United States Patent [19]

Heath et al.

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[54] **COMPUTER SYSTEM WITH AUTOMATIC INITIALIZATION OF PLUGGABLE OPTION CARDS**

[75] Inventors: **Chester A. Heath; John K. Langgood,** both of Boca Raton, Fla.; **Ronald E. Valli,** Pittsburgh, Pa.

[73] Assignee: **International Business Machines Corp.,** Armonk, N.Y.

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[22] Filed: **Jan. 6, 1989**

Related U.S. Application Data

[63] Continuation of Ser. No. 21,391, Mar. 13, 1987, abandoned.

[51] **Int. Cl.^{5}** G06F 13/00; G06F 7/04
[52] **U.S. Cl.** 364/900; 364/948.5; 364/944.61; 364/975.2; 364/976.4; 364/945; 364/929.5; 364/929.2; 371/11.1
[58] **Field of Search** ... 364/200 MS File, 900 MS File; 340/825.07, 825.06, 825.52, 825.06; 371/11.1, 11.2, 11.3, 66, 7

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Primary Examiner—Gareth D. Shaw
Assistant Examiner—Paul Kulik
Attorney, Agent, or Firm—Winfield J. Brown, Jr.; Robert Lieber

[57] **ABSTRACT**

A data processing system includes a planar board having a central processing unit (CPU), a main memory unit, and input/output (I/O) sockets or slots, each adapted to receive a selected one of a plurality of different and/or similar option cards. each card contains (or is connected to) and controls a respective peripheral device; and each card is pre-wired with an ID value corresponding to its card type. Software programmable option registers on each card store parameters such as designated default (or alternate) address information, priority levels, and other system resource parameters. A setup routine, during initial power-on, retrieves and stores the appropriate parameters in the I/O cards and also in slot positions in main memory, one position being assigned to each slot on the board. Each slot position is adapted to hold the parameters associated with the card inserted in its respective slot and the card ID value. That portion of main memory containing the slot positions is adapted to maintain the parameter and ID information by means of battery power when system power fails or is disconnected, i.e., a nonvolatile memory portion. Subsequent power-on routines are simplified by merely transferring parameters from the table to the card option registers if the status of all the slots has not changed since the last power-down, system reset, or channel reset.

