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(54) **SYSTEMS AND METHODS FOR PROVIDING DYNAMIC AD HOC PROXY-CACHE HIERARCHIES**

(75) Inventors: **Allen Samuels**, San Jose, CA (US); **Richard Jensen**, San Jose, CA (US); **Zubin Dittia**, San Mateo, CA (US); **Dan Decasper**, San Mateo, CA (US); **Michael Ovsiannikov**, San Mateo, CA (US); **Robert Plamondon**, Blodgett, OR (US)

(73) Assignee: **Citrix Systems, Inc.**, Fort Lauderdale, FL (US)

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(58) **Field of Classification Search** 709/223, 709/217, 219; 711/118, 125, 137
See application file for complete search history.

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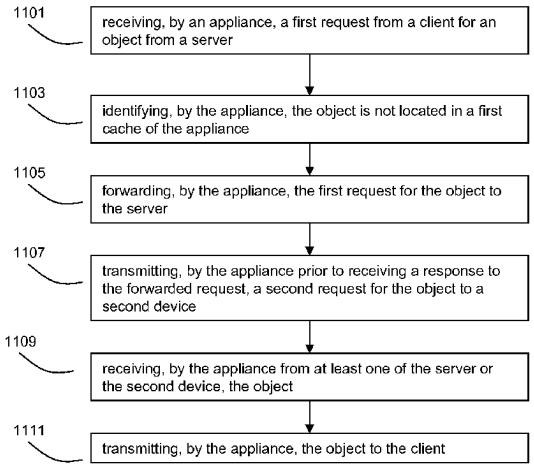
Primary Examiner—Krisna Lim
(74) *Attorney, Agent, or Firm*—Foley and Lardner LLP; Christopher McKenna

(57) **ABSTRACT**

Systems and methods of storing previously transmitted data and using it to reduce bandwidth usage and accelerate future communications are described. By using algorithms to identify long compression history matches, a network device may improve compression efficiently and speed. A network device may also use application specific parsing to improve the length and number of compression history matches. Further, by sharing compression histories, compression history indexes and caches across multiple devices, devices can utilize data previously transmitted to other devices to compress network traffic. Any combination of the systems and methods may be used to efficiently find long matches to stored data, synchronize the storage of previously sent data, and share previously sent data among one or more other devices.

25 Claims, 29 Drawing Sheets



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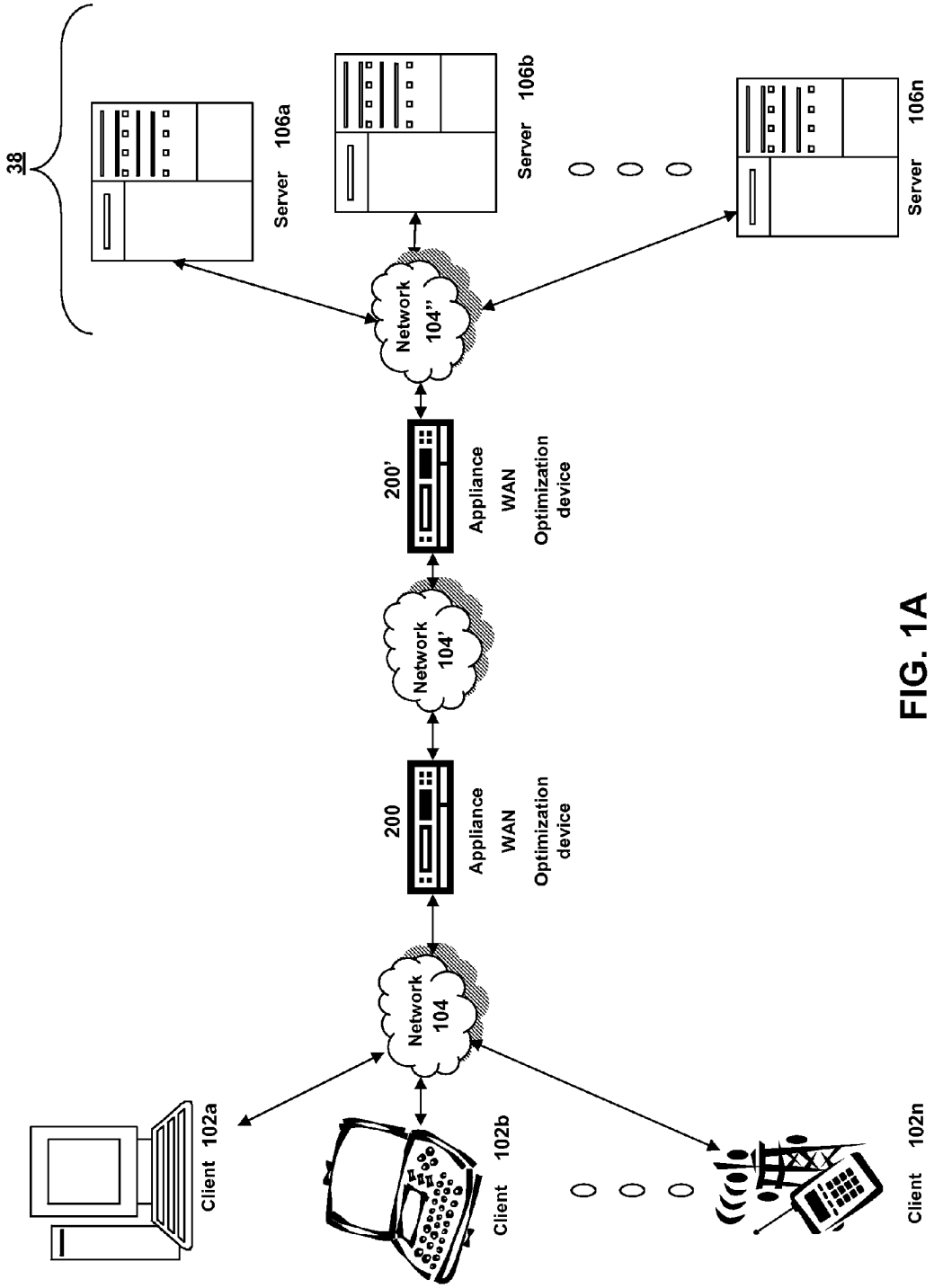

