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(54) **INTERACTIVE PROCESS FOR USE AS A NAVIGATIONAL AID AND DEVICE FOR ITS IMPLEMENTATION**

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(51) **Int. Cl.**^{7} **G08G 1/127**
(52) **U.S. Cl.** **701/202**; 701/207; 701/208
(58) **Field of Search** 701/201, 202, 701/205, 207, 208, 209, 211

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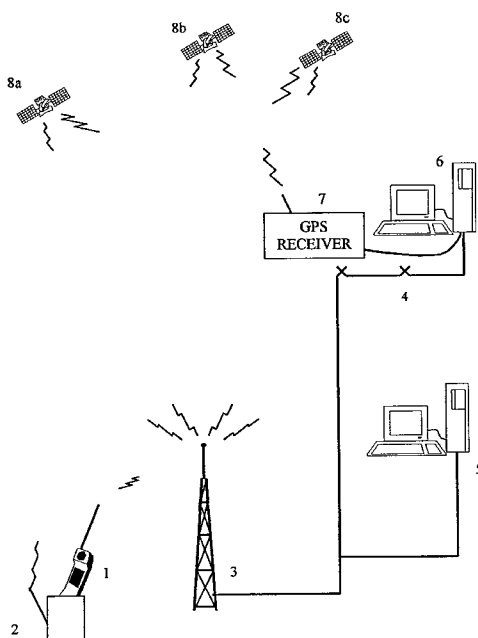| 5,311,434	A	*	5/1994	Tamai 364/449
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(57) **ABSTRACT**

