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United States Patent [19]

Auerbach et al.

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[54] **CREATION AND DISTRIBUTION OF CRYPTOGRAPHIC ENVELOPE**

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[51] **Int. Cl.**[6] **H04L 9/00**

[52] **U.S. Cl.** **380/4**; 380/25

[58] **Field of Search** 380/3, 4, 23, 24, 380/25, 28, 49

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Primary Examiner—David C. Cain

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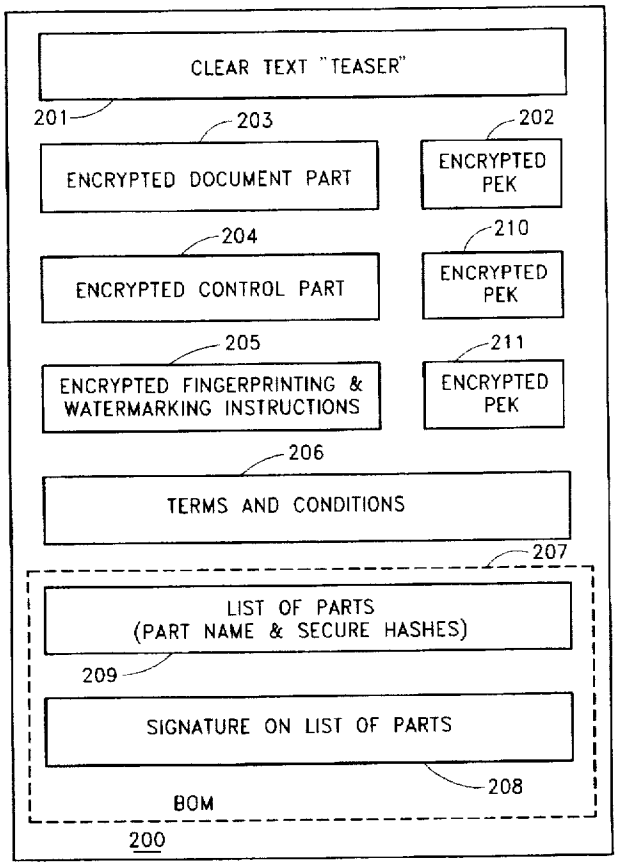
[57] **ABSTRACT**

A method and apparatus to create, distribute, sell and control access to digital documents using secure cryptographic envelopes. An envelope is an aggregation of information parts, where each of the parts to be protected are encrypted with a corresponding part encryption key. These encrypted information parts along with the other information parts become part of the envelope. Each part encryption key is also encrypted with a public key, and these encrypted part encryption keys are also included in the envelope. The envelope also includes a list of parts where each entry in the list has a part name and a secure hash of the named part. The list is then signed with a secret key to generate a signature, which is also included in the envelope. The signature can be verified using a second public key associated with first secret key, and the integrity of any information part in the envelope can be checked by computing a second hash and comparing it with the corresponding hash in the list of parts. Also, the information content of any encrypted part can only be recovered by knowledge of a second secret key corresponding to the public key that was used to encrypt the part encryption keys.

