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Edery et al.

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(45) **Date of Patent: Jun. 6, 2006**

(54) **MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS**

(75) Inventors: **Yigal Mordechai Edery**, Pardesia (IL); **Nimrod Itzhak Vered**, Goosh Tel-Mond (IL); **David R. Kroll**, San Jose, CA (US)

(73) Assignee: **Finjan Software, Ltd.**, South Netanya (IL)

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Related U.S. Application Data

(63) Continuation-in-part of application No. 09/551,302, filed on Apr. 18, 2000, now Pat. No. 6,480,962, which is a continuation-in-part of application No. 09/539,667, filed on Mar. 30, 2000, now Pat. No. 6,804,780.

(60) Provisional application No. 60/205,591, filed on May 17, 2000.

(51) **Int. Cl.**
G06F 11/30 (2006.01)

(52) **U.S. Cl.** **713/200**

(58) **Field of Classification Search** 713/176, 713/175, 200, 201, 150, 168; 701/223, 229; 717/120, 124, 126, 127, 130, 131, 134, 135; 709/223–229
See application file for complete search history.

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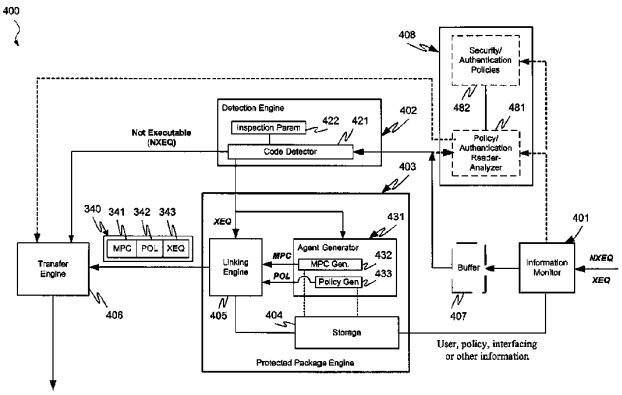
Primary Examiner—Christopher Revak
(74) *Attorney, Agent, or Firm*—Squire, Sanders & Dempsey, L.L.P.

(57) **ABSTRACT**

Protection systems and methods provide for protecting one or more personal computers ("PCs") and/or other intermittently or persistently network accessible devices or processes from undesirable or otherwise malicious operations of Java™ applets, ActiveX™ controls, JavaScript™ scripts, Visual Basic scripts, add-ins, downloaded/uploaded programs or other "Downloadables" or "mobile code" in whole or part. A protection engine embodiment provides, within a server, firewall or other suitable "re-communicator," for monitoring information received by the communicator, determining whether received information does or is likely to include executable code, and if so, causes mobile protection code (MPC) to be transferred to and rendered operable within a destination device of the received information, more suitably by forming a protection agent including the MPC, protection policies and a detected-Downloadable. An MPC embodiment further provides, within a Downloadable-destination, for initiating the Downloadable, enabling malicious Downloadable operation attempts to be received by the MPC, and causing (predetermined) corresponding operations to be executed in response to the attempts, more suitably in conjunction with protection policies.

35 Claims, 10 Drawing Sheets



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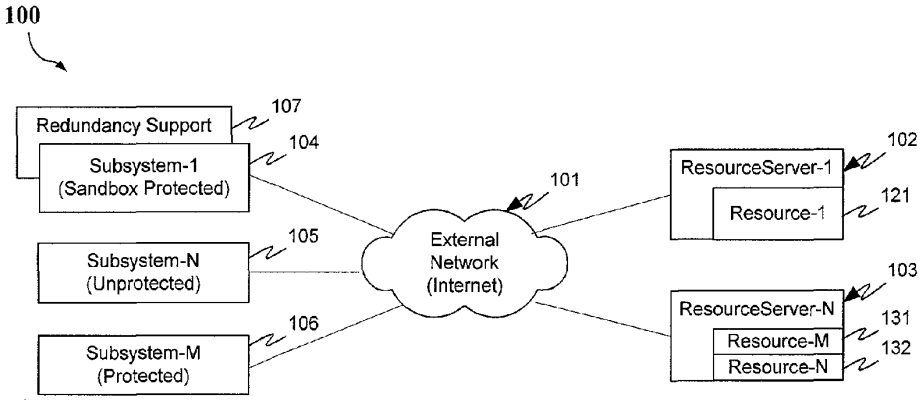

