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United States Patent [19]

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Row et al.

[45] Date of Patent: **Nov. 10, 1992**

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

4,803,621	2/1989	Kelly	364/200
4,819,159	4/1989	Shipley et al.	364/200
4,887,204	12/1989	Johnson et al.	364/200
4,897,781	1/1990	Chang et al.	364/200

[75] Inventors: **Edward J. Row, Mountain View; Laurence B. Boucher, Saratoga; William M. Pitts, Los Altos; Stephen E. Blightman, San Jose, all of Calif.**

Primary Examiner—Kevin A. Kriess
Attorney, Agent, or Firm—Fliesler, Dubb, Meyer & Lovejoy

[73] Assignee: **Auspex Systems, Inc., Santa Clara, Calif.**

[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.⁵ **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**

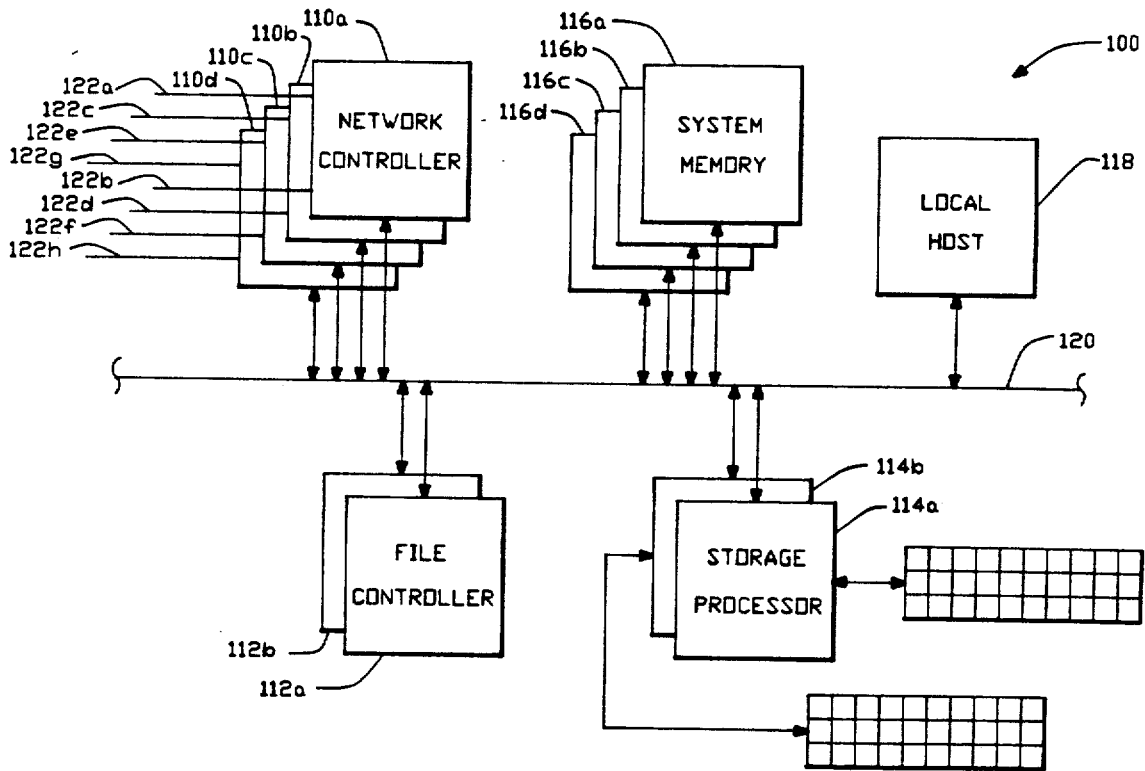
[58] Field of Search ... **364/200 MS File, 900 MS File; 395/200, 650**

[56] References Cited

U.S. PATENT DOCUMENTS

4,527,232	7/1985	Bechtolsheim	364/200
4,550,368	10/1985	Bechtolsheim	364/200
4,710,868	12/1987	Cocke et al.	364/200
4,719,569	1/1988	Ludemann et al.	364/200

