



- [54] APPARATUS AND METHOD FOR CONCURRENT SEARCH CONTENT ADDRESSABLE MEMORY CIRCUIT
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- [73] Assignee: **Motorola, Inc.**, Schaumburg, Ill.
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- [51] Int. Cl.⁶ **H04L 12/28**
- [52] U.S. Cl. **370/392; 370/395; 370/429**
- [58] Field of Search 370/399, 382, 370/383, 392, 393, 395, 397, 409, 416, 429; 365/49, 190, 189.12, 230.02; 395/200, 200.2, 200.21

5,467,349 11/1995 Huey et al. 370/60.1
 5,684,954 11/1997 Kaiserswerth et al. 395/200.2

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 Assistant Examiner—Chiho Andrew Lee
 Attorney, Agent, or Firm—Lee E. Chastain

[57] ABSTRACT

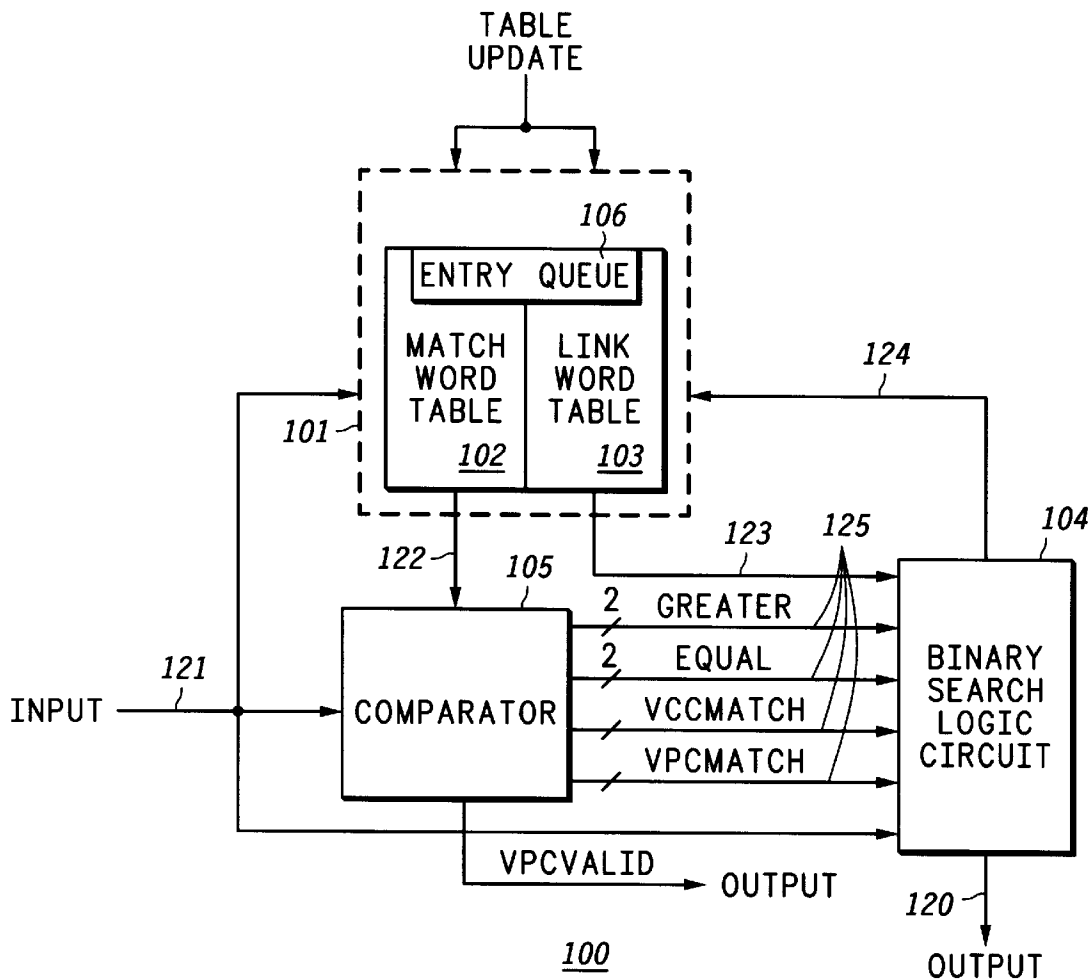
A circuit and method is provided for implementing a content addressable memory circuit (100) in which an output word is produced which corresponds to the content of a reference word containing an ATM header. According to a first aspect, a binary search logic circuit (104) binarily searches the memory array (101) to find a match word whose content is equal to that of the reference word. Output signals indicate either that a match has been found or that the binary searching of the memory array (101) should continue at addresses either above or below the location address of the match word. According to a second aspect, the content addressable memory circuit (100) performs a concurrent search of switching identifiers, virtual circuit identifiers and virtual path identifiers, to determine if a virtual path connection or virtual circuit connection exists for an ATM header.

