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(54) **ARCHITECTURE FOR PROVIDING BLOCK-LEVEL STORAGE ACCESS OVER A COMPUTER NETWORK**

(75) Inventors: **Douglas E. Jewett**, Round Rock, TX (US); **Adam J. Radford**, Mission Viejo, CA (US); **Bradley D. Strand**, Los Gatos, CA (US); **Jeffrey D. Chung**, Cupertino, CA (US); **Joel D. Jacobson**, Mountain View, CA (US); **Robert B. Haigler**, Newark, CA (US); **Rod S. Thompson**, Sunnyvale, CA (US); **Thomas L. Couch**, Woodside, CA (US)

(73) Assignee: **Applied Micro Circuits Corporation**, San Diego, CA (US)

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G06F 15/167 (2006.01)
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See application file for complete search history.

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*Primary Examiner*—Ario Etienne
Assistant Examiner—Sargon N Nano
(74) *Attorney, Agent, or Firm*—Knobbe, Martens, Olson & Bear LLP

(57) **ABSTRACT**

A network-based storage system comprises one or more block-level storage servers that connect to, and provide disk storage for, one or more host computers ("hosts") over logical network connections (preferably TCP/IP sockets). In one embodiment, each host can maintain one or more socket connections to each storage server, over which multiple I/O operations may be performed concurrently in a non-blocking manner. The physical storage of a storage server may optionally be divided into multiple partitions, each of which may be independently assigned to a particular host or to a group of hosts. Host driver software presents these partitions to user-level processes as one or more local disk drives. When a host initially connects to a storage server in one embodiment, the storage server initially authenticates the host, and then notifies the host of the ports that may be used to establish data connections and of the partitions assigned to that host.

