



[54] **BLOCK STORAGE MEMORY MANAGEMENT SYSTEM AND METHOD UTILIZING INDEPENDENT PARTITION MANAGERS AND DEVICE DRIVERS**

Attorney, Agent, or Firm—Burns, Doane, Swecker & Mathis, L.L.P.

[57] **ABSTRACT**

[75] Inventors: **David Lee Smith**, San Francisco; **William J. Keenan**, Redwood; **Steven James Szymanski**, Cupertino, all of Calif.

A memory management system and method of managing a memory system are disclosed. The memory management system includes a plurality of physical storage media and a memory manager for generating virtual storage devices or "stores," with one or more first storage devices each having a corresponding first mapping plug-in, or device driver, associated with the plurality of physical storage media. Each first device driver scans its corresponding first storage device to determine its partitioning format and generates one or more second virtual storage devices from a partition map stored in the partitioning plug-in, or partition manager, associated with the corresponding first storage device, each second virtual storage device having one or more second partitioning formats, a second partition manager and second device driver. The first and second partition managers are independent of the first and second device drivers. The separation of disk driver and partition manager functions allows for the nesting of partition formats and avoids the replication of partitioning codes. The physical storage media may include at least one redundant array of independent disks (RAID), and the first device driver may be a small computer systems interface (SCSI) associated with the physical storage device.

[73] Assignee: **Apple Computer, Inc.**, Cupertino, Calif.

