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Kemp et al.

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(54) **SEMI-RELIABLE DATA TRANSPORT**

(75) Inventors: **Bradford H. Kemp**, Salem, NH (US);
Benjamin E. McCann, Acton, MA (US)

(73) Assignee: **Enterasys Networks, Inc.**, Andover, MA (US)

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(51) **Int. Cl.**⁷ **H04B 1/44**

(52) **U.S. Cl.** **370/282; 370/236; 709/237**

(58) **Field of Search** **709/203, 224, 709/230, 235, 237; 714/748; 380/212; 370/469, 236, 235, 216, 230, 229, 394, 389, 231, 248, 282**

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Primary Examiner—Hassan Kizou

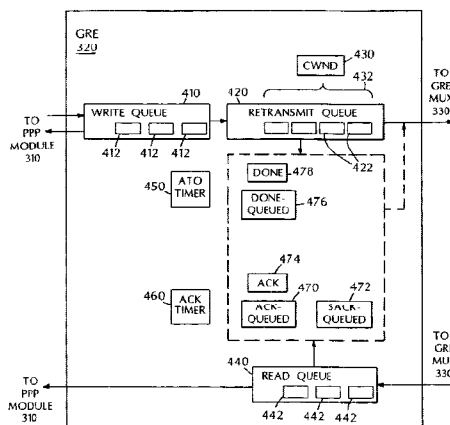
Assistant Examiner—John Pezzlo

(74) *Attorney, Agent, or Firm*—Fish & Richardson P.C.

(57) **ABSTRACT**

A new type of communication protocol provides semi-reliable transport of data over a data channel, such as over the Internet. The new type of protocol limits the number of retransmissions of unsuccessfully delivered data and may eventually "give up" on successfully delivering particular data and go on sending subsequent data to the destination. When a reliable communication protocol, such as TCP/IP is tunneled between two computers over a virtual connection which uses the new type of semi-reliable protocol, overall error control of data passing between the two computers involves elements of error control implemented by both the semi-reliable protocol and the reliable protocol. This overall error control can provide higher throughput than provided by using either a completely reliable protocol (e.g., TCP) for the virtual connection, or a completely unreliable protocol (e.g., UDP) for the virtual connection. This advantage can be even more pronounced if the data stream is compressed or encrypted before being passed over the virtual connection using a technique which maintains state from one data packet to another.

