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Beckert et al.

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(54) **VEHICLE COMPUTER SYSTEM WITH OPEN PLATFORM ARCHITECTURE**

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(*) Notice: Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

(63) Continuation of application No. 08/668,781, filed on Jun. 24, 1996, now Pat. No. 6,009,363, which is a continuation-in-part of application No. 08/564,586, filed on Nov. 29, 1995, now Pat. No. 5,794,164.

(51) Int. Cl.[7] **G06F 7/00**; G01M 17/00
(52) **U.S. Cl.** **701/33**; 701/1; 361/679; 361/683; 361/731; 361/814; 248/27.1; 455/346; 455/348; 340/825.25
(58) **Field of Search** 701/1, 29, 33; 340/815.41, 436, 438, 439, 461, 825.25; 455/456, 345, 348; 370/522, 476, 537; 361/814, 679, 728, 747, 683, 686, 600, 729, 730, 731; 248/27.1, 27.3, 551

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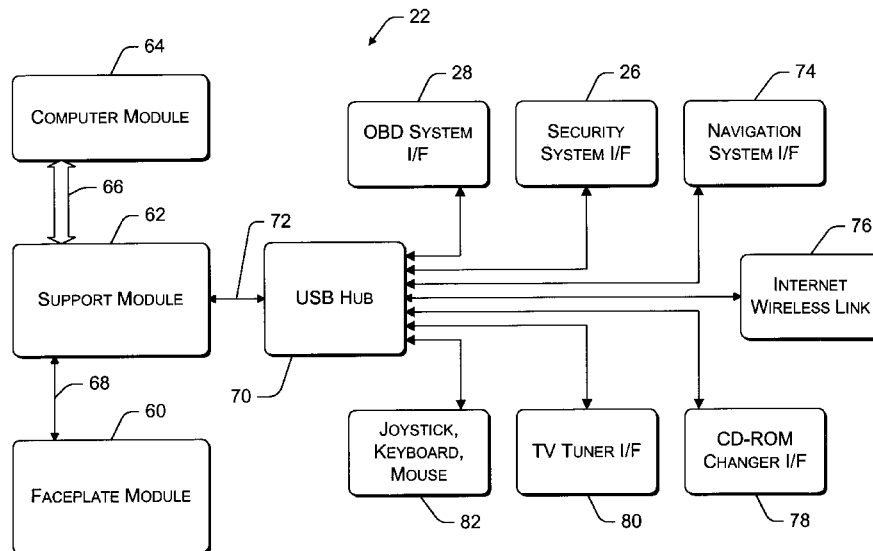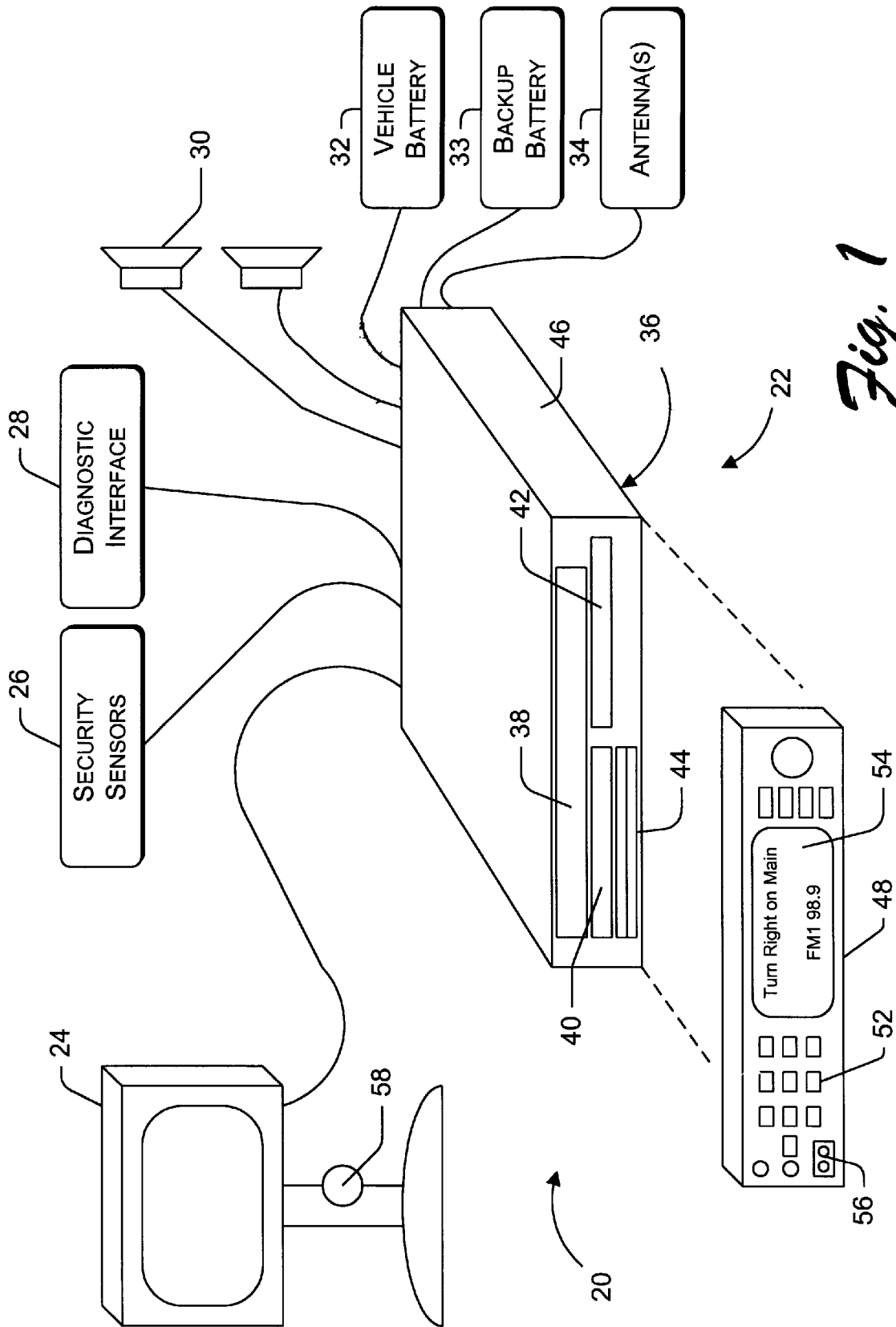|			
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(57) **ABSTRACT**