[21] Appl. No.: **644,412**

[22] Filed: **May 10, 1996**

[51] Int. Cl.⁶ **G06F 12/00**; G06F 12/10

[52] U.S. Cl. **711/202**; 711/209; 711/173; 711/114; 395/681

[58] Field of Search 711/5, 202, 203, 711/209, 129, 153, 173, 114; 395/681

[56] **References Cited**

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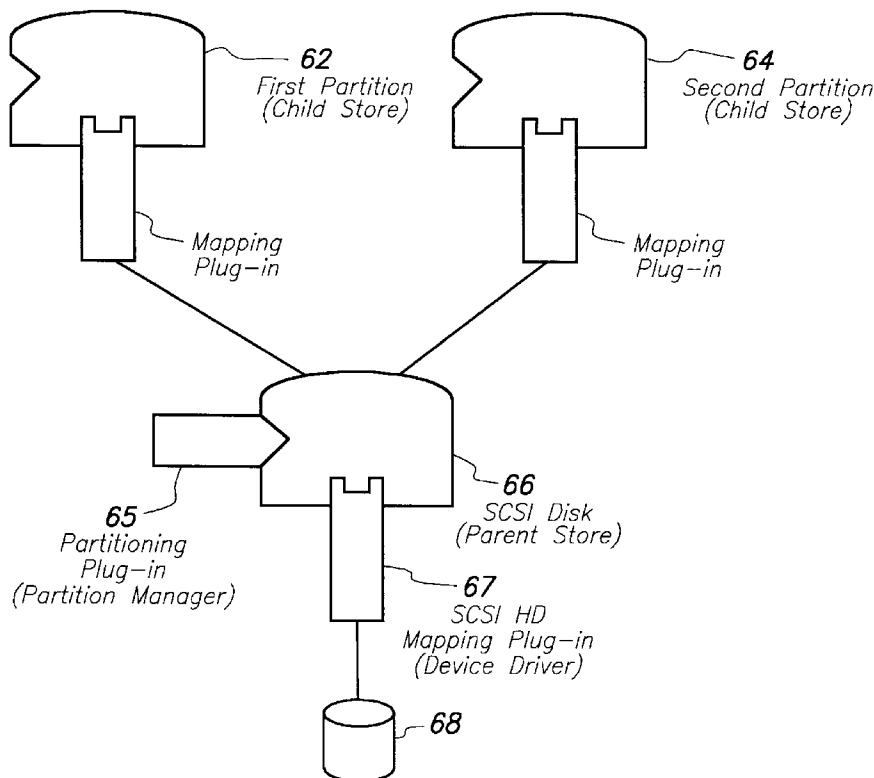
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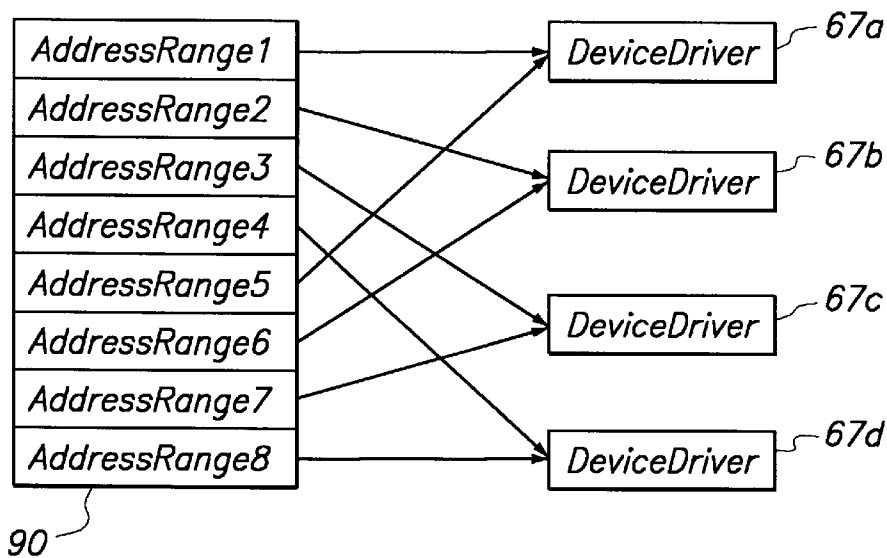
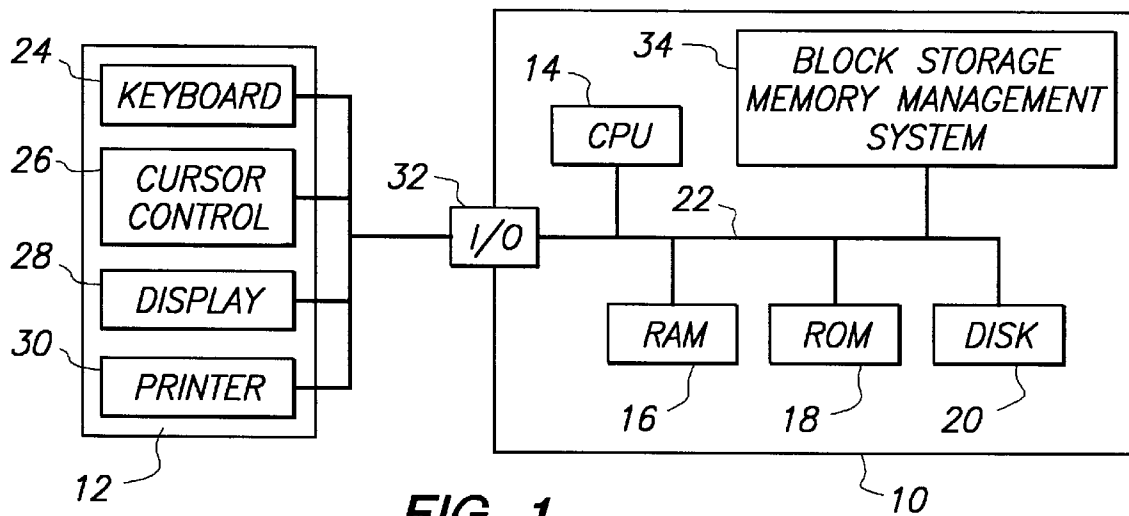
OTHER PUBLICATIONS

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Primary Examiner—Glenn Gossage