67 Claims, 12 Drawing Sheets



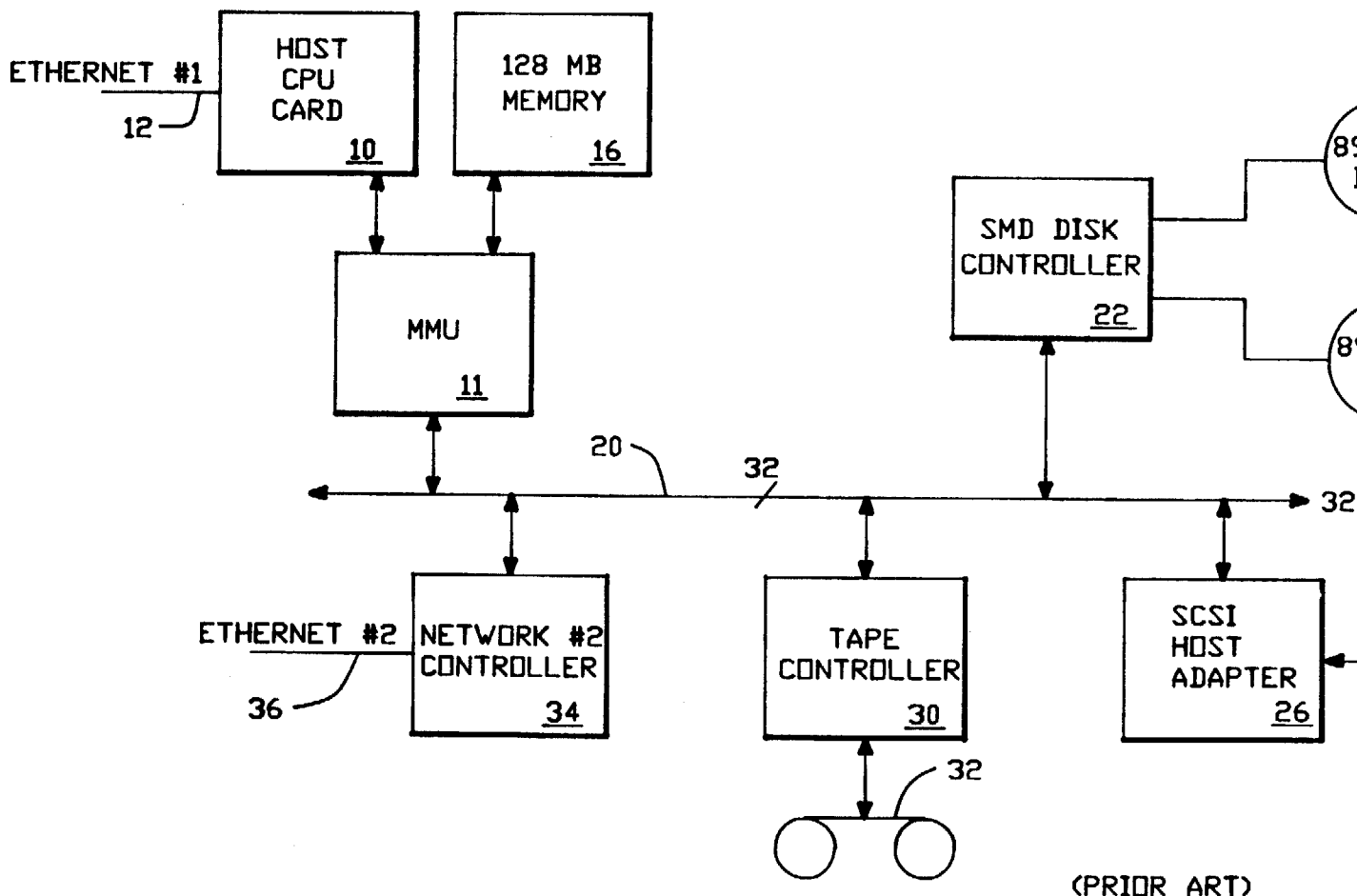


