

United States Patent [19]**Gotou**[11] **Patent Number:** **5,588,733**[45] **Date of Patent:** **Dec. 31, 1996**[54] **HEAD LAMP DEVICE FOR VEHICLE**[75] Inventor: **Shinichirou Gotou**, Saitama-ken, Japan[73] Assignee: **Honda Giken Kogyo Kabushiki Kaisha**, Tokyo, Japan[21] Appl. No.: **472,225**[22] Filed: **Jun. 7, 1995**[30] **Foreign Application Priority Data**

Jan. 17, 1995 [JP] Japan 7-020898

[51] Int. Cl.⁶ **B60Q 1/12**[52] U.S. Cl. **362/37; 362/66; 362/40; 315/79; 315/82**[58] **Field of Search** 362/71, 66, 285, 362/287, 37, 43, 83.3, 40, 41, 36; 315/79, 80, 81, 82; 307/10.1, 10.8[56] **References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Ira S. Lazarus*Assistant Examiner*—Thomas M. Sember*Attorney, Agent, or Firm*—Weiner, Carrier & Burt, P.C.; Joseph P. Carrier; Irving M. Weiner[57] **ABSTRACT**

A head lamp device for a vehicle in which a lighting region in front of the vehicle in a traveling direction can be adjusted in rightward and leftward directions comprises: a direction indicating signal outputting mechanism **11** for detecting an operation of a winker device and outputting a direction indicating signal; a steering signal outputting mechanism **12** for detecting a steering angle of a steering device and outputting a steering angle signal; a map information outputting mechanism **30** for outputting map information including road data; a present position detecting mechanism **32** for detecting a present position of proper vehicle on the map; and a control mechanism **10** for inputting the said direction indicating signal, steering angle, map information and information of the present position and adjusting the lighting region of the head lamp. The control mechanism **10** selects a first control mode when the direction indicating signal is outputted; a second control mode for adjusting the lighting region in response to the steering angle when the first mode is not selected and the present position is not found on the road data of the map information or a steering angle of the steering angle signal exceeds a predetermined range; and a third control mode for adjusting the lighting region in compliance with an expectation of forward road shape in a vehicle traveling direction in reference to the map information and the present position when the first and second control modes are not selected.

