

(12) **United States Patent**
Hoke et al.

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(45) **Date of Patent:** **Mar. 2, 2004**

(54) **METHOD AND APPARATUS FOR PROCESSING COMMUNICATIONS IN A VIRTUAL PRIVATE NETWORK**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **09/188,867**

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(22) Filed: **Nov. 9, 1998**

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Related U.S. Application Data

Primary Examiner—Ayaz Sheikh

(63) Continuation-in-part of application No. 09/062,507, filed on Apr. 17, 1998, now Pat. No. 6,226,751.

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(51) **Int. Cl.**⁷ **H04L 9/00**

(57) **ABSTRACT**

(52) **U.S. Cl.** **713/201; 709/245; 709/249**

One embodiment of the present invention provides a computer system for processing communications in a virtual private network. The computer system operates in a selective mode, in which only communications transiting the virtual private network are processed according to specified virtual private network parameters, such as encryption, compression and authentication algorithms. Virtual private network communications passing between a public network and a private network are thus received and processed according to the algorithms, while other communications bypass the computer system. Multiple private networks may be served by a single computer system.

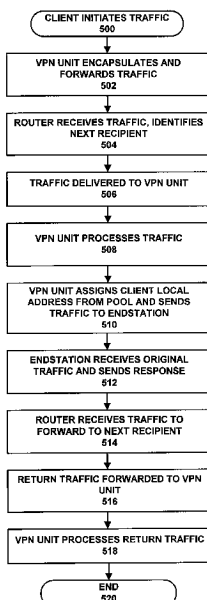
(58) **Field of Search** 713/201, 200, 713/162, 153, 154; 370/351; 709/220, 227, 228, 230, 232, 238, 245, 249