FIG. 1A

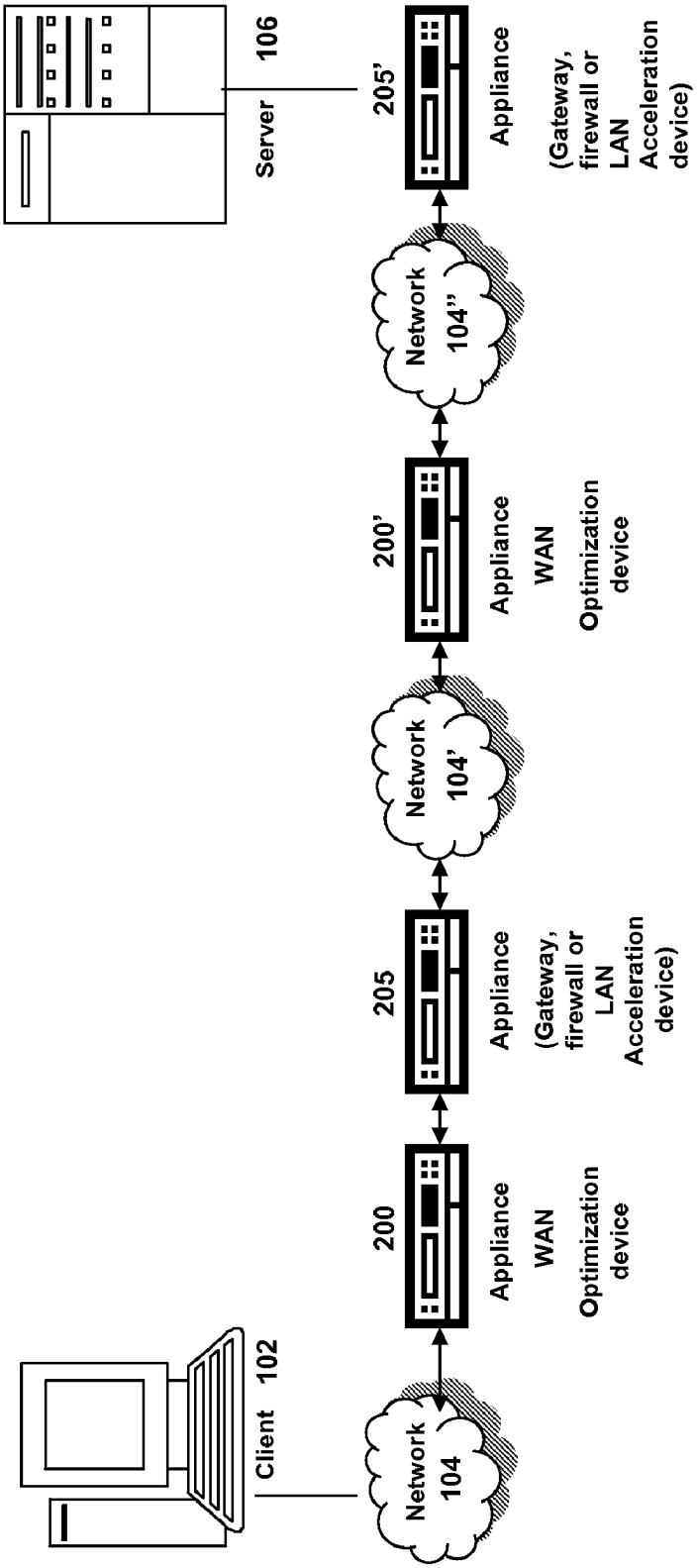

FIG. 1B

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