US010069936B2

(12) **United States Patent**
Shribman et al.

(10) **Patent No.: US 10,069,936 B2**
(45) **Date of Patent: Sep. 4, 2018**

(54) **SYSTEM PROVIDING FASTER AND MORE EFFICIENT DATA COMMUNICATION**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 485 days.

(21) Appl. No.: **14/025,109**

(22) Filed: **Sep. 12, 2013**

(65) **Prior Publication Data**

US 2014/0019514 A1 Jan. 16, 2014

Related U.S. Application Data

(62) Division of application No. 12/836,059, filed on Jul. 14, 2010, now Pat. No. 8,560,604.
(Continued)

(51) **Int. Cl.**
H04L 29/06 (2006.01)
H04L 29/08 (2006.01)
H04L 12/24 (2006.01)

(52) **U.S. Cl.**
CPC ***H04L 67/42*** (2013.01); ***H04L 41/046*** (2013.01); ***H04L 67/1002*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC H04L 67/42; H04L 41/046; H04L 67/1002
(Continued)

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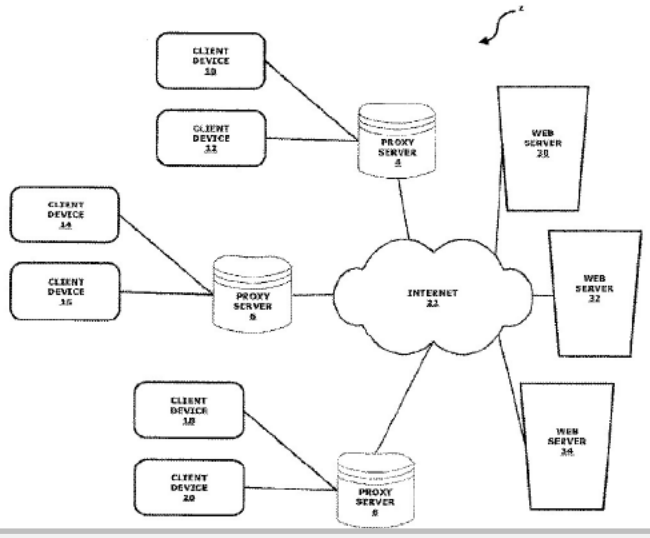
(57) **ABSTRACT**

A system designed for increasing network communication speed for users, while lowering network congestion for content owners and ISPs. The system employs network elements including an acceleration server, clients, agents, and peers, where communication requests generated by applications are intercepted by the client on the same machine. The IP address of the server in the communication request is transmitted to the acceleration server, which provides a list of agents to use for this IP address. The communication request is sent to the agents. One or more of the agents respond with a list of peers that have previously seen some or all of the content which is the response to this request (after checking whether this data is still valid). The client then downloads the data from these peers in parts and in parallel, thereby speeding up the Web transfer, releasing congestion from the Web by fetching the information from multiple sources, and relieving traffic from Web servers by offloading the data transfers from them to nearby peers.

34 Claims, 15 Drawing Sheets



Related U.S. Application Data

(60) Provisional application No. 61/249,624, filed on Oct. 8, 2009.

(52) **U.S. Cl.**
CPC ***H04L 67/108*** (2013.01); ***H04L 67/1023*** (2013.01); ***H04L 67/1063*** (2013.01); ***H04L 67/22*** (2013.01); ***H04L 67/2814*** (2013.01); ***H04L 67/2819*** (2013.01); *H04L 67/02* (2013.01)

(58) **Field of Classification Search**
USPC 709/201–203, 207
See application file for complete search history.

