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Wako et al.

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(54) **DISPLAY METHOD AND APPARATUS FOR NAVIGATION SYSTEM**

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(73) Assignee: **Alpine Electronics, Inc.**, Tokyo (JP)

(*) 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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(21) Appl. No.: **09/777,990**

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(51) **Int. Cl.**⁷ **G01C 21/00**; G06F 7/00; G06F 9/00; G06F 17/00; G06F 165/00; G01S 5/02

(52) **U.S. Cl.** **701/208**; 701/200-207; 701/209-216; 701/23-26; 701/36; 342/357.13; 342/357.09; 342/357.17; 342/458; 340/988; 340/990; 340/995; 340/903; 345/970; 345/1.3; 345/856; 345/555; 345/205; 345/206; 455/556; 455/557; 348/169; 348/142; 348/213

(58) **Field of Search** 701/200-216, 701/23, 24, 25, 27, 14, 36; 342/357.13, 357.09, 357.17, 357.08, 357.06, 458; 240/988, 990, 995, 903, 660, 692, 460; 345/970, 1.3, 856, 555, 205, 206; 455/556, 557; 348/169, 142, 213

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(57) **ABSTRACT**

A display method and apparatus for navigation system for displaying information necessary for guiding a driver of a vehicle. The navigation system is designed to promote safe driving by producing different display forms and contents depending on whether the vehicle is in motion or stationary. When the vehicle is stationary, the navigation system can perform all of the functions. However, when the vehicle is in motion, the navigation system provides simplified and limited functions to ease the operations. The number of key strokes required for operating the navigation system is reduced when the vehicle is in motion.

36 Claims, 14 Drawing Sheets

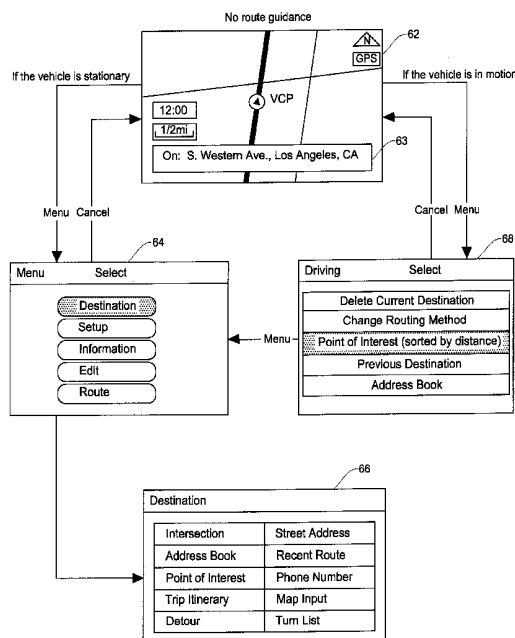


Fig. 1A (Prior Art)

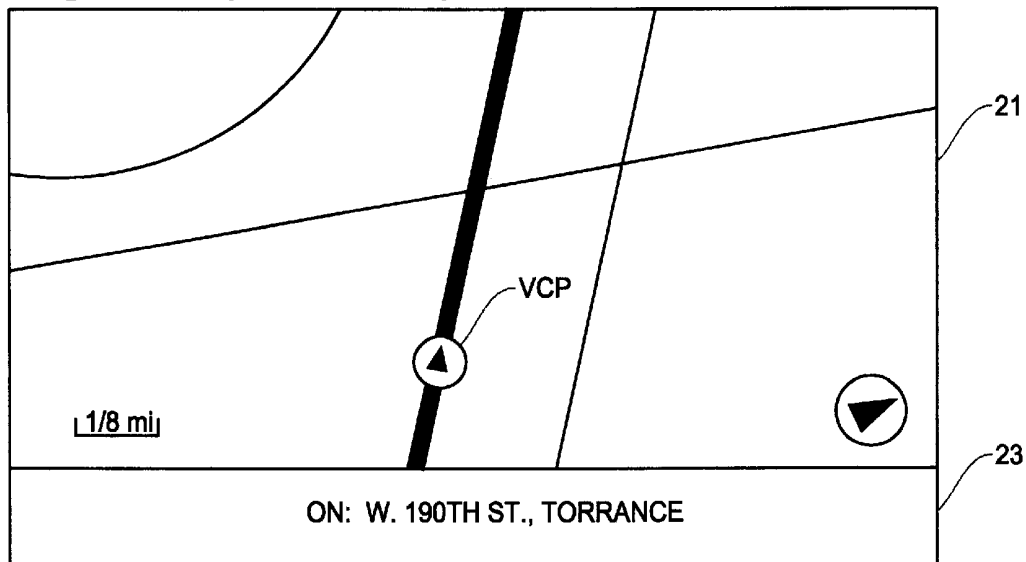


Fig. 1B (Prior Art)

