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# United States Patent [19]

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Perlman et al.

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[54] **MECHANISM FOR EFFICIENTLY SYNCHRONIZING INFORMATION OVER A NETWORK**

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[73] Assignee: **Novell, Inc.**, Orem, Utah

[21] Appl. No.: **499,029**

[22] Filed: **Jul. 6, 1995**

[51] Int. Cl.<sup>6</sup> ..... **G06F 17/30**

[52] U.S. Cl. .... **395/617**; 395/610; 395/200.03; 395/200.09

[58] Field of Search ..... 395/610, 617, 395/200.03, 200.09

### [56] References Cited

#### U.S. PATENT DOCUMENTS

5,129,082	7/1992	Tirfling et al. ....	395/600
5,249,268	9/1993	Doucet .....	395/200
5,265,092	11/1993	Soloway et al. ....	370/60
5,276,871	1/1994	Howarth .....	395/600
5,280,498	1/1994	Tymes et al. ....	375/1
5,479,654	12/1995	Squibb .....	395/617

#### FOREIGN PATENT DOCUMENTS

0 348 331	12/1989	European Pat. Off. .
0 447 725 A2	9/1991	European Pat. Off. .

### OTHER PUBLICATIONS

Ramabadran et al., "A Tutorial on CRC Computations", IEEE Micro, vol. 8, No. 4, Aug., 1988, pp. 62-75.

Radia Perlman, Interconnections Bridges and Routers, Addison-Wesley Professional Computing Series, Jul. 1992, pp. 242-245 and 272-275.

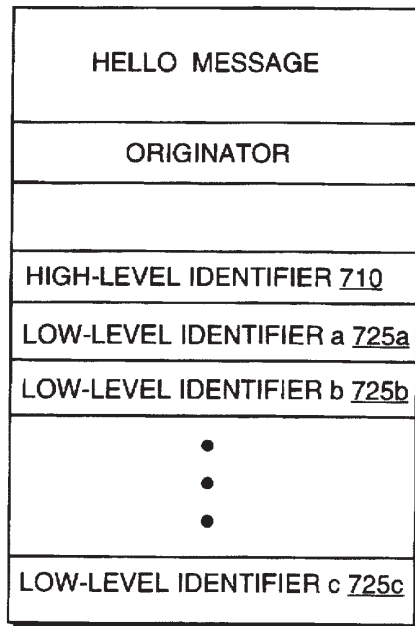
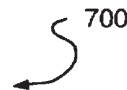
Computer Communications Review, 21 (1991) Jan., No. 1, New York, US, Inter Domain Policy Routing: Overview of Architecture and Protocols, Deborah Estin et al., pp. 71-79.

Primary Examiner—Paul R. Lintz  
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### [57] ABSTRACT

A novel mechanism efficiently synchronizes the contents of databases stored on nodes of a computer network to ensure that those contents are consistent. The mechanism comprises a database identifier generated by a node of the computer network and distributed to other receiving nodes coupled to the network. The database identifier is uniquely representative of the contents of the distributing node's database and the receiving nodes compare this unique identifier with their own generated database identifiers to determine if the identifiers, and thus their databases, are consistent and synchronized.

