

- [54] **GPS/SELF-CONTAINED COMBINATION TYPE NAVIGATION SYSTEM**
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- [73] **Assignees:** **Mitsubishi Denki Kabushiki Kaisha; Japan Radio Co., Ltd., both of Tokyo, Japan**
- [21] **Appl. No.:** **167,093**
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- [51] **Int. Cl.⁴** **G06F 15/50; G01C 21/00**
- [52] **U.S. Cl.** **364/449; 364/443; 364/460; 364/571.01; 342/357; 342/451; 342/461**
- [58] **Field of Search** **364/449, 450, 452, 454, 364/457, 424.01, 424.02, 459, 571.01; 340/988, 989, 990, 995; 342/450, 451, 457, 357, 461**
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[57] **ABSTRACT**

In a global positioning system (GPS)/self-contained combination type navigation system for a vehicle, the GPS navigation data are received by the GPS antenna of the navigation system which are simultaneously transmitted from more than 3 pieces of satellites inclusively. From the GPS navigation data, GPS type velocity data is calculated, whereas self-contained type velocity data is calculated from self-contained type navigation data such as azimuth data and drive-distance data of the vehicle. Only when a difference between the self-contained type velocity data and the GPS type velocity data exceeds a threshold velocity, the GPS type velocity data is voided so as to determine the present position of the vehicle.

