



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

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(54) **SYSTEM AND METHOD TO NEGOTIATE PRIVATE NETWORK ADDRESSES FOR INITIATING TUNNELING ASSOCIATIONS THROUGH PRIVATE AND/OR PUBLIC NETWORKS**

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(51) **Int. Cl.**<sup>7</sup> ..... **G06F 15/16**; G06F 15/173

(52) **U.S. Cl.** ..... **709/245**; 709/227; 709/225

(58) **Field of Search** ..... 709/220, 222, 709/225, 226, 227, 228, 229, 245, 218, 217; 370/401, 349; 713/201

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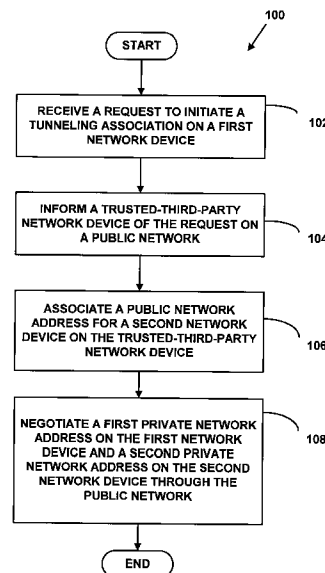
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(57) **ABSTRACT**

A method for initiating a tunneling association in a data network. The method includes negotiating private addresses, such as private Internet Protocol addresses, for the ends of the tunneling association. The negotiation is performed on a public network, such as the Internet, through a trusted-third-party without revealing the private addresses. The method provides for hiding the identity of the originating and terminating ends of the tunneling association from the other users of the public network. Hiding the identities may prevent interception of media flow between the ends of the tunneling association or eavesdropping on Voice-over-Internet-Protocol calls. The method increases the security of communication on the data network without imposing a computational burden on the devices in the data network.

