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Ilnicki et al.

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(54) **METHOD AND APPARATUS FOR ALLOWING A SECURE AND TRANSPARENT COMMUNICATION BETWEEN A USER DEVICE AND SERVERS OF A DATA ACCESS NETWORK SYSTEM VIA A FIREWALL AND A GATEWAY**

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(51) **Int. Cl.^{7}** **G06F 9/54**
(52) **U.S. Cl.** .... **709/316**; 709/229; 707/103 R
(58) **Field of Search** .... 709/201, 225, 709/229, 316; 713/155, 201, 152; 707/10, 103 R

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(57) **ABSTRACT**

A method of allowing a secure and transparent communication between a user device and servers of a data access network system via a firewall and a gateway is described. The method includes the step of designating a plurality of ports in the firewall for the gateway, each corresponding to one of a number of ports in the gateway. Each of the gateway ports can be dynamically assigned to correspond to the port of one of the servers. The method also includes a step of proxifying an object reference used in a user request for a target server from the user device in order to establish secure connection between the user device and the target server. This step is first performed by replacing the IP address and the port number of the target server of the user request with a dynamically assigned gateway port and the IP address of the gateway. Then the dynamically assigned gateway port and the gateway's IP address are mapped to the port of and IP address of the target server such that the user request is not required to expose the IP address and port number of the target server at the gateway.

11 Claims, 8 Drawing Sheets
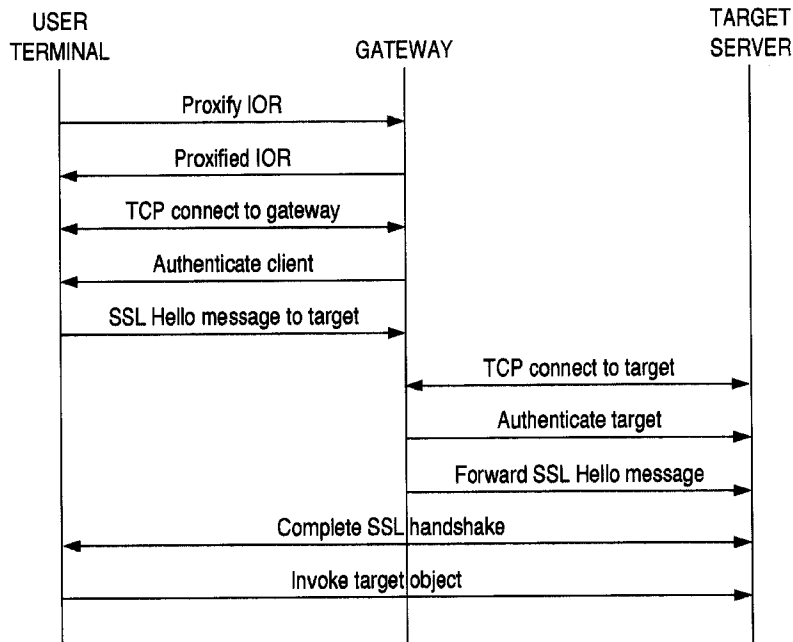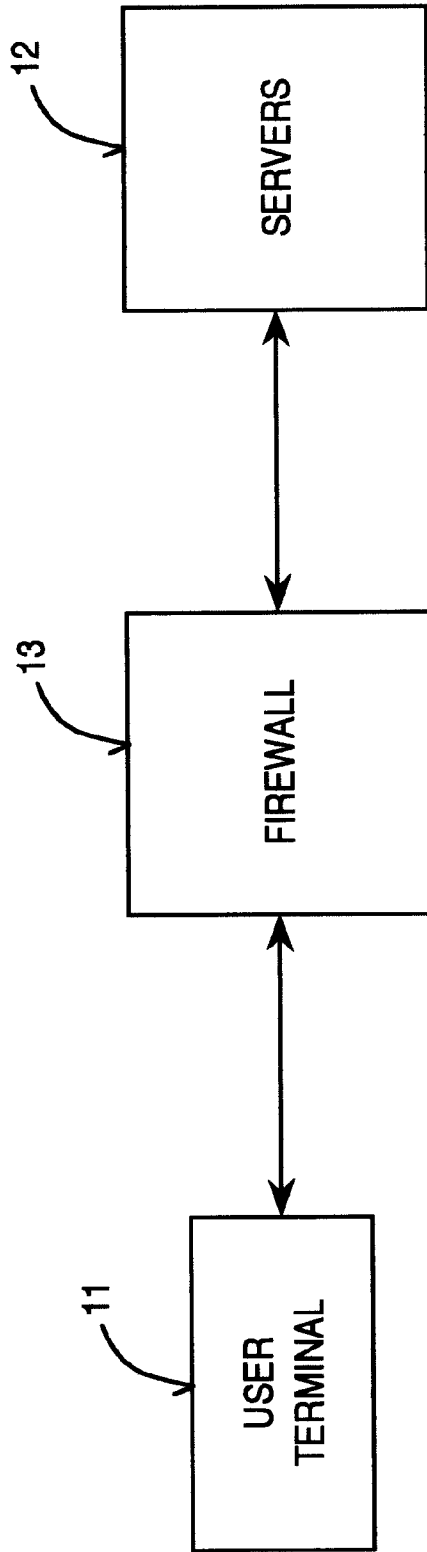
FIGURE 1
(PRIOR ART)

