

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

(10) **Patent No.:** **US 6,327,652 B1**  
(45) **Date of Patent:** **Dec. 4, 2001**

- (54) **LOADING AND IDENTIFYING A DIGITAL RIGHTS MANAGEMENT OPERATING SYSTEM**
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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.: **09/227,611**
- (22) Filed: **Jan. 8, 1999**

**Related U.S. Application Data**

- (60) Provisional application No. 60/105,891, filed on Oct. 26, 1998.
- (51) **Int. Cl.<sup>7</sup>** ..... **G06F 9/445**
- (52) **U.S. Cl.** ..... **713/2; 713/200**
- (58) **Field of Search** ..... **713/1, 2, 155, 713/164-167, 200; 717/11**

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(57) **ABSTRACT**

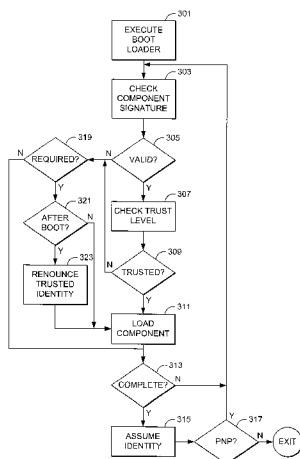
The identity of an operating system running on a computer is determined from an identity associated with an initial component for the operating system, combined with identities of additional components that are loaded afterwards. Loading of a digital rights management operating system on a subscriber computer is guaranteed by validating digital signatures on each component to be loaded and by determining a trust level for each component. A trusted identity is assumed by the digital rights management operating system when only components with valid signatures and a pre-determined trust level are loaded. Otherwise, the operating system is associated with an untrusted identity. Both the trusted and untrusted identities are derived from the components that were loaded. Additionally, a record of the loading of each component is placed into a boot log that is protected from tampering through a chain of public-private key pairs.

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**31 Claims, 10 Drawing Sheets**