A vehicle computer system has a housing sized to be mounted in a vehicle dashboard or other appropriate location. A computer is mounted within the housing and executes an open platform, multi-tasking operating system. The computer runs multiple applications on the operating system, including both vehicle-related applications (e.g., vehicle security application, vehicle diagnostics application, communications application, etc.) and non-vehicle-related applications (e.g., entertainment application, word processing, etc.). The applications may be supplied by the vehicle manufacturer and/or by the vehicle user.
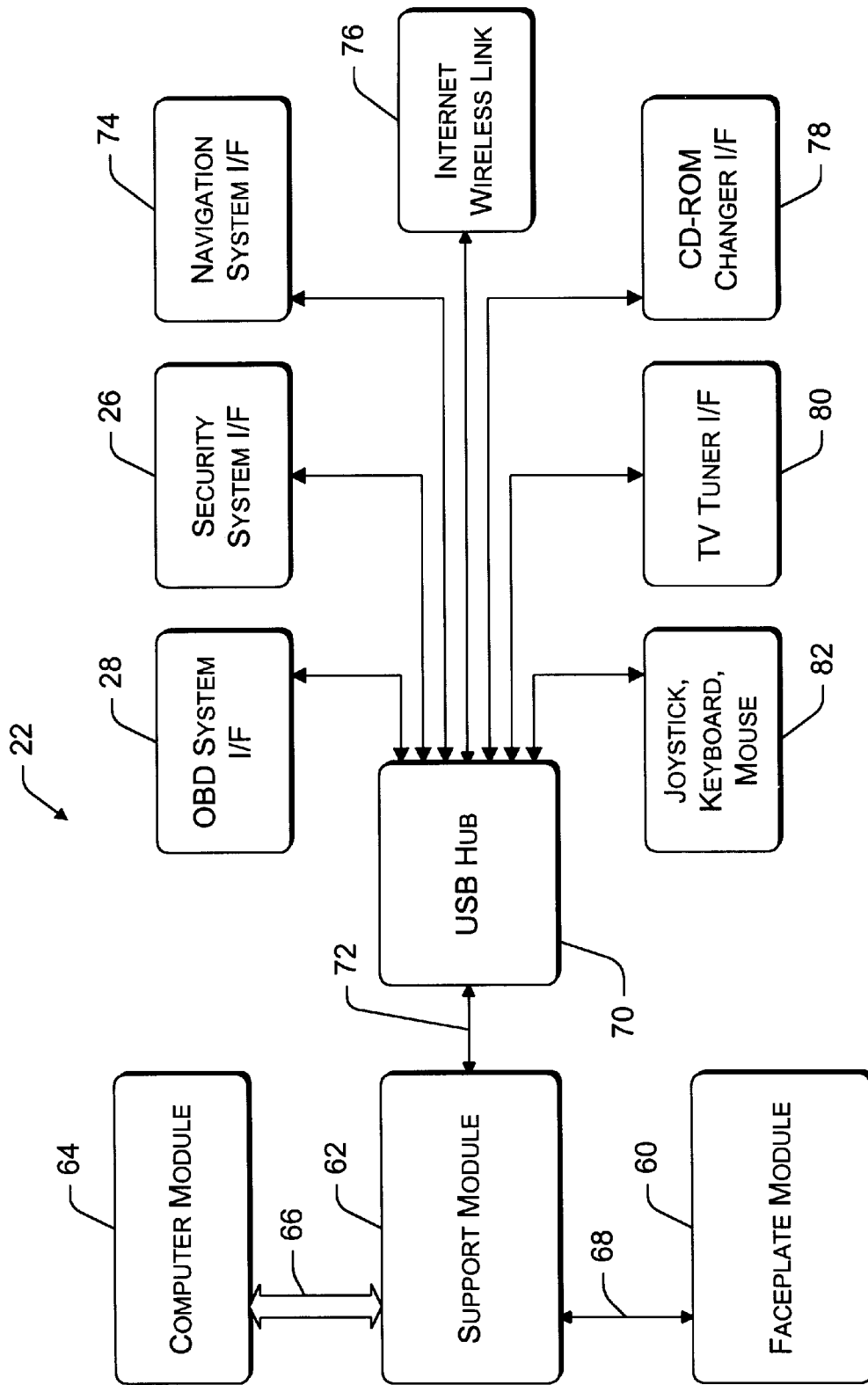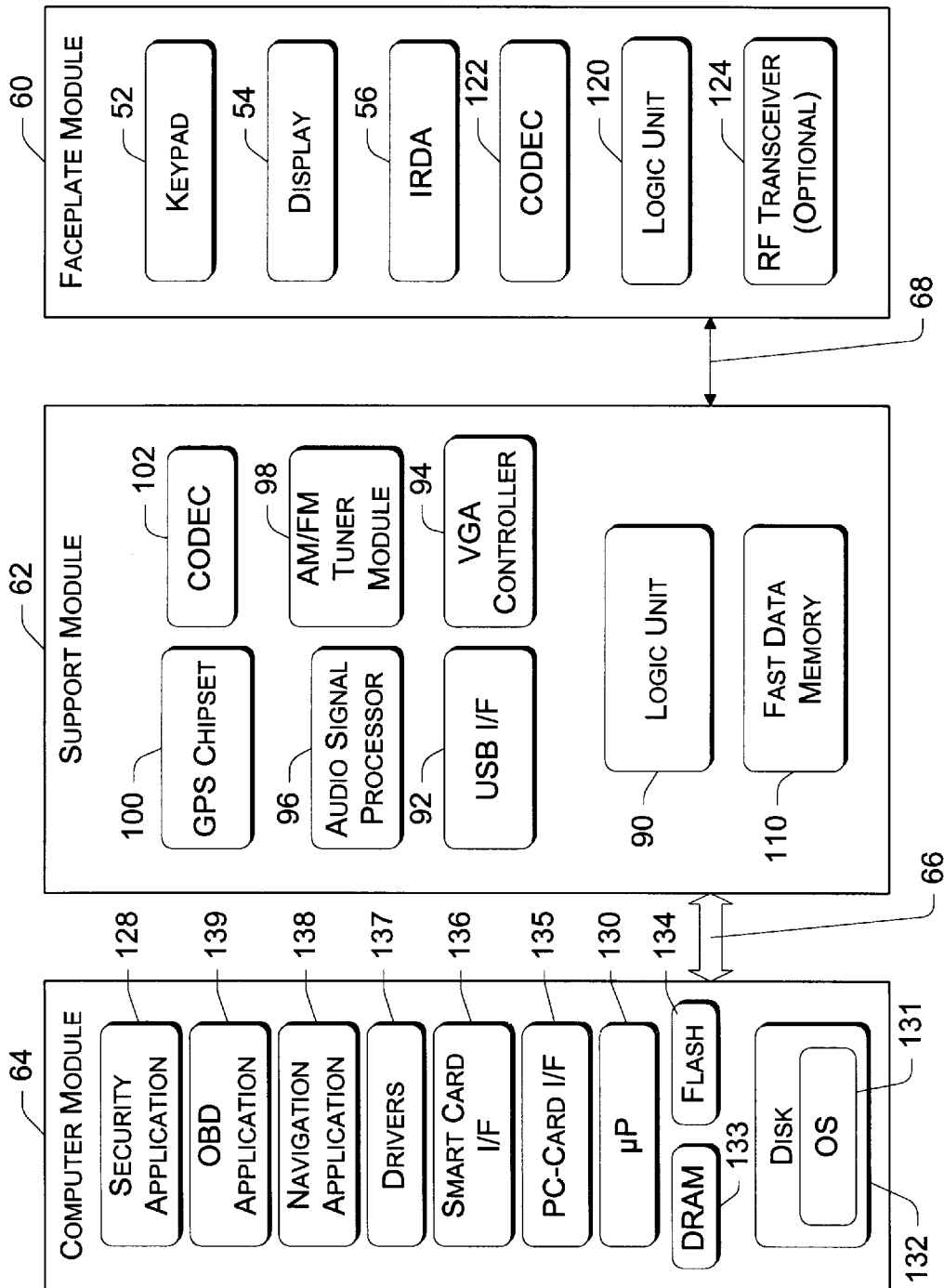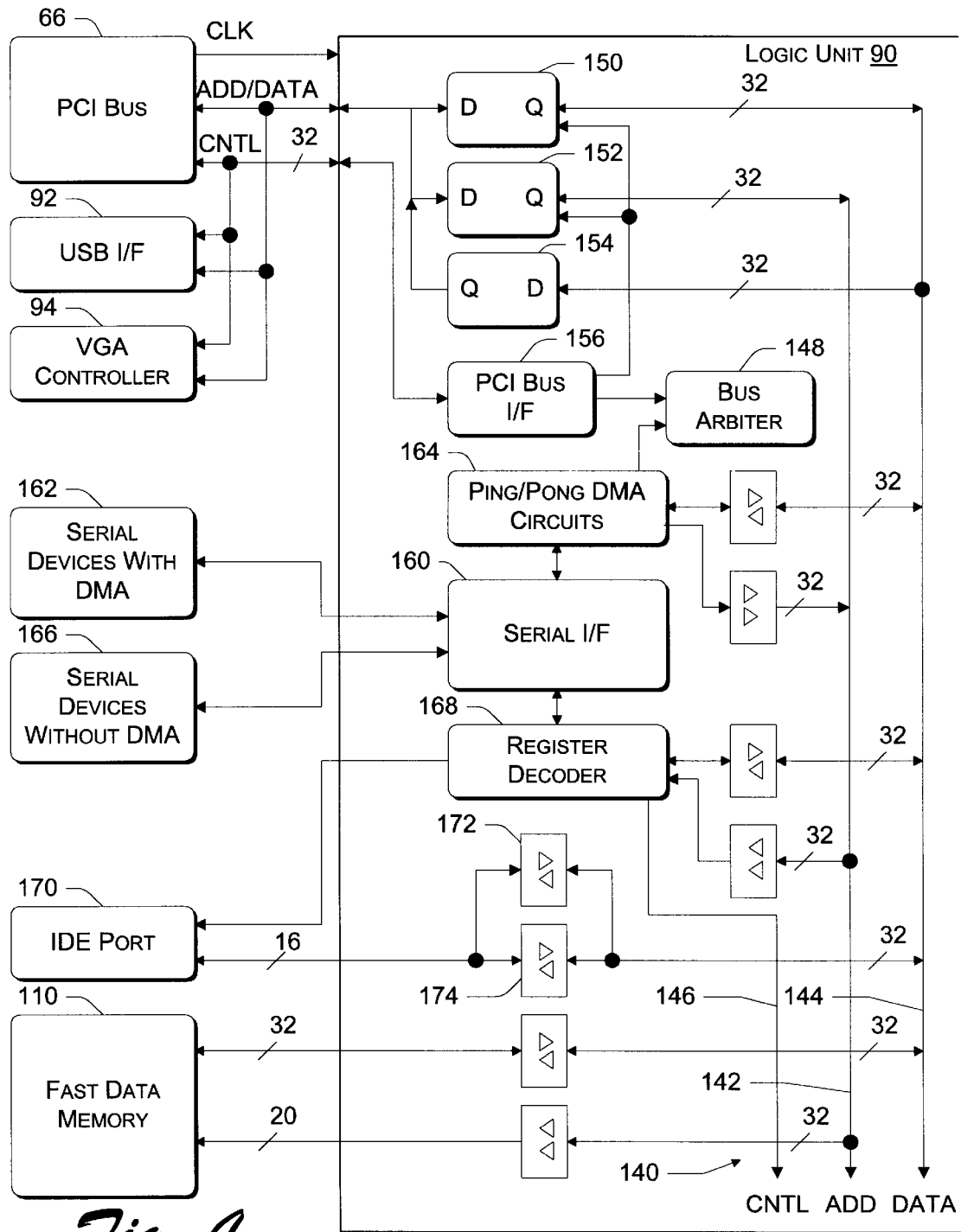
20 Claims, 10 Drawing Sheets

Fig. 1

Fig. 2

Fig. 3

66

CLK

PCI BUS

ADD/DATA

CNTL

32

LOGIC UNIT 90

D   Q   150   32

D   Q   152   32

Q   D   154   32

92

USB I/F

94

VGA CONTROLLER

PCI BUS I/F   156

BUS ARBITER   148

162

SERIAL DEVICES WITH DMA

166

SERIAL DEVICES WITHOUT DMA

164

PING/PONG DMA CIRCUITS   32

160

SERIAL I/F   32

168

REGISTER DECODER   32

172   32

170

IDE PORT

16

174

110

FAST DATA MEMORY

32

20

146   144

32

142

32

140

CNTL   ADD   DATA

Fig. 4

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