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Mihm, Jr.

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[54] **PROCESS FOR IMPROVING PUBLIC KEY AUTHENTICATION**

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[52] **U.S. Cl.** **380/21**; 380/25; 380/30

[58] **Field of Search** 380/21, 23–25, 380/30, 52; 340/825.34

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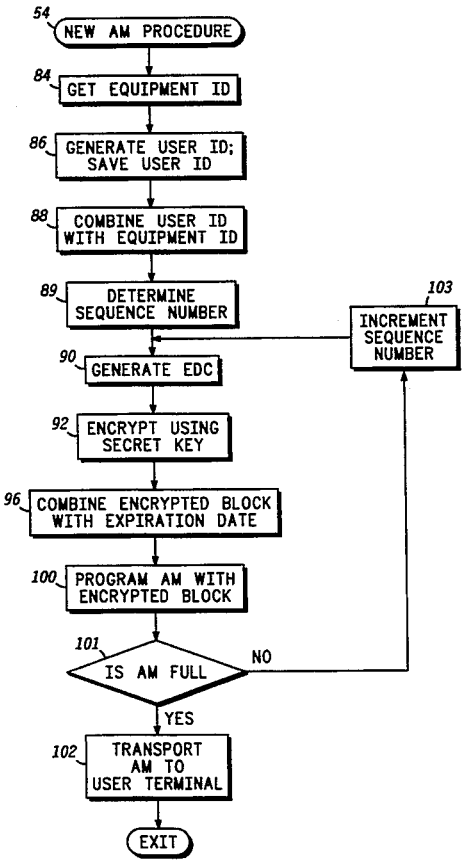
[57] **ABSTRACT**

An environment which includes a communications network, user terminals, and an authentication center provides communication services only to legitimate subscribers. The authentication center receives an equipment ID for each terminal, generates a series of sequence numbers and uses a secret key to encrypt the sequence numbers and the equipment ID with a user ID and an error detection code to form an encrypted block. This block is programmed into an authentication module and sent to the subscriber for installation in the subscriber's terminal. The authentication center sends a public key to network authentication nodes. When the subscriber operates the terminal to gain access to the network, a log-on message, which includes the encrypted block and an unencrypted version of the equipment ID, is sent to an authentication node. The node decrypts the encrypted block and evaluates the IDs and sequence number to determine whether to grant access to services.

32 Claims, 8 Drawing Sheets