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United States Patent [19]
Touboul et al.

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[45] **Date of Patent:** **Nov. 28, 2000**

- [54] **SYSTEM AND METHOD FOR ATTACHING A DOWNLOADABLE SECURITY PROFILE TO A DOWNLOADABLE**
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- [21] Appl. No.: **08/995,648**
- [22] Filed: **Dec. 22, 1997**

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Attorney, Agent, or Firm—Squire, Sanders & Dempsey, L.L.P.

[57] **ABSTRACT**

A system comprises an inspector and a protection engine. The inspector includes a content inspection engine that uses a set of rules to generate a Downloadable security profile corresponding to a Downloadable, e.g., Java™ applets, ActiveX™ controls, JavaScript™ scripts, or Visual Basic scripts. The content inspection engine links the Downloadable security profile to the Downloadable. The set of rules may include a list of suspicious operations, or a list of suspicious code patterns. The first content inspection engine may link to the Downloadable a certificate that identifies the content inspection engine which created the Downloadable security profile. Additional content inspection engines may generate and link additional Downloadable security profiles to the Downloadable. Each additional Downloadable security profile may also include a certificate that identifies its creating content inspection engine. Each content inspection engine preferably creates a Downloadable ID that identifies the Downloadable to which the Downloadable security profile corresponds. The protection includes a Downloadable interceptor for receiving a Downloadable, a file reader coupled to the interceptor for determining whether the Downloadable includes a Downloadable security profile, an engine coupled to the file reader for determining whether to trust the Downloadable security profile, and a security policy analysis engine coupled to the verification engine for comparing the Downloadable security profile against a security policy if the engine determines that the Downloadable security profile is trustworthy. A Downloadable ID verification engine retrieves the Downloadable ID that identifies the Downloadable to which the Downloadable security profile corresponds, generates the Downloadable ID for the Downloadable and compares the generated Downloadable to the linked Downloadable. The protection engine further includes a certificate authenticator for authenticating the certificate that identifies a content inspection engine which created the Downloadable security profile as from a trusted source. The certificate authenticator can also authenticate a certificate that identifies a developer that created the Downloadable.

Related U.S. Application Data

- [60] Provisional application No. 60/030,639, Nov. 8, 1996.
- [51] **Int. Cl.**⁷ **H04L 9/36**
- [52] **U.S. Cl.** **713/201**; 714/38; 713/164
- [58] **Field of Search** 713/201, 200, 713/202, 164, 165, 166, 167, 176; 714/38, 704, 207, 33; 709/229; 380/4, 25, 24; 705/51, 54, 55

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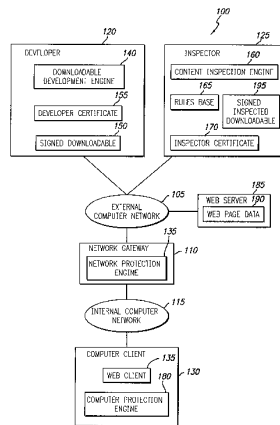
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44 Claims, 7 Drawing Sheets



