Patent Assignment Abstract of Title

Total Assignments: 4

Application #: 10285312 **Filing Dt:** 10/31/2002 **Patent #:** 7241034 **Issue Dt:** 07/10/2007
PCT #: NONE **Publication #:** US20030107898 **Pub Dt:** 06/12/2003
Inventors: James E. Smith, Anthony B. McDonald
Title: AUTOMATIC DIRECTIONAL CONTROL SYSTEM FOR VEHICLE HEADLIGHTS

Assignment: 1

Reel/Frame: 013729 / 0559 **Received:** 02/10/2003 **Recorded:** 02/06/2003 **Mailed:** 06/13/2003 **Pages:** 3
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignors: SMITH, JAMES E. **Exec Dt:** 01/31/2003
MCDONALD, ANTHONY B. **Exec Dt:** 01/31/2003
Assignee: DANA CORPORATION
4500 DORR STREET
TOLEDO, OHIO 43615
Correspondent: MACMILLAN, SOBANSKI & TODD, LLC
RICHARD S. MACMILLAN
720 WATER STREET
ONE MARITIME PLAZA, FOURTH FLOOR
TOLEDO, OH 43604-1853

Assignment: 2

Reel/Frame: 020540 / 0476 **Received:** 02/22/2008 **Recorded:** 02/22/2008 **Mailed:** 02/22/2008 **Pages:** 30
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignor: DANA CORPORATION **Exec Dt:** 01/31/2008
Assignee: DANA AUTOMOTIVE SYSTEMS GROUP, LLC
4500 DORR STREET
TOLEDO, OHIO 43615
Correspondent: DANA HOLDING CORPORATION
4500 DORR STREET
KRISTENE M RAGAN
TOLEDO, OH 43615

Assignment: 3

Reel/Frame: 022813 / 0432 **Received:** 06/12/2009 **Recorded:** 06/12/2009 **Mailed:** 06/12/2009 **Pages:** 2
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignor: DANA AUTOMOTIVE SYSTEMS GROUP, LLC **Exec Dt:** 05/26/2009
Assignee: STRAGENT, LLC
211 W. TYLER, SUITE C
LONGVIEW, TEXAS 75601
Correspondent: ASSIGNMENT RECORDATION
211 W. TYLER ST., SUITE C
LONGVIEW, TX 75601

Assignment: 4

Reel/Frame: 024045 / 0235 **Received:** 03/08/2010 **Recorded:** 03/08/2010 **Mailed:** 03/09/2010 **Pages:** 2
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignor: STRAGENT, LLC **Exec Dt:** 12/16/2009
Assignee: BALTHER TECHNOLOGIES, LLC
211 W. TYLER
SUITE C-4
LONGVIEW, TEXAS 75601
Correspondent: THE CALDWELL FIRM, LLC
PO BOX 59655
DEPT. SVIPGP
DALLAS, TX 75229

Search Results as of: 07/28/2010 01:33 PM

Web interface last modified: October 18, 2008 v.2.0.1

Notice of References Cited	Application/Control No. 90/011,011	Applicant(s)/Patent Under Reexamination 7,241,034	
	Examiner MY-TRANG N. TON	Art Unit 3992	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-4,733,333	03-1988	Shibata et al.	362/40
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

(Also referred to as FORM PTO-1465)

REQUEST FOR *INTER PARTES* REEXAMINATION TRANSMITTAL FORM

Address to:
Mail Stop *Inter Partes* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attorney Docket No.: ____________

Date: May 16, 2011

1. ☒ This is a request for *inter partes* reexamination pursuant to 37 CFR 1.913 of patent number 7,241,034 issued July 10, 2007. The request is made by a third party requester, identified herein below.

2. ☒ a. The name and address of the person requesting reexamination is:
   Volkswagen Group of America, Inc.
   2200 Ferdinand Porsche Drive
   Herndon, Virginia 20171

   b. The real party in interest (37 CFR 1.915(b)(8)) is: Volkswagen Group of America, Inc.

3. ☐ a. A check in the amount of $____________ is enclosed to cover the reexamination fee, 37 CFR 1.20(c)(2);
   ☐ b. The Director is hereby authorized to charge the fee as set forth in 37 CFR 1.20(c)(2) to Deposit Account No. ________________________ ; **or**
   ☒ c. Payment by credit card. Form PTO-2038 is attached.

4. ☒ Any refund should be made by ☐ check or ☒ credit to Deposit Account No. 11-0600
37 CFR 1.26(c). If payment is made by credit card, refund must be to credit card account.

5. ☒ A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed. 37 CFR 1.915(b)(5)

6. ☐ CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table
   ☐ Landscape Table on CD

7. ☐ Nucleotide and/or Amino Acid Sequence Submission
If applicable, items a. – c. are required.
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM (2 copies) or CD-R (2 copies); **or**
      ii. ☐ paper
   c. ☐ Statements verifying identity of above copies

8. ☐ A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.

9. ☒ Reexamination of claim(s) 1-5 is requested.

10. ☒ A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO/SB/08, PTO-1449, or equivalent.

11. ☒ An English language translation of all necessary and pertinent non-English language patents and/or printed publications is included.

12. ☒ The attached detailed request includes at least the following items:

a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.915(b)(3)
b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR 1.915(b)(1) & (3).

13. ☒ It is certified that the estoppel provisions of 37 CFR 1.907 do not prohibit this reexamination. 37 CFR 1.915(b)(7)

14. ☒ a. It is certified that a copy of this request has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c).
The name and address of the party served and the date of service are:
The Caldwell Firm, LLC
PO Box 59655, Dept. SVIPGP
Dallas, TX 75229

Date of Service: May 16, 2011; **or**

☐ b. A duplicate copy is enclosed because service on patent owner was not possible. An explanation of the efforts made to serve patent owner **is attached**. See MPEP 2620.

15. Third Party Requester Correspondence Address: Direct all communications about the reexamination to:

☒ The address associated with Customer Number: 26646

OR

☐ Firm or Individual Name

Address
KENYON & KENYON LLP, One Broadway

City New York	State NY	Zip 10004
Country US		
Telephone 212.425.7200	Email	

16. ☒ The patent is currently the subject of the following concurrent proceeding(s):
- ☐ a. Copending reissue Application No.
- ☒ b. Copending reexamination Control No. 90/011,011
- ☐ c. Copending Interference No.
- ☐ d. Copending litigation styled:

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

/Clifford A. Ulrich/	May 16, 2011
Authorized Signature	Date
Clifford A. Ulrich	42,194
Typed/Printed Name	Registration No., if applicable

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<u>IN THE UNITED STATES PATENT AND TRADEMARK OFFICE</u>

In Re Patent of	:	James E. SMITH et al.
Patent No.	:	7,241,034
Issued	:	July 10, 2007
Title	:	AUTOMATIC DIRECTIONAL CONTROL SYSTEM FOR VEHICLE HEADLIGHTS
Application Serial No.	:	10/285,312
Filed	:	October 31, 2002
Requester	:	Volkswagen Group of America, Inc.

<u>VIA EFS-WEB</u>
Mail Stop *Inter Partes* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

REQUEST FOR *INTER PARTES* REEXAMINATION
<u>OF U.S. PATENT NO. 7,241,034 PURSUANT TO 37 C.F.R. § 1.915</u>

SIR:

Volkswagen Group of America, Inc. ("VWGoA"), through its undersigned counsel, hereby respectfully requests *inter partes* reexamination of U.S. Patent No. 7,241,034 pursuant to 35 U.S.C. § 311 *et seq.* and the provisions of 37 C.F.R. § 1.902 *et seq.*

TABLE OF CONTENTS

EXHIBITS

Exhibit 1	U.S. Patent No. 7,241,034
Exhibit 2	"Original Complaint for Patent Infringement," filed on March 8, 2010, *BALTHER TECHNOLOGIES, LLC, v. AM. HONDA MOTOR CO. INC., et al.*, Case No. 6:10-CV-78-LED (E.D. Tex.)
Exhibit 3	"Plaintiff's Notice of Voluntary Dismissal," filed on May 17, 2010, *BALTHER TECHNOLOGIES, LLC, v. AM. HONDA MOTOR CO. INC., et al.*, Case No. 6:10-CV-78-LED (E.D. Tex.)
Exhibit 4	"Order," dated May 17, 2010, *BALTHER TECHNOLOGIES, LLC, v. AM. HONDA MOTOR CO. INC., et al.*, Case No. 6:10-CV-78-LED (E.D. Tex.)
Exhibit 5	Listing of Prior Art Patents and Printed Publications that Raise Substantial New Questions of Patentability
Exhibit 6	United Kingdom Patent Application Publication No 2 309 773 to Uchida
Exhibit 7	United Kingdom Patent Application Publication No. 2 309 774 to Takahashi
Exhibit 8	U.S. Patent No. 5,182,460 to Hussman
Exhibit 9	German Patent Application Publication No. 31 10 094 to Miskin et al.
Exhibit 10	Certified English-Language Translation of German Patent Application Publication No. 31 10 094 to Miskin et al.
Exhibit 11	German Patent Application Publication No. 31 29 891 to Leleve
Exhibit 12	Certified English-Language Translation of German Patent Application Publication No. 31 29 891 to Leleve
Exhibit 13	U.S. Patent No. 6,305,823 to Toda et al.
Exhibit 14	U.S. Patent No. 6,193,398 to Okuchi et al.
Exhibit 15	U.S. Patent No. 5,909,949 to Gotoh
Exhibit 16	U.S. Patent No. 4,954,933 to Wassen et al.
Exhibit 17	Certificate of Service

I. IDENTIFICATION PURSUANT TO 37 C.F.R. § 1.915(b)(1)

Inter partes reexamination of claims 1 to 5 of U.S. Patent No. 7,241,034 ("the '034 patent") is requested.

II. COPY OF '034 PATENT PURSUANT TO 37 C.F.R. § 1.915(b)(5)

Pursuant to 37 C.F.R. § 1.915(b)(5), annexed hereto as Exhibit 1 is a copy of the entire '034 patent including the front face, drawings, specification and claims (in double column format) for which *inter partes* reexamination is requested.

To the best of VWGoA's knowledge, as of the filing date of this Request, no disclaimer, certificate of correction, or reexamination certificate has been issued in connection with the '034 patent.

III. CERTIFICATION PURSUANT TO 37 C.F.R. § 1.915(b)(7)

Pursuant to 37 C.F.R. § 1.915(b)(7), VWGoA certifies that the estoppel provisions of 37 C.F.R. § 1.907 do not prohibit the *inter partes* reexamination.

IV. IDENTIFICATION OF REAL PARTY IN INTEREST PURSUANT TO 37 C.F.R. § 1.915(b)(8)

The real party in interest is VOLKSWAGEN GROUP OF AMERICA, INC., which is a subsidiary of VOLKSWAGEN AG.

V. PROCEEDINGS RELATED TO '034 PATENT

Although VWGoA is not obligated to inform the Office of proceedings related to the '034 patent, the Office is hereby informed of the following proceeding that relates to the '034 patent which is pending as of the filing date of this Request:

> *EX PARTE REEXAMINATION OF THE '034 PATENT*, Control Number 90/011,011 (Request for *Ex Parte* Reexamination filed July 10, 2010) ("the '034 *Ex Parte* Reexamination"). Pursuant to M.P.E.P. § 2282,[1] VWGoA is filing in the '034 *Ex Parte* Reexamination a "Notice of Concurrent Proceeding" to inform the Office of the filing of this Request.

The Office is hereby further informed of the following concluded proceeding that related to the '034:[2]

> *BALTHER TECHNOLOGIES, LLC, v. AM. HONDA MOTOR CO. INC., et al.*, Case No. 6:10-CV-78-LED (E.D. Tex. – Complaint Filed on March 8, 2010) ("the *BALTHER* case"). Plaintiff Balther Technologies, LLC ("Balther") asserted infringement of the '034 patent by the Requester. Requester was therefore a party to the *BALTHER* case. A copy of the "Original Complaint for Patent Infringement" filed on March 8, 2010 is annexed hereto as Exhibit 2. A copy of "Plaintiff's Notice of Voluntary Dismissal" filed on May 17, 2010 is annexed hereto as Exhibit 3. A copy of the "Order" dismissing the *BALTHER* case pursuant to Plaintiff's request dated May 18, 2010 is annexed hereto as Exhibit 4.

VI. THE '034 PATENT AND ITS PROSECUTION

The '034 patent issued on July 10, 2007 from U.S. Patent Application Serial No. 10/285,312 ("the '312 application"), filed on October 31, 2002. The '034 patent states that it claims the benefit of U.S. Provisional Application No. 60/369,447, filed on April 2, 2002,

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1 "Ordinarily, no submissions of any kind by third parties filed after the date of the order are entered into the reexamination or patent file while the reexamination proceeding is pending. However, in order to ensure a complete file, with updated status information regarding prior or concurrent proceedings regarding the patent under reexamination, the Office will, at any time, accept from any parties, for entry into the reexamination file, copies of notices of suits and other proceedings involving the patent and copies of decisions or papers filed in the court from litigations or other proceedings involving the patent."

2 Despite its duty under 37 C.F.R. § 1.565(a) ("In an *ex parte* reexamination proceeding before the Office, the patent owner must inform the Office of any prior or concurrent proceedings in which the patent is or was involved such as . . . litigation and the results of such proceedings") and M.P.E.P. § 2282 ("It is important for the Office to be aware of any prior or concurrent proceedings in which a patent undergoing *ex parte* reexamination is or was involved, such as . . . litigations, and the results of such proceedings") to inform the Office of all prior and concurrent proceedings involving the '034 patent, as of the filing date of this Request, Balther has not informed of Office of the *BALTHER* case in connection with the '034 *Ex Parte* Reexamination.

U.S. Provisional Application No. 60/356,703, filed on February 13, 2002, and U.S. Provisional Application No. 60/335,409, filed on October 31, 2001.

A. Prosecution of '312 Application

As originally filed, the '312 application included thirteen claims, of which application claim 1 was the only independent claim. Application claim 1 is reproduced below:

> 1. An automatic directional control system for a vehicle headlight comprising:
>
> a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;
>
> a controller that is responsive to said sensor signal for generating an output signal; and
>
> an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.

An Office Action was issued on December 23, 2003, in which: (1) application claims 1 to 2, 4 to 8, and 10 to 13 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,305,823 ("Toda et al."); (2) application claims 1 to 2, 4 to 8, and 10 to 13 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,193,398 ("Okuchi et al."); and (3) application claims 1 to 3 and 9 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,909,949 ("Gotoh").

In an Amendment submitted on March 23, 2004, application claim 6 was cancelled, and application claims 1 and 7 were amended as follows:

> 1. An automatic directional control system for a vehicle headlight comprising:
>
> a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;
>
> a controller that is responsive to said sensor signal for generating an output signal <u>only when said sensor signal changes by more than a predetermined amount</u>; and

an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.

7. An ~~The~~ automatic directional control system ~~defined in Claim 1 wherein said~~ for a vehicle headlight comprising:

a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;

a controller that is responsive to a rate of change of said sensor signal for generating said output signal; and

an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.

The "Remarks" section of the Amendment alleged that: (1) "None of the art of record is believed to show or suggest a controller that is responsive to the sensor signal for generating an output signal only when the sensor signal changes by more than a predetermined amount," as recited in amended claim 1, and (2) "None of the art of record is believed to show or suggest a controller that is responsive to a rate of change of the sensor signal for generating the output signal," as recited in amended claim 7. Amendment at page 5.

A Final Office Action was issued on June 15, 2004, in which all of the claims were again rejected. In particular, (1) application claims 1 to 2, 4 to 5, 7 to 8, and 10 to 13 were rejected under 35 U.S.C. § 102(e) as anticipated by Toda et al.; (2) application claims 1 to 2, 4 to 5, 7 to 8, and 10 to 13 were rejected under 35 U.S.C. § 102(e) as anticipated by Okuchi et al.; and (3) application claims 1 to 3 and 9 were rejected under 35 U.S.C. § 102(b) as anticipated by Gotoh. The Examiner further stated that the applicants' arguments had been considered but were not persuasive.

On September 15, 2004, the applicants filed a Request for Reconsideration along with a Notice of Appeal. On December 28, 2004, the Examiner issued an Advisory Action, which stated that the "request for reconsideration has been considered but does NOT place the application in condition for allowance because [t]he prior art of record including Toda et al[.] in particular reads on independent claims 1 and 7.

Concurrent with the filing of a Request for Continued Examination on February 17, 2005, the applicants again argued that the claims, as amended on March 23, 2004, were allowable. Again, the applicants argued in particular that (1) "None of the art of record is believed to show or suggest a controller that is responsive to the sensor signal for generating an output signal <u>only</u> when the sensor signal changes by more than a predetermined amount," as recited in amended claim 1, and (2) "None of the art of record is believed to show or suggest a controller that is responsive to a <u>rate of change</u> of the sensor signal for generating the output signal," as recited in amended claim 7. Request for Continued Examination, Remarks at pages 2 to 4 (emphasis in original).

Another Office Action was issued on April 14, 2005 again rejecting all of the pending claims on the same grounds as the June 15, 2004 Office Action, and also concluding that the arguments of the applicants were not persuasive. The applicants replied to the April 14, 2005 Office Action by submitting a Response on July 14, 2005, in which the applicants stated that the limitation, "wherein the controller generates an output signal <u>only</u> when the sensor signal <u>changes by more than a predetermined amount</u>" (emphasis in original), "is not merely a recitation of 'intended use' alleged by the Examiner, but rather an important aspect of the operation of the headlight automatic directional control system." Response at page 2.

The Examiner issued a Final Office Action on October 5, 2005, again rejecting the claims as anticipated by Toda et al., Okuchi et al., and Gotoh et al., and again finding the applicants arguments to be unpersuasive.

The applicants then filed a Notice of Appeal and a Pre-Appeal Brief Request for Review on January 5, 2006, again restating their position. On February 3, 2006, a Notice of Panel Decision from Pre-Appeal Brief Review was issued, which states that the application remains under appeal because there is at least one actual issue for appeal.

On August 9, 2006, the applicants filed a Request for Continued Examination with a Preliminary Amendment, adding new independent claim 14, and again arguing that independent claims 1 and 7 were patentable. Newly added independent claim 14 is reproduced below:

> 14. An automatic directional control system for a vehicle headlight comprising:
>
> a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;

> a controller that is responsive to said sensor signal for generating an output signal only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and
>
> an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.

According to the "Remarks" section of the Preliminary Amendment, (1) the cited references, *i.e.*, Toda et al., Okuchi et al., and Gotoh, fail to disclose the limitation of claim 1 that the controller is responsive to the sensor signal for generating an output signal only when the sensor signal changes by more than a predetermined amount; (2) the cited references, *i.e.*, Toda et al., Okuchi et al., and Gotoh, fail to disclose the limitation of claim 14 that the controller is responsive to the sensor signal for generating an output signal only when the sensor signal changes by more than a predetermined minimum threshold amount to prevent the actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and (3) the cited references, *i.e.*, Toda et al. and Okuchi et al., fail to disclose the limitation of claim 7 that the controller is responsive to a rate of change of the sensor signal for generating the output signal.

A further Office Action was issued on October 6, 2006 in which all of the claims were rejected. In particular, (1) application claims 1 to 2, 4 to 5, 7 to 8, and 10 to 14 were rejected under 35 U.S.C. § 102(e) as anticipated by Toda et al.; (2) application claims 1 to 2, 4 to 5, 7 to 8, and 10 to 14 were rejected under 35 U.S.C. § 102(e) as anticipated by Okuchi et al.; and (3) application claims 1 to 3 and 9 were rejected under 35 U.S.C. § 102(b) as anticipated by Gotoh. The Examiner further stated that the applicants' arguments had been considered but were not persuasive.

In a January 8, 2007 Response, the applicants again argued that (1) the cited references, *i.e.*, Toda et al., Okuchi et al., and Gotoh, fail to disclose the limitation of claim 1 that the controller is responsive to the sensor signal for generating an output signal only when the sensor signal changes by more than a predetermined amount; (2) the cited references, *i.e.*, Toda et al., Okuchi et al., and Gotoh, fail to disclose the limitation of claim 14 that the controller is responsive to the sensor signal for generating an output signal only when the sensor signal changes by more than a predetermined minimum threshold amount to prevent the actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and (3) the cited references, *i.e.*, Toda et al. and Okuchi et al., fail to disclose the limitation of claim 7 that the controller is responsive to a rate of change of the sensor signal for generating the output signal. The applicants further argued that claims 1 and 14 "define a system wherein the actuator <u>does not</u> change the headlight according to the output signal generated by the sensor unless the sensor signal changes by more than a predetermined amount" (emphasis in original).

On January 31, 2007, an Interview took place. In the Interview Summary, the Examiner summarized the substance of the Interview as follows:

> We discussed independent claims 1, 7, and 14. We agreed that claim 14 is allowable over the prior art of record because of the specific limitation of "<u>**a predetermined minimum threshhold [*sic*] amount to prevent the actuator from being operated continiously [*sic*] or duly in response to relatively small variations in the sensed operating speed. [*sic*]**</u>"

Interview Summary (emphasis added).

That same day, the applicants submitted an Amendment, cancelling claims 1 and 7 to 13, and amending dependent claims 2 to 5 to depend from independent claim 14.

A Notice of Allowance issued on April 19, 2007, in which application claims 2 to 5 and 14 were indicated to be allowed. The Examiner stated that the "applicant's amendment and accompanying remarks has persuaded the examiner to place the application in condition for allowance." Thus, it is clear that application claim 14 was allowed due to the inclusion of the limitation:

> a controller that is responsive to said sensor signal for generating an output signal only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition.

Independent application claim 14 corresponds to claim 1 in the '034 patent, the sole independent claim of the '034 patent.

B. Pending *Ex Parte* Reexamination of '034 Patent

On May 25, 2010, Balther Technologies, LLC ("Balther"), the stated owner of the '034 patent, filed an incomplete request for *ex parte* reexamination of the '034 patent, and on July 9, 2010, Balther filed a "Substitute Request for *Ex Parte* Reexamination of U.S. Patent No. 7,241,034" requesting reexamination of the '034 patent. According to the records of the Office, the filing date of the request for reexamination is July 10, 2010, the date the requisite fee was received, and Reexamination Control No. 90/011,011 has been assigned to the *ex* *parte* reexamination proceeding. In its request, Balther admitted that claims 1 and 3 of the '034 patent were anticipated by U.S. Patent No. 4,733,333 ("Shibata") under 35 U.S.C. § 102(b), as Shibata teaches all of the limitations of claims 1 and 3.

On August 12, 2010, an Order Granting Request for *Ex Parte* Reexamination issued granting reexamination with respect to claims 1 and 3. On January 12, 2011 an Office Action issued rejecting claims 1 and 3 under 35 U.S.C. § 102(b) as anticipated by Shibata.

In response to the Office Action, on January 18, 2011 Balther submitted an "Amendment A," and then, on February 16, 2011, Balther submitted a "Substitute Amendment A," proposing amendments to claims 1 to 5 and proposing the addition of new claims dependent claims 6 to 45. Substitute Amendment A proposed the following amendment to independent claim 1, the sole independent claim:

> 1. An automatic directional control system for a vehicle headlight, comprising:
>
> [a] two or more sensors that [is] are each adapted to generate a signal that is representative of a condition of [the] a vehicle, said sensed conditions including[es] [one] two or more of road speed, steering angle, pitch, and suspension height of the vehicle;
>
> a controller that is responsive to said two or more sensor signals for generating [an] at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent [said] at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and
>
> [an] said at least one actuator [that is] being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output signal.

In the Remarks section of Substitute Amendment A, Balther argued that Shibata fails to teach "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." Substitute Amendment A at page 9 (emphasis in original). Thus, it appears that Balther considers proposed amended claim 1 to be patentable because it requires two or more sensors to generate a signal.

VII. CITATIONS OF PRIOR ART PATENTS AND PRINTED PUBLICATIONS THAT ARE PRESENTED TO PROVIDE SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY PURSUANT TO 37 C.F.R. § 1.915(b)(2)

Substantial new questions of patentability affecting claims 1 to 5 of the '034 patent under 35 U.S.C. §§ 102 and 103 are raised by the prior art patents and printed publications cited below pursuant to 37 C.F.R. § 1.915(b)(2). Annexed hereto as Exhibit 5 is a listing of, *inter alia*, the prior art patents and printed publications that raise substantial new questions of patentability.

The following patents and publications constitute prior art against the '034 patent, under the subsections of 35 U.S.C. § 102 indicated below:

1. United Kingdom Patent Application Publication No 2 309 773 ("Uchida"), which published on June 8, 1997 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(b).

2. United Kingdom Patent Application Publication No. 2 309 774 ("Takahashi"), which published on June 8, 1997 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(b).

3. U.S. Patent No. 5,182,460 ("Hussman"), which issued on January 26, 1993 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(b).

4. German Patent Application Publication No. 31 10 094 ("Miskin et al."), which published on September 30, 1982 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(b).

5. German Patent Application Publication No. 31 29 891 ("Leleve"), which published on June 9, 1982 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(b).

6. U.S. Patent No. 6,305,823 ("Toda et al."), which was filed on October 14, 1999 and issued on October 23, 2001 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(e).

7. U.S. Patent No. 6,193,398 ("Okuchi et al."), which was filed on June 16, 1999 and issued on February 27, 2001 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(e).

8. U.S. Patent No. 5,909,949 ("Gotoh"), which issued on June 8, 1999 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(b).

9. U.S. Patent No. 4,954,933 ("Wassen et al."), which issued on September 4, 1990 and therefore constitutes prior art against the '034 patent under 35 U.S.C. § 102(b).

A copy of every prior art patent and printed publication relied upon or referred to herein is submitted herewith as required by 37 C.F.R. § 1.915(b)(4), as follows:

A. A copy of Uchida is annexed hereto as Exhibit 6.

B. A copy of Takahashi is annexed hereto as Exhibit 7.

C. A copy of Hussman is annexed hereto as Exhibit 8.

D. A copy of Miskin et al. is annexed hereto as Exhibit 9, and a certified English-language translation of Miskin et al. is annexed hereto as Exhibit 10.

E. A copy of Leleve is annexed hereto as Exhibit 11, and a certified English-language translation of Leleve is annexed hereto as Exhibit 12.

F. A copy of Toda et al. is annexed hereto as Exhibit 13.

G. A copy of Okuchi et al. is annexed hereto as Exhibit 14.

H. A copy of Gotoh is annexed hereto as Exhibit 15.

I. A copy of Wassen et al. is annexed hereto as Exhibit 16.

VIII. STATEMENTS POINTING OUT EACH SUBSTANTIAL NEW QUESTION OF PATENTABILITY PURSUANT TO 37 C.F.R. § 1.915(b)(3)

In accordance with 37 C.F.R. § 1.915(b)(3), reexamination of claims 1 to 5 of the '034 patent is requested in view of the prior art patents and printed publications cited above in Section VII based on the following substantial new questions of patentability and proposed grounds of rejection:

1. Claims 1, 2, 4, and 5 Are Anticipated by Uchida Under 35 U.S.C. § 102(b)

2. Claims 1, 2, 4, and 5 Are Anticipated by Takahashi Under 35 U.S.C. § 102(b)

Requester proposes the following grounds of rejection against proposed amended claims 1 to 46 as presented by Balther in its Substitute Amendment A filed on February 16, 2011 in the *Ex Parte* Reexamination of the '034 patent:

21. Proposed Claims 1, 2, 4 to 6, 9 to 13, 20, 22, 24, 25, 37, 38, 41, 42, 44, and 45 Are Anticipated by Uchida Under 35 U.S.C. § 102(b)

22. Proposed Claims 1, 2, 4 to 6, 9 to 11, 17, 18, 20, 21, 22, 24, 25, 28, 33, 34, 37, 38, 41, 42, 44, and 45 Are Anticipated by Takahashi Under 35 U.S.C. § 102(b)

23. Proposed Claims 1, 2, 4 to 6, 9, 10, 37, 38, 41, 42, 44, and 45 Are Anticipated by Hussman Under 35 U.S.C. § 102(b)

24. Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 Are Unpatentable Over the Combination of Toda et al. and Uchida Under 35 U.S.C. § 103(a)

25. Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 33, 34, 36 to 42, 44, and 45 Are Unpatentable Over the Combination of Toda et al. and Takahashi Under 35 U.S.C. § 103(a)

26. Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 Are Unpatentable Over the Combination of Toda et al. and Hussman Under 35 U.S.C. § 103(a)

27. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 35, 37 to 42, 44, and 45 Are Unpatentable Over the Combination of Okuchi et al. and Uchida Under 35 U.S.C. § 103(a)

28. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45 Are Unpatentable Over the Combination of Okuchi et al. and Takahashi Under 35 U.S.C. § 103(a)

29. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 25, 28, 29, 33, 35, 37 to 42, 44, and 45 Are Unpatentable Over the Combination of Okuchi et al. and Hussman Under 35 U.S.C. § 103(a)

30. Proposed Claims 1 to 13, 20, 22, 24 to 26, 28, 29, 37, 38, and 41 to 45 Are Unpatentable Over the Combination of Gotoh and Uchida Under 35 U.S.C. § 103(a)

31. Proposed Claims 1 to 12, 14, 16 to 18, 20 to 22, 24 to 26, 28, 29, 33, 34, 37, 38, and 41 to 45 Are Unpatentable Over the Combination of Gotoh and Takahashi Under 35 U.S.C. § 103(a)

32. Proposed Claims 1 to 13, 24, 26, 28, 29, 37, 38, and 41 to 45 Are Unpatentable Over the Combination of Gotoh and Hussman Under 35 U.S.C. § 103(a)

33. Proposed Claims 17, 19, 21, 23, 26, and 30 to 32 Are Unpatentable in View of the Combination of Uchida and the Admitted Prior Art Described in the '034 Patent Specification Under 35 U.S.C. § 103(a)

34. Proposed Claims 19, 23, 26, and 30 to 32 Are Unpatentable in View of the Combination of Takahashi and the Admitted Prior Art Described in the '034 Patent Specification Under 35 U.S.C. § 103(a)

35. Proposed Claims 17 to 21, 23 to 26, and 30 to 32 Are Unpatentable in View of the Combination of Hussman and the Admitted Prior Art Described in the '034 Patent Specification Under 35 U.S.C. § 103(a)

36. Proposed Claim 27 Is Unpatentable Over the Combination of Uchida and Wassen et al. Under 35 U.S.C. § 103(a)

37. Proposed Claim 27 Is Unpatentable Over the Combination of Takahashi and Wassen et al. Under 35 U.S.C. § 103(a)

38. Proposed Claim 27 of Is Unpatentable Over the Combination of Hussman and Wassen et al. Under 35 U.S.C. § 103(a)

IX. DETAILED EXPLANATIONS PURSUANT TO 37 C.F.R. § 1.915(b)(3)

The following statements are made, pursuant to 37 C.F.R. § 1.915(b)(3), pointing out each substantial new question of patentability, and each proposed ground of rejection, based on the prior art patents and printed publications cited above in Section VII and annexed hereto as Exhibits 6 to 16, in accordance with the "broadest reasonable interpretation" standard as set forth in M.P.E.P. § 2258(I)(G),[3] which also applies to *inter partes* reexamination proceedings (M.P.E.P. § 2658). As set forth in detail below, the foregoing prior art patents and printed publications would have been considered important by a reasonable Examiner in deciding whether to allow claims 1 to 5 of the '034 patent. Therefore, these prior art patents and printed publications raise substantial new questions of patentability. In addition, the prior art patents and printed publications cited above should be

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[3] "During reexamination, claims are given their broadest reasonable interpretation consistent with the specification and limitations in the specification are not read into the claims."

considered to be important to a reasonable Examiner in determining whether claims 1 to 46, as proposed by Balther in the *Ex Parte* Reexamination of the '034 patent, are patentable.

The criteria for determining whether a substantial new question of patentability is present is set forth in M.P.E.P. § 2642(I), which states:

> [F]or a substantial new question of patentability to be present, it is only necessary that:
>
> (A) The prior art patents and/or printed publications raise a substantial question of patentability regarding at least one claim, i.e., the teaching of the prior art patents and printed publications is such that a reasonable examiner would consider the teaching to be **important** in deciding whether or not the claim is patentable; and
>
> (B) The same question of patentability as to the claim has not been decided by the Office in a previous examination or pending reexamination of the patent or in a final holding of invalidity by the Federal Courts in a decision on the merits involving the claim. (emphasis in original).

With respect to the original prosecution of the '034 patent, this Request presents substantial new questions of patentability. It should be noted that of the prior art documents that are relied upon in this request, only Toda et al., Okuchi et al., and Gotoh were considered by the Examiner during the prosecution of the '034 patent. While the Examiner relied on these references in anticipation rejections under 35 U.S.C. §§ 102(b) and (e), this Request presents substantial new questions of patentability and proposed obviousness rejections based on these references under 35 U.S.C. § 103(a). These questions of patentability and obviousness rejections were not decided during the original prosecution of the '034 patent. Thus, substantial new questions of patentability are presented herein with respect to Toda et al., Okuchi et al., and Gotoh. Furthermore, this Request cites prior art patents and printed publications that disclose the following limitation of claim 1 of the '034 patent, which apparently lead to its allowance:

> a controller that is responsive to said sensor signal for generating an output signal *only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition.*

With respect to the '034 *Ex Parte* Reexamination, this Request also presents substantial new questions of patentability. As of the filing date of the Request, the only question of patentability that is being addressed in the '034 *Ex Parte* Reexamination is the question of anticipation of claims 1 and 3 under 35 U.S.C. § 102(b) by Shibata.

As indicated above, the '034 *Ex Parte* Reexamination was requested based on Balther's admission that Shibata anticipates claims 1 and 3 under 35 U.S.C. § 102(b), and the Office Action dated January 12, 2011 rejected claims 1 and 3 under 35 U.S.C. § 102(b) as anticipated by Shibata. As further indicated above, Balther responded to the Office Action by proposing amendments to claims 1 to 5 and proposing the addition of new dependent claims 6 to 45. According to Balther, "Shibata fails to teach '**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle.'" Substitute Amendment A at page 9 (emphasis in original). This Request cites prior art patents and printed publications that disclose the foregoing limitation of proposed amended claim 1.

Additionally, only claims 1 and 3 of the '034 patent are under reexamination in the '034 *Ex Parte* Reexamination. That is, claims 2, 4, and 5 are *not* being reexamined in the '034 *Ex Parte* Reexamination. This Request presents questions of patentability affecting claims 2, 4, and 5, and, as such, presents questions of patentability that are necessarily *different* from the only question of patentability that is being addressed in the '034 *Ex Parte* Reexamination.

Each of the questions of patentability presented herein are ***new*** questions of patentability, with respect to both the original prosecution of the '034 patent and the '034 *Ex Parte* Reexamination. Furthermore, as set forth below, the teachings of the prior art patents and printed publications cited herein are such that a reasonable Examiner would consider them important in deciding whether the issued claims of the '034 patent and the proposed claims in the '034 *Ex Parte* Reexamination are patentable. Accordingly, ***substantial*** new questions of patentability are raised in this Request.

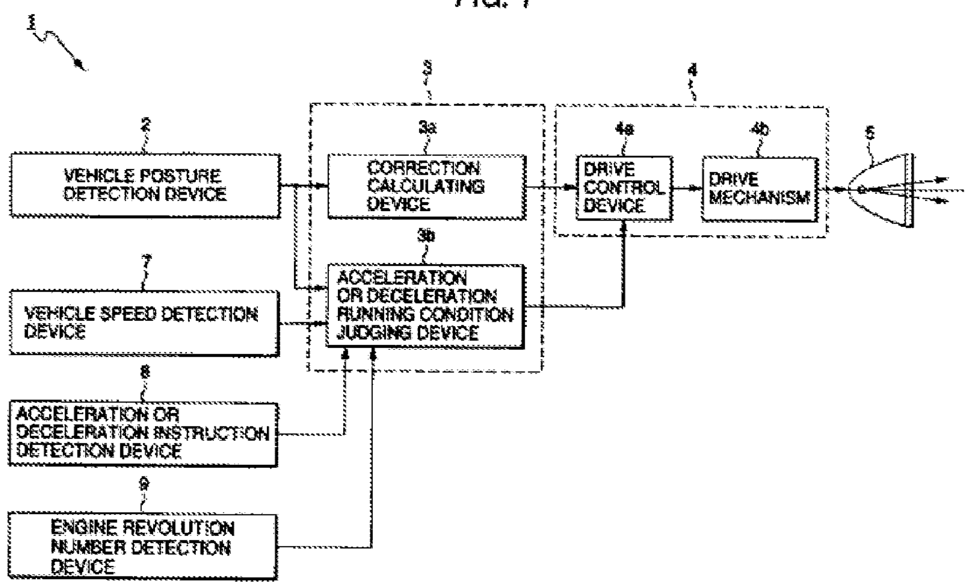
Pursuant to 37 C.F.R. § 1.915(b)(3), a detailed explanation of the pertinence and manner of applying the cited prior art patents and printed publications to every claim for which reexamination is requested is set forth below with reference to the appended charts.

1. Claims 1, 2, 4, and 5 of the '034 Patent Are Anticipated by Uchida Under 35 U.S.C. § 102(b)

Uchida anticipates claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 102(b). Uchida was not cited during the prosecution of the '034 patent, and Uchida provides teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '034 patent.

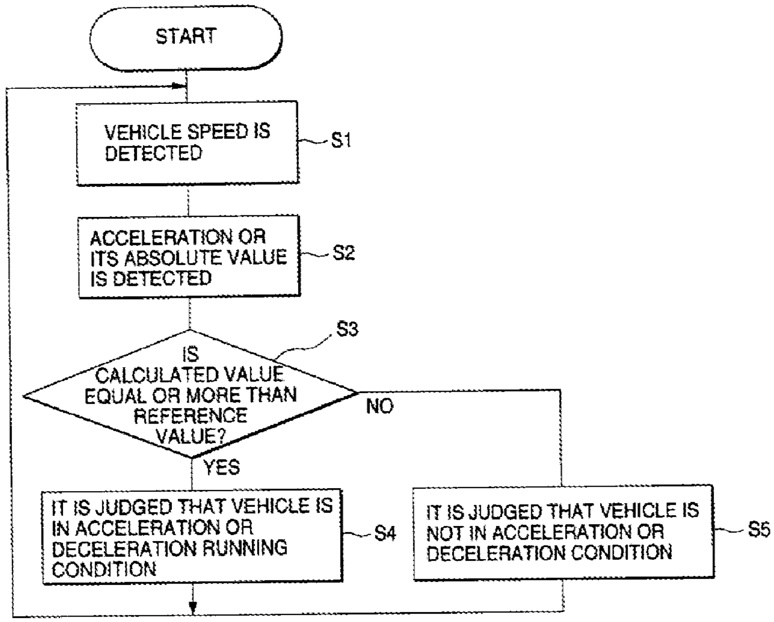
Uchida relates to a vehicle lamp illumination directional control device which detects the posture of a vehicle and adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction. Page 1 at lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, vehicle speed 7, and vehicle acceleration or deceleration 8. The illumination direction is adjusted by control device 3, and drive device 4. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 10 to page 7, line 4.

FIG. 1



Signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6.

FIG. 5



When it is found that the vehicle is not in the acceleration or deceleration running condition, the control device 3 controls the illumination direction of the lamp by fixing the direction of illumination in a given direction, or by limiting the direction of the illumination light to a limited range. Page 4, lines 16 to 27.

Thus, Uchida discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, figure 5; page 4, lines 16 to 27; page 10, line 26 to page 11, line 6. Accordingly, a substantial new question of patentability of claims 1, 2, 4, and 5 is raised by Uchida.

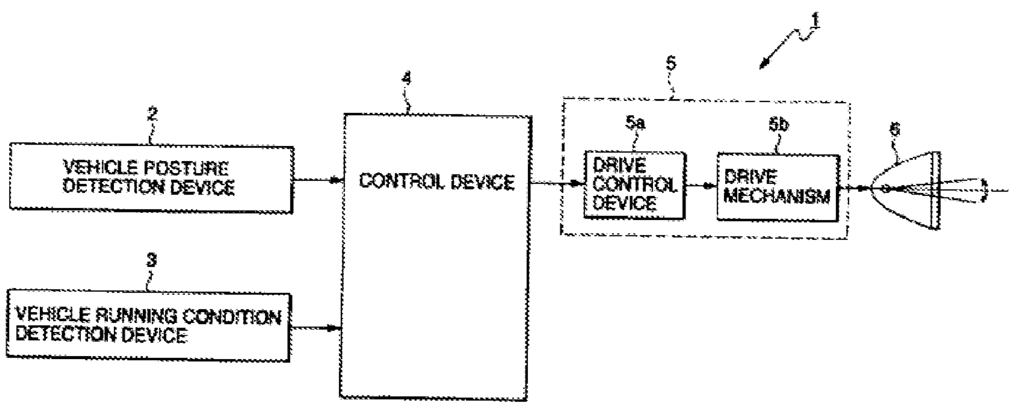
As set forth in the appended charts, Uchida discloses all of the limitations of claims 1, 2, 4, and 5 of the '034 patent and therefore anticipates claims 1, 2, 4, and 5 of the '034 patent. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 102(b) as anticipated by Uchida.

2. Claims 1, 2, 4, and 5 of the '034 Patent Are Anticipated by Takahashi Under 35 U.S.C. § 102(b)

Takahashi anticipates issued claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 102(b). Takahashi was not cited during the prosecution of the '034 patent, and Takahashi provides teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '034 patent.

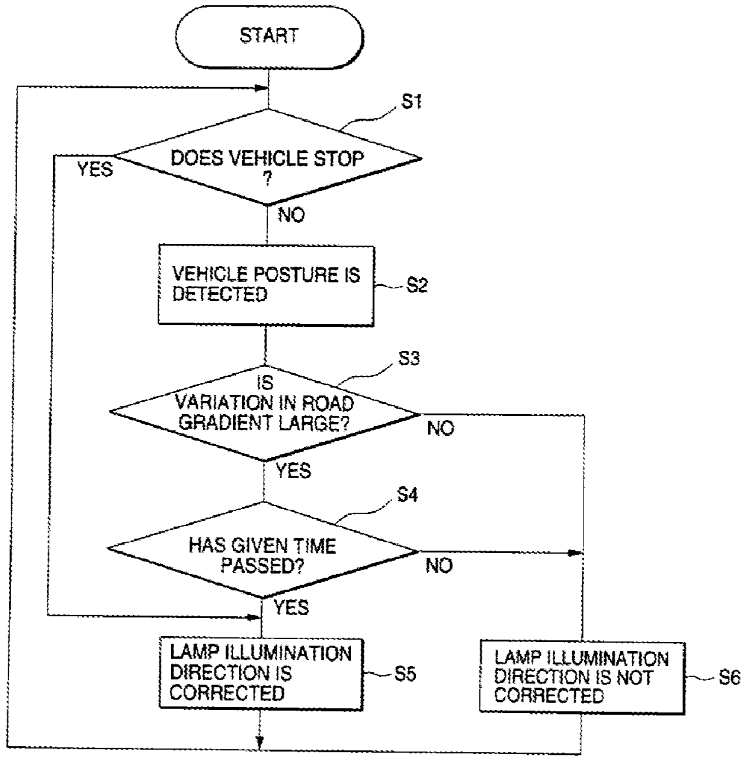
Takahashi relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp to maintain it in a predetermined direction. Page 1, lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, and vehicle running condition 3. The illumination direction is adjusted by control device 4, and drive device 5. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 26 to page 7, line 4.

FIG. 1



A threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line 3. Referring to Figure 7, in step S4 the determination of whether the variation in road gradient is more than a predetermined threshold is made. Based on this determination the lamp illumination is either corrected (S5) or not (S6). Page 10, line 20 to page 11, line 11.

FIG. 7



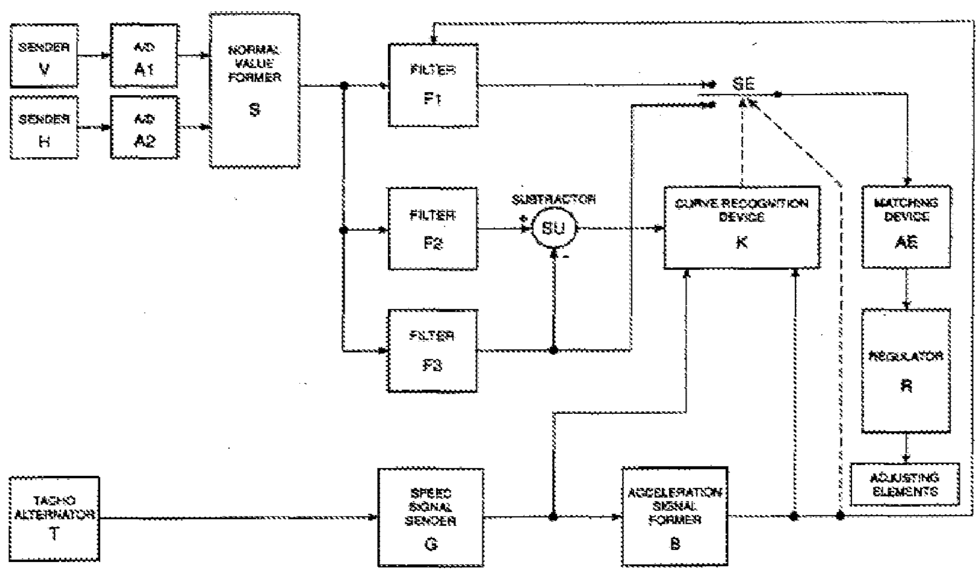
Thus, Takahashi discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, figure 7; page 9, line 16 to page 10, line 3; page 10, line 20 to page 11, line 11. Accordingly, a substantial new question of patentability of claims 1, 2, 4, and 5 is raised by Takahashi.

As set forth in the appended charts, Takahashi discloses all of the limitations of claims 1, 2, 4, and 5 of the '034 patent and therefore anticipates claims 1, 2, 4, and 5 of the '034 patent. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 102(b) as anticipated by Takahashi.

3. Claims 1, 2, 4, and 5 of the '034 Patent Are <u>Anticipated by Hussman Under 35 U.S.C. § 102(b)</u>

Hussman anticipates issued claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 102(b). Hussman was not cited during the prosecution of the '034 patent, and Hussman provides teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '034 patent.

Hussman relates to the regulation of the illumination direction of vehicle lamps based on the relative position of a vehicle body to the front and rear axles. Col. 1, lines 6 to 20. The change in the relative position of the vehicle body over time is detected and signaled by a resulting difference signal, a nominal-value signal. Abstract. This signal is filtered by three filters to determine the time for three average-value formations, each employing different time constants. Abstract. The first nominal-value signal is obtained by using a predetermined value. The second filtered nominal-value signal, obtained from using a smaller time constant, is then compared with the third filtered nominal-value signal, obtained from using a longer filtered time constant. Abstract. When a difference is detected between the second and third signal indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.



Thus, Hussman discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See, e.g.*, col. 3, lines 49 to 61; col. 6, lines 51 to 64. Accordingly, a substantial new question of patentability of claims 1, 2, 4, and 5 is raised by Hussman.

As set forth in the appended charts, Hussman discloses all of the limitations of claims 1, 2, 4, and 5 of the '034 patent and therefore anticipates claims 1, 2, 4, and 5 of the '034 patent. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 102(b) as anticipated by Hussman.

4. Claims 1 and 5 of the '034 Patent Are <u>Anticipated by Miskin et al. Under 35 U.S.C. § 102(b)</u>

Miskin et al. anticipates issued claims 1 and 5 of the '034 patent under 35 U.S.C. § 102. Miskin et al. was not cited during the prosecution of the '034 patent, and Miskin et al. provides teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '034 patent.

Miskin et al. relates to a device for adjusting vehicle headlights automatically including four sensors, S1, S2, S3, and S4 that measure vehicle loading. Abstract; page 4. When the sensors detect a change in loading, they transmit signals through analog multiplexer 2 to the analog-digital converter 3 and are then input to microprocessor 4 as digital signals. Page 4. The microprocessor evaluates the signals by determining differential values and calculating the mean values from a series of measurements and compares these values to a predetermined threshold. Abstract.

Miskin et al. teaches that if the signals that lead to measured data are based on light loads caused by road bumps, the average differential value will be only a small deviation from the ideal headlight position value, and the predetermined threshold value will not be exceeded. Page 5. In this case, the headlights will not be adjusted. *Id.* In the case of a heavier load, the threshold value will be exceeded and the position of the headlights will be changed. *Id.*

Thus, Miskin et al. discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, Abstract; page 5. Accordingly, a substantial new question of patentability of claims 1 and 5 is raised by Miskin et al..

As set forth in the appended charts, Miskin et al. discloses all of the limitations of claims 1 and 5 of the '034 patent and therefore anticipates claims 1 and 5 of the '034 patent. Accordingly, VWGoA proposes a ground of rejection of claims 1 and 5 of the '034 patent under 35 U.S.C. § 102(b) as anticipated by Miskin et al.

5. Claims 1 and 5 of the '034 Patent Are <u>Anticipated by Leleve Under 35 U.S.C. § 102(b)</u>

Leleve anticipates issued claims 1 and 5 of the '034 patent under 35 U.S.C. § 102. Leleve was not cited during the prosecution of the '034 patent, and Leleve provides teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '034 patent.

Leleve relates to a device for adjusting vehicle headlights as a function of the relative position of the vehicle wheels in relation to the vehicle body. Abstract. As illustrated in Figure 1, two sensors supply signals that correspond to the relative position of the vehicle. Sensor 1 is between the front axle and the body of the vehicle to detect the relative movement of the front of the vehicle, while sensor 2 is situated on the rear axle and performs the same function for the rear of the vehicle. Page 12. The signals from sensors 1 and 2 are sent to mixer stage 3, which generates a signal representative of the vibration or rocking motion of the vehicle. *Id.*

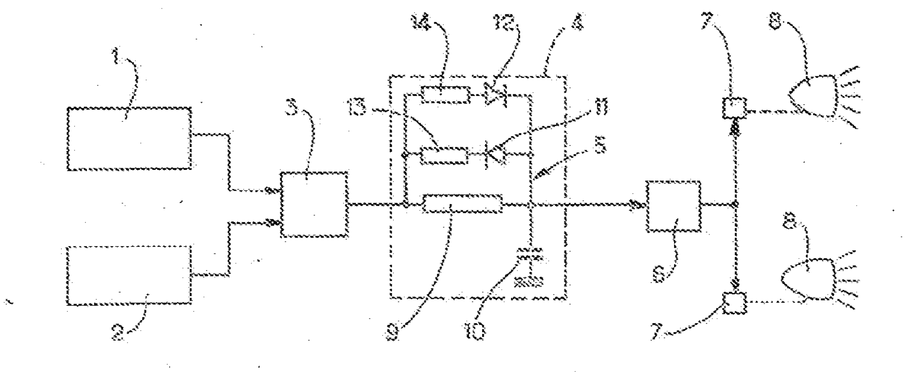


FIG. 1

The output of mixer stage 3 is connected to low pass filter 4, and the output of filter 4 is connected to control device 6, which actuates the mechanisms 7 causing headlights 8 to move. *Id.* Filter 4 is used to filter out frequencies above a certain threshold, for example, frequencies over 2 Hz, which can occur due to the pavement of the road and do not require adjustment. Pages 6 to 8. This feature prevents unwanted frequent adjusting of the headlights and also prolongs the service life of the system. Pages 6 to 7.

Thus, Leleve discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, Abstract; page 5. Accordingly, a substantial new question of patentability of claims 1 and 5 is raised by Leleve.

