



US005163131A

# United States Patent [19]

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Row et al.

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[54] **PARALLEL I/O NETWORK FILE SERVER ARCHITECTURE**

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### [57] ABSTRACT

[21] Appl. No.: **404,959**

A file server architecture is disclosed, comprising as separate processors, a network controller unit, a file controller unit and a storage processor unit. These units incorporate their own processors, and operate in parallel with a local Unix host processor. All networks are connected to the network controller unit, which performs all protocol processing up through the NFS layer. The virtual file system is implemented in the file control unit, and the storage processor provides high-speed multiplexed access to an array of mass storage devices. The file controller unit control file information caching through its own local cache buffer, and controls disk data caching through a large system memory which is accessible on a bus by any of the processors.

[22] Filed: **Sep. 8, 1989**

[51] Int. Cl.<sup>5</sup> ..... **G06F 15/16; G06F 13/00**

[52] U.S. Cl. .... **395/200; 364/DIG. 1; 364/242.4; 364/228.3; 364/284; 364/284.4; 364/243.4; 364/230**

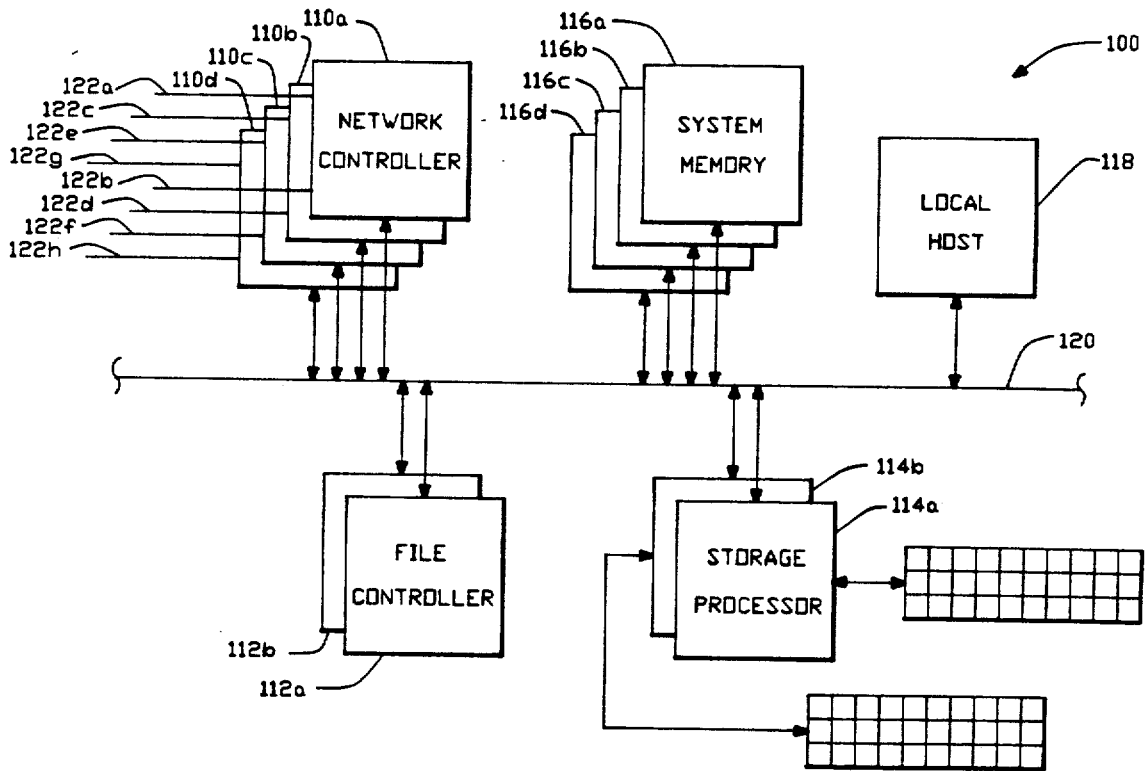
[58] Field of Search ... **364/200 MS File, 900 MS File; 395/200, 650**