FIG. 1a

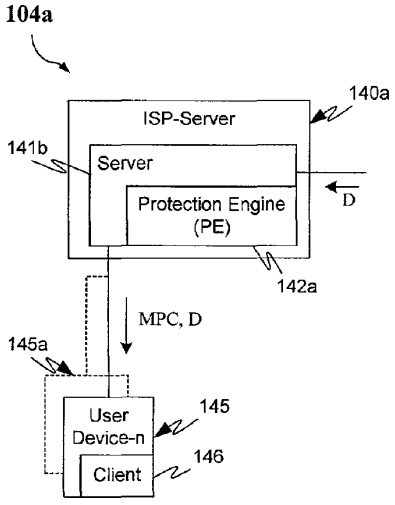

FIG. 1b

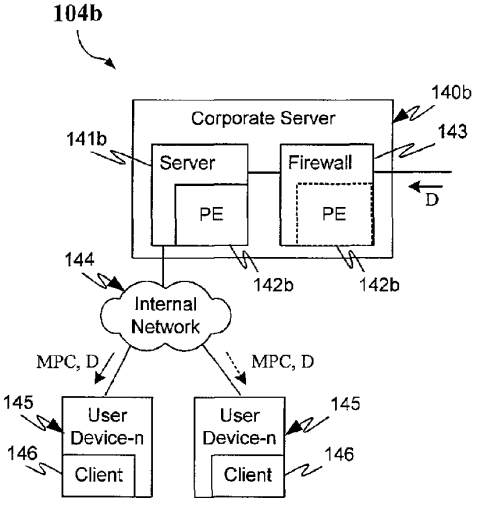

FIG. 1c

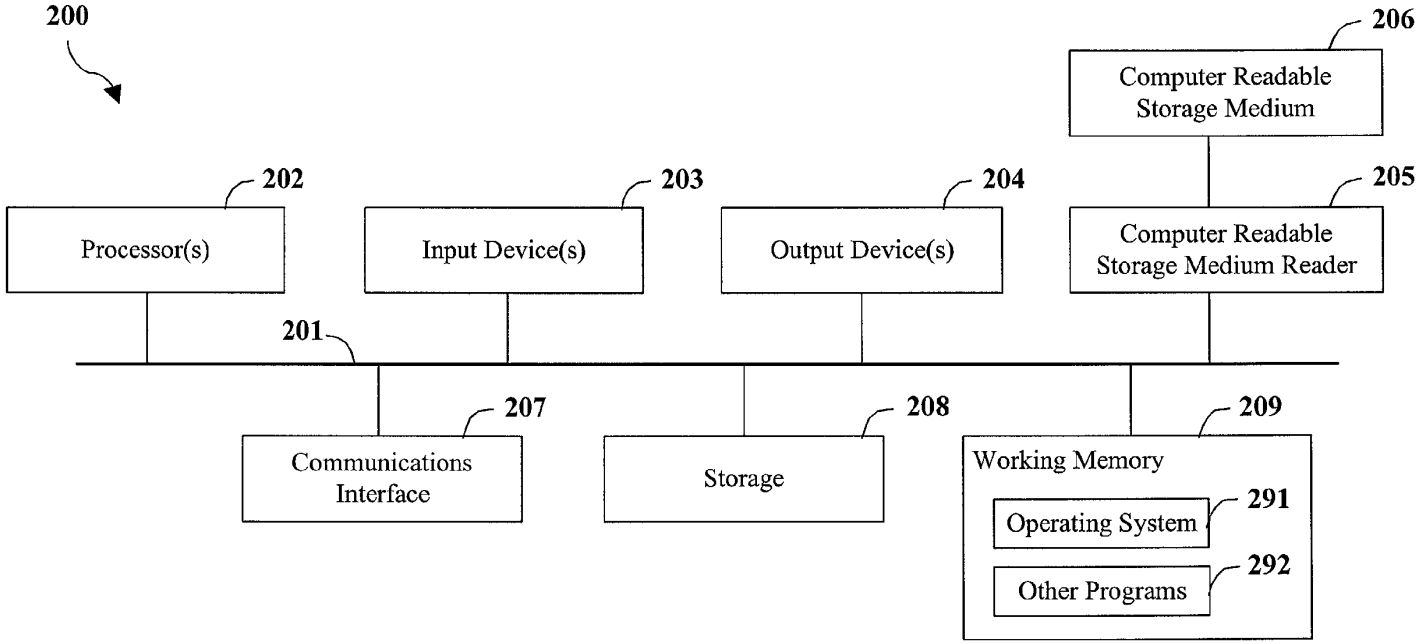