As set forth in the appended charts, Leleve discloses all of the limitations of claims 1 and 5 of the '034 patent and therefore anticipates claims 1 and 5 of the '034 patent. Accordingly, VWGoA proposes a ground of rejection of claims 1 and 5 of the '034 patent under 35 U.S.C. § 102(b) as anticipated by Leleve.

6. Claims 1, 2, 4, and 5 of the '034 Patent Are Unpatentable Over The Combination of Toda et al. and Uchida Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Toda et al. and Uchida under 35 U.S.C. § 103(a). Although Toda et al. was relied on by the Examiner during the prosecution of the '034 patent, it was relied upon in an anticipation rejection under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Uchida was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Toda et al.

Toda et al. discloses an automatic leveling device for automotive vehicle headlamps. The system includes actuators to tilt the optical axes of the vehicle headlights, and a control unit which controls the driving of the actuators based on a detected pitch angle such that the optical axes of the headlamps stay in a certain inclined state with respect to the surface of the road. Col. 1, lines 52 to 63. The system further includes a vehicle speed detection means 12 and a pitch angle detection means 14. Abstract. Toda et al. further discloses that while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, and the acceleration is equal to or lower than a reference value, and these states continue for a predetermined amount of time. Col. 4, lines 1 to 25.

As discussed above, Uchida discloses that signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. Thus, Uchida discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, figure 5; page 4, lines 16 to 27; page 10, line 26 to page 11, line 6.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Toda et al. and the features of Uchida to "prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle" as described, for example, on page 4, lines 16 to 27 of Uchida. Moreover, combining the automatic leveling device described in Toda et al. and the vehicle lamp illumination directional control in Uchida is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Toda et al. and Uchida discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the '034 patent is raised by the combination of Toda et al. and Uchida. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Toda et al. and Uchida.

7. Claims 1, 2, 4, and 5 of the '034 Patent Are Unpatentable Over the Combination of Toda et al. and Takahashi Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Toda et al. and Takahashi under 35 U.S.C. § 103(a) As discussed above, Toda et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Takahashi was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Toda et al.

Toda et al. discloses an automatic leveling device for automotive vehicle headlamps. The system includes actuators to tilt the optical axes of the vehicle headlights, and a control unit which controls the driving of the actuators based on a detected pitch angle such that the optical axes of the headlamps stay in a certain inclined state with respect to the surface of the road. Col. 1, lines 52 to 63. The system further includes a vehicle speed detection means 12 and a pitch angle detection means 14. Abstract. Toda et al. further discloses that while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, and the acceleration is equal to or lower than a reference value, and these states continue for a predetermined amount of time. Col. 4, lines 1 to 25.

As discussed above, Takahashi discloses that a threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line 3. Referring to Figure 7, in step S4 the determination of whether the variation in road gradient is more than a predetermined threshold is made. Based on this determination the lamp illumination is either corrected (S5) or not (S6). Page 10, line 20 to page 11, line 11. Thus, Takahashi discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, figure 7; page 9, line 16 to page 10, line 3; page 10, line 20 to page 11, line 11.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Toda et al. and the features of Takahashi to "improve . . . visibility . . . and guarantee the safety of running of the vehicle" as described, for example, on page 3, lines 8 to 15 of Takahashi. Moreover, combining the automatic leveling device described in Toda et al. and the vehicle lamp illumination directional control in Takahashi is merely: (a) a combination of prior art elements according to known methods to yield predictable results;

(b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Toda et al. and Takahashi discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the '034 patent is raised by the combination of Toda et al. and Takahashi. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Toda et al. and Takahashi.

8. Claims 1, 2, 4, and 5 of the '034 Patent Are Unpatentable Over the Combination of <u>Toda et al. and Hussman Under 35 U.S.C. § 103(a)</u>

Claims 1, 2, 4, and 5 are unpatentable over the combination of Toda et al. and Hussman under 35 U.S.C. § 103(a). As discussed above, Toda et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Hussman was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Toda et al.

Toda et al. discloses an automatic leveling device for automotive vehicle headlamps. The system includes actuators to tilt the optical axes of the vehicle headlights, and a control unit which controls the driving of the actuators based on a detected pitch angle such that the optical axes of the headlamps stay in a certain inclined state with respect to the surface of the road. Col. 1, lines 52 to 63. The system further includes a vehicle speed detection means 12 and a pitch angle detection means 14. Abstract. Toda et al. further discloses that while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, and the acceleration is equal to or lower than a reference value, and these states continue for a predetermined amount of time. Col. 4, lines 1 to 25.

As discussed above, Hussman discloses that when difference between the second and third signal is detected indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

Thus, Hussman discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See, e.g.*, col. 3, lines 49 to 61; col. 6, lines 51 to 64.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Toda et al. and the features of Hussman to "avoid[] false adjustments caused by" "inclination changes of the motor-vehicle body which are not attributable to changes in load or in road surface unevenness" as described, for example, at col. 1, line 65 to col. 2, line 4 of Hussman. Moreover, combining the automatic leveling device described in Toda et al. and the vehicle lamp illumination directional control in Hussman is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Toda et al. and Hussman discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the '034 patent is raised by the combination of Toda et al. and Hussman. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Toda et al. and Hussman.

9. Claims 1, 2, 4, and 5 of the '034 Patent Are Unpatentable Over the Combination of Toda et al. and Miskin et al. Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Toda et al. and Miskin et al. under 35 U.S.C. § 103(a). As discussed above, Toda et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Miskin et al. was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Toda et al.

Toda et al. discloses an automatic leveling device for automotive vehicle headlamps. The system includes actuators to tilt the optical axes of the vehicle headlights, and a control unit which controls the driving of the actuators based on a detected pitch angle such that the optical axes of the headlamps stay in a certain inclined state with respect to the surface of the road. Col. 1, lines 52 to 63. The system further includes a vehicle speed detection means 12 and a pitch angle detection means 14. Abstract. Toda et al. further discloses that while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, and the acceleration is equal to or lower than a reference value, and these states continue for a predetermined amount of time. Col. 4, lines 1 to 25.

Miskin et al. teaches that if the signals that lead to measured data are based on light loads caused by road bumps, the average differential value will be only a small deviation from the ideal headlight position value, and the predetermined threshold value will not be exceeded. Page 5. In this case, the headlights will not be adjusted. *Id.* In the case of a heavier load, the threshold value will be exceeded and the position of the headlights will be changed. *Id.*

Thus, Miskin et al. discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, Abstract; page 5.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Toda et al. and the features of Miskin et al. to provide for "the correct illumination of the road regardless of the load of the vehicle that changes its position compared to its unloaded state" and so that "blinding of oncoming vehicles is avoided" as described, for example, on page 3 of Miskin et al. Moreover, combining the automatic leveling device described in Toda et al. and the vehicle lamp illumination directional control in Miskin et al. is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Toda et al. and Miskin et al. discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the '034 patent is raised by the combination of Toda et al. and Miskin et al. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Toda et al. and Miskin et al.

10. Claims 1, 2, 4, and 5 of the '034 Patent Are Unpatentable Over The Combination of Toda et al. and Leleve Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Toda et al. and Leleve et al. under 35 U.S.C. § 103(a). As discussed above, Toda et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Leleve was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Toda et al.

Toda et al. discloses an automatic leveling device for automotive vehicle headlamps. The system includes actuators to tilt the optical axes of the vehicle headlights, and a control unit which controls the driving of the actuators based on a detected pitch angle such that the optical axes of the headlamps stay in a certain inclined state with respect to the surface of the road. Col. 1, lines 52 to 63. The system further includes a vehicle speed detection means 12 and a pitch angle detection means 14. Abstract. Toda et al. further discloses that while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, and the acceleration is equal to or lower than a reference value, and these states continue for a predetermined amount of time. Col. 4, lines 1 to 25.

Leleve teaches that if the signals that lead to the measured vibration of the vehicle are caused by road bumps, the frequency will be above a certain level, and the frequency threshold will be exceeded. Pages 6 to 8. In this case, the headlights will not be adjusted. *Id.* In the case of lower frequencies, the signal will pass through the filter causing the headlights to be adjusted. Page 12.

Thus, Leleve discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, pages 6 to 8.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Toda et al. and the features of Leleve to provide for a device that can "differentiate between phenomena that require correction, and those for which a correction is undesired" and can prevent a phase shift that would cause the headlights "to be directed upward at the same moment that the front part of the vehicle body is executing an upward movement" as described, for example, on page 7 of Leleve. Moreover, combining the automatic leveling device described in Toda et al. and the vehicle lamp illumination directional control in Leleve is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Toda et al. and Leleve discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the ’034 patent is raised by the combination of Toda et al. and Leleve. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the ’034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Toda et al. and Leleve.

11. Claims 1, 2, 4, and 5 of the ’034 Patent Are Unpatentable Over the Combination of Okuchi et al. and Uchida Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Okuchi et al. and Uchida under 35 U.S.C. § 103(a). As discussed above, Okuchi et al. was relied on by the Examiner during the prosecution of the ’034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the ’034 patent, because of the inclusion of the limitation “a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition.” As indicated above, Uchida was not cited during the prosecution of the ’034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Okuchi et al.

Okuchi et al. discloses a vehicle headlight optical axis direction adjusting system for adjusting the direction of illumination of a vehicle headlight. In Okuchi et al. the vehicle pitch angle is calculated from vehicle height sensors 11F, 11R, HF and HR on the front and rear portions of a vehicle. Col. 4, line 58 to col. 5, line 8. These signals are supplied to Electronic Control Unit 20, which outputs signals to actuators to adjust the optical axis direction of the headlights as needed. Col. 5, lines 11 to 20. Referring to Figure 3, Okuchi further discloses measuring vehicle speed and acceleration and adjusting the filtering of the change in pitch signals in accordance with the running state of the vehicle. Col. 5, line 52 to col. 6, line 39. For example, when the vehicle speed is lower than a speed threshold, the control mode “stop mode” is implemented, and no filtering of the pitch signal is performed so that the actuator is allowed to respond quickly to changes in pitch angle. Col. 5, line 66 to col. 6, line 5. In contrast, when vehicle speed is higher than the threshold, but vehicle acceleration is lower than a threshold, the control mode “constant speed” mode is implemented, and high filtering of the pitch signal is performed as it is largely assumed that the pitch angle does not largely change. Col. 6, lines 29 to 38.

As discussed above, Uchida discloses that signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. Thus, Uchida discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating threshold." *See e.g.*, figure 5; page 4, lines 16 to 27; page 10, line 26 to page 11, line 6.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Okuchi et al. and the features of Uchida to "prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle" as described, for example, on page 4, lines 16 to 27 of Uchida. Moreover, combining the automatic headlight optical axis adjusting system described in Okuchi et al. and the vehicle lamp illumination directional control in Uchida is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Okuchi et al. and Uchida discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the '034 patent is raised by the combination of Okuchi et al. and Uchida. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Okuchi et al. and Uchida.

12. Claims 1, 2, 4, and 5 of the '034 Patent Are Unpatentable Over the Combination of Okuchi et al. and Takahashi Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Okuchi et al. and Takahashi under 35 U.S.C. § 103(a). As discussed above, Okuchi et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Takahashi was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Okuchi et al.

Okuchi et al. discloses a vehicle headlight optical axis direction adjusting system for adjusting the direction of illumination of a vehicle headlight. In Okuchi et al. the vehicle pitch angle is calculated from vehicle height sensors 11F, 11R, HF and HR on the front and rear portions of a vehicle. Col. 4, line 58 to col. 5, line 8. These signals are supplied to Electronic Control Unit 20, which outputs signals to actuators to adjust the optical axis direction of the headlights as needed. Col. 5, lines 11 to 20. Referring to Figure 3, Okuchi further discloses measuring vehicle speed and acceleration and adjusting the filtering of the change in pitch signals in accordance with the running state of the vehicle. Col. 5, line 52 to col. 6, line 39. For example, when the vehicle speed is lower than a speed threshold, the control mode "stop mode" is implemented, and no filtering of the pitch signal is performed so that the actuator is allowed to respond quickly to changes in pitch angle. Col. 5, line 66 to col. 6, line 5. In contrast, when vehicle speed is higher than the threshold, but vehicle acceleration is lower than a threshold, the control mode "constant speed" mode is implemented, and high filtering of the pitch signal is performed as it is largely assumed that the pitch angle does not largely change. Col. 6, lines 29 to 38.

As discussed above, Takahashi discloses that a threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line

3. Referring to Figure 7, in step S4 the determination of whether the variation in road gradient is more than a predetermined threshold is made. Based on this determination the lamp illumination is either corrected (S5) or not (S6). Page 10, line 20 to page 11, line 11. Thus, Takahashi discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, figure 7; page 9, line 16 to page 10, line 3; page 10, line 20 to page 11, line 11.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Okuchi et al. and the features of Takahashi to "improve . . . visibility . . . and guarantee the safety of running of the vehicle" as described, for example, on page 3, lines 8 to 15 of Takahashi. Moreover, combining the automatic headlight optical axis adjusting system described in Okuchi et al. and the vehicle lamp illumination directional control in Takahashi is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Okuchi et al. and Takahashi discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the '034 patent is raised by the combination of Okuchi et al. and Takahashi. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Okuchi et al. and Takahashi.

13. Claims 1, 2, 4, and 5 of the '034 Patent Are Unpatentable Over the Combination of Okuchi et al. and Hussman Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Okuchi et al. and Hussman under 35 U.S.C. § 103(a). As discussed above, Okuchi et al. was relied on by the

Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Hussman was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Okuchi et al.

Okuchi et al. discloses a vehicle headlight optical axis direction adjusting system for adjusting the direction of illumination of a vehicle headlight. In Okuchi et al. the vehicle pitch angle is calculated from vehicle height sensors 11F, 11R, HF and HR on the front and rear portions of a vehicle. Col. 4, line 58 to col. 5, line 8. These signals are supplied to Electronic Control Unit 20, which outputs signals to actuators to adjust the optical axis direction of the headlights as needed. Col. 5, lines 11 to 20. Referring to Figure 3, Okuchi further discloses measuring vehicle speed and acceleration and adjusting the filtering of the change in pitch signals in accordance with the running state of the vehicle. Col. 5, line 52 to col. 6, line 39. For example, when the vehicle speed is lower than a speed threshold, the control mode "stop mode" is implemented, and no filtering of the pitch signal is performed so that the actuator is allowed to respond quickly to changes in pitch angle. Col. 5, line 66 to col. 6, line 5. In contrast, when vehicle speed is higher than the threshold, but vehicle acceleration is lower than a threshold, the control mode "constant speed" mode is implemented, and high filtering of the pitch signal is performed as it is largely assumed that the pitch angle does not largely change. Col. 6, lines 29 to 38.

As discussed above, Hussman discloses that when difference between the second and third signal is detected indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

Thus, Hussman discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See, e.g.*, col. 3, lines 49 to 61; col. 6, lines 51 to 64.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Okuchi et al. and the features of Hussman to "avoid[] false adjustments caused by" "inclination changes of the motor-vehicle body which are not attributable to changes in load or in road surface unevenness" as described, for example, at col. 1, line 65 to col. 2, line 4 of Hussman. Moreover, combining the automatic headlight optical axis adjusting system described in Okuchi et al. and the vehicle lamp illumination directional control in Hussman is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Okuchi et al. and Hussman discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the '034 patent is raised by the combination of Okuchi et al. and Hussman. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Okuchi et al. and Hussman.

14. Claims 1, 2, 4, and 5 of the '034 Patent Are Unpatentable Over the Combination of Okuchi et al. and Miskin et al. Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Okuchi et al. and Miskin et al. under 35 U.S.C. § 103(a). As discussed above, Okuchi et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Miskin et al. was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Okuchi et al.

Okuchi et al. discloses a vehicle headlight optical axis direction adjusting system for adjusting the direction of illumination of a vehicle headlight. In Okuchi et al. the vehicle pitch angle is calculated from vehicle height sensors 11F, 11R, HF and HR on the front and rear portions of a vehicle. Col. 4, line 58 to col. 5, line 8. These signals are supplied to Electronic Control Unit 20, which outputs signals to actuators to adjust the optical axis direction of the headlights as needed. Col. 5, lines 11 to 20. Referring to Figure 3, Okuchi further discloses measuring vehicle speed and acceleration and adjusting the filtering of the change in pitch signals in accordance with the running state of the vehicle. Col. 5, line 52 to col. 6, line 39. For example, when the vehicle speed is lower than a speed threshold, the control mode "stop mode" is implemented, and no filtering of the pitch signal is performed so that the actuator is allowed to respond quickly to changes in pitch angle. Col. 5, line 66 to col. 6, line 5. In contrast, when vehicle speed is higher than the threshold, but vehicle acceleration is lower than a threshold, the control mode "constant speed" mode is implemented, and high filtering of the pitch signal is performed as it is largely assumed that the pitch angle does not largely change. Col. 6, lines 29 to 38.

As discussed above, Miskin et al. teaches that if the signals that lead to measured data are based on light loads caused by road bumps, the average differential value will be only a small deviation from the ideal headlight position value, and the predetermined threshold value will not be exceeded. Page 5. In this case, the headlights will not be adjusted. *Id.* In the case of a heavier load, the threshold value will be exceeded and the position of the headlights will be changed. *Id.*

Thus, Miskin et al. discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, Abstract; page 5.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Okuchi et al. and the features of Miskin et al. to provide for "the correct illumination of the road regardless of the load of the vehicle that changes its position compared to its unloaded state" and so that "blinding of oncoming vehicles is avoided" as described, for example, on page 3 of Miskin et al. Moreover, combining the automatic headlight optical axis adjusting system described in Okuchi et al. and the vehicle lamp illumination directional control in Miskin et al. is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Okuchi et al. and Miskin et al. discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the ’034 patent is raised by the combination of Okuchi et al. and Miskin et al. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the ’034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Okuchi et al. and Miskin et al.

15. Claims 1, 2, 4, and 5 of the ’034 Patent Are Unpatentable Over the Combination of Okuchi et al. and Leleve Under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 are unpatentable over the combination of Okuchi et al. and Leleve under 35 U.S.C. § 103(a). As discussed above, Okuchi et al. was relied on by the Examiner during the prosecution of the ’034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the ’034 patent, because of the inclusion of the limitation “a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition.” As indicated above, Leleve was not cited during the prosecution of the ’034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Okuchi et al.

Okuchi et al. discloses a vehicle headlight optical axis direction adjusting system for adjusting the direction of illumination of a vehicle headlight. In Okuchi et al. the vehicle pitch angle is calculated from vehicle height sensors 11F, 11R, HF and HR on the front and rear portions of a vehicle. Col. 4, line 58 to col. 5, line 8. These signals are supplied to Electronic Control Unit 20, which outputs signals to actuators to adjust the optical axis direction of the headlights as needed. Col. 5, lines 11 to 20. Referring to Figure 3, Okuchi further discloses measuring vehicle speed and acceleration and adjusting the filtering of the change in pitch signals in accordance with the running state of the vehicle. Col. 5, line 52 to col. 6, line 39. For example, when the vehicle speed is lower than a speed threshold, the control mode "stop mode" is implemented, and no filtering of the pitch signal is performed so that the actuator is allowed to respond quickly to changes in pitch angle. Col. 5, line 66 to col. 6, line 5. In contrast, when vehicle speed is higher than the threshold, but vehicle acceleration is lower than a threshold, the control mode "constant speed" mode is implemented, and high filtering of the pitch signal is performed as it is largely assumed that the pitch angle does not largely change. Col. 6, lines 29 to 38.

As discussed above, Leleve teaches that if the signals that lead to the measured vibration of the vehicle are caused by road bumps, the frequency will be above a certain level, and the frequency threshold will be exceeded. Pages 6 to 8. In this case, the headlights will not be adjusted. *Id.* In the case of lower frequencies, the signal will pass through the filter causing the headlights to be adjusted. Page 12.

Thus, Leleve discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, pages 6 to 8.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 4, and 5 of the '034 patent were made would have been motivated to combine the features provided by Okuchi et al. and the features of Leleve to provide for a device that can "differentiate between phenomena that require correction, and those for which a correction is undesired" and can prevent a phase shift that would cause the headlights "to be directed upward at the same moment that the front part of the vehicle body is executing an upward movement" as described, for example, on page 7 of Leleve. Moreover, combining the automatic headlight optical axis adjusting system described in Okuchi et al. and the vehicle lamp illumination directional control in Leleve is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Okuchi et al. and Leleve discloses all of the limitations of claims 1, 2, 4, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 4, and 5 of the '034 patent is raised by the combination of Okuchi et al. and Leleve. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Okuchi et al. and Leleve.

16. Claims 1 to 5 of the '034 Patent Are Unpatentable Over the Combination of Gotoh and Uchida Under 35 U.S.C. § 103(a)

Claims 1 to 5 are unpatentable over the combination of Gotoh and Uchida under 35 U.S.C. § 103(a). As discussed above, Gotoh was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(b). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Uchida was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Gotoh.

Gotoh discloses a device for changing the illumination direction of a vehicle headlights in the right and left directions. Referring to figure 3, a steering angle sensor 21, a vehicle speed sensor 22, and a yaw rate sensor 23, signal the steering angle, vehicle speed, and yaw rate, respectively to the Light Distribution Control ECU 10. Col. 4, line 61 to col. 5, line 5.

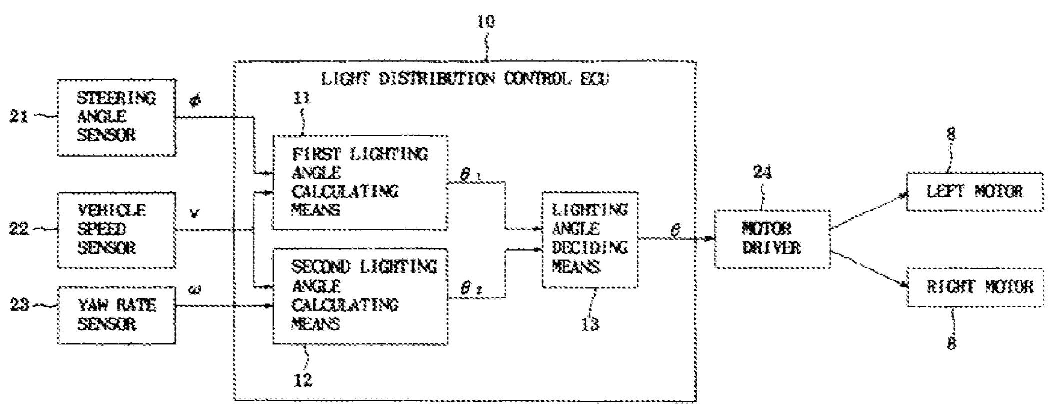


FIG. 3

The ECU 10 calculates a first lighting angle based on the steering angle as detected by the steering angle sensor and a speed correction coefficient based on the measured vehicle speed. Col. 5, lines 1 to 15. A second lighting angle based on the turning movement as based on the detections of the yaw rate and vehicle speed sensors. Col. 5, lines 16 to 24. The final lighting angle is decided based on whether the first lighting angle and the second lighting angle are pointed in the same right or left direction. Col. 5, lines 57 to 62.

As discussed above, Uchida discloses that signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. Thus, Uchida discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, figure 5; page 4, lines 16 to 27; page 10, line 26 to page 11, line 6.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1 to 5 of the '034 patent were made would have been motivated to combine the features provided by Gotoh and the features of Uchida to "prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle" as described, for example, on page 4, lines 16 to 27 of Uchida. Moreover, combining the device for changing the illumination direction of a vehicle headlights in the right and left directions described in Gotoh and the vehicle lamp illumination directional control in Uchida is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Gotoh and Uchida discloses all of the limitations of claims 1 to 5.

Based on the foregoing, a substantial new question of patentability of claims 1 to 5 of the '034 patent is raised by the combination of Gotoh and Uchida. Accordingly, VWGoA proposes a ground of rejection of claims 1 to 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Gotoh and Uchida.

17. Claims 1 to 5 of the '034 Patent Are Unpatentable Over the Combination of Gotoh and Takahashi Under 35 U.S.C. § 103(a)

Claims 1, 2, 3, 4, and 5 are unpatentable over the combination of Gotoh and Takahashi under 35 U.S.C. § 103(a). As discussed above, Gotoh was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(b). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Takahashi was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Gotoh.

As discussed above, Gotoh discloses a device for changing the illumination direction of a vehicle headlights in the right and left directions. Referring to figure 3, a steering angle sensor 21, a vehicle speed sensor 22, and a yaw rate sensor 23, signal the steering angle, vehicle speed, and yaw rate, respectively to the Light Distribution Control ECU 10. Col. 4, line 61 to col. 5, line 5. The ECU 10 calculates a first lighting angle based on the steering angle as detected by the steering angle sensor and a speed correction coefficient based on the measured vehicle speed. Col. 5, lines 1 to 15. A second lighting angle based on the turning movement as based on the detections of the yaw rate and vehicle speed sensors. Col. 5, lines 16 to 24. The final lighting angle is decided based on whether the first lighting angle and the second lighting angle are pointed in the same right or left direction. Col. 5, lines 57 to 62.

As discussed above, Takahashi discloses that a threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line

3. Referring to Figure 7, in step S4 the determination of whether the variation in road gradient is more than a predetermined threshold is made. Based on this determination the lamp illumination is either corrected (S5) or not (S6). Page 10, line 20 to page 11, line 11. Thus, Takahashi discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, figure 7; page 9, line 16 to page 10, line 3; page 10, line 20 to page 11, line 11.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1 to 5 of the '034 patent were made would have been motivated to combine the features provided by Gotoh and the features of Takahashi to "improve . . . visibility . . . and guarantee the safety of running of the vehicle" as described, for example, on page 3, lines 8 to 15 of Takahashi. Moreover, combining the device for changing the illumination direction of a vehicle headlights in the right and left directions described in Gotoh and the vehicle lamp illumination directional control in Takahashi is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Gotoh and Takahashi discloses all of the limitations of claims 1 to 5.

Based on the foregoing, a substantial new question of patentability of claims 1 to 5 of the '034 patent is raised by the combination of Gotoh and Takahashi. Accordingly, VWGoA proposes a ground of rejection of claims 1 to 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Gotoh and Takahashi.

18. Claims 1 to 5 of the '034 Patent Are Unpatentable Over the Combination of Gotoh and Hussman Under 35 U.S.C. § 103(a)

Claims 1, 2, 3, 4, and 5 are unpatentable over the combination of Gotoh and Hussman under 35 U.S.C. § 103(a). As discussed above, Gotoh was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(b). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the ’034 patent, because of the inclusion of the limitation “a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition.” As indicated above, Hussman was not cited during the prosecution of the ’034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Gotoh.

As discussed above, Gotoh discloses a device for changing the illumination direction of a vehicle headlights in the right and left directions. Referring to figure 3, a steering angle sensor 21, a vehicle speed sensor 22, and a yaw rate sensor 23, signal the steering angle, vehicle speed, and yaw rate, respectively to the Light Distribution Control ECU 10. Col. 4, line 61 to col. 5, line 5. The ECU 10 calculates a first lighting angle based on the steering angle as detected by the steering angle sensor and a speed correction coefficient based on the measured vehicle speed. Col. 5, lines 1 to 15. A second lighting angle based on the turning movement as based on the detections of the yaw rate and vehicle speed sensors. Col. 5, lines 16 to 24. The final lighting angle is decided based on whether the first lighting angle and the second lighting angle are pointed in the same right or left direction. Col. 5, lines 57 to 62.

As discussed above, Hussman discloses that when difference between the second and third signal is detected indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

Thus, Hussman discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, “a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition.” *See, e.g.*, col. 3, lines 49 to 61; col. 6, lines 51 to 64.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1 to 5 of the ’034 patent were made would have been motivated to combine the features provided by Gotoh and the features of Hussman to “avoid[] false adjustments caused by” “inclination changes of the motor-vehicle body which are not attributable to changes in load or in road surface unevenness” as described, for example, at col. 1, line 65 to col. 2, line 4 of Hussman. Moreover, combining the device for changing the illumination direction of a vehicle headlights in the right and left directions described in Gotoh and the vehicle lamp illumination directional control in Hussman is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Gotoh and Hussman discloses all of the limitations of claims 1 to 5.

Based on the foregoing, a substantial new question of patentability of claims 1 to 5 of the '034 patent is raised by the combination of Gotoh and Hussman. Accordingly, VWGoA proposes a ground of rejection of claims 1 to 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Gotoh and Hussman.

19. Claims 1, 2, 3, and 5 of the '034 Patent Are Unpatentable Over the Combination of Gotoh and Miskin et al. Under 35 U.S.C. § 103(a)

Claims 1, 2, 3, and 5 are unpatentable over the combination of Gotoh and Miskin under 35 U.S.C. § 103(a). As discussed above, Gotoh was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(b). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Miskin et al. was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Gotoh.

As discussed above, Gotoh discloses a device for changing the illumination direction of a vehicle headlights in the right and left directions. Referring to figure 3, a steering angle sensor 21, a vehicle speed sensor 22, and a yaw rate sensor 23, signal the steering angle, vehicle speed, and yaw rate, respectively to the Light Distribution Control ECU 10. Col. 4, line 61 to col. 5, line 5. The ECU 10 calculates a first lighting angle based on the steering angle as detected by the steering angle sensor and a speed correction coefficient based on the measured vehicle speed. Col. 5, lines 1 to 15. A second lighting angle based on the turning movement as based on the detections of the yaw rate and vehicle speed sensors. Col. 5, lines

16 to 24. The final lighting angle is decided based on whether the first lighting angle and the second lighting angle are pointed in the same right or left direction. Col. 5, lines 57 to 62.

As discussed above, Miskin et al. teaches that if the signals that lead to measured data are based on light loads caused by road bumps, the average differential value will be only a small deviation from the ideal headlight position value, and the predetermined threshold value will not be exceeded. Page 5. In this case, the headlights will not be adjusted. *Id.* In the case of a heavier load, the threshold value will be exceeded and the position of the headlights will be changed. *Id.*

Thus, Miskin et al. discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, Abstract; page 5.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1, 2, 3, and 5 of the '034 patent were made would have been motivated to combine the features provided by Gotoh and the features of Miskin et al. to provide for "the correct illumination of the road regardless of the load of the vehicle that changes its position compared to its unloaded state" and so that "blinding of oncoming vehicles is avoided" as described, for example, on page 3 of Miskin et al. Moreover, combining the device for changing the illumination direction of a vehicle headlights in the right and left directions described in Gotoh and the vehicle lamp illumination directional control in Miskin et al. is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Gotoh and Miskin et al. discloses all of the limitations of claims 1, 2, 3, and 5.

Based on the foregoing, a substantial new question of patentability of claims 1, 2, 3, and 5 of the '034 patent is raised by the combination of Gotoh and Miskin et al. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 3, and 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Gotoh and Miskin et al.

20. Claims 1 to 5 of the '034 Patent Are Unpatentable Over the <u>Combination of Gotoh and Leleve Under 35 U.S.C. § 103(a)</u>

Claims 1 to 5 are unpatentable over the combination of Gotoh and Leleve under 35 U.S.C. § 103(a). As discussed above, Gotoh was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(b). The Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Leleve was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner considered to be missing from Gotoh.

As discussed above, Gotoh discloses a device for changing the illumination direction of a vehicle headlights in the right and left directions. Referring to figure 3, a steering angle sensor 21, a vehicle speed sensor 22, and a yaw rate sensor 23, signal the steering angle, vehicle speed, and yaw rate, respectively to the Light Distribution Control ECU 10. Col. 4, line 61 to col. 5, line 5. The ECU 10 calculates a first lighting angle based on the steering angle as detected by the steering angle sensor and a speed correction coefficient based on the measured vehicle speed. Col. 5, lines 1 to 15. A second lighting angle based on the turning movement as based on the detections of the yaw rate and vehicle speed sensors. Col. 5, lines 16 to 24. The final lighting angle is decided based on whether the first lighting angle and the second lighting angle are pointed in the same right or left direction. Col. 5, lines 57 to 62.

As discussed above, Leleve teaches that if the signals that lead to the measured vibration of the vehicle are caused by road bumps, the frequency will be above a certain level, and the frequency threshold will be exceeded. Pages 6 to 8. In this case, the headlights will not be adjusted. *Id.* In the case of lower frequencies, the signal will pass through the filter causing the headlights to be adjusted. Page 12.

Thus, Leleve discloses precisely the feature of claim 1 on which patentability of the issued claims was apparently based, *i.e.*, "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." *See e.g.*, pages 6 to 8.

A person of ordinary skill in the art at the time of the alleged inventions claimed in claims 1 to 5 of the '034 patent were made would have been motivated to combine the features provided by Gotoh and the features of Leleve to provide for a device that can "differentiate between phenomena that require correction, and those for which a correction is undesired" and can prevent a phase shift that would cause the headlights "to be directed upward at the same moment that the front part of the vehicle body is executing an upward movement" as described, for example, on page 7 of Leleve. Moreover, combining the device for changing the illumination direction of a vehicle headlights in the right and left directions described in Gotoh and the vehicle lamp illumination directional control in Leleve is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Gotoh and Leleve discloses all of the limitations of claims 1 to 5.

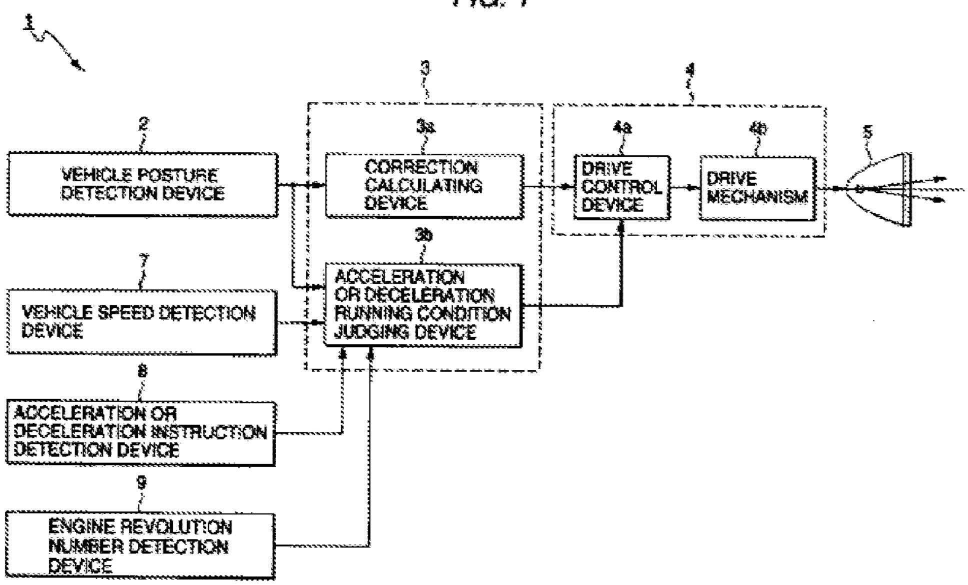
Based on the foregoing, a substantial new question of patentability of claims 1 to 5 of the '034 patent is raised by the combination of Gotoh and Leleve. Accordingly, VWGoA proposes a ground of rejection of claims 1 to 5 of the '034 patent under 35 U.S.C. § 103(a) as obvious over the combination of Gotoh and Leleve.

21. Proposed Claims 1, 2, 4 to 6, 9 to 13, 20, 22, 24, 25, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination Are Anticipated by Uchida Under 35 U.S.C. § 102(b)

Uchida anticipates proposed claims 1, 2, 4 to 6, 9 to 13, 20, 22, 24, 25, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 102(b). Uchida was not cited during the prosecution of the '034 patent, and, as of the filing date of this Request, has not been cited during the '034 *Ex Parte* Reexamination. Uchida provides teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '034 patent, and have not been otherwise provided in any prior art relied upon in the '034 *Ex Parte* Reexamination.

Uchida relates to a vehicle lamp illumination directional control device which detects both the posture and speed of a vehicle and adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction. Page 1 at lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, vehicle speed 7, and vehicle acceleration or deceleration 8. The illumination direction is adjusted by control device 3, and drive device 4. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 10 to page 7, line 4.

FIG. 1



Signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. When it is found that the vehicle is not in the acceleration or deceleration running condition, the control device 3 controls the illumination direction of the lamp by fixing the direction of illumination in a given direction, or by limiting the direction of the illumination light to a limited range. Page 4, lines 16 to 27.

Thus, by disclosing detection of vehicle posture, speed, and acceleration, Uchida discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**<u>two or more sensors</u>** that are each adapted to generate a signal that is representative of a condition of the vehicle, said <u>sensed conditions including</u> **<u>two or more</u>** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 1; page 6, lines 9 to 15; page 9, lines 28 to 33. Accordingly, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9 to 13, 20, 22, 24, 25, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by Uchida.

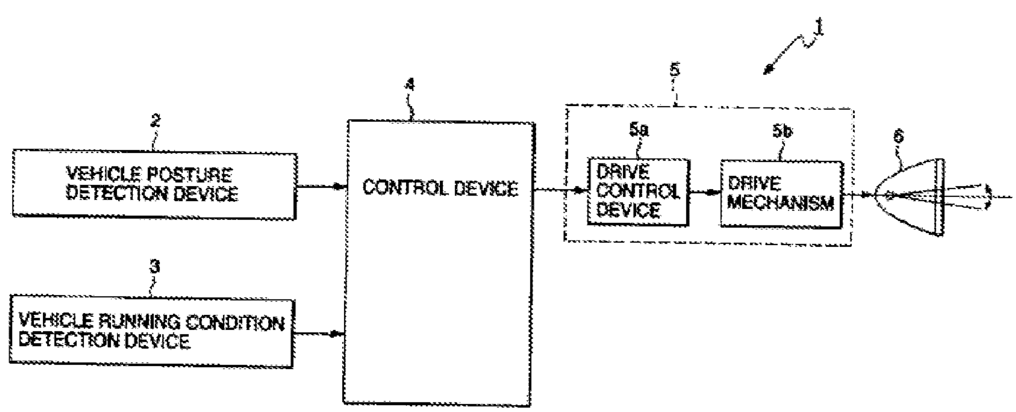
As set forth in the appended charts, Uchida discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9 to 13, 20, 22, 24, 25, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination and therefore anticipates proposed claims 1, 2, 4 to 6, 9 to 13, 20, 22, 24, 25, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1, 2, 4 to 6, 9 to 13, 20, 22, 24, 25, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 102(b) as anticipated by Uchida.

22. Proposed Claims 1, 2, 4 to 6, 9 to 11, 17, 18, 20 to 22, 24, 25, 28, 33, 34, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination Are <u>Anticipated by Takahashi Under 35 U.S.C. § 102(b)</u>

Takahashi anticipates proposed claims 1, 2, 4 to 6, 9 to 11, 17, 18, 20 to 22, 24, 25, 28, 33, 34, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 102(b). Takahashi was not cited during the prosecution of the '034 patent, and, as of the filing date of this Request, has not been cited during the '034 *Ex Parte* Reexamination. Takahashi provides teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '034 patent, and have not been otherwise provided in any prior art relied upon in the '034 *Ex Parte* Reexamination.

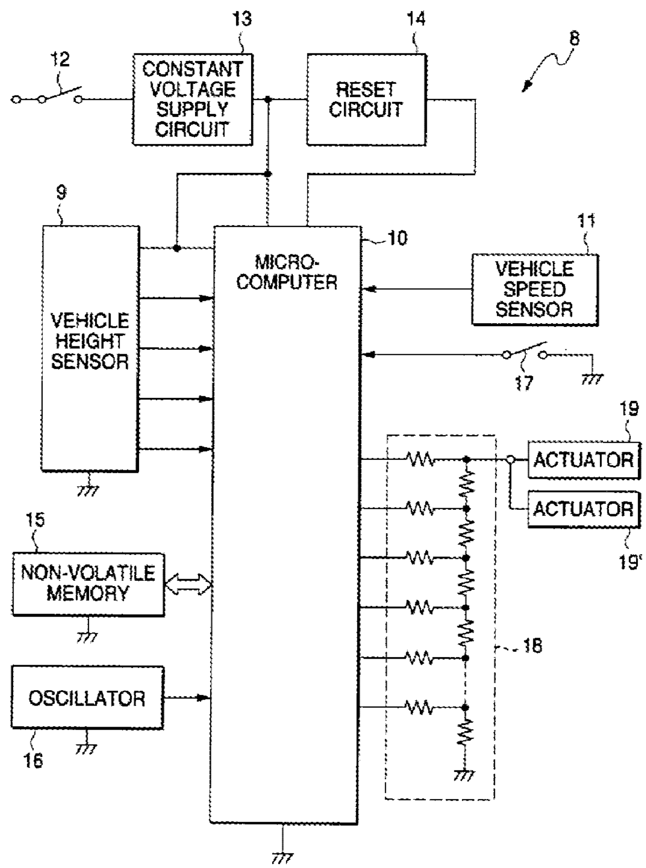
Takahashi relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp to maintain it in a predetermined direction. Page 1, lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, and vehicle running condition 3.

FIG. 1



Referring to figure 9, vehicle posture detect member 2 is composed of four height sensors 9. Figure 9; page 15, lines 24 to 30. Vehicle speed sensor 11 corresponds to the running condition detection device 3. Figure 9; page 15, line 24 to page 16, line 1.

FIG. 9



The illumination direction is adjusted by control device 4, and drive device 5. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 26 to page 7, line 4.

A threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line 3. Referring to Figure 7, in step S4 the determination of whether the variation in road gradient is more than a predetermined threshold is made. Based on this determination the lamp illumination is either corrected (S5) or not (S6). Page 10, line 20 to page 11, line 11.

Thus, by disclosing vehicle height sensors and speed sensors, Takahashi discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 9; page 15, line 24 to page 16, line 1. Accordingly, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9 to 11, 17, 18, 20 to 22, 24, 25, 28, 33, 34, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by Takahashi.

As set forth in the appended charts, Takahashi discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9 to 11, 17, 18, 20 to 22, 24, 25, 28, 33, 34, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination and therefore anticipates proposed claims 1, 2, 4 to 6, 9 to 11, 17, 18, 20 to 22, 24, 25, 28, 33, 34, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1, 2, 4 to 6, 9 to 11, 17, 18, 20 to 22, 24, 25, 28, 33, 34, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 102(b) as anticipated by Takahashi.

23. Proposed Claims 1, 2, 4 to 6, 9, 10, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination Are Anticipated by Hussman Under 35 U.S.C. § 102(b)

Hussman anticipates proposed claims 1, 2, 4 to 6, 9, 10, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 102. Hussman was not cited during the prosecution of the '034 patent, and, as of the filing date of this Request, has not been cited during the '034 *Ex Parte* Reexamination. Hussman provides teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '034 patent, and have not been otherwise provided in any prior art relied upon in the '034 *Ex Parte* Reexamination.

Hussman relates to the regulation of the illumination direction of vehicle lamps based on the relative position of a vehicle body to the front and rear axles. Col. 1, lines 6 to 20. A front axle sensor sender V measures a relative position of a motor vehicle body to the front axle, and a rear axle sensor sender H measures a relative position of a motor vehicle body to the rear axle. Col. 2, lines 40 to 48. The change in the relative position of the vehicle body between front axle sender V and rear axle sender H is used to obtain a nominal-value signal.

Col. 2, lines 48 to 53. This signal is filtered by three filters to determine the time for three average-value formations, each employing different time constants. Abstract. The first nominal-value signal is obtained by using a predetermined value. The second filtered nominal-value signal, obtained from using a smaller time constant, is then compared with the third filtered nominal-value signal, obtained from using a longer filtered time constant. Abstract. When a difference is detected between the second and third signal indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

With two sensors, V and H, signaling the suspension height of the vehicle, Hussman discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, col. 2, lines 48 to 53. Accordingly, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9, 10, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by Hussman.

As set forth in the appended charts, Hussman discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9, 10, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination and therefore anticipates proposed claims 1, 2, 4 to 6, 9, 10, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination. Accordingly, VWGoA proposes a ground of rejection of claims 1, 2, 4 to 6, 9, 10, 37, 38, 41, 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 102(b) as anticipated by Hussman.

24. Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination Are Unpatentable Over the Combination of Toda et al. and Uchida Under 35 U.S.C. § 103(a)

Proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Toda et al. and Uchida under 35 U.S.C. § 103(a). As discussed above, Toda et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). As of the filing date of this Request, Toda et al. has not been relied on during the ’034 *Ex Parte* Reexamination of the ’034 patent. During the original prosecution of the ’034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the ’034 patent, because of the inclusion of the limitation “a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition.” As indicated above, Uchida was not cited during the prosecution of the ’034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the ’034 patent considered to be missing from Toda et al. Moreover, Toda et al. and Uchida disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the ’034 *Ex Parte* Reexamination, *i.e.*, “two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

Toda et al. discloses an automatic leveling device for automotive vehicle headlamps. The system includes actuators to tilt the optical axes of the vehicle headlights, and a control unit which controls the driving of the actuators based on a detected pitch angle such that the optical axes of the headlamps stay in a certain inclined state with respect to the surface of the road. Col. 1, lines 52 to 63. The system further includes a vehicle speed detection means 12 and a pitch angle detection means 14. Abstract. Toda et al. further discloses that while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, and the acceleration is equal to or lower than a reference value, and these states continue for a predetermined amount of time. Col. 4, lines 1 to 25. Thus, by disclosing detection of vehicle pitch angle and speed, Toda discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the ’034 *Ex Parte* Reexamination fails to teach, *i.e.*, “**<u>two or more sensors</u>** that are each adapted to generate a signal that is representative of a condition of the vehicle, said <u>sensed conditions including</u> **<u>two or more</u>** of road speed, steering angle, pitch, and suspension height of the vehicle.” Abstract; col. 1, lines 52 to 63.

As discussed above, Uchida relates to a vehicle lamp illumination directional control device which detects both the posture and speed of a vehicle and adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction. Page 1 at lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, vehicle speed 7, and vehicle acceleration or deceleration 8. Uchida discloses that signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. Thus, by disclosing detection of vehicle posture, speed, and acceleration, Uchida discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 1; page 6, lines 9 to 15; page 9, lines 28 to 33.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Toda et al. and the features of Uchida to "prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle" as described, for example, on page 4, lines 16 to 27 of Uchida. Moreover, combining the automatic leveling device described in Toda et al. and the vehicle lamp illumination directional control in Uchida is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Toda et al. and Uchida discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Toda et al. and Uchida. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Toda et al. and Uchida.

25. Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 33, 34, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination Are Unpatentable Over the Combination of Toda et al. and Takahashi Under 35 U.S.C. § 103(a)

Proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 33, 34, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Toda et al. and Takahashi under 35 U.S.C. § 103(a). As discussed above, Toda et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). As of the filing date of this Request, Toda et al. has not been relied on during the '034 *Ex Parte* Reexamination of the '034 patent. During the original prosecution of the '034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Takahashi was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the '034 patent considered to be missing from Toda et al. Moreover, Toda et al. and Takahashi disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the '034 *Ex Parte* Reexamination, *i.e.*, "two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

Toda et al. discloses an automatic leveling device for automotive vehicle headlamps. The system includes actuators to tilt the optical axes of the vehicle headlights, and a control unit which controls the driving of the actuators based on a detected pitch angle such that the optical axes of the headlamps stay in a certain inclined state with respect to the surface of the road. Col. 1, lines 52 to 63. The system further includes a vehicle speed detection means 12 and a pitch angle detection means 14. Abstract. Toda et al. further discloses that while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, and the acceleration is equal to or lower than a reference value, and these states continue for a predetermined amount of time. Col. 4, lines 1 to 25. Thus, by disclosing detection of vehicle pitch angle and speed, Toda discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." Abstract; col. 1, lines 52 to 63.

As discussed above, Takahashi relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp to maintain it in a predetermined direction. Page 1, lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, and vehicle running condition 3. Referring to figure 9, vehicle posture detect member 2 is composed of four height sensors 9. Figure 9; page 15, lines 24 to 30. Vehicle speed sensor 11 corresponds to the running condition detection device 3. Figure 9; page 15, line 24 to page 16, line 1. The illumination direction is adjusted by control device 4, and drive device 5. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 26 to page 7, line 4.

A threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line 3.

Thus, by disclosing vehicle height sensors and speed sensors, Takahashi discloses precisely the feature of proposed claim 1 that Balther argues the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 9; page 15, line 24 to page 16, line 1.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 33, 34, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Toda et al. and the features of Takahashi to "improve . . . visibility . . . and guarantee the safety of running of the vehicle" as described, for example, on page 3, lines 8 to 15 of Takahashi. Moreover, combining the automatic leveling device described in Toda et al. and the vehicle lamp illumination directional control in Takahashi is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Toda et al. and Takahashi discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 33, 34, 36 to 42, 44, and 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 33, 34, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Toda et al. and Takahashi. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 33, 34, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Toda et al. and Takahashi.

26. Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination Are Unpatentable Over the Combination Of Toda et al. and Hussman Under 35 U.S.C. § 103(a)

Proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Toda et al. and Hussman under 35 U.S.C. § 103(a). As discussed above, Toda et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). As of the filing date of this Request, Toda et al. has not been relied on during the '034 *Ex Parte* Reexamination of the '034 patent. During the original prosecution of the '034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Hussman was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the '034 patent considered to be missing from Toda et al. Moreover, Toda et al. and Hussman disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the '034 *Ex Parte* Reexamination, *i.e.*, "two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

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As discussed above, Hussman relates to the regulation of the illumination direction of vehicle lamps based on the relative position of a vehicle body to the front and rear axles. Col. 1, lines 6 to 20. A front axle sensor sender V measures a relative position of a motor vehicle body to the front axle, and a rear axle sensor sender H measures a relative position of a motor vehicle body to the rear axle. Col. 2, lines 40 to 48. The change in the relative position of the vehicle body between front axle sender V and rear axle sender H is used to obtain a nominal-value signal. Col. 2, lines 48 to 53. This signal is filtered by three filters to determine the time for three average-value formations, each employing different time constants. Abstract. The first nominal-value signal is obtained by using a predetermined value. The second filtered nominal-value signal, obtained from using a smaller time constant, is then compared with the third filtered nominal-value signal, obtained from using a longer filtered time constant. Abstract. When a difference is detected between the second and third signal indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

With two sensors, V and H, signaling the suspension height of the vehicle, Hussman discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, col. 2, lines 48 to 53.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Toda et al. and the features of Hussman to "avoid[] false adjustments caused by" "inclination changes of the motor-vehicle body which are not attributable to changes in load or in road surface unevenness" as described, for example, at col. 1, line 65 to col. 2, line 4 of Hussman. Moreover, combining the automatic leveling device described in Toda et al. and the vehicle lamp illumination directional control in Hussman is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Toda et al. and Hussman discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Toda et al. and Hussman. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20 to 22, 24, 25, 28, 29, 36 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Toda et al. and Hussman.

27. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 35, 37 to 42, 44, and 45 of the '034 Ex Parte Reexamination Are Unpatentable Over the Combination of Okuchi et al. and Uchida Under 35 U.S.C. § 103(a)

Proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Okuchi et al. and Uchida under 35 U.S.C. § 103(a). As discussed above, Okuchi et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). As of the filing date of this Request, Okuchi et al. has not been relied on during the '034 *Ex Parte* Reexamination of the '034 patent. During the original prosecution of the '034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Uchida was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the '034 patent considered to be missing from Okuchi et al. Moreover, Okuchi et al. and Uchida disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the '034 *Ex Parte* Reexamination, *i.e.*, "two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

Okuchi et al. discloses a vehicle headlight optical axis direction adjusting system for adjusting the direction of illumination of a vehicle headlight. In Okuchi et al. the vehicle pitch angle is calculated from vehicle height sensors 11F, 11R, HF and HR on the front and rear portions of a vehicle. Col. 4, line 58 to col. 5, line 8. These signals are supplied to Electronic Control Unit 20, which outputs signals to actuators to adjust the optical axis direction of the headlights as needed. Col. 5, lines 11 to 20. Referring to Figure 3, Okuchi et al. further discloses detecting vehicle speed and acceleration and adjusting the filtering of the change in pitch signals in accordance with the running state of the vehicle. Col. 5, line 52 to col. 6, line 39. For example, when the vehicle speed is lower than a speed threshold, the control mode "stop mode" is implemented, and no filtering of the pitch signal is performed so that the actuator is allowed to respond quickly to changes in pitch angle. Col. 5, line 66 to col. 6, line 5. In contrast, when vehicle speed is higher than the threshold, but vehicle acceleration is lower than a threshold, the control mode "constant speed" mode is implemented, and high filtering of the pitch signal is performed as it is largely assumed that the pitch angle does not largely change. Col. 6, lines 29 to 38. Thus, by disclosing sensors for suspension height, speed, and acceleration of a vehicle, Okuchi et al. discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**<u>two or more sensors</u>** that are each adapted to generate a signal that is representative of a condition of the vehicle, said <u>sensed conditions including</u> **<u>two or more</u>** of road speed, steering angle, pitch, and suspension height of the vehicle." Col. 4, line 58 to col. 5, line 8; col. 5, line 52 to col. 6, line 39.

As discussed above, Uchida relates to a vehicle lamp illumination directional control device which detects both the posture and speed of a vehicle and adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction. Page 1 at lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, vehicle speed 7, and vehicle acceleration or deceleration 8. Uchida discloses that signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. Thus, by disclosing detection of vehicle posture, speed, and acceleration, Uchida discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**<u>two or more sensors</u>** that are each adapted to generate a signal that is representative of a condition of the vehicle, said <u>sensed conditions including</u> **<u>two or more</u>** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 1; page 6, lines 9 to 15; page 9, lines 28 to 33.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Okuchi et al. and the features of Uchida to "prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle" as described, for example, on page 4, lines 16 to 27 of Uchida. Moreover, combining the automatic leveling device described in Okuchi et al. and the vehicle lamp illumination directional control in Uchida is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Okuchi et al. and Uchida discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 35, 37 to 42, 44, and 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Okuchi et al. and Uchida. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Okuchi et al. and Uchida.

28. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination Are Unpatentable Over the Combination Of Okuchi et al. and Takahashi Under 35 U.S.C. § 103(a)

Proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 34, 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Okuchi et al. and Takahashi under 35 U.S.C. § 103(a). As discussed above, Okuchi et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). As of the filing date of this Request, Okuchi et al. has not been relied on during the '034 *Ex Parte* Reexamination of the '034 patent. During the original prosecution of the '034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Takahashi was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the '034 patent considered to be missing from Okuchi et al. Moreover, Okuchi et al. and Takahashi disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the '034 *Ex Parte* Reexamination, *i.e.*, "two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

Okuchi et al. discloses a vehicle headlight optical axis direction adjusting system for adjusting the direction of illumination of a vehicle headlight. In Okuchi et al. the vehicle pitch angle is calculated from vehicle height sensors 11F, 11R, HF and HR on the front and rear portions of a vehicle. Col. 4, line 58 to col. 5, line 8. These signals are supplied to Electronic Control Unit 20, which outputs signals to actuators to adjust the optical axis direction of the headlights as needed. Col. 5, lines 11 to 20. Referring to Figure 3, Okuchi et al. further discloses detecting vehicle speed and acceleration and adjusting the filtering of the change in pitch signals in accordance with the running state of the vehicle. Col. 5, line 52 to col. 6, line 39. For example, when the vehicle speed is lower than a speed threshold, the control mode "stop mode" is implemented, and no filtering of the pitch signal is performed so that the actuator is allowed to respond quickly to changes in pitch angle. Col. 5, line 66 to col. 6, line 5. In contrast, when vehicle speed is higher than the threshold, but vehicle acceleration is lower than a threshold, the control mode "constant speed" mode is implemented, and high filtering of the pitch signal is performed as it is largely assumed that the pitch angle does not largely change. Col. 6, lines 29 to 38. Thus, by disclosing sensors for suspension height, speed, and acceleration of a vehicle, Okuchi et al. discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said <u>sensed conditions including</u> **<u>two or more</u>** of road speed, steering angle, pitch, and suspension height of the vehicle." Col. 4, line 58 to col. 5, line 8; col. 5, line 52 to col. 6, line 39.

As discussed above, Takahashi relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp to maintain it in a predetermined direction. Page 1, lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, and vehicle running condition 3. Referring to figure 9, vehicle posture detect member 2 is composed of four height sensors 9. Figure 9; page 15, lines 24 to 30. Vehicle speed sensor 11 corresponds to the running condition detection device 3. Figure 9; page 15, line 24 to page 16, line 1. The illumination direction is adjusted by control device 4, and drive device 5. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 26 to page 7, line 4.

A threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line 3.

Thus, by disclosing vehicle height sensors and speed sensors, Takahashi discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**<u>two or more sensors</u>** that are each adapted to generate a signal that is representative of a condition of the vehicle, said <u>sensed conditions including</u> **<u>two or more</u>** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 9; page 15, line 24 to page 16, line 1.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 34, 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Okuchi et al. and the features of Takahashi to "improve . . . visibility . . . and guarantee the safety of running of the vehicle" as described, for example, on page 3, lines 8 to 15 of Takahashi. Moreover, combining the automatic leveling device described in Okuchi et al. and the vehicle lamp illumination directional control in Takahashi is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Okuchi et al. and Takahashi discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 34, 35, 37 to 42, 44, and 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 34, 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Okuchi et al. and Takahashi. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 24, 25, 28, 29, 33, 34, 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Okuchi et al. and Takahashi.

29. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination Are Unpatentable Over the Combination Of Okuchi et al. and Hussman Under 35 U.S.C. § 103(a)

Proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Okuchi et al. and Hussman under 35 U.S.C. § 103(a). As discussed above, Okuchi et al. was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(e). As of the filing date of this Request, Okuchi et al. has not been relied on during the '034 *Ex Parte* Reexamination of the '034 patent. During the original prosecution of the '034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Hussman was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the '034 patent considered to be missing from Okuchi et al. Moreover, Okuchi et al. and

Hussman disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the '034 *Ex Parte* Reexamination, *i.e.*, "two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

Okuchi et al. discloses a vehicle headlight optical axis direction adjusting system for adjusting the direction of illumination of a vehicle headlight. In Okuchi et al. the vehicle pitch angle is calculated from vehicle height sensors 11F, 11R, HF and HR on the front and rear portions of a vehicle. Col. 4, line 58 to col. 5, line 8. These signals are supplied to Electronic Control Unit 20, which outputs signals to actuators to adjust the optical axis direction of the headlights as needed. Col. 5, lines 11 to 20. Referring to Figure 3, Okuchi et al. further discloses detecting vehicle speed and acceleration and adjusting the filtering of the change in pitch signals in accordance with the running state of the vehicle. Col. 5, line 52 to col. 6, line 39. For example, when the vehicle speed is lower than a speed threshold, the control mode "stop mode" is implemented, and no filtering of the pitch signal is performed so that the actuator is allowed to respond quickly to changes in pitch angle. Col. 5, line 66 to col. 6, line 5. In contrast, when vehicle speed is higher than the threshold, but vehicle acceleration is lower than a threshold, the control mode "constant speed" mode is implemented, and high filtering of the pitch signal is performed as it is largely assumed that the pitch angle does not largely change. Col. 6, lines 29 to 38. Thus, by disclosing sensors for suspension height, speed, and acceleration of a vehicle, Okuchi et al. discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." Col. 4, line 58 to col. 5, line 8; col. 5, line 52 to col. 6, line 39.

As discussed above, Hussman relates to the regulation of the illumination direction of vehicle lamps based on the relative position of a vehicle body to the front and rear axles. Col. 1, lines 6 to 20. A front axle sensor sender V measures a relative position of a motor vehicle body to the front axle, and a rear axle sensor sender H measures a relative position of a motor vehicle body to the rear axle. Col. 2, lines 40 to 48. The change in the relative position of the vehicle body between front axle sender V and rear axle sender H is used to obtain a nominal-value signal. Col. 2, lines 48 to 53. This signal is filtered by three filters to determine the time for three average-value formations, each employing different time constants. Abstract. The first nominal-value signal is obtained by using a predetermined value. The second filtered nominal-value signal, obtained from using a smaller time constant, is then compared with the third filtered nominal-value signal, obtained from using a longer filtered time constant. Abstract. When a difference is detected between the second and third signal indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

With two sensors, V and H, signaling the suspension height of the vehicle, Hussman discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, col. 2, lines 48 to 53.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Okuchi et al. and the features of Hussman to "avoid[] false adjustments caused by" "inclination changes of the motor-vehicle body which are not attributable to changes in load or in road surface unevenness" as described, for example, at col. 1, line 65 to col. 2, line 4 of Hussman. Moreover, combining the automatic leveling device described in Okuchi et al. and the vehicle lamp illumination directional control in Hussman is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Okuchi et al. and Hussman discloses all of the limitations of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Okuchi et al. and Hussman. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20 to 22, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Okuchi et al. and Hussman.

30. Proposed Claims 1 to 14, 20, 22, 24 to 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination Are Unpatentable Over the Combination Of Gotoh and Uchida Under 35 U.S.C. § 103(a)

Proposed claims 1 to 14, 20, 22, 24 to 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Gotoh and Uchida under 35 U.S.C. § 103(a). As discussed above, Gotoh was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(b). As of the filing date of this Request, Gotoh has not been relied on during the '034 *Ex Parte* Reexamination of the '034 patent. During the original prosecution of the '034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Uchida was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the '034 patent considered to be missing from Gotoh. Moreover, Gotoh and Uchida disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the '034 *Ex Parte* Reexamination, *i.e.*, "two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

Gotoh discloses a device for changing the illumination direction of a vehicle headlights in the right and left directions. Referring to figure 3, a steering angle sensor 21, a vehicle speed sensor 22, and a yaw rate sensor 23, signal the steering angle, vehicle speed, and yaw rate, respectively to the Light Distribution Control ECU 10. Col. 4, line 61 to col. 5, line 5.

The ECU 10 calculates a first lighting angle based on the steering angle as detected by the steering angle sensor and a speed correction coefficient based on the measured vehicle speed. Col. 5, lines 1 to 15. A second lighting angle based on the turning movement as based on the detections of the yaw rate and vehicle speed sensors. Col. 5, lines 16 to 24. The final lighting angle is decided based on whether the first lighting angle and the second lighting angle are pointed in the same right or left direction. Col. 5, lines 57 to 62.

Thus, by disclosing sensors for steering angle, vehicle speed, and yaw rate, Gotoh discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." Col. 4, line 61 to col. 5, line 5.

As discussed above, Uchida relates to a vehicle lamp illumination directional control device which detects both the posture and speed of a vehicle and adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction. Page 1 at lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, vehicle speed 7, and vehicle acceleration or deceleration 8. Uchida discloses that signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. Thus, by disclosing detection of vehicle posture, speed, and acceleration, Uchida discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 1; page 6, lines 9 to 15; page 9, lines 28 to 33.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1 to 14, 20, 22, 24 to 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte*

Reexamination were made would have been motivated to combine the features provided by Gotoh and the features of Uchida to "prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle" as described, for example, on page 4, lines 16 to 27 of Uchida. Moreover, combining the automatic leveling device described in Gotoh and the vehicle lamp illumination directional control in Uchida is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Gotoh and Uchida discloses all of the limitations of proposed claims 1 to 14, 20, 22, 24 to 26, 28, 29, 37, 38, and 41 to 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1 to 14, 20, 22, 24 to 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Gotoh and Uchida. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1 to 14, 20, 22, 24 to 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Gotoh and Uchida.

31. Proposed Claims 1 to 12, 14, 16 to 18, 20 to 22, 24 to 26, 28, 29, 33, 34, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination Are Unpatentable Over the Combination of Gotoh and Takahashi Under 35 U.S.C. § 103(a)

Proposed claims 1 to 12, 14, 16 to 18, 20 to 22, 24 to 26, 28, 29, 33, 34, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Gotoh and Takahashi under 35 U.S.C. § 103(a). As discussed above, Gotoh was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(b). As of the filing date of this Request, Gotoh has not been relied on during the '034 *Ex Parte* Reexamination of the '034 patent. During the original prosecution of the '034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Takahashi was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the '034 patent considered to be missing from Gotoh. Moreover, Gotoh and Takahashi disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the '034 *Ex Parte* Reexamination, *i.e.*, "two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

Gotoh discloses a device for changing the illumination direction of a vehicle headlights in the right and left directions. Referring to figure 3, a steering angle sensor 21, a vehicle speed sensor 22, and a yaw rate sensor 23, signal the steering angle, vehicle speed, and yaw rate, respectively to the Light Distribution Control ECU 10. Col. 4, line 61 to col. 5, line 5.

The ECU 10 calculates a first lighting angle based on the steering angle as detected by the steering angle sensor and a speed correction coefficient based on the measured vehicle speed. Col. 5, lines 1 to 15. A second lighting angle based on the turning movement as based on the detections of the yaw rate and vehicle speed sensors. Col. 5, lines 16 to 24. The final lighting angle is decided based on whether the first lighting angle and the second lighting angle are pointed in the same right or left direction. Col. 5, lines 57 to 62.

Thus, by disclosing sensors for steering angle, vehicle speed, and yaw rate, Gotoh discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "<u>**two or more sensors**</u> that are each adapted to generate a signal that is representative of a condition of the vehicle, said <u>sensed conditions including</u> <u>**two or more**</u> of road speed, steering angle, pitch, and suspension height of the vehicle." Col. 4, line 61 to col. 5, line 5.

As discussed above, Takahashi relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp to maintain it in a predetermined direction. Page 1, lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, and vehicle running condition 3. Referring to figure 9, vehicle posture detect member 2 is composed of four height sensors 9. Figure 9; page 15, lines 24 to 30. Vehicle speed sensor 11 corresponds to the running condition detection device 3. Figure 9; page 15, line 24 to page 16, line 1. The illumination direction is adjusted by control device 4, and drive device 5. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 26 to page 7, line 4.

A threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line 3.

Thus, by disclosing vehicle height sensors and speed sensors, Takahashi discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 9; page 15, line 24 to page 16, line 1.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1 to 12, 14, 16 to 18, 20 to 22, 24 to 26, 28, 29, 33, 34, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Gotoh and the features of Takahashi to "improve . . . visibility . . . and guarantee the safety of running of the vehicle" as described, for example, on page 3, lines 8 to 15 of Takahashi. Moreover, combining the automatic leveling device described in Gotoh and the vehicle lamp illumination directional control in Takahashi is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Gotoh and Takahashi discloses all of the limitations of proposed claims 1 to 12, 14, 16 to 18, 20 to 22, 24 to 26, 28, 29, 33, 34, 37, 38, and 41 to 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1 to 12, 14, 16 to 18, 20 to 22, 24 to 26, 28, 29, 33, 34, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Gotoh and Takahashi. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1 to 12, 14, 16 to 18, 20 to 22, 24 to 26, 28, 29, 33, 34, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Gotoh and Takahashi.

32. Proposed Claims 1 to 13, 24, 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination Are Unpatentable Over the Combination of Gotoh and Hussman Under 35 U.S.C. § 103(a)

Proposed claims 1 to 13, 24, 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination are unpatentable over the combination of Gotoh and Hussman under 35 U.S.C. § 103(a). As discussed above, Gotoh was relied on by the Examiner during the prosecution of the '034 patent in rejecting the claims as anticipated under 35 U.S.C. § 102(b). As of the filing date of this Request, Gotoh has not been relied on during the '034 *Ex Parte* Reexamination of the '034 patent. During the original prosecution of the '034 patent, the Examiner ultimately allowed application claim 14, which issued as claim 1 in the '034 patent, because of the inclusion of the limitation "a predetermined minimum threshold amount to prevent the actuator from being operated continuously or duly in response to relatively small variations in the sensed operating condition." As indicated above, Hussman was not cited during the prosecution of the '034 patent and discloses the foregoing limitation that the Examiner in the original prosecution of the '034 patent considered to be missing from Gotoh. Moreover, Gotoh and Hussman disclose the limitation of proposed amended claim 1 that Balther apparently considers to be absent from the prior art cited in the '034 *Ex Parte* Reexamination, *i.e.*, "two or more sensors that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle.

Gotoh discloses a device for changing the illumination direction of a vehicle headlights in the right and left directions. Referring to figure 3, a steering angle sensor 21, a vehicle speed sensor 22, and a yaw rate sensor 23, signal the steering angle, vehicle speed, and yaw rate, respectively to the Light Distribution Control ECU 10. Col. 4, line 61 to col. 5, line 5.

The ECU 10 calculates a first lighting angle based on the steering angle as detected by the steering angle sensor and a speed correction coefficient based on the measured vehicle speed. Col. 5, lines 1 to 15. A second lighting angle based on the turning movement as based on the detections of the yaw rate and vehicle speed sensors. Col. 5, lines 16 to 24. The final lighting angle is decided based on whether the first lighting angle and the second lighting angle are pointed in the same right or left direction. Col. 5, lines 57 to 62.

Thus, by disclosing sensors for steering angle, vehicle speed, and yaw rate, Gotoh discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." Col. 4, line 61 to col. 5, line 5.

As discussed above, Hussman relates to the regulation of the illumination direction of vehicle lamps based on the relative position of a vehicle body to the front and rear axles. Col. 1, lines 6 to 20. A front axle sensor sender V measures a relative position of a motor vehicle body to the front axle, and a rear axle sensor sender H measures a relative position of a motor vehicle body to the rear axle. Col. 2, lines 40 to 48. The change in the relative position of the vehicle body between front axle sender V and rear axle sender H is used to obtain a nominal-value signal. Col. 2, lines 48 to 53. This signal is filtered by three filters to determine the time for three average-value formations, each employing different time constants. Abstract. The first nominal-value signal is obtained by using a predetermined value. The second filtered nominal-value signal, obtained from using a smaller time constant, is then compared with the third filtered nominal-value signal, obtained from using a longer filtered time constant. Abstract. When a difference is detected between the second and third signal indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

With two sensors, V and H, signaling the suspension height of the vehicle, Hussman discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, col. 2, lines 48 to 53.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 1 to 13, 24, 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Gotoh and the features of Hussman to "avoid[] false adjustments caused by" "inclination changes of the motor-vehicle body which are not attributable to changes in load or in road surface unevenness" as described, for example, at col. 1, line 65 to col. 2, line 4 of Hussman. Moreover, combining the automatic leveling device described in Gotoh and the vehicle lamp illumination directional control in Hussman is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Gotoh and Hussman discloses all of the limitations of proposed claims 1 to 13, 24, 26, 28, 29, 37, 38, and 41 to 45.

Based on the foregoing, a substantial new question of patentability of proposed claims 1 to 11, 24, 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination is raised by the combination of Gotoh and Hussman. Accordingly, VWGoA proposes a ground of rejection of proposed claims 1 to 13, 24, 26, 28, 29, 37, 38, and 41 to 45 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Gotoh and Hussman.

33. Proposed Claims 17, 19, 21, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination Are Unpatentable in View of the Combination of Uchida and the Admitted Prior Art Described in the '034 Patent Specification Under 35 U.S.C. § 103(a)

Proposed claims 17, 19, 21, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination are unpatentable in view of the combination of Uchida and the admitted prior art described in the '034 patent specification under 35 U.S.C. § 103(a). As indicated above, Uchida was not cited during the prosecution of the '034 patent, and, as of the filing date of this Request, has not been cited during the '034 *Ex Parte* Reexamination.

As discussed above, Uchida relates to a vehicle lamp illumination directional control device which detects both the posture and speed of a vehicle and adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction. Page 1 at lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, vehicle speed 7, and vehicle acceleration or deceleration 8. Uchida discloses that signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. Thus, by disclosing detection of vehicle posture, speed, and acceleration, Uchida discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 1; page 6, lines 9 to 15; page 9, lines 28 to 33.

The '034 patent specification admits that the features recited in proposed dependent claims 17, 19, 21, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination were in the prior art at the time the '034 patent was filed. For example, the '034 patent specification states that "it is known to provide a directional control system for vehicle headlights that is capable of automatically altering the directional aiming angles of the headlights to account for changes in the operating conditions of the vehicle," including moving the headlights in both the horizontal and vertical directions for aiming. Col. 1, lines 57 to 62. Further, actuators 12 and 13 to move the vehicle headlights are "conventional in the art," and the motors that embody the actuators, such as servo motors, step motors, electronically controlled mechanical actuators, and micro stepping motors are also described as "known in the art." Col. 3, lines 26 to 41. Further, the condition sensors 15 and 16 are described as "conventional in the art" and position feedback sensors 18 and 19 "can be embodied as any conventional sensor structures, such as Hall effect sensors" or can include "a conventional optical interrupter for each of the actuators 12 and 13." Col. 4, lines 24 to 36.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 17, 19, 21, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Uchida and the admitted prior art features in the '034 patent specification to include conventional features such as allowing the headlights to move both horizontally and vertically, or various types of conventional actuators and condition sensors. Moreover, combining the vehicle lamp illumination directional control in Uchida is merely with the prior art features described in the '034 patent specification is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Uchida and the admitted prior art described in the '034 patent specification discloses all of the limitations of proposed claims 17, 19, 21, 23, 26, and 30 to 32.

Based on the foregoing, a substantial new question of patentability of proposed claims 17, 19, 21, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination is raised by the combination of Uchida and the admitted prior art described in the '034 patent specification. Accordingly, VWGoA proposes a ground of rejection of proposed claims 17, 19, 21, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Uchida and the admitted prior art.

34. Proposed Claims 19, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination Are Unpatentable in View of the Combination of Takahashi and the Admitted Prior Art Described in the '034 Patent Specification Under 35 U.S.C. § 103(a)

Proposed claims 19, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination are unpatentable in view of the combination of Takahashi and the admitted prior art described in the '034 patent specification under 35 U.S.C. § 103(a). As indicated above, Takahashi was not cited during the prosecution of the '034 patent, and, as of the filing date of this Request, has not been cited during the '034 *Ex Parte* Reexamination.

As discussed above, Takahashi relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp to maintain it in a predetermined direction. Page 1, lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, and vehicle running condition 3. Referring to figure 9, vehicle posture detect member 2 is composed of four height sensors 9. Figure 9; page 15, lines 24 to 30. Vehicle speed sensor 11 corresponds to the running condition detection device 3. Figure 9; page 15, line 24 to page 16, line 1. The illumination direction is adjusted by control device 4, and drive device 5. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 26 to page 7, line 4.

A threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line 3.

Thus, by disclosing vehicle height sensors and speed sensors, Takahashi discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 9; page 15, line 24 to page 16, line 1.

The '034 patent specification admits that the features recited in proposed dependent claims 19, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination were in the prior art at the time the '034 patent was filed. For example, the '034 patent specification states that "it is known to provide a directional control system for vehicle headlights that is capable of automatically altering the directional aiming angles of the headlights to account for changes in the operating conditions of the vehicle," including moving the headlights in both the horizontal and vertical directions for aiming. Col. 1, lines 57 to 62. Further, actuators 12 and 13 to move the vehicle headlights are "conventional in the art," and the motors that embody the actuators, such as servo motors, step motors, electronically controlled mechanical actuators, and micro stepping motors are also described as "known in the art." Col. 3, lines 26 to 41. Further, the condition sensors 15 and 16 are described as "conventional in the art" and position feedback sensors 18 and 19 "can be embodied as any conventional sensor structures, such as Hall effect sensors" or can include "a conventional optical interrupter for each of the actuators 12 and 13." Col. 4, lines 24 to 36.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 19, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Takahashi and the admitted prior art features in the '034 patent specification to include conventional features such as allowing the headlights to move both horizontally and vertically, or various types of conventional actuators and condition sensors. Moreover, combining the vehicle lamp illumination directional control in Takahashi is merely with the prior art features described in the '034 patent specification is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Takahashi and the admitted prior art described in the '034 patent specification discloses all of the limitations of proposed claims 19, 23, 26, and 30 to 32.

Based on the foregoing, a substantial new question of patentability of proposed claims 19, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination is raised by the combination of Takahashi and the admitted prior art described in the '034 patent specification. Accordingly, VWGoA proposes a ground of rejection of proposed claims 19, 23, 26, and 30 to 32 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Takahashi and the admitted prior art.

35. Proposed Claims 17 to 21, 23 to 26, and 30 to 32 of the '034 *Ex Parte* Reexamination Are Unpatentable in View of the Combination of Hussman and the Admitted Prior Art <u>Described in the '034 Patent Specification Under 35 U.S.C. § 103(a)</u>

Proposed claims 17 to 21, 23 to 26, and 30 to 32 of the '034 *Ex Parte* Reexamination are unpatentable in view of the combination of Hussman and the admitted prior art described in the '034 patent specification under 35 U.S.C. § 103(a). As indicated above, Hussman was not cited during the prosecution of the '034 patent, and, as of the filing date of this Request, has not been cited during the '034 *Ex Parte* Reexamination.

As discussed above, Hussman relates to the regulation of the illumination direction of vehicle lamps based on the relative position of a vehicle body to the front and rear axles. Col. 1, lines 6 to 20. A front axle sensor sender V measures a relative position of a motor vehicle body to the front axle, and a rear axle sensor sender H measures a relative position of a motor vehicle body to the rear axle. Col. 2, lines 40 to 48. The change in the relative position of the vehicle body between front axle sender V and rear axle sender H is used to obtain a nominal-value signal. Col. 2, lines 48 to 53. This signal is filtered by three filters to determine the time for three average-value formations, each employing different time constants. Abstract. The first nominal-value signal is obtained by using a predetermined value. The second filtered nominal-value signal, obtained from using a smaller time constant, is then compared with the third filtered nominal-value signal, obtained from using a longer filtered time constant. Abstract. When a difference is detected between the second and third signal indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

With two sensors, V and H, signaling the suspension height of the vehicle, Hussman discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, col. 2, lines 48 to 53.

The '034 patent specification admits that the features recited in proposed dependent claims 17 to 21, 23 to 26, and 30 to 32 of the '034 *Ex Parte* Reexamination were in the prior art at the time the '034 patent was filed. For example, the '034 patent specification states that "it is known to provide a directional control system for vehicle headlights that is capable of automatically altering the directional aiming angles of the headlights to account for changes in the operating conditions of the vehicle," including moving the headlights in both the horizontal and vertical directions for aiming. Col. 1, lines 57 to 62. Further, actuators 12 and 13 to move the vehicle headlights are "conventional in the art," and the motors that embody the actuators, such as servo motors, step motors, electronically controlled mechanical actuators, and micro stepping motors are also described as "known in the art." Col. 3, lines 26 to 41. Further, the condition sensors 15 and 16 are described as "conventional in the art" and position feedback sensors 18 and 19 "can be embodied as any conventional sensor structures, such as Hall effect sensors" or can include "a conventional optical interrupter for each of the actuators 12 and 13." Col. 4, lines 24 to 36.

A person of ordinary skill in the art at the time of the alleged inventions claimed in proposed claims 17 to 21, 23 to 26, and 30 to 32 of the '034 *Ex Parte* Reexamination were made would have been motivated to combine the features provided by Hussman and the admitted prior art features in the '034 patent specification to include conventional features such as allowing the headlights to move both horizontally and vertically, or various types of conventional actuators and condition sensors. Moreover, combining the vehicle lamp illumination directional control in Hussman is merely with the prior art features described in the '034 patent specification is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Hussman and the admitted prior art described in the '034 patent specification discloses all of the limitations of proposed claims 17 to 21, 23 to 26, and 30 to 32.

Based on the foregoing, a substantial new question of patentability of proposed claims 17 to 21, 23 to 26, and 30 to 32 of the '034 *Ex Parte* Reexamination is raised by the combination of Hussman and the admitted prior art described in the '034 patent specification. Accordingly, VWGoA proposes a ground of rejection of proposed claims 17 to 21, 23 to 26, and 30 to 32 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Hussman and the admitted prior art.

36. Proposed Claim 27 of the '034 *Ex Parte* Reexamination Is Unpatentable Over the Combination of Uchida and Wassen et al. Under 35 U.S.C. § 103(a)

Proposed claim 27 of the '034 *Ex Parte* Reexamination is unpatentable over the combination of Uchida and Wassen et al. under 35 U.S.C. § 103(a). As indicated above, neither Uchida nor Wassen et al. was cited during the prosecution of the '034 patent, and, as of the filing date of this Request, neither Uchida nor Wassen et al. has been cited during the '034 *Ex Parte* Reexamination.

As discussed above, Uchida relates to a vehicle lamp illumination directional control device which detects both the posture and speed of a vehicle and adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction. Page 1 at lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, vehicle speed 7, and vehicle acceleration or deceleration 8. Uchida discloses that signals to the drive means are over-ridden when acceleration is not above a given threshold, such as when the vehicle is running over a rough road, to prevent excessive adjustment of the illumination direction. Specifically, referring to Figure 5, the vehicle is judged to be in acceleration or deceleration running condition or not in acceleration or deceleration condition by determining if a calculated value of acceleration is more or less than a reference value. Page 10, line 26 to page 11, line 6. Thus, by disclosing detection of vehicle posture, speed, and acceleration, Uchida discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 1; page 6, lines 9 to 15; page 9, lines 28 to 33.

Wassen et al. discloses manual adjustment of the beam emitted by a headlight when an actuator is associated with the adjustment device. Col. 3, lines 17 to 30.

A person of ordinary skill in the art at the time of the alleged invention claimed in proposed claim 27 of the '034 *Ex Parte* Reexamination was made would have been motivated to combine the features of Uchida with the features provided by Wassen et al. to provide a calibration mode that includes the capability of adjusting the illumination direction of a beam of light by manual operation of the at least one actuator. Moreover, combining the manual adjustment described in Wassen et al. and the vehicle lamp illumination directional control in Uchida is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended chart, the combination of Uchida and Wassen et al. discloses all of the limitations of proposed claim 27.

Based on the foregoing, a substantial new question of patentability of proposed claim 27 of the ’034 *Ex Parte* Reexamination is raised by the combination of Uchida and Wassen et al. Accordingly, VWGoA proposes a ground of rejection of proposed claim 27 of the ’034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Uchida and Wassen et al.

37. Proposed Claim 27 of the ’034 *Ex Parte* Reexamination Is Unpatentable Over the Combination of Takahashi and Wassen et al. Under 35 U.S.C. § 103(a)

Proposed claim 27 of the ’034 *Ex Parte* Reexamination is unpatentable over the combination of Takahashi and Wassen et al. under 35 U.S.C. § 103(a). As indicated above, neither Takahashi nor Wassen et al. was cited during the prosecution of the ’034 patent, and, as of the filing date of this Request, neither Takahashi nor Wassen et al. has been cited during the ’034 *Ex Parte* Reexamination.

As discussed above, Takahashi relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp to maintain it in a predetermined direction. Page 1, lines 3 to 7. Referring to Figure 1, the illumination direction of lights in a vehicle is controlled by detecting vehicle posture 2, and vehicle running condition 3. Referring to figure 9, vehicle posture detect member 2 is composed of four height sensors 9. Figure 9; page 15, lines 24 to 30. Vehicle speed sensor 11 corresponds to the running condition detection device 3. Figure 9; page 15, line 24 to page 16, line 1. The illumination direction is adjusted by control device 4, and drive device 5. Thus, as a vehicle posture changes when loads are applied to it, the inclination angle is measured and the direction of illumination of vehicle lamps are adjusted accordingly. Page 6, line 26 to page 7, line 4.

A threshold value with respect to vehicle posture prevents the adjustment of the illumination direction when the vehicle makes sudden stops or starts. A threshold value with respect to time may be set in detection of the road gradient, and only when the amount of variations in the detection signal of the vehicle posture exceed a given reference value and such excessive state continues for a time longer than the set threshold time will the illumination direction be adjusted. Page 9, line 16 to page 10, line 3.

Thus, by disclosing vehicle height sensors and speed sensors, Takahashi discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the ’034

Ex Parte Reexamination fails to teach, *i.e.*, "**two or more sensors** that are each adapted to generate a signal that is representative of a condition of the vehicle, said sensed conditions including **two or more** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, figure 9; page 15, line 24 to page 16, line 1.

Wassen et al. discloses manual adjustment of the beam emitted by a headlight when an actuator is associated with the adjustment device. Col. 3, lines 17 to 30.

A person of ordinary skill in the art at the time of the alleged invention claimed in proposed claim 27 of the '034 *Ex Parte* Reexamination was made would have been motivated to combine the features of Takahashi with the features provided by Wassen et al. to provide a calibration mode that includes the capability of adjusting the illumination direction of a beam of light by manual operation of the at least one actuator. Moreover, combining the manual adjustment described in Wassen et al. and the vehicle lamp illumination directional control in Takahashi is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended chart, the combination of Takahashi and Wassen et al. discloses all of the limitations of proposed claim 27.

Based on the foregoing, a substantial new question of patentability of proposed claim 27 of the '034 *Ex Parte* Reexamination is raised by the combination of Takahashi and Wassen et al. Accordingly, VWGoA proposes a ground of rejection of proposed claim 27 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Takahashi and Wassen et al.

38. Proposed Claim 27 of the '034 *Ex Parte* Reexamination Is Unpatentable Over the Combination of Hussman '460 and Wassen et al. Under 35 U.S.C. § 103(a)

Proposed claim 27 of the '034 *Ex Parte* Reexamination is unpatentable over the combination of Hussman and Wassen et al. under 35 U.S.C. § 103(a). As indicated above, neither Hussman nor Wassen et al. was cited during the prosecution of the '034 patent, and, as of the filing date of this Request, neither Hussman nor Wassen et al. has been cited during the '034 *Ex Parte* Reexamination.

As discussed above, Hussman relates to the regulation of the illumination direction of vehicle lamps based on the relative position of a vehicle body to the front and rear axles. Col. 1, lines 6 to 20. A front axle sensor sender V measures a relative position of a motor vehicle body to the front axle, and a rear axle sensor sender H measures a relative position of a motor vehicle body to the rear axle. Col. 2, lines 40 to 48. The change in the relative position of the vehicle body between front axle sender V and rear axle sender H is used to obtain a nominal-value signal. Col. 2, lines 48 to 53. This signal is filtered by three filters to determine the time for three average-value formations, each employing different time constants. Abstract. The first nominal-value signal is obtained by using a predetermined value. The second filtered nominal-value signal, obtained from using a smaller time constant, is then compared with the third filtered nominal-value signal, obtained from using a longer filtered time constant. Abstract. When a difference is detected between the second and third signal indicating changes in the inclination of the motor-vehicle body, and the vehicle speed is above a given threshold, the regulation of the illumination direction is switched from the first signal to the third signal, which was obtained using a larger time constant. Col. 3, lines 49 to 61; col. 6, lines 51 to 64. This causes the illumination direction to be adjusted less frequently, and prevents changing of illumination direction based on signals not attributable to longer term body position change. Col. 6, lines 51 to 64.

With two sensors, V and H, signaling the suspension height of the vehicle, Hussman discloses precisely the feature of proposed claim 1 that applicants argue the reference cited in the '034 *Ex Parte* Reexamination fails to teach, *i.e.*, "**<u>two or more sensors</u>** that are each adapted to generate a signal that is representative of a condition of the vehicle, said <u>sensed conditions including</u> **<u>two or more</u>** of road speed, steering angle, pitch, and suspension height of the vehicle." (emphasis in original) *See e.g.*, col. 2, lines 48 to 53.

Wassen et al. discloses manual adjustment of the beam emitted by a headlight when an actuator is associated with the adjustment device. Col. 3, lines 17 to 30.

A person of ordinary skill in the art at the time of the alleged invention claimed in proposed claim 27 of the '034 *Ex Parte* Reexamination was made would have been motivated to combine the features of Hussman with the features provided by Wassen et al. to provide a calibration mode that includes the capability of adjusting the illumination direction of a beam of light by manual operation of the at least one actuator. Moreover, combining the manual adjustment described in Wassen et al. and the vehicle lamp illumination directional control in

Hussman is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As set forth in the appended charts, the combination of Hussman and Wassen et al. discloses all of the limitations of proposed claim 27.

Based on the foregoing, a substantial new question of patentability of proposed claim 27 of the '034 *Ex Parte* Reexamination is raised by the combination of Hussman and Wassen et al. Accordingly, VWGoA proposes a ground of rejection of proposed claim 27 of the '034 *Ex Parte* Reexamination under 35 U.S.C. § 103(a) as obvious over the combination of Hussman and Wassen et al.

X. PROPOSED REJECTION OF PROPOSED CLAIMS 12 TO 16 UNDER 35 U.S.C. § 314(A)

Pursuant to 35 U.S.C. § 314(a), "no proposed amended or new claim enlarging the scope of the claims of the patent shall be permitted" in *inter partes* reexamination. Proposed claim 1 of the '034 *Ex Parte* Reexamination recites "two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle." Thus, proposed claim 1 requires sensors that generate a signal representative of two or more of the specific group of four specific recited conditions of road speed, steering angle, pitch, and suspension height of the vehicle.

Proposed claim 12 recites "The automatic directional control system defined in claim 1, wherein said sensed conditions further include one or more of a rate of change of road speed of the vehicle, a rate of change of steering angle of the vehicle, a rate of change of pitch of the vehicle, or a rate of change of suspension height of the vehicle." Thus, proposed claim 12 allows for sensors that generate a signal representative of four additional conditions, none of which were in the group required by claim 1. In other words, the group recited in proposed claim 12 is *broader* than the group recited in claim 1 of the '034 patent. Thus, proposed claim 12 is *broader* than claim 1 of the '034 patent. For example, a directional control system with sensors for rate of change of pitch and rate of change of road speed would satisfy the conditions of proposed claim 12, but **not** claim 1 of the '034 patent.

Proposed claim 12 therefore improperly enlarges the scope of the claims of the '034 patent. As such proposed claim 12, and proposed claims 13 to 16, which depend from proposed claim 12, are should be rejected under 35 U.S.C. § 314(a).

XI. PROPOSED REJECTION OF PROPOSED CLAIMS 12 TO 16 UNDER 35 U.S.C. § 112, ¶ 4

Pursuant to 35 U.S.C. § 112, ¶ 4, "a claim in dependent form shall . . . specify a further limitation of the subject matter claimed." As set forth above, proposed claims 12 to 16 are *broader* than proposed claim 1, from which proposed claims 12 to 16 ultimately depend. As such, proposed claims 12 to 16 fail to "specify a further limitation of the subject matter claimed" and should therefore be rejected under 35 U.S.C. § 112, ¶ 4.

XII. FEE PURSUANT TO 37 C.F.R. § 1.915(a)

The $8,800 fee under 37 C.F.R. § 1.915(a) and 37 C.F.R. § 1.20(c)(2) for requesting *inter partes* reexamination is being paid by credit card. The Director is nevertheless authorized to charge any fees that may be required in connection with the Request or these proceedings on behalf of Requester, Volkswagen Group of America, Inc., to the deposit account of Kenyon & Kenyon LLP, Deposit Account ***11-0600***.

XIII. CERTIFICATION PURSUANT TO 37 C.F.R. § 1.915(b)(6)

According to 37 C.F.R. § 1.915(b)(6), a request for *inter partes* reexamination must include a certification that a copy of the request filed by a person other than the patent owner has been served in its entirety on the patent owner at the address as provided for in 37 C.F.R. § 1.33(c).

According to the Office's PAIR system, the correspondence address for the '034 patent is: **The Caldwell Firm, LLC, P.O. Box 59655, Dept. SVIPGP, Dallas, Texas 75229**.

Accordingly, a copy of this Request is being served in its entirety at the foregoing correspondence address as provided for in 37 C.F.R. § 1.33(c), in accordance with 37 C.F.R. § 1.915(b)(6). A certificate of service is annexed hereto as Exhibit 17, which sets forth that, pursuant to 37 C.F.R. § 1. 1.915(b)(6), a copy of this Request has been served in its entirety on "the patent owner at the address as provided for in [37 C.F.R.] § 1.33(c)" at the correspondence address listed above.

XIV. CONCLUSION

For all of the reasons set forth above, reexamination of claims 1 to 5 of the '034 patent is requested.

Respectfully submitted,

Date: May 16, 2011

By: /Clifford A. Ulrich/
Clifford A. Ulrich
Reg. No. 42,194

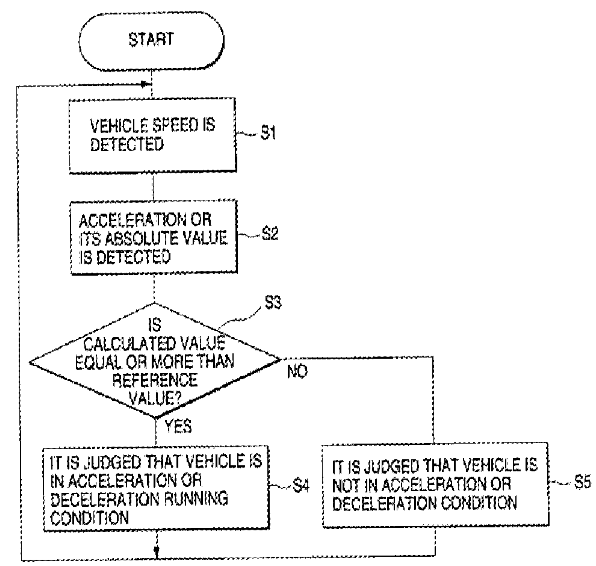
KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200 (telephone)
(212) 425-5288 (facsimile)
CUSTOMER NO. 26646

Attorneys for Requester,
VOLKSWAGEN GROUP OF AMERICA, INC.

1. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 are Anticipated by Uchida under 35 U.S.C. § 102(b)

Limitation of '034 Patent Claim 1	GB 2 309 773 (Uchida)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., page 1, line 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., Page 1, lines 14 to 28, "The conventional device of this type includes a detection device which detects the inclination and height of the vehicle body variable according to the conditions of occupants (such as the number of occupants, the position arrangement of the occupants, and the like), the loaded conditions of loads on board the vehicle, the running conditions of the vehicle, and the like, calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detection device, and adjusts the illumination angle of the vehicle lamp with respect to the initially adjusted value of the vehicle lamp so that the illumination state of the vehicle lamp can always be kept in a desired state, thereby to control the illumination direction of the vehicle lamp for desired light distribution." E.g., Page 8, lines 20 to page 9, line 1, "Here, as basic information used to judge whether the vehicle is in the acceleration or deceleration running condition or not, besides the information that is given by the vehicle posture detection device 2, as shown in Fig. 1, there is also available information which can be obtained by providing acceleration or deceleration instruction detection device 8 used to detect an acceleration or deceleration instruction or information relating to the present instruction according to the amount of pressing-down of a gas pedal, variations in the opening of a throttle valve or the like, or information which can be obtained by providing an engine revolution number detection device 9 used to detect the number of revolutions of an engine: that is, the information obtained by these detection devices may be transmitted to the acceleration or deceleration running condition judging device 3b."

Limitation of '034 Patent Claim 1	GB 2 309 773 (Uchida)
	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." See also Page 9, lines 24 to 28 and Page 12 line 27 to page 13, line 15.
a controller that is responsive to said sensor signal for generating an output signal	E.g., Page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., Page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle." E.g., Page 10, line 26 to page 11, line 6, "At first, in step S1, the vehicle

Limitation of '034 Patent Claim 1	GB 2 309 773 (Uchida)
	speed v(t) is detected and, after then, in step S2, the acceleration dv(t)/dt or the absolute value thereof is calculated. Next, in Step S3, it is checked whether the acceleration dv(t)/dt or the absolute value thereof is equal to or more than a reference value or not. If it is found that the acceleration dv(t)/dt or the absolute value thereof is less than the reference value, then the processing advances to step S5. In step S4, it is judged that the vehicle is in the acceleration or deceleration running condition and, after then, the processing goes back to Step S2. Also, in Step S5, it is judged that the vehicle is not in the acceleration or deceleration running condition and, after then, the processing returns back to the first step S1. E.g., Figure 5: FIG. 5 

Limitation of '034 Patent Claim 1	**GB 2 309 773 (Uchida)**
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., Page 16, line 28 to Page 17, line 6 "Also, if it is judged by the acceleration or deceleration running condition judging device 3b that the vehicle is not in the acceleration or deceleration running condition, then the illumination angle of the lamp 5 can be controlled by one of the following methods when the drive control device 4a receives an instruction from the acceleration or deceleration running condition judging device 3b: 1) a method for fixing the illumination angle; 2) a method for limiting the range of the illumination angle or forbidding part of the range of the illumination angle; and, 3) a method for changing the response speed or control speed of an actuator." E.g., Page 7, lines 4 to 9 "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., Page 8, lines 1 to 9 "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction."

Limitation of '034 Patent Claim 2	**GB 2 309 773 (Uchida)**
2. The automatic directional control system defined in claim 1	See claim 1 chart, above at page 1.
wherein said sensor generates a signal that is representative of the road speed	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration

Limitation of '034 Patent Claim 2	GB 2 309 773 (Uchida)
of the vehicle.	or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Claim 4	GB 2 309 773 (Uchida)
4. The automatic directional control system defined in claim 1	See claim 1 chart, above at page 1.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., Page 12 line 27 to page 13, line 15 "Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Claim 5	GB 2 309 773 (Uchida)
5. The automatic directional control system defined in claim 1	See claim 1 chart, above at page 1.

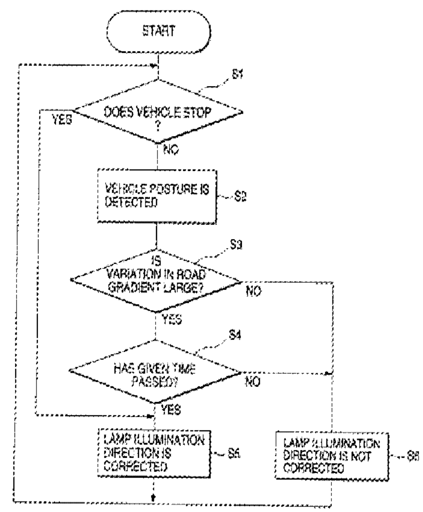
Limitation of '034 Patent Claim 5	GB 2 309 773 (Uchida)
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

2. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 are Anticipated by Takahashi under 35 U.S.C. § 102(b)

Limitation of '034 Patent Claim 1	GB 2 309 774 (Takahashi)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., page 5, line 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjust the illumination direction of a vehicle lamp so that it can be always kept in a predetermined direction."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."
a controller that is responsive to said sensor signal for generating an output signal	E.g., Page 10, line 20 to page 11, line 11, "In Step S4, it is checked whether a state in which the amount of variations of the detect signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues for a given period of time or longer or not. If it is found that such state continues, then the processing advances to Step S and, if not, then the processing goes to Step S6. Here, when a threshold value relating to the running distance of the vehicle is set instead of setting a threshold value relating to the above-mentioned continuing time, in Step S4, it may be checked whether a state in which the amount of variations in the detect signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues over a given running distance or not. In Step S5, in accordance with the information from the vehicle posture detection device 2, the control device 4 transmits to the drive control device 5a a control signal which causes the illumination direction of the lamp 6 to be kept

Limitation of '034 Patent Claim 1	GB 2 309 774 (Takahashi)
	in a predetermined direction, and the illumination direction of the lamp 6 is corrected through the drive mechanism 5. After then, the processing goes back to the first step S1. Also, in Step 6, the correction of the illumination direction of the lamp 6 is not carried out but the processing returns to the first Step S1."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, line to page 10, line 3 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected. Also, the threshold values may be set in various manners, for example, they may be set as a constant value, or may be set as a variable which varies according to the speeds of the vehicle." E.g., Page 10, line 20 to page 11, line 11, "In Step S4, it is checked whether a state in which the amount of variations of the detect signal supplied by the

Limitation of '034 Patent Claim 1	GB 2 309 774 (Takahashi)
	vehicle posture detection device 2 is equal to or more than a given reference value continues for a given period of time or longer or not. If it is found that such state continues, then the processing advances to Step S and, if not, then the processing goes to Step S6. Here, when a threshold value relating to the running distance of the vehicle is set instead of setting a threshold value relating to the above-mentioned continuing time, in Step S4, it may be checked whether a state in which the amount of variations in the detect signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues over a given running distance or not. In Step S5, in accordance with the information from the vehicle posture detection device 2, the control device 4 transmits to the drive control device 5a a control signal which causes the illumination direction of the lamp 6 to be kept in a predetermined direction, and the illumination direction of the lamp 6 is corrected through the drive mechanism 5. After then, the processing goes back to the first step S1. Also, in Step 6, the correction of the illumination direction of the lamp 6 is not carried out but the processing returns to the first Step S1." E.g., Figure 7:

Limitation of '034 Patent Claim 1	GB 2 309 774 (Takahashi)
	FIG. 7 
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., page 2, lines 14 to 17 "However, in the above-mentioned automatic adjustment device, since the lamp is driven with high frequency, an actuator used in a drive mechanism for driving the lamp is required to show high response property and high durability." See also page 6, lines 26 to 32, page 7, lines 12 to 17, and page 11, lines 12 to 16.

Limitation of '034 Patent Claim 2	GB 2 309 774 (Takahashi)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 7.

Limitation of '034 Patent Claim 2	GB 2 309 774 (Takahashi)
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

Limitation of '034 Patent Claim 4	GB 2 309 774 (Takahashi)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 7.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Claim 5	GB 2 309 774 (Takahashi)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 7.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is

Limitation of '034 Patent Claim 5	GB 2 309 774 (Takahashi)
	obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

3. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 are Anticipated by Hussman under 35 U.S.C. § 102(b)

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,182,460 (Hussman)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." See also col. 2, lines 40 to 48, and col. 3, lines 40 to 45.
a controller that is responsive to said sensor signal for generating an output signal	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,182,460 (Hussman)
	adjustment and regulation of the illumination range are avoided." E.g., col. 6, line 10 to 34, "In this connection, it is beneficial that upon the presence of a difference between the second, filtered, nominal-value signal to the third, filtered, nominal-value signal and upon termination of a difference is again switched from the third, filtered, nominal-value signal to the first, filtered, nominal-value signal because in this manner, in an uncomplicated and cost effective manner, upon the presence of an inclination change of the motor vehicle body which is not attributable to a change in loading or to road surface unevenness, the regulation of the illumination range of the motor vehicle, in dependence from the third, long, filter time constant results, whereby the third, filtered, nominal-value signal is independent, or substantially independent, from the disturbing, or distorting, short time inclination changes so that after inclination changes of the motor-vehicle body which, for example, are caused by driving about a curve, false adjustments of the illumination range are not caused which can lead to the blinding of oncoming traffic or to losses in illumination range, which eliminates a danger during operation of a motor vehicle."
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 3, lines 16 to 18, "The regulator R regulates the position of adjusting elements, which are shown here in block form and which change the positions of headlights."

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,182,460 (Hussman)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 13.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,182,460 (Hussman)
	third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Claim 4	U.S. Patent No. 5,182,460 (Hussman)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 13.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g. col. 1, lines 6 to 20, "This invention concerns a method to regulate an illuminating range of a motor vehicle in which signals are measured at a position on a front axle and at a position on a rear axle, which signals depend upon a relative position of a motor vehicle body, or chassis, to the front and rear axles, with a difference between these signals being formed as a difference signal, with the resulting difference signal, as a nominal-value signal, being filtered to a first mean, or average, value, with a time for the first average-value formation being determined by a first filter time constant, and with positions of adjusting elements being regulated when the first, filtered, nominal-value signal deviates from a predetermined, or set, value and an apparatus for regulating the illumination range of a motor vehicle."