8 Claims, 6 Drawing Sheets



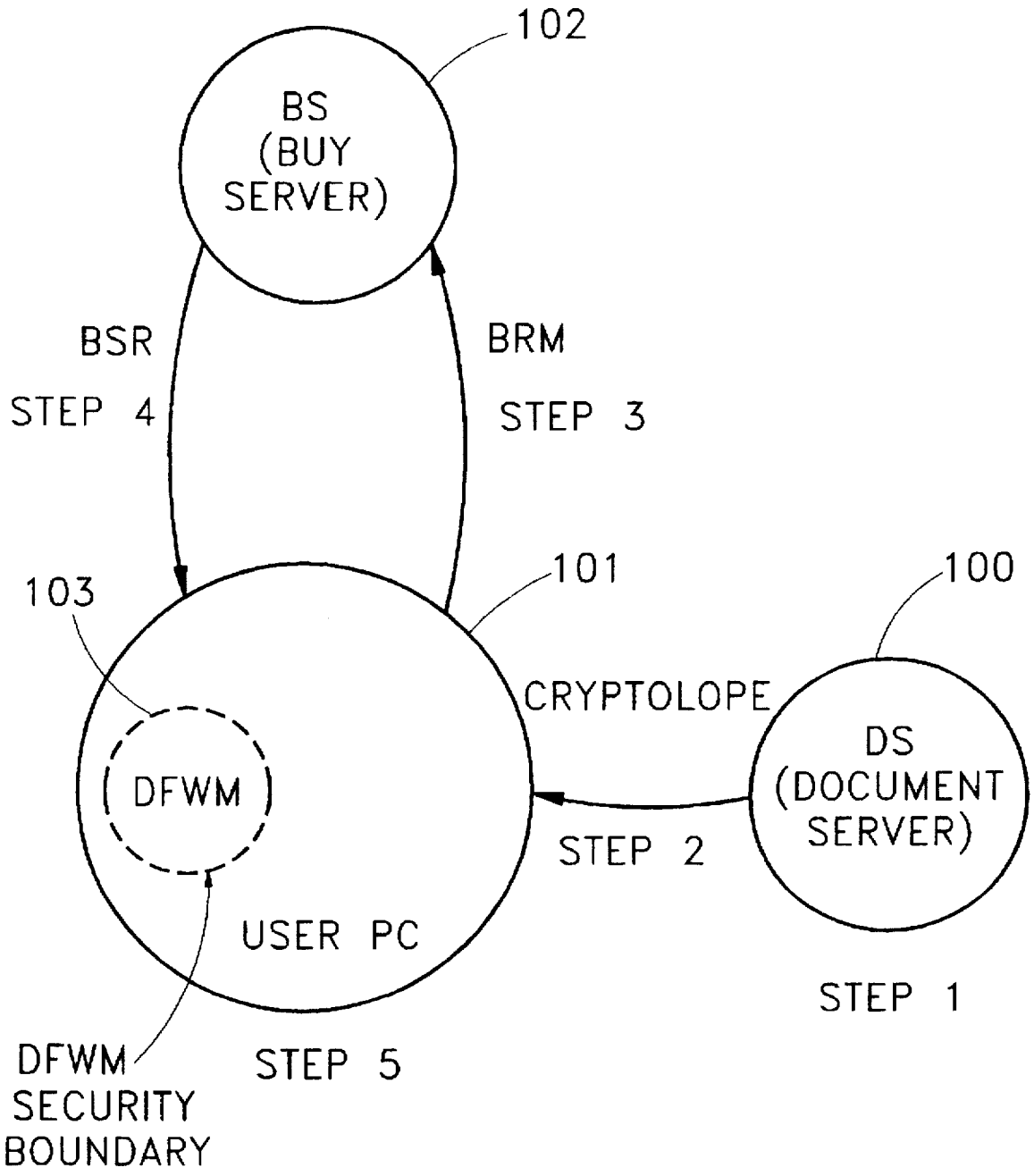


FIG. 1

