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**United States Patent** [19]  
**Patel et al.**

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[54] **SHARED AUTO-NEGOTIATION LOGIC FOR MULTIPLE PORT NETWORK DEVICES**

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[73] Assignee: **3Com Corporation**, Santa Clara, Calif.

[21] Appl. No.: **774,480**

[22] Filed: **Dec. 30, 1996**

[51] **Int. Cl.<sup>6</sup>** ..... **H04L 12/413**

[52] **U.S. Cl.** ..... **370/438; 370/447; 370/449; 370/462**

[58] **Field of Search** ..... 370/465, 466, 370/401, 437, 438, 439, 445, 447, 449, 458, 461, 462

[56] **References Cited**

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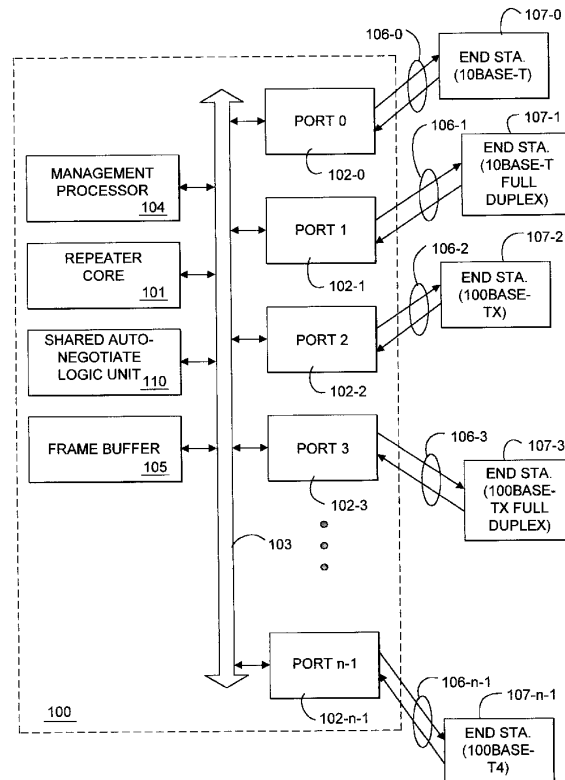
*Primary Examiner*—Alpus H. Hsu

*Attorney, Agent, or Firm*—Wilson Sonsini Goodrich & Rosati

[57] **ABSTRACT**

A device interconnects across links, a plurality of terminals having respective modes of operation. The device includes a plurality of ports for connection to respective links, and logic coupled to the plurality of ports to exercise an auto-negotiation protocol with terminals coupled to the respective links to resolve modes of operation. The logic includes a shared unit for executing the auto-negotiation protocol, and an arbiter unit for arbitrating among the plurality of ports for use of the shared unit. The arbiter connects ports in the plurality of ports to the shared unit in a round robin sequence. Memory stores a set of status signals for respective ports. The arbiter logic polls the memory to read the set of status signals in sequence, and in response enables use of the shared auto-negotiation unit by the ports. The modes of operation resolved by the shared auto-negotiation unit include LAN technology supported by terminals on the corresponding links, such as IEEE 802.3 Local Area Network technologies.