FIGURE 2
(PRIOR ART)

FIGURE 3

APPLICATION LAYER 62

SECURE SOCKET LAYER 61

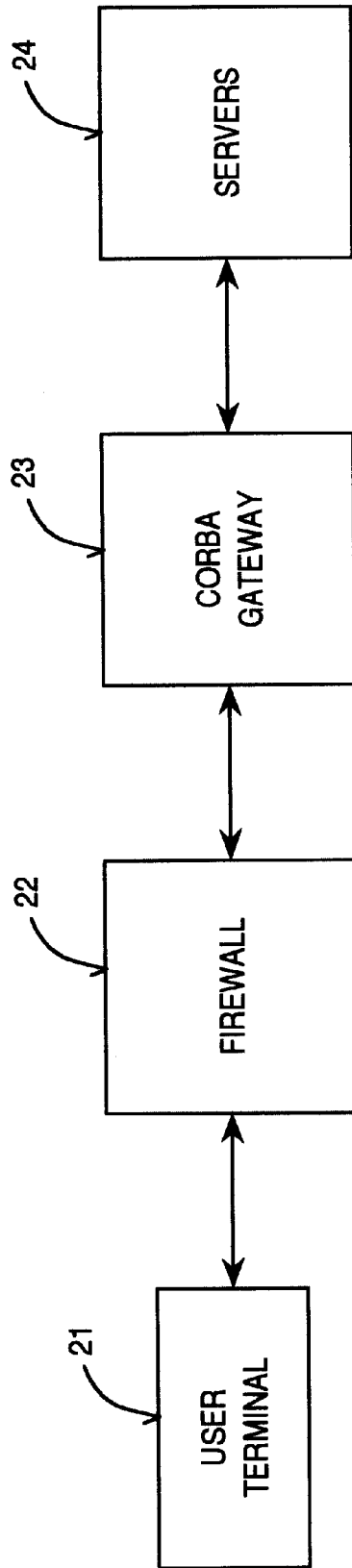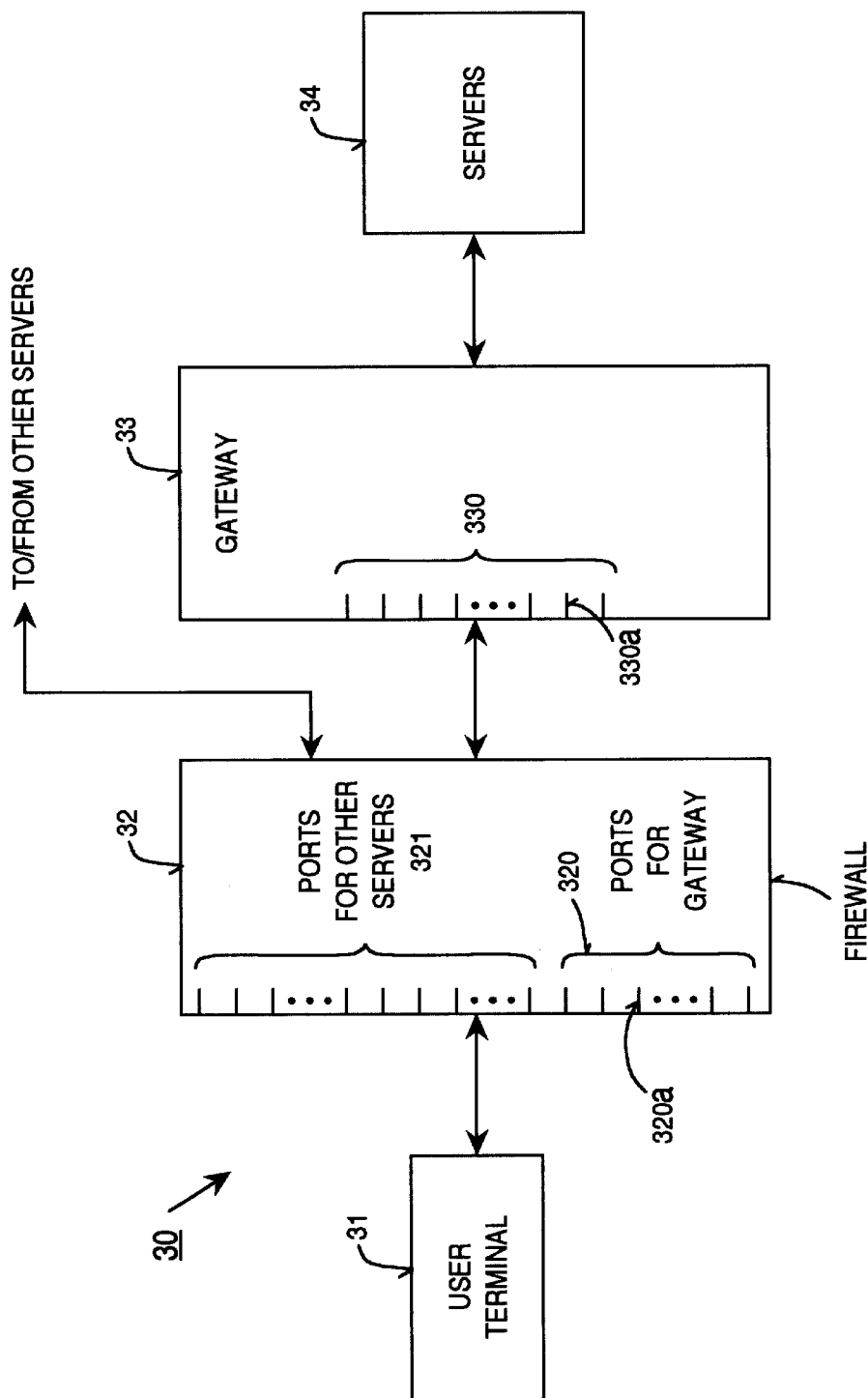