



(12) **United States Patent**
Touboul

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(54) **SYSTEM AND METHOD FOR PROTECTING A CLIENT DURING RUNTIME FROM HOSTILE DOWNLOADABLES**

5,724,425 A 3/1998 Chang et al.
5,740,248 A 4/1998 Fieres et al.
5,761,421 A 6/1998 van Hoff et al.

(List continued on next page.)

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OTHER PUBLICATIONS

(73) Assignee: **Finjan Software, Ltd., Kefar-Haim (IL)**

Jim K. Omura, "Novel Applications of Cryptography in Digital Communications", IEEE Communications Magazine, May, 1990; pp. 21-29.

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

Okamoto, E. et al., "ID-Based Authentication System For Computer Virus Detection", IEEE/IEE Electronic Library online, Electronics Letters, vol. 26, Issue 15, ISSN 0013-5194, Jul. 19, 1990, Abstract and pp. 1169-1170. URL:http://iel.ihs.com:80/cgi-bin/iel.cgi?se2ehts%26ViewTemplate%3ddocview%5fb%2ehts.

This patent is subject to a terminal disclaimer.

IBM AntiVirus User's Guide Version 2.4, International Business Machines Corporation, Nov. 15, 1995, pp. 6-7.

(21) Appl. No.: **09/551,302**

Norvin Leach et al, "IE 3.0 Applets Will Earn Certification", PC Week, vol. 13, No. 29, Jul. 22, 1996, 2 pages.

(22) Filed: **Apr. 18, 2000**

"Finjan Software Releases SurfinBoard, Industry's First JAVA Security Product For the World Wide Web", Article published on the Internet by Finjan Software Ltd., Jul. 29, 1996, 1 page.

Related U.S. Application Data

(List continued on next page.)

(63) Continuation of application No. 08/790,097, filed on Jan. 29, 1997.

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(51) **Int. Cl.⁷** **H02H 3/05**

(52) **U.S. Cl.** **713/200; 713/201**

(58) **Field of Search** **713/200, 201, 713/202; 714/38, 704; 709/225, 229**

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(56) **References Cited**

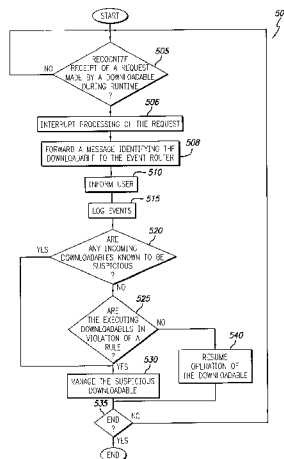
ABSTRACT

U.S. PATENT DOCUMENTS

A system protects a client from hostile Downloadables. The system includes security rules defining suspicious actions and security policies defining the appropriate responsive actions to rule violations. The system includes an interface for receiving incoming Downloadable and requests made by the Downloadable. The system still further includes a comparator coupled to the interface for examining the Downloadable, requests made by the Downloadable and runtime events to determine whether a security policy has been violated, and a response engine coupled to the comparator for performing a violation-based responsive action.

- 5,077,677 A 12/1991 Murphy et al.
- 5,359,659 A 10/1994 Rosenthal
- 5,361,359 A 11/1994 Tajalli et al.
- 5,485,409 A 1/1996 Gupta et al.
- 5,485,575 A 1/1996 Chess et al.
- 5,572,643 A 11/1996 Judson
- 5,606,668 A 2/1997 Shwed
- 5,623,600 A 4/1997 Ji et al.
- 5,638,446 A 6/1997 Rubin
- 5,692,047 A 11/1997 McManis
- 5,692,124 A 11/1997 Holden et al.
- 5,720,033 A 2/1998 Deo

51 Claims, 7 Drawing Sheets



U.S. PATENT DOCUMENTS

5,765,205	A	6/1998	Breslau et al.	
5,784,459	A	7/1998	Devarakonda et al.	
5,796,952	A	8/1998	Davis et al.	
5,805,829	A	9/1998	Cohen et al.	
5,832,208	A	11/1998	Chen et al.	
5,850,559	A	12/1998	Angelo et al.	
5,859,966	A	1/1999	Hayman et al.	
5,864,683	A	1/1999	Boebert et al.	
5,892,904	A	4/1999	Atkinson et al.	
5,951,698	A	9/1999	Chen et al.	
5,956,481	A	9/1999	Walsh et al.	
5,974,549	A	10/1999	Golan	
5,983,348	A	11/1999	Ji	
6,092,194	A *	7/2000	Touboul	713/200
6,154,844	A *	11/2000	Touboul et al.	713/201
6,167,520	A *	12/2000	Touboul	713/200