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**67 Claims, 12 Drawing Sheets**



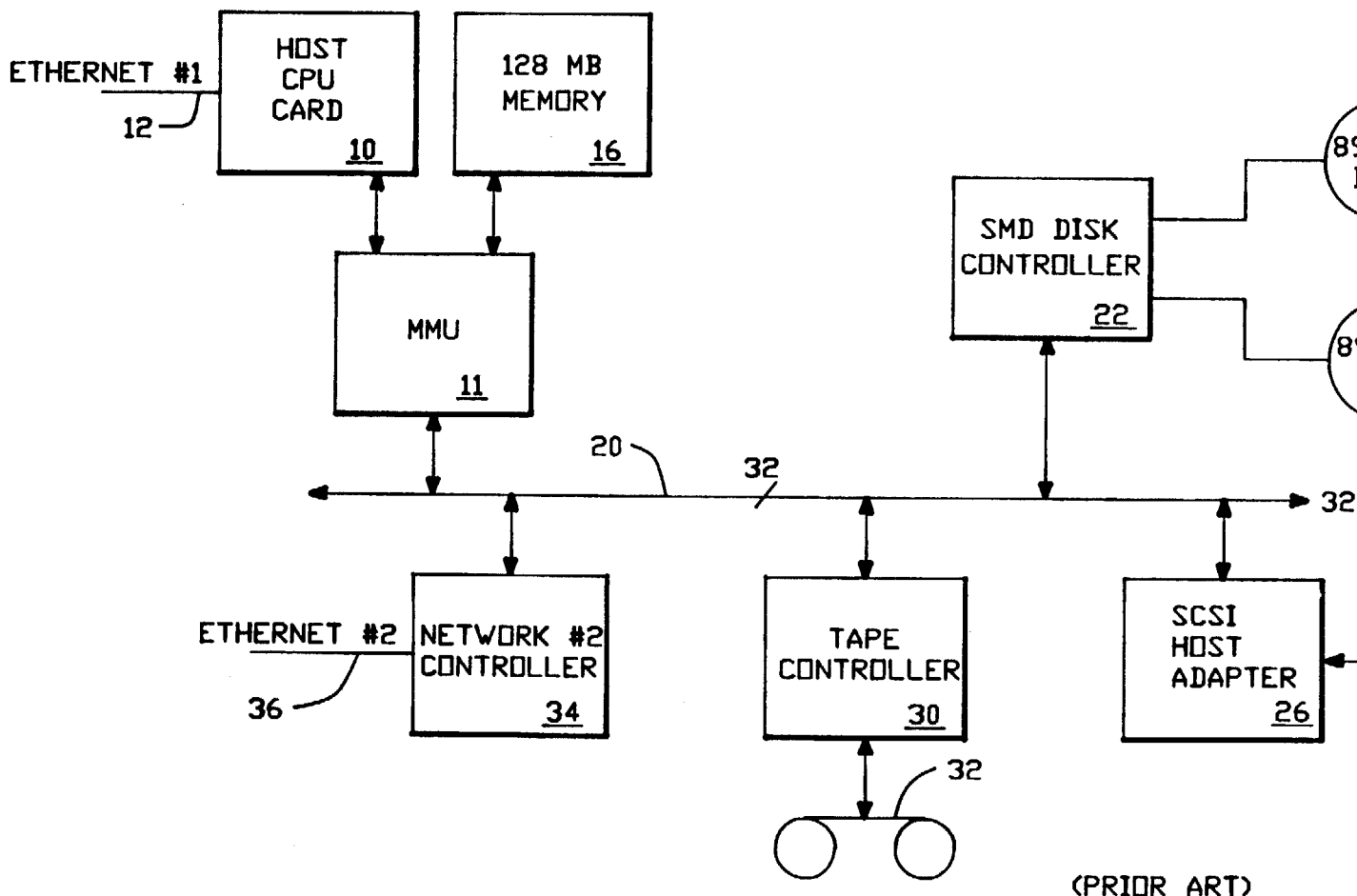


FIG.-1