FIG.-1

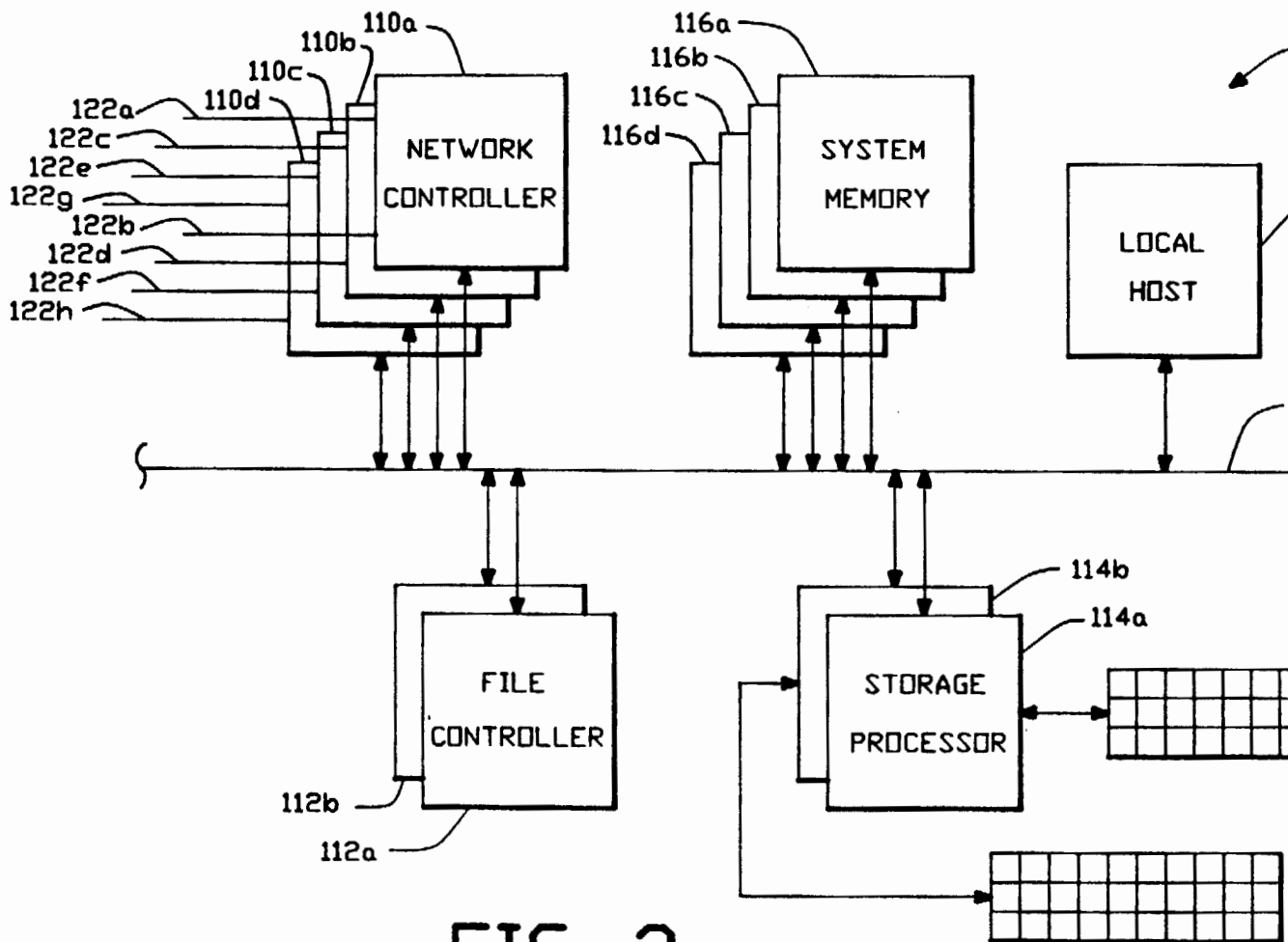


FIG.-2

