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**Stefan et al.**

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(54) **METHOD AND SYSTEM FOR PROVIDING  
MULTIPLE BEGINNING MANEUVERS FOR  
NAVIGATION OF A VEHICLE**

(75) Inventors: **Jeffrey M. Stefan**, Clawson, MI (US);  
**Linda G. Means**, Macomb Township,  
MI (US); **Gregory B. Stewart**, Livonia,  
MI (US)

(73) Assignee: **General Motors Corporation**, Detroit,  
MI (US)

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340/989; 340/992; 340/995.19; 340/995.27

(58) **Field of Search** ..... 701/207, 208,  
701/209, 210, 211, 200, 201; 340/988,  
990, 995, 989, 991, 992, 996, 995.1, 995.19,  
995.2, 995.22, 995.27

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,394,332 A \* 2/1995 Kuwahara et al. .... 340/988  
5,543,789 A 8/1996 Behr et al. .... 340/995  
5,608,635 A \* 3/1997 Tamai ..... 340/990  
5,774,071 A \* 6/1998 Konishi et al. .... 340/988

5,877,708 A \* 3/1999 Hijikata ..... 340/995  
5,878,368 A \* 3/1999 DeGraaf ..... 701/209  
5,926,118 A \* 7/1999 Hayashida et al. .... 340/995  
5,991,688 A \* 11/1999 Fukushima et al. .... 701/209  
6,014,607 A \* 1/2000 Yagyu et al. .... 701/202  
6,034,626 A \* 3/2000 Maekawa et al. .... 340/995  
6,119,066 A \* 9/2000 Sugiura et al. .... 701/201  
6,134,501 A \* 10/2000 Oumi ..... 701/209  
6,172,641 B1 \* 1/2001 Millington ..... 340/996  
6,199,013 B1 \* 3/2001 O'Shea ..... 340/988  
6,266,613 B1 \* 7/2001 Nimura et al. .... 340/990  
6,278,942 B1 \* 8/2001 McDonough ..... 701/210  
6,298,305 B1 \* 10/2001 Kadaba et al. .... 701/200  
6,324,472 B1 \* 11/2001 O'Shea ..... 340/988  
6,427,119 B1 7/2002 Stefan et al. .... 701/209  
6,487,496 B2 \* 11/2002 Katayama et al. .... 701/209  
2002/0152024 A1 \* 10/2002 Stefan ..... 701/209

\* cited by examiner

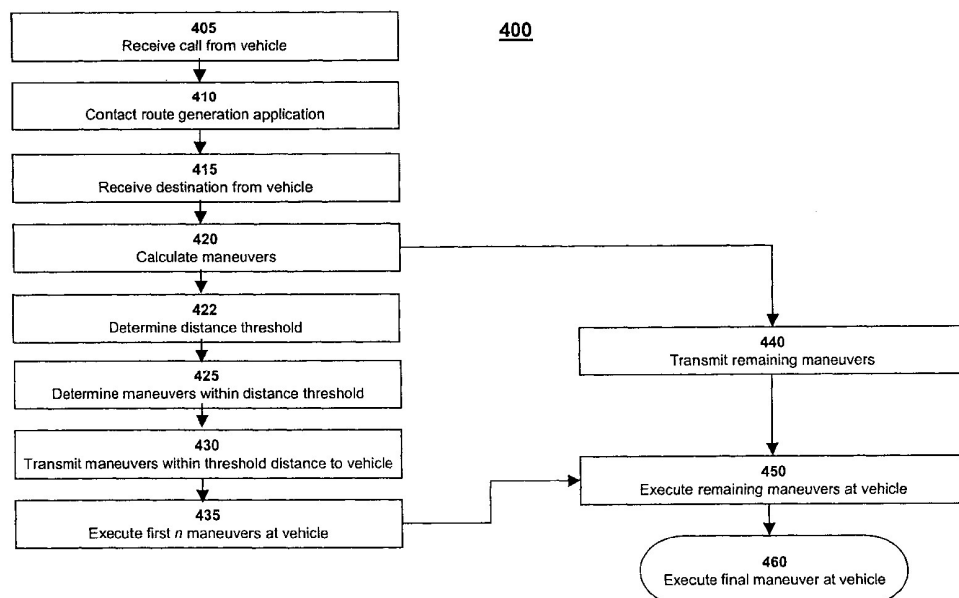
*Primary Examiner*—Jacques H. Louis-Jacques