13 Claims, 5 Drawing Sheets





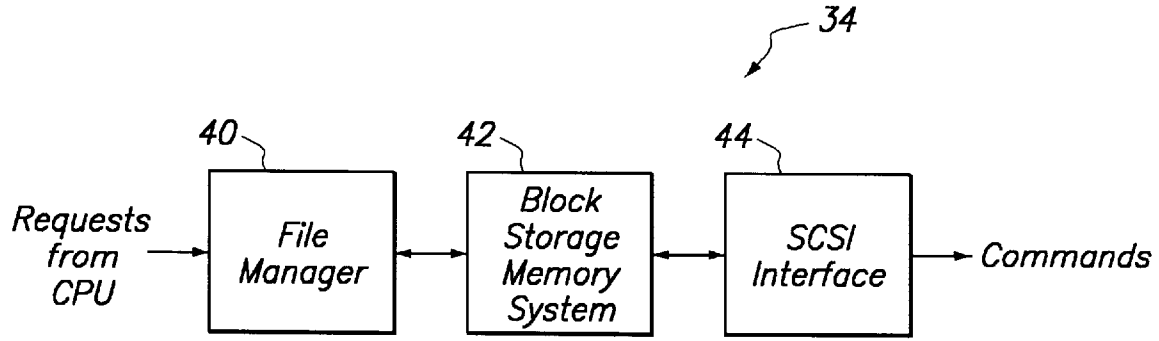


FIG. 2

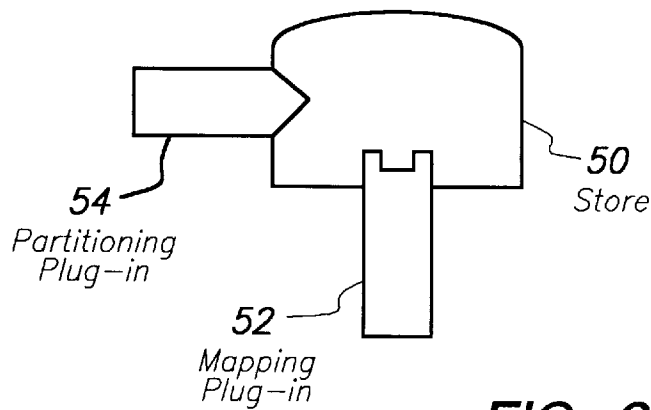