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FIG. 1

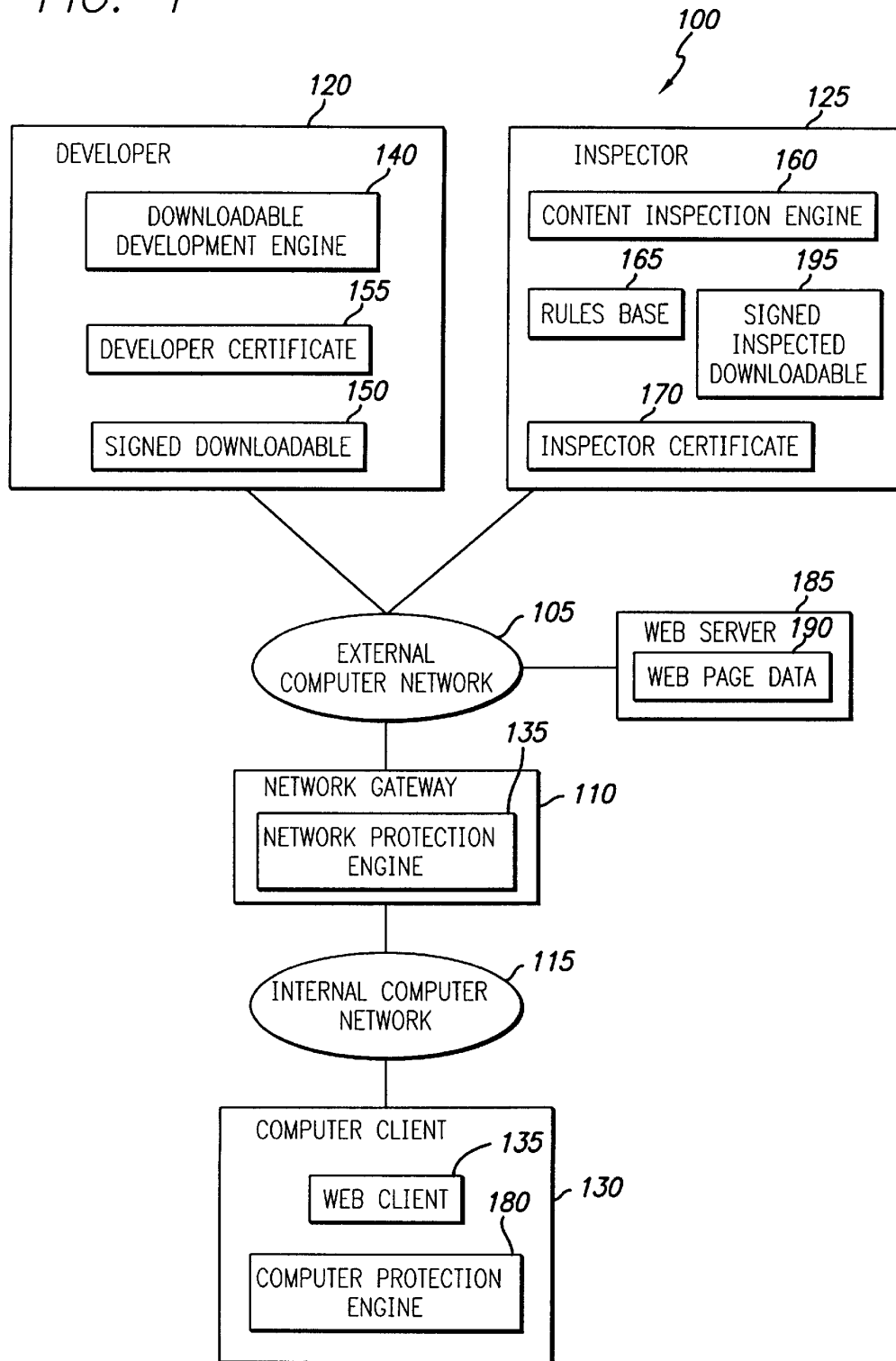


FIG. 2

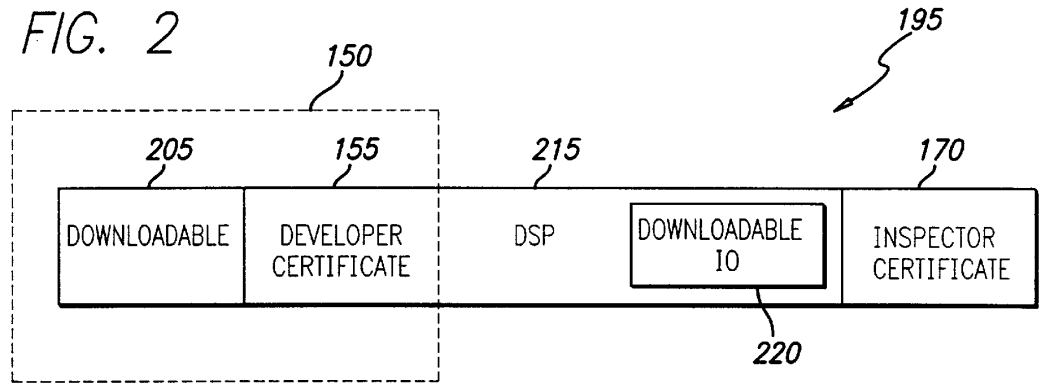