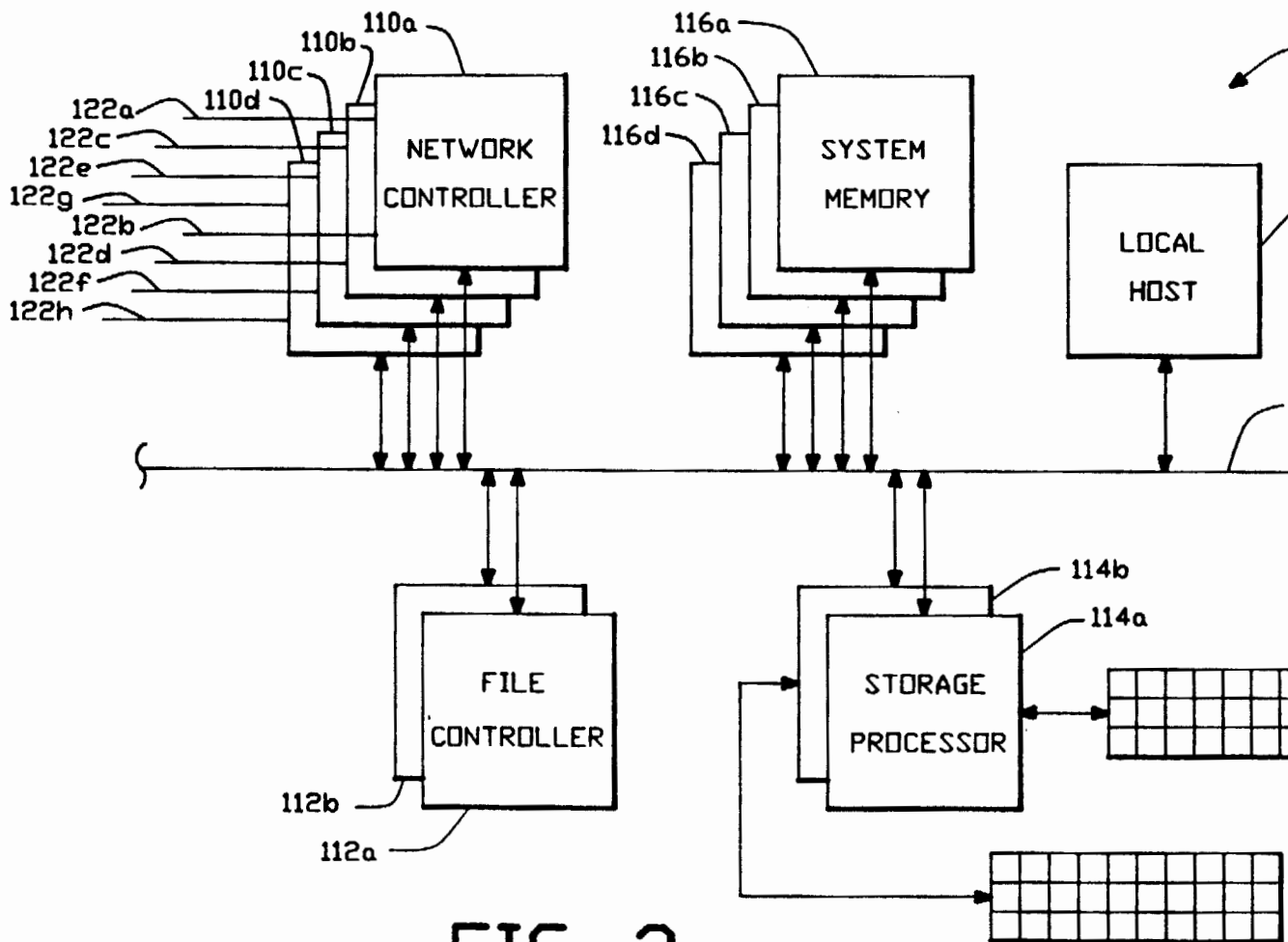
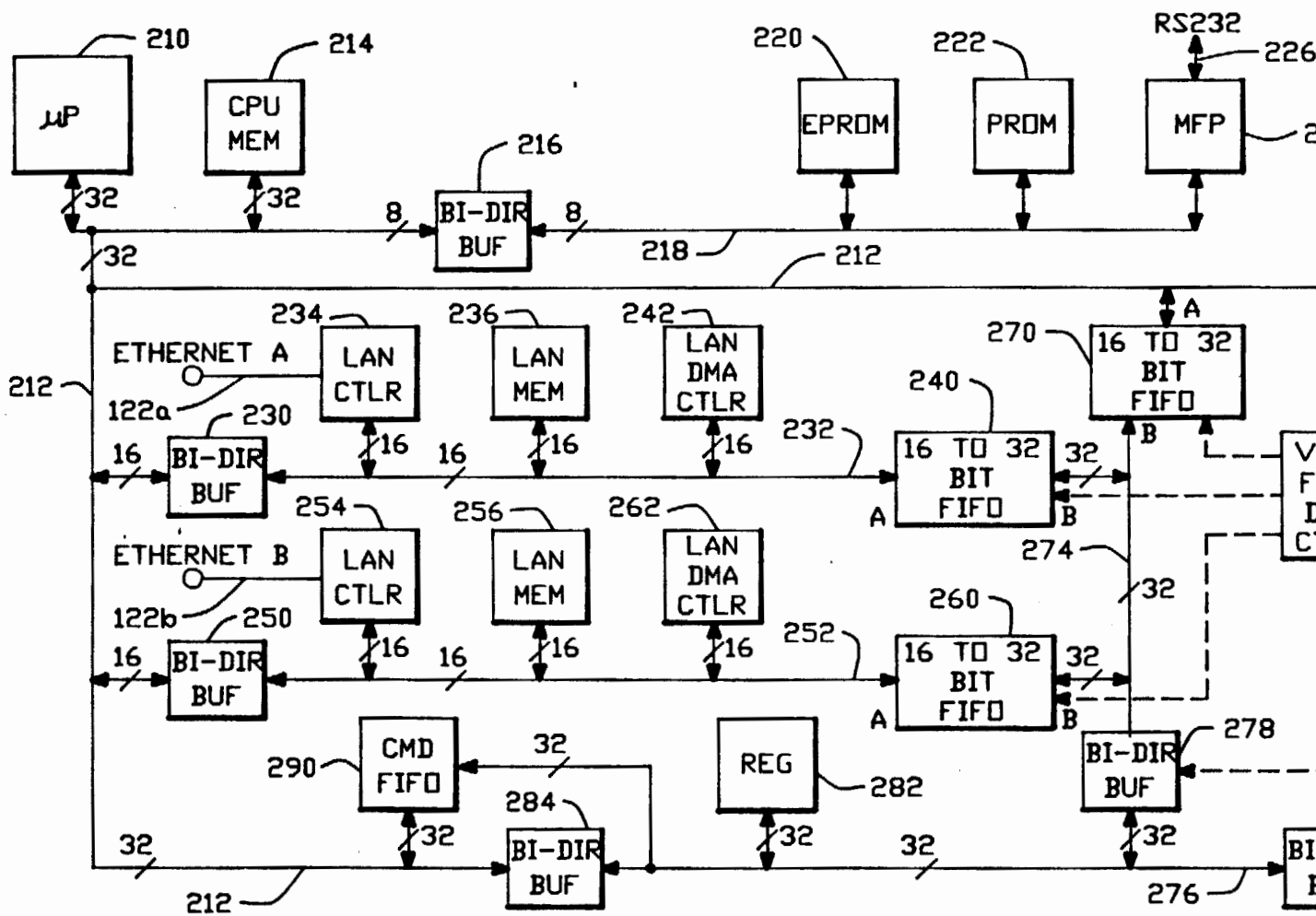