FIG. 2

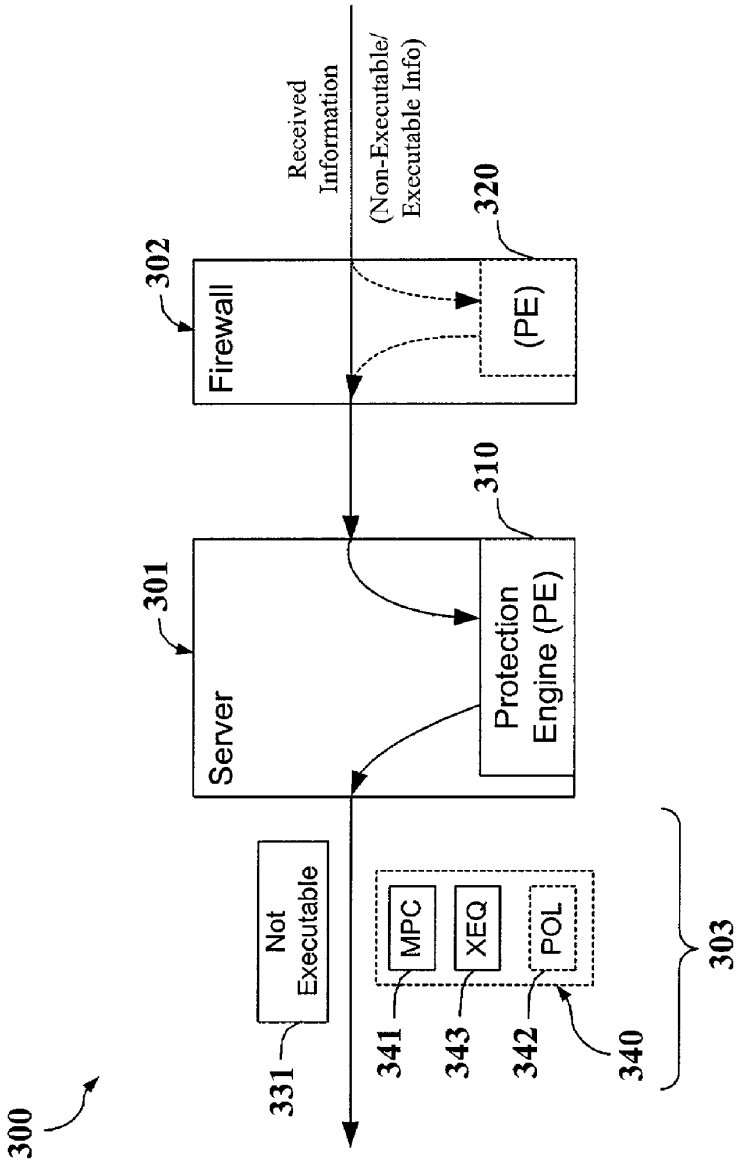

FIG. 3

DOCKET ALARM

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