Limitation of '034 Patent Claim 5	U.S. Patent No. 5,182,460 (Hussman)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 13.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g. col. 1, lines 6 to 20, "This invention concerns a method to regulate an illuminating range of a motor vehicle in which signals are measured at a position on a front axle and at a position on a rear axle, which signals depend upon a relative position of a motor vehicle body, or chassis, to the front and rear axles, with a difference between these signals being formed as a

Limitation of '034 Patent Claim 5	U.S. Patent No. 5,182,460 (Hussman)
	difference signal, with the resulting difference signal, as a nominal-value signal, being filtered to a first mean, or average, value, with a time for the first average-value formation being determined by a first filter time constant, and with positions of adjusting elements being regulated when the first, filtered, nominal-value signal deviates from a predetermined, or set, value and an apparatus for regulating the illumination range of a motor vehicle."

4. Claims 1, and 5 of U.S. Patent No. 7,231,034 are Anticipated by Miskin et al. under 35 U.S.C. § 102(b)

Limitation of '034 Patent Claim 1	DE 31 10 094 (Miskin et al.)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading." E.g., page 4, "The four sensors are arranged in pairs one behind the other S1, S2/S3, S4, following the driving direction, on those components of the motor vehicle that experience position change by loading, e.g. on wheel suspensions or shock absorbers."
a controller that is responsive to said sensor signal for generating an output signal	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not

Limitation of '034 Patent Claim 1	DE 31 10 094 (Miskin et al.)
	exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."

Limitation of '034 Patent Claim 5	DE 31 10 094 (Miskin et al.)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 17.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading." E.g., page 4, "The four sensors are arranged in pairs one behind the other S1, S2/S3, S4, following the driving direction, on those components of the motor vehicle that experience position change by loading, e.g. on wheel suspensions

Limitation of '034 Patent Claim 5	DE 31 10 094 (Miskin et al.)
	or shock absorbers."

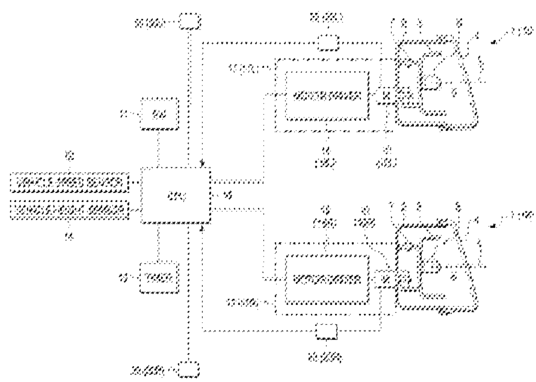
5. Claims 1, and 5 of U.S. Patent No. 7,231,034 are Anticipated by Leleve under 35 U.S.C. § 102(b)

Limitation of '034 Patent Claim 1	DE 31 29 891 (Leleve)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., page 7, "According to the invention, a device for the dynamic adjustment of the headlights of a vehicle is to be provided, which no longer has the aforementioned disadvantages and allows pleasant night-time driving under all driving conditions and regardless of the state of the road."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., page 12, "The device shown in Fig. 1 has a first sensor 1 between the front axle and the body of the vehicle in order to detect a relative movement. A corresponding sensor 2 is situated on the rear axle."
a controller that is responsive to said sensor signal for generating an output signal	E.g., page 12, "The signals generated by sensors 1, 2 are processed in a mixer stage 3, where a signal is generated that represents the vibration or rocking motion of the vehicle in the course of its movement."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., page 8, "One first specific embodiment of the invention is characterized by the fact that the filter includes threshold value elements, via which at least one amplitude threshold is able to be defined, for which the filter predefines a limit frequency. This allows a precise adaptation of the features of the filter to the different interference phenomena requiring an adjustment of the headlight position." See also pages 9 to 10, 13.
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., page 12, "The output of filter 4 is connected to a control and amplifier device 6, which outputs a power signal to actuating organs 7, which causes headlights 8 to move."

Limitation of '034 Patent Claim 5	DE 31 29 891 (Leleve)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 20.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., page 12, "The device shown in Fig. 1 has a first sensor 1 between the front axle and the body of the vehicle in order to detect a relative movement. A corresponding sensor 2 is situated on the rear axle."

6. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Toda et al. and Uchida Under 35 U.S.C. § 103(a)

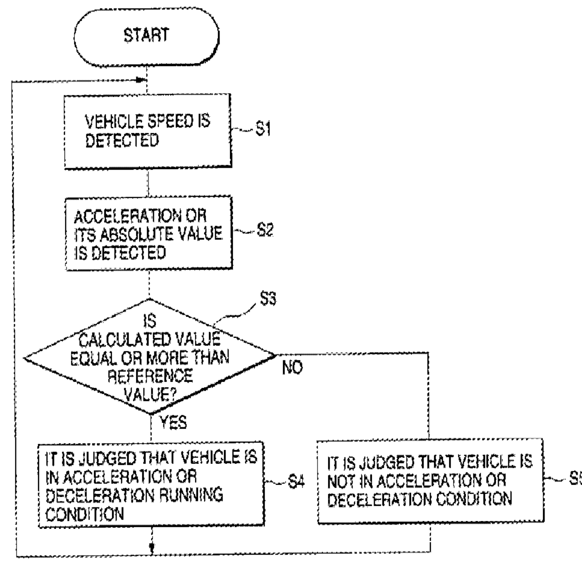
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "An automatic leveling device for automotive vehicle headlamps is described."	E.g., page 1, line 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., Page 1, lines 14 to 28, "The conventional device of this type includes a detection device which detects the inclination and height of the vehicle body variable according to the conditions of occupants (such as the number of occupants, the position arrangement of the occupants, and the like), the loaded conditions of loads on board the vehicle, the running conditions of the vehicle, and the like, calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detection device, and adjusts the illumination angle of the vehicle lamp with respect to the initially adjusted value of the vehicle lamp so that the illumination state of the vehicle lamp can always be kept in a desired state, thereby to control the illumination direction of the vehicle lamp for desired light distribution." E.g., Page 8, lines 20 to page 9, line 1, "Here, as basic information used to judge whether the vehicle is in the acceleration or deceleration running condition or not, besides the information that is given by the vehicle posture detection device 2, as shown in Fig. 1, there is

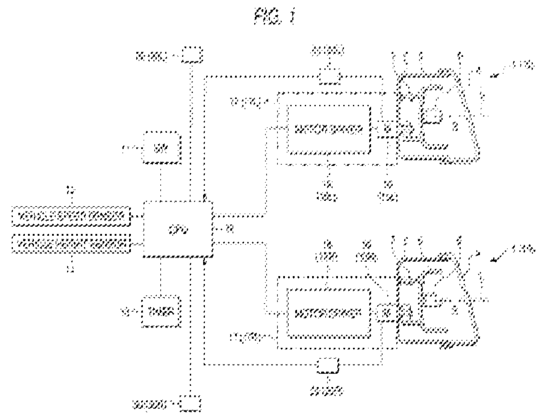
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	also available information which can be obtained by providing acceleration or deceleration instruction detection device 8 used to detect an acceleration or deceleration instruction or information relating to the present instruction according to the amount of pressing-down of a gas pedal, variations in the opening of a throttle valve or the like, or information which can be obtained by providing an engine revolution number detection device 9 used to detect the number of revolutions of an engine: that is, the information obtained by these detection devices may be transmitted to the acceleration or deceleration running condition judging device 3b." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."
a controller that is responsive to said sensor signal for generating an output signal	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or	E.g., Page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the

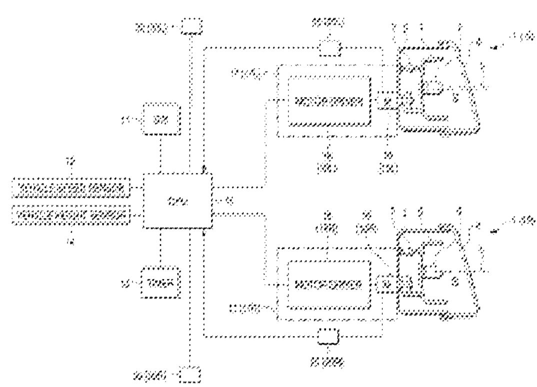
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s^2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or	E.g., Page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the

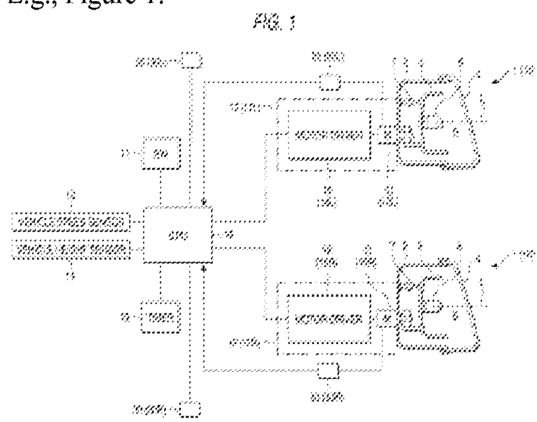
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s^2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle." E.g., Page 10, line 26 to page 11, line 6, "At first, in step S1, the vehicle speed v(t) is detected and, after then, in step S2, the acceleration dv(t)/dt or the absolute value thereof is calculated. Next, in Step S3, it is checked whether the acceleration dv(t)/dt or the absolute value thereof is equal to or more than a reference value or not. If it is found that the acceleration dv(t)/dt or the absolute value thereof is less than the reference value, then the processing advances to step S5. In step S4, it is judged that the vehicle is in the acceleration or deceleration running condition and, after then, the processing goes back to Step S2. Also, in Step S5, it is judged that the vehicle is not in the acceleration or deceleration running condition and, after then, the processing returns back to the first step S1. E.g., Figure 5:

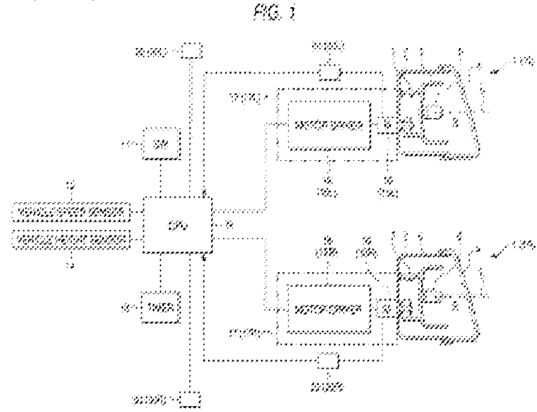
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		FIG. 5 
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., Page 16, line 28 to Page 17, line 6 "Also, if it is judged by the acceleration or deceleration running condition judging device 3b that the vehicle is not in the acceleration or deceleration running condition, then the illumination angle of the lamp 5 can be controlled by one of the following methods when the drive control device 4a receives an instruction from the acceleration or deceleration running condition judging device 3b: 1) a method for fixing the illumination angle; 2) a method for limiting the range of the illumination angle or forbidding	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	part of the range of the illumination angle; and, 3) a method for changing the response speed or control speed of an actuator." E.g., Page 7, lines 4 to 9 "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., Page 8, lines 1 to 9 "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction."	

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 22.	See claim 1 claim chart, above at page 22.

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

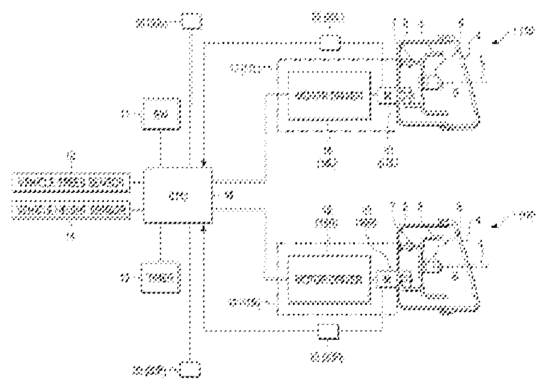
Limitation of '034 Patent Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 22.	See claim 1 claim chart, above at page 22.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: 	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 22.	See claim 1 claim chart, above at page 22.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		running condition of the vehicle can be confirmed to a certain degree."

7. **Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Toda et al. and Takahashi Under 35 U.S.C. § 103(a)**

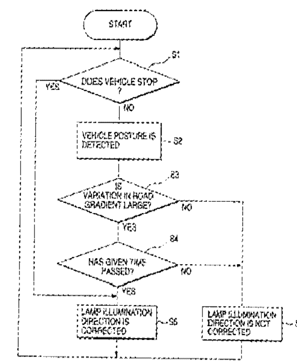
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "An automatic leveling device for automotive vehicle headlamps is described."	E.g., page 5, line 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjust the illumination direction of a vehicle lamp so that it can be always kept in a predetermined direction."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition

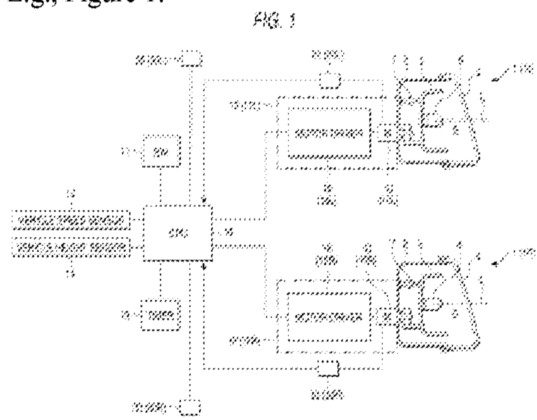
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle.". E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
		a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."
a controller that is responsive to said sensor signal for generating an output signal	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s^2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off,	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2."

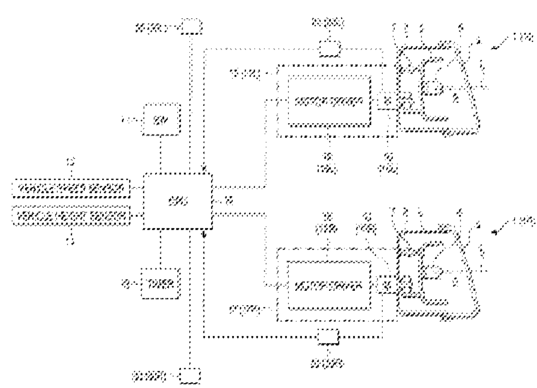
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s^2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off,	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, line to page 10, line 3 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected. Also, the threshold values may be set in various manners, for example, they may be set as a constant value, or may be set as a variable which varies according to the speeds of the vehicle." E.g., Page 10, line 20 to page 11, line 11, "In Step S4, it is checked whether a state in which the amount of variations of the detect signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues for a given period of time or longer or not. If it is found that such state continues, then the processing advances to Step S and, if not, then the processing goes to Step S6. Here, when a threshold value relating to the running distance of the vehicle is set instead of setting a threshold value relating to the above-mentioned continuing time, in Step S4, it may be checked whether a state in which the amount of variations in the detect signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues over a given running distance or not. In Step S5, in accordance with the information from the vehicle posture detection device 2, the control device 4 transmits to the drive control device 5a a control signal which causes the illumination direction of the lamp 6 to be kept in a predetermined direction, and the

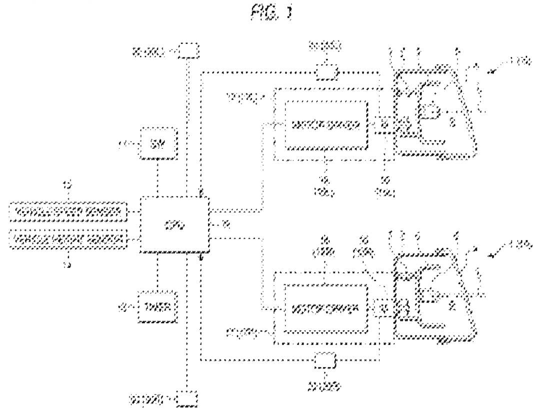
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
		illumination direction of the lamp 6 is corrected through the drive mechanism 5. After then, the processing goes back to the first step S1. Also, in Step 6, the correction of the illumination direction of the lamp 6 is not carried out but the processing returns to the first Step S1." E.g., Figure 7: FIG. 7 
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit."	E.g., page 2, lines 14 to 17 "However, in the above-mentioned automatic adjustment device, since the lamp is driven with high frequency, an actuator used in a drive mechanism for driving the lamp is required to show high response property and high durability." E.g., page 6, lines 26 to 32 "When the control device 4 receives the detect signal of the vehicle running condition detection device 3 and finds from this detect signal that the vehicle is standing

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	E.g., Figure 1: 	still, the control device 4, in accordance with information on the vehicle posture obtained from the vehicle posture detection device 2, transmits to the drive signal 5 a control signal for correction of the illumination direction of the lamp 6." E.g., page 7, lines 12 to 17 "In view of this, the control device 4 is structured such that, based on the information from the vehicle posture detection device 2, it can detect the amount of variations in the gradient of the road and, therefore, when the road gradient varies suddenly, it can correct the illumination direction of the lamp 6." E.g., page 11, lines 12 to 16 "The correction of the illumination direction of the lamp 6 in Step S5 is carried out by the drive device 5 based on the control signal transmitted from the control device 4 and, as a method for executing such correction, there are available two methods . . ."

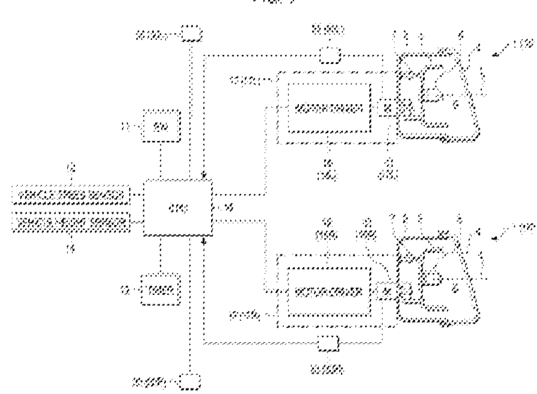
Limitation of '034 Patent Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 33.	See claim 1 claim chart, above at page 33.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

Limitation of '034 Patent Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 33.	See claim 1 claim chart, above at page 33.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a

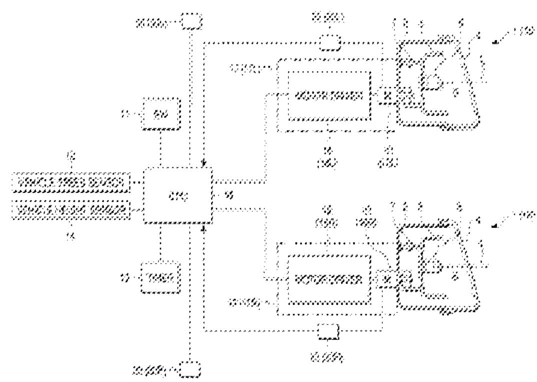
Limitation of '034 Patent Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	(17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 33.	See claim 1 claim chart, above at page 33.
wherein said sensor generates a signal that is	E.g., col. 3, lines 11 to 18, "The headlamp	E.g., page 2, lines 6 to 13 "Therefore, there is

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
representative of the suspension height of the vehicle.	automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

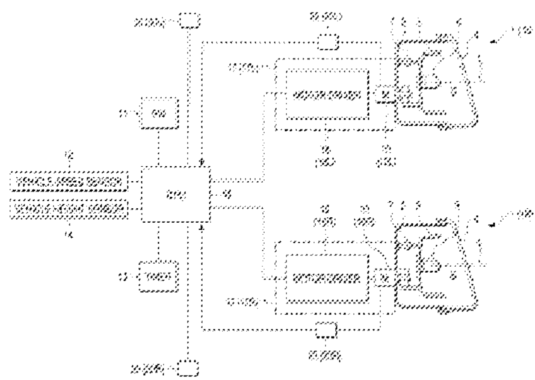
8. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Toda et al. and Hussman Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "An automatic leveling device for automotive vehicle headlamps is described."	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value

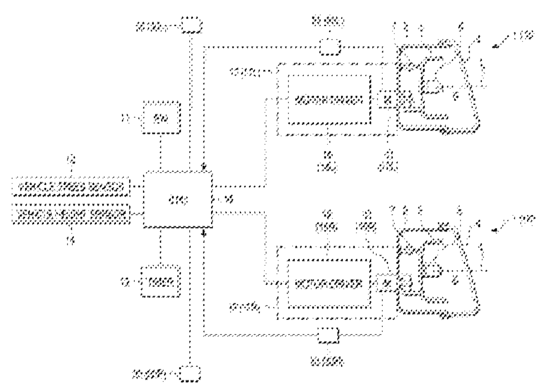
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."
a controller that is responsive to said sensor signal for generating an output signal	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R."

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	proper to limit the acceleration to 0.5 m/s^2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R." E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that

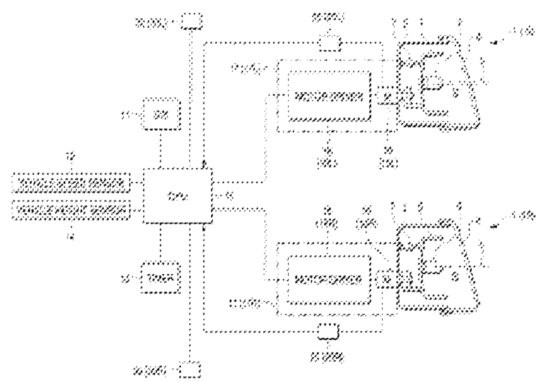
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	proper to limit the acceleration to 0.5 m/s^2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	discontinuities or jumps in the adjustment and regulation of the illumination range are avoided." E.g., col. 6, line 10 to 34, "In this connection, it is beneficial that upon the presence of a difference between the second, filtered, nominal-value signal to the third, filtered, nominal-value signal and upon termination of a difference is again switched from the third, filtered, nominal-value signal to the first, filtered, nominal-value signal because in this manner, in an uncomplicated and cost effective manner, upon the presence of an inclination change of the motor vehicle body which is not attributable to a change in loading or to road surface unevenness, the regulation of the illumination range of the motor vehicle, in dependence from the third, long, filter time constant results, whereby the third, filtered, nominal-value signal is independent, or substantially independent, from the disturbing, or distorting, short time inclination changes so that after inclination changes of the motor-vehicle body which, for example, are caused by driving about a curve, false adjustments of the illumination range are not caused which can lead to the blinding of oncoming traffic or to losses in illumination range, which eliminates a danger during operation of a motor vehicle."
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes	E.g., col. 3, lines 16 to 18, "The regulator R regulates the position of adjusting elements, which are shown here in block form and which change

Limitation of ’034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit.” E.g., Figure 1: FIG. 1 	the positions of headlights.”

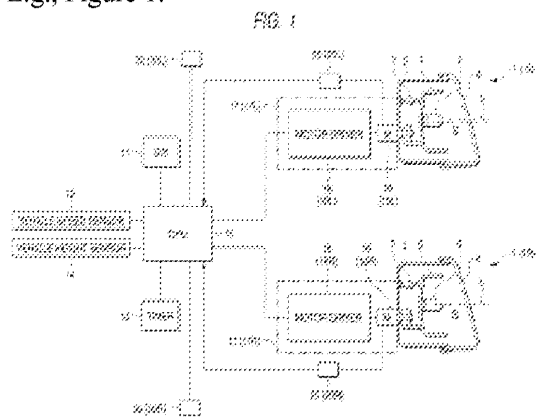
Limitation of ’034 Patent Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 43.	See claim 1 claim chart, above at page 43.
wherein said sensor generates a signal that is	E.g., col. 3, lines 11 to 18, “The headlamp	E.g., col. 3, lines 40 to 45, “The curve-recognition

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
representative of the road speed of the vehicle.	automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 43.	See claim 1 claim chart, above at page 43.

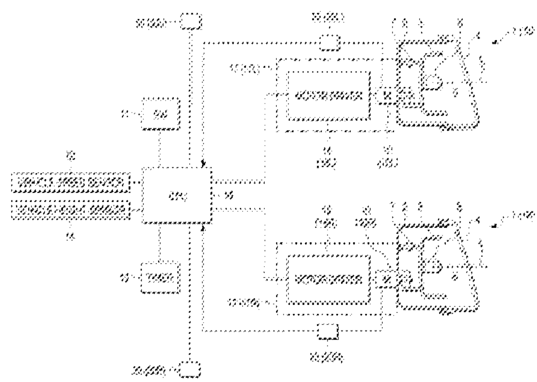
Limitation of '034 Patent Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g. col. 1, lines 6 to 20, "This invention concerns a method to regulate an illuminating range of a motor vehicle in which signals are measured at a position on a front axle and at a position on a rear axle, which signals depend upon a relative position of a motor vehicle body, or chassis, to the front and rear axles, with a difference between these signals being formed as a difference signal, with the resulting difference signal, as a nominal-value signal, being filtered to a first mean, or average, value, with a time for the first average-value formation being determined by a first filter time constant, and with positions of adjusting elements being regulated when the first, filtered, nominal-value signal deviates from a predetermined, or set, value and an apparatus for regulating the illumination range of a motor vehicle."

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 43.	See claim 1 claim chart, above at page 43.

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: 	E.g. col. 1, lines 6 to 20, "This invention concerns a method to regulate an illuminating range of a motor vehicle in which signals are measured at a position on a front axle and at a position on a rear axle, which signals depend upon a relative position of a motor vehicle body, or chassis, to the front and rear axles, with a difference between these signals being formed as a difference signal, with the resulting difference signal, as a nominal-value signal, being filtered to a first mean, or average, value, with a time for the first average-value formation being determined by a first filter time constant, and with positions of adjusting elements being regulated when the first, filtered, nominal-value signal deviates from a predetermined, or set, value and an apparatus for regulating the illumination range of a motor vehicle."

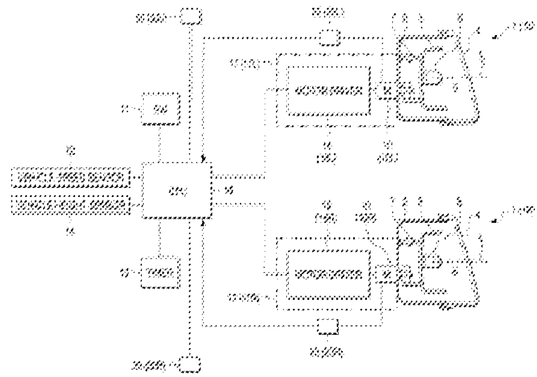
9. **Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Toda et al. and Miskin et al. Under 35 U.S.C. § 103(a)**

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "An automatic leveling device for automotive vehicle headlamps is described."	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading." E.g., page 4, "The four sensors are arranged in pairs one behind the other S1, S2/S3, S4, following the driving direction, on those components of the motor vehicle that experience position change by loading, e.g. on wheel suspensions or shock absorbers."

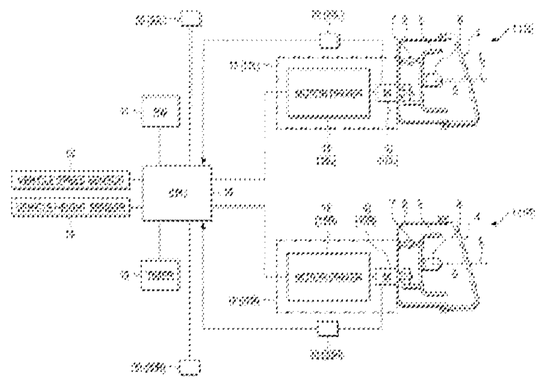
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
	FIG. 1 	
a controller that is responsive to said sensor signal for generating an output signal	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s^2 or	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
	lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s^2 or	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."

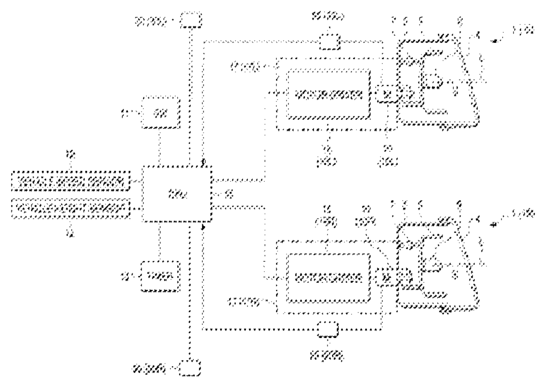
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
	lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
	FIG. 1 	

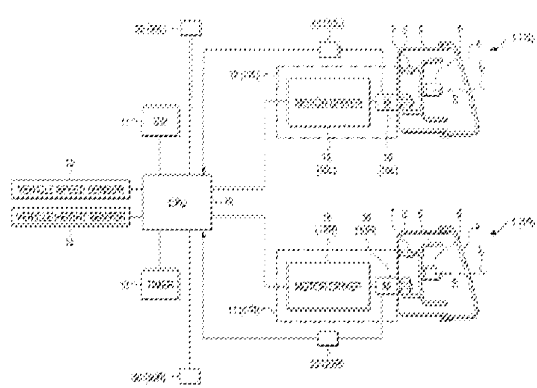
Limitation of '034 Patent Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 51.	See claim 1 claim chart, above at page 51.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit."	

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
	E.g., Figure 1: FIG. 1 	

Limitation of '034 Patent Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 51.	See claim 1 claim chart, above at page 51.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control	

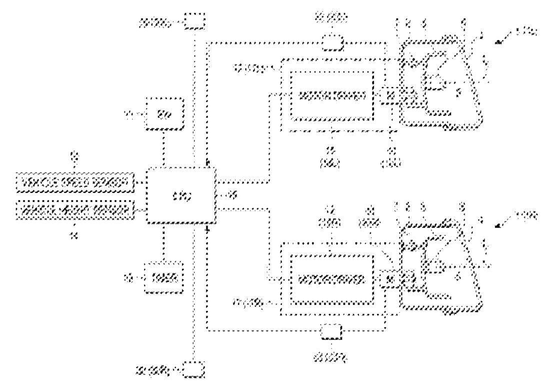
Limitation of '034 Patent Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
	unit." E.g., Figure 1: FIG. 1 	

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 51.	See claim 1 claim chart, above at page 51.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading." E.g., page 4, "The four sensors are arranged in

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	DE 31 10 094 (Miskin et al.)
	sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	pairs one behind the other S1, S2/S3, S4, following the driving direction, on those components of the motor vehicle that experience position change by loading, e.g. on wheel suspensions or shock absorbers."

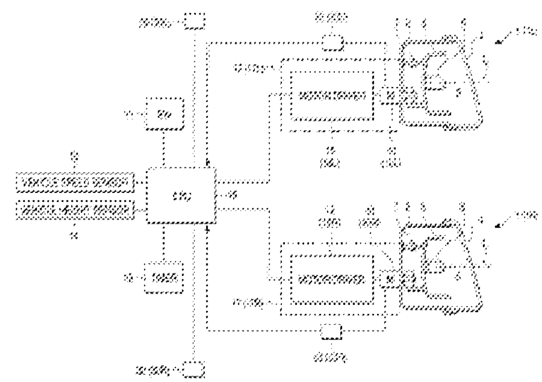
10. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Toda et al. and Leleve Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Claim 1	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., page 7, "According to the invention, a device for the dynamic adjustment of the headlights of a vehicle is to be provided, which no longer has the aforementioned disadvantages and allows pleasant night-time driving under all driving conditions and regardless of the state of the road."	E.g., Abstract, "An automatic leveling device for automotive vehicle headlamps is described."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., page 12, "The device shown in Fig. 1 has a first sensor 1 between the front axle and the body of the vehicle in order to detect a relative movement. A corresponding sensor 2 is situated on the rear axle."	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:

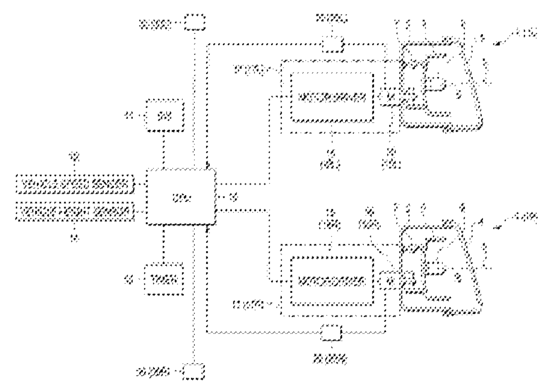
Limitation of '034 Patent Claim 1	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
		FIG. 1 
a controller that is responsive to said sensor signal for generating an output signal	E.g., page 12, "The signals generated by sensors 1, 2 are processed in a mixer stage 3, where a signal is generated that represents the vibration or rocking motion of the vehicle in the course of its movement."	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s^2 or lower. Therefore, an abrupt detection of an

Limitation of '034 Patent Claim 1	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
		abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., page 8, "One first specific embodiment of the invention is characterized by the fact that the filter includes threshold value elements, via which at least one amplitude threshold is able to be defined, for which the filter predefines a limit frequency. This allows a precise adaptation of the features of the filter to the different interference phenomena requiring an adjustment of the headlight position."	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s^2 or lower. Therefore, an abrupt detection of an

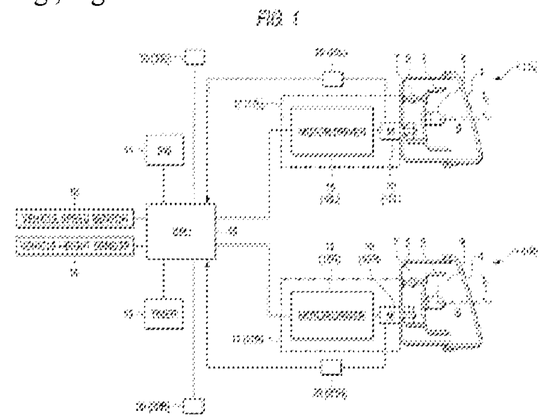
Limitation of '034 Patent Claim 1	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
		abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., page 12, "The output of filter 4 is connected to a control and amplifier device 6, which outputs a power signal to actuating organs 7, which causes headlights 8 to move."	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:

Limitation of '034 Patent Claim 1	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
		FIG. 1 

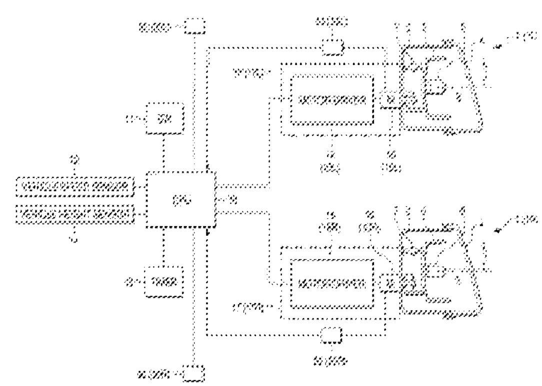
Limitation of '034 Patent Claim 2	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart above at page 59.	See claim 1 claim chart above at page 59.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.		E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit."

Limitation of '034 Patent Claim 2	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
		E.g., Figure 1: FIG. 1 

Limitation of '034 Patent Claim 4	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart above at page 59.	See claim 1 claim chart above at page 59.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.		E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control

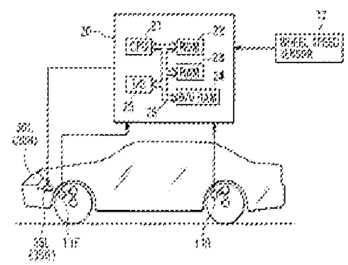
Limitation of '034 Patent Claim 4	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
		unit." E.g., Figure 1: 

Limitation of '034 Patent Claim 5	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart above at page 59.	See claim 1 claim chart above at page 59.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., page 12, "The device shown in Fig. 1 has a first sensor 1 between the front axle and the body of the vehicle in order to detect a relative movement. A corresponding sensor 2 is situated on the rear axle."	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch

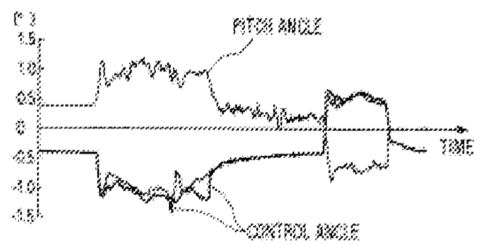
Limitation of '034 Patent Claim 5	DE 31 29 891 (Leleve)	U.S. Patent No. 6,305,823 (Toda et al.)
		angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 

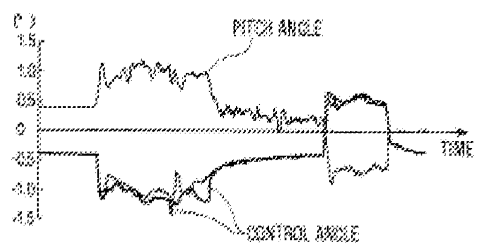
11. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Okuchi et al. and Uchida Under 35 U.S.C. § 103(a)

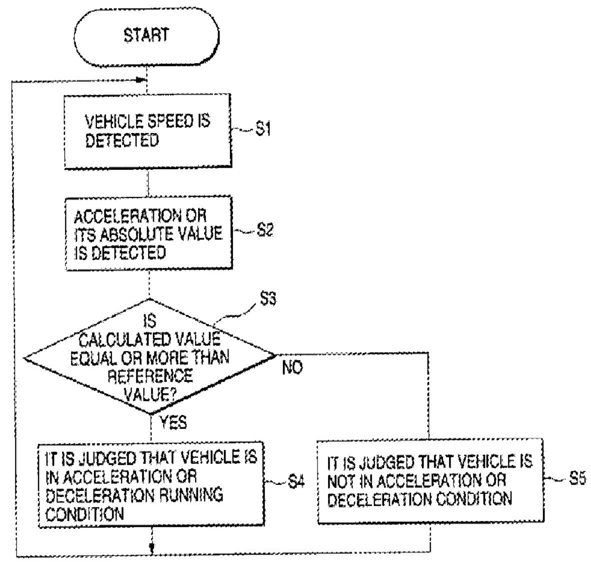
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "In a vehicle headlight optical axis automatic adjusting system, a pitch angle in the longitudinal direction of a vehicle is calculated from a signal of a height sensor."	E.g., page 1, line 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the	E.g., Page 1, lines 14 to 28, "The conventional device of this type includes a detection device which detects the inclination and height of the vehicle body variable according to the conditions of occupants (such as the number of occupants, the position arrangement of the occupants, and the like), the loaded conditions of loads on board the vehicle, the running conditions of the vehicle, and the like, calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detection device, and adjusts the illumination angle of the vehicle lamp with respect to the initially adjusted value of the vehicle lamp so that the illumination state of the vehicle lamp can always be kept in a desired state, thereby to control the illumination direction of the vehicle lamp for desired light distribution." E.g., Page 8, lines 20 to page 9, line 1, "Here, as basic information used to judge whether the vehicle is in the acceleration or deceleration running condition or not, besides the information that is given by the vehicle posture detection device 2, as shown in Fig. 1, there is

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	also available information which can be obtained by providing acceleration or deceleration instruction detection device 8 used to detect an acceleration or deceleration instruction or information relating to the present instruction according to the amount of pressing-down of a gas pedal, variations in the opening of a throttle valve or the like, or information which can be obtained by providing an engine revolution number detection device 9 used to detect the number of revolutions of an engine: that is, the information obtained by these detection devices may be transmitted to the acceleration or deceleration running condition judging device 3b." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
		remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."
a controller that is responsive to said sensor signal for generating an output signal	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding	E.g., Page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the

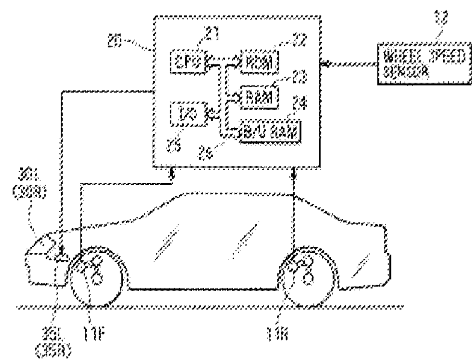
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7  	direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7  	E.g., Page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle." E.g., Page 10, line 26 to page 11, line 6, "At first, in step S1, the vehicle speed v(t) is detected and, after then, in step S2, the acceleration dv(t)/dt or the absolute value thereof is calculated. Next, in Step S3, it is checked whether the acceleration dv(t)/dt or the absolute value thereof is equal to or more than a reference value or not. If it is found that the acceleration dv(t)/dt or the absolute value thereof is less than the reference value, then the processing advances to step S5. In step S4, it is judged that the vehicle is in the acceleration or deceleration running condition and, after then, the processing goes back to Step S2. Also, in Step S5, it is judged that the vehicle is not in the acceleration or deceleration running condition and, after then, the processing returns back to the first step S1. E.g., Figure 5:

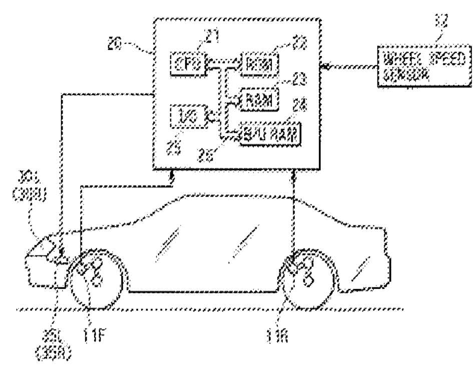
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
		FIG. 5 

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	E.g., Page 16, line 28 to Page 17, line 6 "Also, if it is judged by the acceleration or deceleration running condition judging device 3b that the vehicle is not in the acceleration or deceleration running condition, then the illumination angle of the lamp 5 can be controlled by one of the following methods when the drive control device 4a receives an instruction from the acceleration or deceleration running condition judging device 3b: 1) a method for fixing the illumination angle; 2) a method for limiting the range of the illumination angle or forbidding part of the range of the illumination angle; and, 3) a method for changing the response speed or control speed of an actuator." E.g., Page 7, lines 4 to 9 "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., Page 8, lines 1 to 9 "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction."

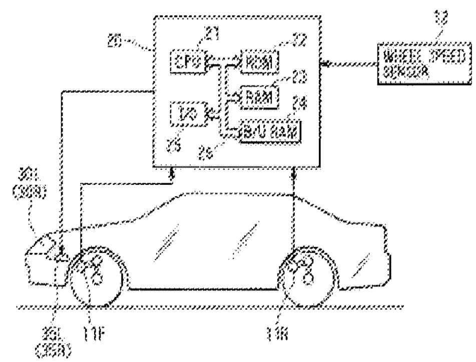
Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 67.	See claim 1 claim chart, above at page 67.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	

Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 67.	See claim 1 claim chart, above at page 67.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used

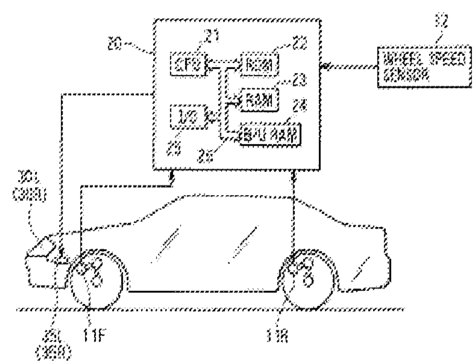
Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 67.	See claim 1 claim chart, above at page 67.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

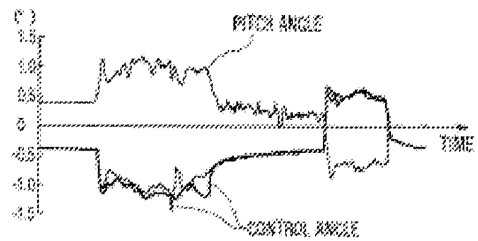
Limitation of '034 Patent Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	

12. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Okuchi et al. and Takahashi Under 35 U.S.C. § 103(a)

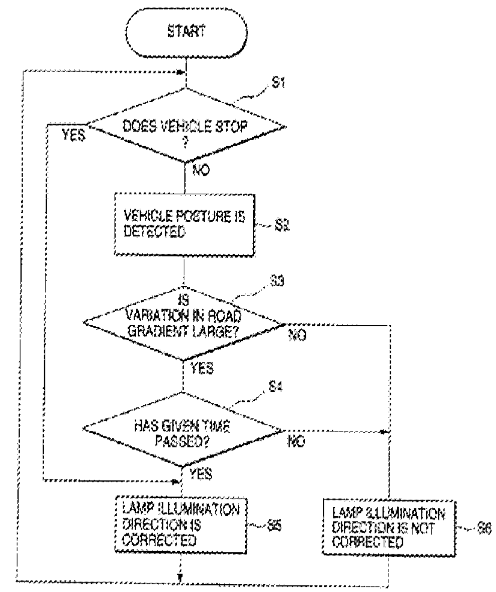
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "In a vehicle headlight optical axis automatic adjusting system, a pitch angle in the longitudinal direction of a vehicle is calculated from a signal of a height sensor."	E.g., page 5, line 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjust the illumination direction of a vehicle lamp so that it can be always kept in a predetermined direction."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20."	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	E.g., Fig. 1: FIG.1 	detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle.". E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
		a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."
a controller that is responsive to said sensor signal for generating an output signal		E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7:	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, line to page 10, line 3 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 7  	in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected. Also, the threshold values may be set in various manners, for example, they may be set as a constant value, or may be set as a variable which varies according to the speeds of the vehicle." E.g., Page 10, line 20 to page 11, line 11, "In Step S4, it is checked whether a state in which the amount of variations of the detect signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues for a given period of time or longer or not. If it is found that such state continues, then the processing advances to Step S and, if not, then the processing goes to Step S6. Here, when a threshold value relating to the running distance of the vehicle is set instead of setting a threshold value relating to the above-mentioned continuing time, in Step S4, it may be checked whether a state in which the amount of variations in the detect

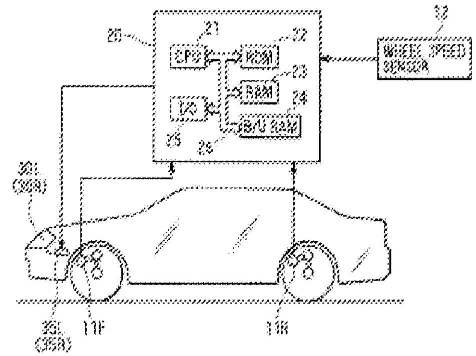
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
		signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues over a given running distance or not. In Step S5, in accordance with the information from the vehicle posture detection device 2, the control device 4 transmits to the drive control device 5a a control signal which causes the illumination direction of the lamp 6 to be kept in a predetermined direction, and the illumination direction of the lamp 6 is corrected through the drive mechanism 5. After then, the processing goes back to the first step S1. Also, in Step 6, the correction of the illumination direction of the lamp 6 is not carried out but the processing returns to the first Step S1." E.g., Figure 7:

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
		FIG. 7 
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	E.g., page 2, lines 14 to 17 "However, in the above-mentioned automatic adjustment device, since the lamp is driven with high frequency, an actuator used in a drive mechanism for driving the lamp is required to show high response property and high durability." E.g., page 6, lines 26 to 32 "When the control device 4 receives the detect signal of the vehicle running condition detection device 3 and finds from this detect signal that the vehicle is standing

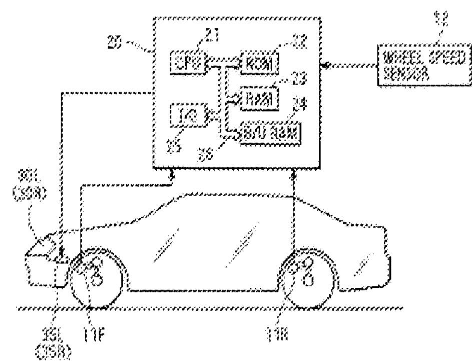
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
		still, the control device 4, in accordance with information on the vehicle posture obtained from the vehicle posture detection device 2, transmits to the drive signal 5 a control signal for correction of the illumination direction of the lamp 6." E.g., page 7, lines 12 to 17 "In view of this, the control device 4 is structured such that, based on the information from the vehicle posture detection device 2, it can detect the amount of variations in the gradient of the road and, therefore, when the road gradient varies suddenly, it can correct the illumination direction of the lamp 6." E.g., page 11, lines 12 to 16 "The correction of the illumination direction of the lamp 6 in Step S5 is carried out by the drive device 5 based on the control signal transmitted from the control device 4 and, as a method for executing such correction, there are available two methods . . ."

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 79.	See claim 1 claim chart, above at page 79.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the

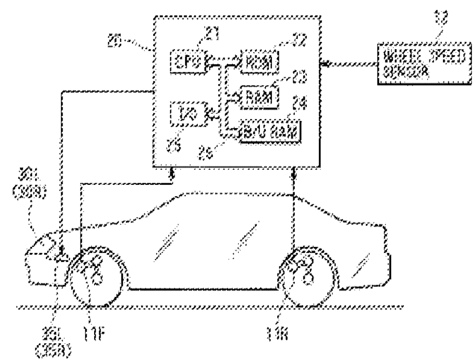
Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	

Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 79.	See claim 1 claim chart, above at page 79.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

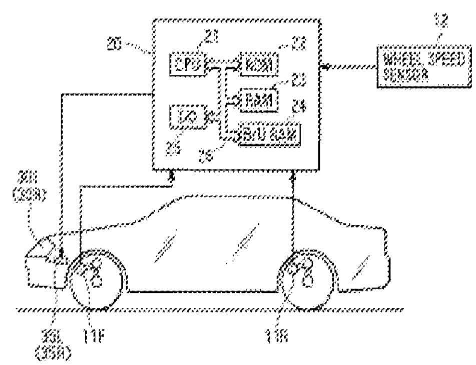
Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 79.	See claim 1 claim chart, above at page 79.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	

13. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Okuchi et al. and Hussman Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "In a vehicle headlight optical axis automatic adjusting system, a pitch angle in the longitudinal direction of a vehicle is calculated from a signal of a height sensor."	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value

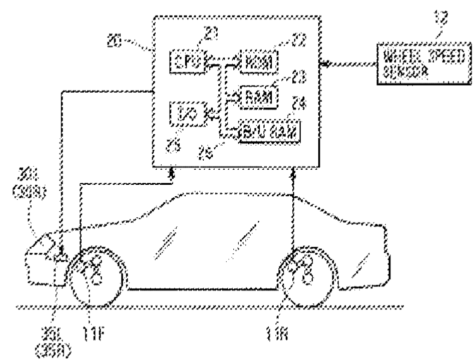
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."
a controller that is responsive to said sensor signal for generating an output signal	E.g., Col. 4, lines 59 to 60, "The motor 8 is controlled for its driving by a light distribution control ECU 10."	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R."

