

(54) **AUTOMATIC LEVELING DEVICE FOR AUTOMOTIVE VEHICLE HEADLAMPS**

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- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(51) **Int. Cl.⁷** **B60Q 10/76**

(52) **U.S. Cl.** **362/276; 362/464; 362/465; 362/467**

(58) **Field of Search** **362/276, 464, 362/465, 467, 272, 286, 271**

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(57) **ABSTRACT**

An automatic leveling device for automotive vehicle headlamps is described. The device automatically stops driving an actuator if the actuator is determined to be failing, while the other normally operating actuator is used to perform a leveling of the optical axis of the headlamp as close to a proper leveling as possible. In an implementation, a pair of left and right headlamps 1L, 1R have optical axes L that are tilted individually by driving left and right actuators 10L, 10R, respectively. A single control unit 16 simultaneously controls the driving of the left and right actuators 10L, 10R. A vehicle speed detection means 12, a pitch angle detection means 14, and failure detection means 20L, 20R are included. The control unit 16 controls the driving of the actuators 10L, 10R 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 a road, and when an actuator is determined to be failing, the CPU unit 16 stops driving the failing actuator, while driving the normally operating actuator, thereby performing a leveling of the optical axis of the headlamp as close to a proper leveling as possible.

9 Claims, 5 Drawing Sheets

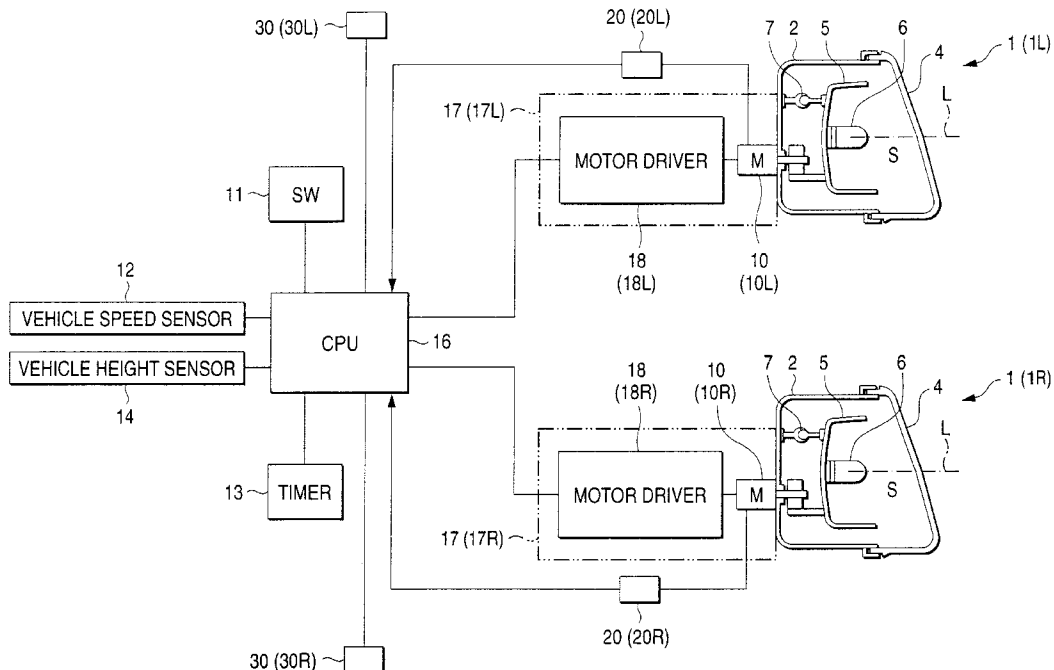


FIG. 1

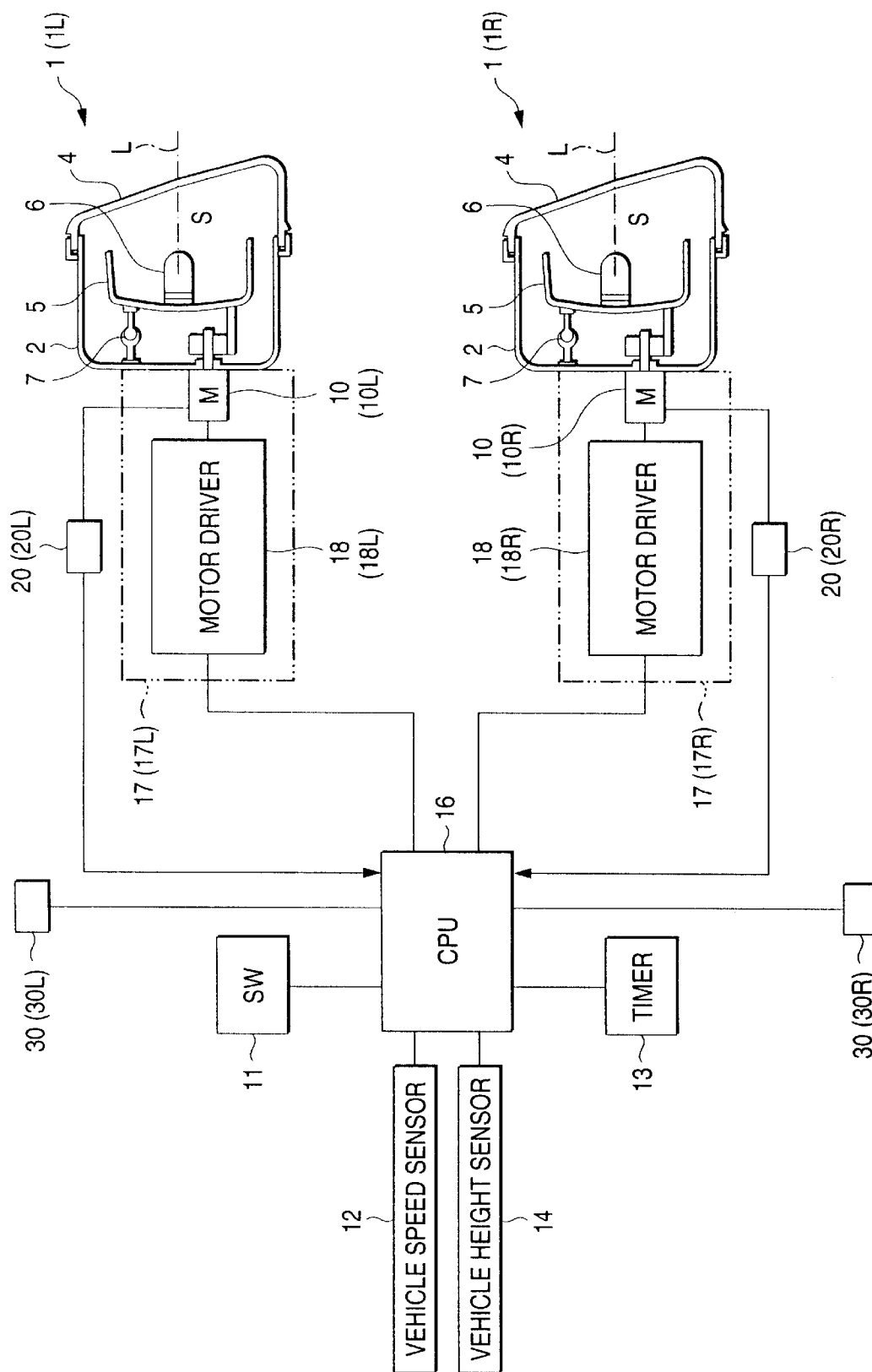


FIG. 2

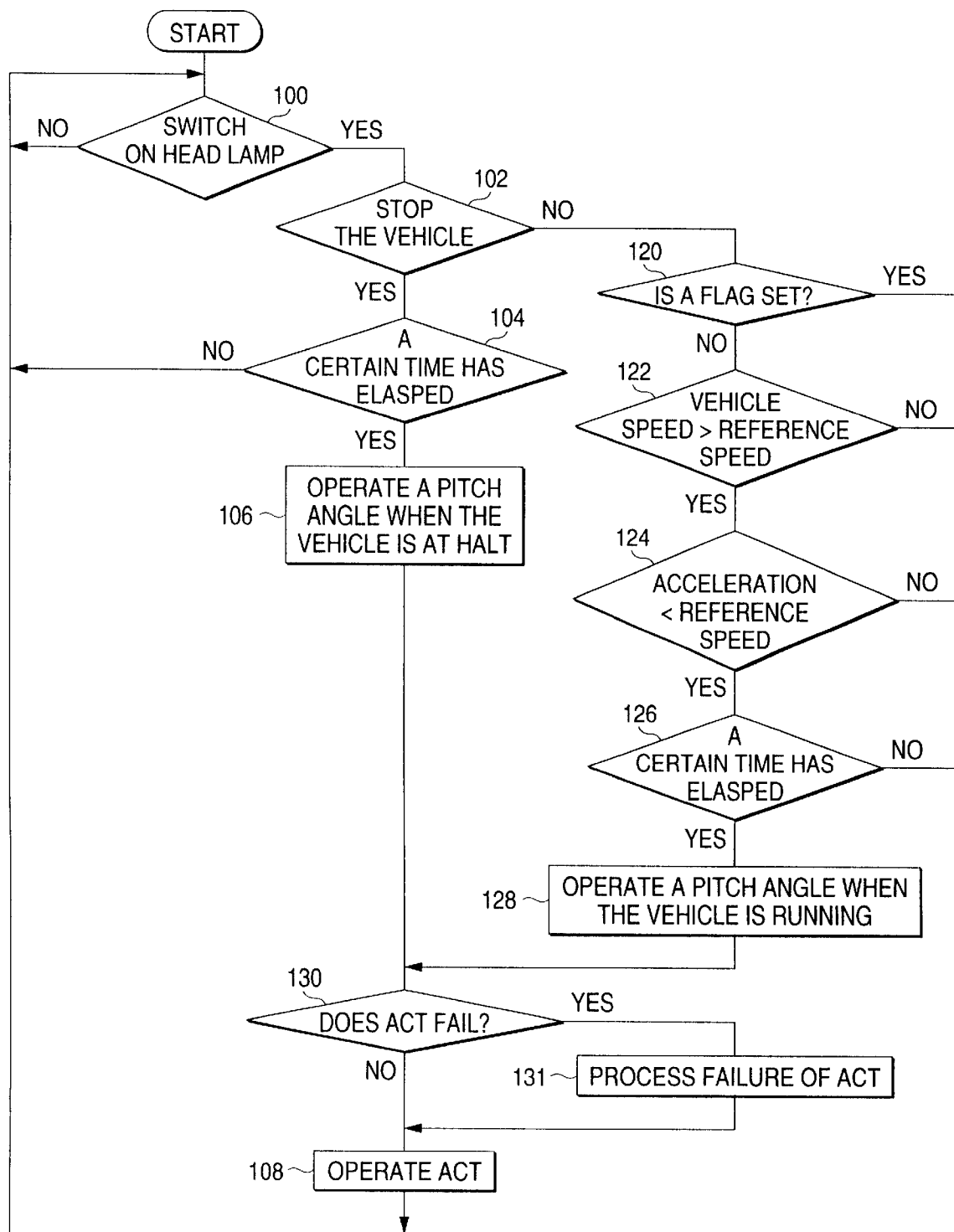


FIG. 3

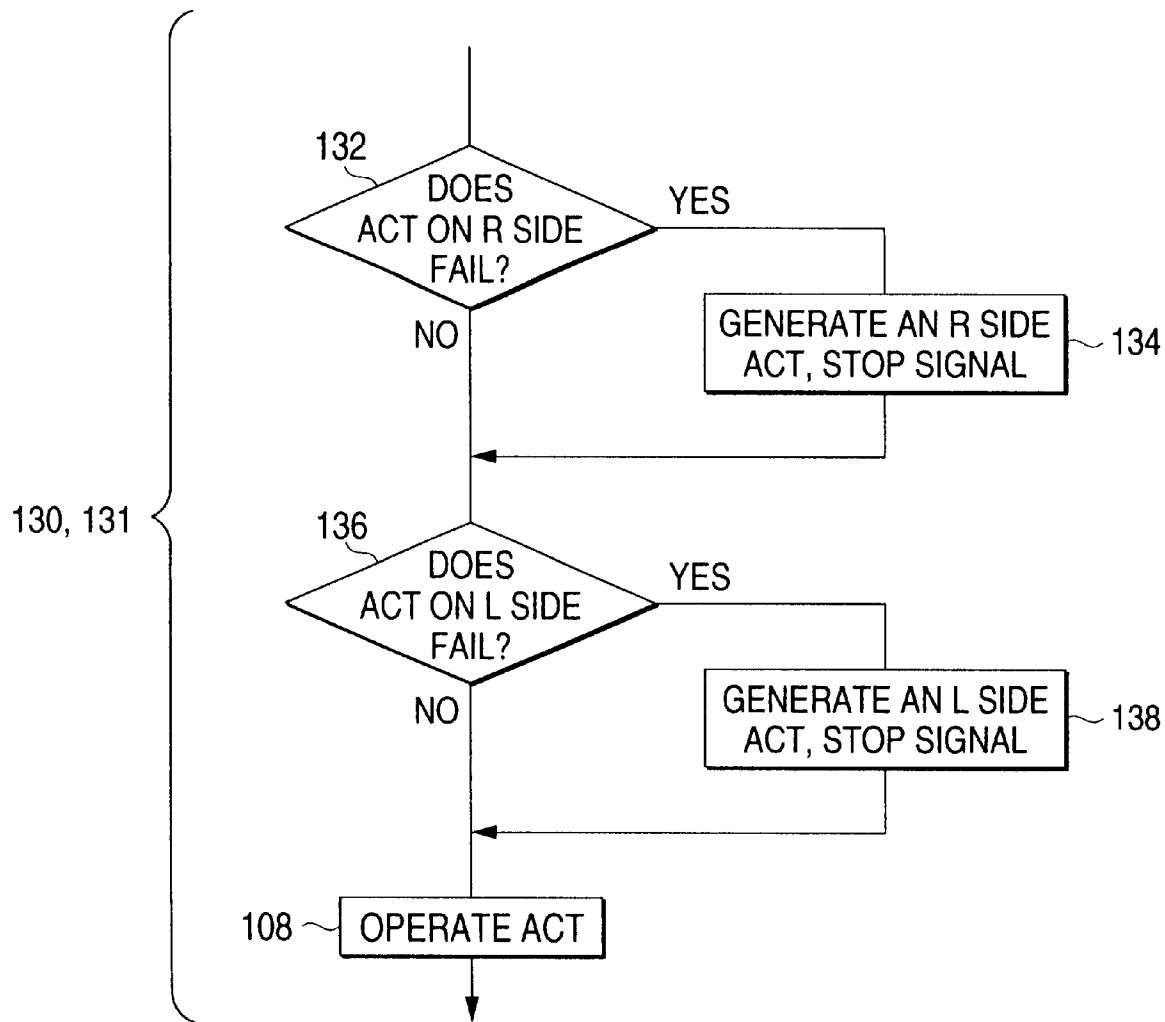
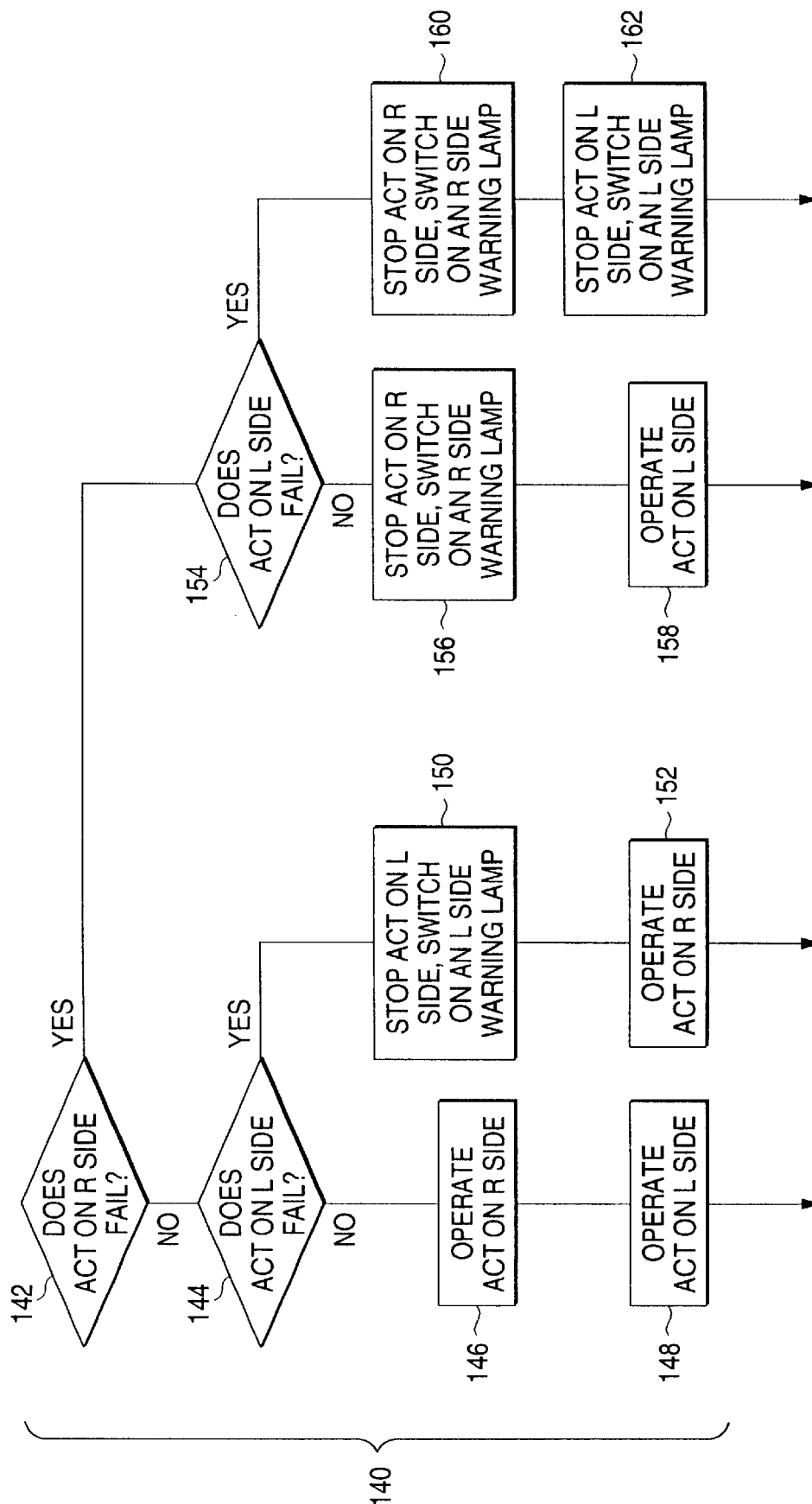


FIG. 4



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