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Beaverton et al.

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[54] **SYSTEM FOR UPDATING PROGRAM STORED IN EEPROM BY STORING NEW VERSION INTO NEW LOCATION AND UPDATING SECOND TRANSFER VECTOR TO CONTAIN STARTING ADDRESS OF NEW VERSION**

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[52] **U.S. Cl.** 395/500; 364/DIG. 1; 364/259; 364/259.9; 364/243; 364/245.2; 395/425

[58] **Field of Search** ... 364/200 MS File, 900 MS File; 395/500, 425

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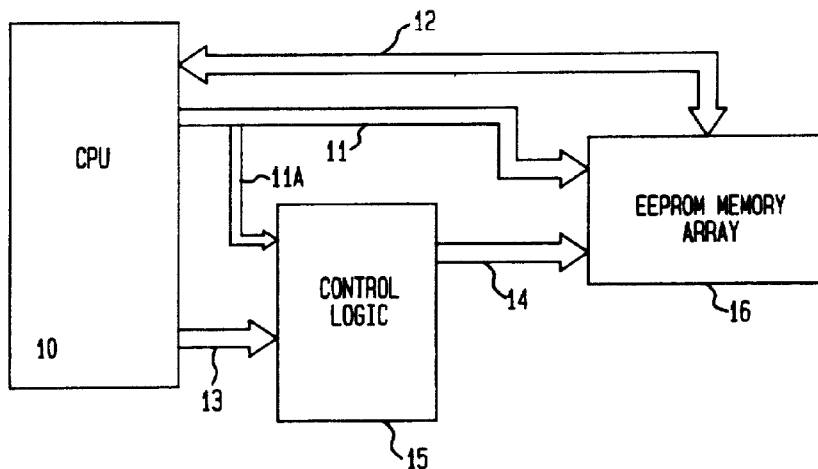
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Assistant Examiner—Mehmet Geckil
Attorney, Agent, or Firm—Kenyon & Kenyon

[57] **ABSTRACT**

Firmware resident in electrically erasable programmable read only memory ("EEPROM") can be updated by a user while maintaining the intelligence of a computer system during the updating process by a control logic device. The control logic device decodes address and control signals to provide a hardware partitioning of the firmware resident in the EEPROMs to prevent writing to protected partitions of the firmware. Transfer vectors are used to provide indirect accessing of subroutines resident in the firmware. During an updating process, a new version of a subroutine is stored in a free area in the EEPROMs before the transfer vector pointing to the old version of the subroutine is updated. The window of vulnerability to errors during the updating process is minimized by only updating a page of memory containing the transfer vector that points to the old version of the subroutine after the new version has been stored.