[56] References Cited

U.S. PATENT DOCUMENTS

- 5,414,707 5/1995 Johnston et al. 370/79
- 5,422,838 6/1995 Lin 365/49

12 Claims, 8 Drawing Sheets



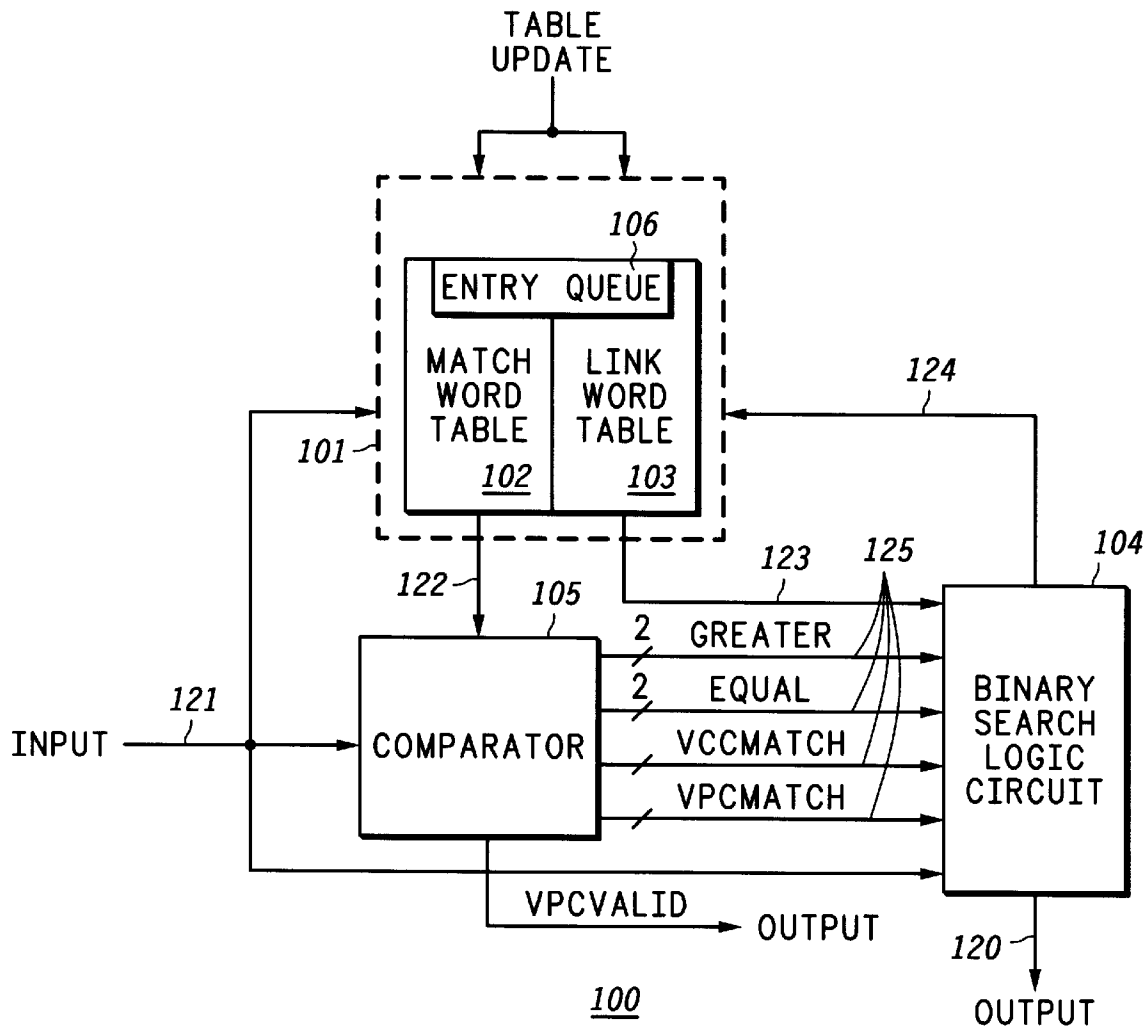


FIG. 1

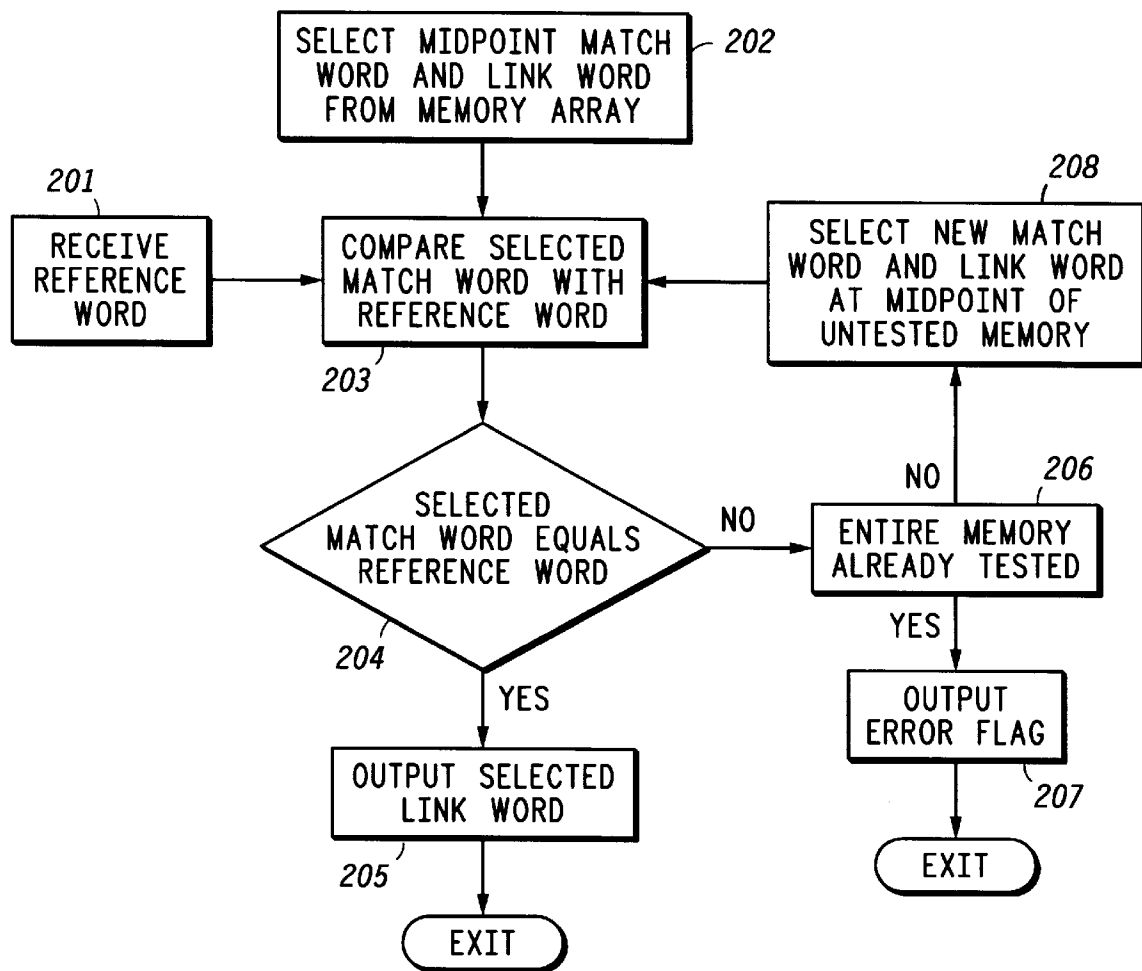
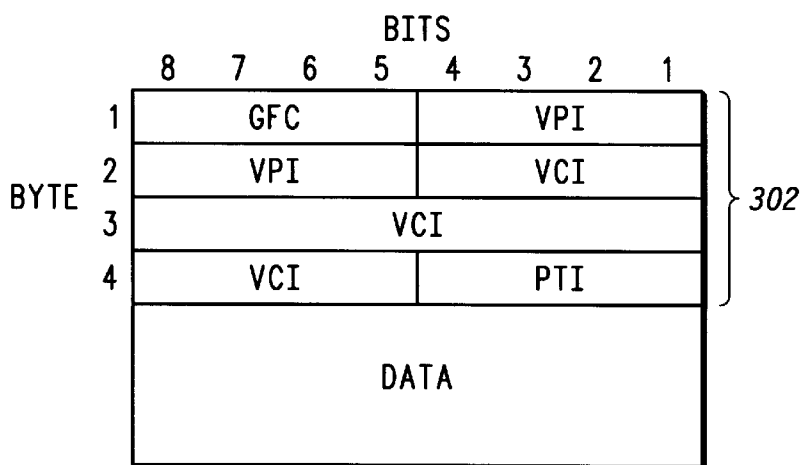
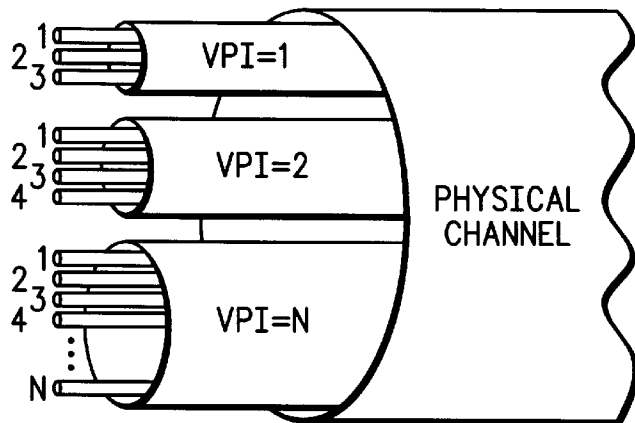