16 Claims, 8 Drawing Sheets

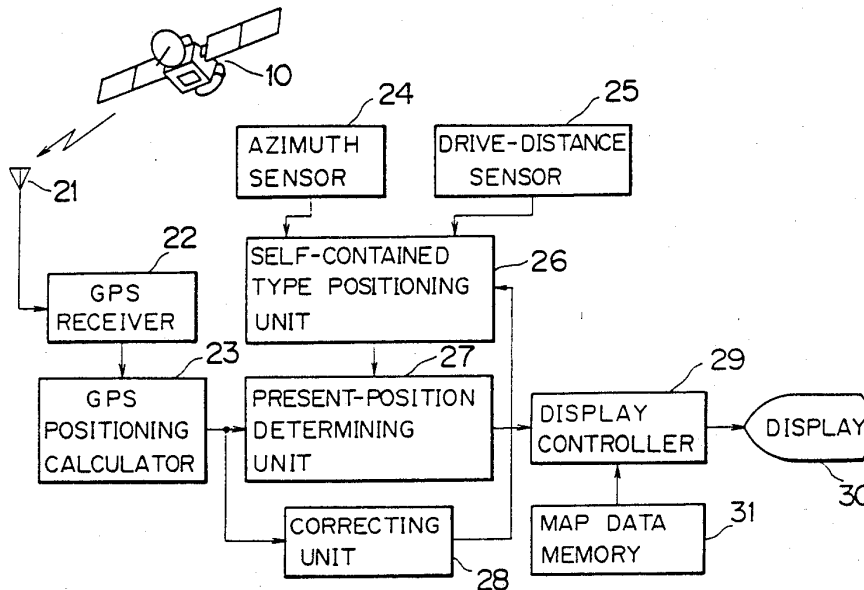


FIG. 1
PRIOR ART

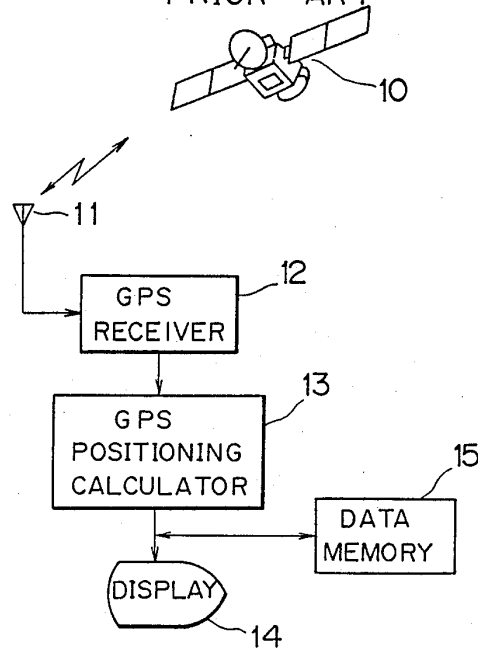
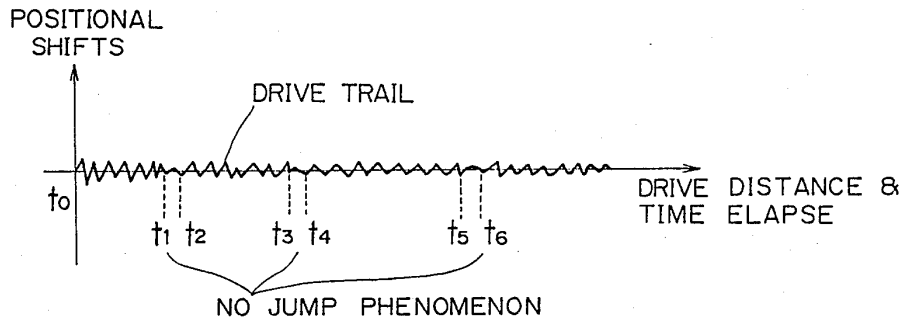
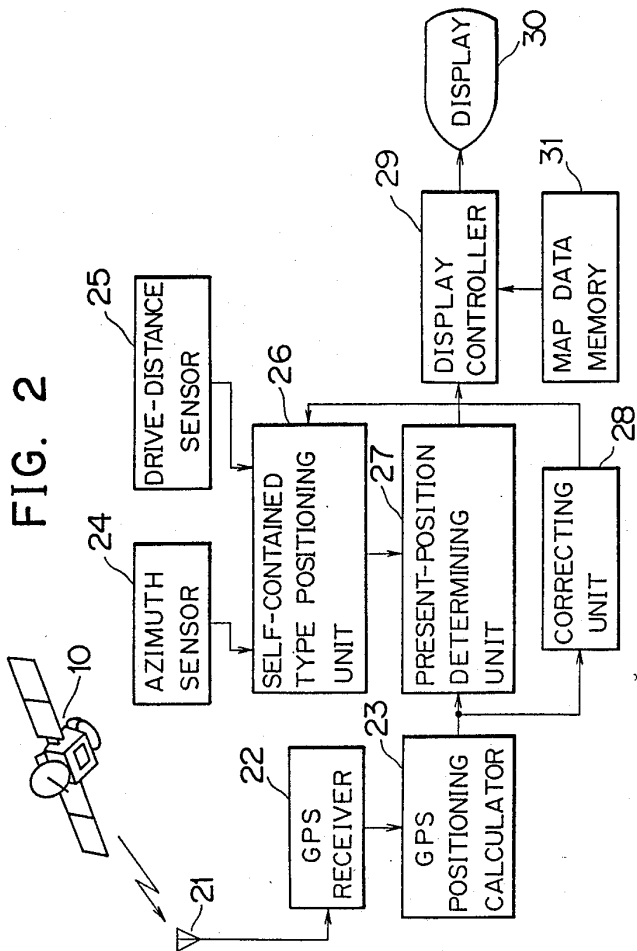