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33 Claims, 8 Drawing Sheets



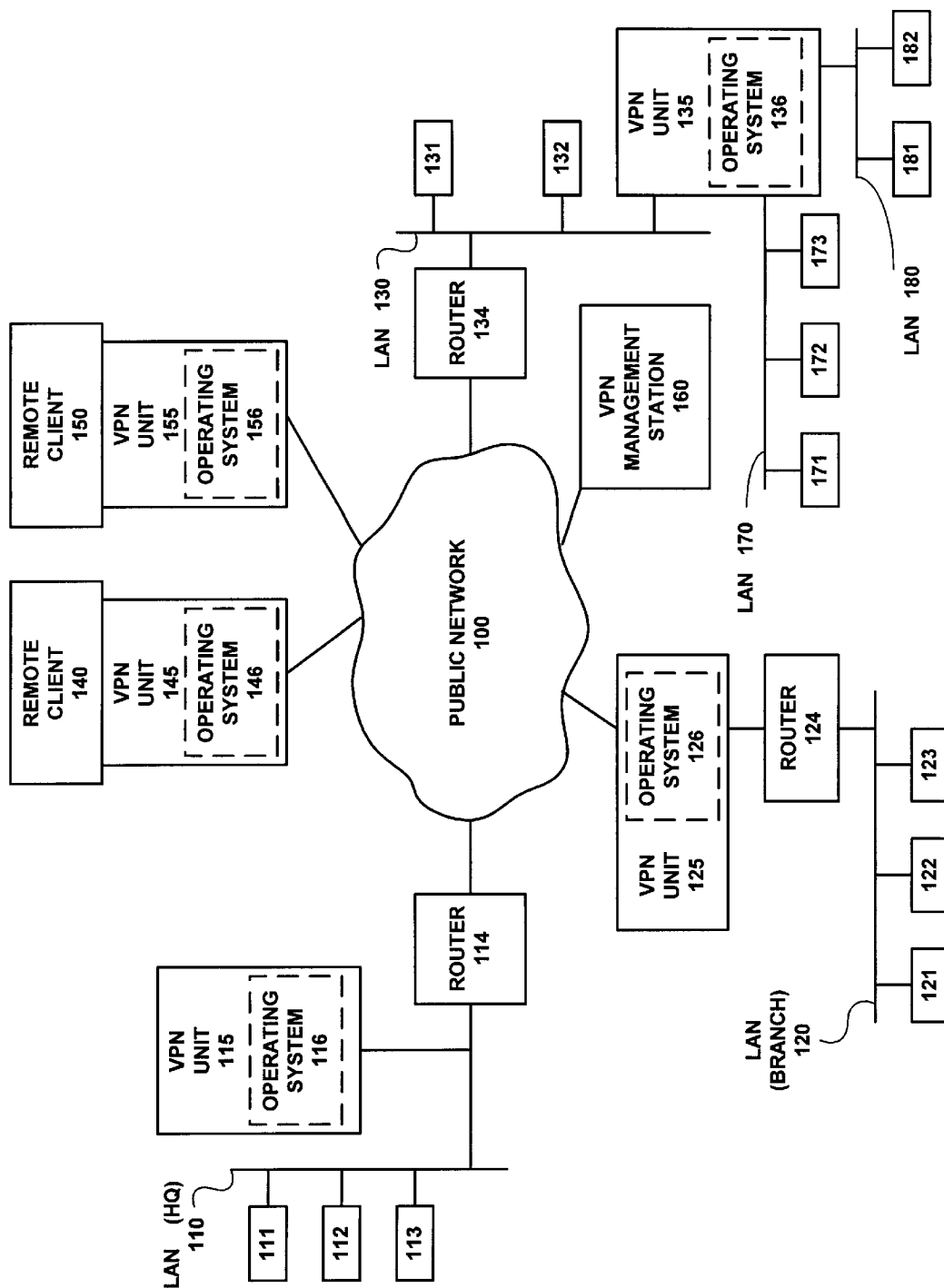


