MOTHERSON EXHIBIT 1006

DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.



US006672731B2

(12) United States Patent Schnell et al.

(54) VEHICULAR REARVIEW MIRROR WITH BLIND SPOT VIEWING SYSTEM

- (75) Inventors: Robert E. Schnell, West Olive, MI
 (US); David K. Willmore, Holland, MI
 (US); Richard J. Weber, Grand Haven, MI (US)
- (73) Assignee: **Donnelly Corporation**, Holland, MI (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 46 days.
- (21) Appl. No.: 09/991,463

(65)

(22) Filed: Nov. 16, 2001

Prior Publication Data

US 2002/0159171 A1 Oct. 31, 2002

Related U.S. Application Data

- (60) Provisional application No. 60/252,149, filed on Nov. 20, 2000.
- (51) Int. Cl.⁷ G02B 7/182
- (52) U.S. Cl. 359/877; 359/873; 359/874; 359/874; 359/875

(56) References Cited

U.S. PATENT DOCUMENTS

4,105,301 A	8/1978	Doeg 350/289
4,712,879 A	12/1987	Lynam et al 350/357
4,792,220 A	12/1988	Janowicz 350/637
4,834,522 A	5/1989	Janowicz 350/637
4,907,870 A	* 3/1990	Brucker 359/875
4,940,322 A	7/1990	Hamamoto et al 350/637
4,971,430 A	11/1990	Lynas 350/605
5,033,835 A	7/1991	Platzer, Jr 350/637
5,035,496 A	7/1991	An 350/605
5,050,977 A	9/1991	Platzer, Jr 359/866

5.097.362 A 3/1992 Lynas

5,097,362 A	3/1992	Lynas 359/843
5,115,352 A	5/1992	do Espirito Santo 359/855
5,140,455 A	8/1992	Varaprasad et al 359/275
5,142,407 A	8/1992	Varaprasad et al 359/276
5,151,816 A	9/1992	Varaprasad et al 359/275
5,159,497 A	10/1992	Lynas 359/843
5,189,561 A	2/1993	Hong 359/843
5,293,265 A	* 3/1994	Aleshin et al 359/198
5,311,368 A	5/1994	Tsuyama 359/874

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

3926560 A1	2/1991
551246 A1	7/1993
6483431	3/1989
6191349	7/1994

DE

EP JP JP

(57)

841, 849

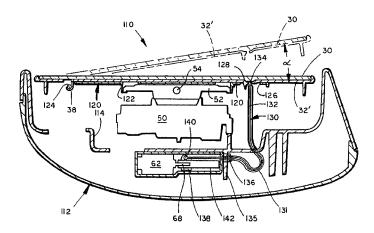
Primary Examiner-Mohammad Sikder

(74) Attorney, Agent, or Firm—Van Dyke, Gardner, Linn & Burkhart, LLP

ABSTRACT

A vehicular exterior rearview mirror blind spot viewing system includes an exterior rearview mirror assembly which enables moving the reflective mirror element to an alternate position for viewing of areas adjacent the vehicle which otherwise would be hidden in the driver's blind spot. The blind spot system includes a reflective mirror element mounted on a pivot member such as an electric actuator for adjusting the field of view of the mirror element for different drivers about an axis which is preferably centered on the mirror element. A support member has a joint spaced laterally of the axis and pivotally connected to the pivot member for moving the mirror element between a first rearward viewing position and a blind spot viewing position. A power source such as an electric motor is preferably mounted on the pivot member and is spaced from the support member joint, and includes a threaded member pivotally connected to the support member and driven by a gear. The electric motor is preferably connected via a control circuit to a remote switch such as in the passenger compartment to allow the driver to pivot the support member and mirror element for blind spot viewing when desired.