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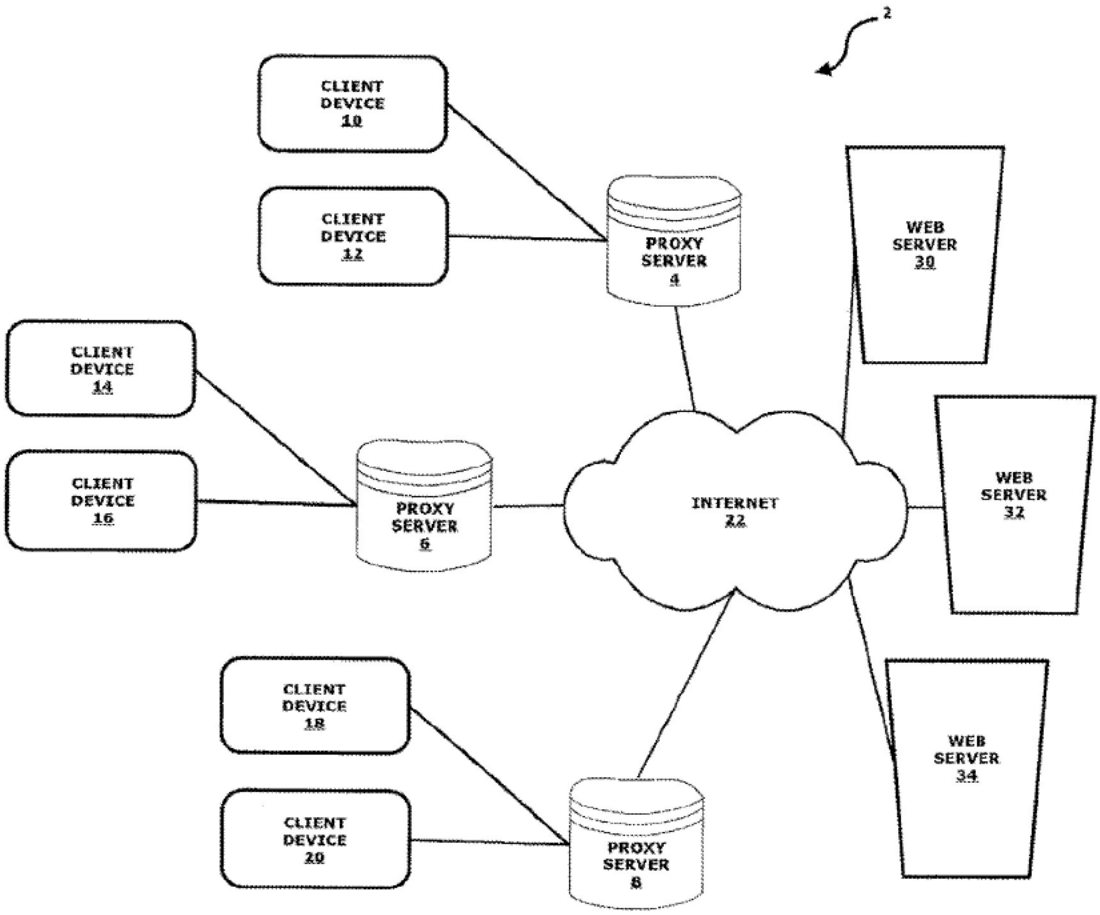