OTHER PUBLICATIONS

“Powerful PC Security for the New World of JAVA™ and Downloadables, Surfin Shield™” Article published on the Internet by Finjan Software Ltd., 1996, 2 Pages.
 Microsoft® Authenticode Technology, “Ensuring Accountability and Authenticity for Software Components on the Internet”, Microsoft Corporation, Oct. 1996, including Abstract, Contents, Introduction and pp. 1–10.

“Finjan Announces a Personal Java™ Firewall For Web Browsers—the SurfinShield™ 1.6 (formerly known as SurfinBoard)”, Press Release of Finjan Releases SurfinShield 1.6, Oct. 21, 1996, 2 pages.

Company Profile “Finjan—Safe Surfing, The Java Security Solutions Provider” Article published on the Internet by Finjan Software Ltd., Oct. 31, 1996, 3 pages.

“Finjan Announces Major Power Boost and New Features for SurfinShield™ 2.0” Las Vegas Convention Center/Pavilion 5 P5551, Nov. 18, 1996, 3 pages.

“Java Security: Issues & Solutions” Article published on the Internet by Finjan Software Ltd., 1996, 8 pages.

“Products” Article published on the Internet, 7 pages.

Mark LaDue, “Online Business Consultant: Java Security: Whose Business Is It?” Article published on the Internet, Home Page Press, Inc. 1996, 4 pages.

Web Page Article “Frequently Asked Questions About Authenticode”, Microsoft Corporation, last updated Feb. 17, 1997, Printed Dec. 23, 1998. URL: <http://www.microsoft.com/workshop/security/authcode/signfaq.asp#9>, pp. 1–13.

Zhang, X.N., “Secure Code Distribution”, IEEE/IEE Electronic Library online, Computer, vol. 30, Issue 6, Jun. 1997, pp.: 76–79.