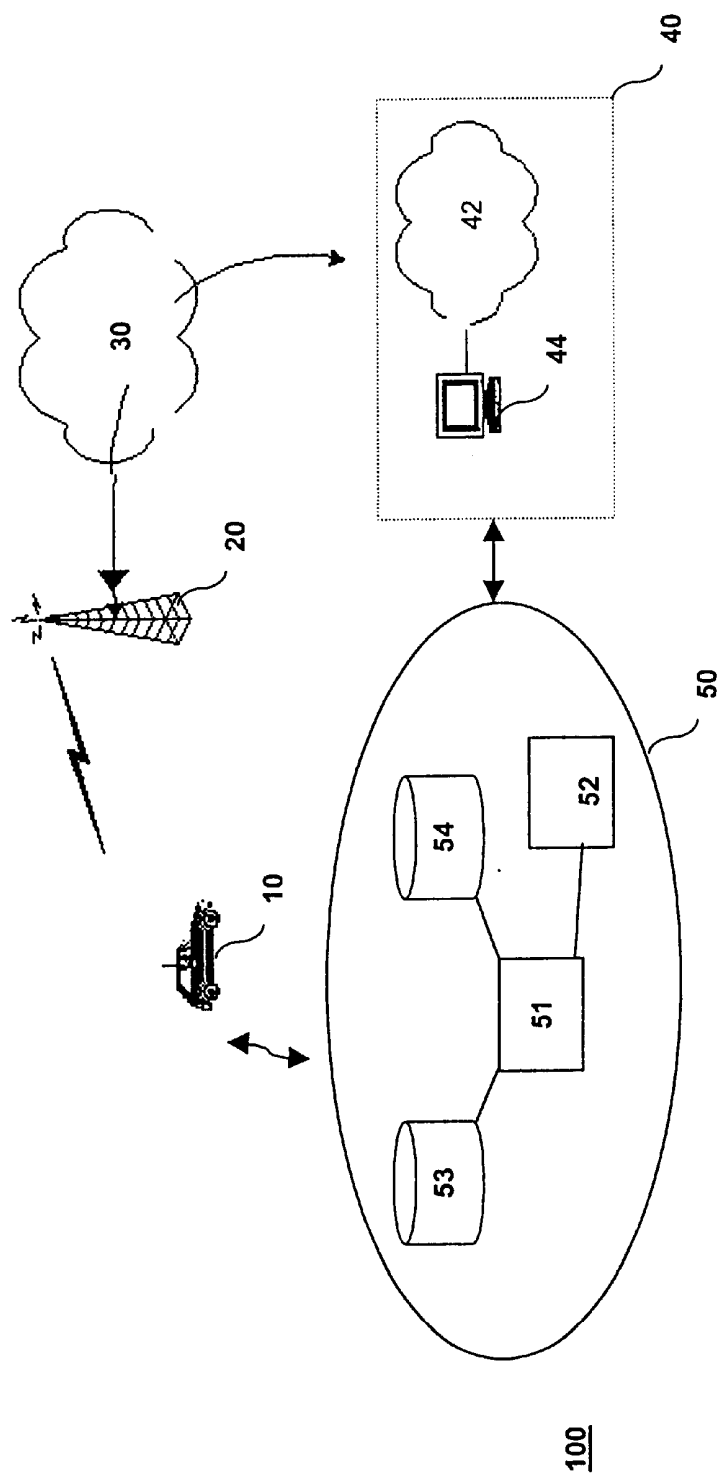
(74) *Attorney, Agent, or Firm*—Anthony Luke Simon