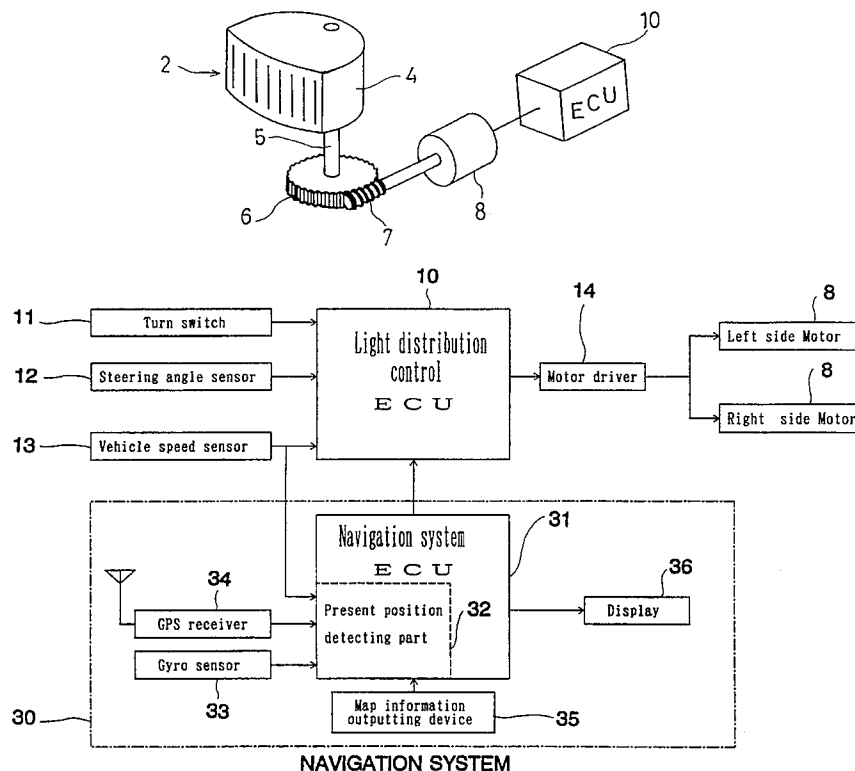
17 Claims, 7 Drawing Sheets

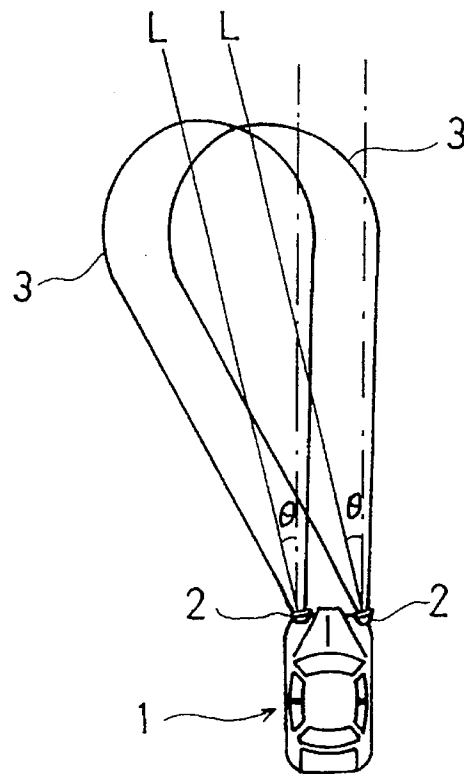
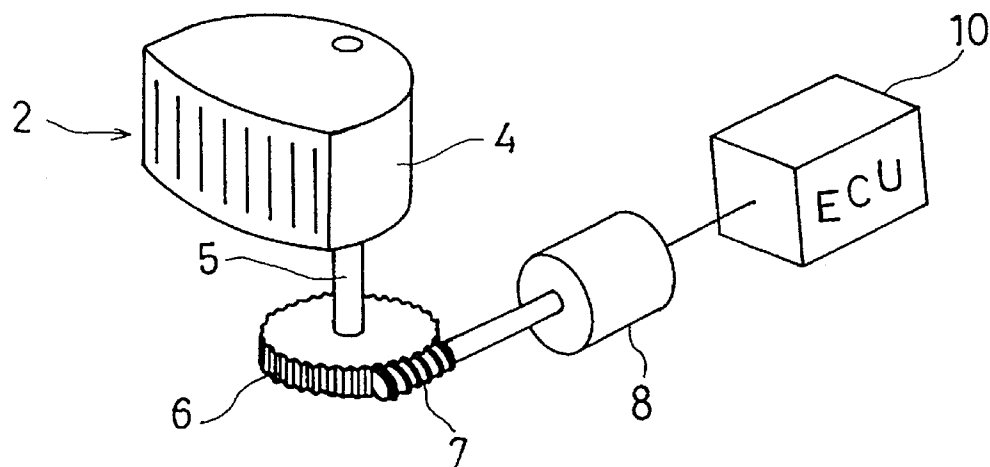
FIG. 1FIG. 2

