

### US005920893A

## **United States Patent** [19]

Nakayama et al.

5,920,893 [11] **Patent Number:** 

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### [54] STORAGE CONTROL AND COMPUTER SYSTEM USING THE SAME

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[30] Foreign Application Priority Data [JP] Japan ...... 8-163927 [51] Int. Cl.<sup>6</sup> ...... G06F 12/00 [52] **U.S. Cl.** ...... **711/147**; 711/147; 711/163; 711/170; 711/206; 395/494; 395/878; 395/200.08; 360/48; 360/369 711/170, 206; 395/494, 878, 200.08; 360/48,

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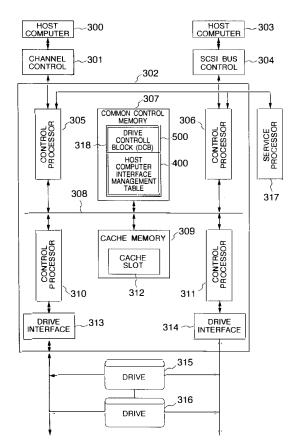
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Primary Examiner—Tod R. Swann Assistant Examiner—Nasser Moazzami Attorney, Agent, or Firm--Antonelli, Terry, Stout & Kraus,

#### **ABSTRACT** [57]

A storage control enables data on various storage media to be shared among host computers having various different host computer input/output interfaces. A control processor checks a host computer interface management table when write is requested by a host computer (HCP). The control processor writes write data in a cache slot of the cache memory without converting the format if the data format of the HCP is in an FBA format and it converts the format into the FBA format and writes it when the data format of HCP is in a CKD format. The processor checks a table when read is requested by HCP. If the data format of HCP is FBA, the processor transfers the read data read from the cache slot without converting it and if it is CKD, the processor converts the format into the FBA format and transfers the format converted data. The control processors, retrieve write data in the cache memory and writes it in a drive.

### 19 Claims, 9 Drawing Sheets





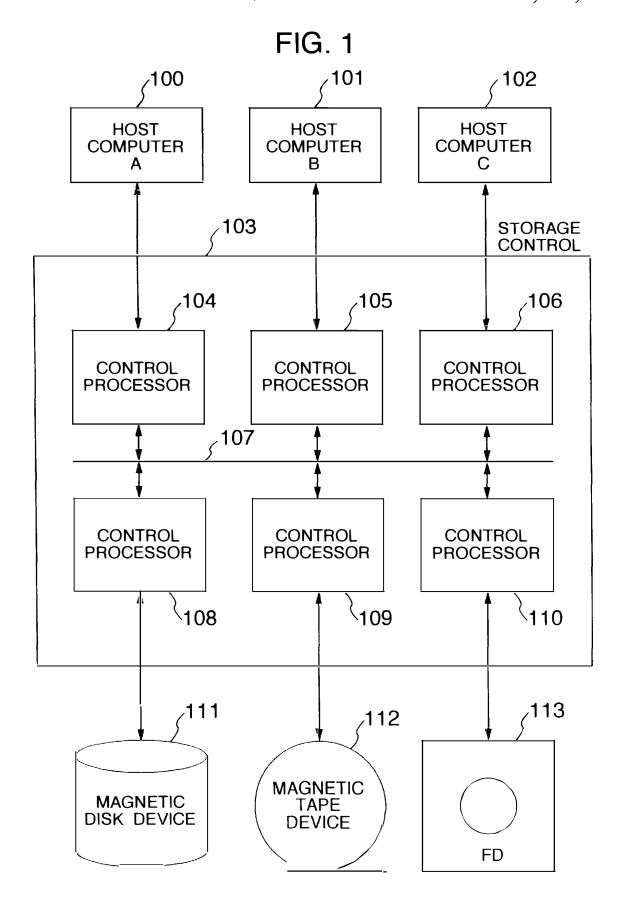




FIG. 2

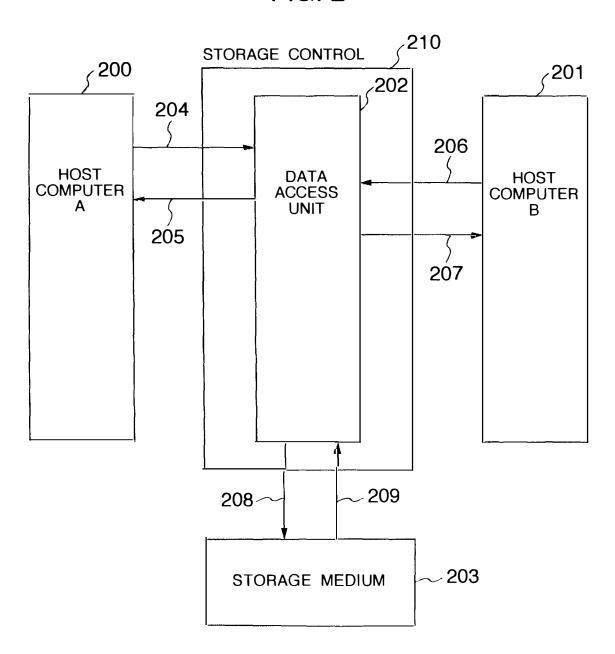




FIG. 3 **HOST** 300 **HOST** 303 COMPUTER COMPUTER **CHANNEL** SCSI BUS 301 304 CONTROL CONTROL 302 307 COMMON CONTROL MEMORY 306 305 CONTROL PROCESSOR SERVICE PROCESSOR CONTROL PROCESSOR DRIVE 500 CONTROLL 318 BLOCK (DCB) HOST COMPUTER INTERFACE 400 MANAGEMENT **TABLE** 308 317 309 CACHE MEMORY CONTROL PROCESSOR CONTROL PROCESSOR **CACHE** SLOT 312 310 311 DRIVE **DRIVE** 313 314 **INTERFACE INTERFACE** 315 **DRIVE** 316 **DRIVE** 

FIG. 4
DRIVE CONTROL BLOCK (DCB)

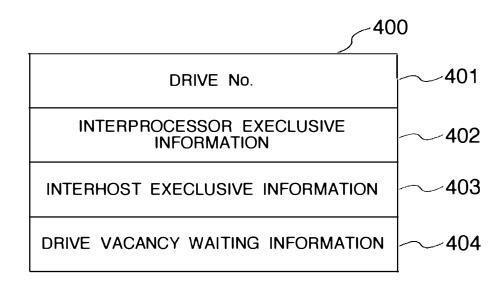


FIG. 5
HOST COMPUTER INTERFACE MANAGEMENT INFORMATION TABLE

		500	
501~	CONTROL PROCESSOR No.	INTERFACE INFORMATION	<u>502</u>
503~	305	CKD FORMAT	<b>~</b> 506
504~	306	FBA FORMAT	<u>507</u>

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