* cited by examiner

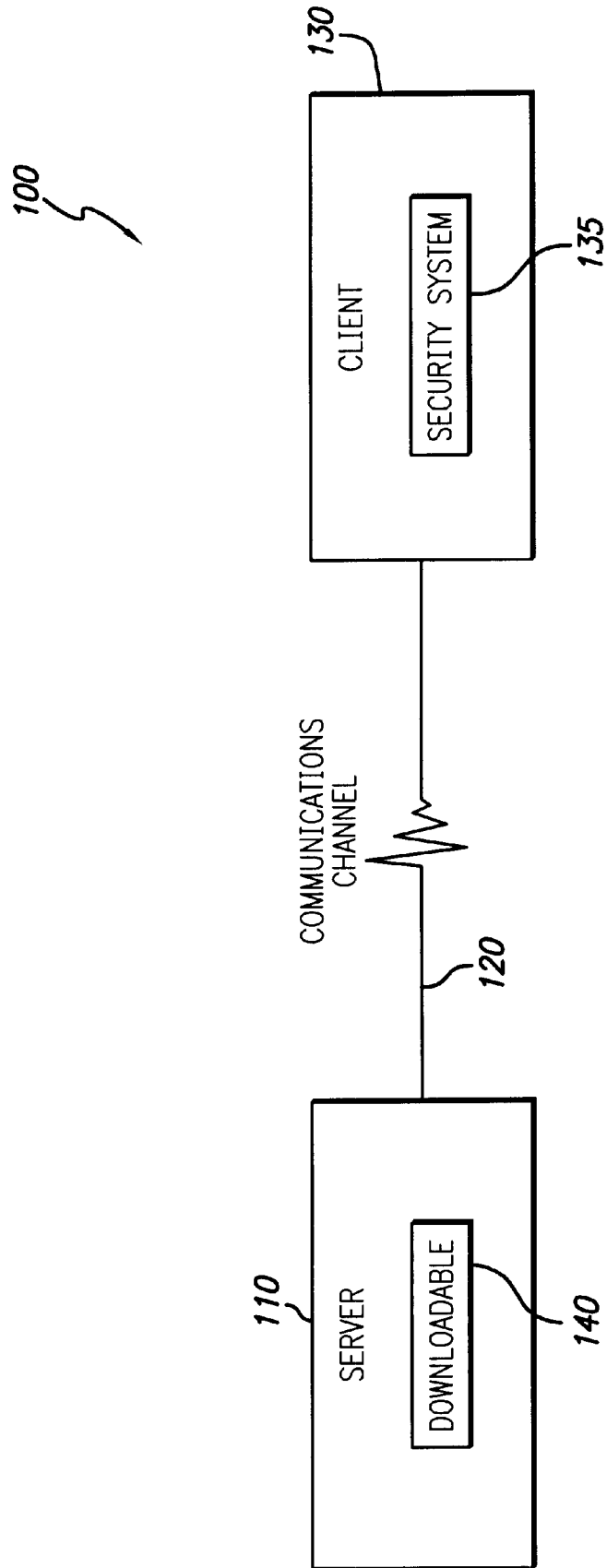


FIG. 1

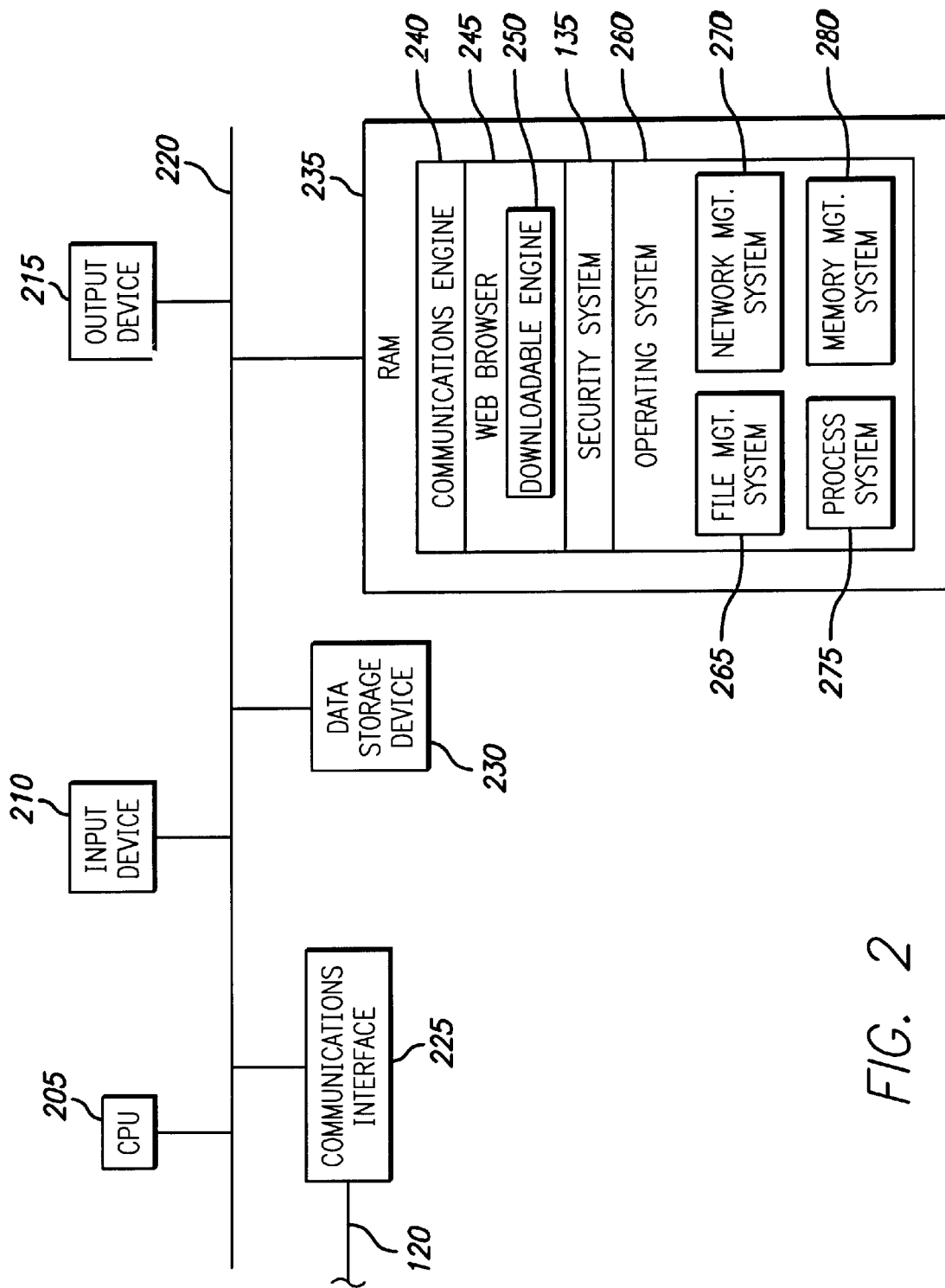