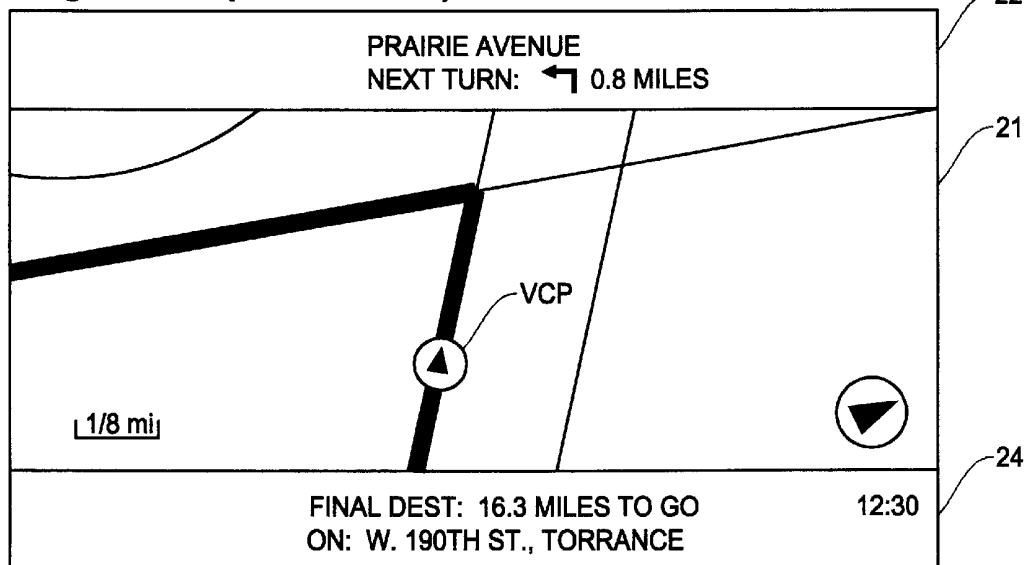


Fig. 2A
(Prior Art)

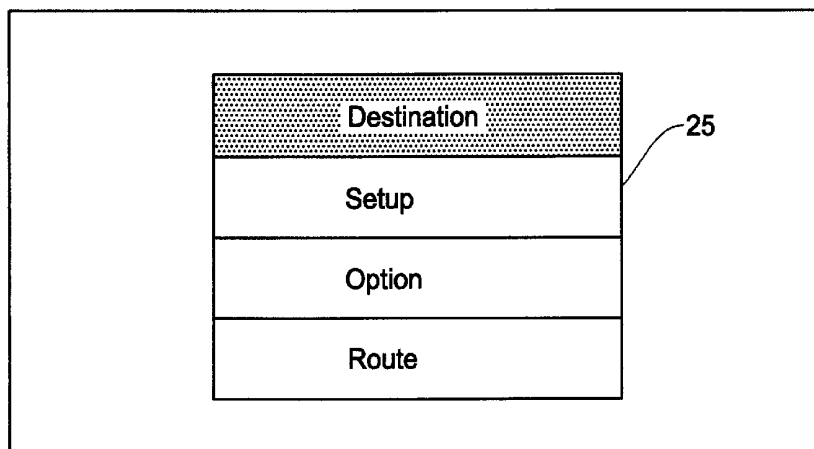


Fig. 2B
(Prior Art)

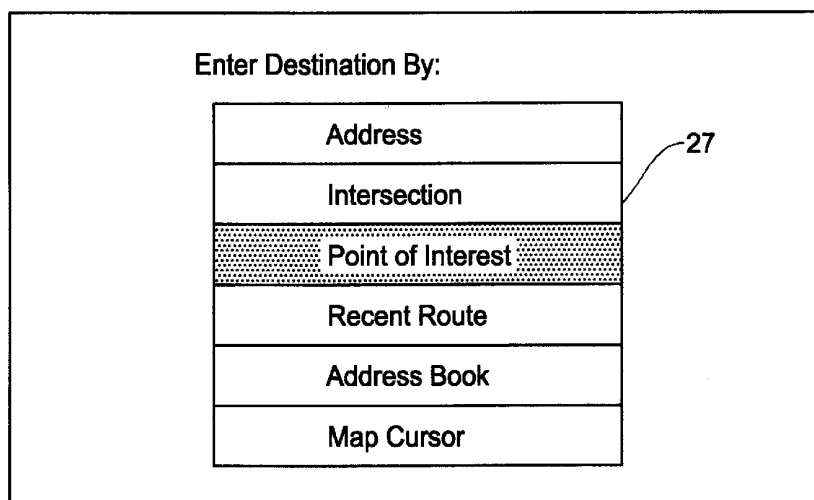


Fig. 2C
(Prior Art)