FIG. 3

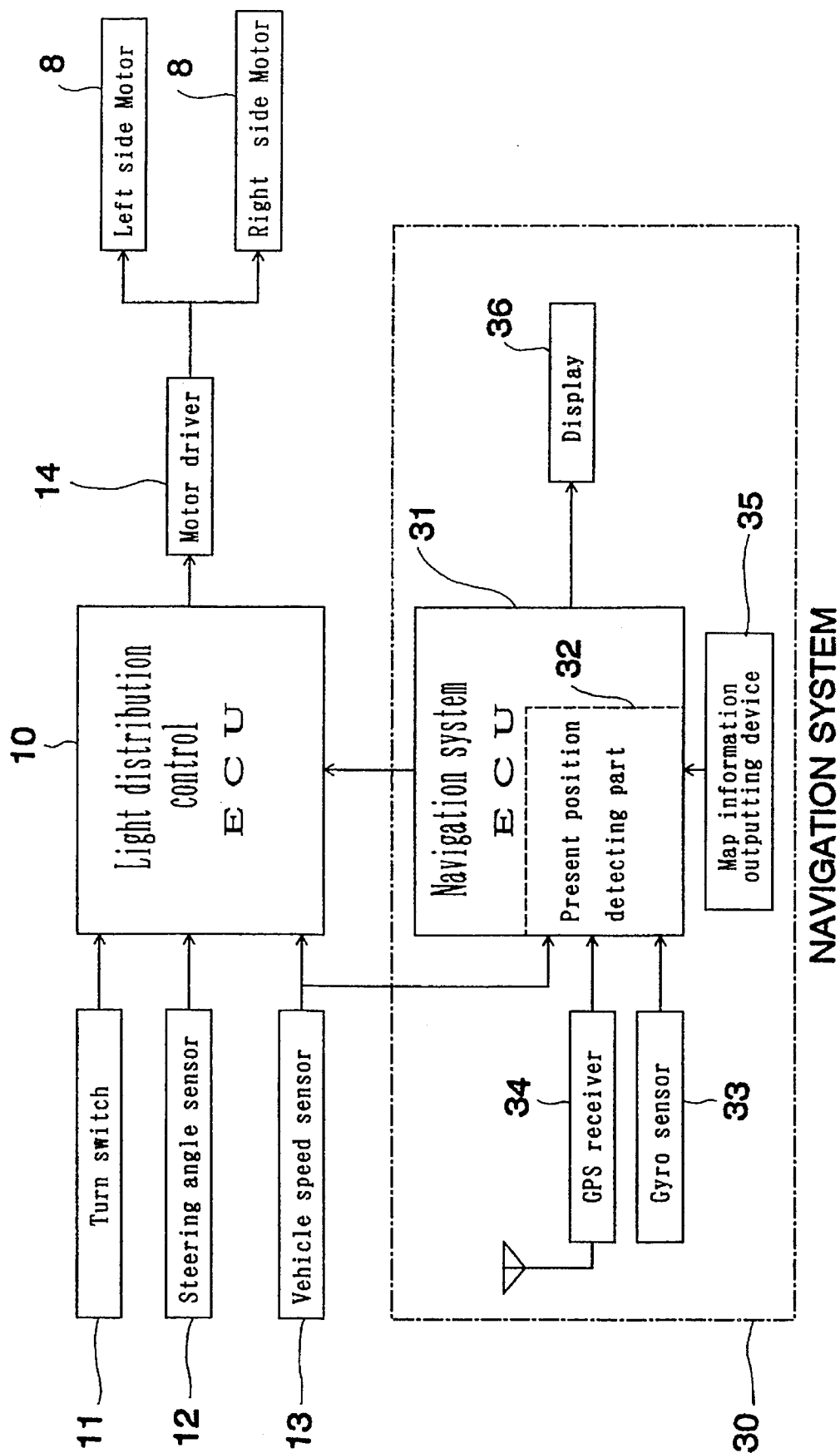


FIG. 4

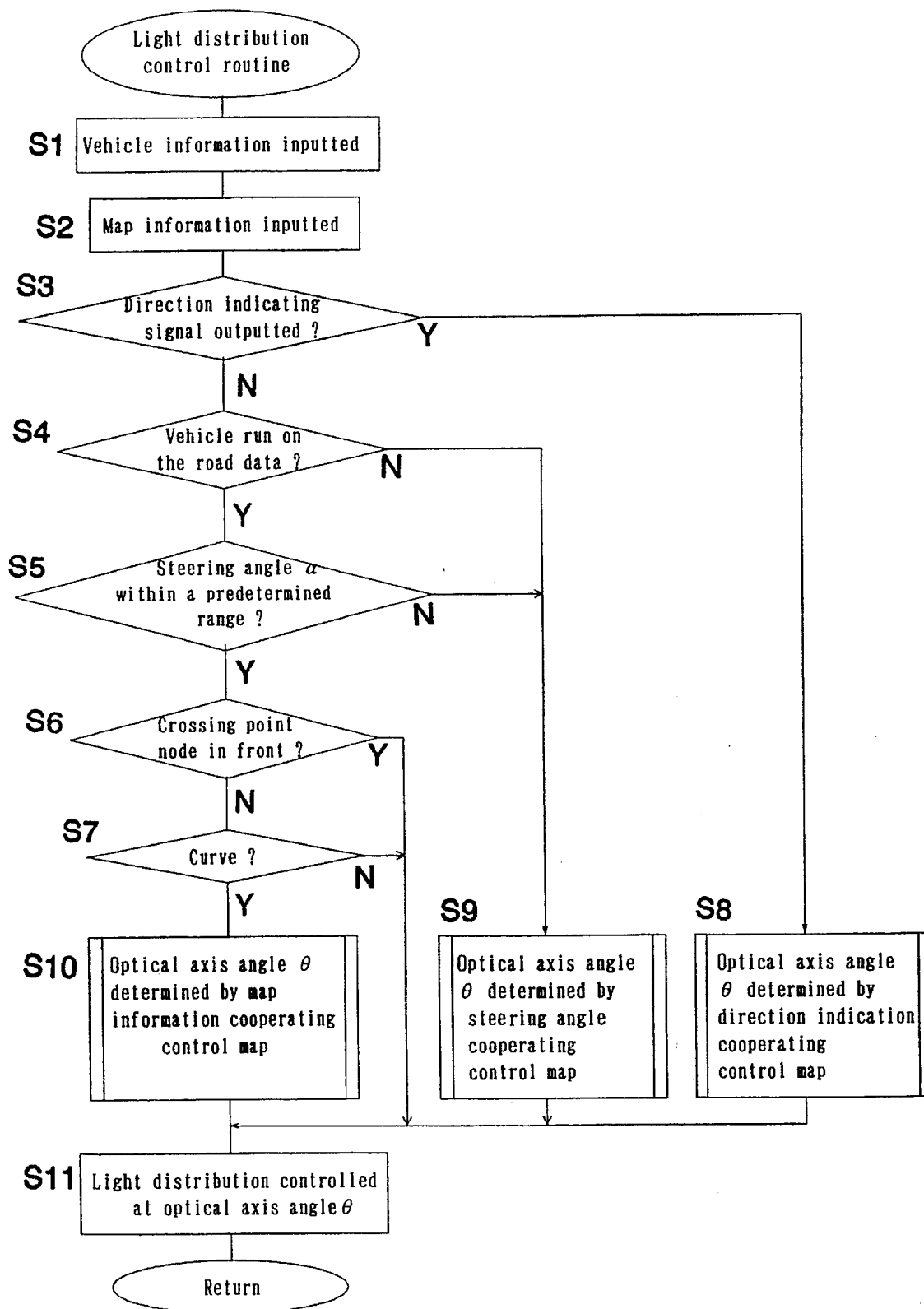