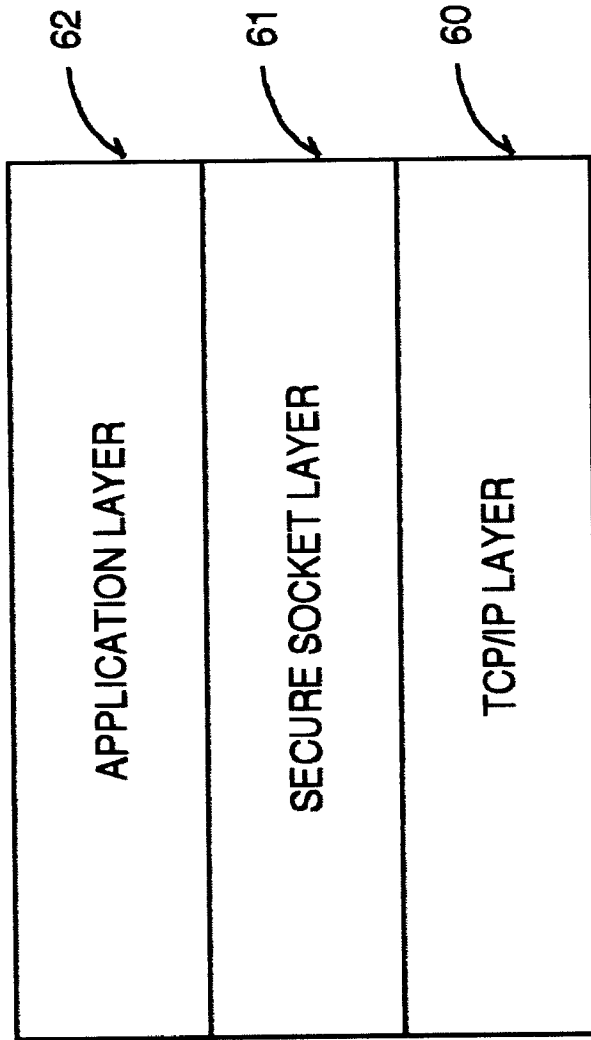TCP/IP LAYER 60

FIGURE 4

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