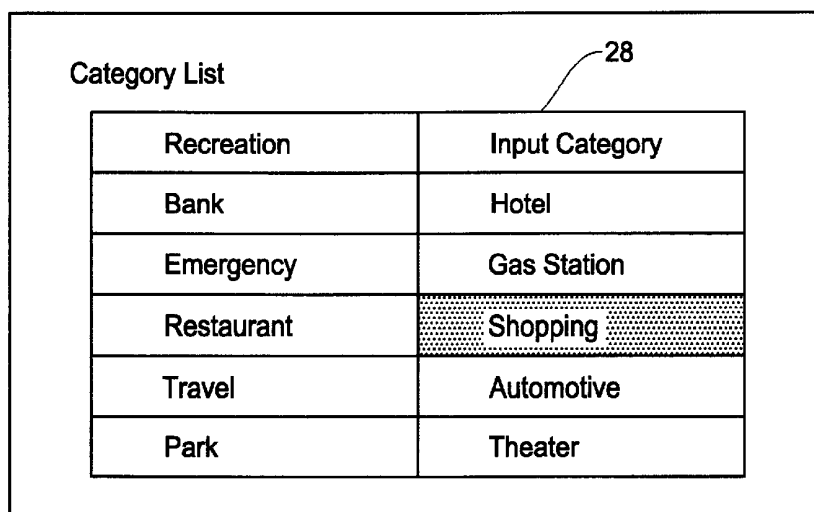


Fig. 2D
(Prior Art)

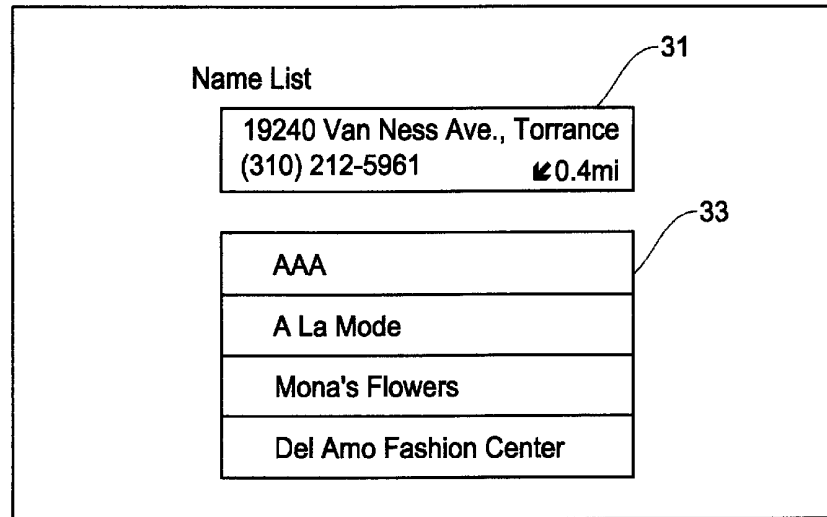


Fig. 2E
(Prior Art)