FIG. 1

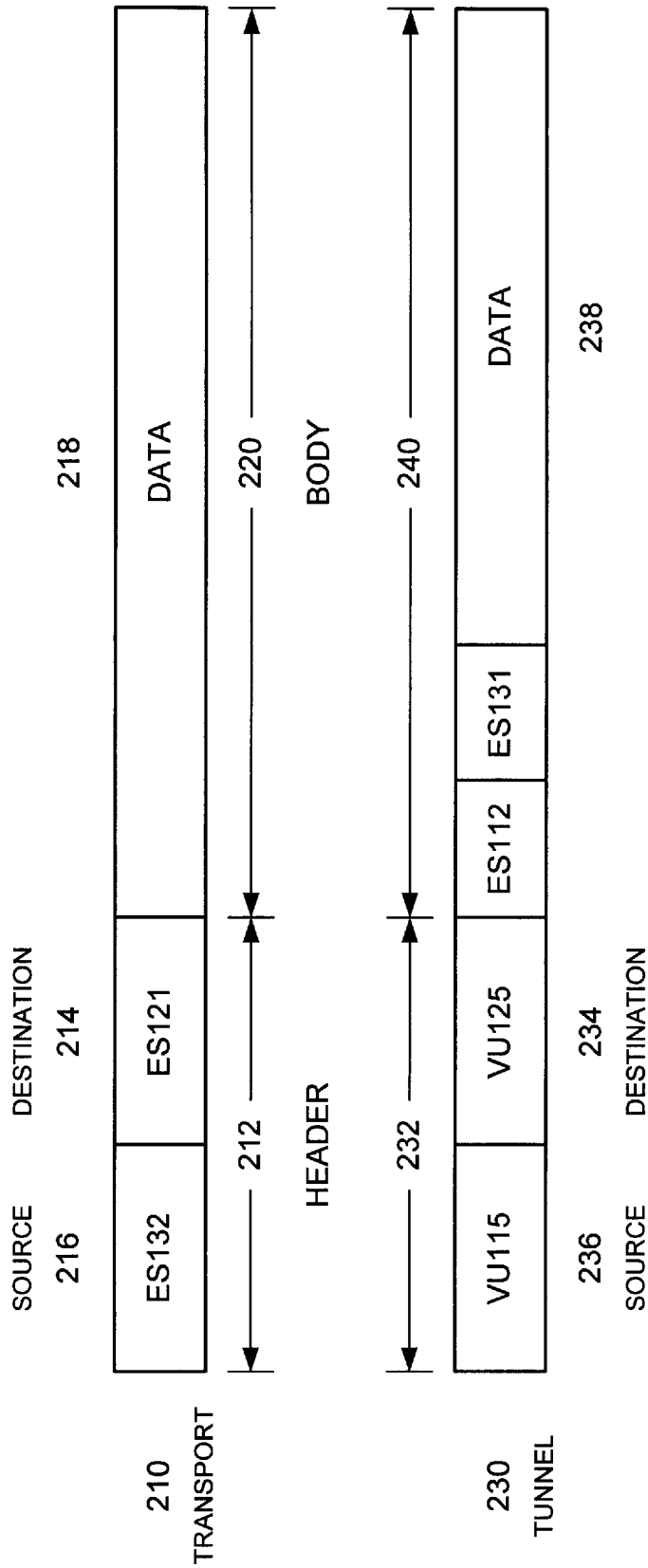


FIG. 2

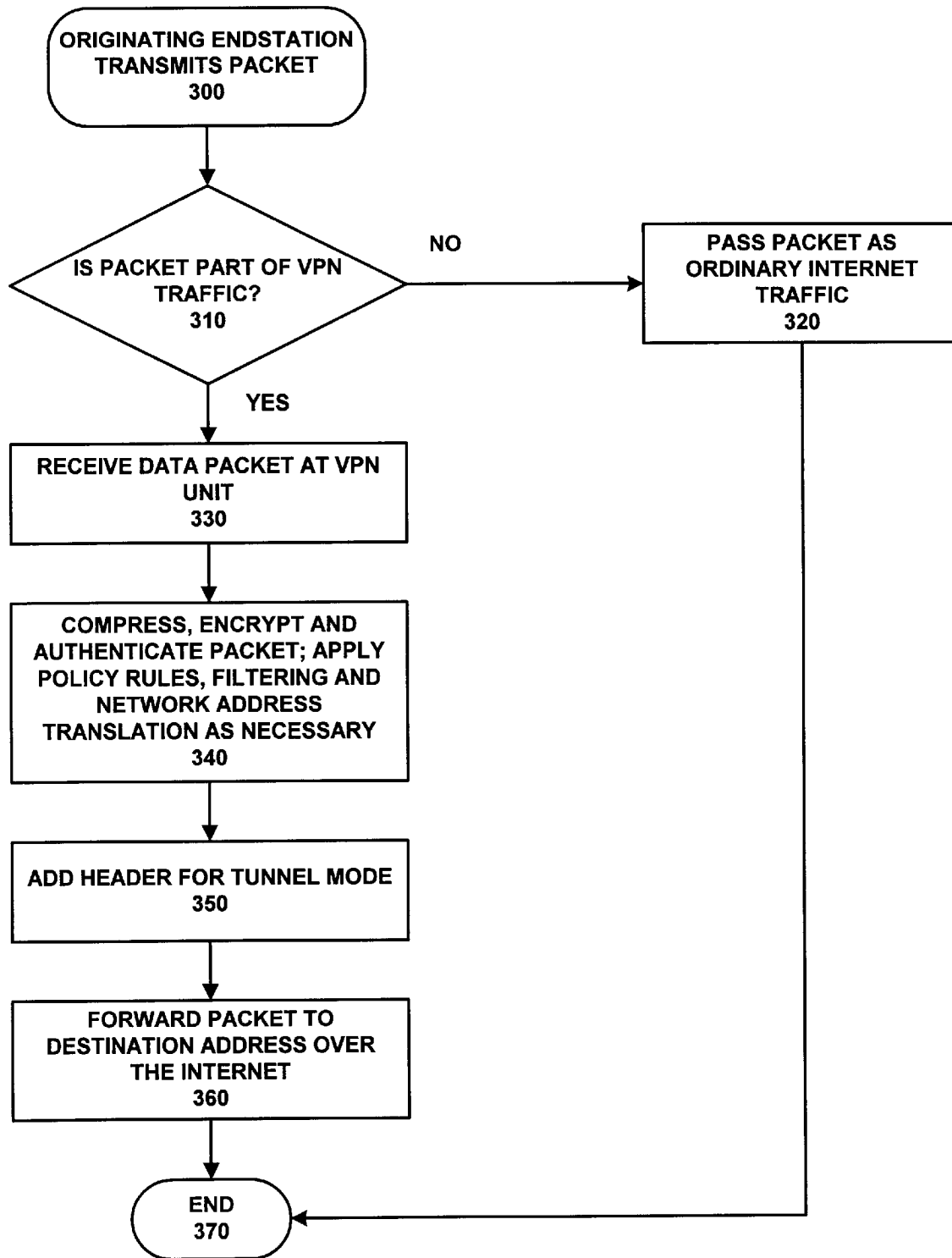