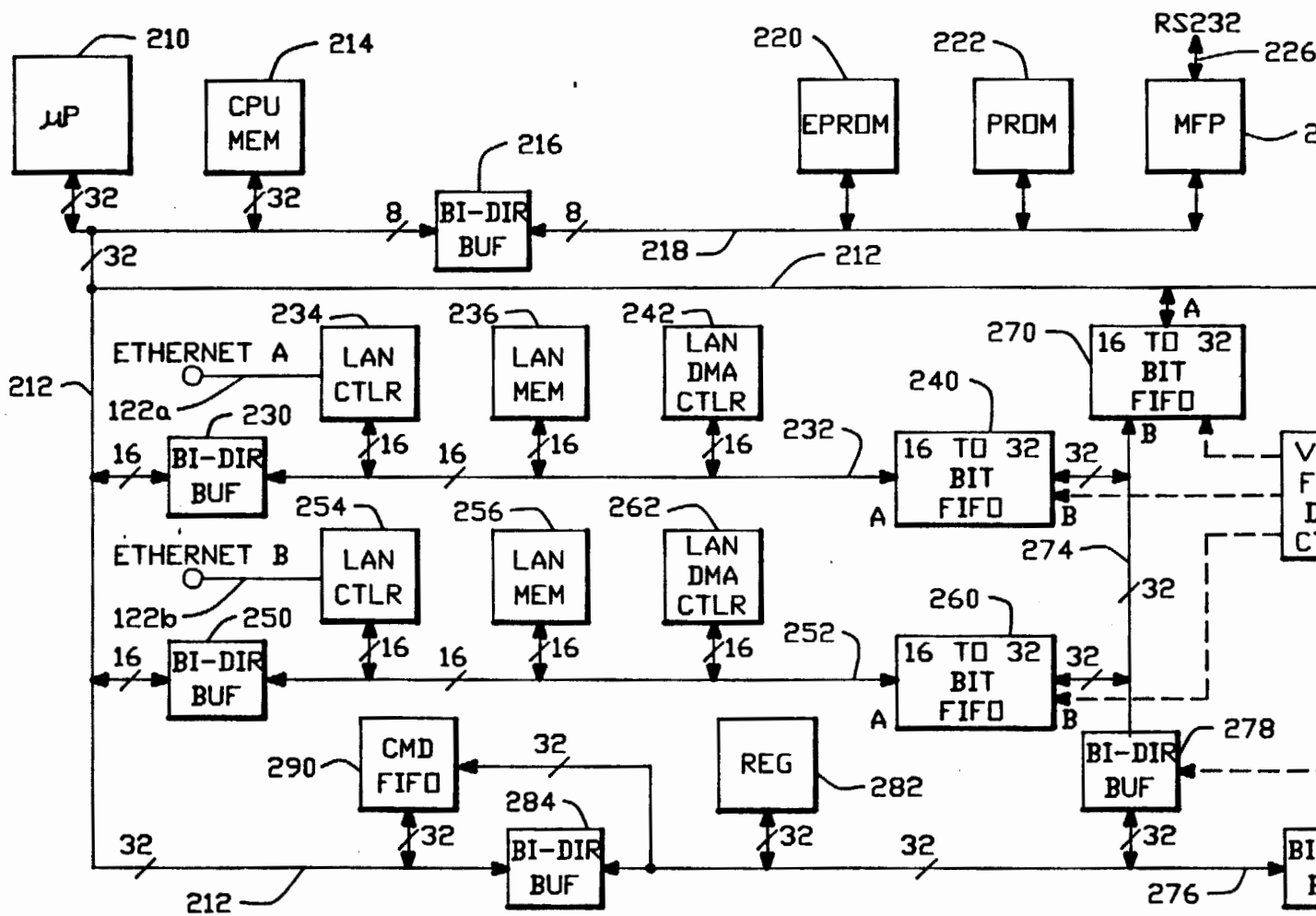


FIG.-3 (NETWORK CONTROLLER)