FIG. 7





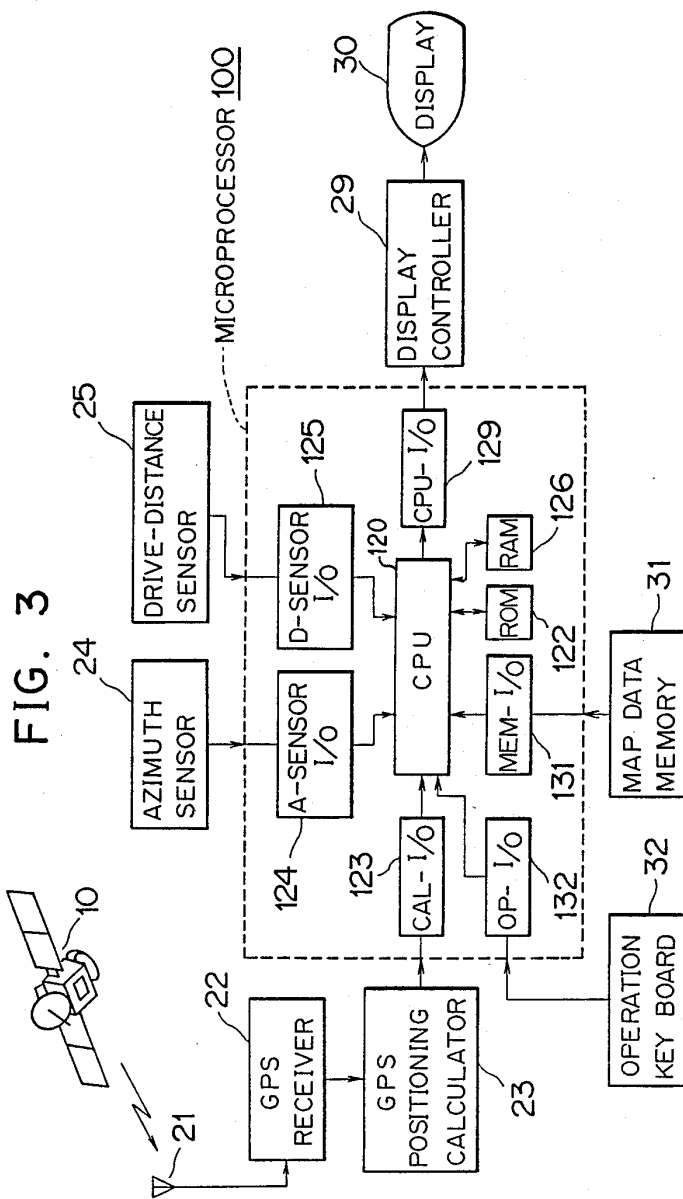
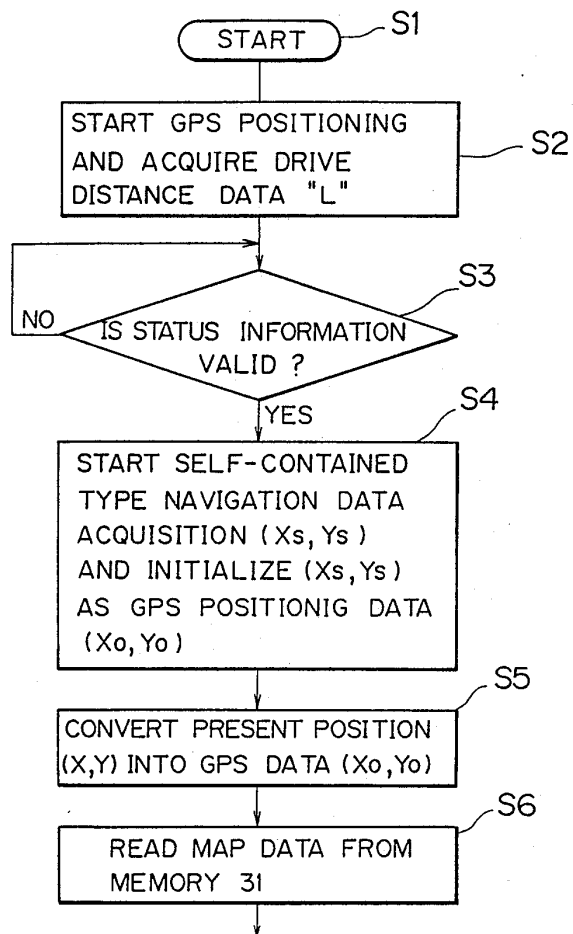


FIG. 4A



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