FIG. 2

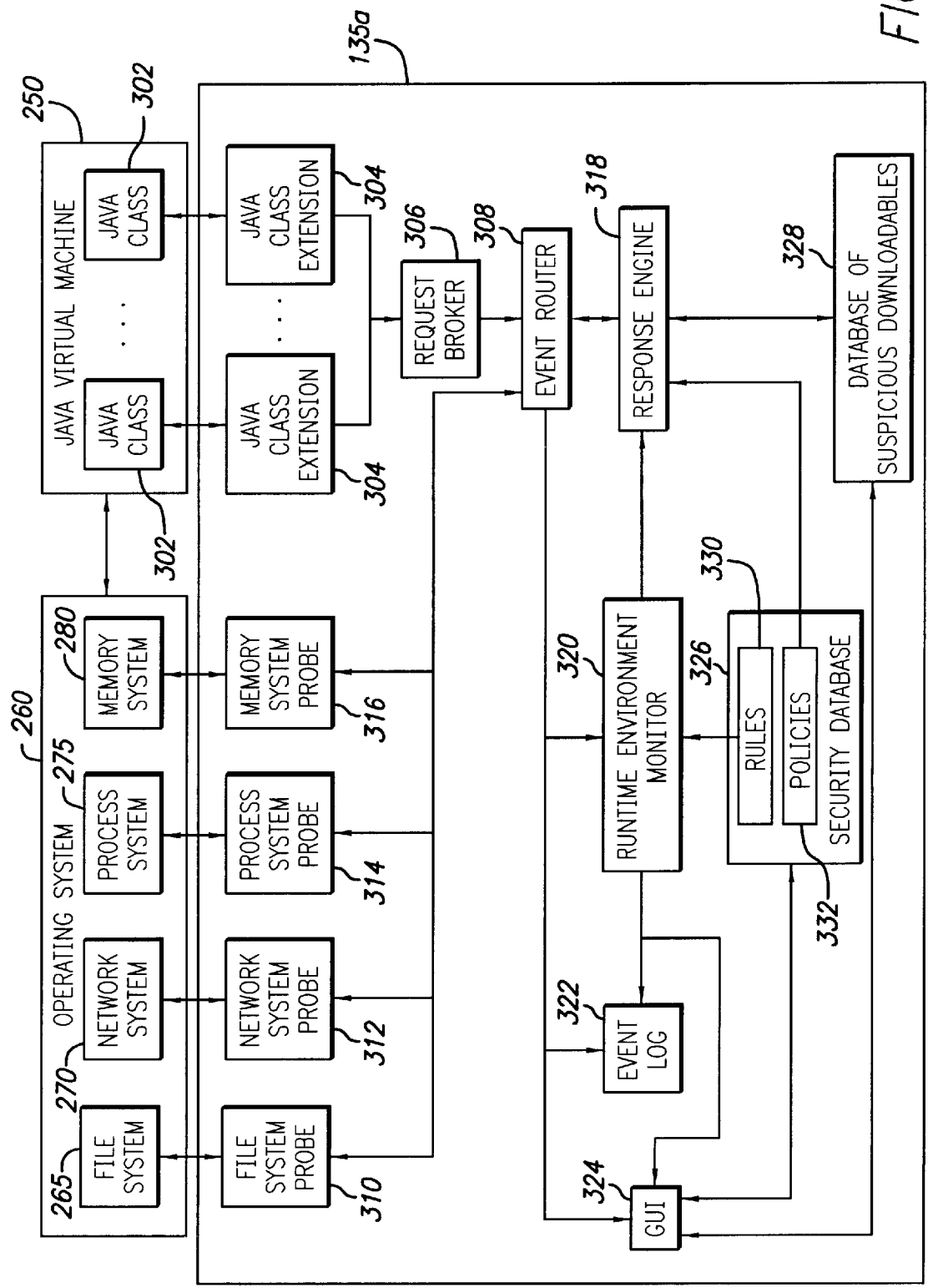


FIG. 3

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