7 Claims, 5 Drawing Sheets



Liberty Mutual
Exhibit 1009

FIG. 1

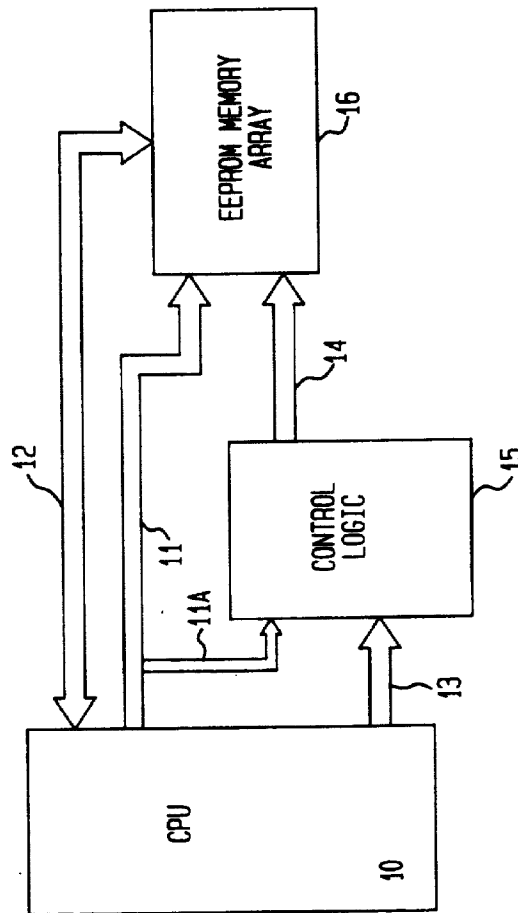


FIG. 3

PHYSICAL ADDRESS

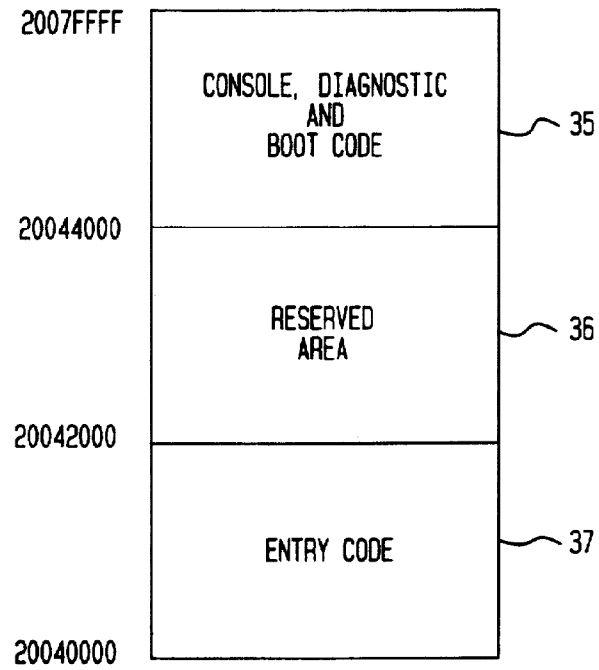
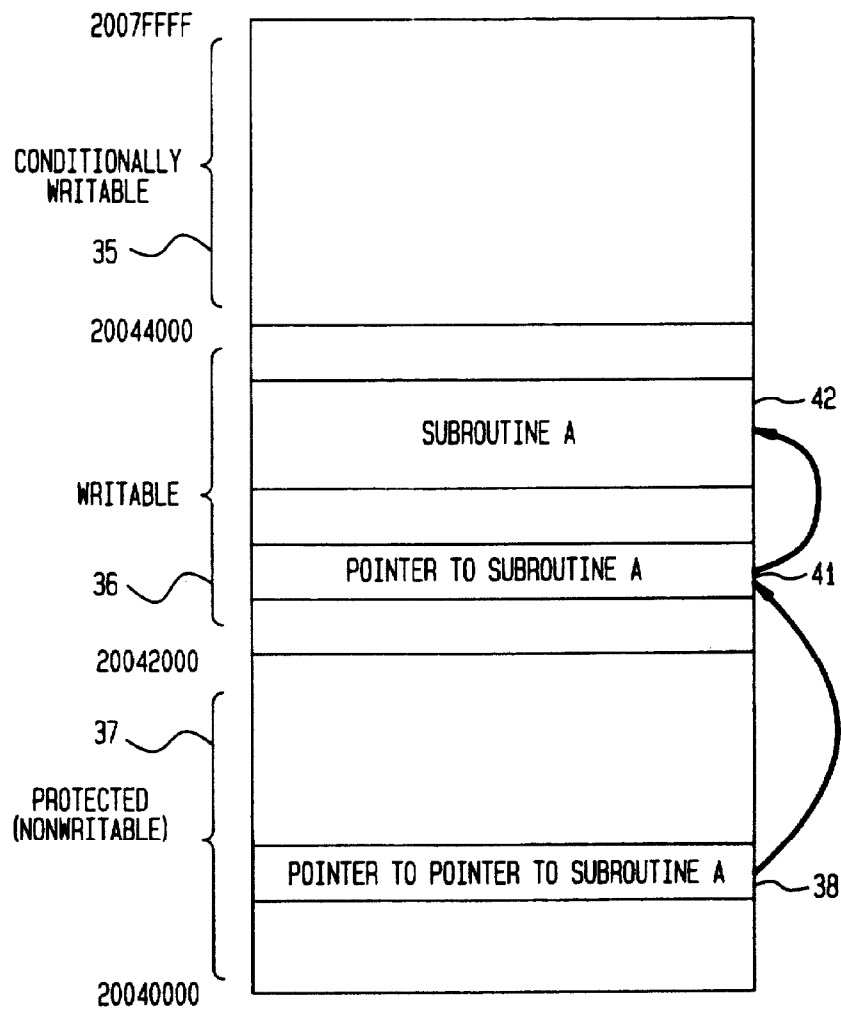


FIG. 4



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