18 Claims, 6 Drawing Sheets



**MICROSOFT  
EXHIBIT 1003**

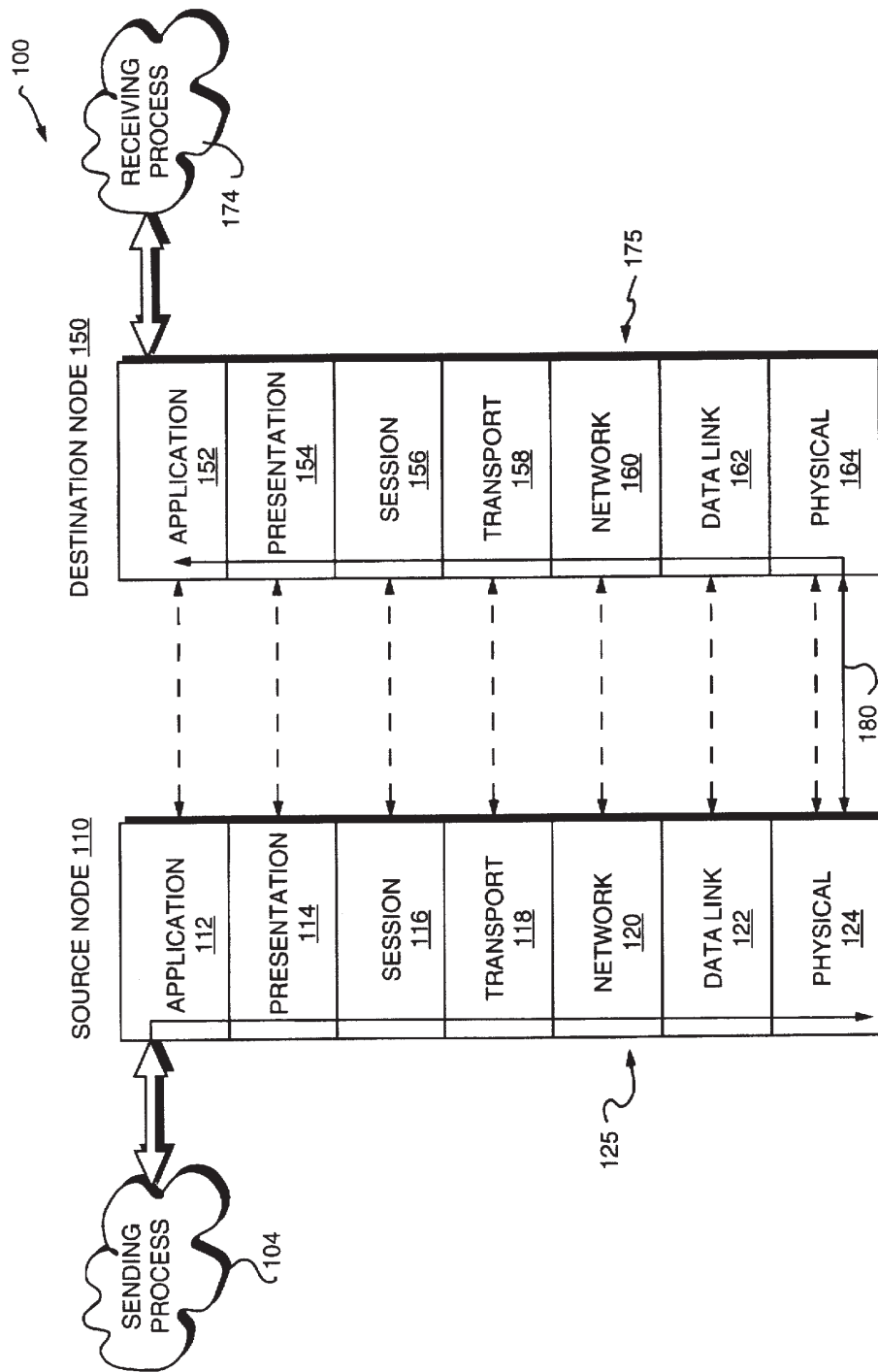


FIG. 1  
PRIOR ART