**41 Claims, 17 Drawing Sheets**



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FIG. 1

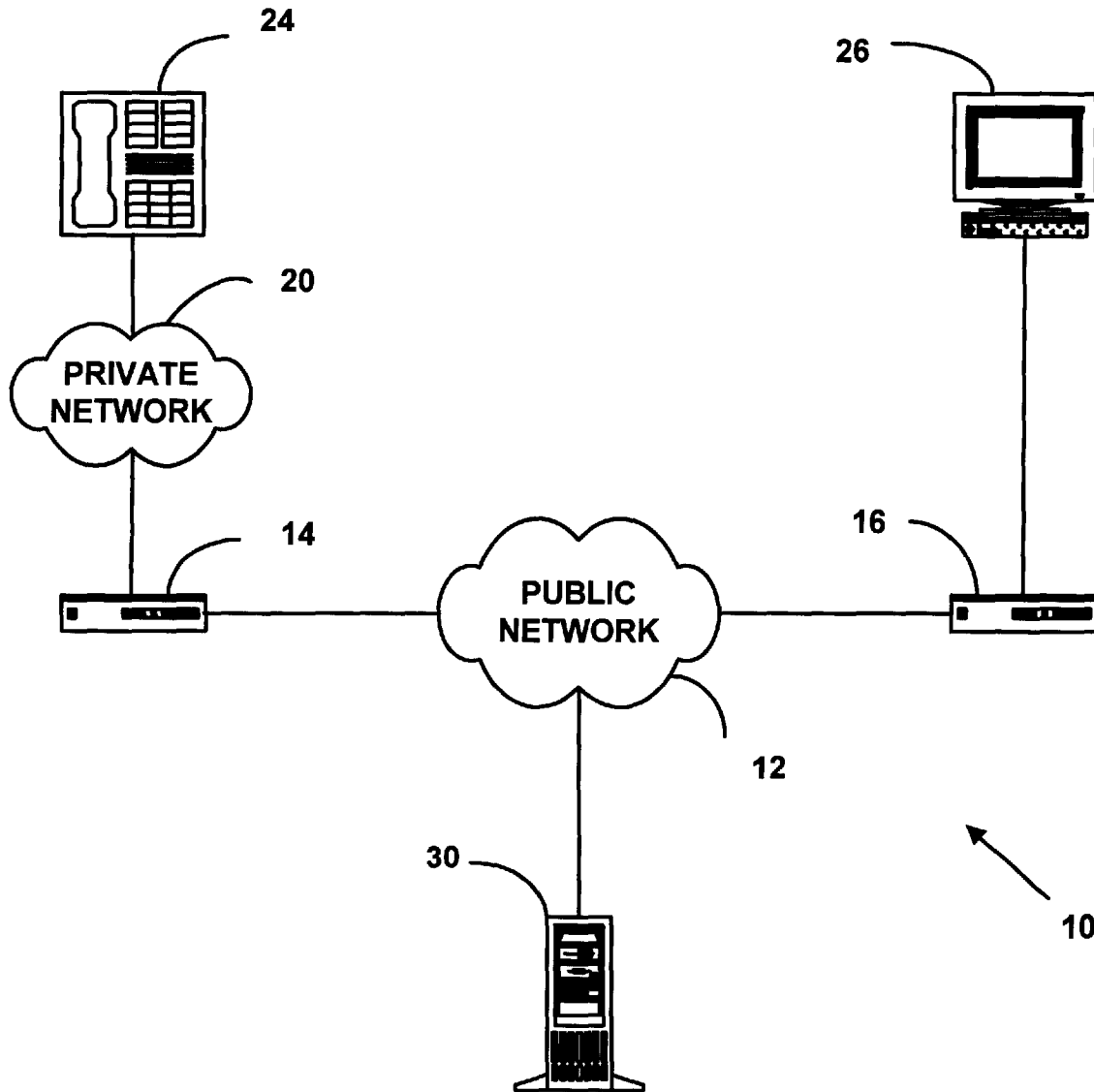
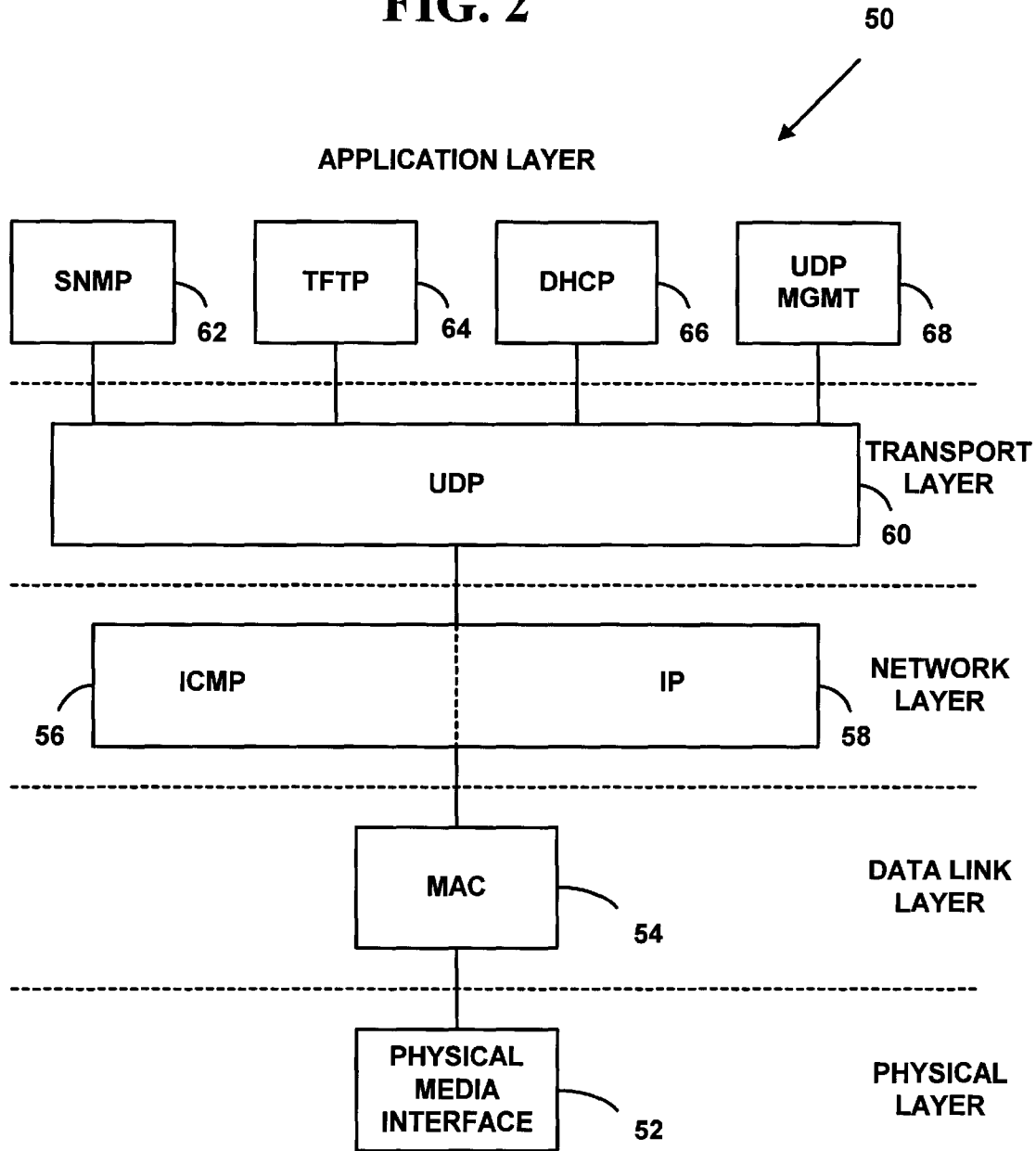