**12 Claims, 4 Drawing Sheets**



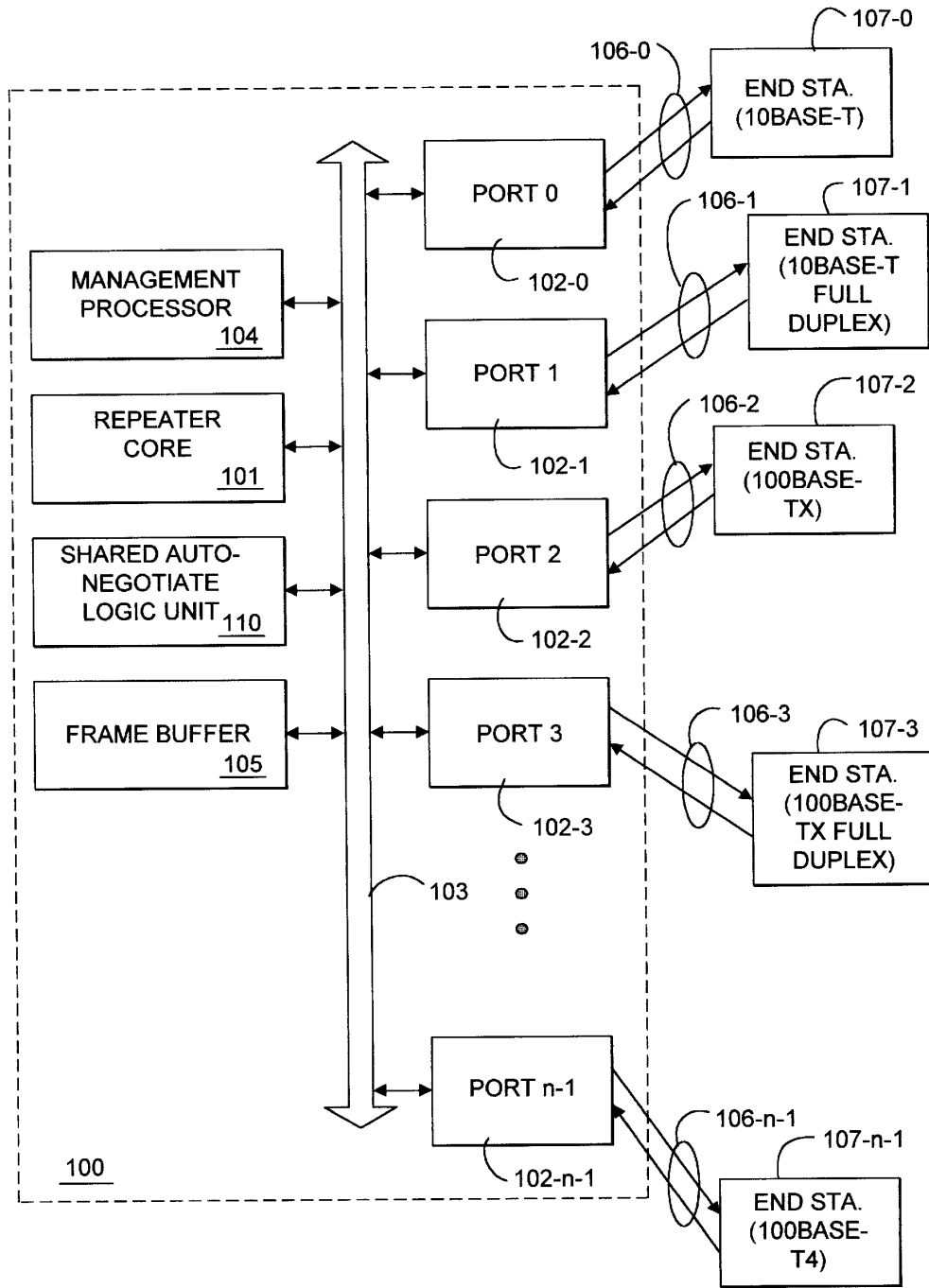


FIG. 1

