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Anderson, IV et al.

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(54) **SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR CACHING DOMAIN NAME SYSTEM INFORMATION ON A NETWORK GATEWAY**

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(75) Inventors: **Charles Edward Anderson, IV**, Woodstock, GA (US); **Thomas Carroll Willis, Jr.**, Westminster, CO (US); **Jason Andrew Willis**, Westminster, CO (US)

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(73) Assignee: **Broadcom Corporation**, Irvine, CA (US)

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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 612 days.

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(21) Appl. No.: **10/080,676**

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(22) Filed: **Feb. 25, 2002**

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(65) **Prior Publication Data**

Primary Examiner—William Vaughn

Assistant Examiner—Joseph Maniwang

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(74) *Attorney, Agent, or Firm*—Sterne, Kessler, Goldstein & Fox P.L.L.C.

(51) **Int. Cl.**
G06F 15/16 (2006.01)

(57) **ABSTRACT**

(52) **U.S. Cl.** **709/245; 709/225**

A system, method and computer program product is provided for caching domain name system (DNS) information on a network gateway. In particular, a network gateway that interfaces one or more customer premises equipment (CPE) devices to an IP network maintains a centralized on-board cache for storing domain names and corresponding IP addresses. The domain names and IP addresses in the cache are used by the network gateway to resolve DNS queries generated by application programs running on the CPE devices in a manner that is transparent to the CPE devices and that does not expend CPE resources. The cache may be initially loaded by an attached CPE or an external network entity and is continuously populated with information extracted from DNS messages exchanged between a CPE device and the external IP network.

(58) **Field of Classification Search** **709/245, 709/203, 202, 225**

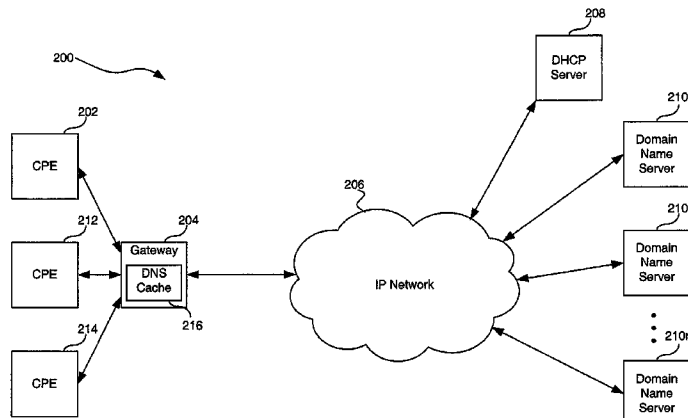
See application file for complete search history.

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31 Claims, 10 Drawing Sheets



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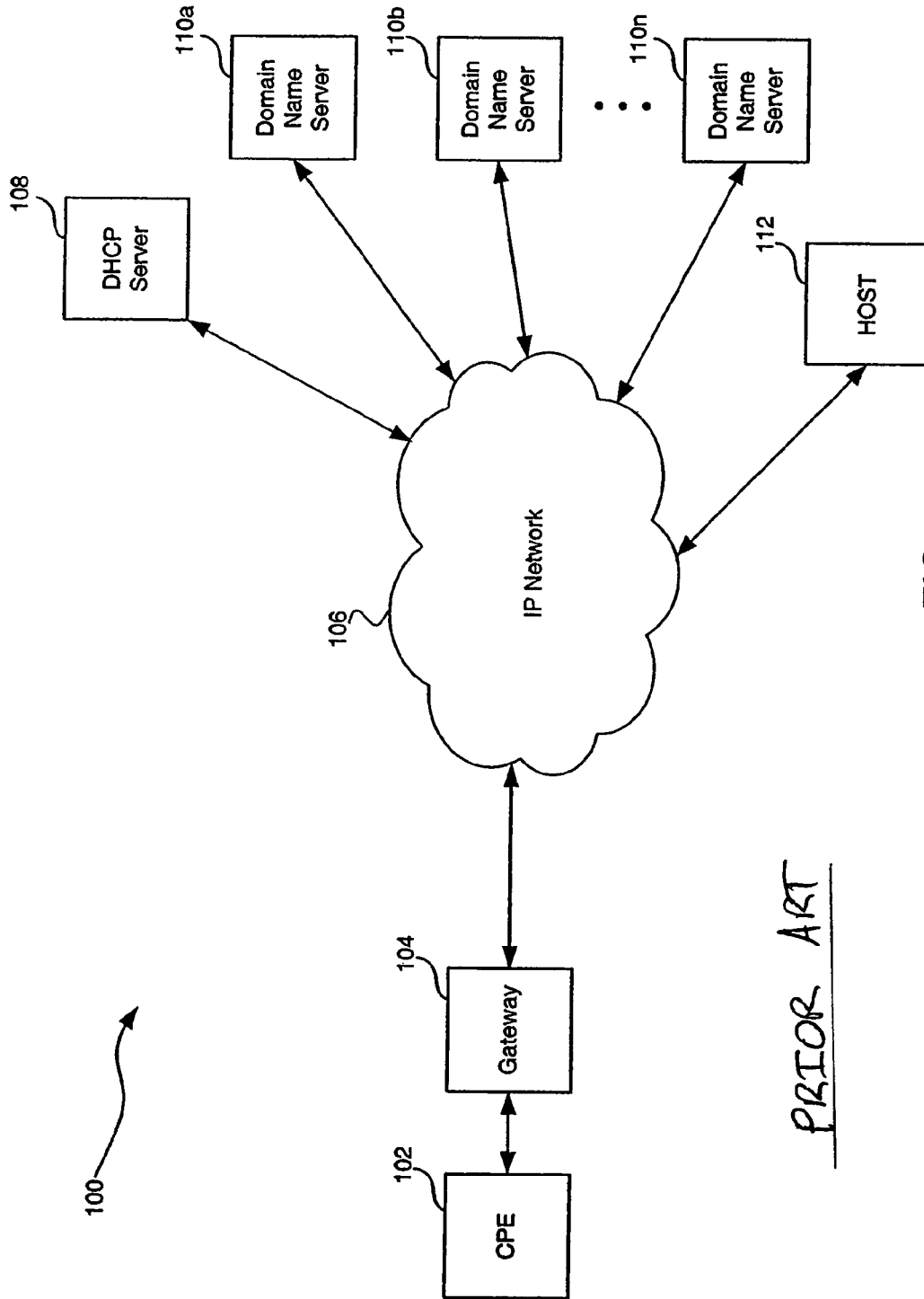