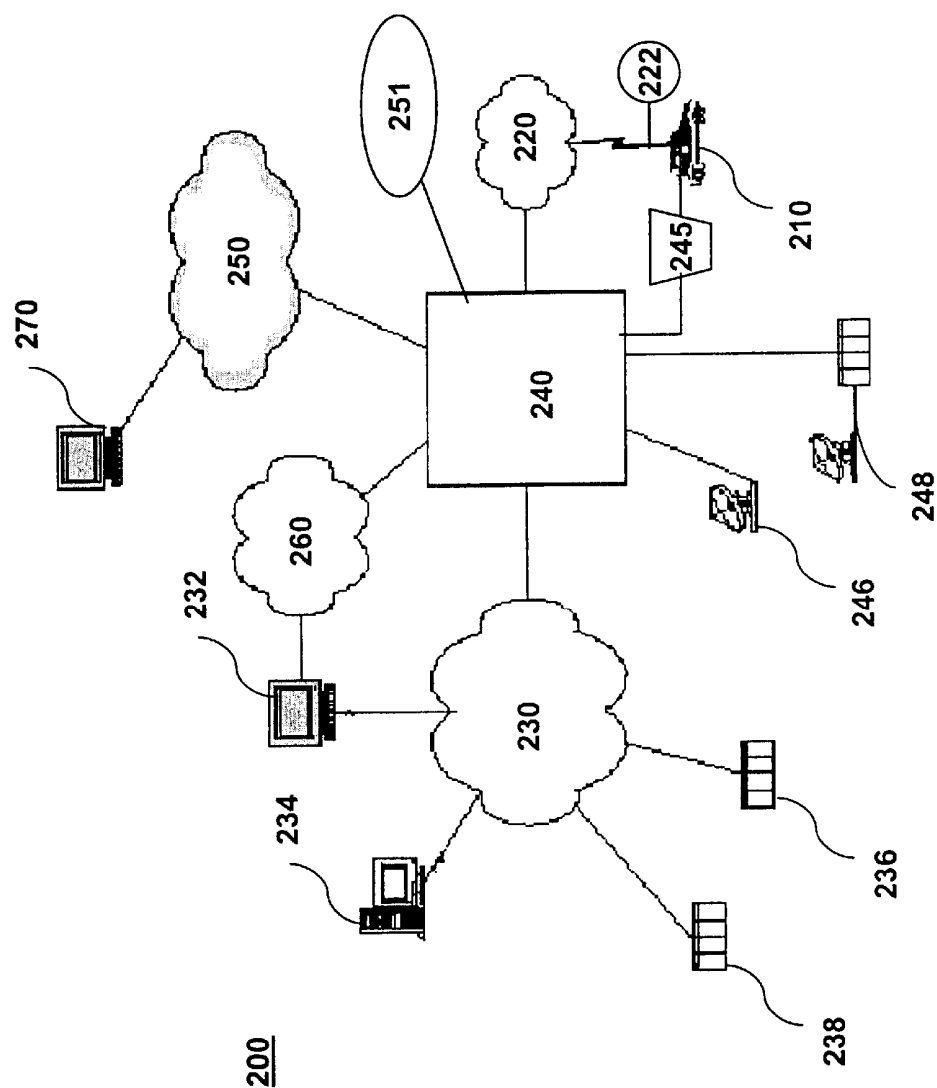
(57) **ABSTRACT**

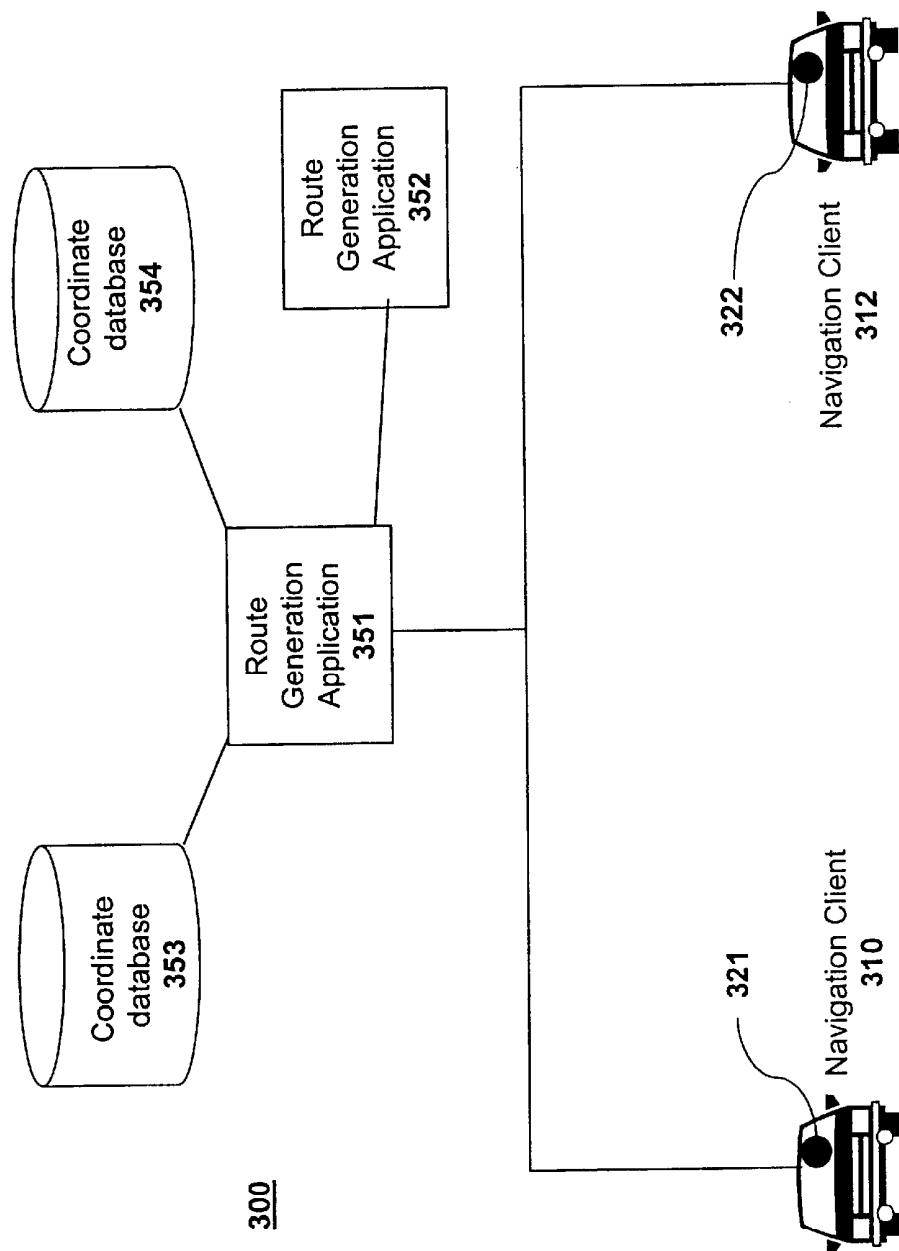
A method of generating navigation instructions for a vehicle is provided. A destination of the vehicle is received at a route generation application. A maneuver list comprising a plurality of navigation instructions is calculated based on a current location of the vehicle and the destination. A distance threshold is determined based on the current location of the vehicle and the destination. The navigation instructions located within the distance threshold are determined and transmitted from the route generation application to the vehicle. The navigation instructions located within the distance threshold are executed at the vehicle. Systems and programs for using the method are also provided.