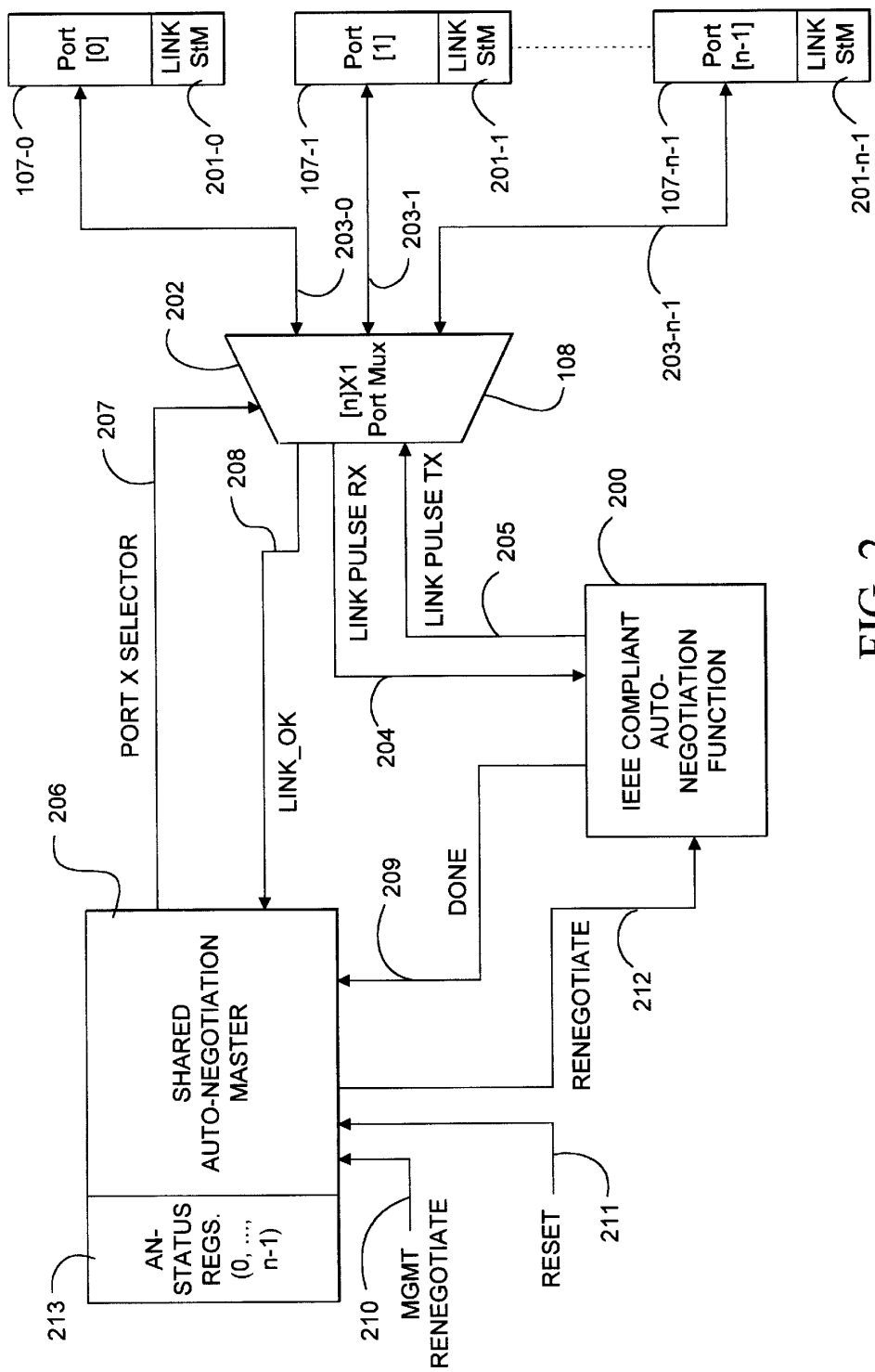


FIG. 2

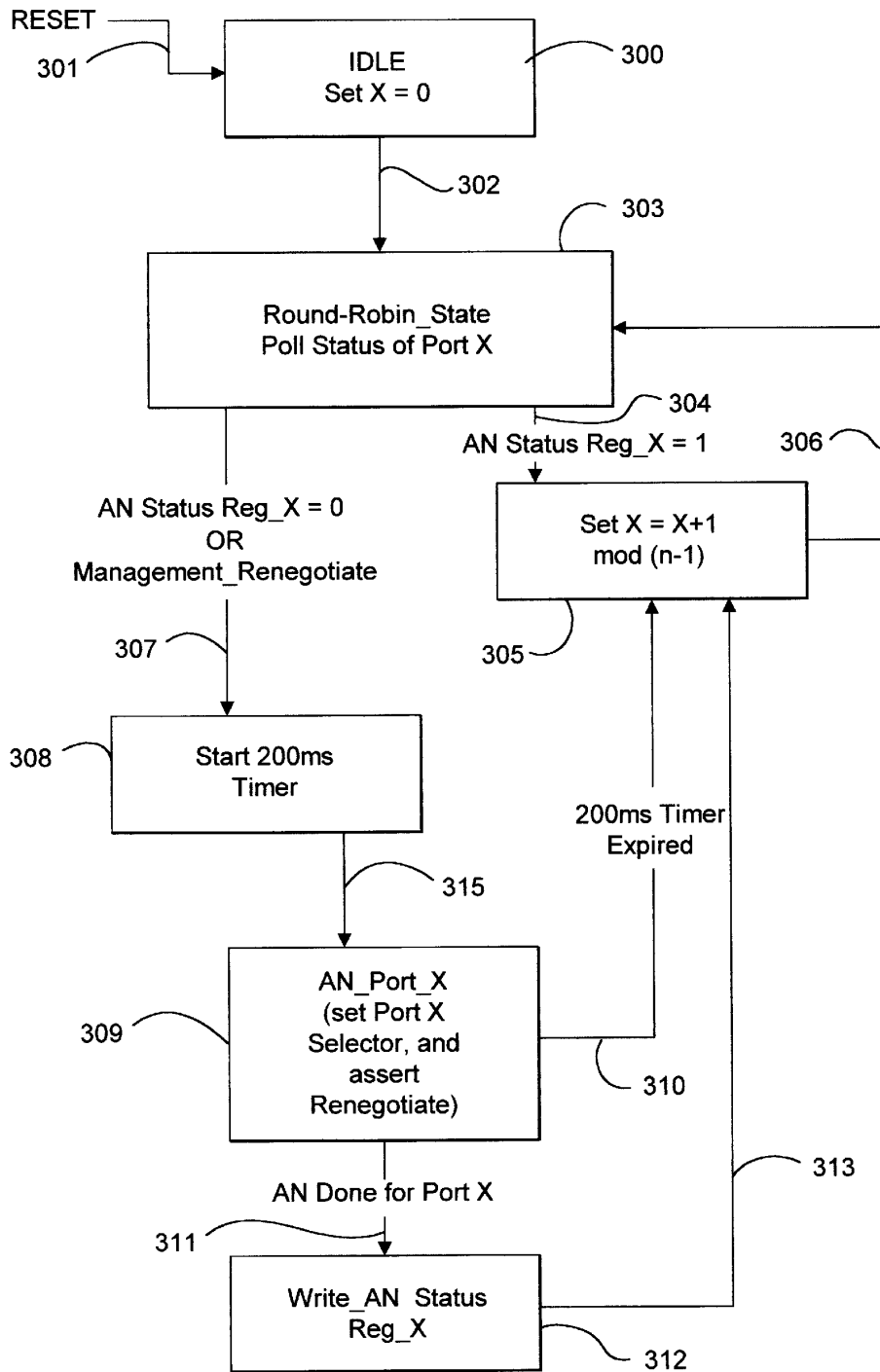


FIG. 3