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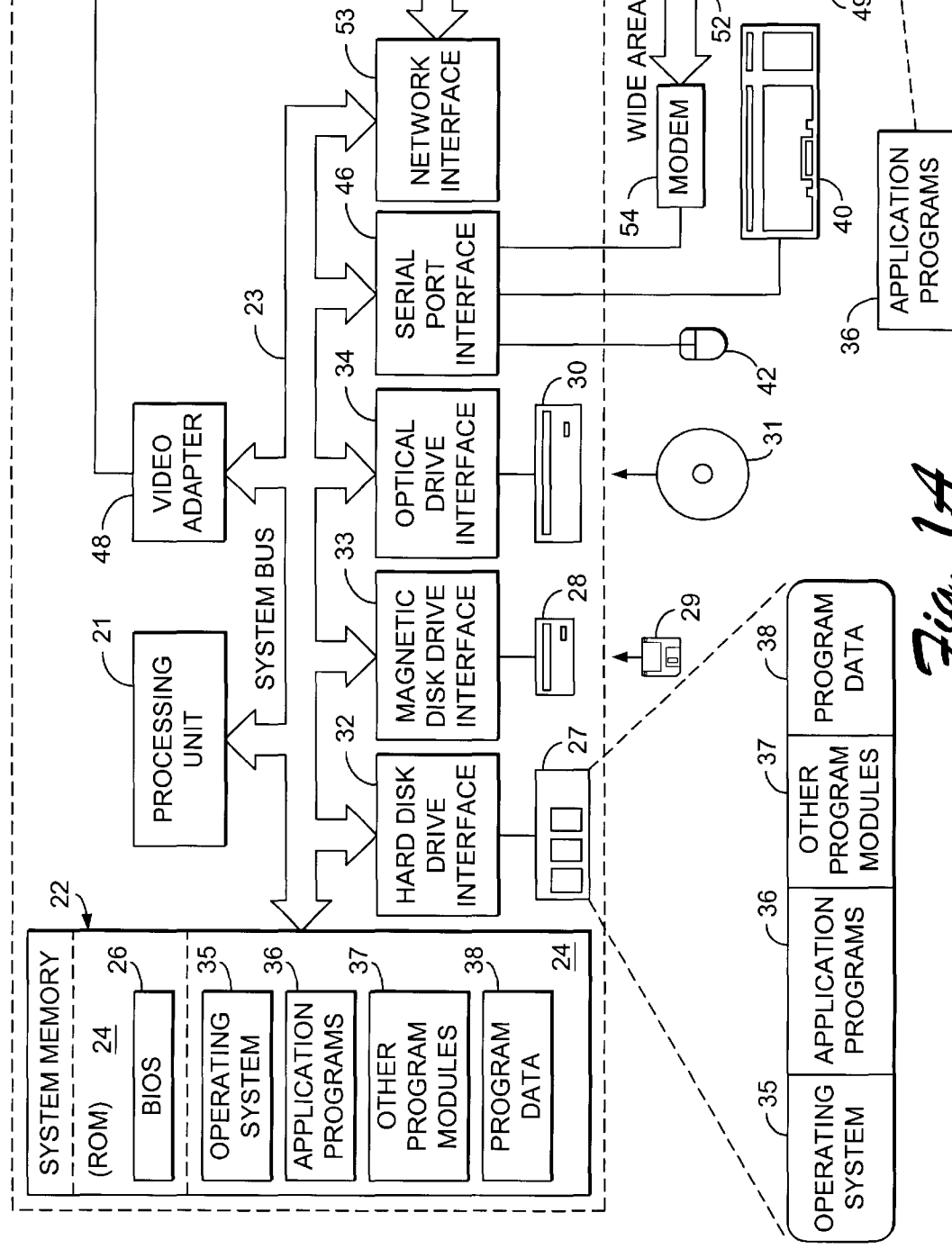
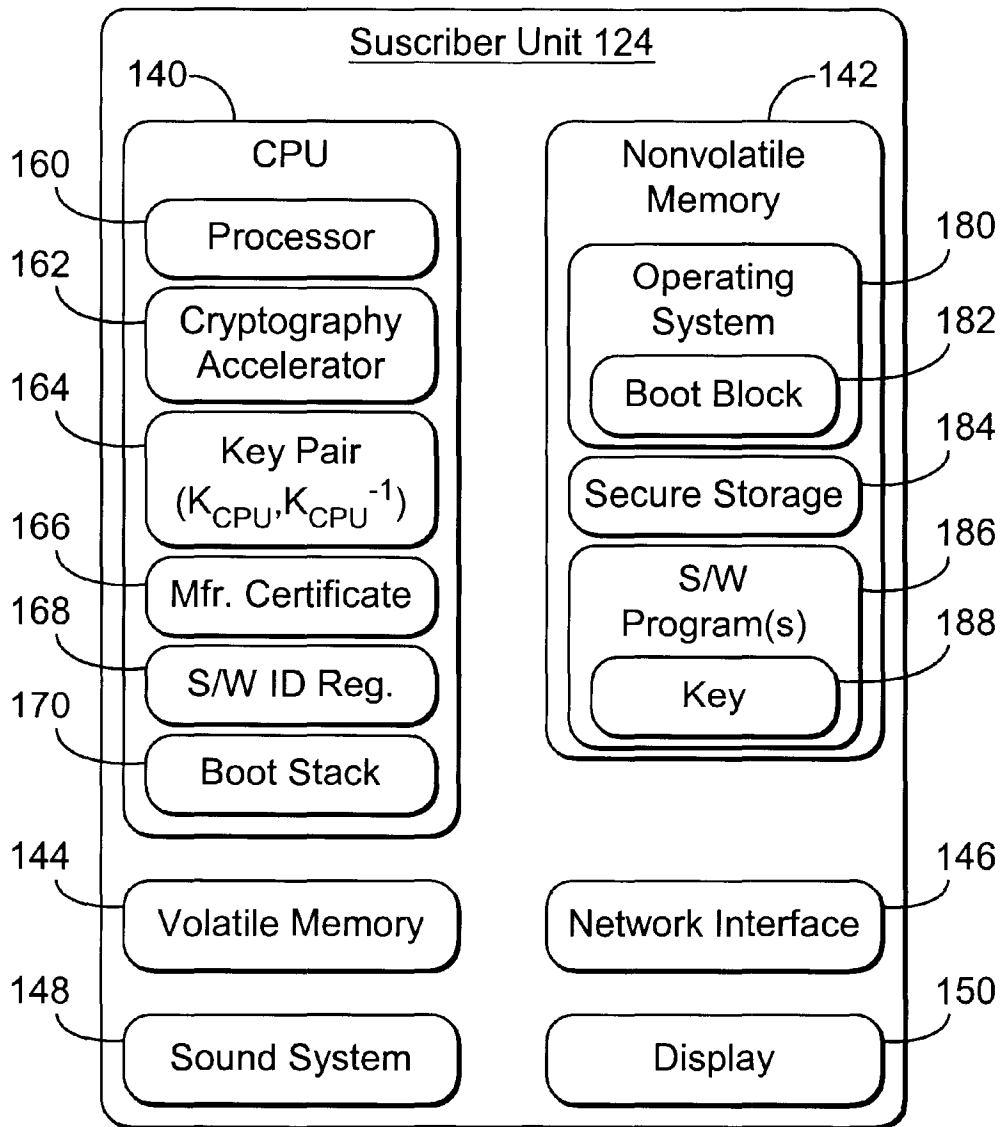