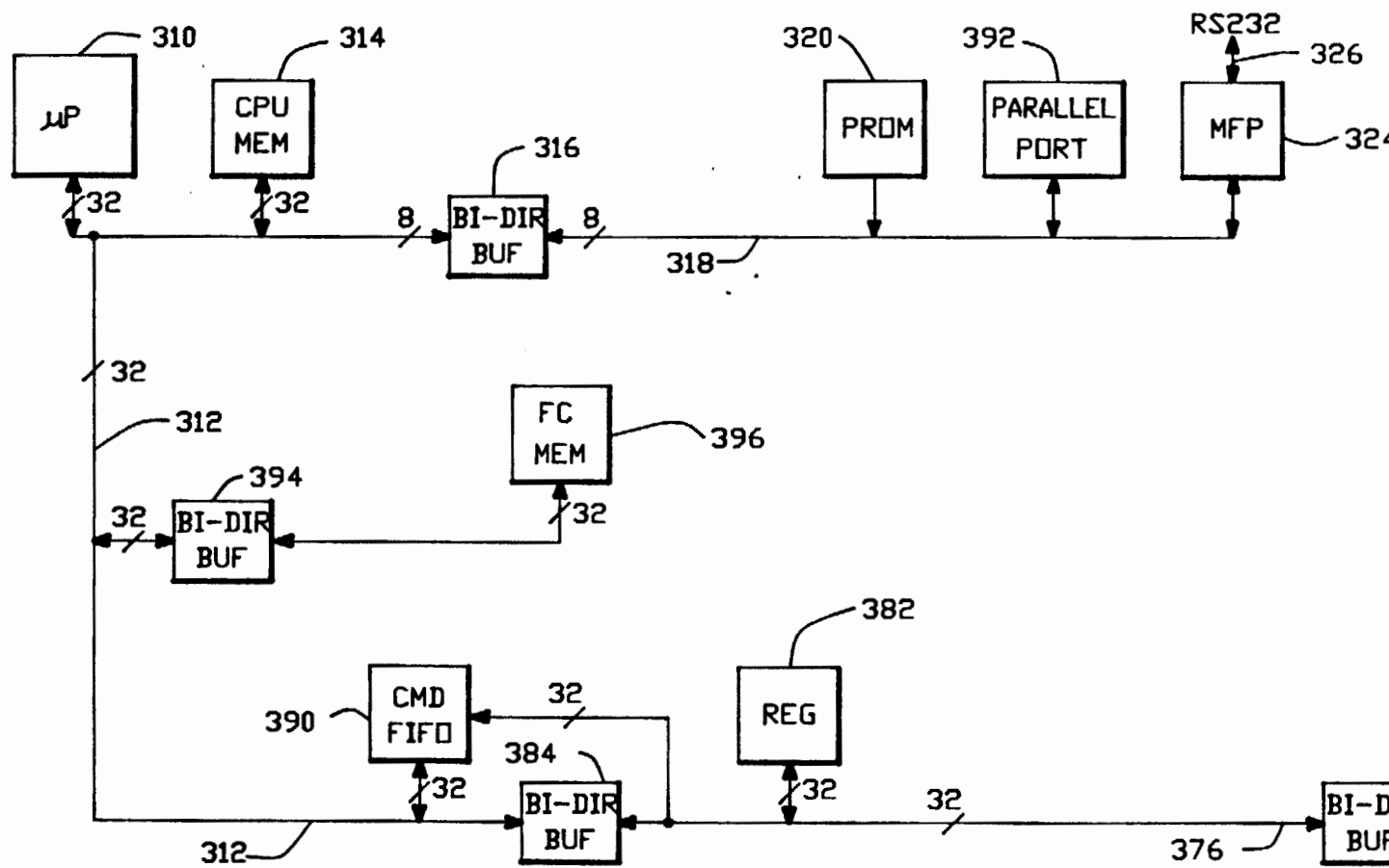


FIG.-4

(FILE CONTROLLER)

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