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, line 42 to col. 7, line 2, "Referring to FIG. 8, from changes of the steering angle φ and the yaw angular velocity ω of FIGS. 7A and 7B, the following is understood. When the vehicle goes around the rightward curve, the steering wheel is turned to the right to have a positive steering angle φ at first, and the vehicle body yaws somewhat after the change of steering angle φ so that the yaw angular velocity ω increases following increase of the steering angle. In the meantime, the rear part of the vehicle is swung outside large, and therefore the driver turns the steering wheel to the left or in the opposite direction rapidly for counter-steering to recover direction of the vehicle. Namely, the steering angle φ changes from an upward incline to a downward incline in FIG. 7A. However, the yaw angular velocity ω is maintained due to inertia. Further, when the direction of the vehicle comes to show some recovery, the driver again turns the steering wheel to the right for going around the rightward curve, but he comes to carry out the counter-steering again soon after. Thus, the steering angle φ swings rightward and leftward in large variations. However, while the steering angle φ is swinging rightward and leftward as described above, the yaw angular velocity ω is maintained at a certain angular velocity stably in general, and at a time	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R." E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided." E.g., col. 6, line 10 to 34, "In this connection, it is beneficial that upon the presence of a difference between the second, filtered, nominal-value signal to the third, filtered, nominal-value signal and upon termination of a difference is again switched from the third, filtered, nominal-value signal to the first, filtered, nominal-value signal because in this manner, in an uncomplicated and cost effective manner, upon the presence of an inclination change of the motor vehicle body which is not attributable to a change in loading or to road surface unevenness, the regulation of the

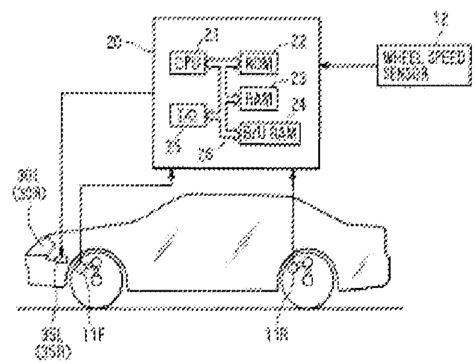
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	somewhat before the vehicle passes through the curve completely, the yaw angular velocity ω comes to coincide with the steering angle φ." E.g., Col. 7, lines 34 to 39, "Since the actual light distribution control is performed on the basis of the above-mentioned final lighting angle θ, even if the steering wheel is operated rapidly for the counter-steering and the like, change of the lighting region is suppressed pertinently and the driver is given no sense of incongruity."	illumination range of the motor vehicle, in dependence from the third, long, filter time constant results, whereby the third, filtered, nominal-value signal is independent, or substantially independent, from the disturbing, or distorting, short time inclination changes so that after inclination changes of the motor-vehicle body which, for example, are caused by driving about a curve, false adjustments of the illumination range are not caused which can lead to the blinding of oncoming traffic or to losses in illumination range, which eliminates a danger during operation of a motor vehicle."
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	E.g., col. 3, lines 16 to 18, "The regulator R regulates the position of adjusting elements, which are shown here in block form and which change the positions of headlights."

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 136.	See claim 1 claim chart, above at page 136.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a	E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects

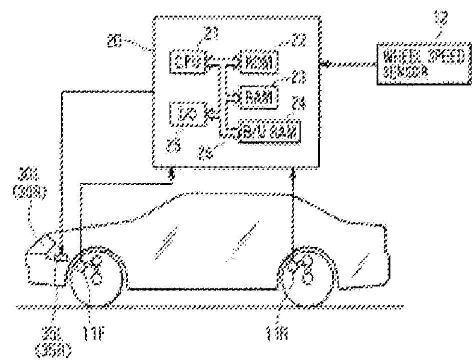
Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	FIG.1 	

Limitation of '034 Patent Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 136.	See claim 1 claim chart, above at page 136.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g. col. 1, lines 6 to 20, "This invention concerns a method to regulate an illuminating range of a motor vehicle in which signals are measured at a position on a front axle and at a position on a rear axle, which signals depend upon a relative position of a motor vehicle body, or chassis, to the front and rear axles, with a difference between these signals being formed as a difference signal, with the resulting difference signal, as a nominal-value signal, being filtered to a first mean, or average,

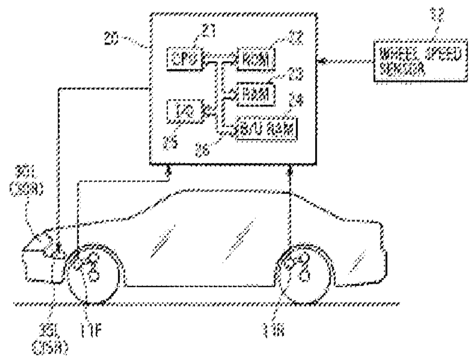
Limitation of '034 Patent Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	value, with a time for the first average-value formation being determined by a first filter time constant, and with positions of adjusting elements being regulated when the first, filtered, nominal-value signal deviates from a predetermined, or set, value and an apparatus for regulating the illumination range of a motor vehicle."

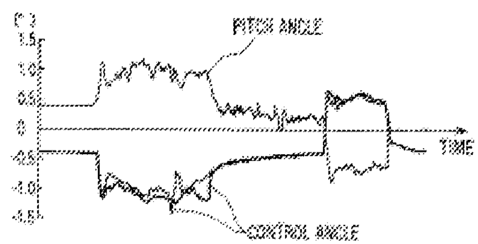
Limitation of '034 Patent Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 136.	See claim 1 claim chart, above at page 136.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g. col. 1, lines 6 to 20, "This invention concerns a method to regulate an illuminating range of a motor vehicle in which signals are measured at a position on a front axle and at a position on a rear axle, which signals depend upon a relative position of a motor vehicle body, or chassis, to the front and rear axles, with a difference between these signals being formed as a difference signal, with the resulting difference signal, as a nominal-value signal, being filtered to a first mean, or average, value, with a time for the first average-value formation being determined by a first filter time constant, and with positions of adjusting elements being regulated when the first, filtered, nominal-value signal deviates from a predetermined, or set, value and an apparatus for regulating the illumination range of a motor vehicle."

Limitation of '034 Patent Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	FIG.1 	

14. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Okuchi et al. and Miskin et al. Under 35 U.S.C. § 103(a)

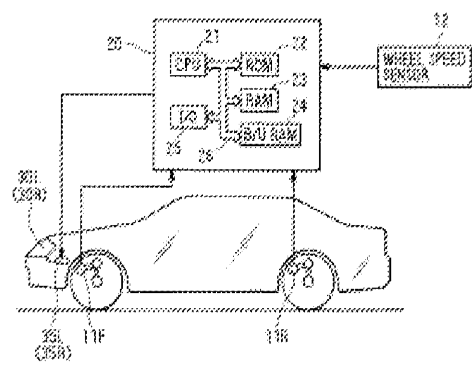
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "In a vehicle headlight optical axis automatic adjusting system, a pitch angle in the longitudinal direction of a vehicle is calculated from a signal of a height sensor."	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20."	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading." E.g., page 4, "The four sensors are arranged in pairs one behind the other S1, S2/S3, S4, following the driving direction, on those components of the motor vehicle that experience position change by loading, e.g. on wheel suspensions or shock absorbers."

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
	E.g., Fig. 1: FIG.1 	
a controller that is responsive to said sensor signal for generating an output signal		E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals

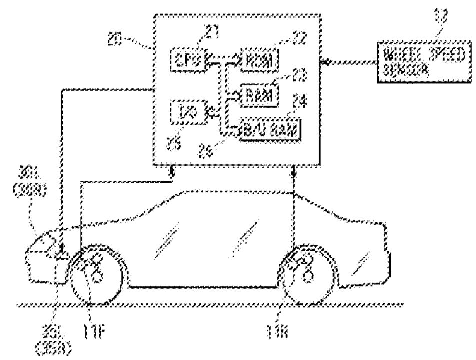
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
		via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 100.	See claim 1 claim chart, above at page 100.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of	

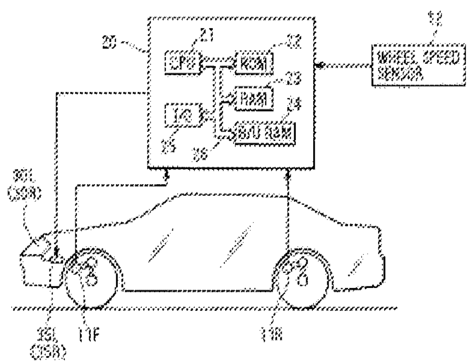
Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
	wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	

Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 100.	See claim 1 claim chart, above at page 100.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided	

Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
	between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	

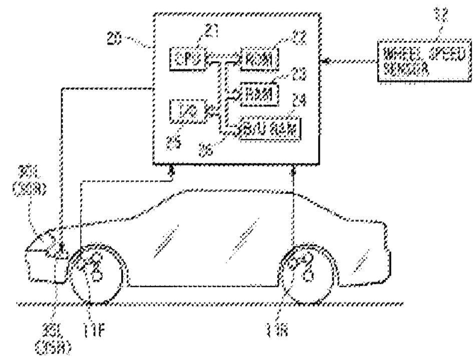
Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
	FIG. 1 	

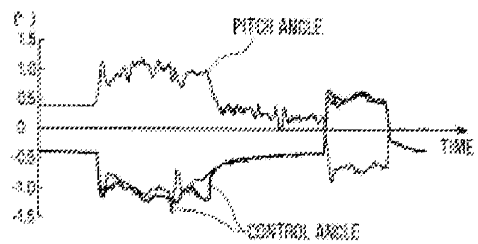
Limitation of '034 Patent Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 100.	See claim 1 claim chart, above at page 100.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading." E.g., page 4, "The four sensors are arranged in pairs one behind the other S1, S2/S3, S4, following the driving direction, on those

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 10 094 (Miskin et al.)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	components of the motor vehicle that experience position change by loading, e.g. on wheel suspensions or shock absorbers."

15. Claims 1, 2, 4, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Okuchi et al. and Leleve Under 35 U.S.C. § 103(a)

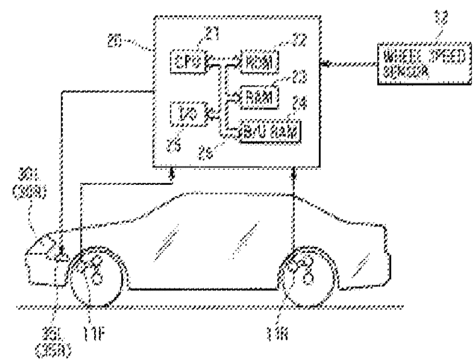
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "In a vehicle headlight optical axis automatic adjusting system, a pitch angle in the longitudinal direction of a vehicle is calculated from a signal of a height sensor."	E.g., page 7, "According to the invention, a device for the dynamic adjustment of the headlights of a vehicle is to be provided, which no longer has the aforementioned disadvantages and allows pleasant night-time driving under all driving conditions and regardless of the state of the road."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20."	E.g., page 12, "The device shown in Fig. 1 has a first sensor 1 between the front axle and the body of the vehicle in order to detect a relative movement. A corresponding sensor 2 is situated on the rear axle."

Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
	E.g., Fig. 1: FIG. 1 	
a controller that is responsive to said sensor signal for generating an output signal		E.g., page 12, "The signals generated by sensors 1, 2 are processed in a mixer stage 3, where a signal is generated that represents the vibration or rocking motion of the vehicle in the course of its movement."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so	E.g., page 8, "One first specific embodiment of the invention is characterized by the fact that the filter includes threshold value elements, via which at least one amplitude threshold is able to be defined, for which the filter predefines a limit frequency. This allows a precise adaptation of the features of the filter to the different interference phenomena requiring an adjustment of the headlight position." See also pages 9 to 10, 13.

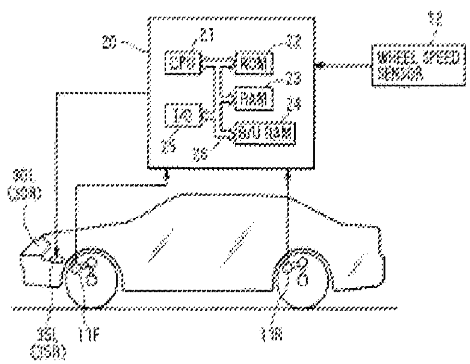
Limitation of '034 Patent Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
	that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7  	
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	E.g., page 12, "The output of filter 4 is connected to a control and amplifier device 6, which outputs a power signal to actuating organs 7, which causes headlights 8 to move."

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 108.	See claim 1 claim chart, above at page 108.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided	

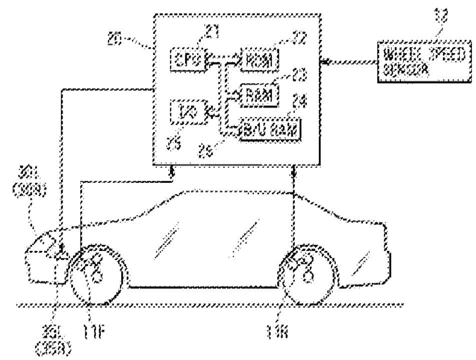
Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
	between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	

Limitation of '034 Patent Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
	FIG. 1 	

Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 108.	See claim 1 claim chart, above at page 108.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	

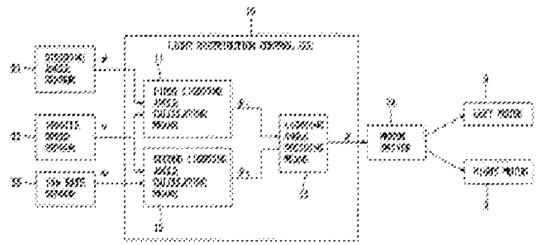
Limitation of '034 Patent Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	

Limitation of '034 Patent Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 108.	See claim 1 claim chart, above at page 108.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., page 12, "The device shown in Fig. 1 has a first sensor 1 between the front axle and the body of the vehicle in order to detect a relative movement. A corresponding sensor 2 is situated on the rear axle."

Limitation of ’034 Patent Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	DE 31 29 891 (Leleve)
	FIG. 1 	

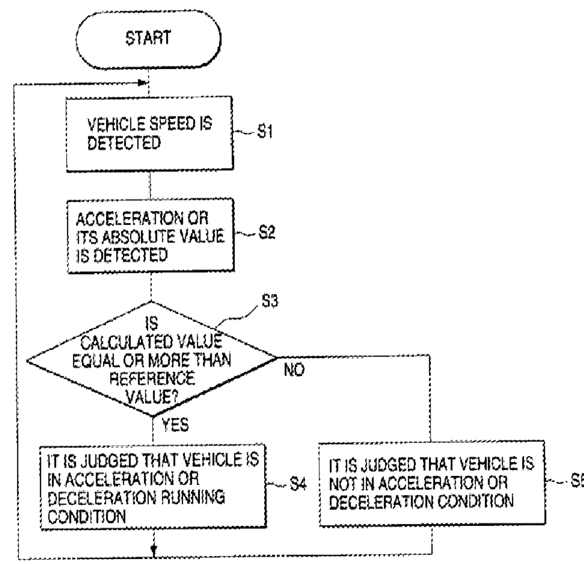
16. Claims 1 to 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Gotoh and Uchida Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "A head lamp device for a vehicle capable of changing a lighting region in front of the vehicle in right and left directions, in which change of the lighting region is suppressed so as not to give the driver a sense of incongruity when a steering wheel is operated in one direction and then rapidly in the other as in case of counter-steering."	E.g., page 1, line 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp so that the illumination direction can always be kept in a predetermined direction."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3	E.g., Page 1, lines 14 to 28, "The conventional device of this type includes a detection device which detects the inclination and height of the vehicle body variable according to the conditions of occupants (such as the number of occupants, the position arrangement of the occupants, and the like), the loaded conditions of loads on board the vehicle, the running conditions of the vehicle, and the like, calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detection device, and adjusts the illumination angle of the vehicle lamp with respect to the initially adjusted value of the vehicle lamp so that the illumination state of the vehicle lamp can always be kept in a desired state, thereby to control the illumination direction of the vehicle lamp for desired light distribution." E.g., Page 8, lines 20 to page 9, line 1, "Here, as basic information used to judge whether the vehicle is in the acceleration or deceleration running condition or not,

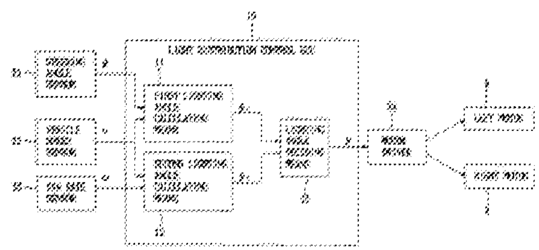
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
	 FIG. 3	besides the information that is given by the vehicle posture detection device 2, as shown in Fig. 1, there is also available information which can be obtained by providing acceleration or deceleration instruction detection device 8 used to detect an acceleration or deceleration instruction or information relating to the present instruction according to the amount of pressing-down of a gas pedal, variations in the opening of a throttle valve or the like, or information which can be obtained by providing an engine revolution number detection device 9 used to detect the number of revolutions of an engine: that is, the information obtained by these detection devices may be transmitted to the acceleration or deceleration running condition judging device 3b." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
		E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."
a controller that is responsive to said sensor signal for generating an output signal	E.g., Col. 4, lines 59 to 60, "The motor 8 is controlled for its driving by a light distribution control ECU 10."	E.g., Page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the

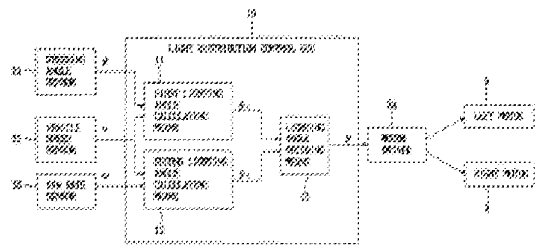
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
		lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, line 42 to col. 7, line 2, "Referring to FIG. 8, from changes of the steering angle φ and the yaw angular velocity ω of FIGS. 7A and 7B, the following is understood. When the vehicle goes around the rightward curve, the steering wheel is turned to the right to have a positive steering angle φ at first, and the vehicle body yaws somewhat after the change of steering angle φ so that the yaw angular velocity ω increases following increase of the steering angle. In the meantime, the rear part of the vehicle is swung outside large, and therefore the driver turns the steering wheel to the left or in the opposite direction rapidly for counter-steering to recover direction of the vehicle. Namely, the steering angle φ changes from an upward incline to a downward incline in FIG. 7A. However, the yaw angular velocity ω is maintained due to inertia.	E.g., Page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle." E.g., Page 10, line 26 to page 11, line 6, "At first, in step S1, the vehicle speed v(t) is detected and, after then, in step S2, the acceleration dv(t)/dt or the absolute value thereof is calculated. Next, in Step S3, it is checked whether the acceleration dv(t)/dt or the absolute value thereof is equal to or more than a reference value or not. If it is found that the acceleration dv(t)/dt or the absolute value thereof is less

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
	Further, when the direction of the vehicle comes to show some recovery, the driver again turns the steering wheel to the right for going around the rightward curve, but he comes to carry out the counter-steering again soon after. Thus, the steering angle φ swings rightward and leftward in large variations. However, while the steering angle φ is swinging rightward and leftward as described above, the yaw angular velocity ω is maintained at a certain angular velocity stably in general, and at a time somewhat before the vehicle passes through the curve completely, the yaw angular velocity ω comes to coincide with the steering angle φ." E.g., Col. 7, lines 34 to 39, "Since the actual light distribution control is performed on the basis of the above-mentioned final lighting angle θ, even if the steering wheel is operated rapidly for the counter-steering and the like, change of the lighting region is suppressed pertinently and the driver is given no sense of incongruity."	than the reference value, then the processing advances to step S5. In step S4, it is judged that the vehicle is in the acceleration or deceleration running condition and, after then, the processing goes back to Step S2. Also, in Step S5, it is judged that the vehicle is not in the acceleration or deceleration running condition and, after then, the processing returns back to the first step S1. E.g., Figure 5: FIG. 5 
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.		E.g., Page 16, line 28 to Page 17, line 6 "Also, if it is judged by the acceleration or deceleration running condition judging device 3b that the vehicle is not in

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
		the acceleration or deceleration running condition, then the illumination angle of the lamp 5 can be controlled by one of the following methods when the drive control device 4a receives an instruction from the acceleration or deceleration running condition judging device 3b: 1) a method for fixing the illumination angle; 2) a method for limiting the range of the illumination angle or forbidding part of the range of the illumination angle; and, 3) a method for changing the response speed or control speed of an actuator." E.g., Page 7, lines 4 to 9 "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., Page 8, lines 1 to 9 "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction."

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 116.	See claim 1 claim chart, above at page 116.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
3. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 116.	See claim 1 claim chart, above at page 116.
wherein said sensor generates a signal that is	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block	

Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
representative of the steering angle of the vehicle.	diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	

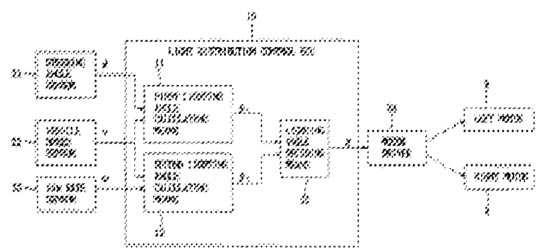
Limitation of '034 Patent Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 116.	See claim 1 claim chart, above at page 116.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.		E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2.

Limitation of '034 Patent Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
		Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 116.	See claim 1 claim chart, above at page 116.

Limitation of '034 Patent Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.		E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

17. Claims 1 to 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Gotoh and Takahashi Under 35 U.S.C. § 103(a)

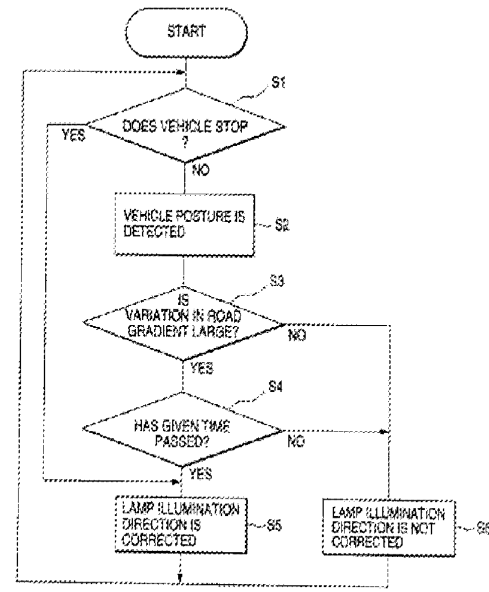
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "A head lamp device for a vehicle capable of changing a lighting region in front of the vehicle in right and left directions, in which change of the lighting region is suppressed so as not to give the driver a sense of incongruity when a steering wheel is operated in one direction and then rapidly in the other as in case of counter-steering."	E.g., page 5, line 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjust the illumination direction of a vehicle lamp so that it can be always kept in a predetermined direction."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
		stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle.". E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
		method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."
a controller that is responsive to said sensor signal for generating an output signal	E.g., Col. 4, lines 59 to 60, "The motor 8 is controlled for its driving by a light distribution control ECU 10."	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, line 42 to col. 7, line 2, "Referring to FIG. 8, from changes of the steering angle φ and the yaw angular velocity ω of FIGS. 7A and 7B, the following is understood. When the vehicle goes around the rightward curve, the steering wheel is turned to the right to have a positive steering angle φ at first, and the vehicle body yaws somewhat after the change of steering angle φ so that the yaw angular velocity ω increases following increase of the steering angle. In the meantime, the rear part of the vehicle is swung outside large, and therefore the driver turns the steering wheel to the left or in the opposite direction rapidly for counter-steering to recover direction of the vehicle. Namely, the steering angle φ changes from an upward incline to a	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, line to page 10, line 3 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with

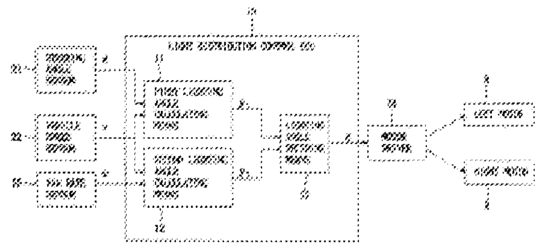
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
	downward incline in FIG. 7A. However, the yaw angular velocity ω is maintained due to inertia. Further, when the direction of the vehicle comes to show some recovery, the driver again turns the steering wheel to the right for going around the rightward curve, but he comes to carry out the counter-steering again soon after. Thus, the steering angle φ swings rightward and leftward in large variations. However, while the steering angle φ is swinging rightward and leftward as described above, the yaw angular velocity ω is maintained at a certain angular velocity stably in general, and at a time somewhat before the vehicle passes through the curve completely, the yaw angular velocity ω comes to coincide with the steering angle φ." E.g., Col. 7, lines 34 to 39, "Since the actual light distribution control is performed on the basis of the above-mentioned final lighting angle θ, even if the steering wheel is operated rapidly for the counter-steering and the like, change of the lighting region is suppressed pertinently and the driver is given no sense of incongruity."	respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected. Also, the threshold values may be set in various manners, for example, they may be set as a constant value, or may be set as a variable which varies according to the speeds of the vehicle." E.g., Page 10, line 20 to page 11, line 11, "In Step S4, it is checked whether a state in which the amount of variations of the detect signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues for a given period of time or longer or not. If it is found that such state continues, then the processing advances to Step S and, if not, then the processing goes to Step S6. Here, when a threshold value relating to the running distance of the vehicle is set instead of setting a threshold value relating to the above-mentioned continuing

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
		time, in Step S4, it may be checked whether a state in which the amount of variations in the detect signal supplied by the vehicle posture detection device 2 is equal to or more than a given reference value continues over a given running distance or not. In Step S5, in accordance with the information from the vehicle posture detection device 2, the control device 4 transmits to the drive control device 5a a control signal which causes the illumination direction of the lamp 6 to be kept in a predetermined direction, and the illumination direction of the lamp 6 is corrected through the drive mechanism 5. After then, the processing goes back to the first step S1. Also, in Step 6, the correction of the illumination direction of the lamp 6 is not carried out but the processing returns to the first Step S1." E.g., Figure 7:

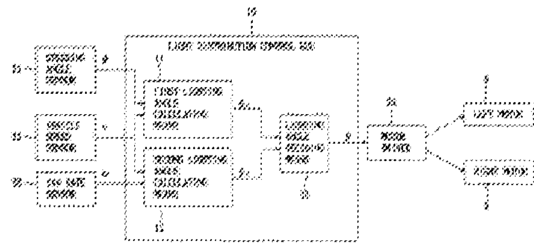
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
		FIG. 7 
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.		E.g., page 2, lines 14 to 17 "However, in the above-mentioned automatic adjustment device, since the lamp is driven with high frequency, an actuator used in a drive mechanism for driving the lamp is required to show high response property and high durability." E.g., page 6, lines 26 to 32 "When the control device 4 receives the detect signal of the vehicle running condition detection device 3 and finds from this detect signal that the vehicle is standing

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
		still, the control device 4, in accordance with information on the vehicle posture obtained from the vehicle posture detection device 2, transmits to the drive signal 5 a control signal for correction of the illumination direction of the lamp 6." E.g., page 7, lines 12 to 17 "In view of this, the control device 4 is structured such that, based on the information from the vehicle posture detection device 2, it can detect the amount of variations in the gradient of the road and, therefore, when the road gradient varies suddenly, it can correct the illumination direction of the lamp 6." E.g., page 11, lines 12 to 16 "The correction of the illumination direction of the lamp 6 in Step S5 is carried out by the drive device 5 based on the control signal transmitted from the control device 4 and, as a method for executing such correction, there are available two methods . . ."

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 126.	See claim 1 claim chart, above at page 126.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
	a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
3. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 126.	See claim 1 claim chart, above at page 126.
wherein said sensor generates a signal that is representative of the steering angle of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw	

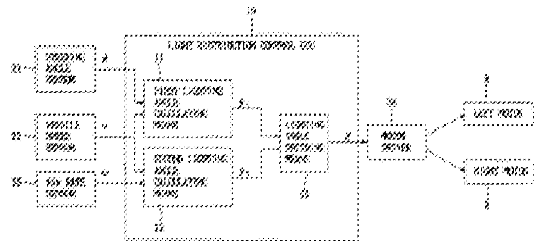
Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
	angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	

Limitation of '034 Patent Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 126.	See claim 1 claim chart, above at page 126.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.		E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 774 (Takahashi)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 126.	See claim 1 claim chart, above at page 126.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.		E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

18. Claims 1 to 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Gotoh and Hussman Under 35 U.S.C. § 103(a)

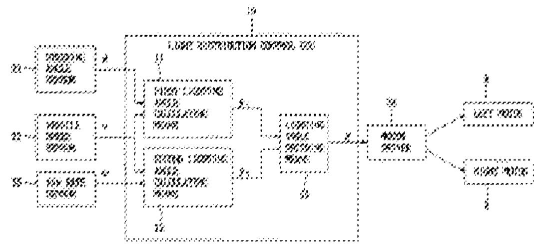
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "A head lamp device for a vehicle capable of changing a lighting region in front of the vehicle in right and left directions, in which change of the lighting region is suppressed so as not to give the driver a sense of incongruity when a steering wheel is operated in one direction and then rapidly in the other as in case of counter-steering."	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	 FIG. 5	former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."
a controller that is responsive to said sensor signal for generating an output signal	E.g., Col. 4, lines 59 to 60, "The motor 8 is controlled for its driving by a light distribution control ECU 10."	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, line 42 to col. 7, line 2, "Referring to FIG. 8, from changes of the steering angle φ and the yaw angular velocity ω of FIGS. 7A and 7B, the following is understood. When the vehicle goes around the rightward curve, the steering wheel is turned to the right to have a positive	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no

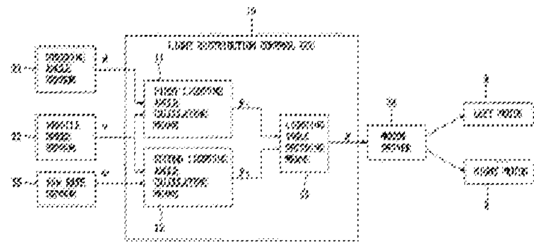
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	steering angle φ at first, and the vehicle body yaws somewhat after the change of steering angle φ so that the yaw angular velocity ω increases following increase of the steering angle. In the meantime, the rear part of the vehicle is swung outside large, and therefore the driver turns the steering wheel to the left or in the opposite direction rapidly for counter-steering to recover direction of the vehicle. Namely, the steering angle φ changes from an upward incline to a downward incline in FIG. 7A. However, the yaw angular velocity ω is maintained due to inertia. Further, when the direction of the vehicle comes to show some recovery, the driver again turns the steering wheel to the right for going around the rightward curve, but he comes to carry out the counter-steering again soon after. Thus, the steering angle φ swings rightward and leftward in large variations. However, while the steering angle φ is swinging rightward and leftward as described above, the yaw angular velocity ω is maintained at a certain angular velocity stably in general, and at a time somewhat before the vehicle passes through the curve completely, the yaw angular velocity ω comes to coincide with the steering angle φ." E.g., Col. 7, lines 34 to 39, "Since the actual light distribution control is performed on the basis of	difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R." E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided." E.g., col. 6, line 10 to 34, "In this connection, it is beneficial that upon the presence of a difference between the second, filtered, nominal-value signal to the third, filtered, nominal-value signal and upon termination of a difference is again switched from the third, filtered, nominal-value signal to the first, filtered, nominal-value signal because in this manner, in an uncomplicated and cost effective manner, upon the presence of an inclination change of the motor vehicle body which is not attributable to a change in loading or to road surface unevenness, the regulation of the illumination range of the motor vehicle, in dependence from the third, long, filter time constant results, whereby the third, filtered, nominal-value signal is independent, or substantially independent, from the disturbing, or distorting, short time inclination changes so that

Limitation of ’034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	the above-mentioned final lighting angle θ, even if the steering wheel is operated rapidly for the counter-steering and the like, change of the lighting region is suppressed pertinently and the driver is given no sense of incongruity.”	after inclination changes of the motor-vehicle body which, for example, are caused by driving about a curve, false adjustments of the illumination range are not caused which can lead to the blinding of oncoming traffic or to losses in illumination range, which eliminates a danger during operation of a motor vehicle.”
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.		E.g., col. 3, lines 16 to 18, “The regulator R regulates the position of adjusting elements, which are shown here in block form and which change the positions of headlights.”

Limitation of ’034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 136.	See claim 1 claim chart, above at page 136.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, lines 61 to 67, “Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω.” E.g., Figure 3	E.g., col. 3, lines 40 to 45, “The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded.”

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	 FIG. 3	

Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
3. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 136.	See claim 1 claim chart, above at page 136.
wherein said sensor generates a signal that is representative of the steering angle of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3	

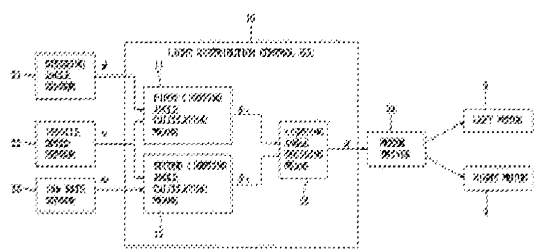
Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
	 FIG. 5	

Limitation of '034 Patent Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 136.	See claim 1 claim chart, above at page 136.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.		E.g. col. 1, lines 6 to 20, "This invention concerns a method to regulate an illuminating range of a motor vehicle in which signals are measured at a position on a front axle and at a position on a rear axle, which signals depend upon a relative position of a motor vehicle body, or chassis, to the front and rear axles, with a difference between these signals being formed as a difference signal, with the resulting difference signal, as a nominal-value signal, being filtered to a first mean, or average, value, with a time for the first average-value formation being determined by a first filter time constant, and with positions of adjusting elements being regulated when the first, filtered, nominal-value signal deviates from a

Limitation of '034 Patent Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
		predetermined, or set, value and an apparatus for regulating the illumination range of a motor vehicle."

Limitation of '034 Patent Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	U.S. Patent No. 5,182,460 (Hussman)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 136.	See claim 1 claim chart, above at page 136.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.		E.g. col. 1, lines 6 to 20, "This invention concerns a method to regulate an illuminating range of a motor vehicle in which signals are measured at a position on a front axle and at a position on a rear axle, which signals depend upon a relative position of a motor vehicle body, or chassis, to the front and rear axles, with a difference between these signals being formed as a difference signal, with the resulting difference signal, as a nominal-value signal, being filtered to a first mean, or average, value, with a time for the first average-value formation being determined by a first filter time constant, and with positions of adjusting elements being regulated when the first, filtered, nominal-value signal deviates from a predetermined, or set, value and an apparatus for regulating the illumination range of a motor vehicle."

19. Claims 1, 2, 3, and 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Gotoh and Miskin et al. Under 35 U.S.C. § 103(a)

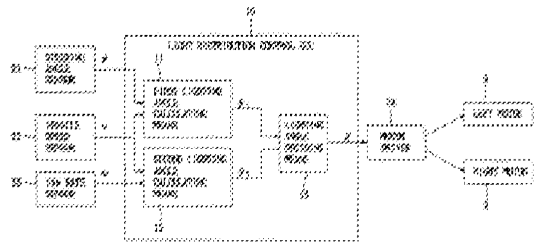
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "A head lamp device for a vehicle capable of changing a lighting region in front of the vehicle in right and left directions, in which change of the lighting region is suppressed so as not to give the driver a sense of incongruity when a steering wheel is operated in one direction and then rapidly in the other as in case of counter-steering."	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading." E.g., page 4, "The four sensors are arranged in pairs one behind the other S1, S2/S3, S4, following the driving direction, on those components of the motor vehicle that experience position change by loading, e.g. on wheel suspensions or shock absorbers."

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
a controller that is responsive to said sensor signal for generating an output signal	E.g., Col. 4, lines 59 to 60, "The motor 8 is controlled for its driving by a light distribution control ECU 10."	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, line 42 to col. 7, line 2, "Referring to FIG. 8, from changes of the steering angle φ and the yaw angular velocity ω of FIGS. 7A and 7B, the following is understood. When the vehicle goes around the rightward curve, the steering wheel is turned to the right to have a positive steering angle φ at first, and the vehicle body yaws somewhat after the change of steering angle φ so that the yaw angular velocity ω increases following increase of the steering angle. In the meantime, the rear part of the vehicle is swung outside large, and therefore the driver turns the steering wheel to the left or in the opposite direction rapidly for counter-steering to recover direction of the vehicle. Namely, the steering	E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."

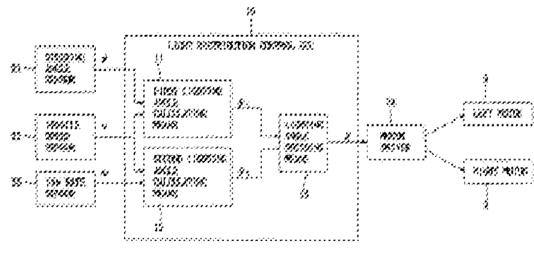
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
	angle φ changes from an upward incline to a downward incline in FIG. 7A. However, the yaw angular velocity ω is maintained due to inertia. Further, when the direction of the vehicle comes to show some recovery, the driver again turns the steering wheel to the right for going around the rightward curve, but he comes to carry out the counter-steering again soon after. Thus, the steering angle φ swings rightward and leftward in large variations. However, while the steering angle φ is swinging rightward and leftward as described above, the yaw angular velocity ω is maintained at a certain angular velocity stably in general, and at a time somewhat before the vehicle passes through the curve completely, the yaw angular velocity ω comes to coincide with the steering angle φ." E.g., Col. 7, lines 34 to 39, "Since the actual light distribution control is performed on the basis of the above-mentioned final lighting angle θ, even if the steering wheel is operated rapidly for the counter-steering and the like, change of the lighting region is suppressed pertinently and the driver is given no sense of incongruity."	
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.		E.g., page 5, "If the signals that lead to measured data are based on light load such as those caused by road bumps, then it will result on average in a differential value that provides only a small

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
		deviation from the ideal headlight position value, thus the predetermined threshold value is not exceeded. For heavier loads, the threshold value is exceeded, the microprocessor 4 transmits signals via the digital/analog converter 6, 6' and the operational amplifier 7, 7' to the respective headlights adjustment devices, which then change the position of the headlights accordingly using conventional tools, such as, for example, spindles, which convert the rotary motion of the motor into linear movement of the headlights."

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 143.	See claim 1 claim chart, above at page 143.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3	

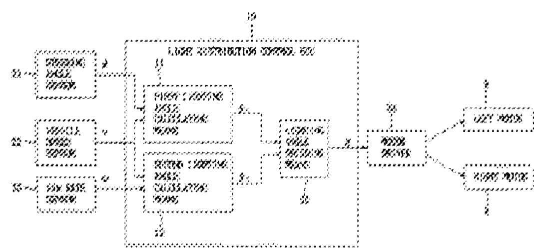
Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
	 FIG. 3	

Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
3. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 143.	See claim 1 claim chart, above at page 143.
wherein said sensor generates a signal that is representative of the steering angle of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3	

Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
	 FIG. 3	

Limitation of '034 Patent Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 10 094 (Miskin et al.)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart, above at page 143.	See claim 1 claim chart, above at page 143.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.		E.g., Abstract, "A device for automatic headlight adjustment in motor vehicles consists of four sensors which are arranged in pairs one behind the other in the direction of travel on those components of the motor vehicle which respond to loading." E.g., page 4, "The four sensors are arranged in pairs one behind the other S1, S2/S3, S4, following the driving direction, on those components of the motor vehicle that experience position change by loading, e.g. on wheel suspensions or shock absorbers."

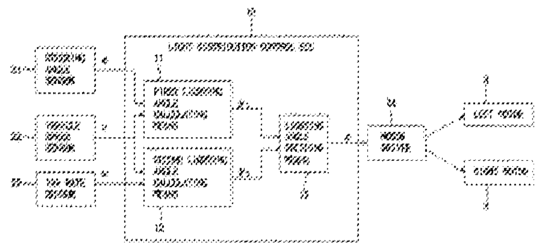
20. Claims 1 to 5 of U.S. Patent No. 7,231,034 Are Unpatentable Over the Combination of Gotoh and Leleve Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 29 891 (Leleve)
1. An automatic directional control system for a vehicle headlight comprising:	E.g., Abstract, "A head lamp device for a vehicle capable of changing a lighting region in front of the vehicle in right and left directions, in which change of the lighting region is suppressed so as not to give the driver a sense of incongruity when a steering wheel is operated in one direction and then rapidly in the other as in case of counter-steering."	E.g., page 7, "According to the invention, a device for the dynamic adjustment of the headlights of a vehicle is to be provided, which no longer has the aforementioned disadvantages and allows pleasant night-time driving under all driving conditions and regardless of the state of the road."
a sensor that is adapted to generate a signal that is representative of a condition of the vehicle, said sensed condition includes one or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	E.g., page 12, "The device shown in Fig. 1 has a first sensor 1 between the front axle and the body of the vehicle in order to detect a relative movement. A corresponding sensor 2 is situated on the rear axle."

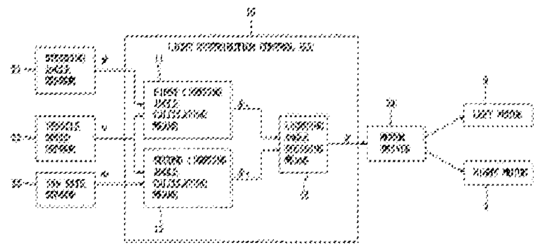
Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 29 891 (Leleve)
a controller that is responsive to said sensor signal for generating an output signal	E.g., Col. 4, lines 59 to 60, "The motor 8 is controlled for its driving by a light distribution control ECU 10."	E.g., page 12, "The signals generated by sensors 1, 2 are processed in a mixer stage 3, where a signal is generated that represents the vibration or rocking motion of the vehicle in the course of its movement."
only when said sensor signal changes by more than a predetermined minimum threshold amount to prevent said actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating condition; and	E.g., col. 6, line 42 to col. 7, line 2, "Referring to FIG. 8, from changes of the steering angle φ and the yaw angular velocity ω of FIGS. 7A and 7B, the following is understood. When the vehicle goes around the rightward curve, the steering wheel is turned to the right to have a positive steering angle φ at first, and the vehicle body yaws somewhat after the change of steering angle φ so that the yaw angular velocity ω increases following increase of the steering angle. In the meantime, the rear part of the vehicle is swung outside large, and therefore the driver turns the steering wheel to the left or in the opposite direction rapidly for counter-steering to recover direction of the vehicle. Namely, the steering angle φ changes from an upward incline to a downward incline in FIG. 7A. However, the yaw angular velocity ω is maintained due to inertia. Further, when the direction of the vehicle comes to show some recovery, the driver again turns the steering wheel to the right for going around the rightward curve, but he comes to carry out the counter-steering again soon after. Thus, the steering angle φ swings rightward and leftward in	E.g., page 8, "One first specific embodiment of the invention is characterized by the fact that the filter includes threshold value elements, via which at least one amplitude threshold is able to be defined, for which the filter predefines a limit frequency. This allows a precise adaptation of the features of the filter to the different interference phenomena requiring an adjustment of the headlight position." See also pages 9 to 10, 13.

Limitation of '034 Patent Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 29 891 (Leleve)
	large variations. However, while the steering angle φ is swinging rightward and leftward as described above, the yaw angular velocity ω is maintained at a certain angular velocity stably in general, and at a time somewhat before the vehicle passes through the curve completely, the yaw angular velocity ω comes to coincide with the steering angle φ." E.g., Col. 7, lines 34 to 39, "Since the actual light distribution control is performed on the basis of the above-mentioned final lighting angle θ, even if the steering wheel is operated rapidly for the counter-steering and the like, change of the lighting region is suppressed pertinently and the driver is given no sense of incongruity."	
an actuator that is adapted to be connected to the headlight to effect movement thereof in accordance with said output signal.		E.g., page 12, "The output of filter 4 is connected to a control and amplifier device 6, which outputs a power signal to actuating organs 7, which causes headlights 8 to move."

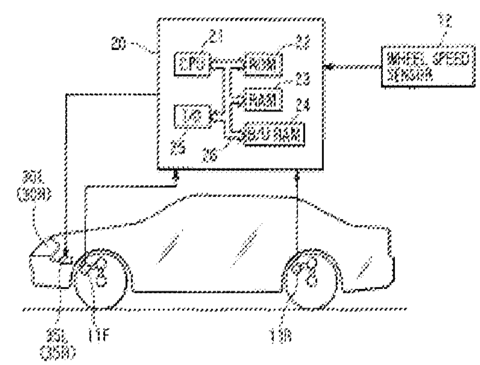
Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 29 891 (Leleve)
2. The automatic directional control system defined in claim 1	See claim 1 claim chart above at page 149.	See claim 1 claim chart above at page 149.
wherein said sensor generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing	

Limitation of '034 Patent Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 29 891 (Leleve)
	the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	

Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 29 891 (Leleve)
3. The automatic directional control system defined in claim 1	See claim 1 claim chart above at page 149.	See claim 1 claim chart above at page 149.
wherein said sensor generates a signal that is representative of the steering angle of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle	

Limitation of '034 Patent Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	DE 31 29 891 (Leleve)
	speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	

Limitation of '034 Patent Claim 4	DE 31 29 891 (Leleve)	U.S. Patent No. 5,909,949 (Gotoh)
4. The automatic directional control system defined in claim 1	See claim 1 claim chart above at page 149.	See claim 1 claim chart above at page 149.
wherein said sensor generates a signal that is representative of the pitch of the vehicle.		E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front

Limitation of '034 Patent Claim 4	DE 31 29 891 (Leleve)	U.S. Patent No. 5,909,949 (Gotoh)
		wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 

Limitation of '034 Patent Claim 5	DE 31 29 891 (Leleve)	U.S. Patent No. 5,909,949 (Gotoh)
5. The automatic directional control system defined in claim 1	See claim 1 claim chart above at page 149.	See claim 1 claim chart above at page 149.
wherein said sensor generates a signal that is representative of the suspension height of the vehicle.	E.g., page 12, "The device shown in Fig. 1 has a first sensor 1 between the front axle and the body of the vehicle in order to detect a relative movement. A corresponding sensor 2 is situated on the rear axle."	

21. Proposed Claims 1, 2, 4 to 6, 9 to 13, 20, 22, 24, 25, 37, 38, 41, 42, 44, and 45 Are Anticipated by Uchida Under 35 U.S.C. § 102(b)

Limitation of '034 Patent Proposed Claim 1	GB 2 309 773 (Uchida)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., page 1, lines 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp so that the illumination direction can be always kept in a predetermined direction."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the

Limitation of '034 Patent Proposed Claim 1	GB 2 309 773 (Uchida)
	vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., page 15, line 30 to page 16, line 2 "As has been described above, according to the respective methods, it is possible to judge whether the vehicle is running in the acceleration condition or in the deceleration condition. Also, these methods can be applied in various manners, for example, the respective methods can be used individually, or some of them may be combined together for the enhanced accuracy of the judgment."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Proposed Claim 1	GB 2 309 773 (Uchida)
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output signal.	E.g., page 16, line 28 to page 17, line 6 "Also, if it is judged by the acceleration or deceleration running condition judging device 3b that the vehicle is not in the acceleration or deceleration running condition, then the illumination angle of the lamp 5 can be controlled by one of the following methods when the drive control device 4a receives an instruction from the acceleration or deceleration running condition judging device 3b: 1) a method for fixing the illumination angle; 2) a method for limiting the range of the illumination angle or forbidding part of the range of the illumination angle; and, 3) a method for changing the response speed or control speed of an actuator." E.g., page 7, lines 4 to 9, "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., page 8, lines 1 to 9, "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which

Limitation of '034 Patent Proposed Claim 1	GB 2 309 773 (Uchida)
	allows the illumination direction of the lamp 5 to be corrected in a predetermined direction."

Limitation of '034 Patent Proposed Claim 2	GB 2 309 773 (Uchida)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Proposed Claim 4	GB 2 309 773 (Uchida)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the

Limitation of '034 Patent Proposed Claim 4	GB 2 309 773 (Uchida)
	vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 5	GB 2 309 773 (Uchida)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by

Limitation of '034 Patent Proposed Claim 5	GB 2 309 773 (Uchida)
	comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 6	GB 2 309 773 (Uchida)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein said two or more sensors include a first sensor and a second sensor.	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is

Limitation of '034 Patent Proposed Claim 6	GB 2 309 773 (Uchida)
	obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

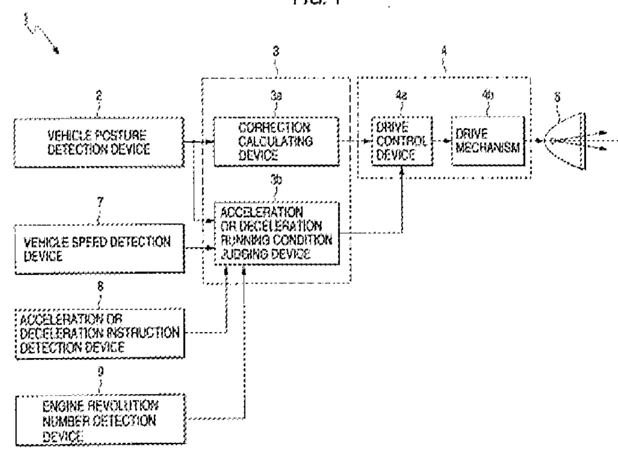
Limitation of '034 Patent Proposed Claim 9	GB 2 309 773 (Uchida)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 161.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions

Limitation of '034 Patent Proposed Claim 9	GB 2 309 773 (Uchida)
	thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 10	GB 2 309 773 (Uchida)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 161.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 10	GB 2 309 773 (Uchida)
	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Proposed Claim 11	GB 2 309 773 (Uchida)
11. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 161.
wherein said first sensor is physically separate from said second sensor.	E.g., page 6, line 30 to page 7, line 3, "In order for the vehicle posture detection device and the acceleration or deceleration running condition judging device to transmit signals to one another, they must be separate: "The outputs of the vehicle posture detection device 2 are transmitted to the correction calculating device 3a and acceleration or deceleration running condition judging device 3b which cooperate together in forming the control device 3, and these outputs are used as control signals to be applied to the drive device 4 and are then used as instructions for correcting the illumination of lamp 5." E.g., Fig. 1:

Limitation of '034 Patent Proposed Claim 11	GB 2 309 773 (Uchida)
	FIG. 1 

Limitation of '034 Patent Proposed Claim 12	GB 2 309 773 (Uchida)
12. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein said sensed conditions further include one or more of a rate of change of road speed of the vehicle, a rate of change of steering angle of the vehicle, a rate of change of pitch of the vehicle, or a rate of change of suspension height of the vehicle.	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by

Limitation of '034 Patent Proposed Claim 12	GB 2 309 773 (Uchida)
	comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 20	GB 2 309 773 (Uchida)
20. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein the at least one actuator includes an electronically controlled mechanical actuator.	E.g., page 19, lines 6 to 22 "For example, when the actuator incorporates therein a DC (direct current) motor, a difference between the control target position (or angle) of the actuator and the current position (or angle) thereof is detected, and a pulse signal having a duty cycle corresponding to the detected position difference is supplied to the DC motor to thereby control the position of the actuator, as shown in Fig. 11, if the characteristic of the duty cycle DT with respect to the position difference δxx is changed from the state of a relatively faster response speed shown by a broken line 10 to the state of a slow response speed shown by a solid line 11, with respect to the same position difference δxx=δxxa, the duty cycle DT in the other running conditions of the vehicle than the acceleration or deceleration running condition thereof is smaller than the duty cycle in the acceleration or deceleration running condition of the vehicle, so that the drive control on the lamp 5 by the actuator is slowed down."

Limitation of '034 Patent Proposed Claim 22	GB 2 309 773 A (Uchida)
22. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein the at least one actuator includes a servo motor.	E.g., page 19, lines 6 to 22 "For example, when the actuator incorporates therein a DC (direct current) motor, a difference between the control target position (or angle) of the actuator and the current position (or angle) thereof is detected, and a pulse signal having a duty cycle corresponding to the detected position difference is supplied to the DC motor to thereby control the position of the actuator, as shown in Fig. 11, if the characteristic of the duty cycle DT with respect to the position difference δxx is changed from the state of a relatively faster response speed shown by a broken line 10 to the state of a slow response speed shown by a solid line 11, with respect to the same position difference δxx=δxxa, the duty cycle DT in the other running conditions of the vehicle than the acceleration or deceleration running condition thereof is smaller than the duty cycle in the acceleration or deceleration running condition of the vehicle, so that the drive control on the lamp 5 by the actuator is slowed down."