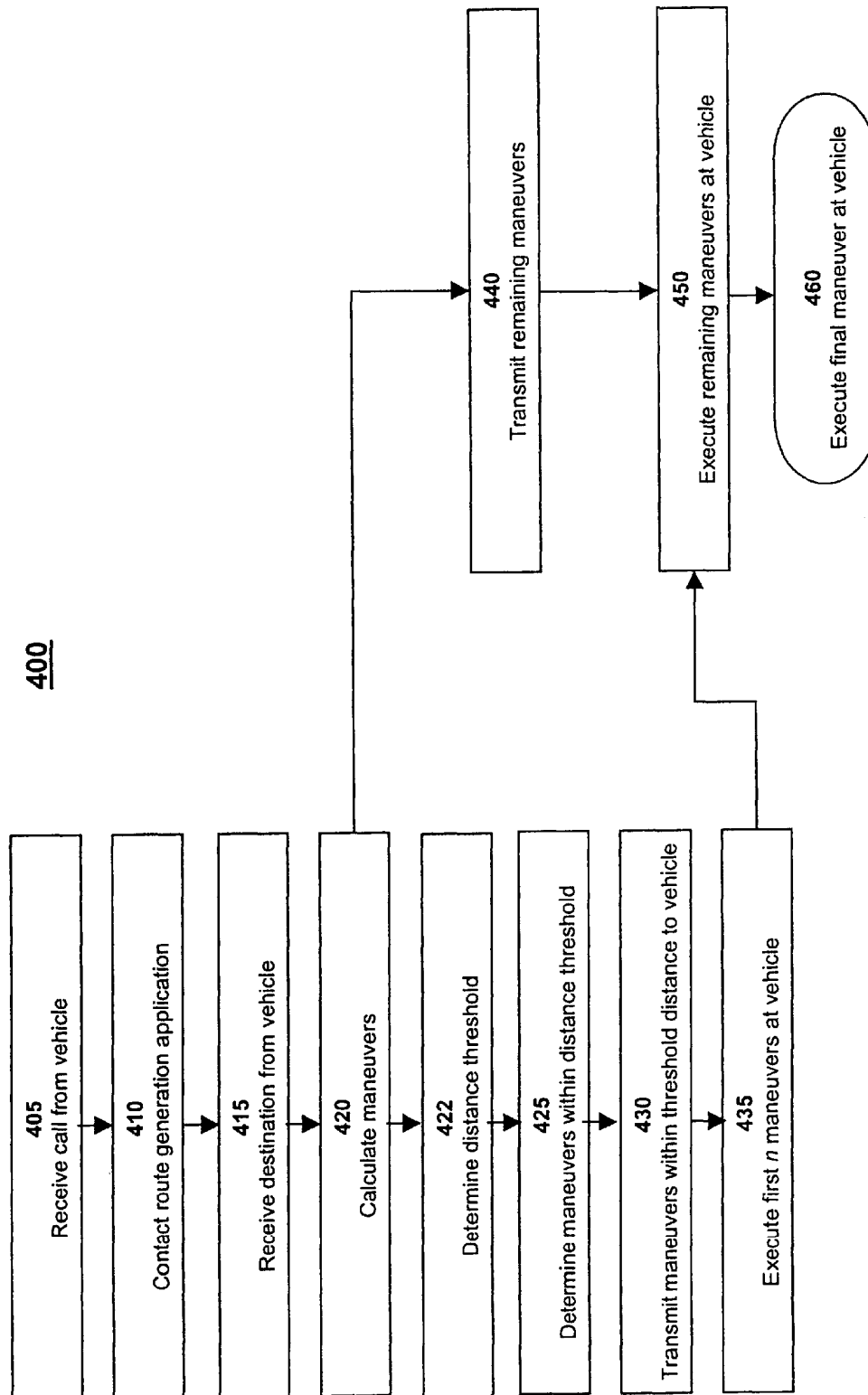
**22 Claims, 5 Drawing Sheets**



**FIG. 1**

**FIG. 2**

**FIG. 3**

**FIG. 4**

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