FIG. 3

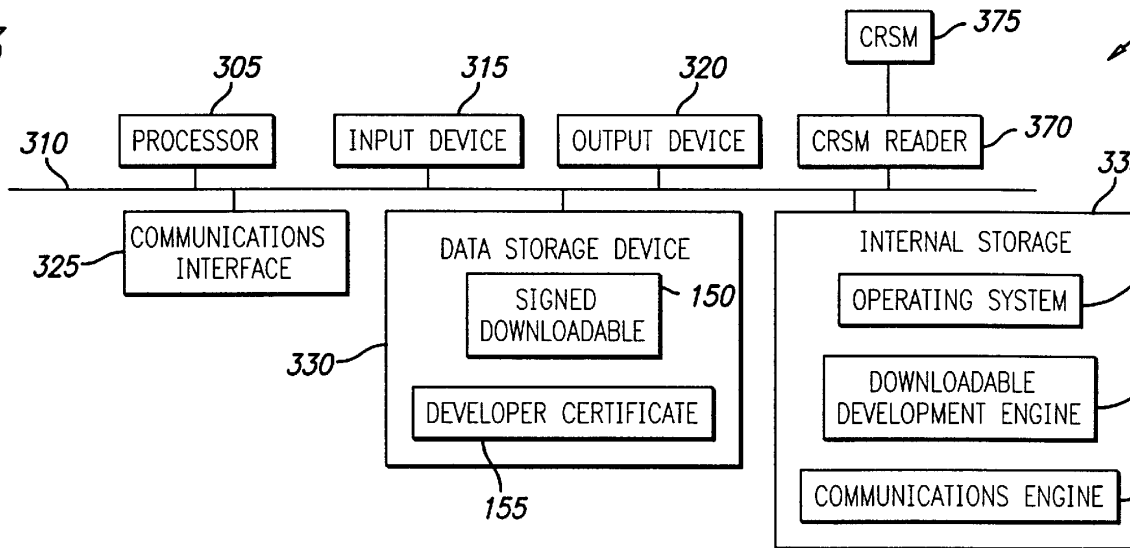
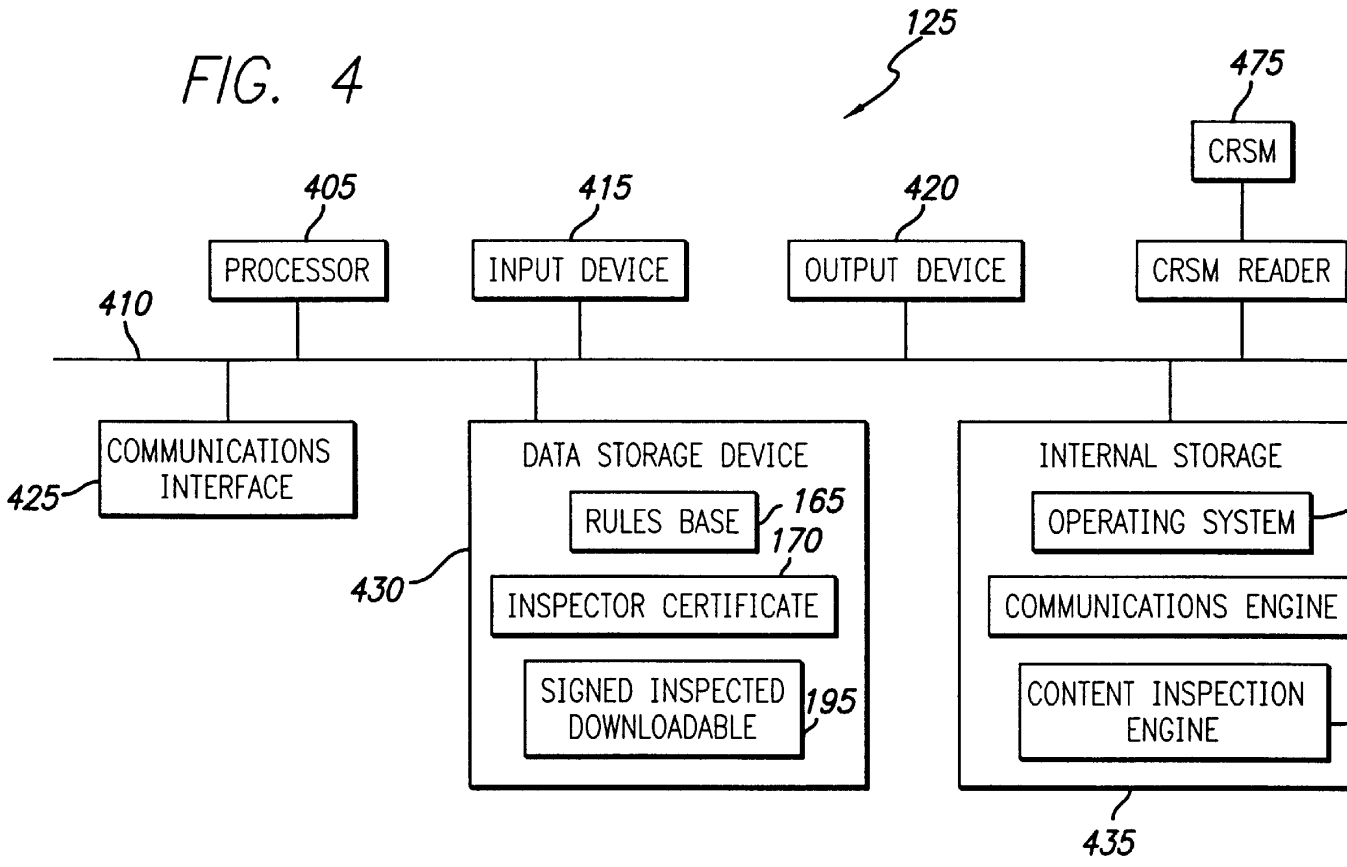


FIG. 4



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