The invention relates to a system to be used as an aid in navigation comprising a mobile terminal (**1, 2**) connected to a centralized server (**5**), and more specifically to the improvements required to convert a portable radiotelephone (**1**) into a complete and precise navigational aid system. The invention is characterized by the fact that the itinerary requests of the mobile terminal (**1, 2**) are transmitted to a centralized server (**5**) by a radio relay link, and by the fact that the server (**5**), which contains the necessary cartographic and program data, calculates the itinerary requested and transmits to the mobile terminal (**1, 2**) the data concerning the straight line and arc segments that constitute the itinerary, thereby permitting real-time guidance. The invention is further characterized by the fact that the server (**5**) evaluates the possibility of the craft deviating from its course, as well as by the fact that the server (**5**) also calculates and transmits the data concerning the segments of possible deviation itineraries in an area of proximity to the main itinerary. The invention can be applied in particular to automotive vehicles.
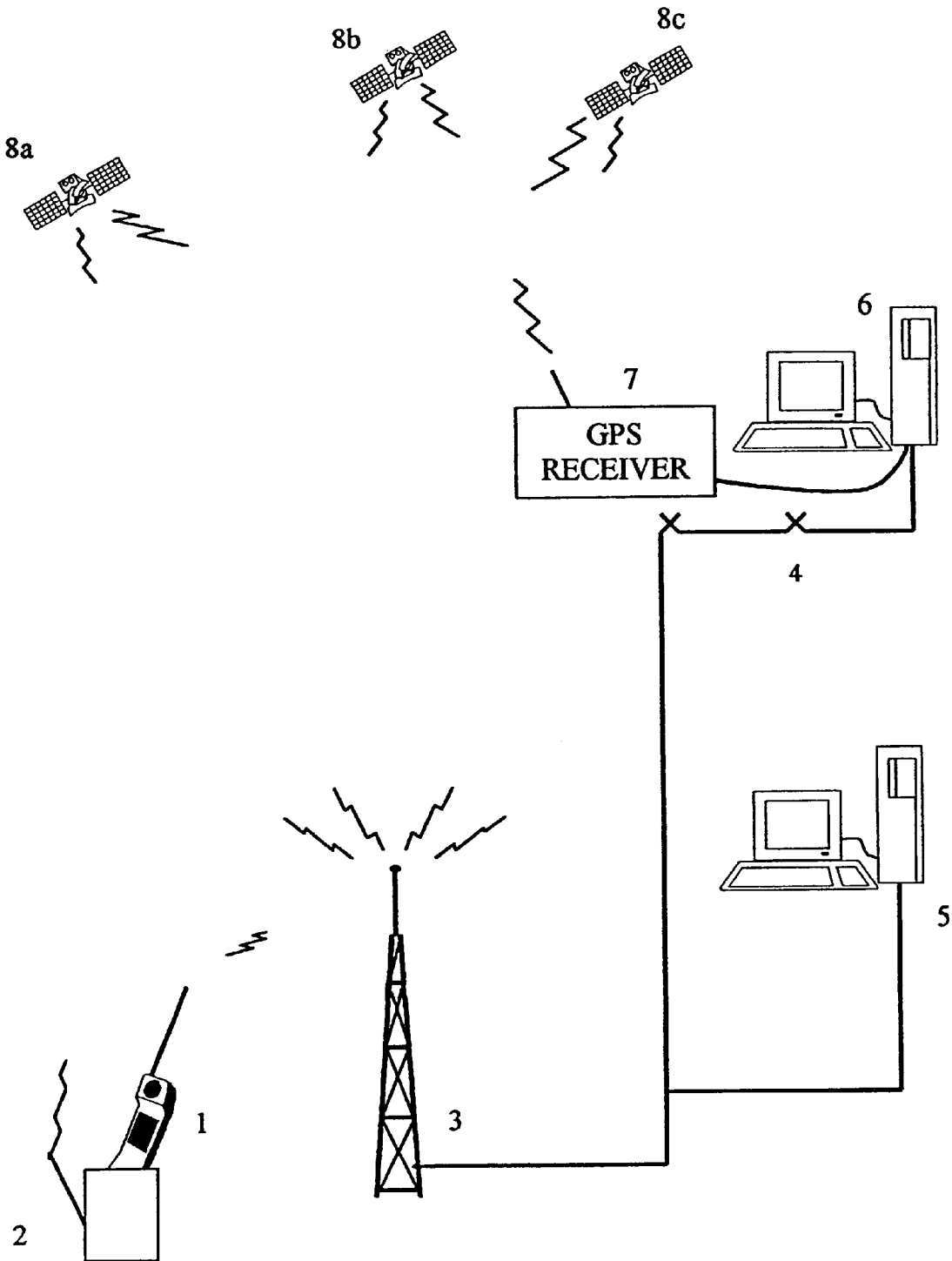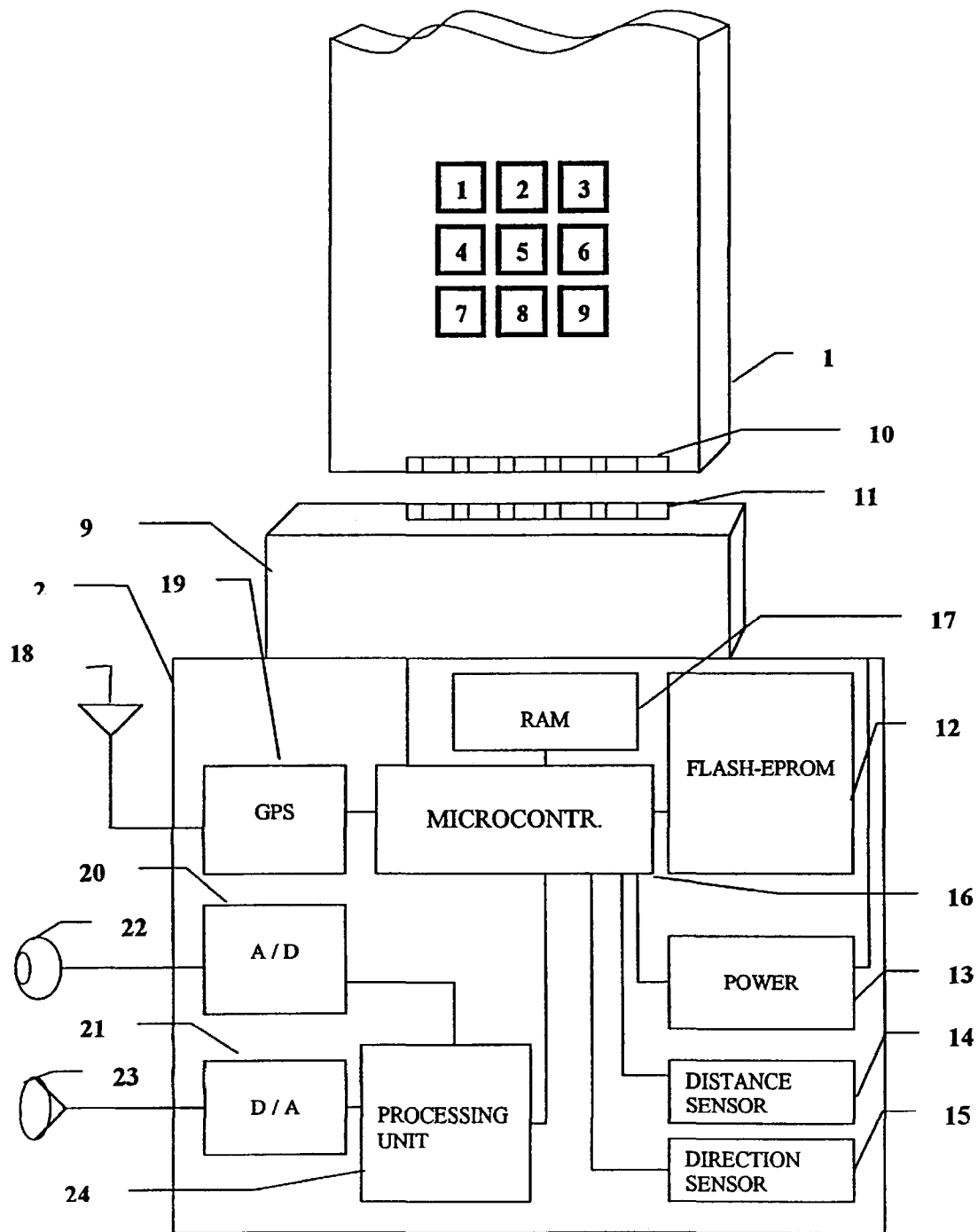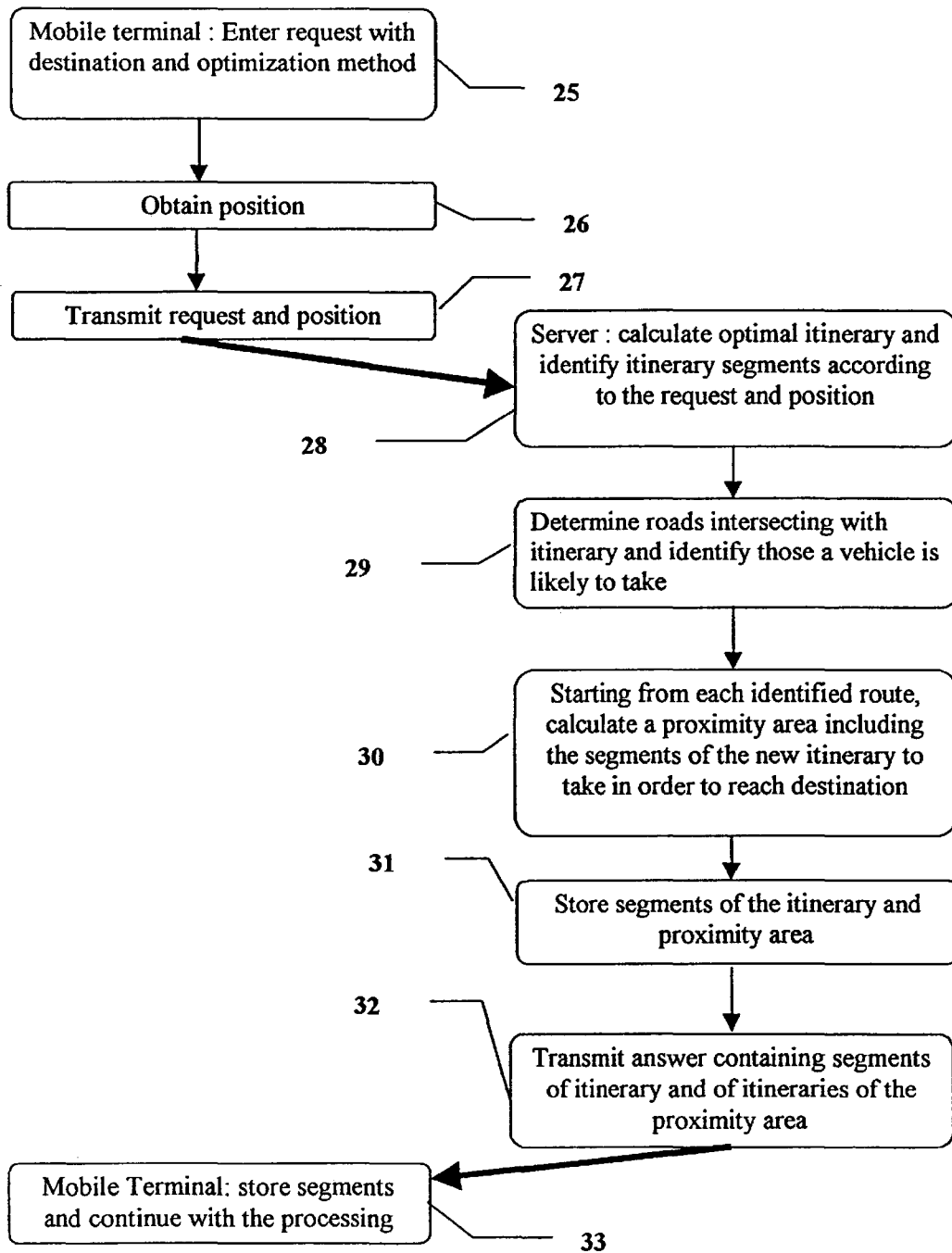
18 Claims, 4 Drawing Sheets

