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Philbrick et al.

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(54) **DATA COMMUNICATION APPARATUS FOR COMPUTER INTELLIGENT NETWORK INTERFACE CARD WHICH TRANSFERS DATA BETWEEN A NETWORK AND A STORAGE DEVICE ACCORDING DESIGNATED UNIFORM DATAGRAM PROTOCOL SOCKET**

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(57) **ABSTRACT**

An interface device is connected to a host by an I/O bus and provides hardware and processing mechanisms for accelerating data transfers between a network and a storage unit, while controlling the data transfers by the host. The interface device includes hardware circuitry for processing network packet headers, and can use a dedicated fast-path for data transfer between the network and the storage unit, the fast-path set up by the host. The host CPU and protocol stack avoids protocol processing for data transfer over the fast-path, freeing host bus bandwidth, and the data need not cross the I/O bus, freeing I/O bus bandwidth. Realtime audio and video communication can also be provided when the interface device is coupled by an audio/video interface to appropriate communication devices, such as microphone, a speaker, a camera and/or a display.

20 Claims, 24 Drawing Sheets

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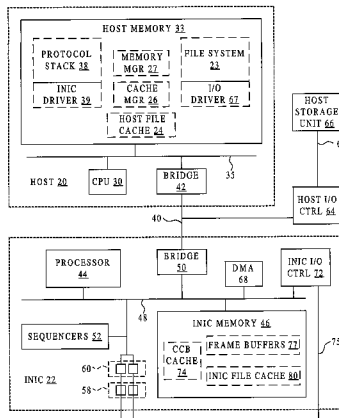
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G06F 15/16 (2006.01)

(52) **U.S. Cl.** **709/250; 709/230**

(58) **Field of Classification Search** **709/203, 709/212, 217, 230, 232, 250; 710/5, 22, 710/23, 26, 27; 370/474**

See application file for complete search history.



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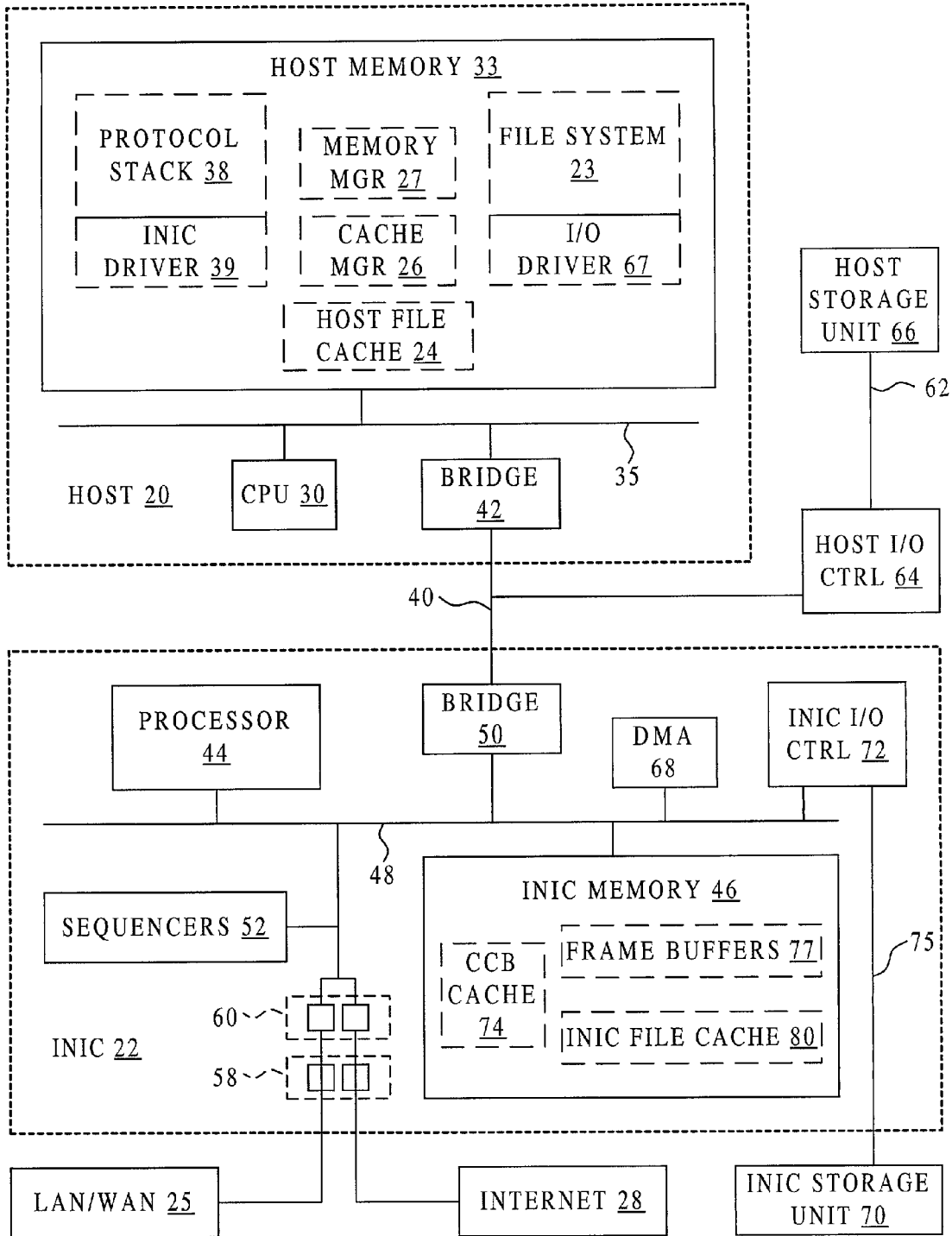


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