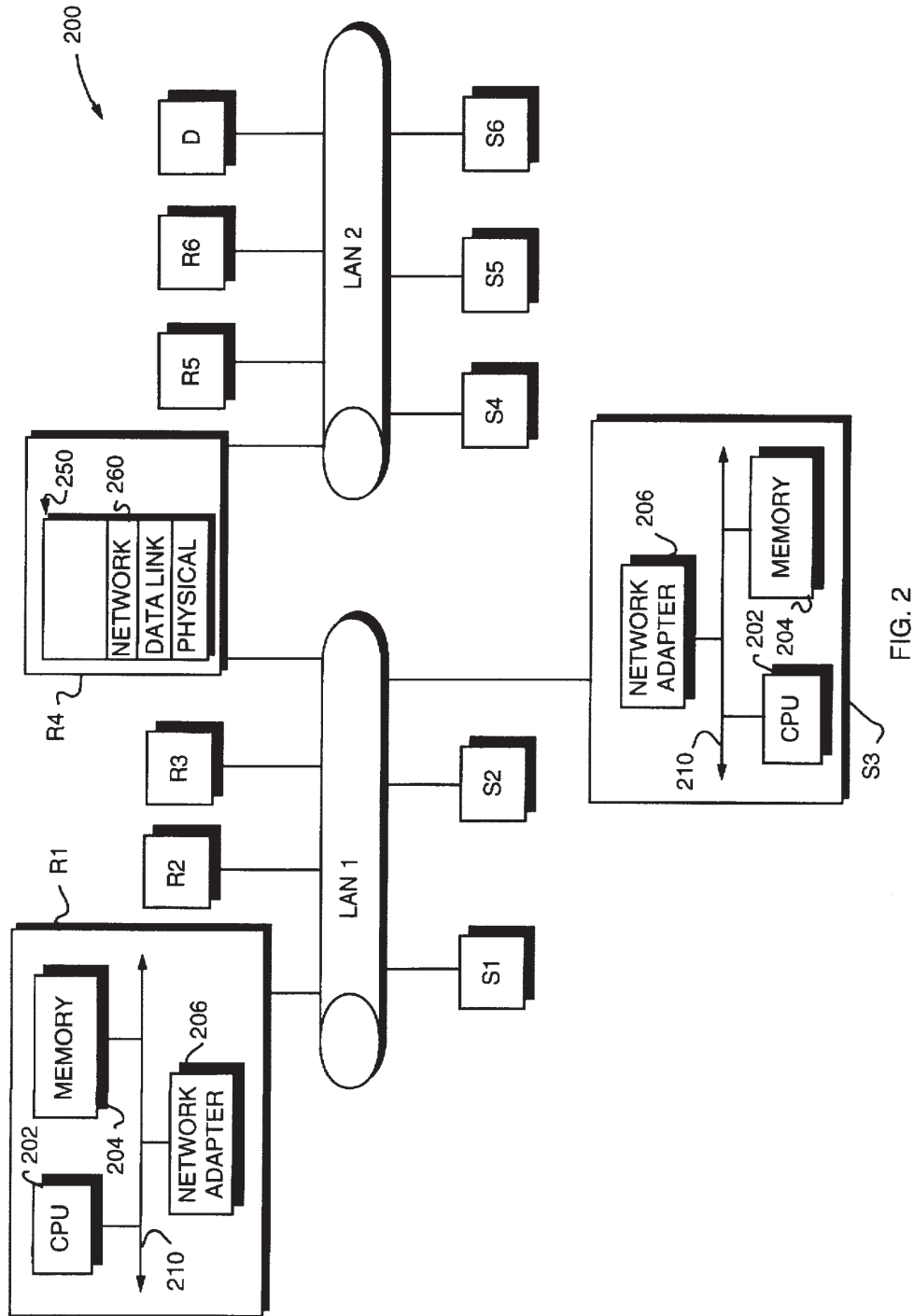


FIG. 2

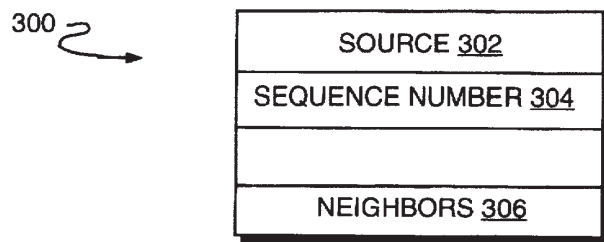


FIG. 3

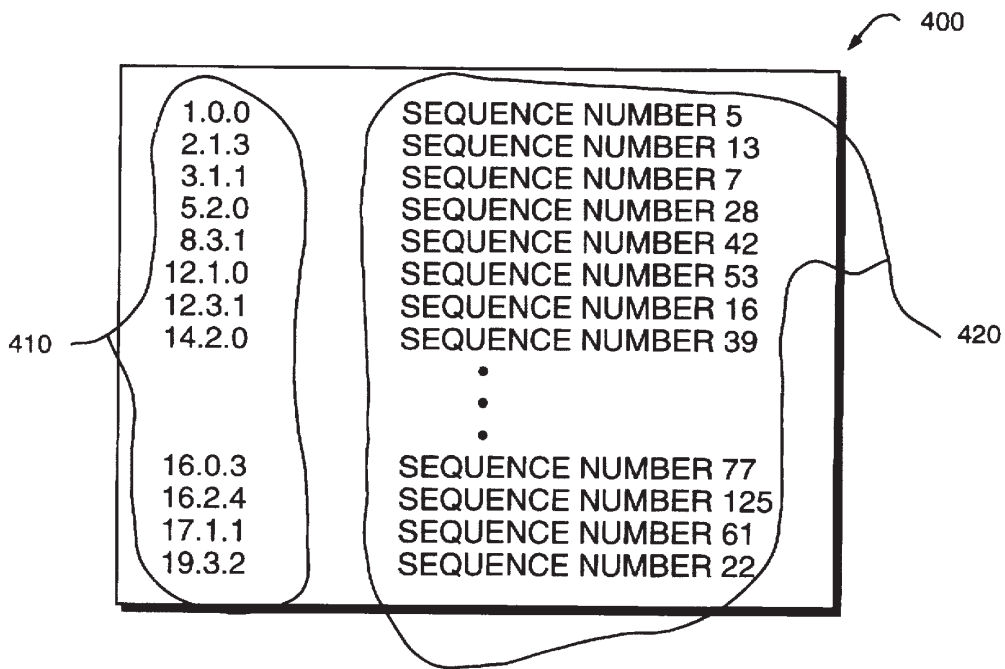