FIG. 3

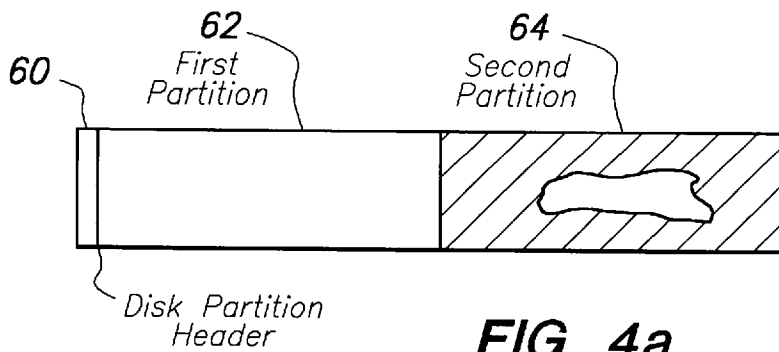
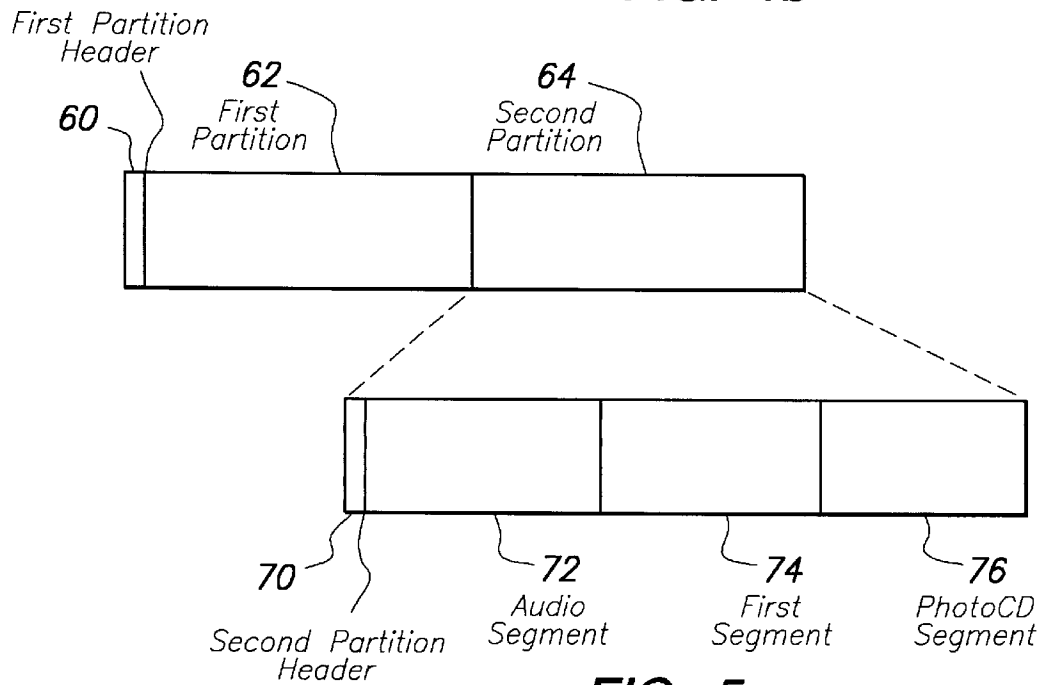
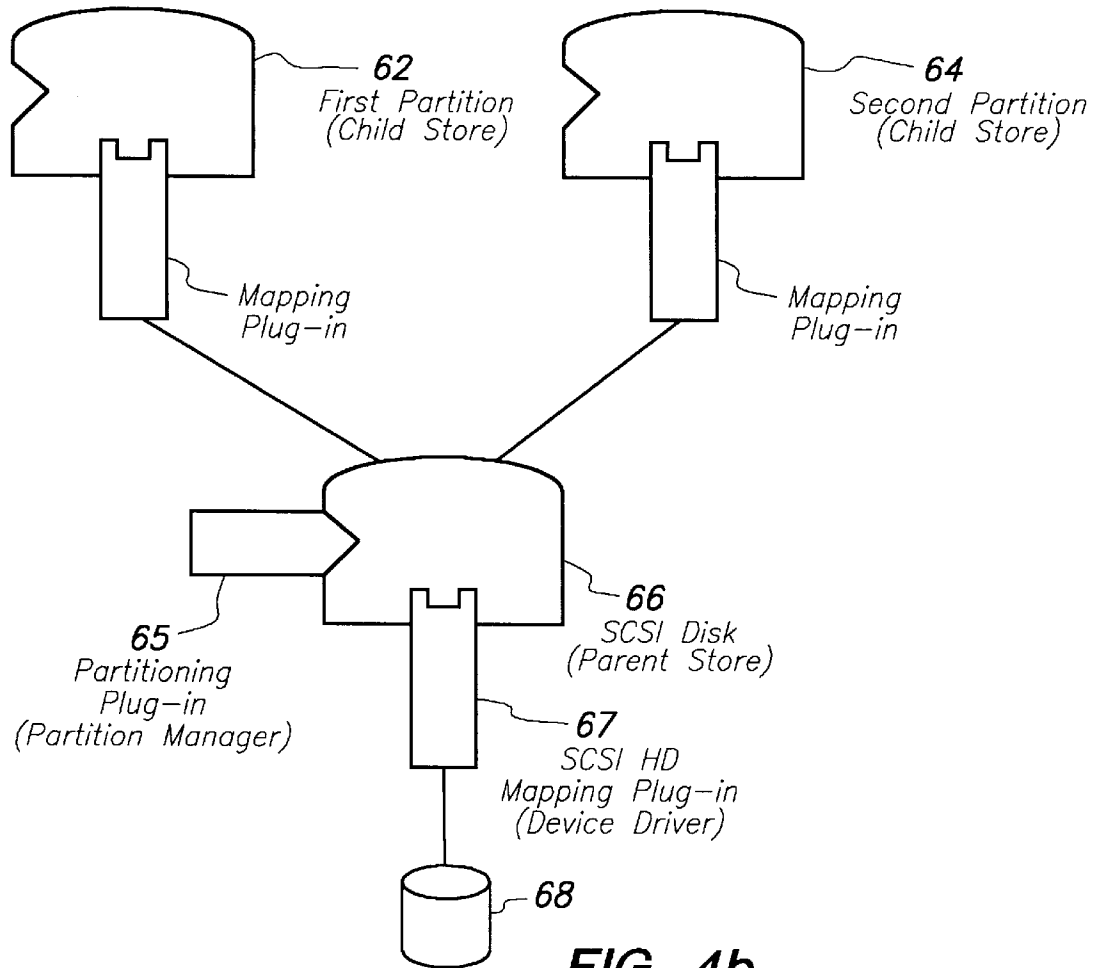