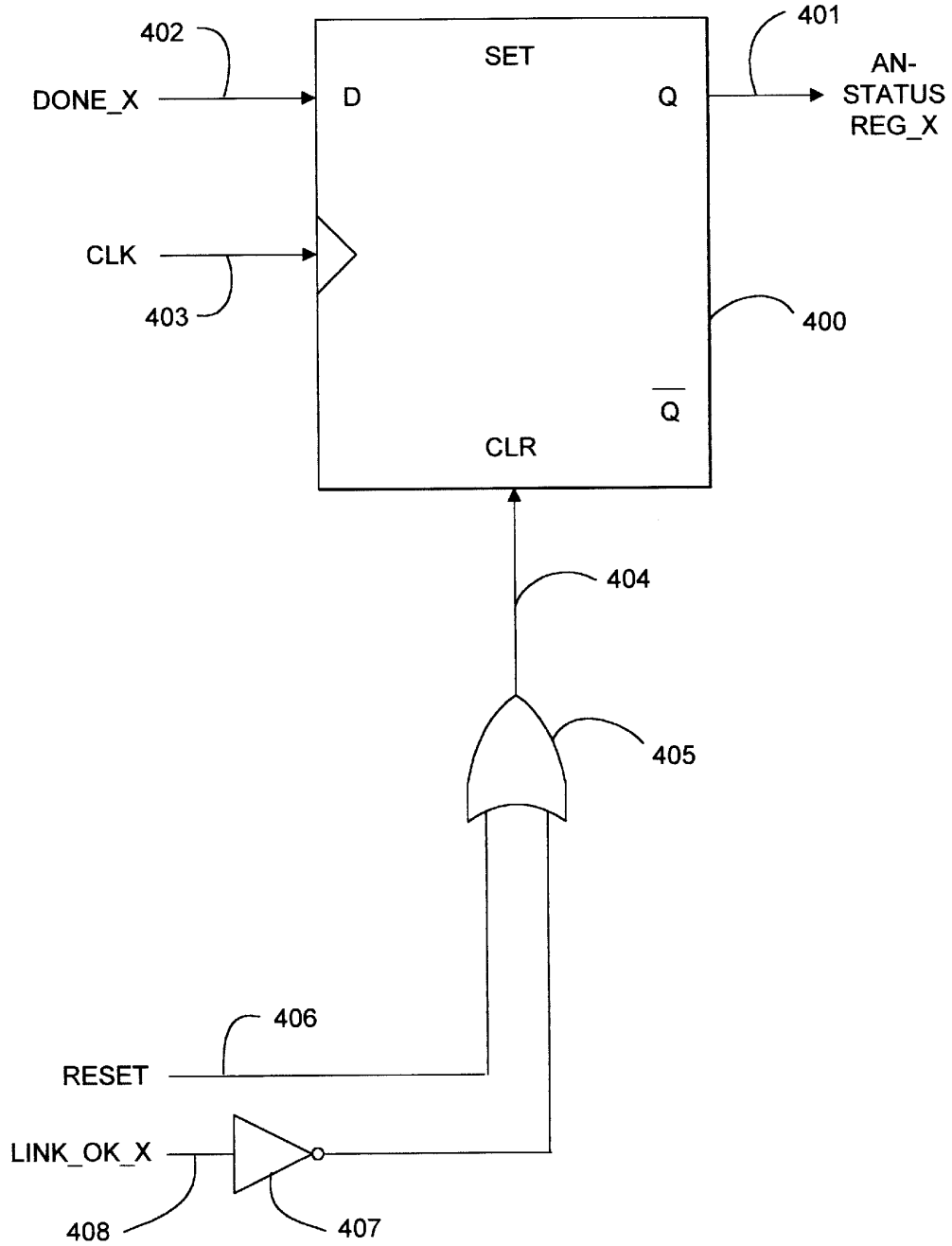


FIG. 4

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