Limitation of '034 Patent Proposed Claim 24	GB 2 309 773 (Uchida)
24. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted relative to the vehicle.	E.g., page 16, lines 6 to 15 "The simplest method for changing the illumination pattern of the lamp 5 in a vertical plane is a method which changes the illumination angle of the lamp 5 with respect to a horizontal plane by rotating the entire lamp 5 about the rotary shaft thereof. For example, the right and left side surfaces of the lamp 5 are supported in a freely rotatable manner and the rotary shaft of the lamp 5 is rotated directly by a drive source such as a motor or the like, or, there is available a drive mechanism in which a member fixed to the lamp 5 or formed integrally with the lamp 5 is rotated by the drive device 4."

Limitation of '034 Patent Proposed Claim 25	GB 2 309 773 (Uchida)
25. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted up and down relative to a horizontal reference position.	E.g., page 16, lines 6 to 15 "The simplest method for changing the illumination pattern of the lamp 5 in a vertical plane is a method which changes the illumination angle of the lamp 5 with respect to a horizontal plane by rotating the entire lamp 5 about the rotary shaft thereof. For example, the right and left side surfaces of the lamp 5 are supported in a freely rotatable manner and the rotary shaft of the lamp 5 is rotated directly by a drive source such as a motor or the like, or, there is available a drive mechanism in which a member fixed to the lamp 5 or formed integrally with the lamp 5 is rotated by the drive device 4."

Limitation of '034 Patent Proposed Claim 37	GB 2 309 773 (Uchida)
37. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running

Limitation of '034 Patent Proposed Claim 37	GB 2 309 773 (Uchida)
	condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 38	GB 2 309 773 (Uchida)
38. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by a pitch level sensor.	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed

Limitation of '034 Patent Proposed Claim 38	GB 2 309 773 (Uchida)
	to a certain degree."

Limitation of '034 Patent Proposed Claim 41	GB 2 309 773 A (Uchida)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., page 4, lines 16 to 27, "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Proposed Claim 42	GB 2 309 773 (Uchida)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2."

Limitation of '034 Patent Proposed Claim 42	GB 2 309 773 (Uchida)
	E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., page 15, line 30 to page 16, line 2 "As has been described above, according to the respective methods, it is possible to judge whether the vehicle is running in the acceleration condition or in the deceleration condition. Also, these methods can be applied in various manners, for example, the respective methods can be used individually, or some of them may be combined together for the enhanced accuracy of the judgment."

Limitation of ’034 Patent Proposed Claim 44	GB 2 309 773 (Uchida)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein said controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously in response to relatively small variations in the sensed operating conditions.	E.g., page 4, lines 16 to 27 “According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle.”

Limitation of ’034 Patent Proposed Claim 45	GB 2 309 773 (Uchida)
45. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 156.
wherein controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the sensed operating conditions.	E.g., page 4, lines 16 to 27 “According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle.”

22. Proposed Claims 1, 2, 4 to 6, 9 to 11, 17, 18, 20, 21, 22, 24, 25, 28, 33, 34, 37, 38, 41, 42, 44, and 45 Are Anticipated by Takahashi Under 35 U.S.C. § 102(b)

Limitation of '034 Patent Proposed Claim 1	GB 2 309 774 (Takahashi)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping

Limitation of '034 Patent Proposed Claim 1	GB 2 309 774 (Takahashi)
	or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle." E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2."
only when said at least one of the two or more sensor signals changes by	E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination

Limitation of '034 Patent Proposed Claim 1	GB 2 309 774 (Takahashi)
more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output signal.	E.g., page 2, lines 14 to 17 "However, in the above-mentioned automatic adjustment device, since the lamp is driven with high frequency, an actuator used in a drive mechanism for driving the lamp is required to show high response property and high durability." E.g., page 6, lines 26 to 32 "When the control device 4 receives the detect signal of the vehicle running condition detection device 3 and finds from this detect signal that the vehicle is standing still, the control device 4, in accordance with information on the vehicle posture obtained from the vehicle posture detection device 2, transmits to the drive signal 5 a control signal for correction of the illumination direction of the lamp 6." E.g., page 7, lines 12 to 17 "In view of this, the control device 4 is structured such that, based on the information from the vehicle posture detection device 2, it can detect the amount of variations in the gradient of the road and, therefore, when the road gradient varies suddenly, it can correct the illumination direction of the lamp 6."

Limitation of '034 Patent Proposed Claim 1	GB 2 309 774 (Takahashi)
	E.g., page 11, lines 12 to 16, "The correction of the illumination direction of the lamp 6 in Step S5 is carried out by the drive device 5 based on the control signal transmitted from the control device 4 and, as a method for executing such correction, there are available two methods as follows: 1) a method for inclining the entire lamp, and, 2) a method for moving the component (such as a lens, a reflector, a shade or the like) of the optical system of the lamp."

Limitation of '034 Patent Proposed Claim 2	GB 2 309 774 (Takahashi)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

Limitation of '034 Patent Proposed Claim 4	GB 2 309 774 (Takahashi)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is

Limitation of '034 Patent Proposed Claim 4	GB 2 309 774 (Takahashi)
	obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 5	GB 2 309 774 (Takahashi)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 6	GB 2 309 774 (Takahashi)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.

Limitation of '034 Patent Proposed Claim 6	GB 2 309 774 (Takahashi)
wherein said two or more sensors include a first sensor and a second sensor.	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

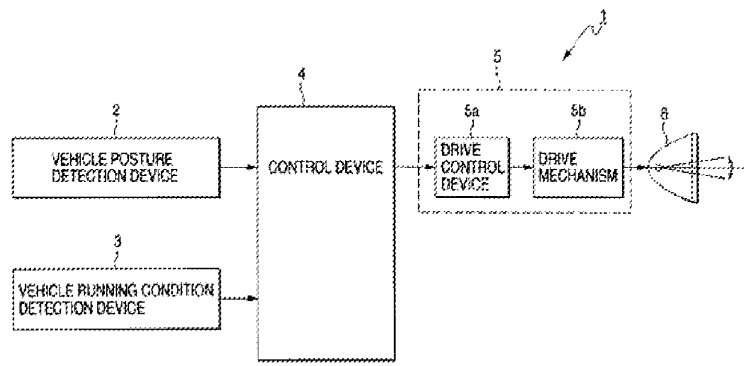
Limitation of '034 Patent Proposed Claim 9	GB 2 309 774 (Takahashi)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 177.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 9	GB 2 309 774 (Takahashi)
	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 10	GB 2 309 774 (Takahashi)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 177.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4

Limitation of '034 Patent Proposed Claim 10	GB 2 309 774 (Takahashi)
	is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

Limitation of '034 Patent Proposed Claim 11	GB 2 309 774 (Takahashi)
11. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 177.
wherein said first sensor is physically separate from said second sensor.	See, e.g., Fig. 1, ref. 2, 3 (Separate detection devices). See also 5:25-27 ("an illumination direction control device 1 is composed of vehicle posture detection device 2, vehicle running condition detection device 3, control device 4, drive device 5 . . ., and lamp 6.")

Limitation of '034 Patent Proposed Claim 11	GB 2 309 774 (Takahashi)
	FIG. 1 

Limitation of '034 Patent Proposed Claim 17	GB 2 309 774 (Takahashi)
17. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the automatic directional control system is configured to include at least two actuators.	E.g., page 16, line 31 to page 17, line 1 "A rudder resistance network 18, which corresponds to the above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19' which are disposed downstream thereof."

Limitation of '034 Patent Proposed Claim 18	GB 2 309 774 (Takahashi)
18. The automatic directional control system defined in claim 17,	See claim 17 claim chart, above at page 181.
wherein the at least two actuators include a first actuator that is adapted to be connected to the headlight to effect movement thereof in a vertical direction.	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to a horizontal plane including the optical axis of the lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably, and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally with the lamp 6 is rotated by the drive device 5."

Limitation of '034 Patent Proposed Claim 20	GB 2 309 774 (Takahashi)
20. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the at least one actuator includes an electronically controlled mechanical actuator.	E.g., page 16, line 31 to page 17, line 1 "A rudder resistance network 18, which corresponds to the above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19' which are disposed downstream thereof." E.g., page 11, line 32 to page 12, line 3 "As an example of such lamp, there is available a lamp including a mechanism which can use the rotational force of the motor as the rotational force of the lam through a transmission mechanism using a worm and worm wheel (for example, see Japanese Patent Publication No. Hei. 63-166672)."

Limitation of '034 Patent Proposed Claim 21	GB 2 309 774 (Takahashi)
21. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the at least one actuator includes a step motor.	E.g., page 18, lines 5 to 8 "Besides this, according to the invention, the lamp or the component thereof can be driven or controlled by use of a stepping motor to thereby correct the illumination direction of the lamp."

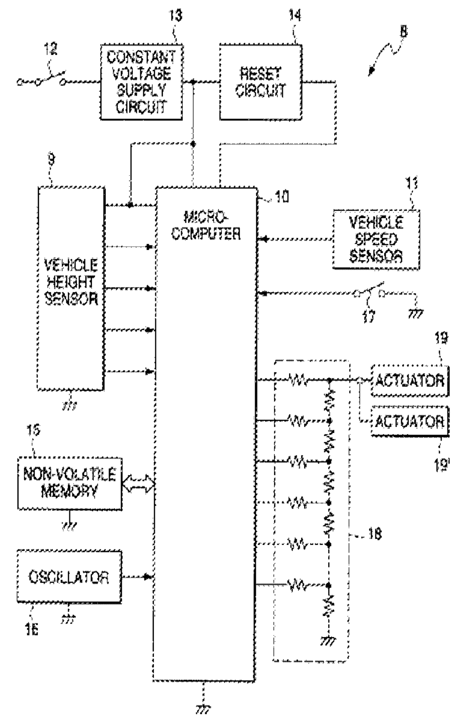
Limitation of '034 Patent Proposed Claim 22	GB 2 309 774 (Takahashi)
22. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the at least one actuator includes a servo motor.	E.g., page 16, line 31 to page 17, line 1 "A rudder resistance network 18, which corresponds to the above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19' which are disposed downstream thereof." E.g., page 11, line 32 to page 12, line 3 "As an example of such lamp, there is available a lamp including a mechanism which can use the rotational force of the motor as the rotational force of the lam through a transmission mechanism using a worm and worm wheel (for example, see Japanese Patent Publication No. Hei. 63-166672)."

Limitation of '034 Patent Proposed Claim 24	GB 2 309 774 (Takahashi)
24. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted relative to the vehicle.	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to

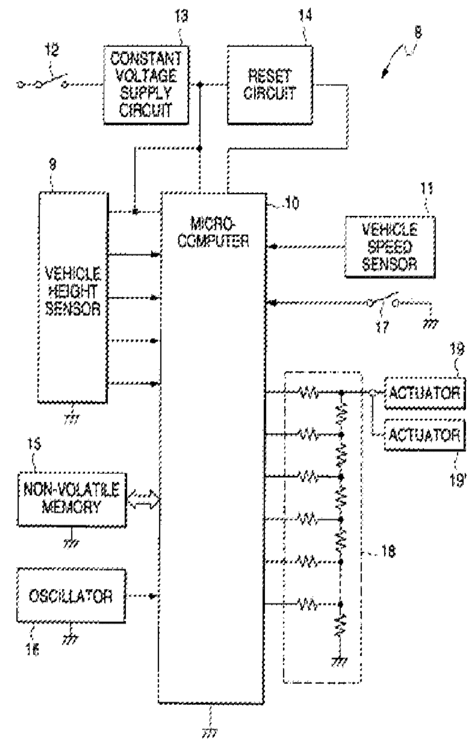
Limitation of '034 Patent Proposed Claim 24	GB 2 309 774 (Takahashi)
	a horizontal plane including the optical axis of the lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably, and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally with the lamp 6 is rotated by the drive device 5."

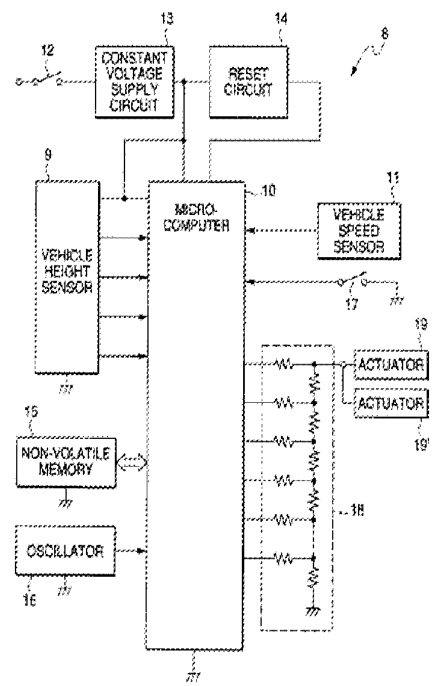
Limitation of '034 Patent Proposed Claim 25	GB 2 309 774 (Takahashi)
25. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted up and down relative to a horizontal reference position.	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to a horizontal plane including the optical axis of the lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably, and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally with the lamp 6 is rotated by the drive device 5."

Limitation of '034 Patent Proposed Claim 28	GB 2 309 774 (Takahashi)
28. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the automatic directional control system is configured such that the controller includes a microprocessor.	E.g., page 16, lines 1 to 4 "When a turn-on switch 12 for the lamp 6 is put into operation, a supply voltage from a constant voltage supply circuit 13 and

Limitation of '034 Patent Proposed Claim 28	GB 2 309 774 (Takahashi)
	a reset signal from a reset circuit 14 are supplied to the microcomputer 10." See also Fig. 9, ref. 10. FIG. 9 

Limitation of '034 Patent Proposed Claim 33	GB 2 309 774 (Takahashi)
33. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.

Limitation of '034 Patent Proposed Claim 33	GB 2 309 774 (Takahashi)
wherein the automatic directional control system further includes memory.	E.g., page 16, lines 5 to 9 "Also, a non-volatile memory 15 (such as an electrically erasable EEPROM, or the like) for storing control programs and data values therein) [sic] and an oscillator 16 used to generate a clock signal are additionally attached to the microcomputer 10." See also Fig. 9, ref. 15. FIG. 9 

Limitation of '034 Patent Proposed Claim 34	GB 2 309 774 (Takahashi)
34. The automatic directional control system defined in claim 33,	See claim 33 claim chart, above at page 185.
wherein the memory includes non-volatile memory.	E.g., page 16, lines 5 to 9 "Also, a non-volatile memory 15 (such as an electrically erasable EEPROM, or the like) for storing control programs and data values therein) [sic] and an oscillator 16 used to generate a clock signal are additionally attached to the microcomputer 10." See also Fig. 9, ref. 15. FIG. 9 

Limitation of '034 Patent Proposed Claim 37	GB 2 309 774 (Takahashi)
37. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 38	GB 2 309 774 (Takahashi)
38. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by a pitch level sensor.	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 41	GB 2 309 774 (Takahashi)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

Limitation of '034 Patent Proposed Claim 42	GB 2 309 774 (Takahashi)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping

Limitation of '034 Patent Proposed Claim 42	GB 2 309 774 (Takahashi)
	or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle." E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 44	GB 2 309 774 (Takahashi)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 173.
wherein said controller is configured to be responsive to said two or more	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with

Limitation of '034 Patent Proposed Claim 44	GB 2 309 774 (Takahashi)
sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously in response to relatively small variations in the sensed operating conditions.	time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

Limitation of '034 Patent Proposed Claim 45	GB 2 309 774 (Takahashi)
45. The automatic directional control system defined in claim l,	See claim 1 claim chart, above at page 173.
wherein controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2."

Limitation of '034 Patent Proposed Claim 45	GB 2 309 774 (Takahashi)
sensed operating conditions.	E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

23. Proposed Claims 1, 2, 4 to 6, 9, 10, 37, 38, 41, 42, 44, and 45 Are Anticipated by Hussman Under 35 U.S.C. § 102(b)

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,182,460 (Hussman)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,182,460 (Hussman)
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R." E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	E.g., col. 6, line 10 to 34, "In this connection, it is beneficial that upon the presence of a difference between the second, filtered, nominal-value signal to the third, filtered, nominal-value signal and upon termination of a difference is again switched from the third, filtered, nominal-value signal to the first, filtered, nominal-value signal because in this manner, in an uncomplicated and cost effective manner, upon the presence of an inclination change of the motor vehicle body which is not attributable to a change in loading or to road surface unevenness, the regulation of the illumination range of the motor vehicle, in dependence from the third, long, filter time constant results, whereby the third, filtered, nominal-value signal is independent, or substantially independent, from the disturbing, or distorting, short time inclination changes so that after inclination changes of the motor-vehicle body which, for example, are caused by driving about a curve, false adjustments of the illumination range are not caused which can lead to the blinding of oncoming traffic or to losses in illumination range, which eliminates a danger during operation of a motor vehicle."
said at least one actuator being adapted to be connected to the headlight to	E.g., col. 3, lines 16 to 18, "The regulator R regulates the position of

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,182,460 (Hussman)
effect movement thereof in accordance with said at least one output signal.	adjusting elements, which are shown here in block form and which change the positions of headlights."

Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 5,182,460 (Hussman)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 5,182,460 (Hussman)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-

Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 5,182,460 (Hussman)
	value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 5,182,460 (Hussman)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 5,182,460 (Hussman)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 5,182,460 (Hussman)
wherein said two or more sensors include a first sensor and a second sensor.	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 5,182,460 (Hussman)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 196.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a

Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 5,182,460 (Hussman)
	difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 5,182,460 (Hussman)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 196.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 5,182,460 (Hussman)
	vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 5,182,460 (Hussman)
37. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 5,182,460 (Hussman)
38. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by a pitch level sensor.	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 5,182,460 (Hussman)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

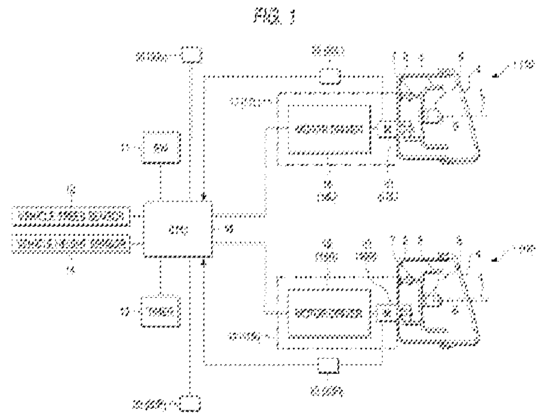
Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 5,182,460 (Hussman)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 5,182,460 (Hussman)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 193.
wherein said controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously in response to relatively small variations in the sensed operating conditions.	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 5,182,460 (Hussman)
45. The automatic directional control system defined in claim l,	See claim 1 claim chart, above at page 193.
wherein controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the sensed operating conditions.	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

24. Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20, 21, 22, 24, 25, 28, 29, 36 to 42, 44, and 45 Are Unpatentable Over the Combination of Toda et al. and Uchida Under 35 U.S.C. § 103(a)

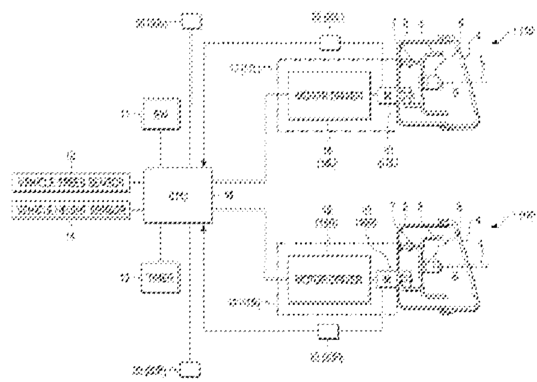
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., Abstract, "An automatic leveling device for automotive vehicle headlamps is described."	E.g., page 1, lines 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp so that the illumination direction can be always kept in a predetermined direction."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the

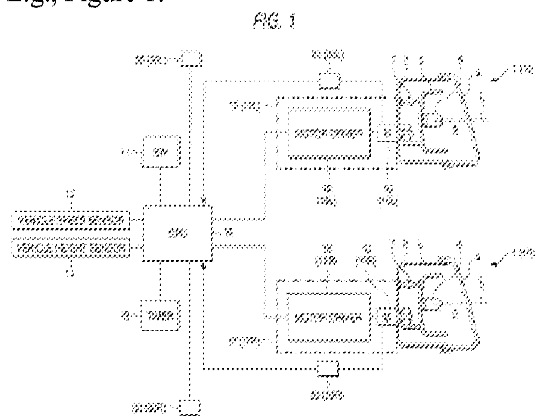
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., page 15, line 30 to page 16, line 2 "As has been described above, according to the respective methods, it is possible to judge whether the vehicle is running in the acceleration condition or in the deceleration condition. Also, these methods can be applied in various manners, for example, the respective methods can be used individually, or some of them may be combined together for the enhanced accuracy of the judgment."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher,	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher,	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

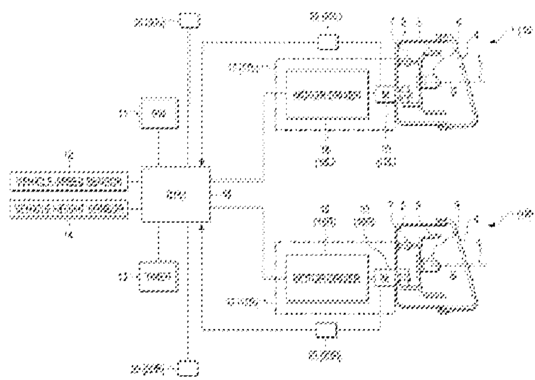
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output signal.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., page 16, line 28 to page 17, line 6 "Also, if it is judged by the acceleration or deceleration running condition judging device 3b that the vehicle is not in the acceleration or deceleration running condition, then the illumination angle of the lamp 5 can be controlled by one of the following methods when the drive control device 4a receives an instruction from the acceleration or deceleration running condition judging device 3b: 1) a method for fixing the illumination angle; 2) a method for limiting the range of the illumination angle or forbidding part of the range of the illumination angle; and, 3) a method for changing the response speed or control speed of an actuator."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	E.g., page 7, lines 4 to 9, "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., page 8, lines 1 to 9, "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction."

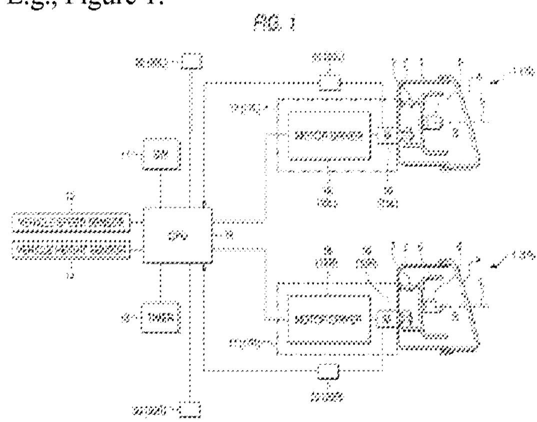
Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a

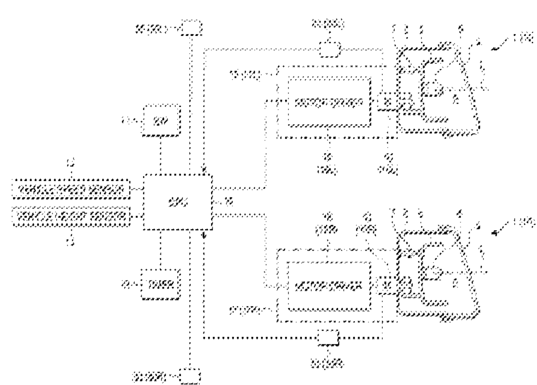
Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: 	method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition

Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

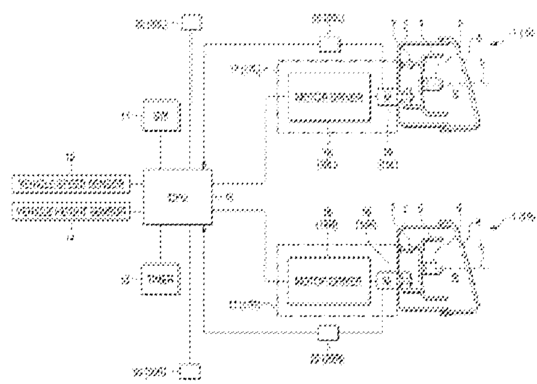
Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
5. The automatic directional control system	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
defined in claim 1,		
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: 	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

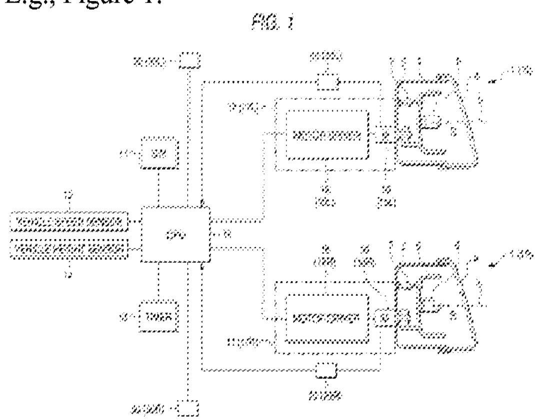
Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein said two or more sensors include a first sensor and a second sensor.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 212.	See claim 6 claim chart, above at page 212.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit."	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the

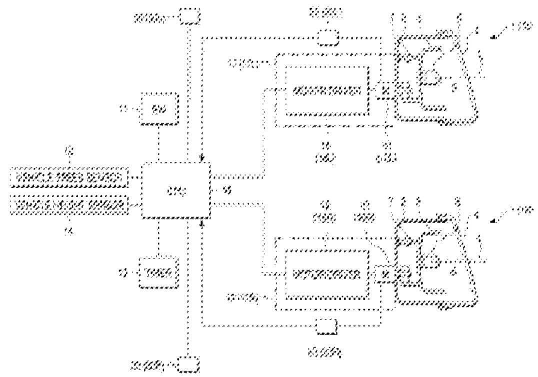
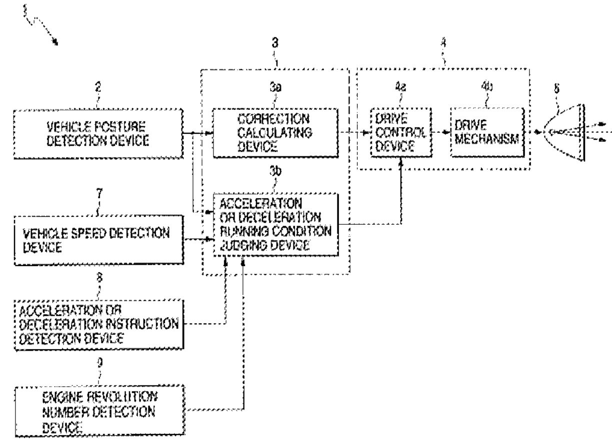
Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	E.g., Figure 1: FIG. 1 	information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 212.	See claim 6 claim chart, above at page 212.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: 	vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
11. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 212.	See claim 6 claim chart, above at page 212.
wherein said first sensor is physically separate from said second sensor.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., page 6, line 30 to page 7, line 3, "In order for the vehicle posture detection device and the acceleration or deceleration running condition judging device to transmit signals to one another, they must be separate: "The outputs of the vehicle posture detection device 2 are transmitted to the correction calculating device 3a and acceleration or deceleration running condition judging device 3b which cooperate together in forming the control device 3, and these outputs are used as control signals to be applied to the drive device 4 and are then used as instructions for correcting the illumination of lamp 5." E.g., Fig. 1:

Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	FIG. 1 

Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
12. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein said sensed conditions further include one or more of a rate of change of road speed of the vehicle, a rate of change of steering angle of the vehicle, a rate of change of pitch of the vehicle, or a rate of change of suspension height of the vehicle.	E.g., col. 5, lines 31 to 38, "If YES (the vehicle speed exceeds 30 km/h), in step 124, it is determined whether or not the acceleration is lower than the reference value when the vehicle is at halt. In step 124, if YES (lower than 0.5 m/s2), then in step 126 it is determined whether or not a state continues for a predetermined time period (three seconds) or longer in which the vehicle speed exceeds 30 km/h and the acceleration is	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the

Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	lower than 0.5 m/s2"	height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
13. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 217.	See claim 12 claim chart, above at page 217.
wherein at least one of said two or more sensors generate a signal that is representative of the rate of change of road speed of the vehicle.	E.g., col. 5, lines 31 to 38, "If YES (the vehicle speed exceeds 30 km/h), in step 124, it is determined whether or not the acceleration is lower than the reference value when the vehicle is	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is

Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	at halt. In step 124, if YES (lower than 0.5 m/s2), then in step 126 it is determined whether or not a state continues for a predetermined time period (three seconds) or longer in which the vehicle speed exceeds 30 km/h and the acceleration is lower than 0.5 m/s2"	obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
17. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
wherein the automatic directional control system is configured to include at least two actuators.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
18. The automatic directional control system defined in claim 17,	See claim 17 claim chart, above at page 219.	See claim 17 claim chart, above at page 219.
wherein the at least two actuators include a first actuator that is adapted to be connected to the headlight to effect movement thereof in a vertical direction.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb	E.g., page 7, lines 4 to 9 "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction."

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	E.g., page 8, lines 1 to 9 "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction." E.g., page 3, lines 19 to 22 "There is provided a vehicle lamp illumination direction control device for changing the direction of the illumination light of a lamp according to the vertical inclination of a vehicle in the advancing direction thereof."

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
20. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the at least one actuator includes an electronically controlled mechanical actuator.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb	E.g., page 19, lines 6 to 22 "For example, when the actuator incorporates therein a DC (direct current) motor, a difference between the control target position (or angle) of the actuator and the current position (or angle) thereof is detected, and a pulse signal having a duty cycle corresponding to the detected position difference is supplied to

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)." E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	the DC motor to thereby control the position of the actuator, as shown in Fig. 11, if the characteristic of the duty cycle DT with respect to the position difference δxx is changed from the state of a relatively faster response speed shown by a broken line 10 to the state of a slow response speed shown by a solid line 11, with respect to the same position difference δxx=δxxa, the duty cycle DT in the other running conditions of the vehicle than the acceleration or deceleration running condition thereof is smaller than the duty cycle in the acceleration or deceleration running condition of the vehicle, so that the drive control on the lamp 5 by the actuator is slowed down."

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
21. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the at least one actuator includes a step motor.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp	

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
22. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the at least one actuator includes a servo motor.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt	E.g., page 19, lines 6 to 22 "For example, when the actuator incorporates therein a DC (direct current) motor, a difference between the control target position (or angle) of the actuator and the current position (or angle) thereof is detected, and a pulse signal having a duty cycle corresponding to the detected position difference is supplied to the DC motor to thereby control the position of the actuator, as shown in Fig. 11, if the characteristic of the duty cycle DT with respect to the position difference δxx is changed from the state of a relatively faster response speed shown by a broken

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)." E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	line 10 to the state of a slow response speed shown by a solid line 11, with respect to the same position difference δxx=δxxa, the duty cycle DT in the other running conditions of the vehicle than the acceleration or deceleration running condition thereof is smaller than the duty cycle in the acceleration or deceleration running condition of the vehicle, so that the drive control on the lamp 5 by the actuator is slowed down."

Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
24. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted relative to the vehicle.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a	E.g., page 16, lines 6 to 15 "The simplest method for changing the illumination pattern of the lamp 5 in a vertical plane is a method which changes the illumination angle of the lamp 5 with respect to a horizontal plane by rotating the entire lamp 5 about the rotary shaft thereof. For example, the right and left side surfaces of the lamp 5 are supported in a freely rotatable manner and the rotary shaft of the lamp 5 is rotated directly by a

Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	drive source such as a motor or the like, or, there is available a drive mechanism in which a member fixed to the lamp 5 or formed integrally with the lamp 5 is rotated by the drive device 4."

Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
25. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted up and down relative to a horizontal reference position.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L,	E.g., page 16, lines 6 to 15 "The simplest method for changing the illumination pattern of the lamp 5 in a vertical plane is a method which changes the illumination angle of the lamp 5 with respect to a horizontal plane by rotating the entire lamp 5 about the rotary shaft thereof. For example, the right and left side surfaces of the lamp 5 are supported in a freely rotatable manner and the rotary shaft of the lamp 5 is rotated directly by a drive source such as a motor or the like, or, there is available a drive mechanism in which a member fixed to the lamp 5 or formed integrally with the lamp 5 is rotated by the drive device 4."

Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	18R)."	

Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
28. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the controller includes a microprocessor.	E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
29. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the controller includes a programmable electronic controller.	E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors	

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	

Limitation of '034 Patent Proposed Claim 36	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
36. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured to position the headlight at or near a calibration position when an electrical system of the vehicle is turned on.	E.g., col. 3, lines 62 to 65, "When the vehicle is stationary, since the proper pitch angle of the vehicle can be detected in principle, the driving of the motors 10 (10L, 10R) is first controlled based on the vehicle pitch angle obtained when the vehicle is at halt."	

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
37. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., col. 3, lines 48 to 53, "When a two-sensor system is used in which vehicle height sensors are provided on both the front and rear wheels, the vehicle pitch angle is obtained from displacement distances of the vehicle height at the front and rear of the vehicle and a wheel base of the vehicle, or a distance between front and rear axles of the	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	vehicle."	vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
38. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the pitch of the vehicle is	E.g., col. 3, lines 48 to 53, "When a two-sensor system is used in which vehicle height sensors are	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
capable of being determined by a pitch level sensor.	provided on both the front and rear wheels, the vehicle pitch angle is obtained from displacement distances of the vehicle height at the front and rear of the vehicle and a wheel base of the vehicle, or a distance between front and rear axles of the vehicle."	the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
39. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18	

Limitation of ’034 Patent Proposed Claim 39	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	(18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on.”	

Limitation of ’034 Patent Proposed Claim 40	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
40. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle, thereby ignoring frequency changes in the suspension height of the vehicle that are a result of bumps in a road.	E.g., col. 4, lines 1 to 25, “But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the	

Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher,	E.g., page 4, lines 16 to 27, "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
	and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.		E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9;

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
		example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., page 15, line 30 to page 16, line 2 "As has been described above, according to the respective methods, it is possible to judge whether the vehicle is running in the acceleration condition or in the deceleration condition. Also, these methods can be applied in various manners, for example, the respective methods can be used individually, or some of them may be combined together for the enhanced accuracy of the judgment."

Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.
wherein said controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a

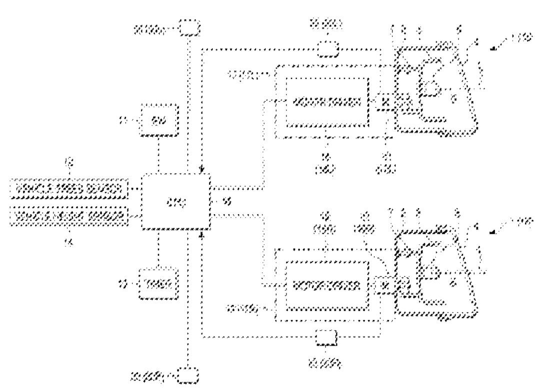
Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
from being operated continuously in response to relatively small variations in the sensed operating conditions.	reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
45. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 203.	See claim 1 claim chart, above at page 203.

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 773 (Uchida)
wherein controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the sensed operating conditions.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

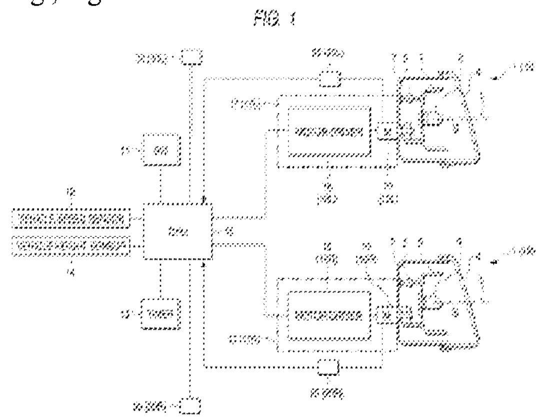
25. **Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20, 21, 22, 24, 25, 28, 29, 33, 34, 36 to 42, 44, and 45 Are Unpatentable Over the Combination of Toda et al. and Takahashi Under 35 U.S.C. §103(a)**

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., Abstract, "An automatic leveling device for automotive vehicle headlamps is described."	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detect device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle." E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the

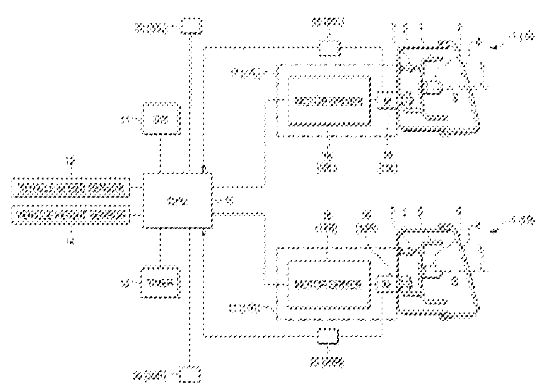
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For	E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6

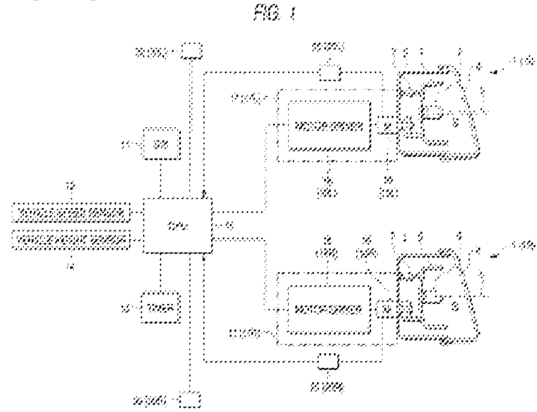
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output signal.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control	E.g., page 2, lines 14 to 17 "However, in the above-mentioned automatic adjustment device, since the lamp is driven with high frequency, an actuator used in a drive mechanism for driving the lamp is required to show high response property and high durability." E.g., page 6, lines 26 to 32 "When the control device 4 receives the detect signal of the vehicle running condition detection device 3 and finds

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	unit." E.g., Figure 1: 	from this detect signal that the vehicle is standing still, the control device 4, in accordance with information on the vehicle posture obtained from the vehicle posture detection device 2, transmits to the drive signal 5 a control signal for correction of the illumination direction of the lamp 6." E.g., page 7, lines 12 to 17 "In view of this, the control device 4 is structured such that, based on the information from the vehicle posture detection device 2, it can detect the amount of variations in the gradient of the road and, therefore, when the road gradient varies suddenly, it can correct the illumination direction of the lamp 6." E.g., page 11, lines 12 to 16, "The correction of the illumination direction of the lamp 6 in Step S5 is carried out by the drive device 5 based on the control signal transmitted from the control device 4 and, as a method for executing such correction, there are available two methods as follows: 1) a method for inclining the entire lamp, and, 2) a method for moving the component (such as a lens, a reflector, a shade or the like) of the optical system of the lamp."

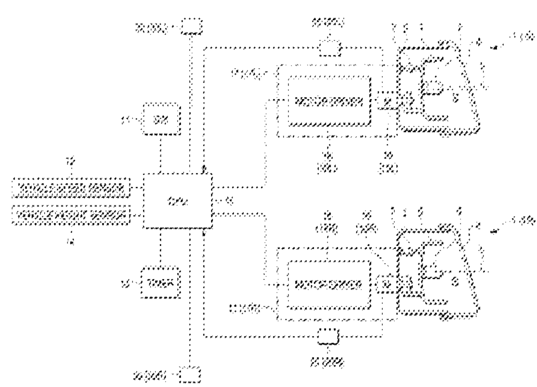
Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.

Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

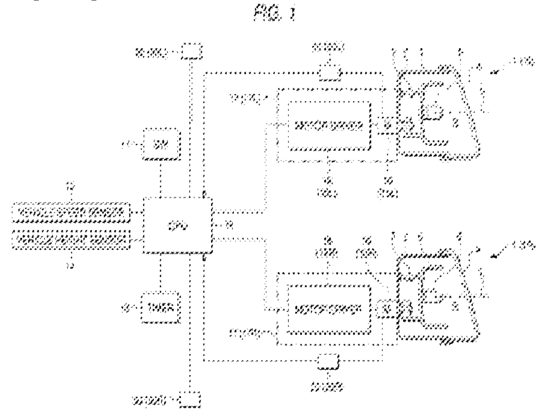
Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.

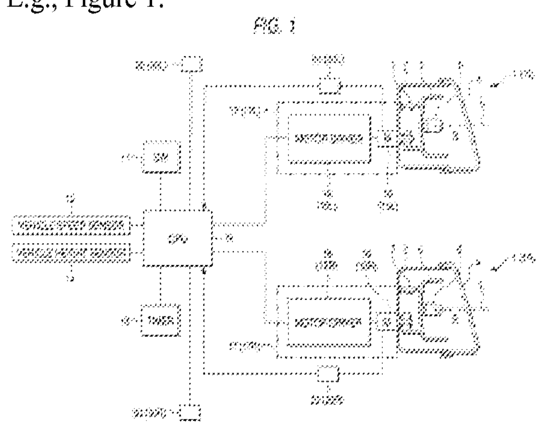
Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

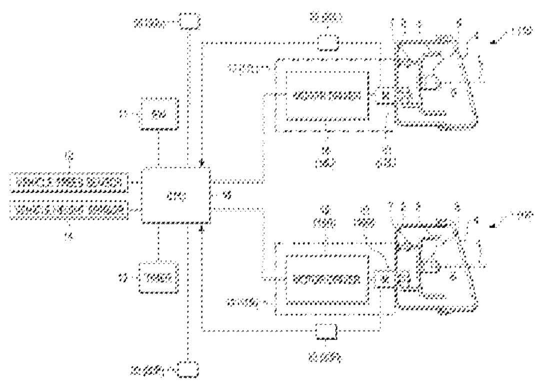
Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
6. The automatic directional control system	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
defined in claim 1,		
wherein said two or more sensors include a first sensor and a second sensor.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

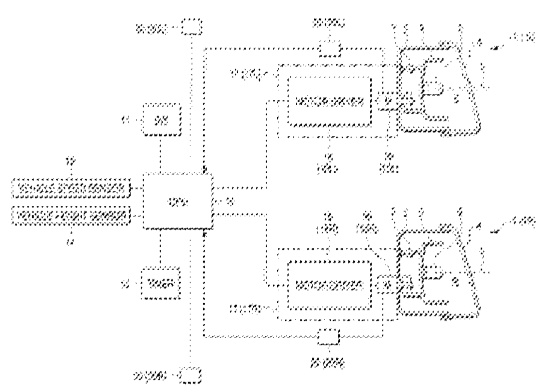
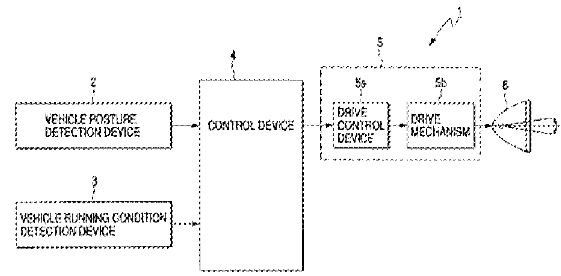
Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 245.	See claim 6 claim chart, above at page 245.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: 	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
		E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 245.	See claim 6 claim chart, above at page 245.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
11. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 245.	See claim 6 claim chart, above at page 245.
wherein said first sensor is physically separate from said second sensor.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit."	See, e.g., Fig. 1, ref. 2, 3 (Separate detection devices). See also 5:25-27 ("an illumination direction control device 1 is composed of vehicle posture detection device 2, vehicle running condition detection device 3, control device 4, drive device 5 . . ., and lamp 6.")

Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	E.g., Figure 1: FIG. 1 	FIG. 1 

Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
12. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein said sensed conditions further include one or more of a rate of change of road speed of the vehicle, a rate of change of steering angle of the vehicle, a rate of change of pitch of the vehicle, or a rate of change of suspension height of the vehicle.	E.g., col. 5, lines 31 to 38, "If YES (the vehicle speed exceeds 30 km/h), in step 124, it is determined whether or not the acceleration is lower than the reference value when the vehicle is at halt. In step 124, if YES (lower than 0.5 m/s2), then in step 126 it is determined whether or not a state continues for a predetermined time period (three seconds) or longer in which the vehicle speed exceeds 30 km/h and the acceleration is lower than 0.5 m/s2"	E.g., page 7, lines 29 to 34, to page 8, line 21 "In particular, Fig. 3 shows schematically the amount of variations in the output level V when the vehicle runs first along an uphill slope and thereafter runs along a road having a small gradient. In this case, when the vehicle runs over the uphill slope the output level V falls down suddenly." E.g., page 8, lines 19 to 25, "These figures show clearly that the magnitude of the amount of

Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
		variations in the road gradients is reflected on the amount of variations in the outputs of the height sensor when the vehicle runs from the road having a small gradient to the road having a large gradient or when the vehicle runs from the road having a large gradient to the road having a small gradient."

Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
13. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 250.	See claim 12 claim chart, above at page 250.
wherein at least one of said two or more sensors generate a signal that is representative of the rate of change of road speed of the vehicle.	E.g., col. 5, lines 31 to 38, "If YES (the vehicle speed exceeds 30 km/h), in step 124, it is determined whether or not the acceleration is lower than the reference value when the vehicle is at halt. In step 124, if YES (lower than 0.5 m/s2), then in step 126 it is determined whether or not a state continues for a predetermined time period (three seconds) or longer in which the vehicle speed exceeds 30 km/h and the acceleration is lower than 0.5 m/s2"	

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
17. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
wherein the automatic directional control system is configured to include at least two actuators.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	E.g., page 16, line 31 to page 17, line 1 "A rudder resistance network 18, which corresponds to the above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19' which are disposed downstream thereof."

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
18. The automatic directional control system defined in claim 17,	See claim 17 claim chart, above at page 251.	See claim 17 claim chart, above at page 251.
wherein the at least two actuators include a first actuator that is adapted to be connected to the headlight to effect movement thereof in a vertical direction.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to a horizontal plane including the optical axis of the

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably, and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally with the lamp 6 is rotated by the drive device 5."

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
20. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the at least one actuator includes an electronically controlled mechanical actuator.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a	E.g., page 16, line 31 to page 17, line 1 "A rudder resistance network 18, which corresponds to the above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19' which are disposed downstream thereof." E.g., page 11, line 32 to page 12, line 3 "As an example of such lamp, there is available a lamp including a mechanism which can use the rotational force of the motor as the rotational force of the lam through a transmission mechanism using a worm and worm wheel (for example, see

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)." E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	Japanese Patent Publication No. Hei. 63-166672)."

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
21. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the at least one actuator includes a step motor.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic	E.g., page 18, lines 5 to 8 "Besides this, according to the invention, the lamp or the component thereof can be driven or controlled by use of a stepping motor to thereby correct the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
22. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the at least one actuator includes a servo motor.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	E.g., page 16, line 31 to page 17, line 1 "A rudder resistance network 18, which corresponds to the above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19' which are disposed downstream thereof." E.g., page 11, line 32 to page 12, line 3 "As an example of such lamp, there is available a lamp including a mechanism which can use the rotational force of the motor as the rotational force of the lam through a transmission mechanism using a worm and worm wheel (for example, see Japanese Patent Publication No. Hei. 63-166672)."

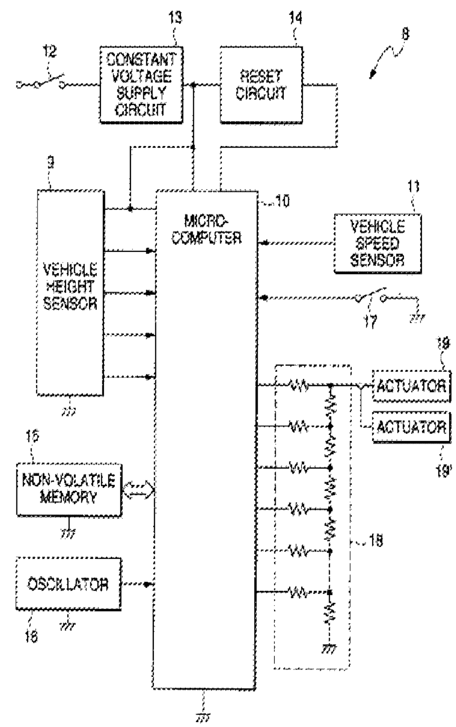
Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	

Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
24. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted relative to the vehicle.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to a horizontal plane including the optical axis of the lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably, and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally with the lamp 6 is rotated by the drive device 5."

Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
25. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted up and down relative to a horizontal reference position.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to a horizontal plane including the optical axis of the lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably, and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally with the lamp 6 is rotated by the drive device 5."

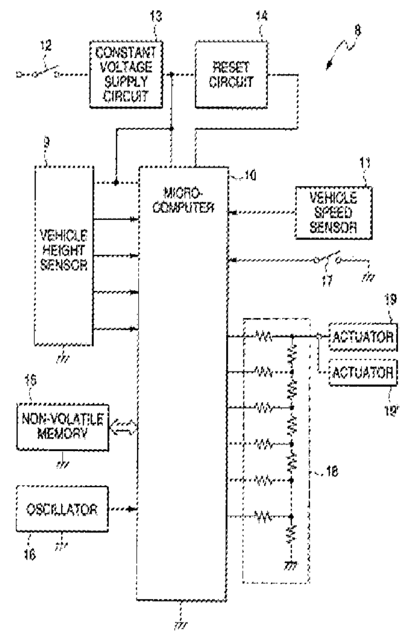
Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
28. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system is configured such that the controller includes a microprocessor.	E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	E.g., page 16, lines 1 to 4 "When a turn-on switch 12 for the lamp 6 is put into operation, a supply voltage from a constant voltage supply circuit 13 and a reset signal from a reset circuit 14 are supplied to the microcomputer 10." See also Fig. 9, ref. 10.

Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
		FIG. 9 

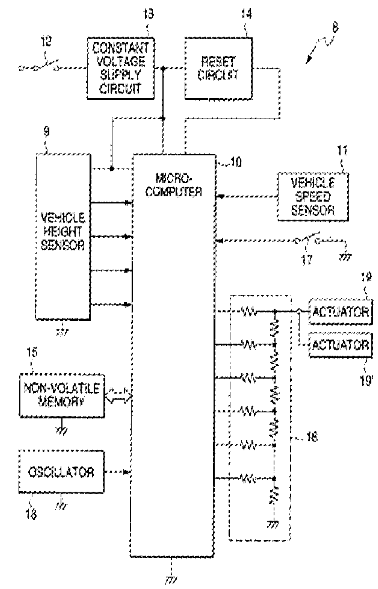
Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
29. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system is	E.g., col. 3, lines 18 to 24, "The CPU 16 calculates	

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
configured such that the controller includes a programmable electronic controller.	vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	

Limitation of '034 Patent Proposed Claim 33	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
33. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system further includes memory.		E.g., page 16, lines 5 to 9 "Also, a non-volatile memory 15 (such as an electrically erasable EEPROM, or the like) for storing control programs and data values therein) [sic] and an oscillator 16 used to generate a clock signal are additionally attached to the microcomputer 10." See also Fig. 9, ref. 15.

Limitation of '034 Patent Proposed Claim 33	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
		FIG. 9 

Limitation of '034 Patent Proposed Claim 34	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
34. The automatic directional control system defined in claim 33,	See claim 33 claim chart, above at page 260.	See claim 33 claim chart, above at page 260.
wherein the memory includes non-volatile memory.		E.g., page 16, lines 5 to 9 "Also, a non-volatile memory 15 (such as an electrically erasable EEPROM, or the like) for storing control programs and data values therein) [sic] and an oscillator 16 used to generate a clock signal are

Limitation of '034 Patent Proposed Claim 34	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
		additionally attached to the microcomputer 10." See also Fig. 9, ref. 15. FIG. 9 

Limitation of '034 Patent Proposed Claim 36	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
36. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system is configured to position the headlight at or near a calibration position when an electrical system of the vehicle is turned on.	E.g., col. 3, lines 62 to 65, "When the vehicle is stationary, since the proper pitch angle of the vehicle can be detected in principle, the driving of the motors 10 (10L, 10R) is first controlled based	

Limitation of '034 Patent Proposed Claim 36	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	on the vehicle pitch angle obtained when the vehicle is at halt."	

