

(12) United States Patent
Maruyama et al.

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(54) **PORTABLE TERMINAL WITH THE FUNCTION OF WALKING NAVIGATION**

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* cited by examiner

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(51) Int. Cl.⁷ **G01C 21/00**

(52) U.S. Cl. **701/200; 701/201; 342/357.01; 342/357.08; 340/980**

(58) Field of Search **701/200, 201, 701/202, 211, 212, 213, 214; 340/988, 995; 342/357.01, 357.06, 357.08, 443, 147; 367/118**

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13 Claims, 10 Drawing Sheets

(57) ABSTRACT

A portable terminal has a function of walking navigation. The direction of the destination is displayed by an indicating arrow that always points in the direction of the destination. In the navigation processing, the user enters data to select a menu and/or set retrieving conditions on the setup screen. At first, the user gets the location information of the portable terminal, represented by a latitude/longitude or coordinates and an altitude, for example. Then, the user gets the direction information of the portable terminal, which is the direction of the tip of the portable terminal as determined by a compass, a gyro, or a clinometer. The location information and the direction information are set as terminal information for the retrieving conditions. The system controls retrieving of the database and retrieves the information corresponding to the selected menu, such as route guidance.

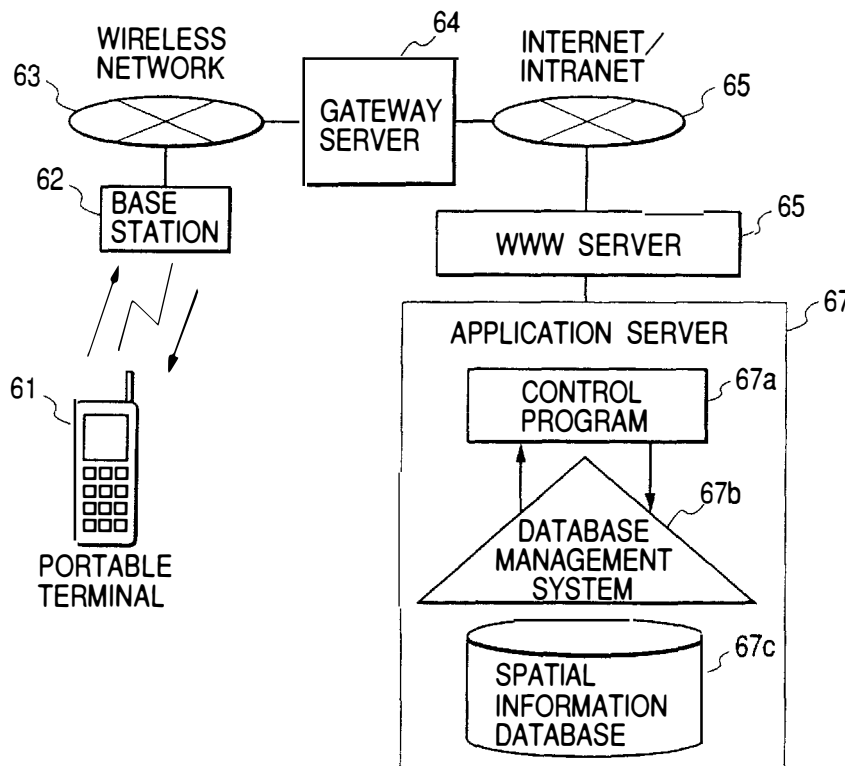


FIG. 1

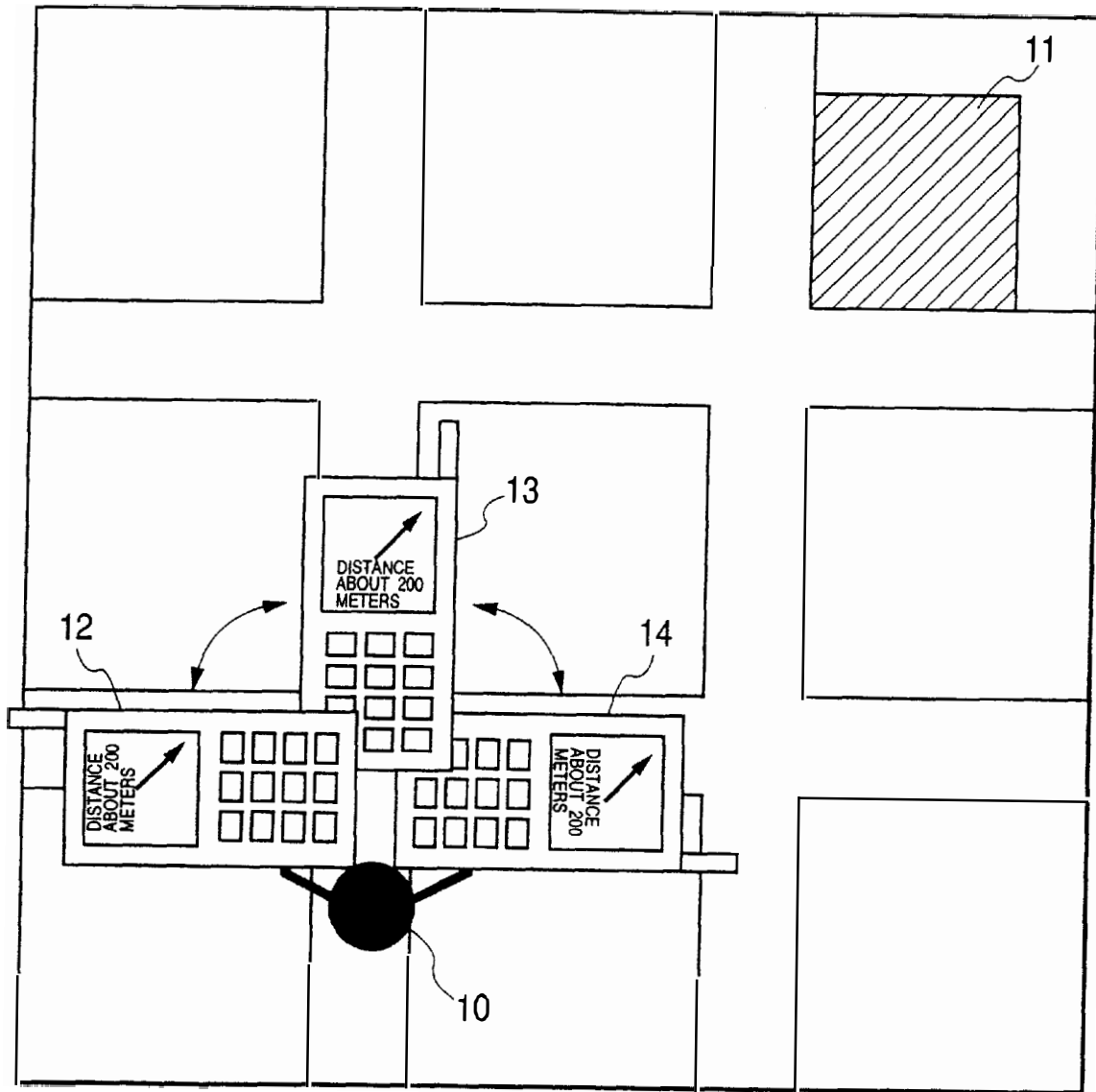


FIG. 2

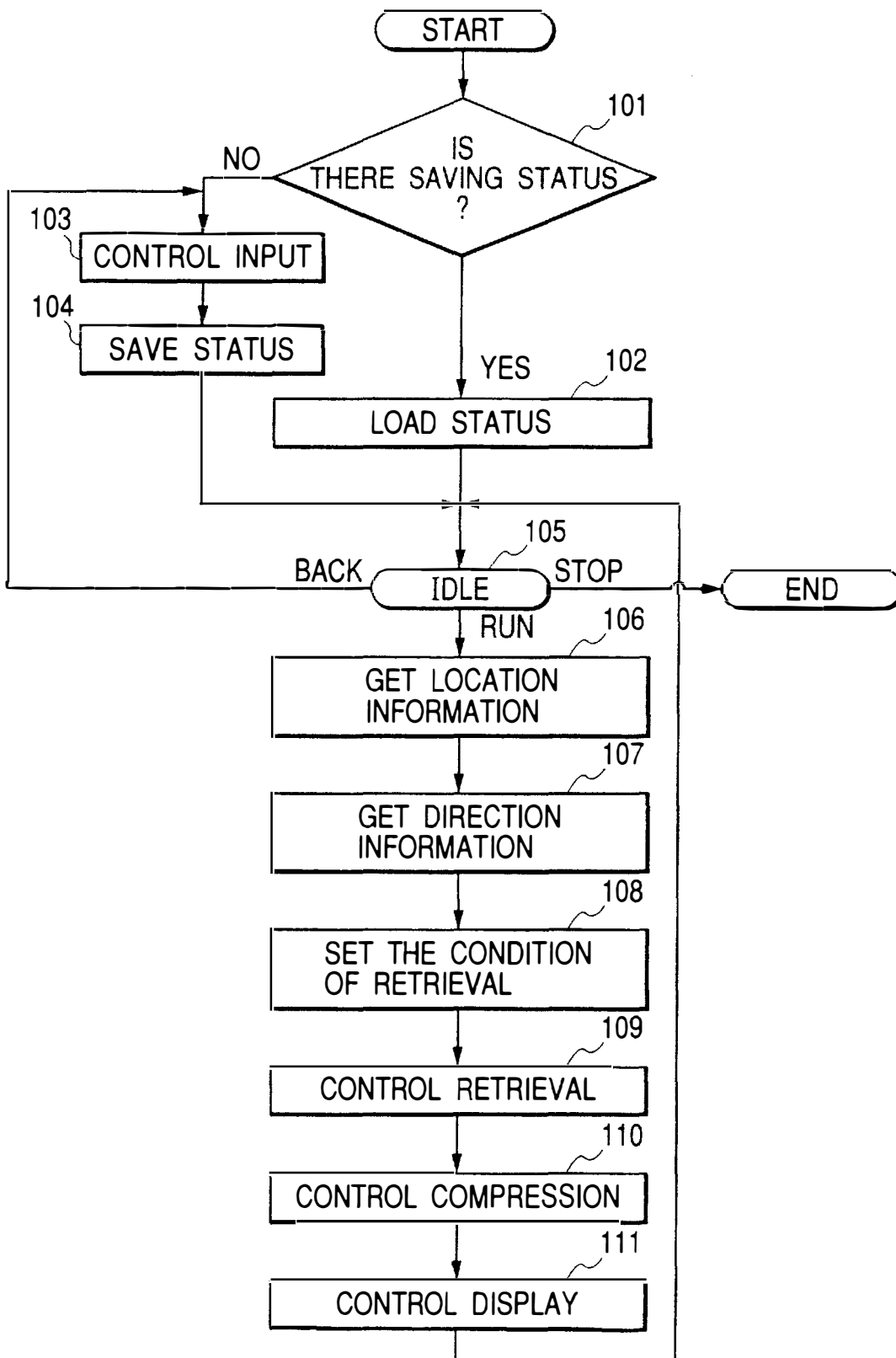


FIG. 3(a)

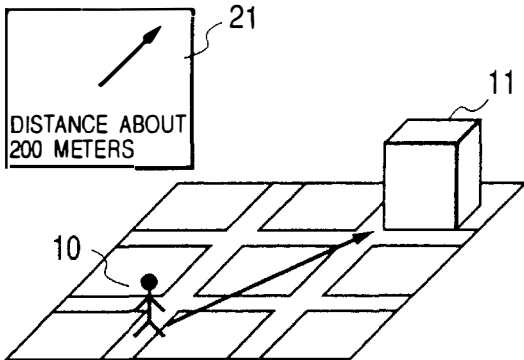


FIG. 3(b)

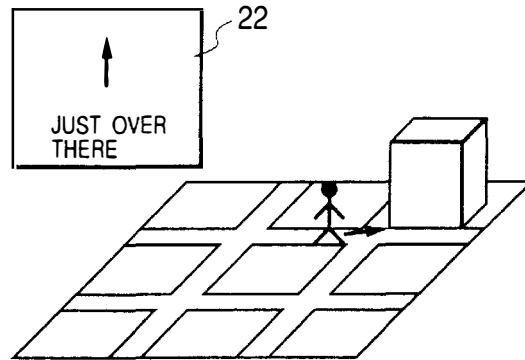


FIG. 3(c)

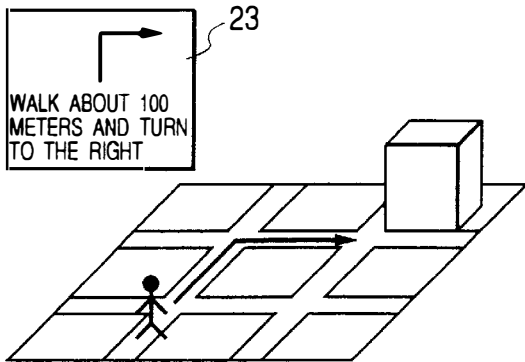


FIG. 3(d)

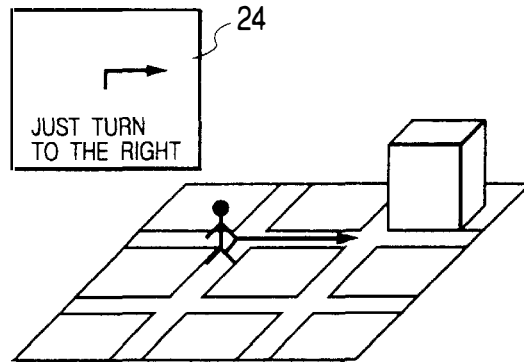


FIG. 3(e)

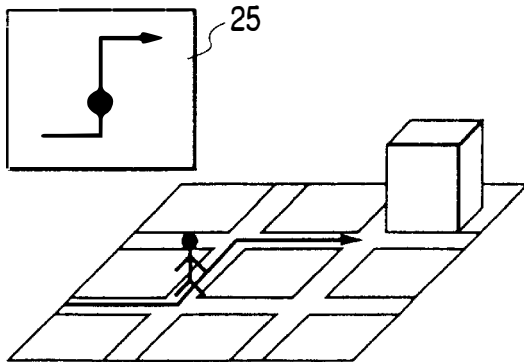


FIG. 3(f)