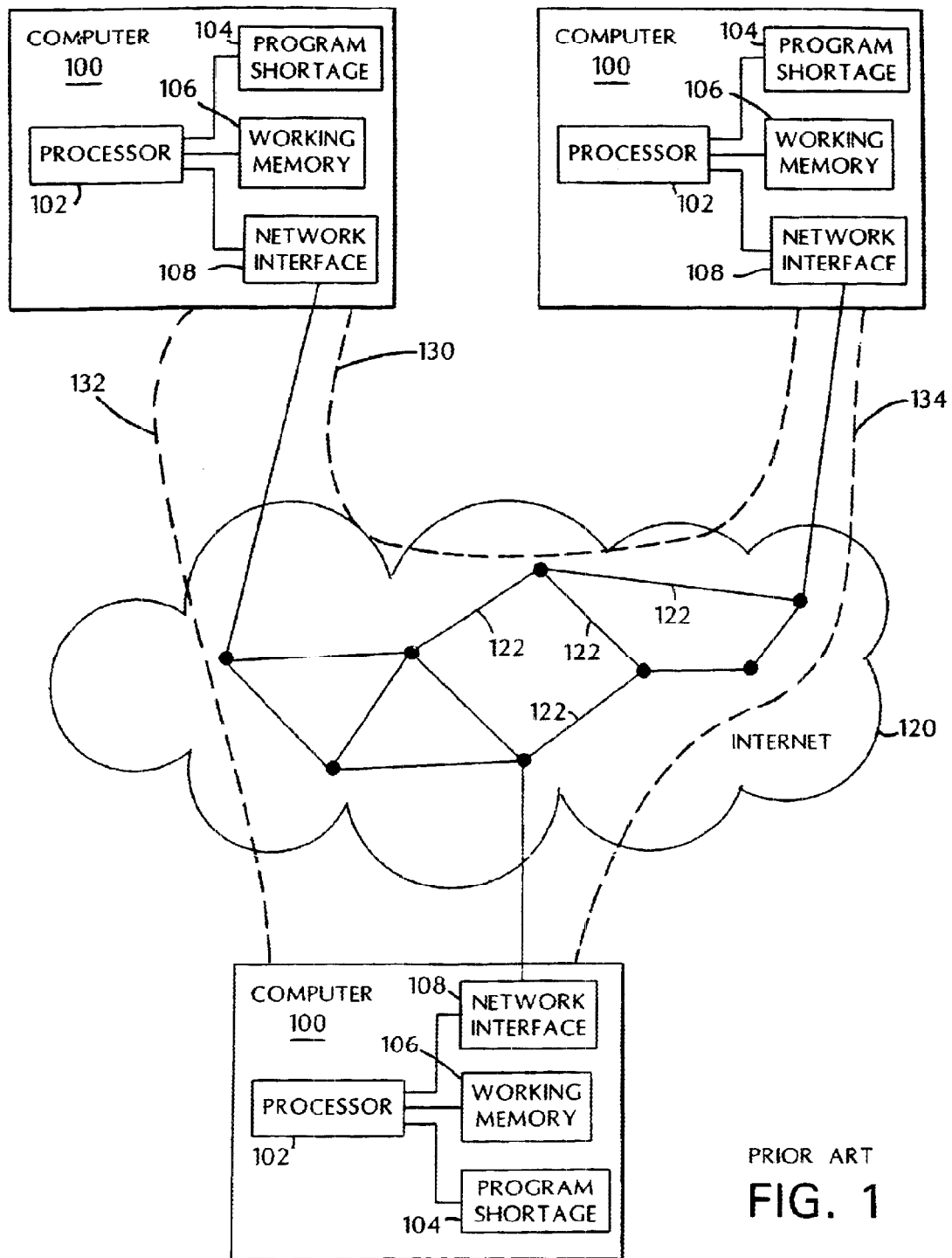
25 Claims, 14 Drawing Sheets



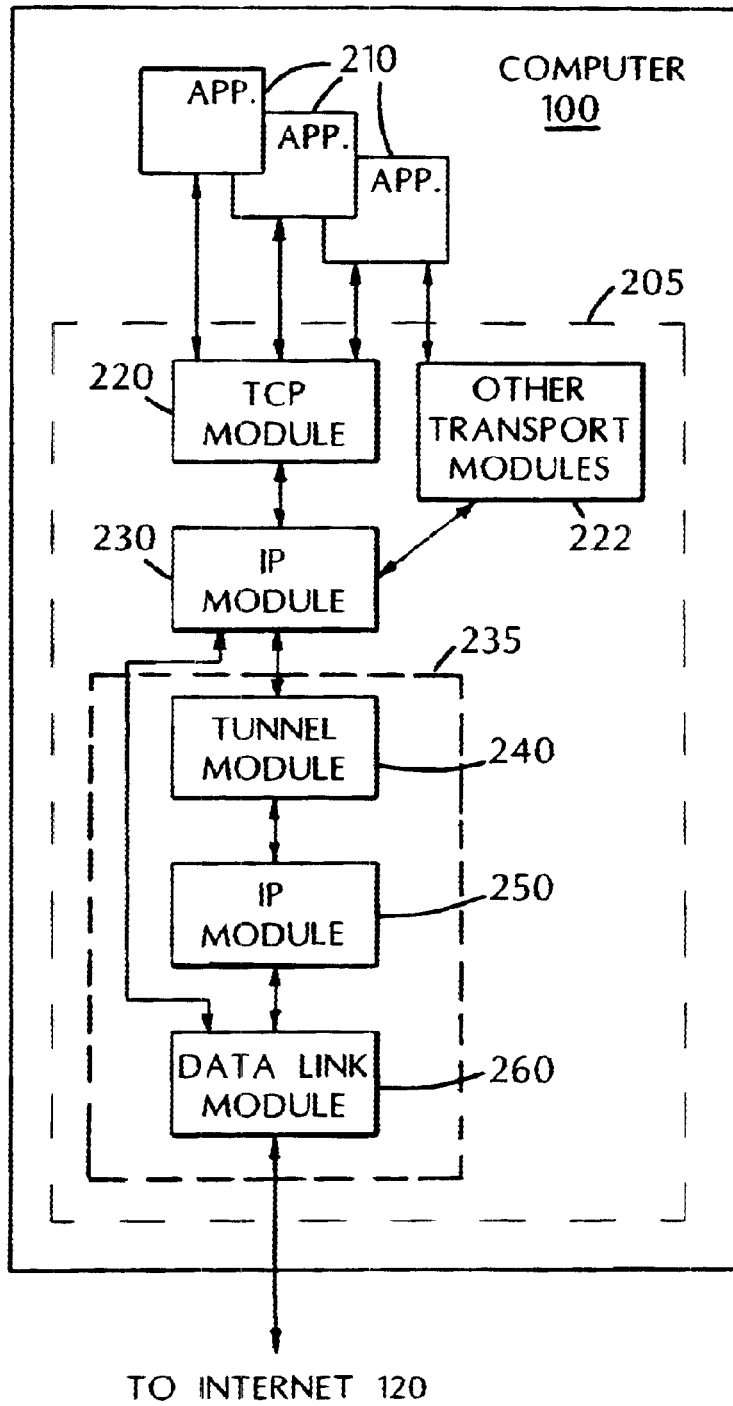
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PRIOR ART
FIG. 1