41 Claims, 9 Drawing Sheets
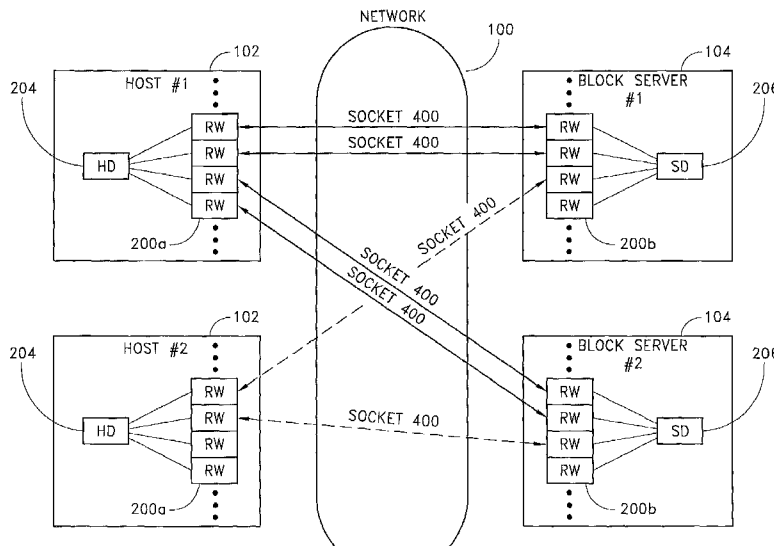
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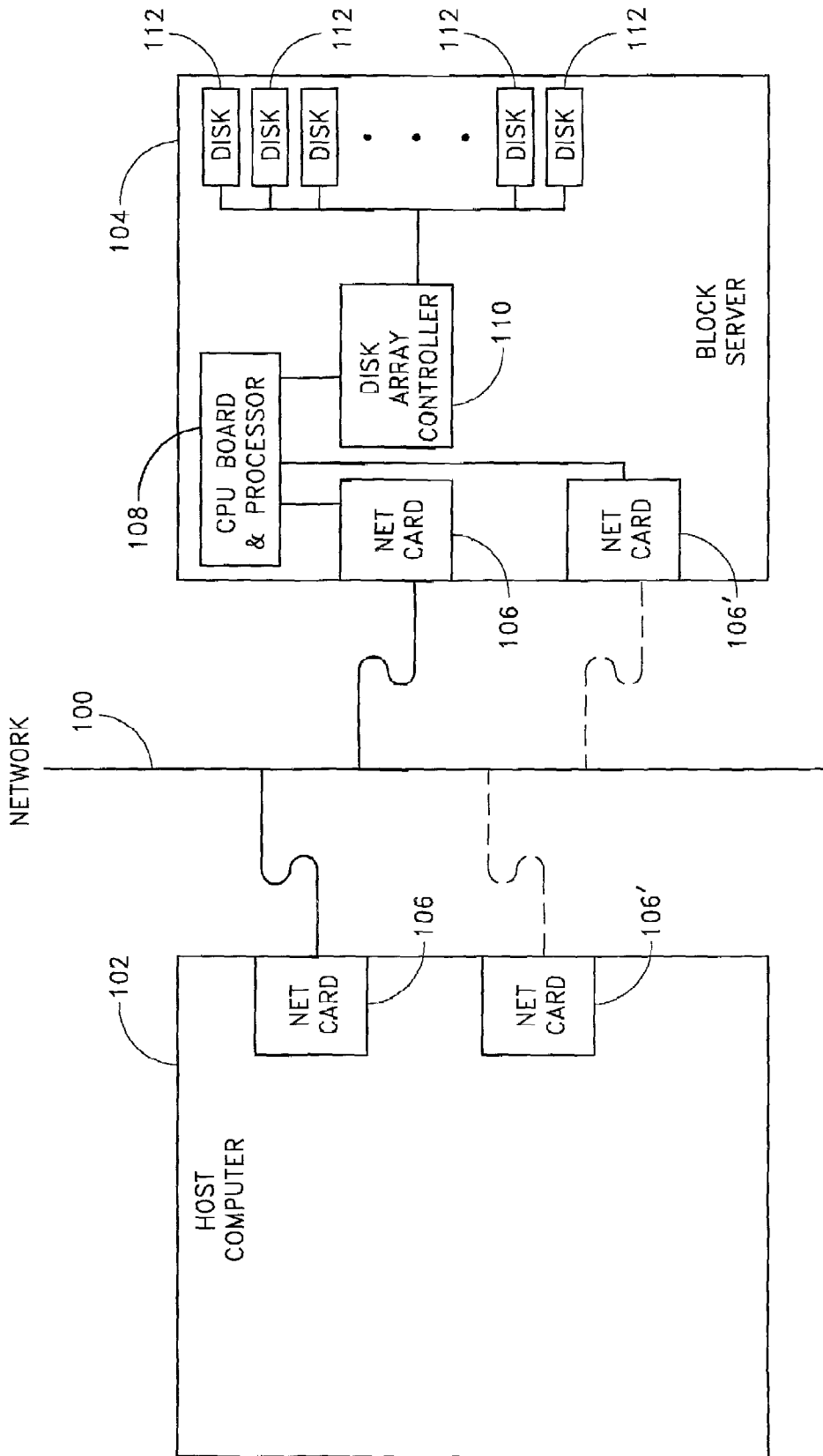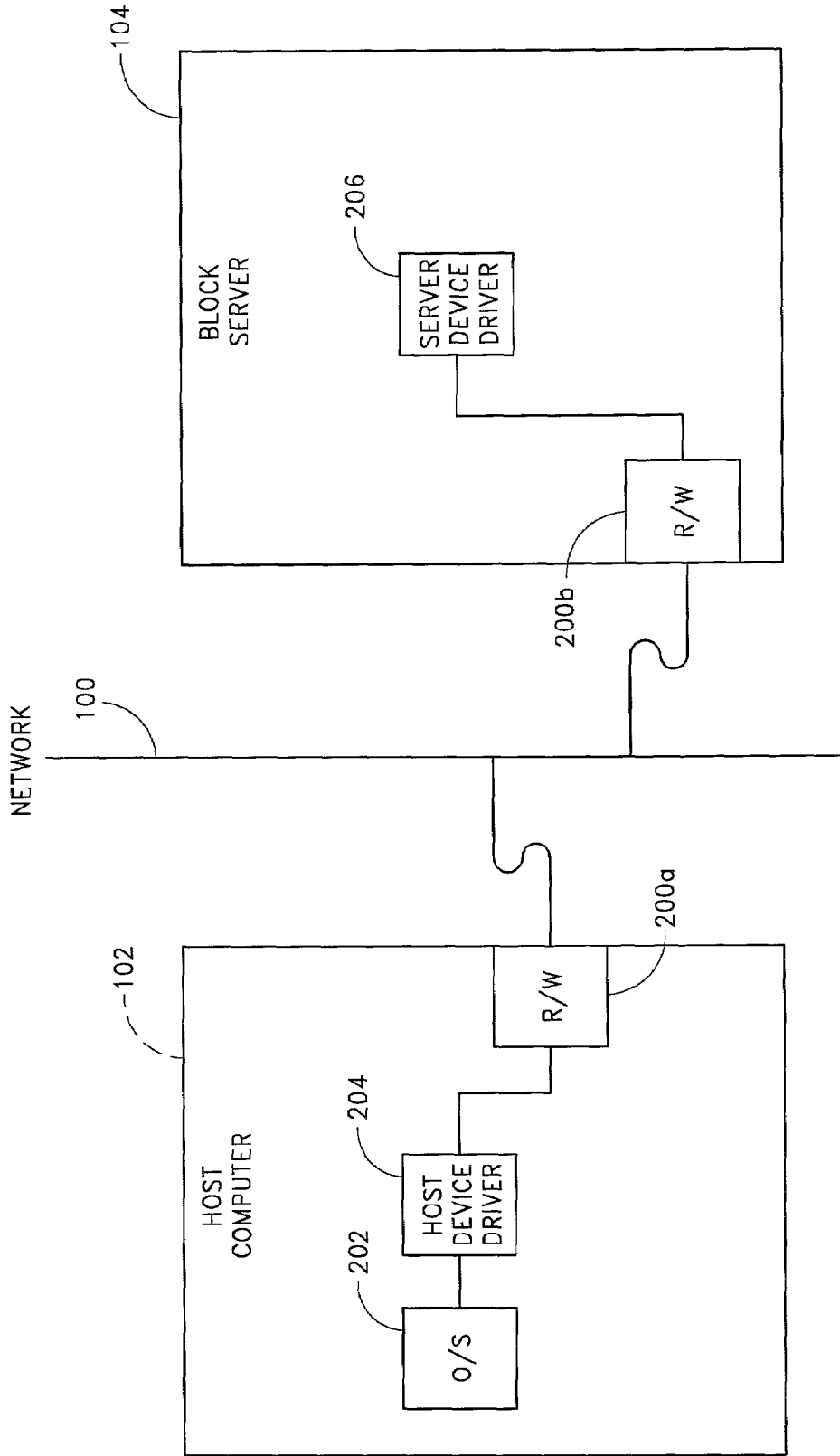