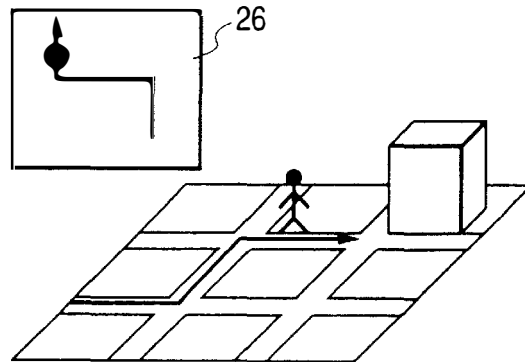
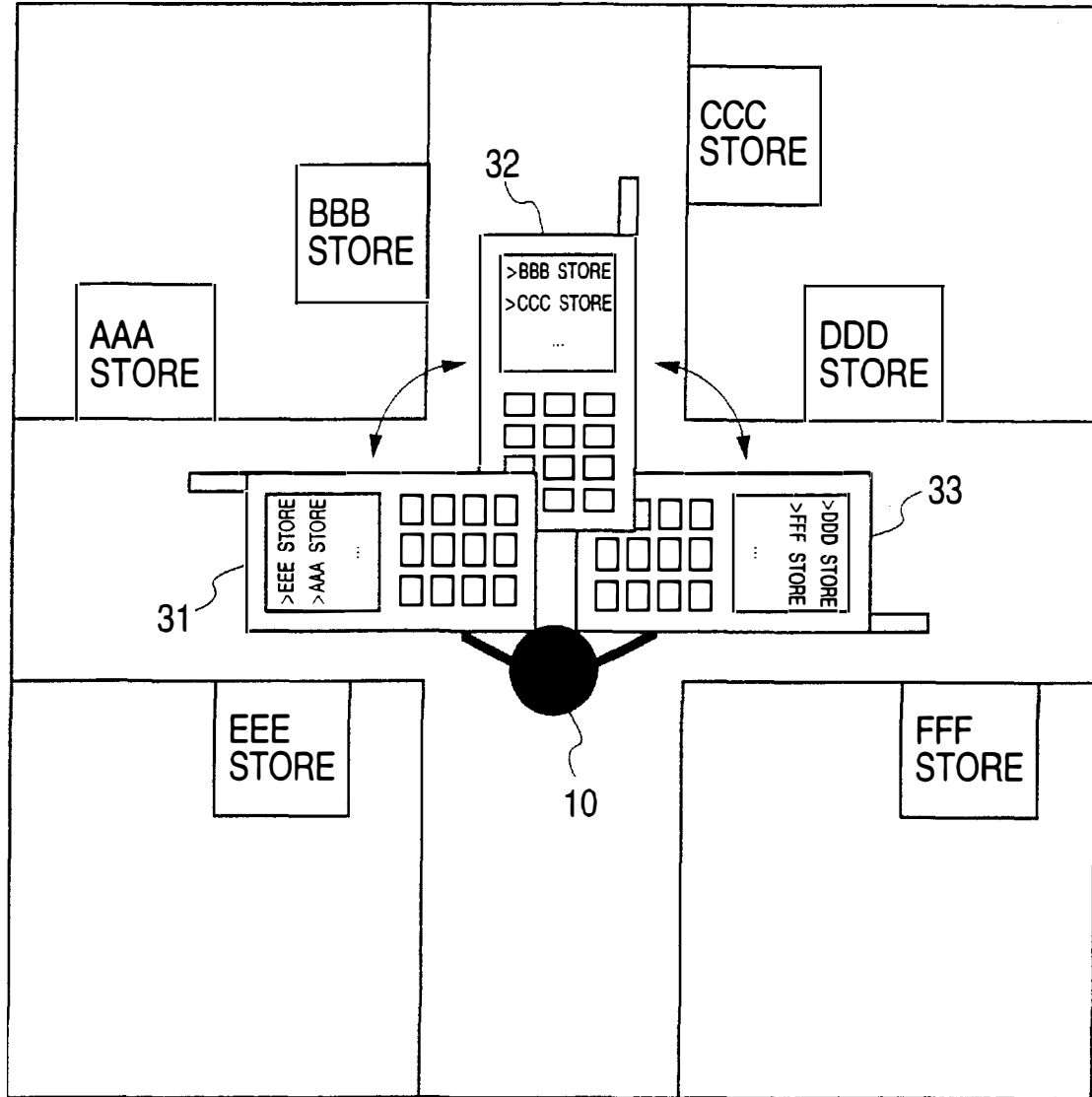


FIG. 4



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