FIG. 1

PRIOR ART

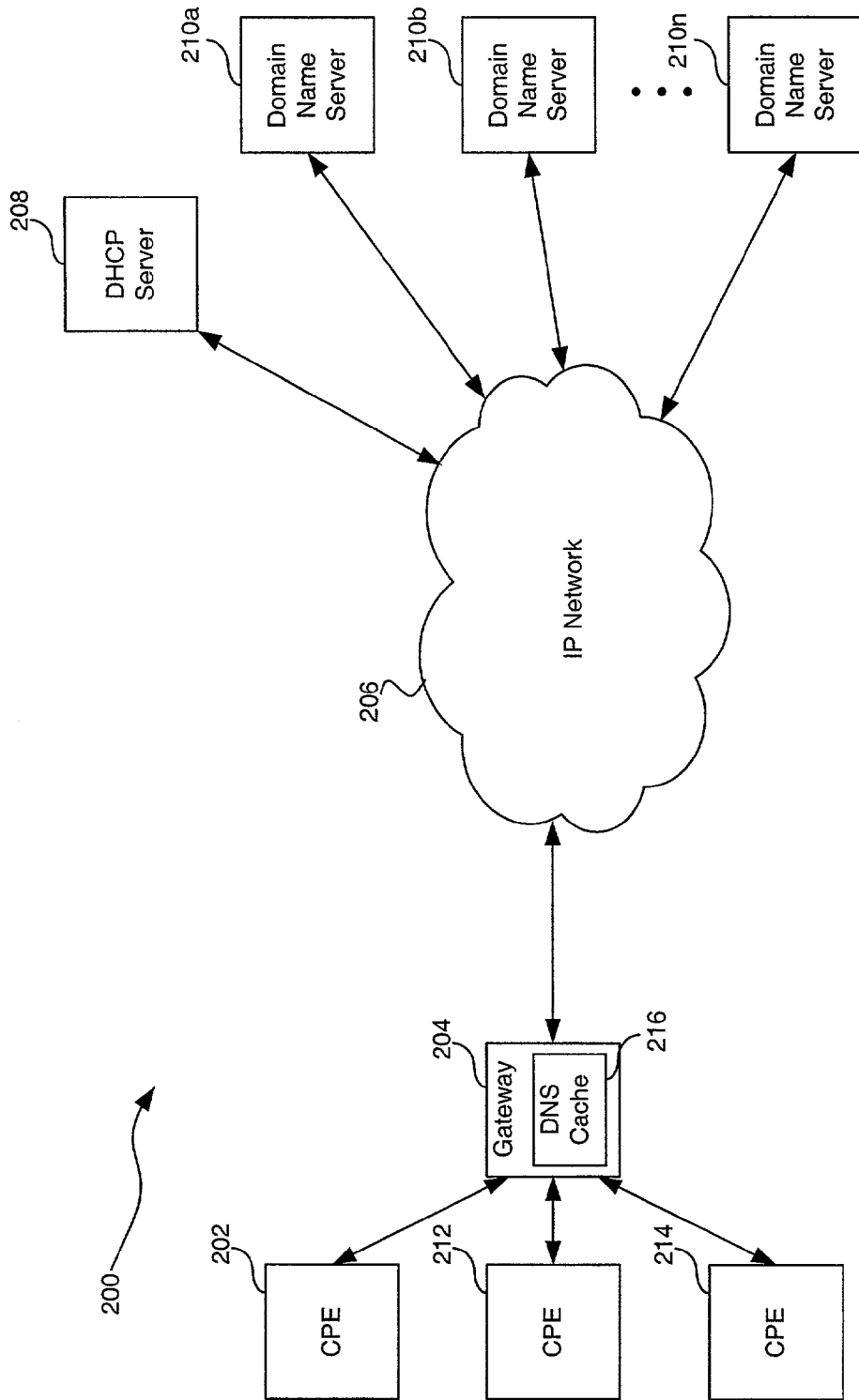


FIG. 2