FIG. 4a



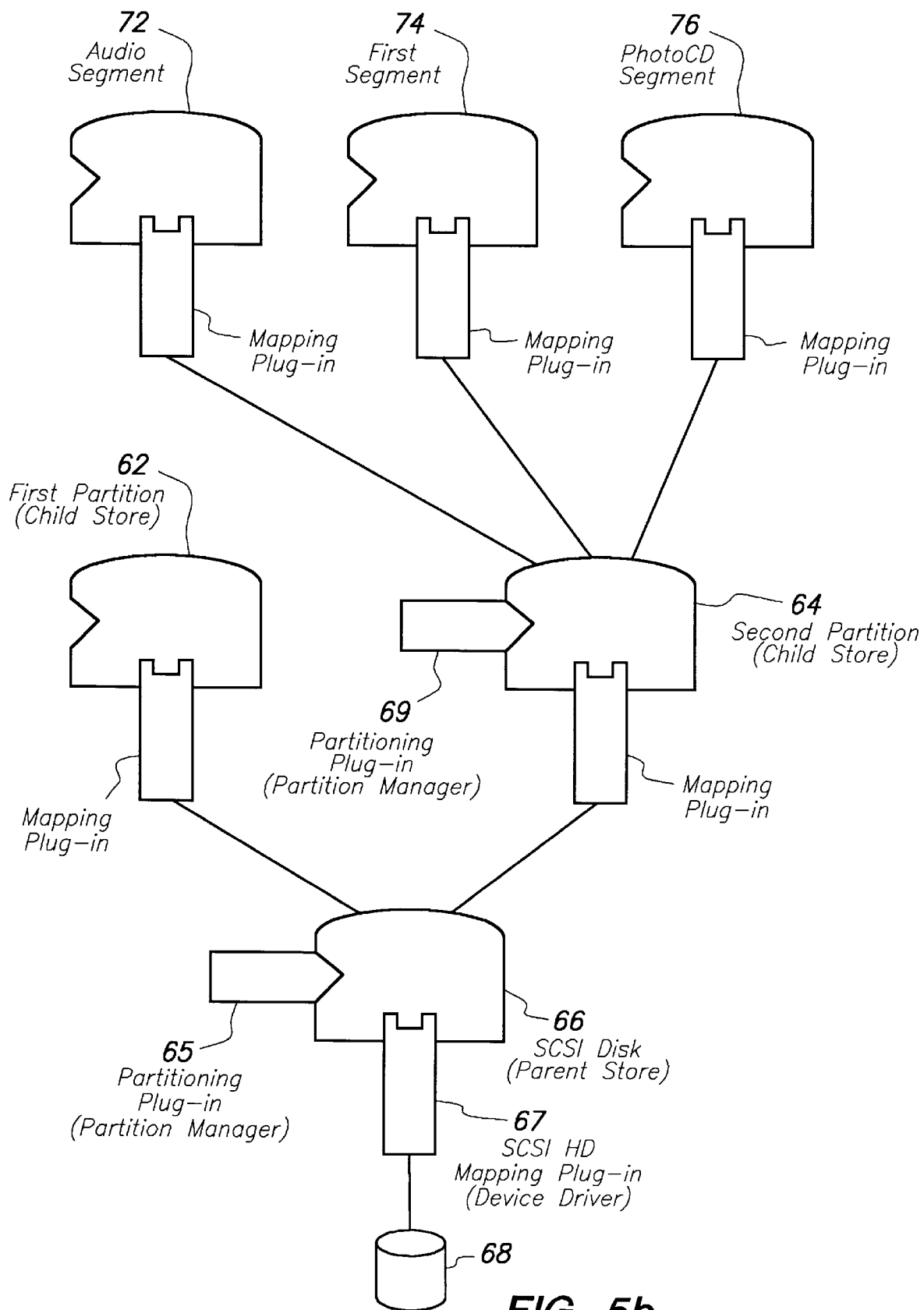


FIG. 5b

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