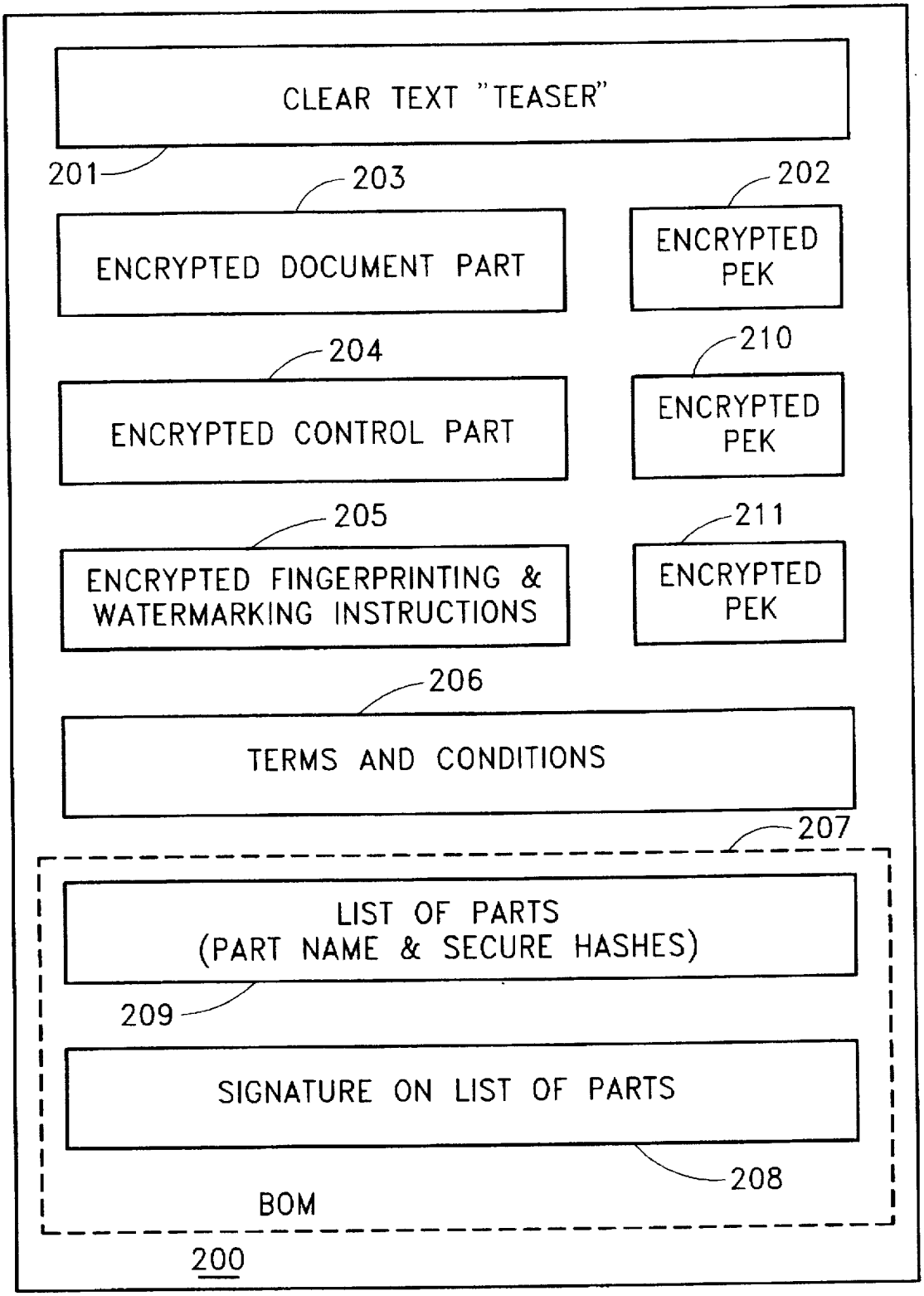


FIG.2

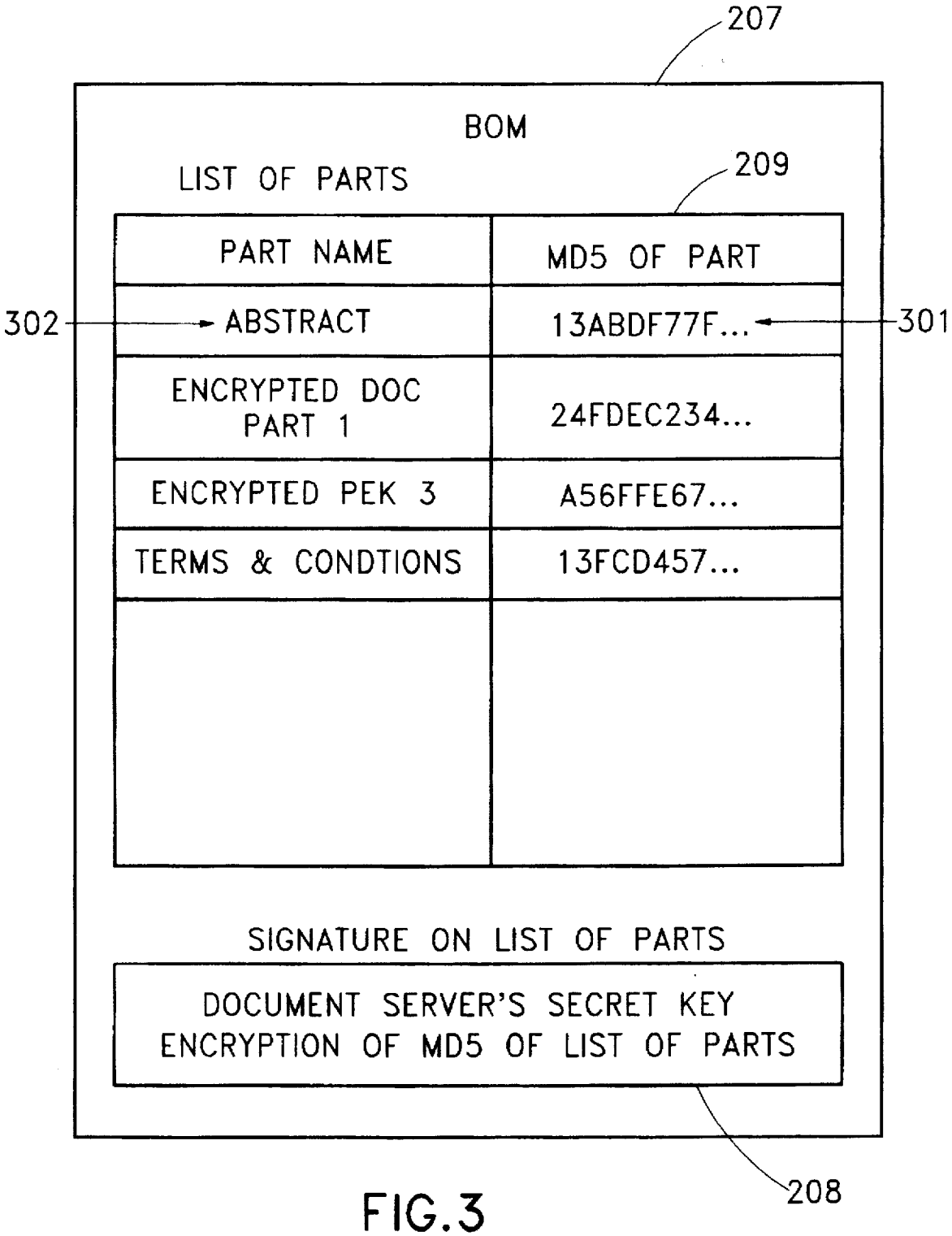


FIG.3