FIG. 1

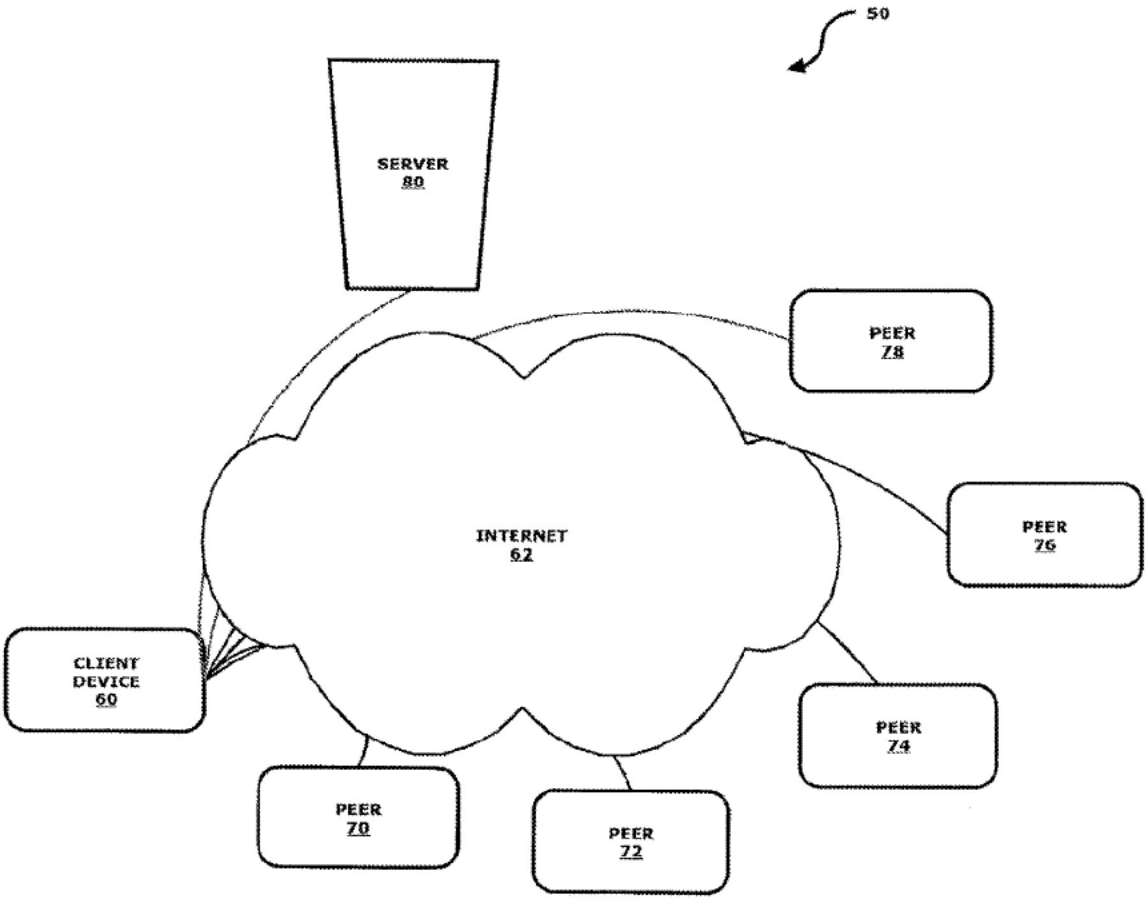
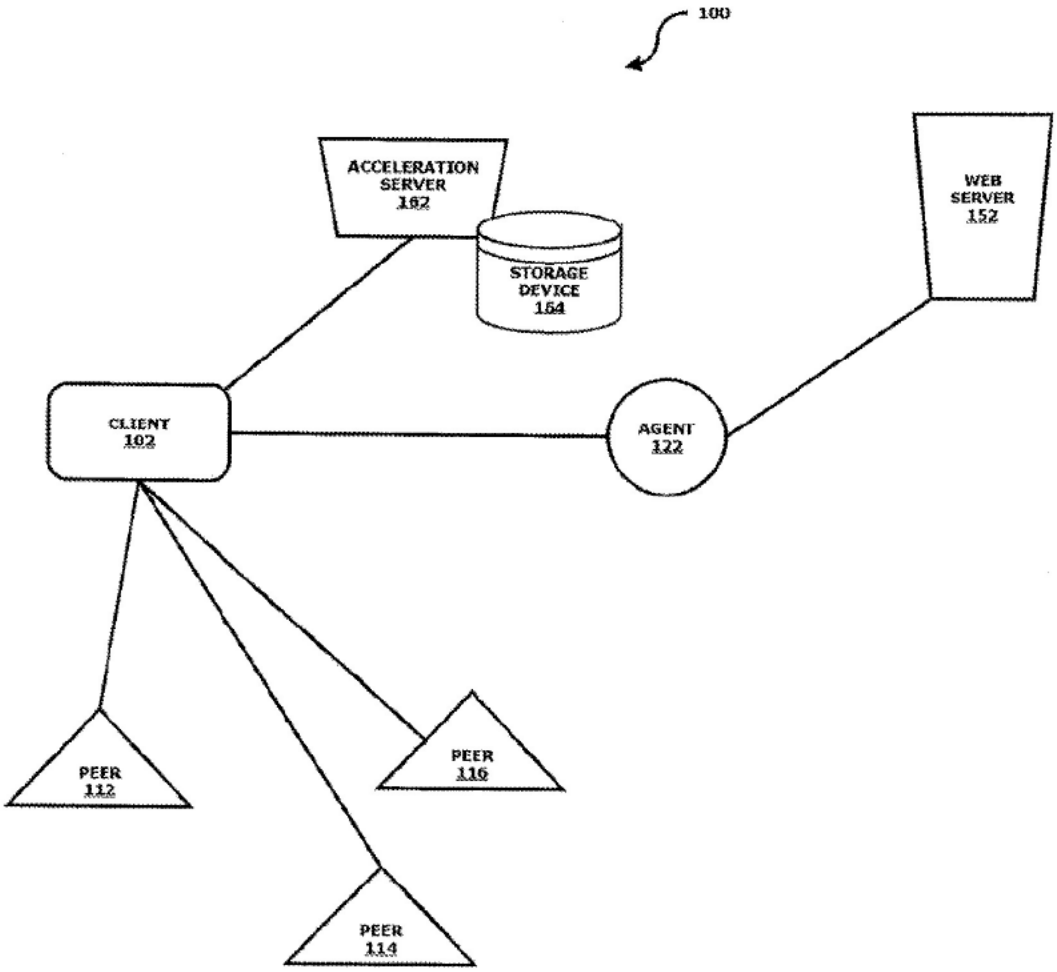


FIG. 2



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