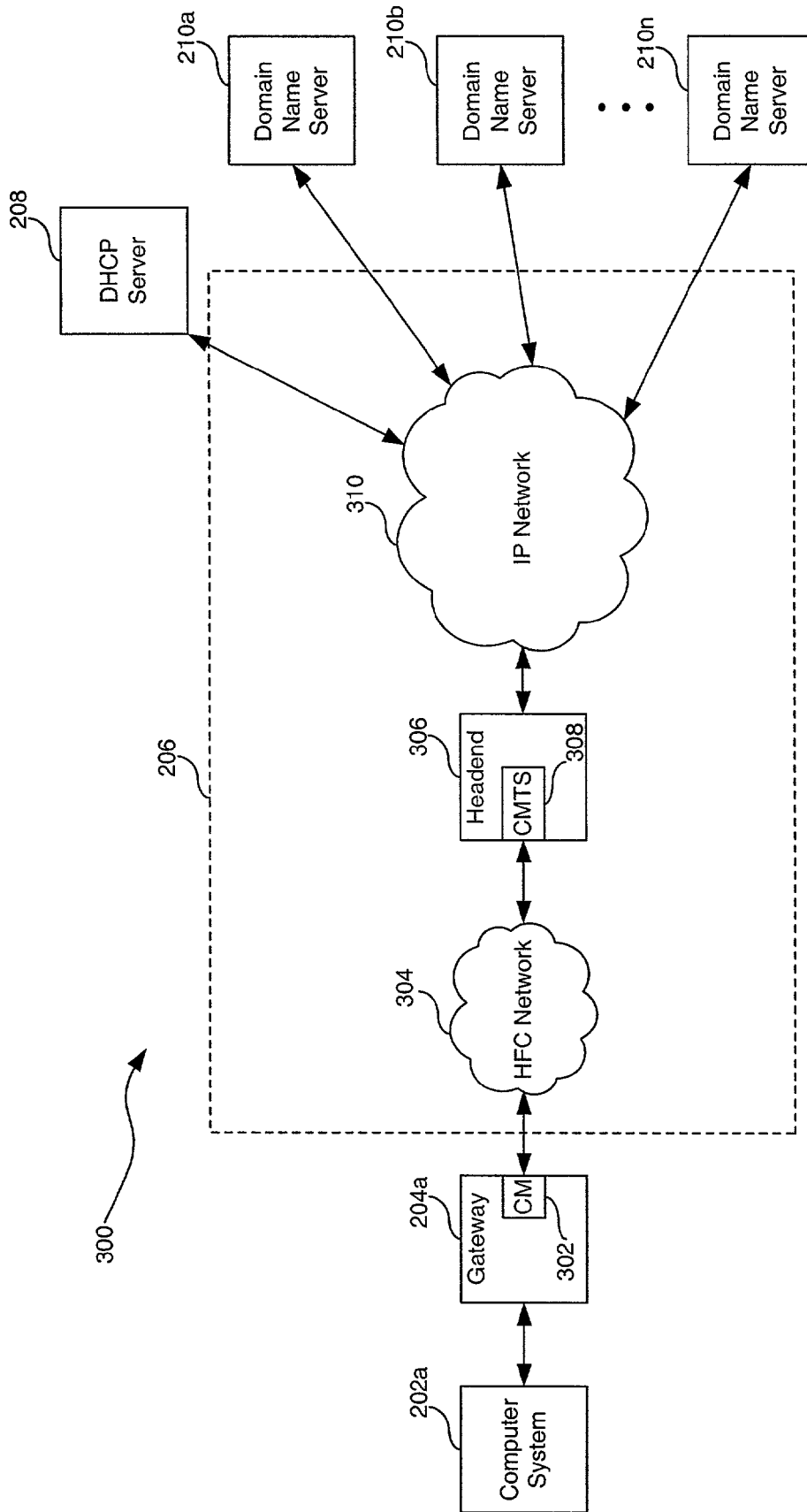


FIG. 3

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