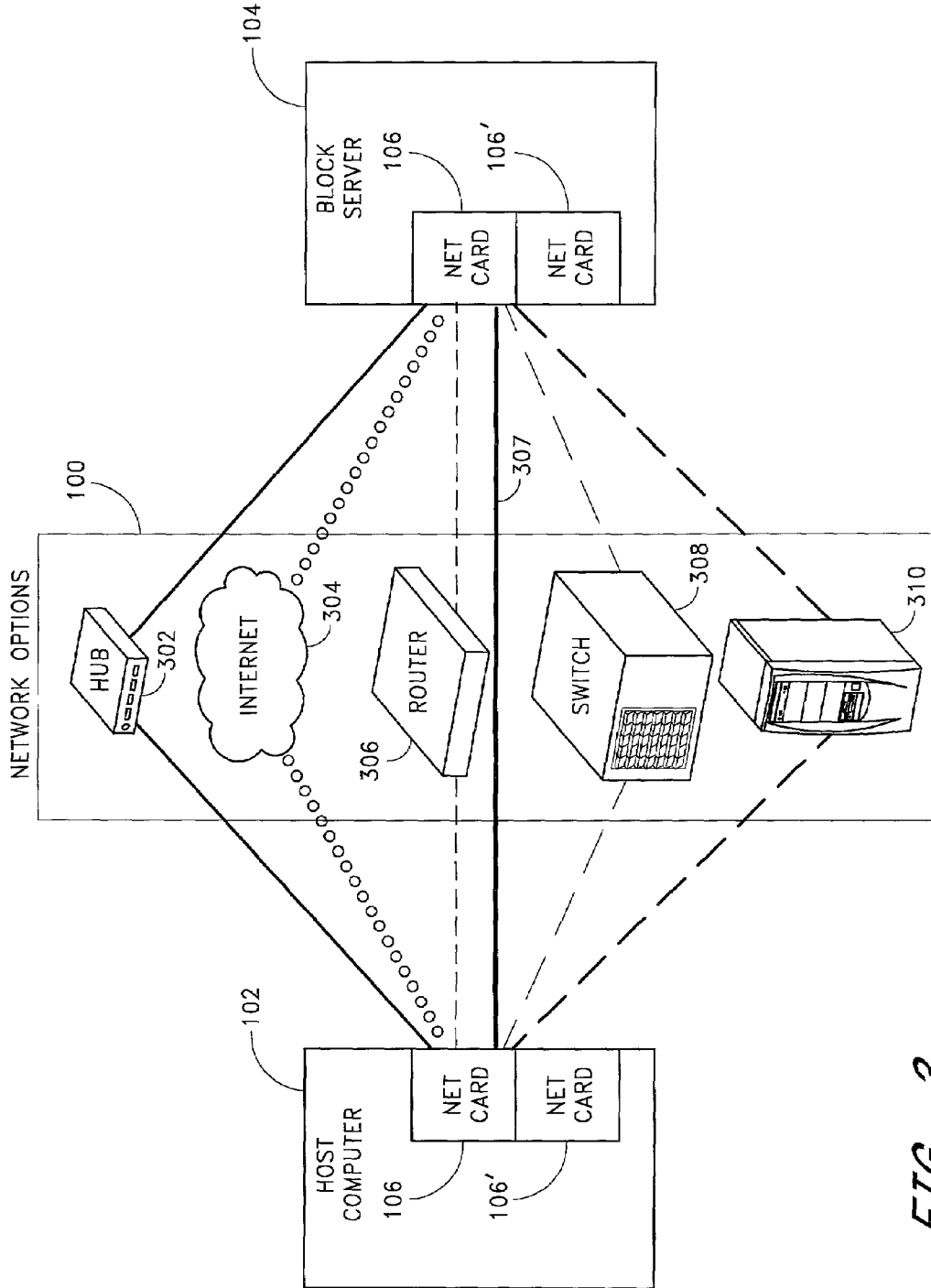
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FIG. 1

FIG. 2

FIG. 3

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