PRIOR ART
FIG. 2

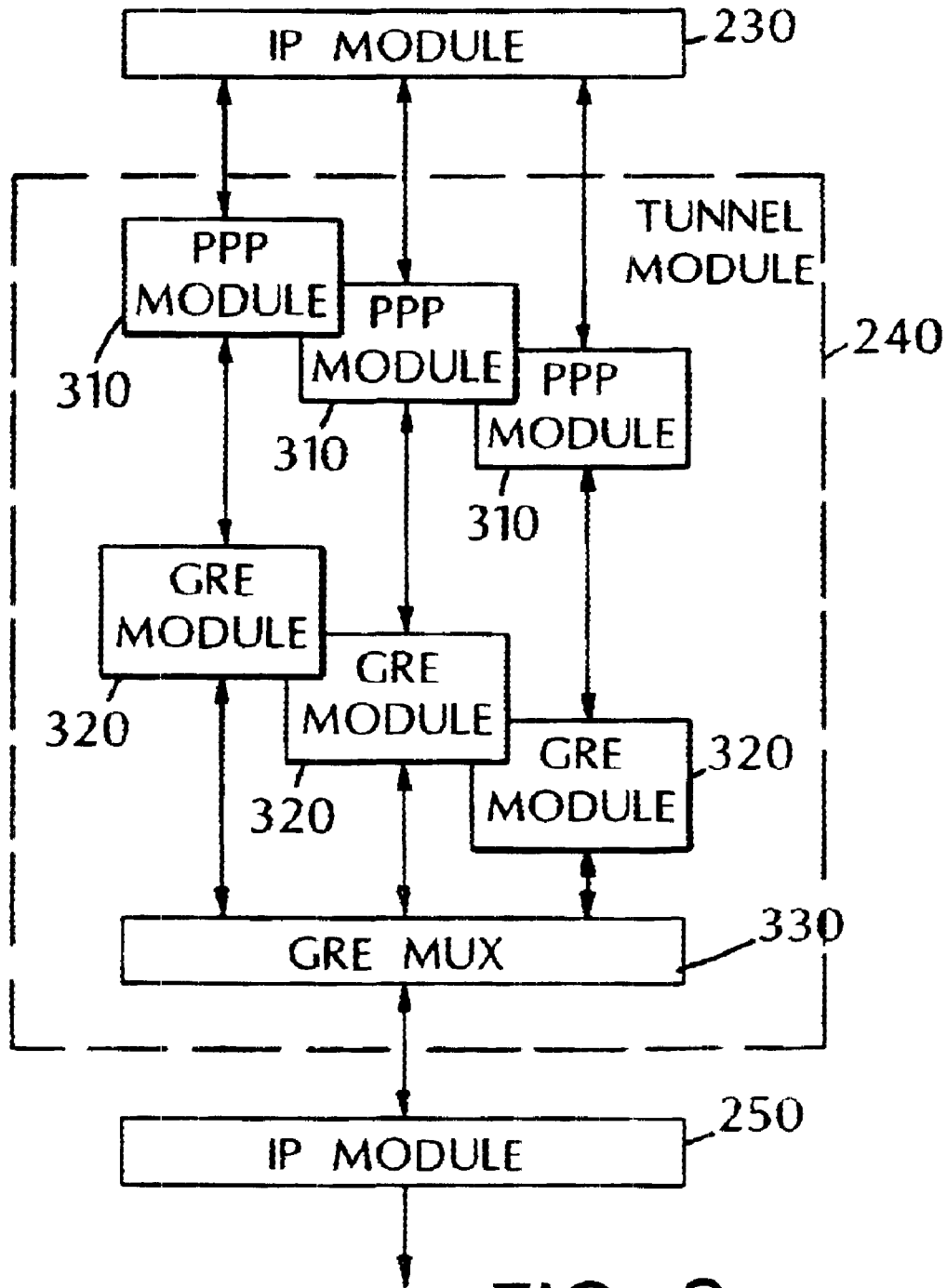


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