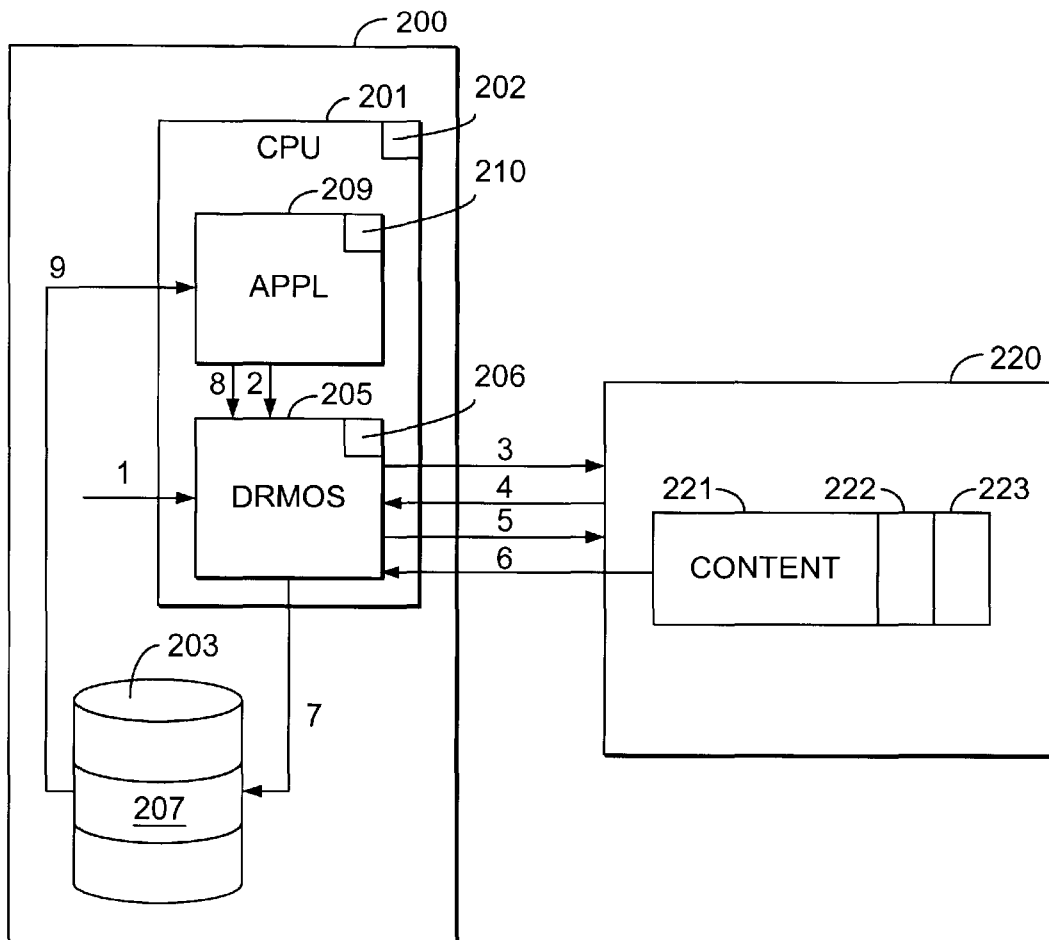


Fig. 1A



*Fig. 1B*



*Fig. 2*

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