FIG.-2



**FIG.-3** (NETWORK CONTROLLER)

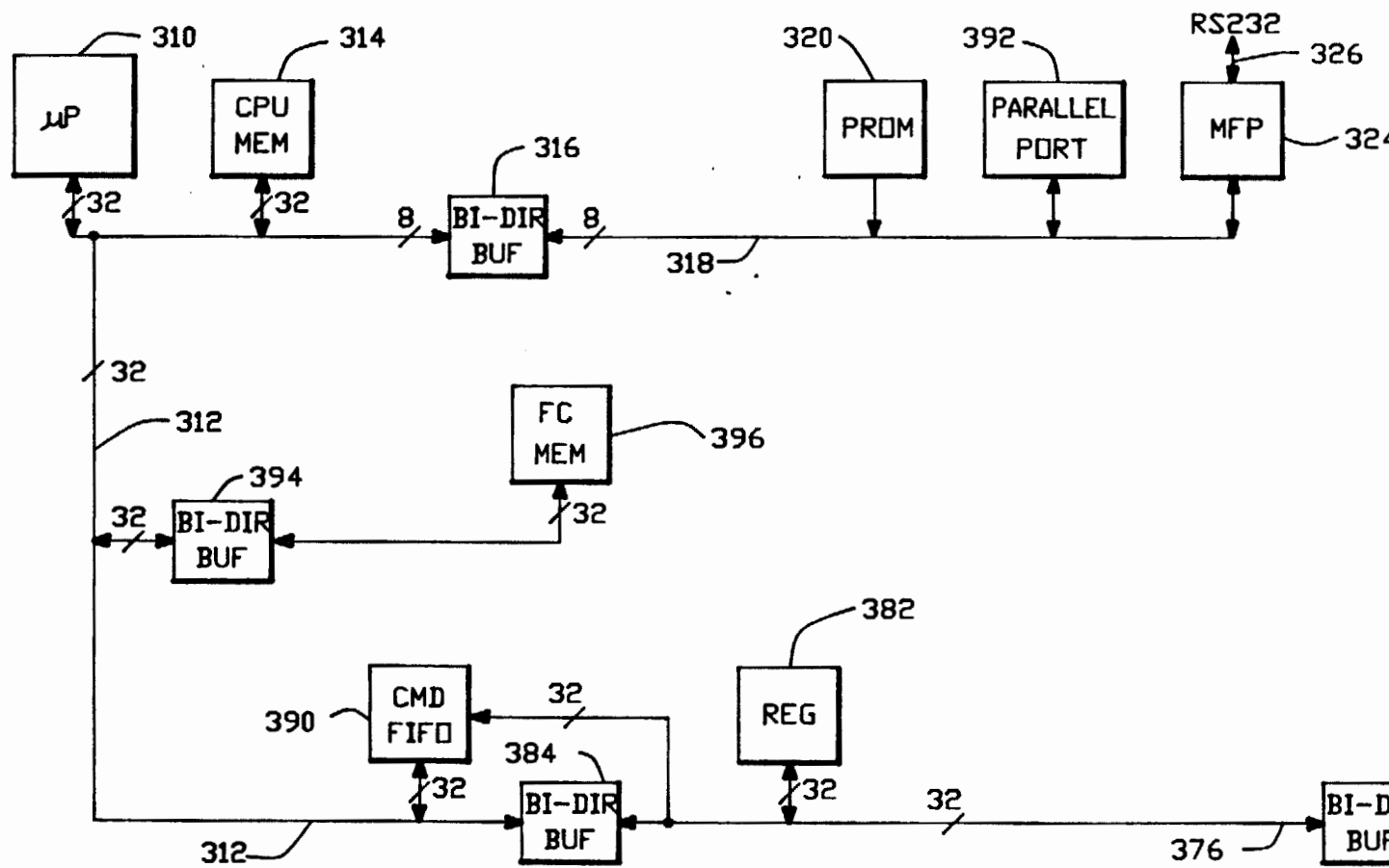


FIG.-4

(FILE CONTROLLER)

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