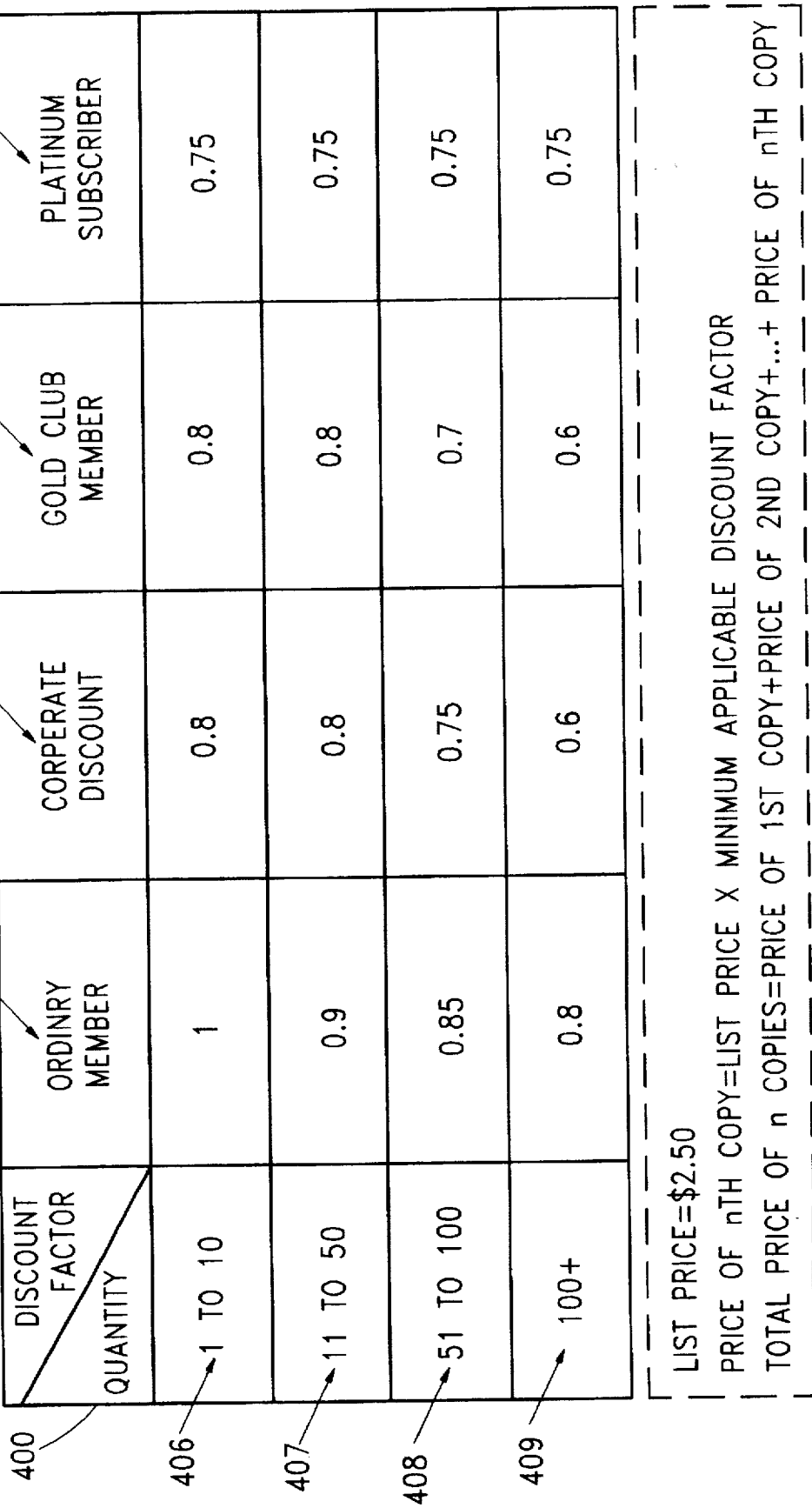


FIG. 4

DOCKET ALARM

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