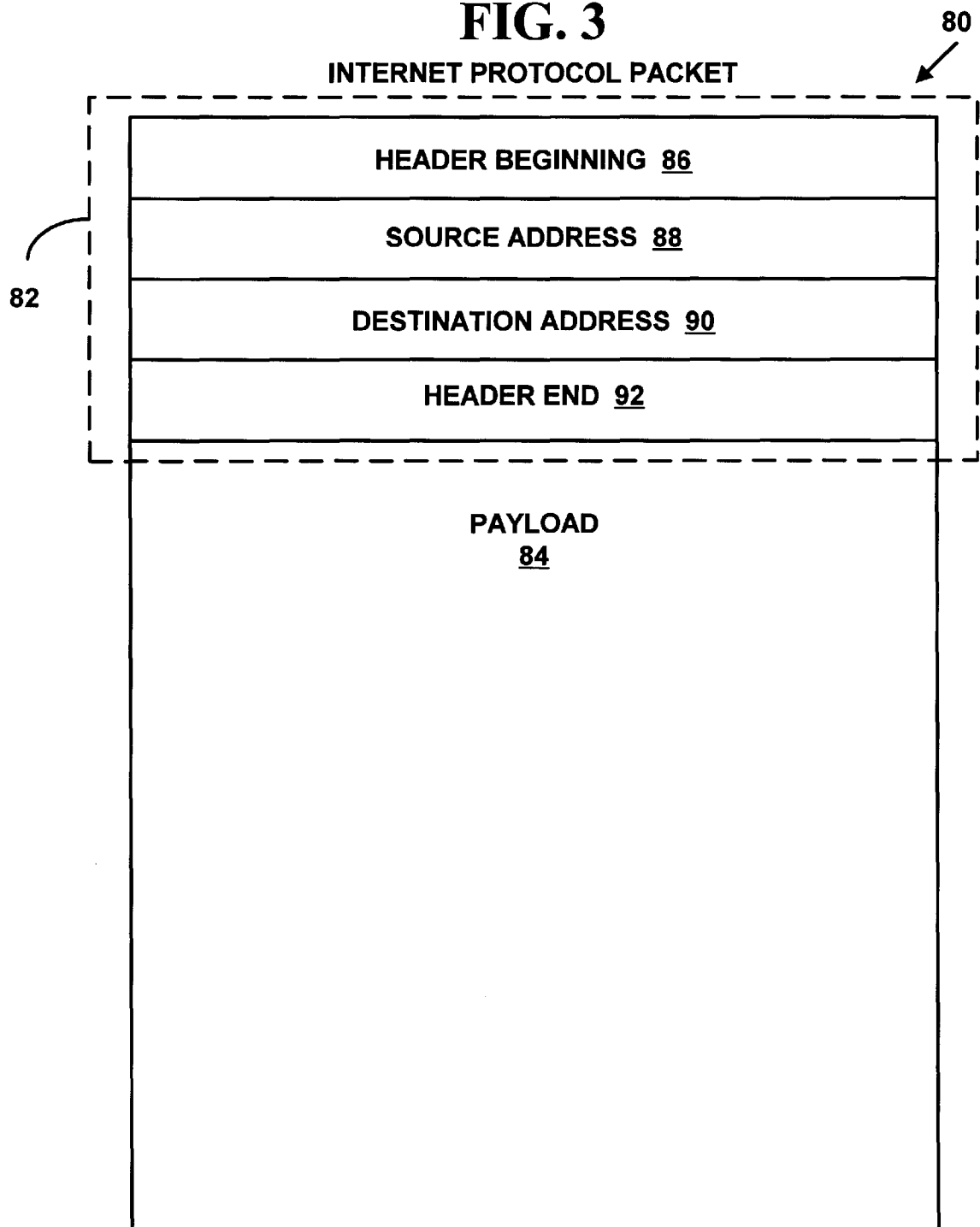


FIG. 2



**FIG. 3**

**INTERNET PROTOCOL PACKET**



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