FIG. 3

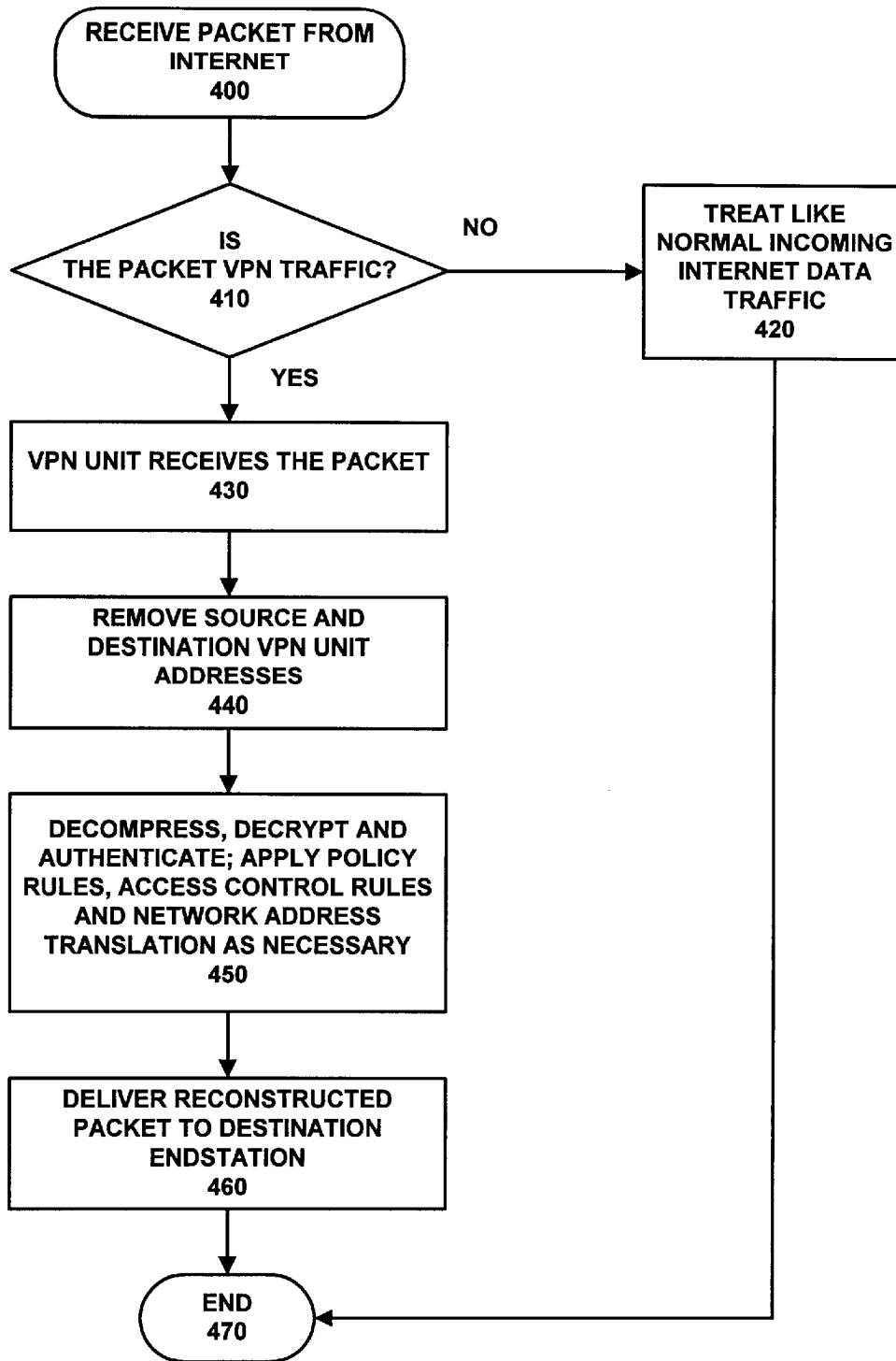


FIG. 4

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