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
37. The automatic directional control system defined in claim 1,.	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., col. 3, lines 48 to 53, "When a two-sensor system is used in which vehicle height sensors are provided on both the front and rear wheels, the vehicle pitch angle is obtained from displacement distances of the vehicle height at the front and rear of the vehicle and a wheel base of the vehicle, or a distance between front and rear axles of the vehicle."	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
38. The automatic directional control system	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
defined in claim 1,		
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by a pitch level sensor.	E.g., col. 3, lines 48 to 53, "When a two-sensor system is used in which vehicle height sensors are provided on both the front and rear wheels, the vehicle pitch angle is obtained from displacement distances of the vehicle height at the front and rear of the vehicle and a wheel base of the vehicle, or a distance between front and rear axles of the vehicle."	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
39. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a	

Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	

Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
40. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.

Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle, thereby ignoring frequency changes in the suspension height of the vehicle that are a result of bumps in a road.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off,	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle." E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein said controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that

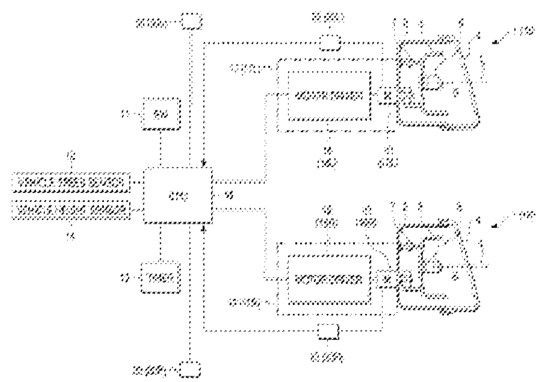
Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously in response to relatively small variations in the sensed operating conditions.	vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
45. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 238.	See claim 1 claim chart, above at page 238.
wherein controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the sensed operating conditions.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,305,823 (Toda et al.)	GB 2 309 774 (Takahashi)
	(18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

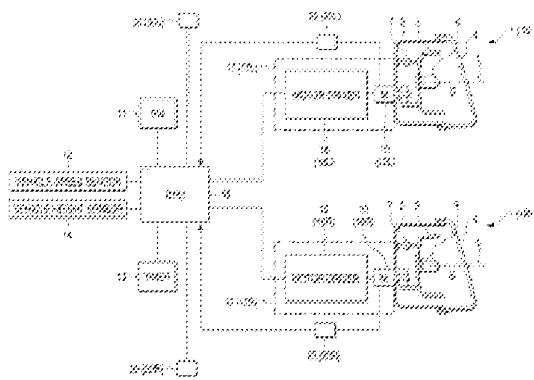
26. Proposed Claims 1, 2, 4 to 6, 9 to 13, 17, 18, 20, 21, 22, 24, 25, 28, 29, 36 to 42, 44, and 45 Are Unpatentable Over the Combination of Toda et al. and Hussman Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., Abstract, "An automatic leveling device for automotive vehicle headlamps is described."	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value

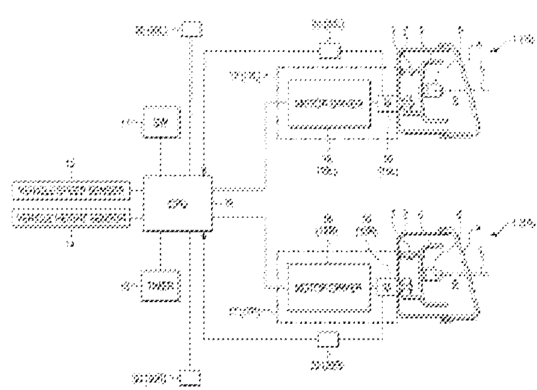
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R." E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that

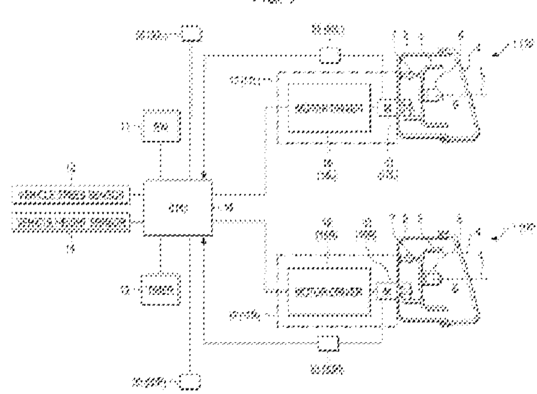
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	discontinuities or jumps in the adjustment and regulation of the illumination range are avoided." E.g., col. 6, line 10 to 34, "In this connection, it is beneficial that upon the presence of a difference between the second, filtered, nominal-value signal to the third, filtered, nominal-value signal and upon termination of a difference is again switched from the third, filtered, nominal-value signal to the first, filtered, nominal-value signal because in this manner, in an uncomplicated and cost effective manner, upon the presence of an inclination change of the motor vehicle body which is not attributable to a change in loading or to road surface unevenness, the regulation of the illumination range of the motor vehicle, in dependence from the third, long, filter time constant results, whereby the third, filtered, nominal-value signal is independent, or substantially independent, from the disturbing, or distorting, short time inclination changes so that after inclination changes of the motor-vehicle body which, for example, are caused by driving about a curve, false adjustments of the illumination range are not caused which can lead to the blinding of oncoming traffic or to losses in illumination range, which eliminates a danger during operation of a motor vehicle."
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes	E.g., col. 3, lines 16 to 18, "The regulator R regulates the position of adjusting elements, which are shown here in block form and which change

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
signal.	L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	the positions of headlights."

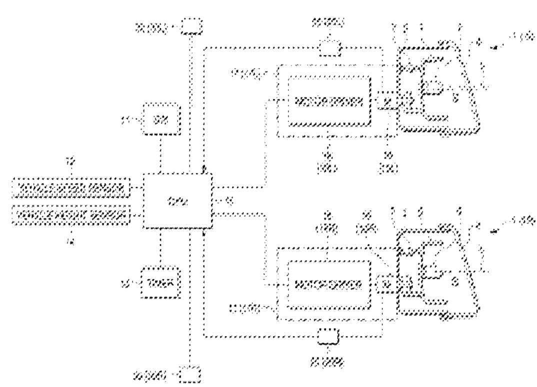
Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein at least one of said two or more sensors generates a signal that is representative of the road	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17	E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with

Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
speed of the vehicle.	(17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

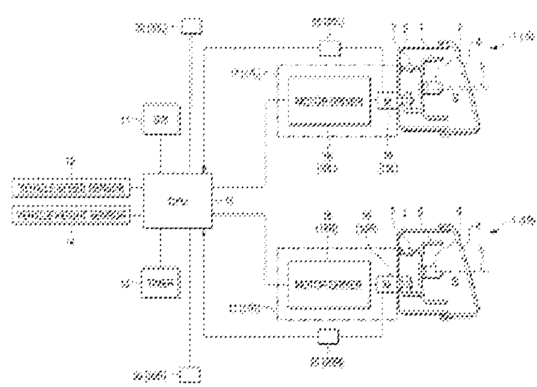
Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein at least one of said two or more sensors	E.g., col. 3, lines 11 to 18, "The headlamp	E.g., Abstract, "In a method and apparatus to

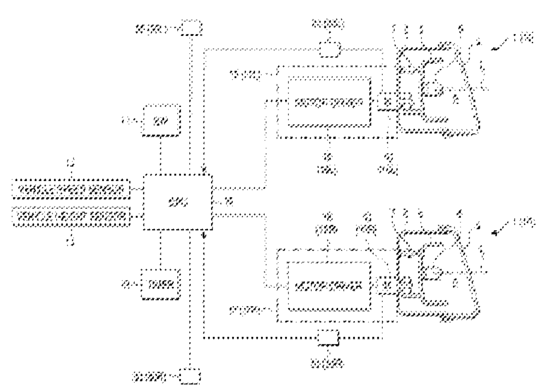
Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
generates a signal that is representative of the pitch of the vehicle.	automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

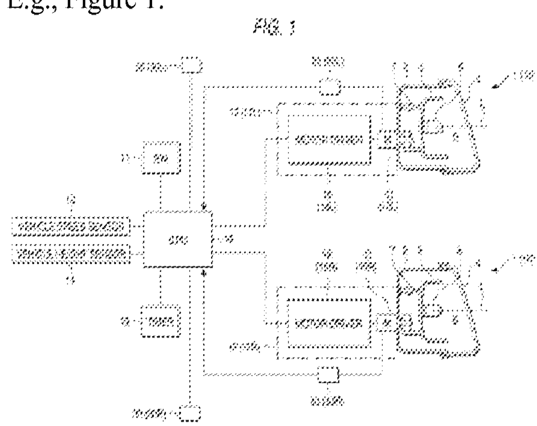
Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.

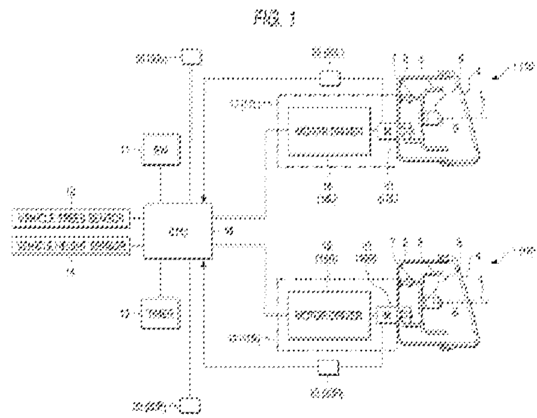
Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein said two or more sensors include a first sensor and a second sensor.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 280.	See claim 6 claim chart, above at page 280.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: FIG. 1 	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 280.	See claim 6 claim chart, above at page 280.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1: 	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
		coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
11. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 280.	See claim 6 claim chart, above at page 280.
wherein said first sensor is physically separate from said second sensor.	E.g., col. 3, lines 11 to 18, "The headlamp automatic leveling device includes the actuators 17 (17L, 17R) for tilt adjusting respective optical axes L of the headlamps 1 (1L, 1R) vertically, actuator failure detection sensors 20 (20L, 20R), a headlamp switch-on switch 11, vehicle speed sensors 12 as a vehicle speed detection means for detecting the speed of a vehicle, vehicle height sensors 14 constituting a part of a vehicle pitch angle detection means, a CPU 16 as a control unit." E.g., Figure 1:	

Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
		

Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
12. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein said sensed conditions further include one or more of a rate of change of road speed of the vehicle, a rate of change of steering angle of the vehicle, a rate of change of pitch of the vehicle, or a rate of change of suspension height of the vehicle.	E.g., col. 5, lines 31 to 38, "If YES (the vehicle speed exceeds 30 km/h), in step 124, it is determined whether or not the acceleration is lower than the reference value when the vehicle is at halt. In step 124, if YES (lower than 0.5 m/s2), then in step 126 it is determined whether or not a state continues for a predetermined time period (three seconds) or longer in which the vehicle speed exceeds 30 km/h and the acceleration is lower than 0.5 m/s2"	E.g., col. 5, lines 34 to 40, "So that also such inclination changes of the motor-vehicle body which are not attributable to acceleration changes will be recognized and false adjustments during regulation of the illumination range because of such inclination changes will be avoided, the third filter F3 is only placed in connection with the regulator when no acceleration of the motor vehicle is present."

Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
13. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 285.	See claim 12 claim chart, above at page 285.
wherein at least one of said two or more sensors generate a signal that is representative of the rate of change of road speed of the vehicle.	E.g., col. 5, lines 31 to 38, "If YES (the vehicle speed exceeds 30 km/h), in step 124, it is determined whether or not the acceleration is lower than the reference value when the vehicle is at halt. In step 124, if YES (lower than 0.5 m/s2), then in step 126 it is determined whether or not a state continues for a predetermined time period (three seconds) or longer in which the vehicle speed exceeds 30 km/h and the acceleration is lower than 0.5 m/s2"	E.g., col. 5, lines 34 to 40, "So that also such inclination changes of the motor-vehicle body which are not attributable to acceleration changes will be recognized and false adjustments during regulation of the illumination range because of such inclination changes will be avoided, the third filter F3 is only placed in connection with the regulator when no acceleration of the motor vehicle is present."

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
17. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the automatic directional control system is configured to include at least two actuators.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic	

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
18. The automatic directional control system defined in claim 17,	See claim 17 claim chart, above at page 286.	See claim 17 claim chart, above at page 286.
wherein the at least two actuators include a first actuator that is adapted to be connected to the headlight to effect movement thereof in a vertical direction.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
20. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the at least one actuator includes an electronically controlled mechanical actuator.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)." E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
21. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the at least one actuator includes a step motor.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
22. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the at least one actuator includes a servo motor.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the	

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)." E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	

Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
24. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.

Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted relative to the vehicle.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb 6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
25. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted up and down relative to a horizontal reference position.	E.g., col. 2, line 65 to col. 3, line 10, "In FIG. 1, reference number 1 (1L, 1R) denotes a pair of left and right headlamps for an automotive vehicle, the headlights having the same construction. A front lens 4 is mounted in the front opening of a lamp body, so that a lamp space S is provided. In the lamp space S, a parabolic reflector 5 having a bulb	

Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	6 as a light source securely inserted therein is supported in such a manner as to be tilted around a horizontal tilt shaft 7 (in FIG. 1, a shaft normal relative to the surface of paper) and the parabolic reflectors 5 are then constructed so as to be tilt adjusted by actuators 17 (17L, 17R), respectively. The actuators 17 (17L, 17R) each comprise a stepping motor 10 (10L, 10R) which includes an actuator main body and a motor driver 18 (18L, 18R)."	

Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
28. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the automatic directional control system is configured such that the controller includes a microprocessor.	E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
29. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the automatic directional control system is configured such that the controller includes a programmable electronic controller.	E.g., col. 3, lines 18 to 24, "The CPU 16 calculates vehicle speed depending on data from sensors 12 and calculates vehicle height depending on data from sensors 14, judges whether the headlamps are switched on or off, and output to motor drivers 18 (18L, 18R) a control signal for driving the motors 10 (10L, 10R) a magnitude corresponding to operating pitch angle data. A timer 13 is also connected to the CPU 16."	

Limitation of '034 Patent Proposed Claim 36	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
36. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the automatic directional control system is configured to position the headlight at or near a calibration position when an electrical system of the vehicle is turned on.	E.g., col. 3, lines 62 to 65, "When the vehicle is stationary, since the proper pitch angle of the vehicle can be detected in principle, the driving of the motors 10 (10L, 10R) is first controlled based on the vehicle pitch angle obtained when the vehicle is at halt."	

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
37. The automatic directional control system	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
defined in claim 1,		
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., col. 3, lines 48 to 53, "When a two-sensor system is used in which vehicle height sensors are provided on both the front and rear wheels, the vehicle pitch angle is obtained from displacement distances of the vehicle height at the front and rear of the vehicle and a wheel base of the vehicle, or a distance between front and rear axles of the vehicle."	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
38. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by a pitch level sensor.	E.g., col. 3, lines 48 to 53, "When a two-sensor system is used in which vehicle height sensors are provided on both the front and rear wheels, the vehicle pitch angle is obtained from displacement distances of the vehicle height at the front and rear of the vehicle and a wheel base of the vehicle, or a distance between front and rear axles of the vehicle."	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
39. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the automatic directional control system is	E.g., col. 4, lines 1 to 25, "But while the vehicle is	E.g., Abstract, "In a method and apparatus to

Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle.	running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
40. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle, thereby ignoring frequency changes in the suspension height of the vehicle that are a result of bumps in a road.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18	

Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	(18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher,	

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
	and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	

Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein said controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously in response to relatively small variations in the sensed operating	E.g., col. 4, lines 1 to 25, "But while the vehicle is running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

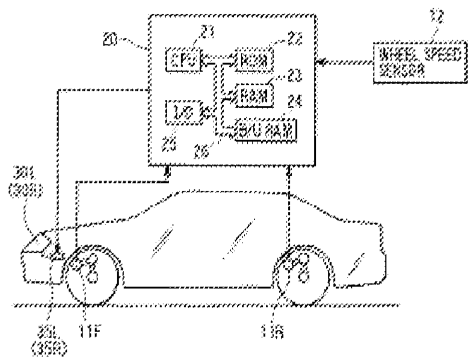
Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
conditions.	reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
45. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 273.	See claim 1 claim chart, above at page 273.
wherein controller is configured to be responsive	E.g., col. 4, lines 1 to 25, "But while the vehicle is	E.g., col. 4, lines 6 to 12, "At the coupling

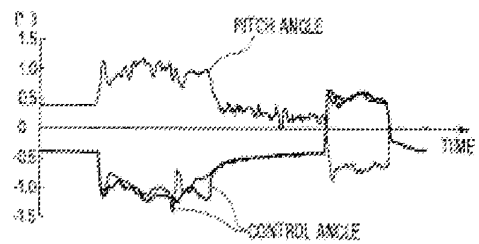
Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,305,823 (Toda et al.)	U.S. Patent No. 5,182,460 (Hussman)
to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the sensed operating conditions.	running, in order to eliminate disturbance, the CPU 16 is constructed so as to calculate a pitch angle of the vehicle only on condition that the vehicle speed is equal to or higher than a reference value, the acceleration is equal to or lower than a reference value, and this state (in which the vehicle speed is equal to or higher than the reference value and the acceleration is equal to lower than the reference value) continues for a predetermined period of time or longer. For example, when a vehicle is running on a rough road in which disturbance is caused by irregularities on the road surface or the like, the vehicle cannot run at a speed of 30 km/h or higher, and in order to eliminate an abrupt acceleration causing the vehicle posture to be changed, it is proper to limit the acceleration to 0.5 m/s2 or lower. Therefore, an abrupt detection of an abnormal value and any influence from the detection of an abnormal value are impeded by permitting calculation of a pitch angle of the vehicle to occur only on condition that the state in which the vehicle speed is equal to or higher than 30 km/h and the acceleration is equal to or lower than 0.5 m/s2 continues for three seconds or longer. In addition, the CPU 16 determines whether the lighting switch is switched on or off, and it outputs a signal to the motor drivers 18 (18L, 18R) to drive the motors 10 (10L, 10R) only when the lighting switch is switched on."	between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

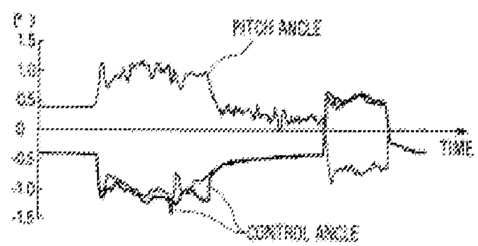
27. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20, 21, 22, 24, 25, 28, 29, 33, 35, 37, 38, 39, 40, 41, 42, 44, and 45 Are Unpatentable Over the Combination of Okuchi et al. and Uchida Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., Abstract, "In a vehicle headlight optical axis automatic adjusting system, a pitch angle in the longitudinal direction of a vehicle is calculated from a signal of a height sensor."	E.g., page 1, lines 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp so that the illumination direction can be always kept in a predetermined direction."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the

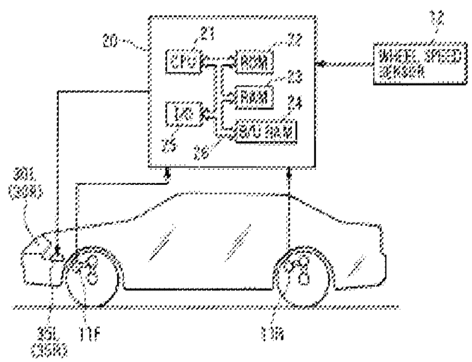
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
		inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., page 15, line 30 to page 16, line 2 "As has been described above, according to the respective methods, it is possible to judge whether the vehicle is running in the acceleration condition or in the deceleration condition. Also, these methods can be applied in various manners, for example, the respective methods can be used individually, or some of them may be combined together for the enhanced accuracy of the judgment."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7: FIG. 7  	
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device,

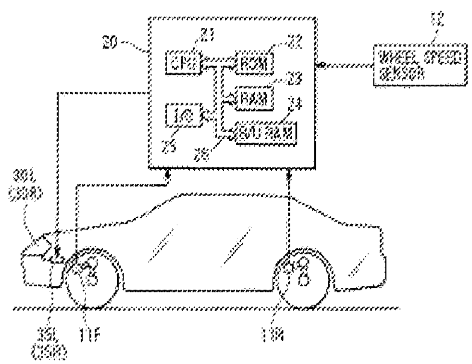
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7: FIG. 7 	thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output		E.g., page 16, line 28 to page 17, line 6 "Also, if it is judged by the acceleration or deceleration running condition judging device 3b that the

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
signal.		vehicle is not in the acceleration or deceleration running condition, then the illumination angle of the lamp 5 can be controlled by one of the following methods when the drive control device 4a receives an instruction from the acceleration or deceleration running condition judging device 3b: 1) a method for fixing the illumination angle; 2) a method for limiting the range of the illumination angle or forbidding part of the range of the illumination angle; and, 3) a method for changing the response speed or control speed of an actuator." E.g., page 7, lines 4 to 9, "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., page 8, lines 1 to 9, "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction."

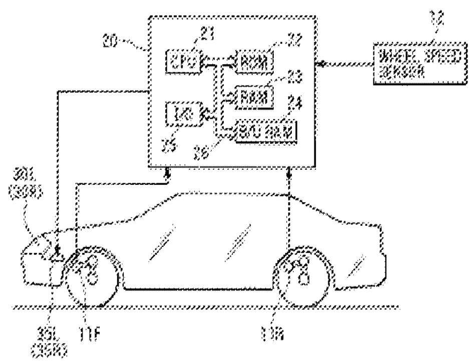
Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	

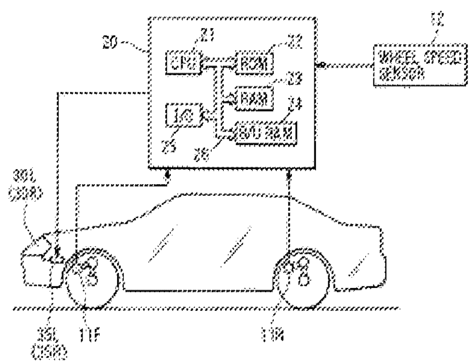
Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used

Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

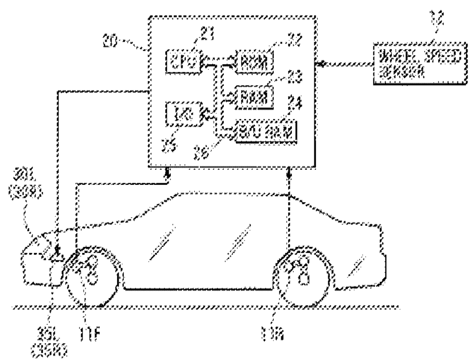
Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	

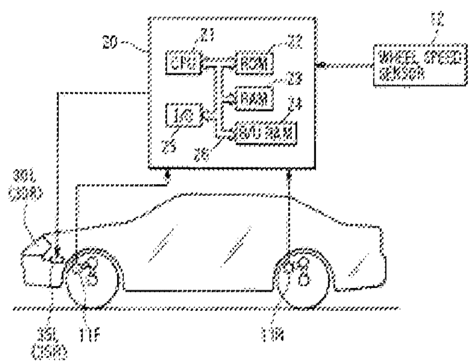
Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein said two or more sensors include a first sensor and a second sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2."

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 313.	See claim 6 claim chart, above at page 313.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

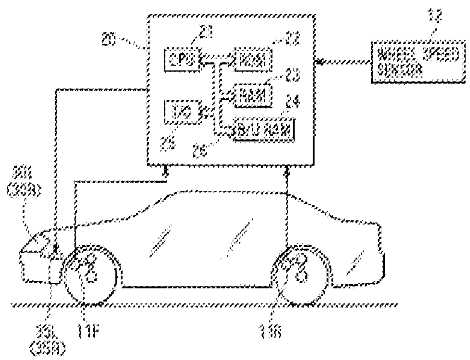
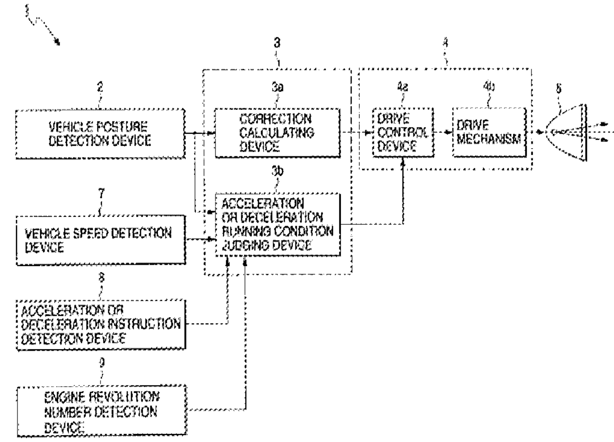
Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 313.	See claim 6 claim chart, above at page 313.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used

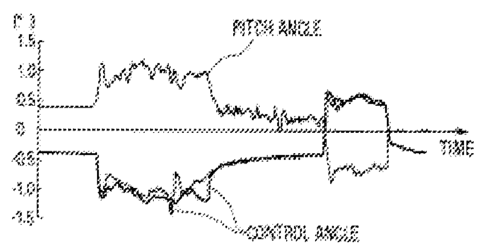
Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1  	height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i)

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
		is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

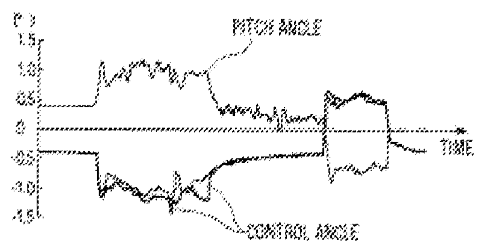
Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
11. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 313.	See claim 6 claim chart, above at page 313.
wherein said first sensor is physically separate from said second sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses	E.g., page 6, line 30 to page 7, line 3, "In order for the vehicle posture detection device and the acceleration or deceleration running condition judging device to transmit signals to one another, they must be separate: "The outputs of the vehicle posture detection device 2 are transmitted to the correction calculating device 3a and acceleration or deceleration running condition judging device 3b which cooperate together in forming the control device 3, and these outputs are used as control signals to be applied to the drive device 4 and are then used as instructions for correcting the illumination of lamp 5." E.g., Fig. 1:

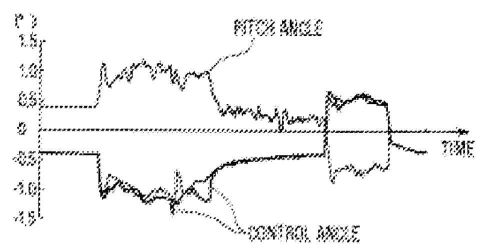
Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	FIG. 1 

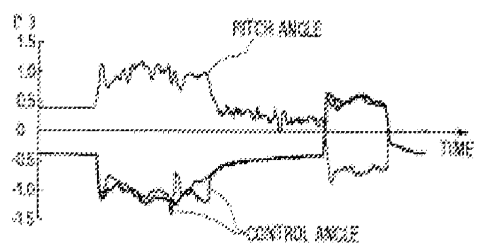
Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
12. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein said sensed conditions further include one or more of a rate of change of road speed of the vehicle, a rate of change of steering angle of the	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition

Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
vehicle, a rate of change of pitch of the vehicle, or a rate of change of suspension height of the vehicle.	acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7  	of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
13. The automatic directional control system	See claim 12 claim chart, above at page 319.	See claim 12 claim chart, above at page 319.

Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
defined in claim 12,		
wherein at least one of said two or more sensors generate a signal that is representative of the rate of change of road speed of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7  	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 15	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
15. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 319.	See claim 12 claim chart, above at page 319.
wherein at least one of said two or more sensors generates a signal that is representative of the rate of change of pitch of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	

Limitation of '034 Patent Proposed Claim 16	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
16. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 319.	See claim 12 claim chart, above at page 319.
wherein at least one of said two or more sensors generates a signal that is representative of the rate of change of suspension height of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	

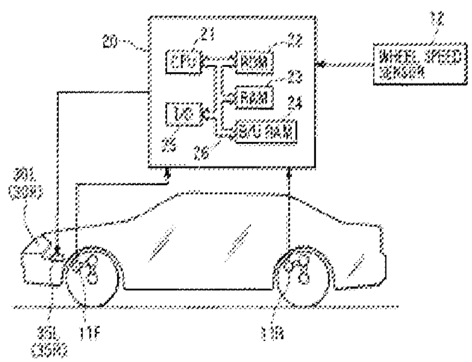
Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
17. The automatic directional control system	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
defined in claim 1,		
wherein the automatic directional control system is configured to include at least two actuators.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
18. The automatic directional control system defined in claim 17,	See claim 17 claim chart, above at page 323.	See claim 17 claim chart, above at page 323.
wherein the at least two actuators include a first actuator that is adapted to be connected to the headlight to effect movement thereof in a vertical direction.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow. The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be	E.g., page 7, lines 4 to 9 "In particular, the correction calculating device 3a is structured in the following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., page 8, lines 1 to 9 "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction." E.g., page 3, lines 19 to 22 "There is provided a vehicle lamp illumination direction control device for changing the direction of the illumination light of a lamp according to the vertical inclination of a vehicle in the advancing direction thereof."

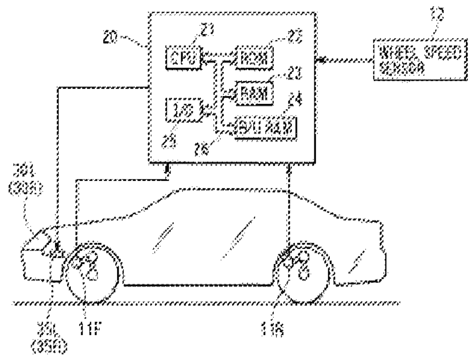
Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
20. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the at least one actuator includes an electronically controlled mechanical actuator.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., col. 5, lines 24 to 33, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the	E.g., page 19, lines 6 to 22 "For example, when the actuator incorporates therein a DC (direct current) motor, a difference between the control target position (or angle) of the actuator and the current position (or angle) thereof is detected, and a pulse signal having a duty cycle corresponding to the detected position difference is supplied to the DC motor to thereby control the position of the actuator, as shown in Fig. 11, if the characteristic of the duty cycle DT with respect to the position difference δxx is changed from the state of a relatively faster response speed shown by a broken line 10 to the state of a slow response speed shown by a solid line 11, with respect to the same position difference δxx=δxxa, the duty cycle DT

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow." E.g., Fig. 1, FIG.1 	in the other running conditions of the vehicle than the acceleration or deceleration running condition thereof is smaller than the duty cycle in the acceleration or deceleration running condition of the vehicle, so that the drive control on the lamp 5 by the actuator is slowed down."

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
21. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the at least one actuator includes a step motor.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by	

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow.	

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
22. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the at least one actuator includes a servo motor.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., col. 5, lines 24 to 33, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow."	E.g., page 19, lines 6 to 22 "For example, when the actuator incorporates therein a DC (direct current) motor, a difference between the control target position (or angle) of the actuator and the current position (or angle) thereof is detected, and a pulse signal having a duty cycle corresponding to the detected position difference is supplied to the DC motor to thereby control the position of the actuator, as shown in Fig. 11, if the characteristic of the duty cycle DT with respect to the position difference δxx is changed from the state of a relatively faster response speed shown by a broken line 10 to the state of a slow response speed shown by a solid line 11, with respect to the same position difference δxx=δxxa, the duty cycle DT in the other running conditions of the vehicle than the acceleration or deceleration running condition thereof is smaller than the duty cycle in the acceleration or deceleration running condition of

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	E.g., Fig. 1, FIG. 1 	the vehicle, so that the drive control on the lamp 5 by the actuator is slowed down."

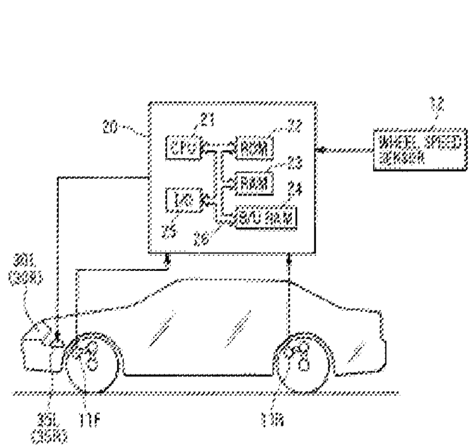
Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
24. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted relative to the vehicle.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a	E.g., page 16, lines 6 to 15 "The simplest method for changing the illumination pattern of the lamp 5 in a vertical plane is a method which changes the illumination angle of the lamp 5 with respect to a horizontal plane by rotating the entire lamp 5 about the rotary shaft thereof. For example, the right and left side surfaces of the lamp 5 are supported in a freely rotatable manner and the

Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	DC motor for driving the movable member 34 in the directions shown by the double-headed arrow. The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	rotary shaft of the lamp 5 is rotated directly by a drive source such as a motor or the like, or, there is available a drive mechanism in which a member fixed to the lamp 5 or formed integrally with the lamp 5 is rotated by the drive device 4."

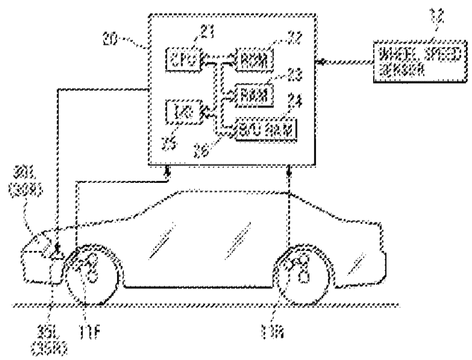
Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
25. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted up and down relative to a horizontal reference position.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow. The movable member 34 is driven in the back and	E.g., page 16, lines 6 to 15 "The simplest method for changing the illumination pattern of the lamp 5 in a vertical plane is a method which changes the illumination angle of the lamp 5 with respect to a horizontal plane by rotating the entire lamp 5 about the rotary shaft thereof. For example, the right and left side surfaces of the lamp 5 are supported in a freely rotatable manner and the rotary shaft of the lamp 5 is rotated directly by a drive source such as a motor or the like, or, there is available a drive mechanism in which a member

Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	fixed to the lamp 5 or formed integrally with the lamp 5 is rotated by the drive device 4."

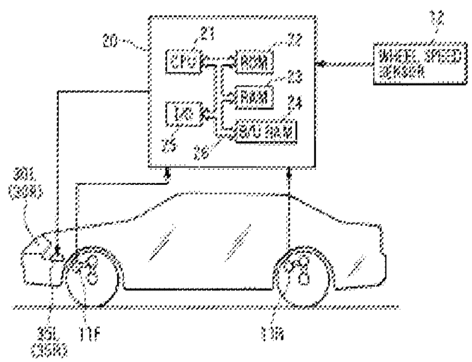
Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
28. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the automatic directional control system is configured such that the controller includes a microprocessor.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1,	

Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
29. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the automatic directional control system is configured such that the controller includes a programmable electronic controller.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1,	

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	

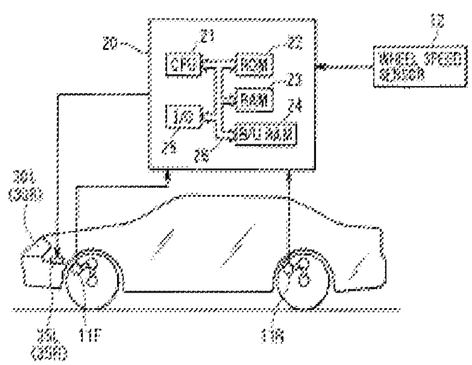
Limitation of '034 Patent Proposed Claim 33	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
33. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the automatic directional control system further includes memory.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1,	

Limitation of '034 Patent Proposed Claim 33	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1  	

Limitation of '034 Patent Proposed Claim 35	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
35. The automatic directional control system defined in claim 33,	See claim 33 claim chart, above at page 332.	See claim 33 claim chart, above at page 332.
wherein the memory is configured to store a predetermined reference position associated with the headlight.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow.	

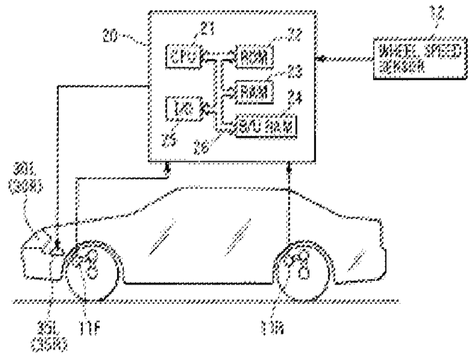
Limitation of '034 Patent Proposed Claim 35	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
37. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	(displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
38. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by a pitch level sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
39. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of	

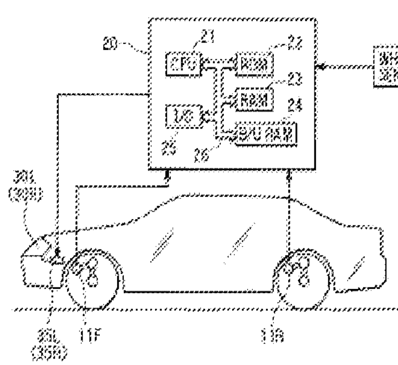
Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	

Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
40. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle, thereby ignoring frequency changes in the suspension height of the vehicle that are a result of bumps in a road.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.

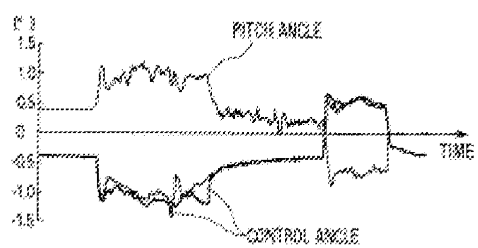
Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	E.g., page 4, lines 16 to 27, "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture

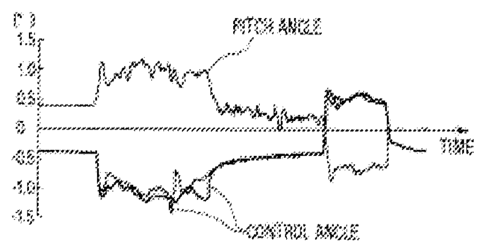
Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	(a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
		and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., page 15, line 30 to page 16, line 2 "As has been described above, according to the respective methods, it is possible to judge whether the vehicle is running in the acceleration condition or in the deceleration condition. Also, these methods can be applied in various manners, for example, the respective methods can be used individually, or some of them may be combined together for the enhanced accuracy of the judgment."

Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein said controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously in response to	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the

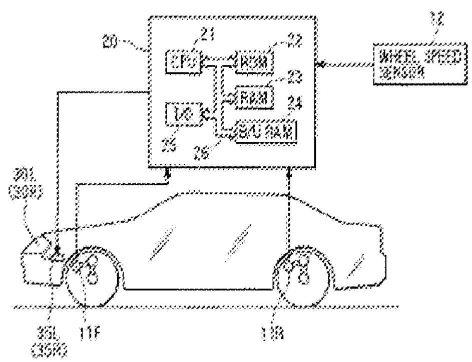
Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
relatively small variations in the sensed operating conditions.	used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7: FIG. 7 	illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

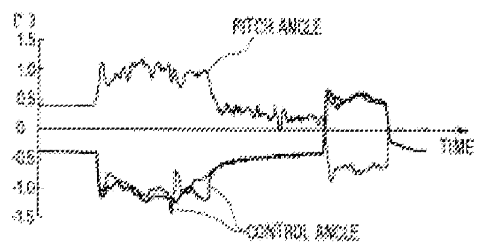
Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
45. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 303.	See claim 1 claim chart, above at page 303.
wherein controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the sensed operating conditions.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7:	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 773 (Uchida)
	FIG. 7 	

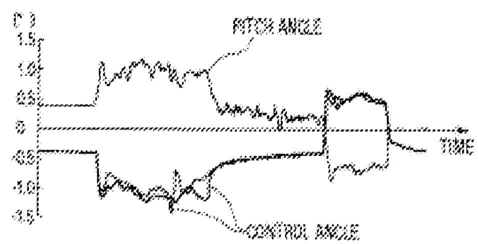
28. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20, 21, 22, 24, 25, 28, 29, 33 to 35, 37 to 42, 44, and 45 Are Unpatentable Over the Combination of Okuchi et al. and Takahashi Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., Abstract, "In a vehicle headlight optical axis automatic adjusting system, a pitch angle in the longitudinal direction of a vehicle is calculated from a signal of a height sensor."	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle." E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2."

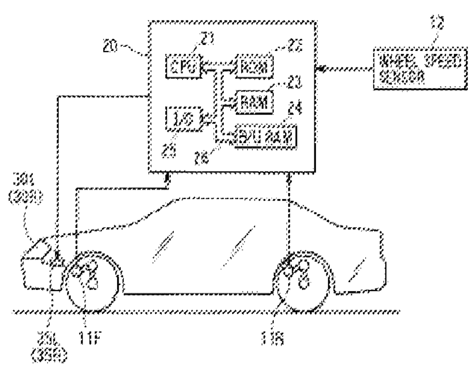
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7: FIG. 7 	
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the	E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7:	temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

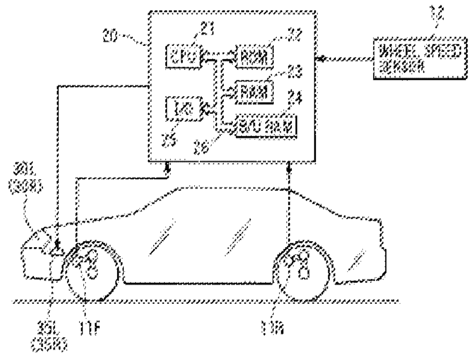
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 7 	
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output signal.		E.g., page 2, lines 14 to 17 "However, in the above-mentioned automatic adjustment device, since the lamp is driven with high frequency, an actuator used in a drive mechanism for driving the lamp is required to show high response property and high durability." E.g., page 6, lines 26 to 32 "When the control device 4 receives the detect signal of the vehicle running condition detection device 3 and finds from this detect signal that the vehicle is standing still, the control device 4, in accordance with information on the vehicle posture obtained from the vehicle posture detection device 2, transmits to the drive signal 5 a control signal for correction of the illumination direction of the lamp 6." E.g., page 7, lines 12 to 17 "In view of this, the control device 4 is structured such that, based on the information from the vehicle posture detection device 2, it can detect the amount of variations in

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
		the gradient of the road and, therefore, when the road gradient varies suddenly, it can correct the illumination direction of the lamp 6." E.g., page 11, lines 12 to 16, "The correction of the illumination direction of the lamp 6 in Step S5 is carried out by the drive device 5 based on the control signal transmitted from the control device 4 and, as a method for executing such correction, there are available two methods as follows: 1) a method for inclining the entire lamp, and, 2) a method for moving the component (such as a lens, a reflector, a shade or the like) of the optical system of the lamp."

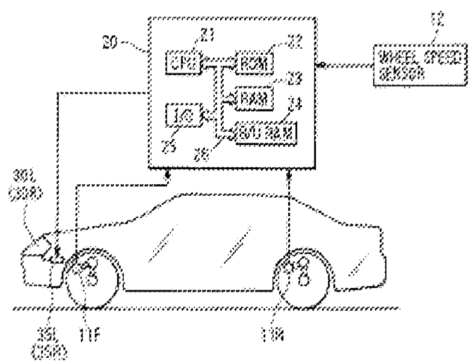
Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be

Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	used to detect the running conditions of the vehicle."

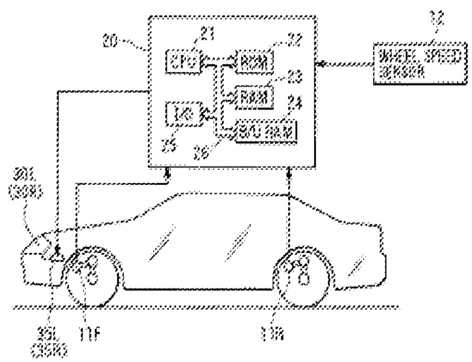
Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	

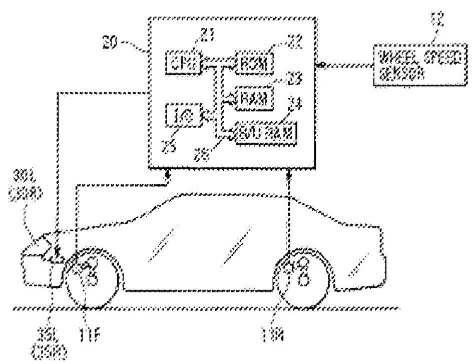
Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

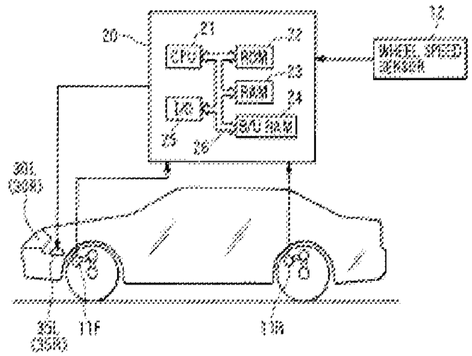
Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein said two or more sensors include a first sensor and a second sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	vehicle."

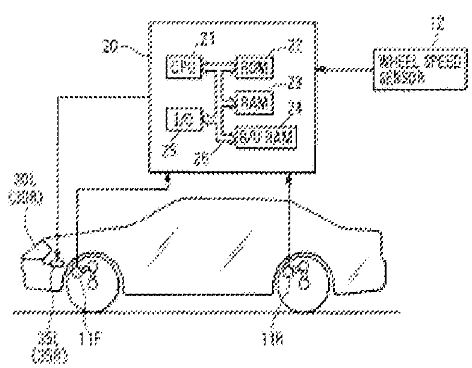
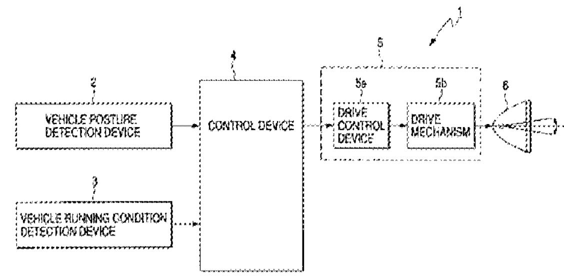
Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 355.	See claim 6 claim chart, above at page 355.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

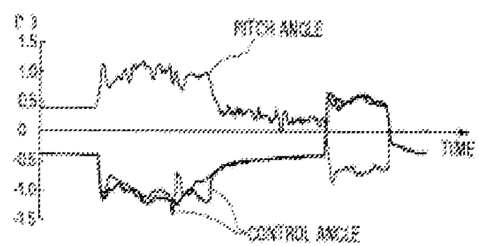
Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle." E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 355.	See claim 6 claim chart, above at page 355.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be used to detect the running conditions of the vehicle."

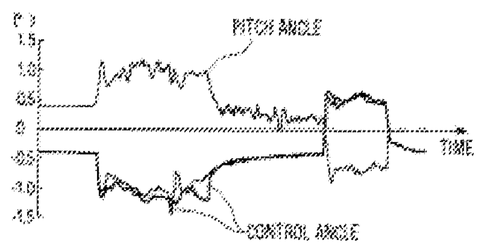
Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
11. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 355.	See claim 6 claim chart, above at page 355.
wherein said first sensor is physically separate from said second sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	See, e.g., Fig. 1, ref. 2, 3 (Separate detection devices). See also 5:25-27 ("an illumination direction control device 1 is composed of vehicle posture detection device 2, vehicle running condition detection device 3, control device 4, drive device 5 . . ., and lamp 6.")

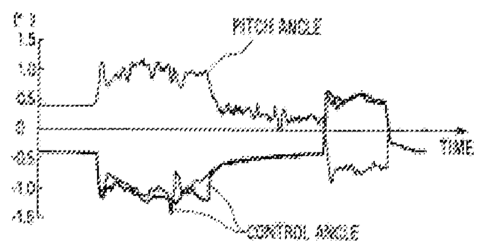
Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	FIG. 1 

Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
12. The automatic directional control system defined in claim 1,	See claim 6 claim chart, above at page 345.	See claim 6 claim chart, above at page 345.
wherein said sensed conditions further include one or more of a rate of change of road speed of the vehicle, a rate of change of steering angle of the vehicle, a rate of change of pitch of the vehicle, or a rate of change of suspension height of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	E.g., page 7, lines 29 to 34, to page 8, line 21 "In particular, Fig. 3 shows schematically the amount of variations in the output level V when the vehicle runs first along an uphill slope and thereafter runs along a road having a small gradient. In this case, when the vehicle runs over the uphill slope the output level V falls down suddenly." E.g., page 8, lines 19 to 25, "These figures show clearly that the magnitude of the amount of variations in the road gradients is reflected on the amount of variations in the outputs of the height sensor when the vehicle runs from the road having a small gradient to the road having a large gradient or when the vehicle runs from the road having a large gradient to the road having a small gradient."

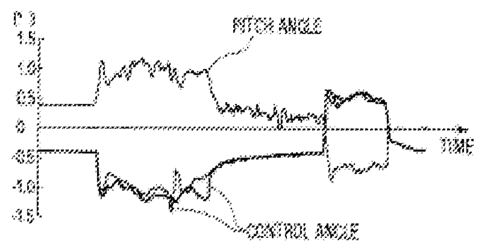
Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
13. The automatic directional control system	See claim 12 claim chart, above at page 361.	See claim 12 claim chart, above at page 361.

Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
defined in claim 12,		
wherein at least one of said two or more sensors generate a signal that is representative of the rate of change of road speed of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	

Limitation of '034 Patent Proposed Claim 15	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
15. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 361.	See claim 12 claim chart, above at page 361.

Limitation of '034 Patent Proposed Claim 15	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
wherein at least one of said two or more sensors generates a signal that is representative of the rate of change of pitch of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	

Limitation of '034 Patent Proposed Claim 16	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
16. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 361.	See claim 12 claim chart, above at page 361.
wherein at least one of said two or more sensors	E.g., col. 6, lines 6 to 14, "On the other hand,	E.g., page 7, lines 29 to 34, to page 8, line 21 "In

Limitation of '034 Patent Proposed Claim 16	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
generates a signal that is representative of the rate of change of suspension height of the vehicle.	when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7  	particular, Fig. 3 shows schematically the amount of variations in the output level V when the vehicle runs first along an uphill slope and thereafter runs along a road having a small gradient. In this case, when the vehicle runs over the uphill slope the output level V falls down suddenly." E.g., page 8, lines 19 to 25, "These figures show clearly that the magnitude of the amount of variations in the road gradients is reflected on the amount of variations in the outputs of the height sensor when the vehicle runs from the road having a small gradient to the road having a large gradient or when the vehicle runs from the road having a large gradient to the road having a small gradient."

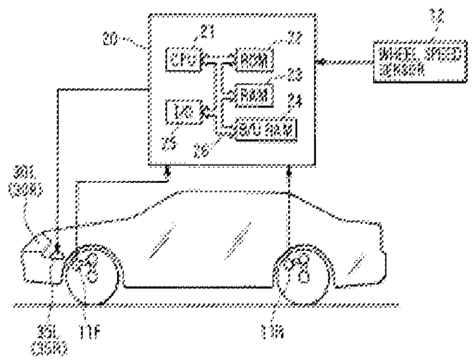
Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
17. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured to include at least two actuators.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L	E.g., page 16, line 31 to page 17, line 1 "A rudder resistance network 18, which corresponds to the

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19' which are disposed downstream thereof."