49 Claims, 17 Drawing Sheets

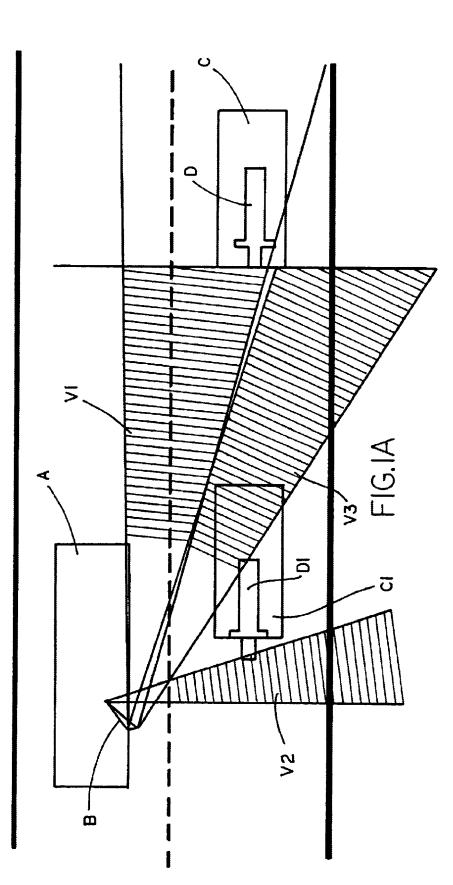


(10) Patent No.: US(45) Date of Patent:

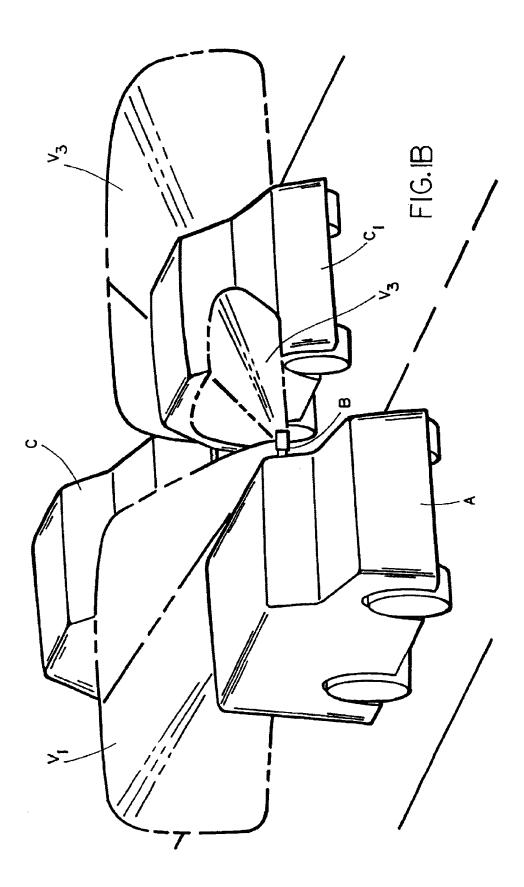
US 6,672,731 B2 Jan. 6, 2004 Page 2

U.S. PATENT DOCUMENTS

U.S.	PATENT	DOCUMENTS		Bingle et al 310/51
5 470 207 A	10/1005	Sec. 250/041		Lynam et al 359/879
5,479,297 A		Summers 359/841	6,094,027 A 7/2000	Willmore et al 318/652
5,497,306 A		Pastrick 362/83.1	6,116,742 A 9/2000	Ahn 359/843
5,500,766 A		Stonecypher 359/605	6,168,279 B1 1/2001	Schnell 359/872
5,519,336 A	5/1996	Russell 350/289	6,176,602 B1 1/2001	Pastrick et al 362/494
5,668,663 A	9/1997	Varaprasad et al 359/608	6,213,612 B1 4/2001	Schnell et al 359/877
5,669,699 A	9/1997	Pastrick et al 362/83.1	6,243,218 B1 6/2001	Whitehead 359/877
5,745,310 A ⁻	* 4/1998	Mathieu 359/843	6,276,821 B1 8/2001	Pastrick et al 362/494
5,823,654 A	10/1998	Pastrick et al 362/83.1	6,485,155 B1 * 11/2002	Duroux et al 359/877
5,900,999 A	5/1999	Huizenga et al 359/877		
5,910,854 A	6/1999	Varaprasad et al 359/273	* cited by examiner	



DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.



DOCKET ALARM Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET A L A R M



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.