18 Claims, 7 Drawing Sheets

POST(POWER ON SELF TEST) SETUP

RESET CHANNEL

FETCH CARD ID'S IN SEQUENCE

COMPARE EACH ID VALUE WITH ID VALUE IN RESPECTIVE SLOT POSITION

ID MISMATCH: INVOKE INITIALIZATION SETUP PROGRAM

IF ALL ID'S MATCH,TRANSFER PARAMETER INFO FROM SLOT POSITIONS TO RESPECTIVE CARD REGISTERS 21
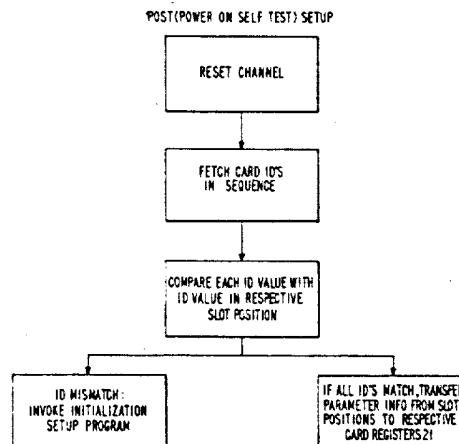
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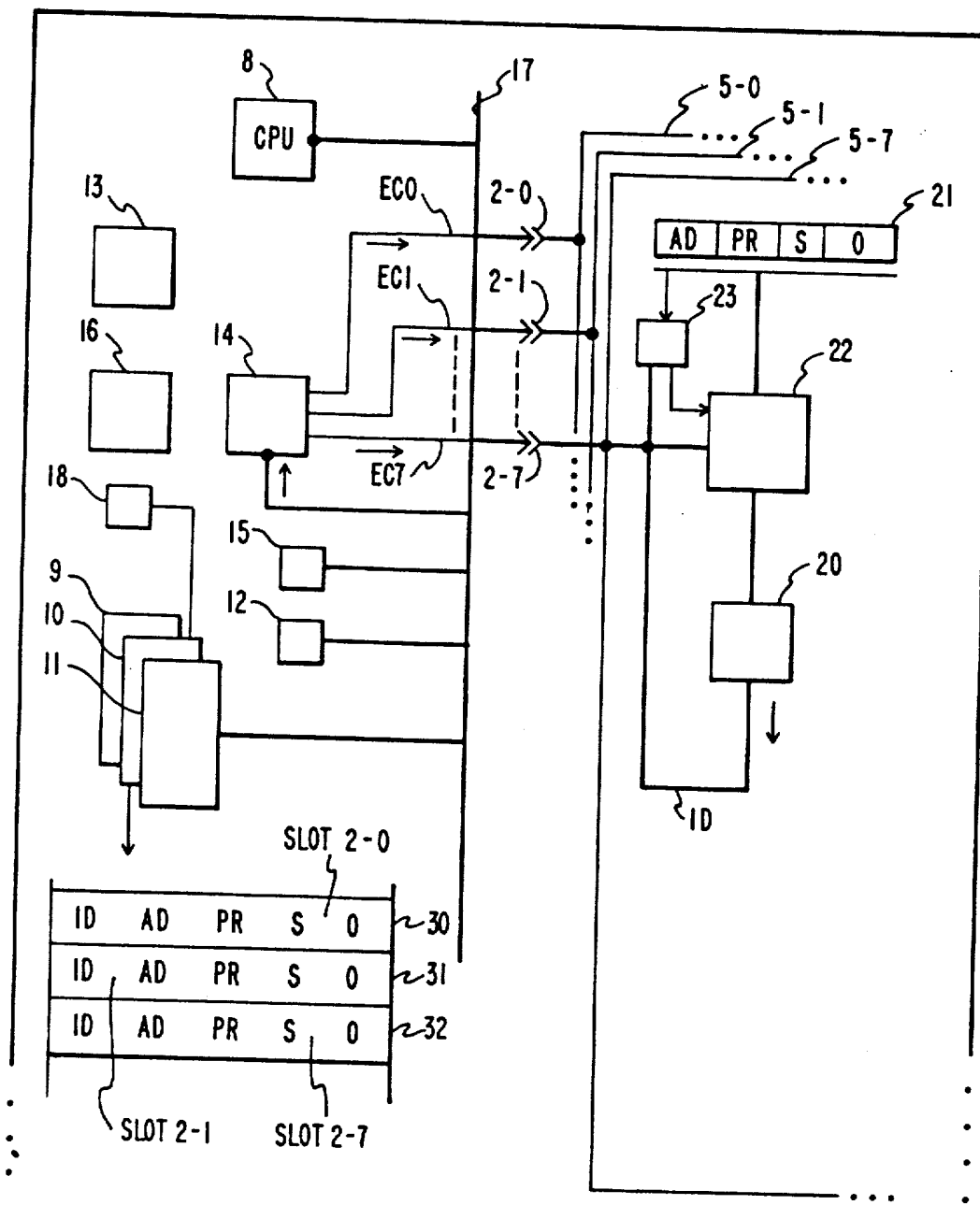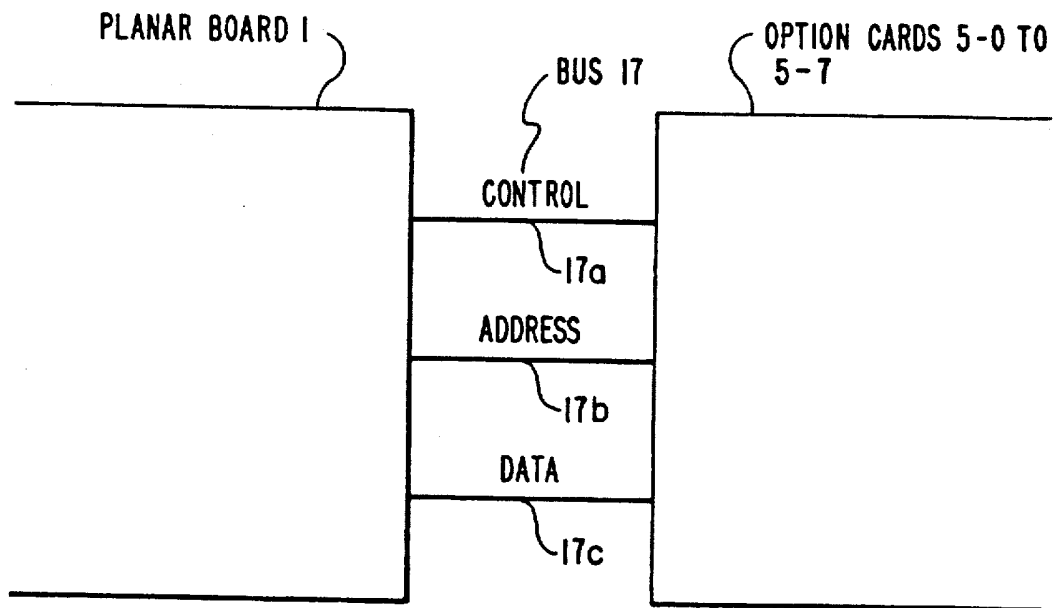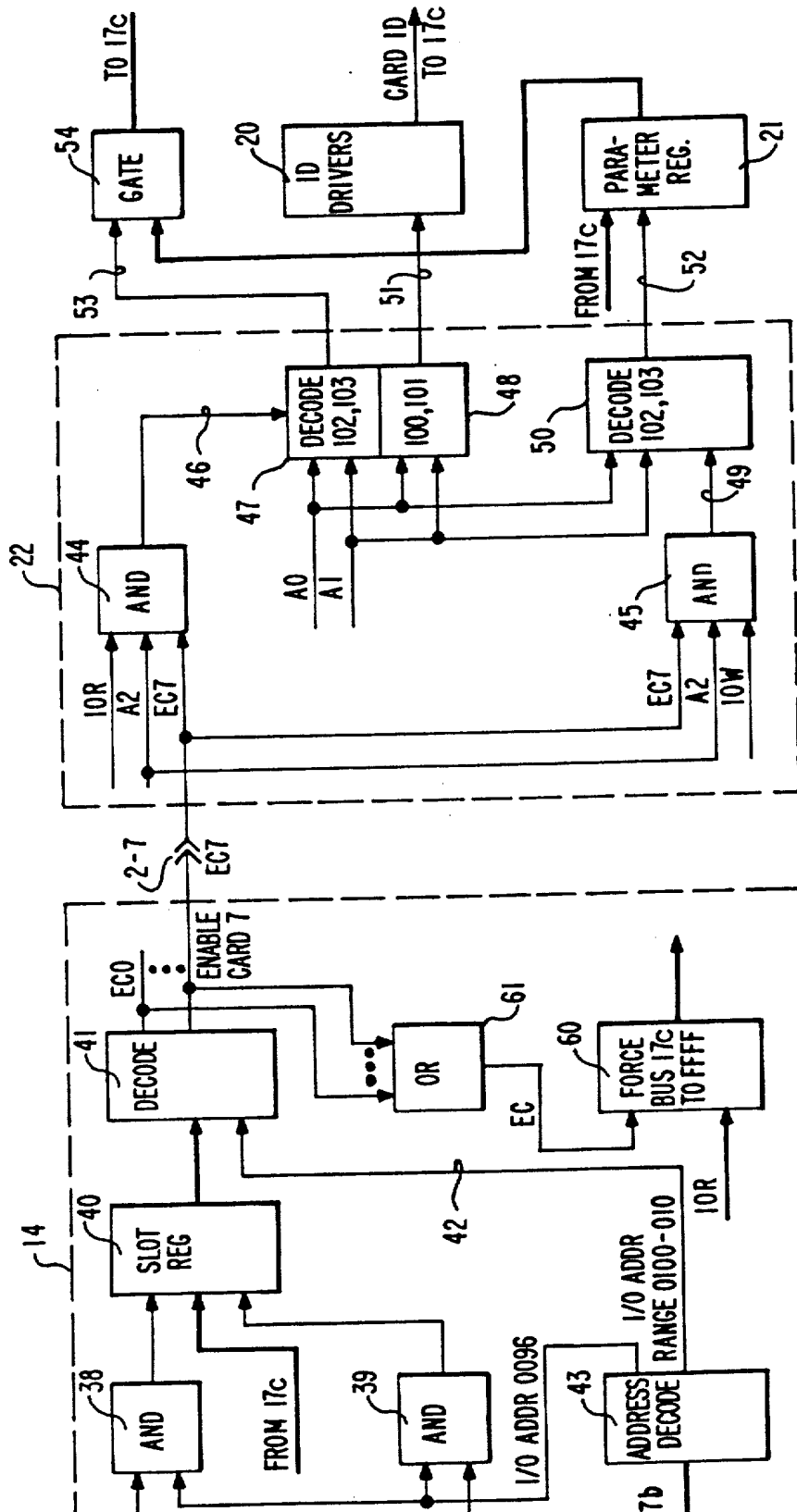
FIG. 1

FIG. 2

PLANAR BOARD 1

BUS 17

OPTION CARDS 5-0 TO 5-7

CONTROL

17a

ADDRESS

17b

DATA

17c

FIG. 3

DOCKET ALARM

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