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
18. The automatic directional control system defined in claim 17,	See claim 17 claim chart, above at page 364.	See claim 17 claim chart, above at page 364.
wherein the at least two actuators include a first actuator that is adapted to be connected to the headlight to effect movement thereof in a vertical direction.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow. The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to a horizontal plane including the optical axis of the lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably, and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally with the lamp 6 is rotated by the drive device 5."

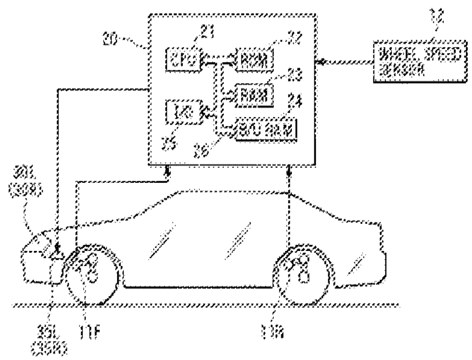
Limitation of ’034 Patent Proposed Claim 18	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	initially set on the assumption that one driver is on the vehicle.”	

Limitation of ’034 Patent Proposed Claim 20	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
20. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the at least one actuator includes an electronically controlled mechanical actuator.	E.g., col. 5, lines 11 to 15, “The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements.” E.g., col. 5, lines 24 to 33, “As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow.” E.g., Fig. 1,	E.g., page 16, line 31 to page 17, line 1 “A rudder resistance network 18, which corresponds to the above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19’ which are disposed downstream thereof.” E.g., page 11, line 32 to page 12, line 3 “As an example of such lamp, there is available a lamp including a mechanism which can use the rotational force of the motor as the rotational force of the lam through a transmission mechanism using a worm and worm wheel (for example, see Japanese Patent Publication No. Hei. 63-166672).”

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
21. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the at least one actuator includes a step motor.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow.	E.g., page 18, lines 5 to 8 "Besides this, according to the invention, the lamp or the component thereof can be driven or controlled by use of a stepping motor to thereby correct the illumination direction of the lamp."

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
22. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the at least one actuator includes a servo motor.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., col. 5, lines 24 to 33, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow." E.g., Fig. 1,	E.g., page 16, line 31 to page 17, line 1 "A rudder resistance network 18, which corresponds to the above-mentioned drive control device 5a, is used to convert the output signal of the microcomputer 10 into an analog signal and transmits it to actuators 19 and 19' which are disposed downstream thereof." E.g., page 11, line 32 to page 12, line 3 "As an example of such lamp, there is available a lamp including a mechanism which can use the rotational force of the motor as the rotational force of the lam through a transmission mechanism using a worm and worm wheel (for example, see Japanese Patent Publication No. Hei. 63-166672)."

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	

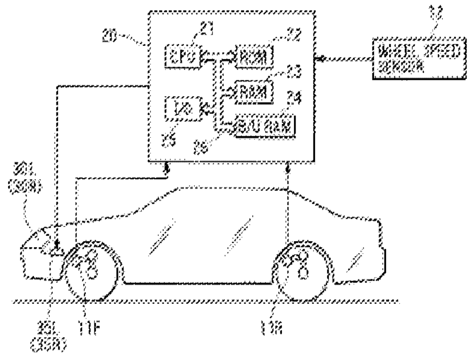
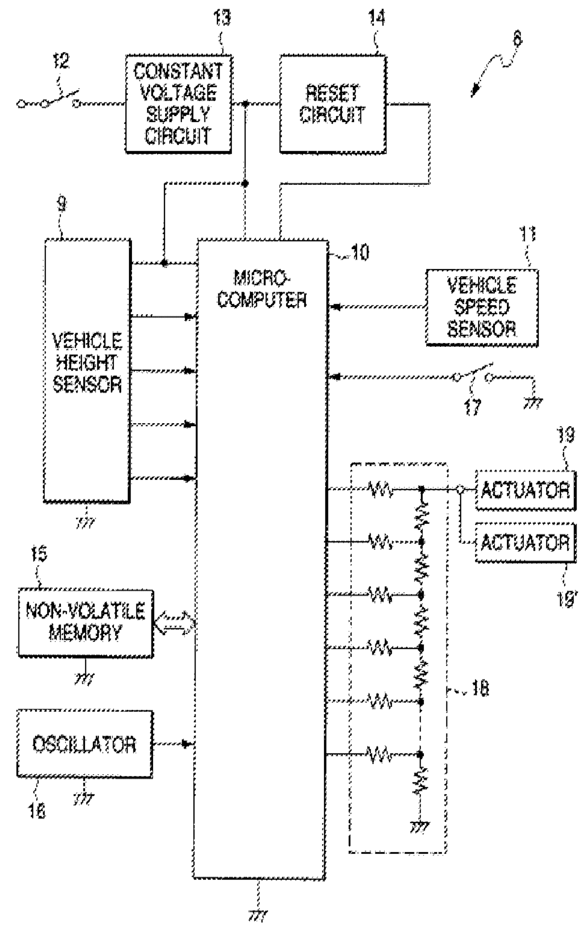
Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
24. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted relative to the vehicle.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow.	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to a horizontal plane including the optical axis of the lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably,

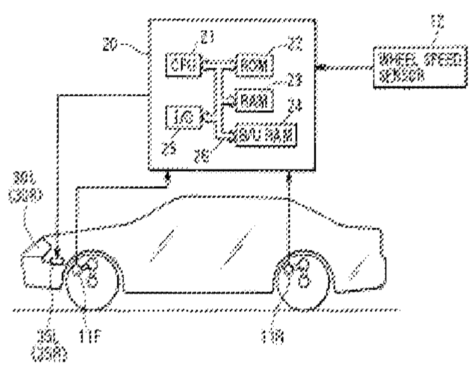
Limitation of '034 Patent Proposed Claim 24	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally with the lamp 6 is rotated by the drive device 5."

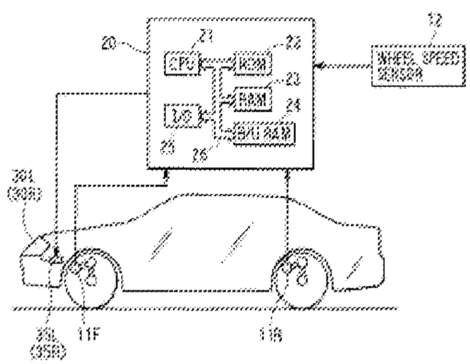
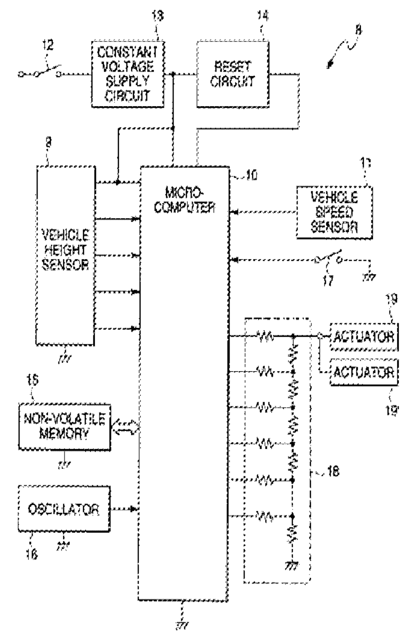
Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
25. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted up and down relative to a horizontal reference position.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow. The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end	E.g., page 11, lines 21 to 32 "In particular, the method 1) is the simplest method that can change the illumination pattern of the lamp 6 within a vertical plane, in which the entire lamp is rotated about the rotary shaft thereof to thereby change the illumination angle of the lamp 6 with respect to a horizontal plane including the optical axis of the lamp. For example, in the method 1), there can be used a drive mechanism in which the right and left side surfaces of the lamp 6 are supported rotatably, and the rotary shaft of the lamp 6 is rotated directly by a drive source such as a motor or the like, or a member fixed to or formed integrally

Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	with the lamp 6 is rotated by the drive device 5."

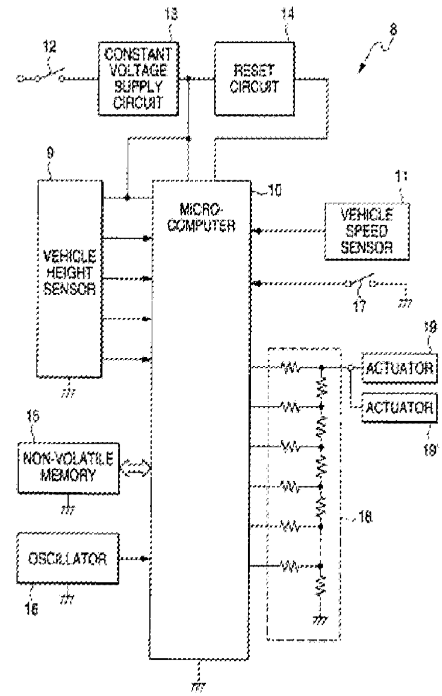
Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
28. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the controller includes a microprocessor.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1,	E.g., page 16, lines 1 to 4 "When a turn-on switch 12 for the lamp 6 is put into operation, a supply voltage from a constant voltage supply circuit 13 and a reset signal from a reset circuit 14 are supplied to the microcomputer 10." See also Fig. 9, ref. 10.

Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	FIG. 9 

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
29. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the controller includes a programmable electronic controller.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1, FIG. 1 	

Limitation of '034 Patent Proposed Claim 33	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
33. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system further includes memory.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1, FIG.1  	E.g., page 16, lines 5 to 9 "Also, a non-volatile memory 15 (such as an electrically erasable EEPROM, or the like) for storing control programs and data values therein) [sic] and an oscillator 16 used to generate a clock signal are additionally attached to the microcomputer 10." See also Fig. 9, ref. 15. FIG. 9 

Limitation of '034 Patent Proposed Claim 34	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
34. The automatic directional control system defined in claim 33,	See claim 33 claim chart, above at page 374.	See claim 33 claim chart, above at page 374.
wherein the memory includes non-volatile memory.		E.g., page 16, lines 5 to 9 "Also, a non-volatile memory 15 (such as an electrically erasable EEPROM, or the like) for storing control programs and data values therein) [sic] and an oscillator 16 used to generate a clock signal are additionally attached to the microcomputer 10." See also Fig. 9, ref. 15.

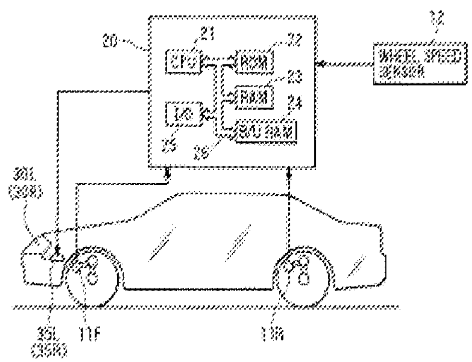
Limitation of '034 Patent Proposed Claim 34	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
		FIG. 9 

Limitation of '034 Patent Proposed Claim 35	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
35. The automatic directional control system defined in claim 33,	See claim 33 claim chart, above at page 374.	See claim 33 claim chart, above at page 374.
wherein the memory is configured to store a predetermined reference position associated with	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a	

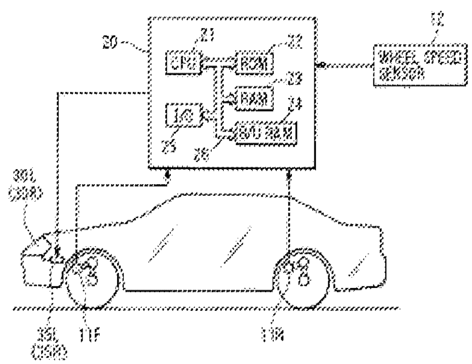
Limitation of '034 Patent Proposed Claim 35	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
the headlight.	reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow. The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
37. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
38. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by a pitch level sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
39. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	

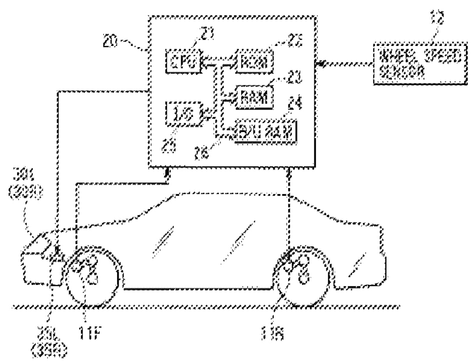
Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
40. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle, thereby ignoring frequency changes in the suspension height of the vehicle that are a result of bumps in a road.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong	

Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	

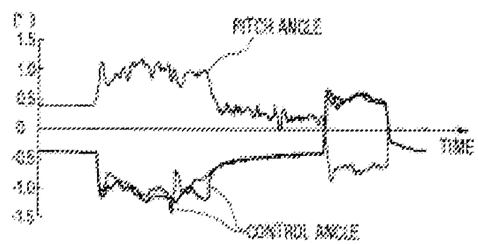
Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
		in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

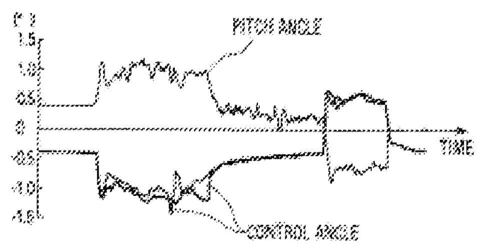
Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a	E.g., page 6, lines 16 to 25 "The vehicle running condition detection device 4 is used to detect the running conditions of the vehicle (including the stopping or stationary condition thereof), while the detect signal of the vehicle running condition detection device 3 is transmitted to the control device 4. As the vehicle running condition detection device 3, for example, there can be used vehicle speed detection device which is one of the existing facilities of the vehicle. Also, every kind of information can be used, provided that it can be

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1  	used to detect the running conditions of the vehicle." E.g., page 2, lines 6 to 13 "Therefore, there is conventionally known a device which includes a device for detecting the posture of the vehicle by detecting the inclination and height of a vehicle body, and calculates the amount of variations in the inclination of the vehicle based on the information that is obtained by the detect device, thereby being able to adjust automatically the illumination direction of the lamp." E.g., page 5, line 30 to page 6, line 9 "The vehicle posture detection device 2 is used to detect the posture of a vehicle (including the vertical inclination of the vehicle in the advancing direction thereof). For example, when there is used height detection device 7 which detects the height of the body of the vehicle, as shown in Fig. 2, there are available a method which measures a distance L between the height detection device 7 and a road surface G by use of detect waves such as ultrasonic waves, laser beams or the like, and a method in which the height detection device 7 detects the expansion and contraction amount x of a suspension S in order to detect the amount of variations in the vertical position of the axle of the vehicle."

Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein said controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously in response to relatively small variations in the sensed operating conditions.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7:	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold

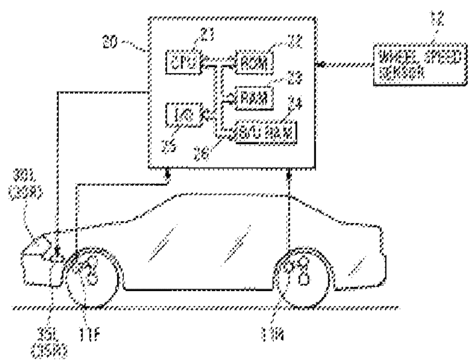
Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	FIG. 7 	value, the illumination direction of the lamp 6 may be corrected."

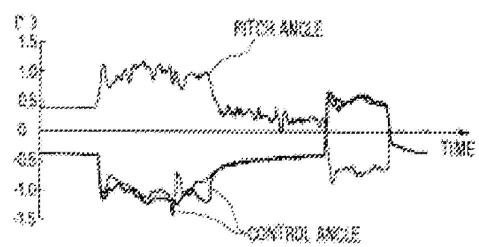
Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
45. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 345.	See claim 1 claim chart, above at page 345.
wherein controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the sensed operating conditions.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h	E.g., page 8, lines 26 to 32 "Therefore, when the amount of variations with time of the detect signal of the vehicle posture detect signal 2 is equal to or larger than a reference value, it may be judged that the gradient of the road has varied, and the illumination direction of the lamp 6 may be corrected in accordance with the detect signal of the vehicle posture detection device 2." E.g., page 9, lines 16 to 34 "Also, in order to prevent the illumination direction of the lamp 6 from being corrected inadvertently when a sudden change in the posture of the vehicle occurs temporarily or due to the wrong operation of the

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,193,398 (Okuchi et al.)	GB 2 309 774 (Takahashi)
	(such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7: FIG. 7 	lamp 6 caused by external disturbances, for example, when the vehicle makes a sudden start or a sudden stop, preferably, a threshold value with respect to time may be set in detection of the road gradient and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a time equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected; or, a threshold value with respect to the running distance of the vehicle may be set and, only when the amount of variations in the detect signal of the vehicle posture detection device 2 exceeds a given reference value and such excessive state continues for a distance equal to or more than the threshold value, the illumination direction of the lamp 6 may be corrected."

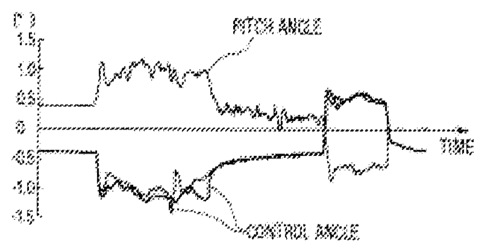
29. Proposed Claims 1, 2, 4 to 6, 9 to 13, 15 to 18, 20, 21, 22, 25, 28, 29, 33, 35, 37, 38, 39, 40, 41, 42, 44, and 45 Are Unpatentable Over the Combination of Okuchi et al. and Hussman Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., Abstract, "In a vehicle headlight optical axis automatic adjusting system, a pitch angle in the longitudinal direction of a vehicle is calculated from a signal of a height sensor."	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value

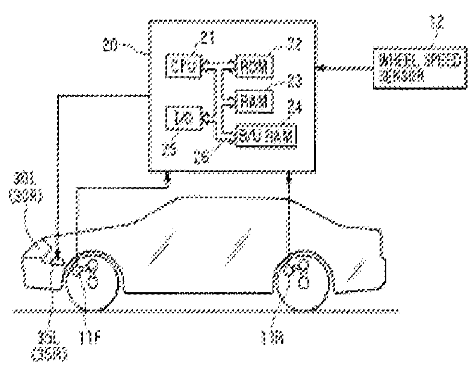
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to	E.g., col. 3, lines 30 to 39, "The curve-recognition device K is electrically conductively coupled with the switchover device SE and thereby couples the third filter F3 electrically conductively with the regulator R if a difference signal other than zero is fed to it from the subtractor SU. When no difference signal from the subtractor SU is present, the curve-recognition device K switches the switchover device SE so that the first filter F1 is coupled to the regulator R."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7: FIG. 7 	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the	E.g., col. 6, line 10 to 34, "In this connection, it is beneficial that upon the presence of a difference between the second, filtered, nominal-value signal to the third, filtered, nominal-value signal and

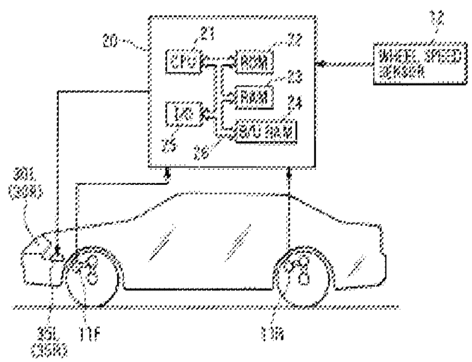
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7:	upon termination of a difference is again switched from the third, filtered, nominal-value signal to the first, filtered, nominal-value signal because in this manner, in an uncomplicated and cost effective manner, upon the presence of an inclination change of the motor vehicle body which is not attributable to a change in loading or to road surface unevenness, the regulation of the illumination range of the motor vehicle, in dependence from the third, long, filter time constant results, whereby the third, filtered, nominal-value signal is independent, or substantially independent, from the disturbing, or distorting, short time inclination changes so that after inclination changes of the motor-vehicle body which, for example, are caused by driving about a curve, false adjustments of the illumination range are not caused which can lead to the blinding of oncoming traffic or to losses in illumination range, which eliminates a danger during operation of a motor vehicle."

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 7 	
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output signal.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	E.g., col. 3, lines 16 to 18, "The regulator R regulates the position of adjusting elements, which are shown here in block form and which change the positions of headlights."

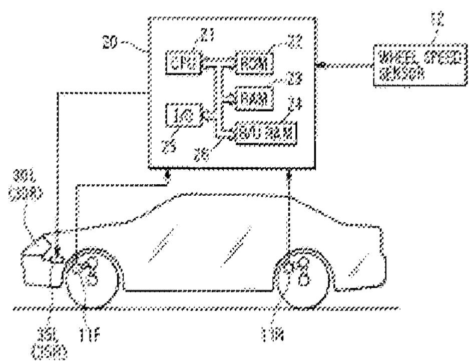
Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle	E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	

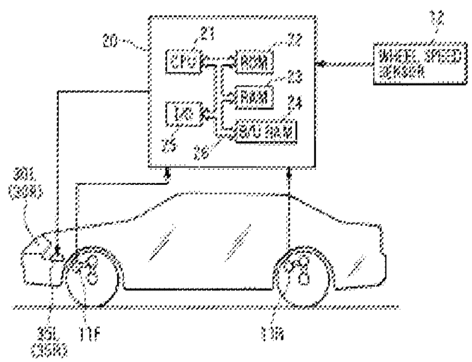
Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	

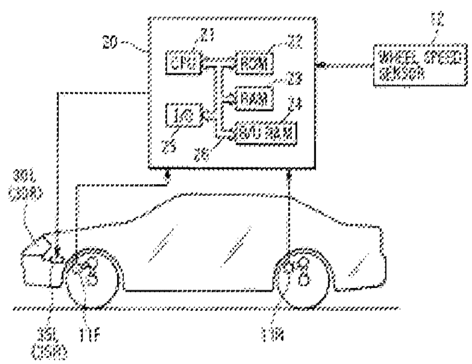
Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1  	a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

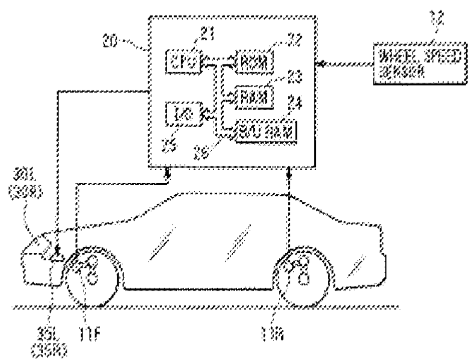
Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein said two or more sensors include a first sensor and a second sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

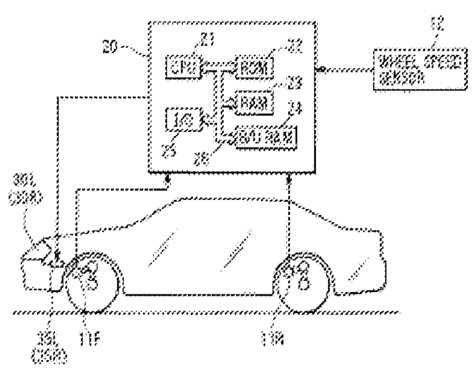
Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 397.	See claim 6 claim chart, above at page 397.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to

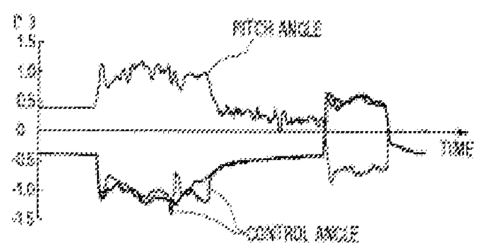
Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1  	a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
10. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 397.	See claim 6 claim chart, above at page 397.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles." E.g., col. 3, lines 40 to 45, "The curve-recognition device K is electrically conductively coupled with a speed signal sensor, or sender, G and includes a speed threshold value device which itself affects the switchover such that the third filter F3 is only

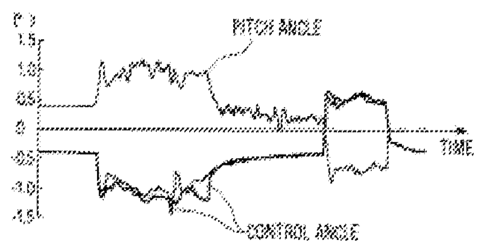
Limitation of '034 Patent Proposed Claim 10	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	coupled to the regulator R if a minimum speed of the motor vehicle is exceeded."

Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
11. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 397.	See claim 6 claim chart, above at page 397.
wherein said first sensor is physically separate from said second sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front	

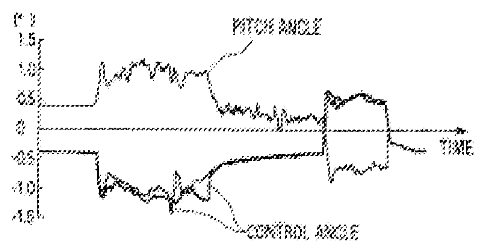
Limitation of '034 Patent Proposed Claim 11	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG. 1 	

Limitation of '034 Patent Proposed Claim 12	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
12. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein said sensed conditions further include one or more of a rate of change of road speed of the vehicle, a rate of change of steering angle of the vehicle, a rate of change of pitch of the vehicle, or a rate of change of suspension height of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	E.g., col. 5, lines 34 to 40, "So that also such inclination changes of the motor-vehicle body which are not attributable to acceleration changes will be recognized and false adjustments during regulation of the illumination range because of such inclination changes will be avoided, the third filter F3 is only placed in connection with the regulator when no acceleration of the motor vehicle is present."

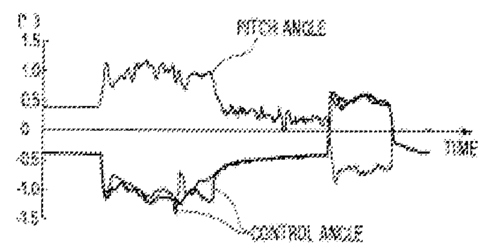
Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
13. The automatic directional control system	See claim 12 claim chart, above at page 403.	See claim 12 claim chart, above at page 403.

Limitation of '034 Patent Proposed Claim 13	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
defined in claim 12,		
wherein at least one of said two or more sensors generate a signal that is representative of the rate of change of road speed of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	E.g., col. 5, lines 34 to 40, "So that also such inclination changes of the motor-vehicle body which are not attributable to acceleration changes will be recognized and false adjustments during regulation of the illumination range because of such inclination changes will be avoided, the third filter F3 is only placed in connection with the regulator when no acceleration of the motor vehicle is present."

Limitation of '034 Patent Proposed Claim 15	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
15. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 403.	See claim 12 claim chart, above at page 403.

Limitation of '034 Patent Proposed Claim 15	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein at least one of said two or more sensors generates a signal that is representative of the rate of change of pitch of the vehicle.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	

Limitation of '034 Patent Proposed Claim 16	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
16. The automatic directional control system defined in claim 12,	See claim 12 claim chart, above at page 403.	See claim 12 claim chart, above at page 403.
wherein at least one of said two or more sensors	E.g., col. 6, lines 6 to 14, "On the other hand,	

Limitation of '034 Patent Proposed Claim 16	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
generates a signal that is representative of the rate of change of suspension height of the vehicle.	when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., Fig. 7: FIG. 7 	

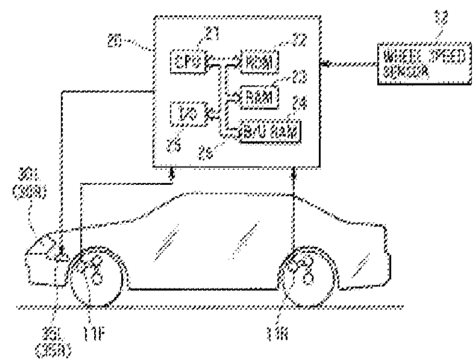
Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
17. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the automatic directional control system is configured to include at least two actuators.	E.g., col. 5, lines 16 to 20, "Output signals from the ECU 20 are supplied to actuators 35R and 35L	

Limitation of '034 Patent Proposed Claim 17	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	of right and left headlights 30R and 30L of the vehicle, thereby adjusting the optical axis direction of the right and left headlights 30R and 30L as will be described hereinlater."	

Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
18. The automatic directional control system defined in claim 17,	See claim 17 claim chart, above at page 406.	See claim 17 claim chart, above at page 406.
wherein the at least two actuators include a first actuator that is adapted to be connected to the headlight to effect movement thereof in a vertical direction.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow. The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on	

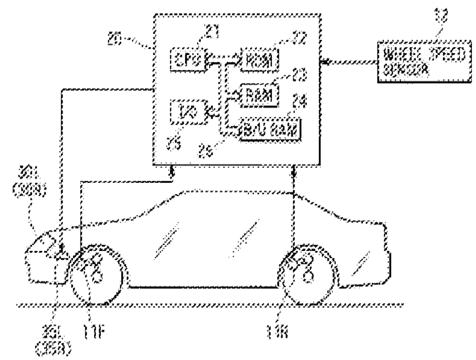
Limitation of '034 Patent Proposed Claim 18	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	the vehicle."	

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
20. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the at least one actuator includes an electronically controlled mechanical actuator.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., col. 5, lines 24 to 33, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow." E.g., Fig. 1,	

Limitation of '034 Patent Proposed Claim 20	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 21	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
21. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the at least one actuator includes a step motor.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow.	

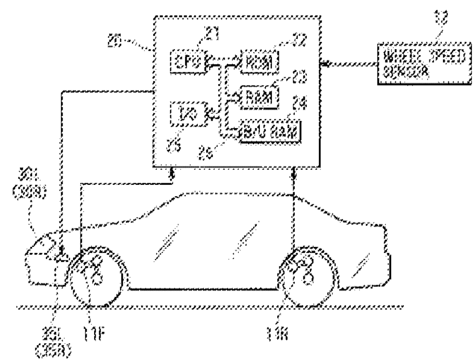
Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
22. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the at least one actuator includes a servo motor.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., col. 5, lines 24 to 33, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow." E.g., Fig. 1,	

Limitation of '034 Patent Proposed Claim 22	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	

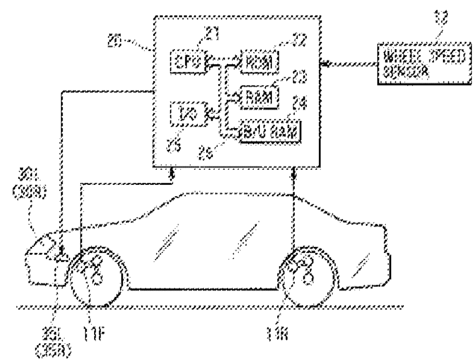
Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
25. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the automatic directional control system is configured such that the headlight is adjustably mounted on the vehicle such that a directional orientation at which a beam of light projects therefrom is capable of being adjusted up and down relative to a horizontal reference position.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow.	

Limitation of '034 Patent Proposed Claim 25	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	

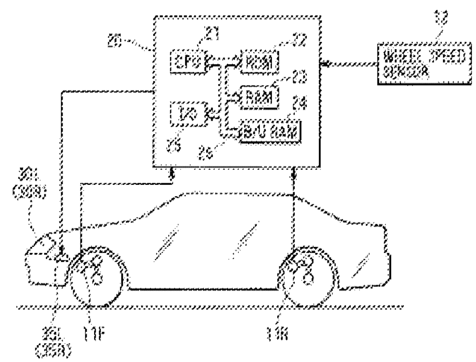
Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
28. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the automatic directional control system is configured such that the controller includes a microprocessor.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1,	

Limitation of '034 Patent Proposed Claim 28	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
29. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the automatic directional control system is configured such that the controller includes a programmable electronic controller.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1,	

Limitation of '034 Patent Proposed Claim 29	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	

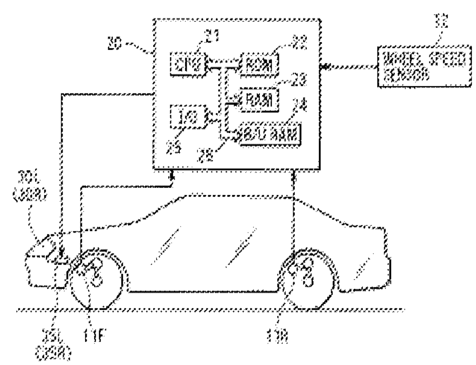
Limitation of '034 Patent Proposed Claim 33	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
33. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the automatic directional control system further includes memory.	E.g., col. 5, lines 11 to 15, "The ECU 20 is a logical operating circuit comprising a CPU 21 as a known central processing unit, a ROM 22 in which control programs are stored, a RAM 23 for storing various data, a B/U (back-up) RAM 24, an input/output circuit 25, and a bus line 26 connecting these elements." E.g., Fig. 1,	

Limitation of '034 Patent Proposed Claim 33	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 35	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
35. The automatic directional control system defined in claim 33,	See claim 33 claim chart, above at page 414.	See claim 33 claim chart, above at page 414.
wherein the memory is configured to store a predetermined reference position associated with the headlight.	E.g., col. 5, lines 24 to 40, "As shown in FIG. 2, the headlight 30L (30R) includes a lamp 31, a reflector 32 for fixing the lamp 31, a supporting member 33 of a rod shape for supporting the reflector 32 swingably in the directions shown by the arc arrow, a movable member 34 having also a rod shape, for supporting the reflector 32, and the actuator 35L (35R) such as a stepping motor or a DC motor for driving the movable member 34 in the directions shown by the double-headed arrow.	

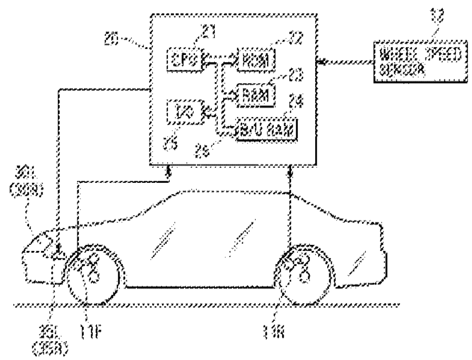
Limitation of '034 Patent Proposed Claim 35	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	The movable member 34 is driven in the back and forth directions by the actuator 35L (35R) so that the reflector 32 is vertically inclined about the end of the supporting member 33 as a fulcrum only by an actuator driving angle (target optical axis direction adjusting angle) Θa which will be described hereinlater, thereby adjusting the optical axis direction of the headlight 30L (30R). The optical axis direction of the headlight 30L (30R) is initially set on the assumption that one driver is on the vehicle."	

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
37. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by sensing a front and a rear suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor

Limitation of '034 Patent Proposed Claim 37	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	(displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
38. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein the automatic directional control system is configured such that the pitch of the vehicle is capable of being determined by a pitch level sensor.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1:	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation." E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

Limitation of '034 Patent Proposed Claim 38	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 1 	

Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
39. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of	

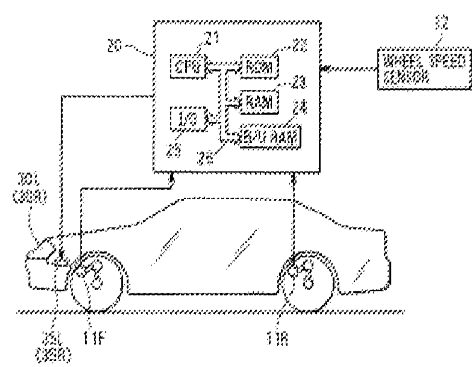
Limitation of '034 Patent Proposed Claim 39	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	

Limitation of '034 Patent Proposed Claim 40	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
40. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein the automatic directional control system is configured such that the controller is programmed to be responsive to changes in the suspension height of the vehicle that occur at frequencies lower than a suspension rebound frequency of the vehicle, thereby ignoring frequency changes in the suspension height of the vehicle that are a result of bumps in a road.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	

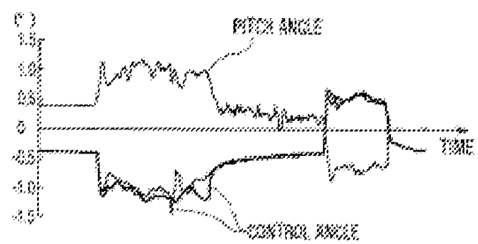
Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
41. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.

Limitation of '034 Patent Proposed Claim 41	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
wherein the automatic directional control system is configured such that the predetermined minimum threshold amount functions as a filter to minimize undesirable operation of the at least one actuator.	E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding."	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

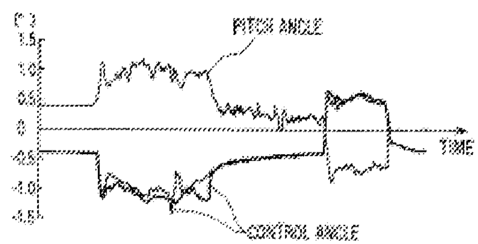
Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
42. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein said sensed conditions include three or more of road speed, steering angle, pitch, and suspension height of the vehicle.	E.g., col. 4, line 58 to col. 5, line 8, "Referring first to Fig. 1, a front (front-wheel) height sensor 11F is attached to a front suspension provided between a front axle and a vehicle chassis on a driver's seat side or a front passenger seat side. A rear (rear-wheel) height sensor 11R is attached to a rear suspension provided between the rear axle and the vehicle chassis on the driver's seat side or the rear passenger seat side. A front height value (a displacement of the vehicle height on the front wheel side) HF and a rear height value (a	E.g., Abstract, "In a method and apparatus to regulate the illumination range of a motor vehicle in which, at a position on a front axle and at a position on a rear axle, signals are measured which are dependent upon the relative positions of a motor-vehicle body to the front axle and the rear axle, with a difference formation between the signal from the front axle and that of the rear axle being accomplished with a resulting difference signal, as a nominal-value signal, being filtered to a first average-value formation."

Limitation of '034 Patent Proposed Claim 42	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	displacement of the vehicle height on the rear wheel side) HR as relative displacements (displacements of the vehicle height) between the respective axles on the front and rear wheel sides and the vehicle chassis supplied from the height sensors 11F and 11R, and various sensor signals of wheel speed pulses and the like from a wheel speed sensor 12 which is mounted as a vehicle speed sensor on the vehicle side and is used for known TRC and ABS controls and the like are supplied to an ECU (Electronic Control Unit) 20." E.g., Fig. 1: FIG.1 	E.g., col. 2, lines 40 to 48, "A front axle sensor sender (a device including or associated with a sensor for sending a sensed signal) V is here coupled with a nominal-value former over a first analog/digital converter A1. The nominal-value former S is additionally coupled with a rear axle sensor sender H over a second analog/digital converter A2. The front axle sender and the rear axle sender produce signals which are functions of the relative position of a motor vehicle body to the front and rear axles."

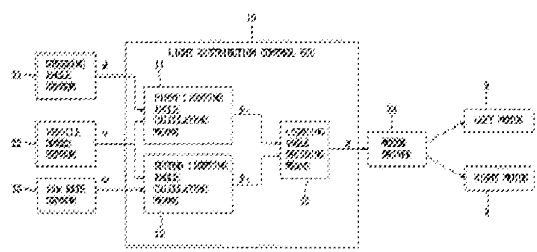
Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
44. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein said controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously in response to relatively small variations in the sensed operating conditions.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h (such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7:	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

Limitation of '034 Patent Proposed Claim 44	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	FIG. 7 	

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
45. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 388.	See claim 1 claim chart, above at page 388.
wherein controller is configured to be responsive to said two or more sensor signals for generating at least one output signal only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated unduly frequently in response to relatively small variations in the sensed operating conditions.	E.g., col. 6, lines 6 to 14, "On the other hand, when the vehicle speed v is equal to or larger than a few km/h (for example, 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V exceeds a preset threshold (such as +/- 2 [m/s2]), the filter B corresponding to the acceleration mode or the deceleration mode is used. Since the change in the pitch angle is large, no filtering or very weak filtering is performed so that the actuator is allowed to respond quickly to the change in the pitch angle." E.g., col. 6, lines 29 to 38, "When the vehicle speed V is equal to or higher than a few km/h	E.g., col. 4, lines 6 to 12, "At the coupling between the switchover device SE and the regulator R, a matching device AE is, here for example, arranged which, upon a switchover by the switchover device SE, adjusts the various nominal values to one another so that discontinuities or jumps in the adjustment and regulation of the illumination range are avoided."

Limitation of '034 Patent Proposed Claim 45	U.S. Patent No. 6,193,398 (Okuchi et al.)	U.S. Patent No. 5,182,460 (Hussman)
	(such as 2 [km/h]) and the acceleration dV/dt obtained by differentiating the vehicle speed V is lower than the preset threshold (for example, +/- 2 [m/s2]), the filter C corresponding to the constant speed mode is used. Since it is generally expected that the pitch angle does not largely change, strong filtering is performed so as to remove high frequency components of a vibration at the time of driving and the change in the pitch angle due to unevenness of the road surface, thereby preventing the actuator from responding." E.g., Fig. 7: FIG. 7  	

30. Proposed Claims 1 to 13, 20, 22, 24 to 26, 28, 29, 37, 38, 41, 42- 45 Are Unpatentable Over the Combination of Gotoh and Uchida Under 35 U.S.C. § 103(a)

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 A (Uchida)
1. An automatic directional control system for a vehicle headlight, comprising:	E.g., Abstract, "A head lamp device for a vehicle capable of changing a lighting region in front of the vehicle in right and left directions, in which change of the lighting region is suppressed so as not to give the driver a sense of incongruity when a steering wheel is operated in one direction and then rapidly in the other as in case of counter-steering."	E.g., page 1, lines 3 to 7, "The present invention relates to a vehicle lamp illumination direction control device which detects the posture of a vehicle and correctly adjusts the illumination direction of a vehicle lamp so that the illumination direction can be always kept in a predetermined direction."
two or more sensors that are each adapted to generate a signal that is representative of a condition of a vehicle, said sensed conditions including two or more of road speed, steering angle, pitch, and suspension height of the vehicle;	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 A (Uchida)
		detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof

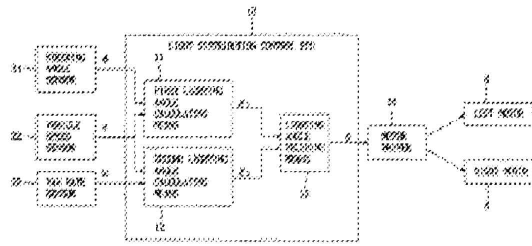
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 A (Uchida)
		and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree." E.g., page 15, line 30 to page 16, line 2 "As has been described above, according to the respective methods, it is possible to judge whether the vehicle is running in the acceleration condition or in the deceleration condition. Also, these methods can be applied in various manners, for example, the respective methods can be used individually, or some of them may be combined together for the enhanced accuracy of the judgment."
a controller that is responsive to said two or more sensor signals for generating at least one output signal	E.g., Col. 4, lines 59 to 60, "The motor 8 is controlled for its driving by a light distribution control ECU 10."	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 A (Uchida)
		the vehicle."
only when said at least one of the two or more sensor signals changes by more than a predetermined minimum threshold amount to prevent at least one actuator from being operated continuously or unduly frequently in response to relatively small variations in the sensed operating conditions; and	E.g., col. 6, line 42 to col. 7, line 2, "Referring to FIG. 8, from changes of the steering angle φ and the yaw angular velocity ω of FIGS. 7A and 7B, the following is understood. When the vehicle goes around the rightward curve, the steering wheel is turned to the right to have a positive steering angle φ at first, and the vehicle body yaws somewhat after the change of steering angle φ so that the yaw angular velocity ω increases following increase of the steering angle. In the meantime, the rear part of the vehicle is swung outside large, and therefore the driver turns the steering wheel to the left or in the opposite direction rapidly for counter-steering to recover direction of the vehicle. Namely, the steering angle φ changes from an upward incline to a downward incline in FIG. 7A. However, the yaw angular velocity ω is maintained due to inertia. Further, when the direction of the vehicle comes to show some recovery, the driver again turns the steering wheel to the right for going around the rightward curve, but he comes to carry out the counter-steering again soon after. Thus, the steering angle φ swings rightward and leftward in large variations. However, while the steering angle φ is swinging rightward and leftward as described above, the	E.g., page 4, lines 16 to 27 "According to the invention, when it is found that the vehicle is not in the acceleration or deceleration running condition, the control device controls the illumination direction of the lamp by fixing the direction of the illumination light of the lamp in a given direction, or by limiting the direction of the illumination light to a limited range, or by slowing down the response speed of the drive device, thereby being able to prevent the illumination direction of the lamp from being changed excessively and thus prevent the illumination direction of the lamp from being corrected excessively in the bad road running condition of the vehicle."

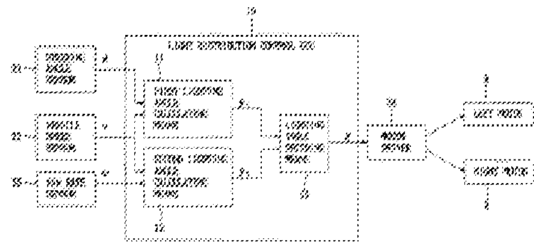
Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 A (Uchida)
	yaw angular velocity ω is maintained at a certain angular velocity stably in general, and at a time somewhat before the vehicle passes through the curve completely, the yaw angular velocity ω comes to coincide with the steering angle φ." E.g., Col. 7, lines 34 to 39, "Since the actual light distribution control is performed on the basis of the above-mentioned final lighting angle θ, even if the steering wheel is operated rapidly for the counter-steering and the like, change of the lighting region is suppressed pertinently and the driver is given no sense of incongruity."	
said at least one actuator being adapted to be connected to the headlight to effect movement thereof in accordance with said at least one output signal.		E.g., page 16, line 28 to page 17, line 6 "Also, if it is judged by the acceleration or deceleration running condition judging device 3b that the vehicle is not in the acceleration or deceleration running condition, then the illumination angle of the lamp 5 can be controlled by one of the following methods when the drive control device 4a receives an instruction from the acceleration or deceleration running condition judging device 3b: 1) a method for fixing the illumination angle; 2) a method for limiting the range of the illumination angle or forbidding part of the range of the illumination angle; and, 3) a method for changing the response speed or control speed of an actuator." E.g., page 7, lines 4 to 9, "In particular, the correction calculating device 3a is structured in the

Limitation of '034 Patent Proposed Claim 1	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 A (Uchida)
		following manner: that is, in accordance with a detect signal from the vehicle posture detection device 2, it transmits a control signal to the drive device 4 so that the illumination direction of the lamp 5 can be always kept in a given direction." See also 7:9-32. E.g., page 8, lines 1 to 9, "When the judging device 3b judges that the vehicle is in an acceleration or deceleration running condition, in accordance with a control signal transmitted from the correction calculating device 3a to the drive control device 4a, the acceleration or deceleration running condition judging device 3b transmits to the drive control device 4a a signal which allows the illumination direction of the lamp 5 to be corrected in a predetermined direction."

Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
2. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 426.	See claim 1 claim chart, above at page 426.
wherein at least one of said two or more sensors generates a signal that is representative of the road speed of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using

Limitation of '034 Patent Proposed Claim 2	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
	and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Proposed Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
3. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 426.	See claim 1 claim chart, above at page 426.
wherein at least one of said two or more sensors generates a signal that is representative of the steering angle of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3	

Limitation of '034 Patent Proposed Claim 3	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
	 FIG. 3	

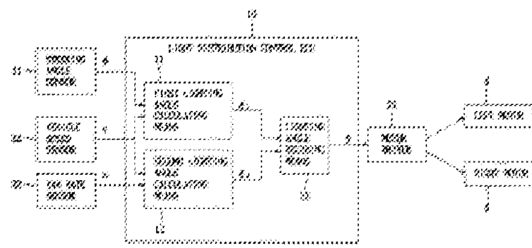
Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
4. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 426.	See claim 1 claim chart, above at page 426.
wherein at least one of said two or more sensors generates a signal that is representative of the pitch of the vehicle.		E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is

Limitation of '034 Patent Proposed Claim 4	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
		calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

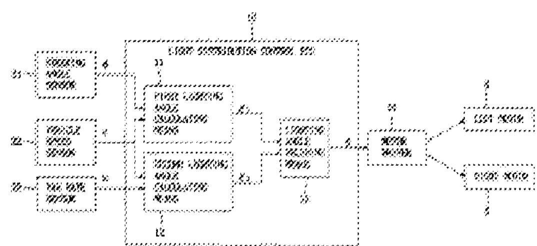
Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
5. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 426.	See claim 1 claim chart, above at page 426.
wherein at least one of said two or more sensors generates a signal that is representative of the suspension height of the vehicle.		E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used

Limitation of '034 Patent Proposed Claim 5	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
		height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
6. The automatic directional control system defined in claim 1,	See claim 1 claim chart, above at page 426.	See claim 1 claim chart, above at page 426.
wherein said two or more sensors include a first sensor and a second sensor.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device;

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
	vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is

Limitation of '034 Patent Proposed Claim 6	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
		detected by these height detection device, then the running condition of the vehicle can be confirmed to a certain degree."

Limitation of '034 Patent Proposed Claim 7	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
7. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 435.	See claim 6 claim chart, above at page 435.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the road speed of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the steering angle of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω." E.g., Figure 3  FIG. 3	E.g., Page 9, lines 13 to 23, "At first, the judging method in the acceleration or deceleration running condition judging device 3b will be described by classifying it into the following four methods: i) a method using the vehicle speed detection device; ii) a method using the acceleration or deceleration instruction detection device 8; iii) a method using the engine revolution number detection device 9; and iv) a method using the vehicle posture detection device 2." E.g., Page 9, lines 24 to 28 "Firstly, the method i) is a method which judges whether the vehicle is in the acceleration or deceleration running condition or not by detecting the running speed of the vehicle to calculate the change of the speed with time, that is, by calculating the acceleration of the vehicle."

Limitation of '034 Patent Proposed Claim 8	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
8. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 435.	See claim 6 claim chart, above at page 435.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the steering angle of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.	E.g., col. 4, lines 61 to 67, "Fig. 3 is a rough block diagram showing a control system for changing the lighting region in the present embodiment. The vehicle has a steering angle sensor 21 for detecting a direction of a front wheel with respect to the vehicle body, i.e. a steering angle φ, a vehicle speed sensor 22 for detecting a vehicle speed v and a yaw rate sensor 23 for detecting a yaw angular velocity (yaw rate) ω."	E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the inclination angle in the pitching direction of the vehicle (so-called pitch angle) is detected in accordance with the detect information that is detected by these height detection device, then the running condition of the vehicle can be confirmed

Limitation of '034 Patent Proposed Claim 8	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
		to a certain degree."

Limitation of '034 Patent Proposed Claim 9	U.S. Patent No. 5,909,949 (Gotoh)	GB 2 309 773 (Uchida)
9. The automatic directional control system defined in claim 6,	See claim 6 claim chart, above at page 435.	See claim 6 claim chart, above at page 435.
wherein said first sensor is adapted to generate a signal that is representative of a condition including the suspension height of the vehicle and said second sensor is adapted to generate a signal that is representative of a condition including the pitch of the vehicle.		E.g., Page 12 line 27 to page 13, line 15 "The remaining method iv) is a method which can judge the acceleration or deceleration running condition of the vehicle based on the information that is obtained by the vehicle posture detection device 2. Generally, as a device for detecting variations in the vibration of a mechanism for absorbing the vibration that is given to the wheels of the vehicle from the surface of a road or for detecting the height of the axle of the vehicle, there is used height detection device such as a height sensor or the like. In the present method, based on the information that is obtained from the height detection device, the time differential of the detected level or the absolute value thereof is calculated and, after then, by comparing the resultant value with a given reference value, it is possible to judge whether the vehicle is in the acceleration or deceleration running condition or not. Also, if a plurality of height detection device are arranged at several positions of the vehicle, for example, in the front and rear portions thereof and/or right and left portions thereof and the