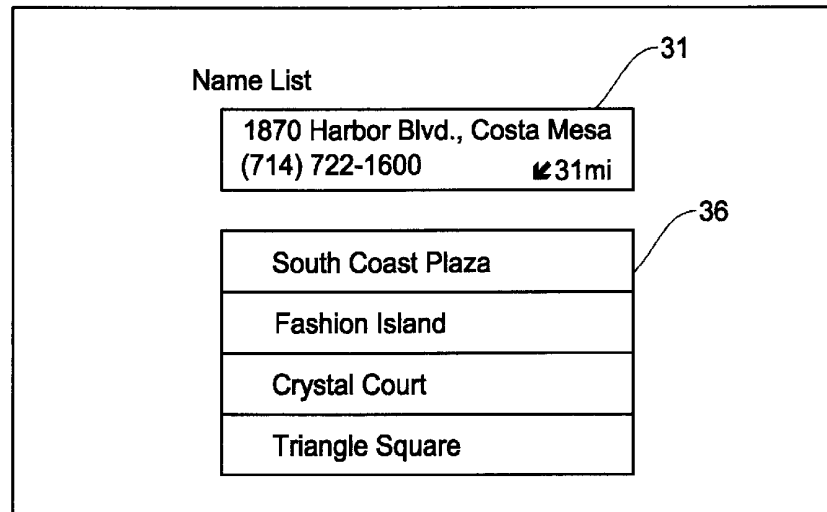
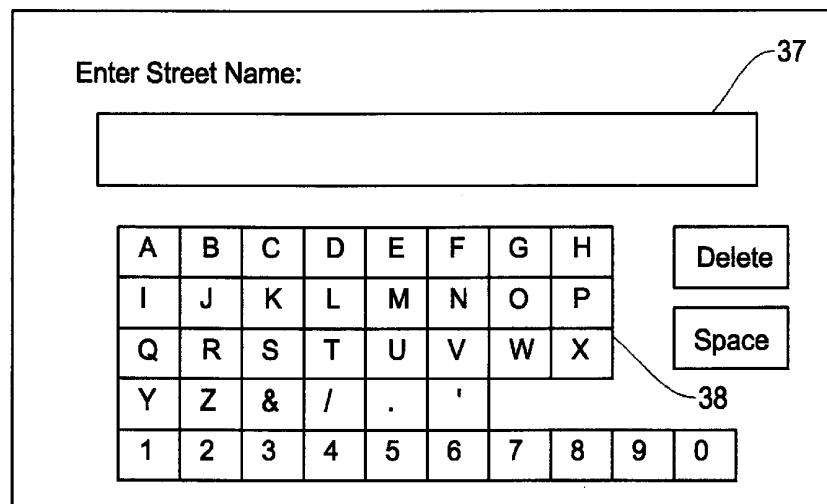
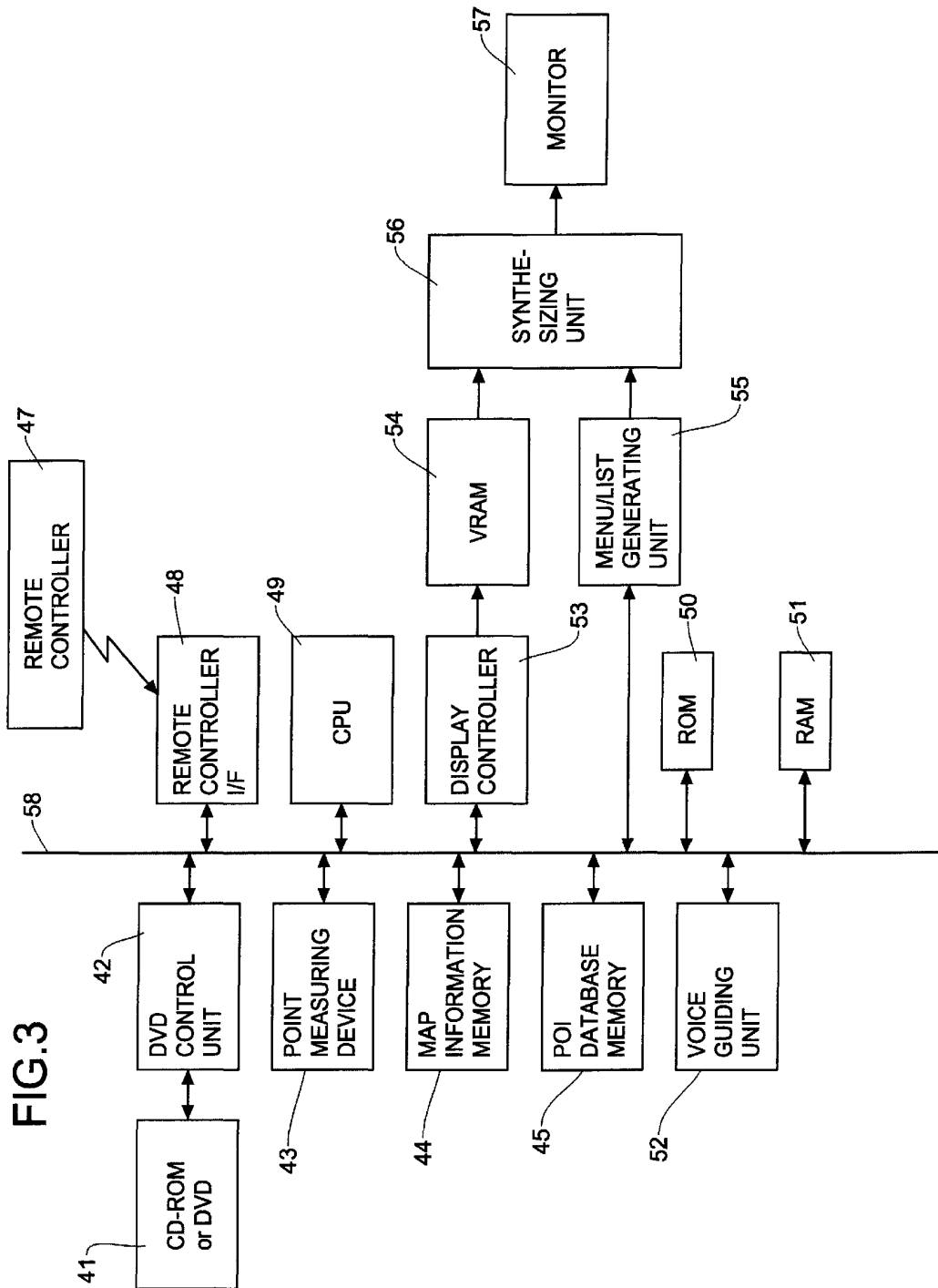


Fig. 2F
(Prior Art)





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