8b

8c

8a

6

7

GPS
RECEIVER

4

5

1

3

2

FIG. 1

FIG. 2

Mobile terminal : Enter request with destination and optimization method — 25

↓

Obtain position — 26

↓

Transmit request and position — 27

28

Server : calculate optimal itinerary and identify itinerary segments according to the request and position

↓

29 — Determine roads intersecting with itinerary and identify those a vehicle is likely to take

↓

30 — Starting from each identified route, calculate a proximity area including the segments of the new itinerary to take in order to reach destination

↓

31 — Store segments of the itinerary and proximity area

↓

32 — Transmit answer containing segments of itinerary and of itineraries of the proximity area

Mobile Terminal: store segments and continue with the processing — 33

FIG. 3

Obtain position — **34**

Position on segments of the itinerary — **39**

NO

Position on segments of proximity area — **35**

NO — **36**

YES

Transmit position to server and obtain new itinerary

YES

37 — Read itinerary from proximity area

38 — Use new itinerary

40 — Display position on graphic representation of segments of the itinerary and update length of journey

41 — Position close to a change

NO

YES

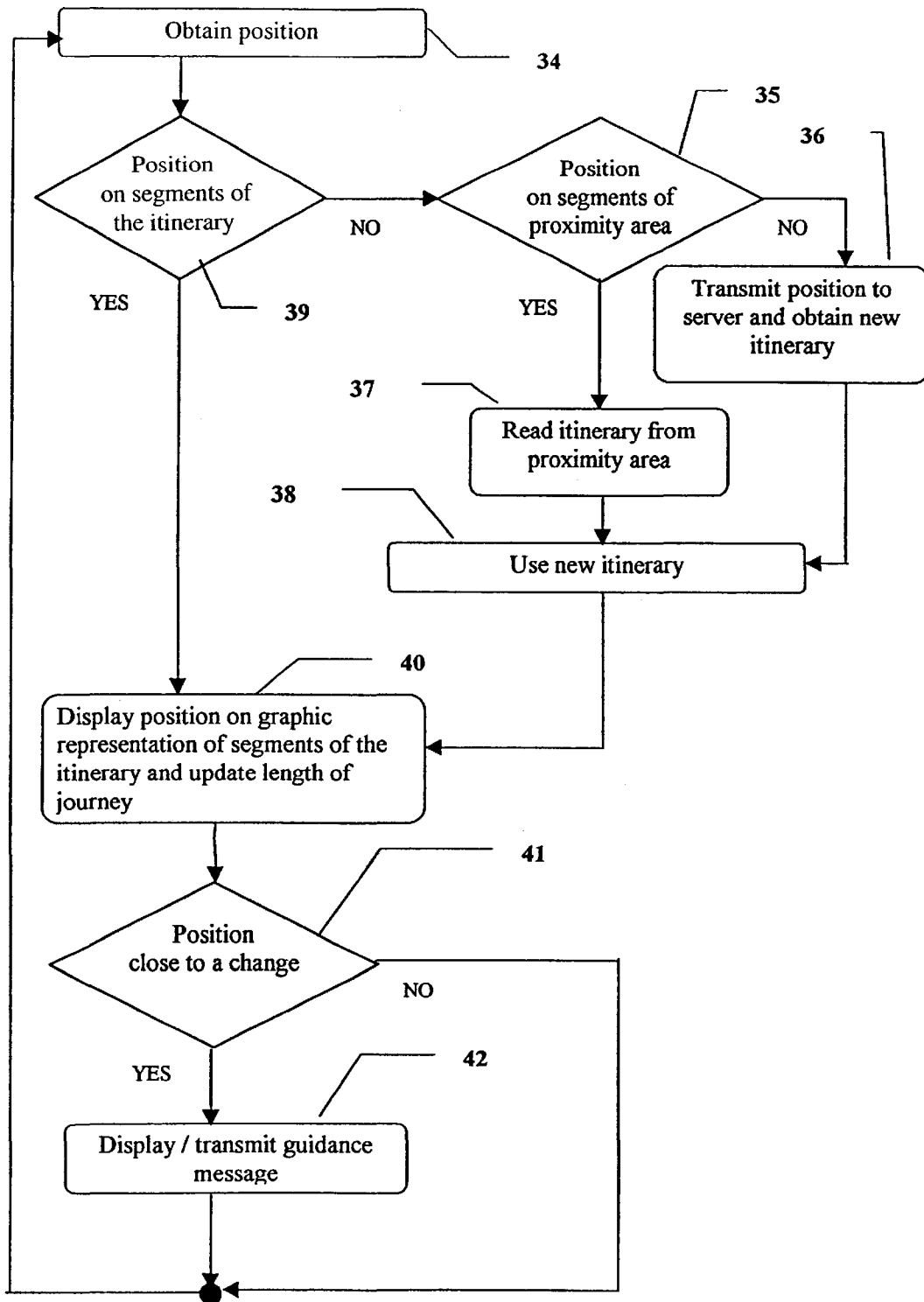**42** — Display / transmit guidance message

FIG. 4

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