FIG. 4A

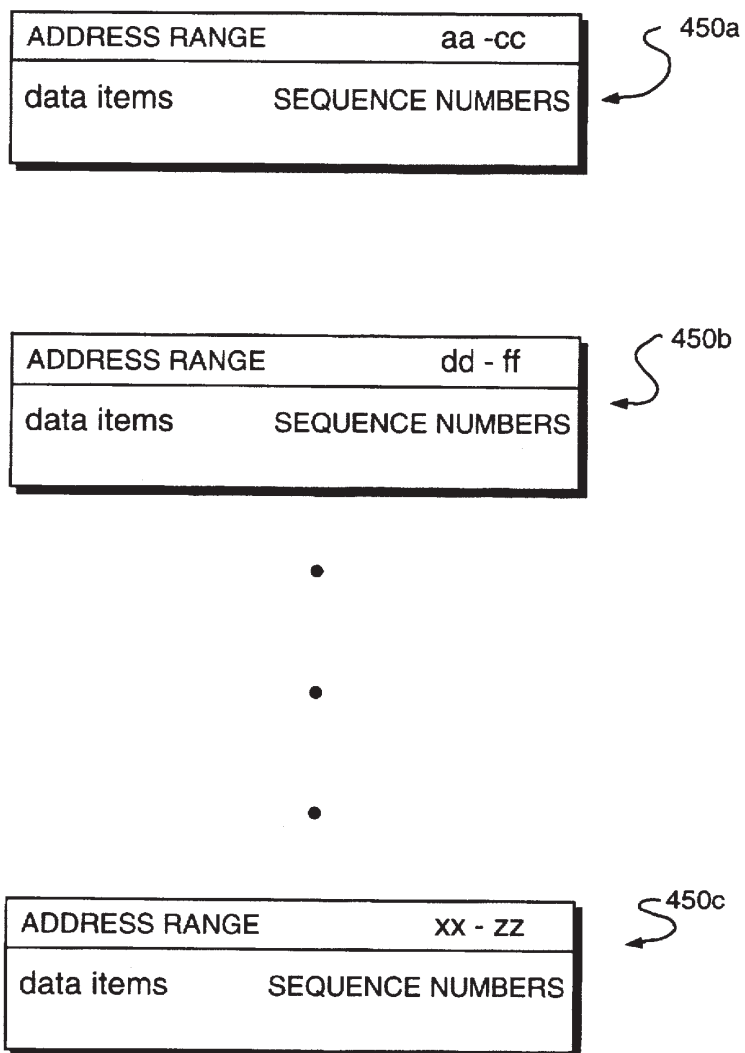


FIG. 4B

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