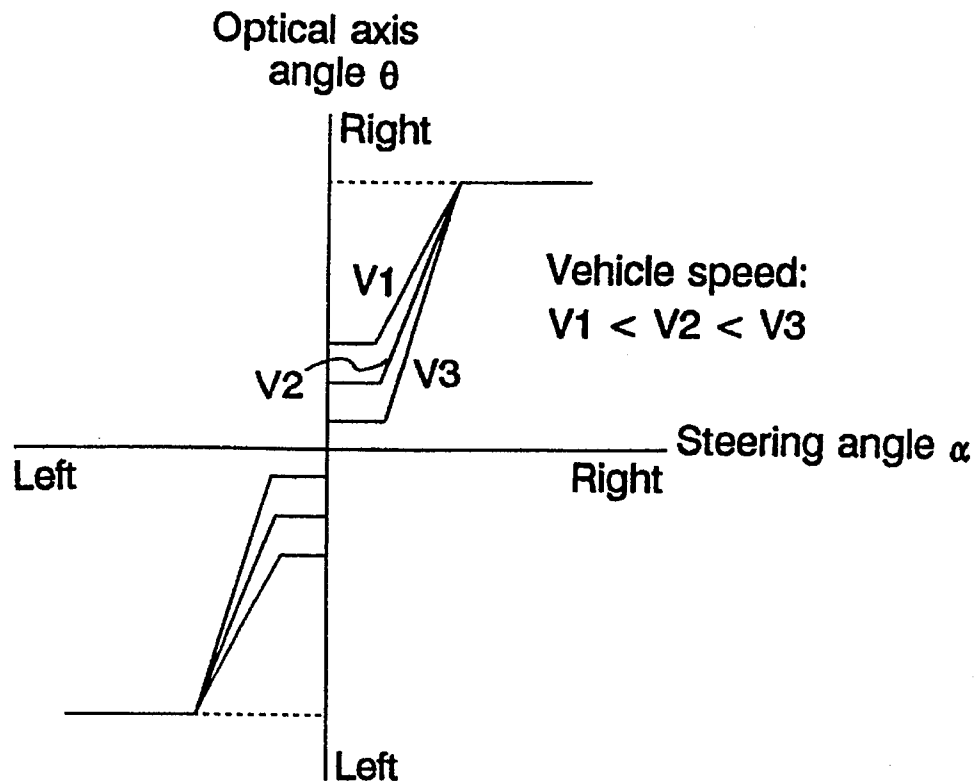
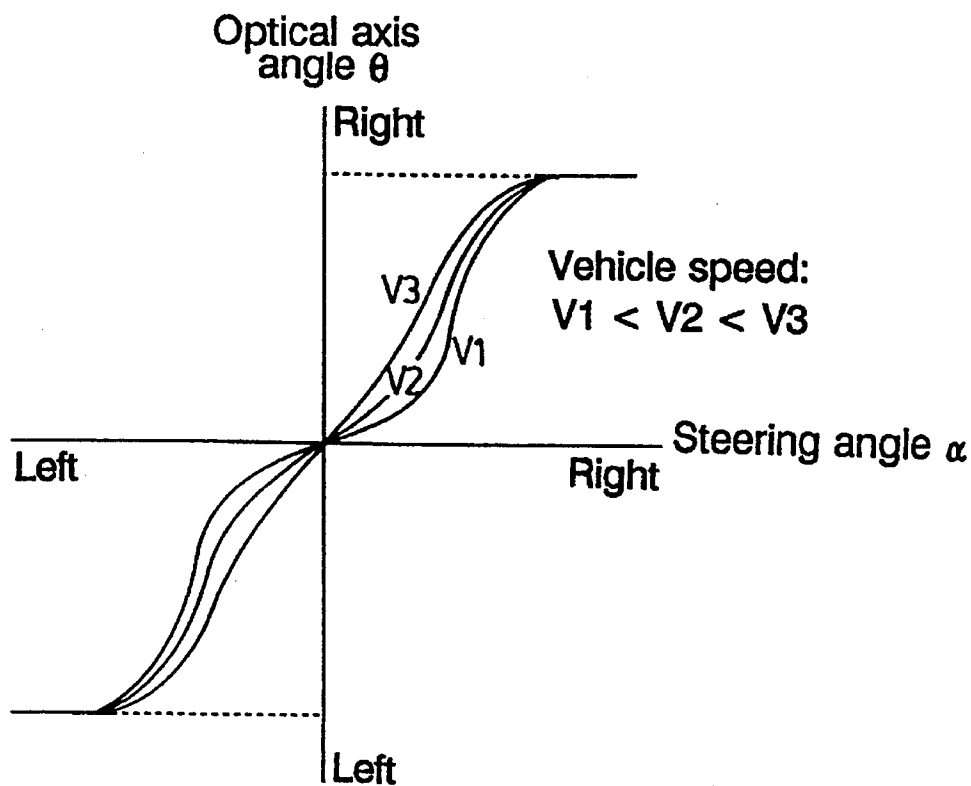


FIG. 5FIG. 6

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