FIG. 2



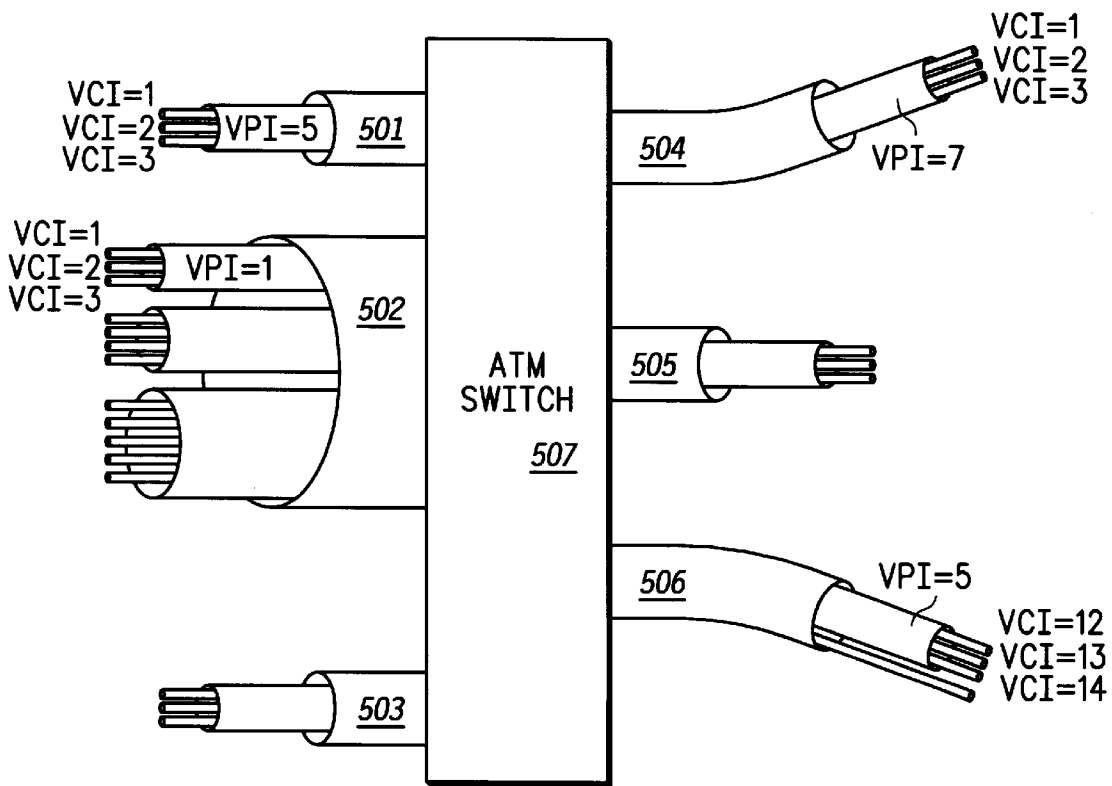
300

FIG. 3



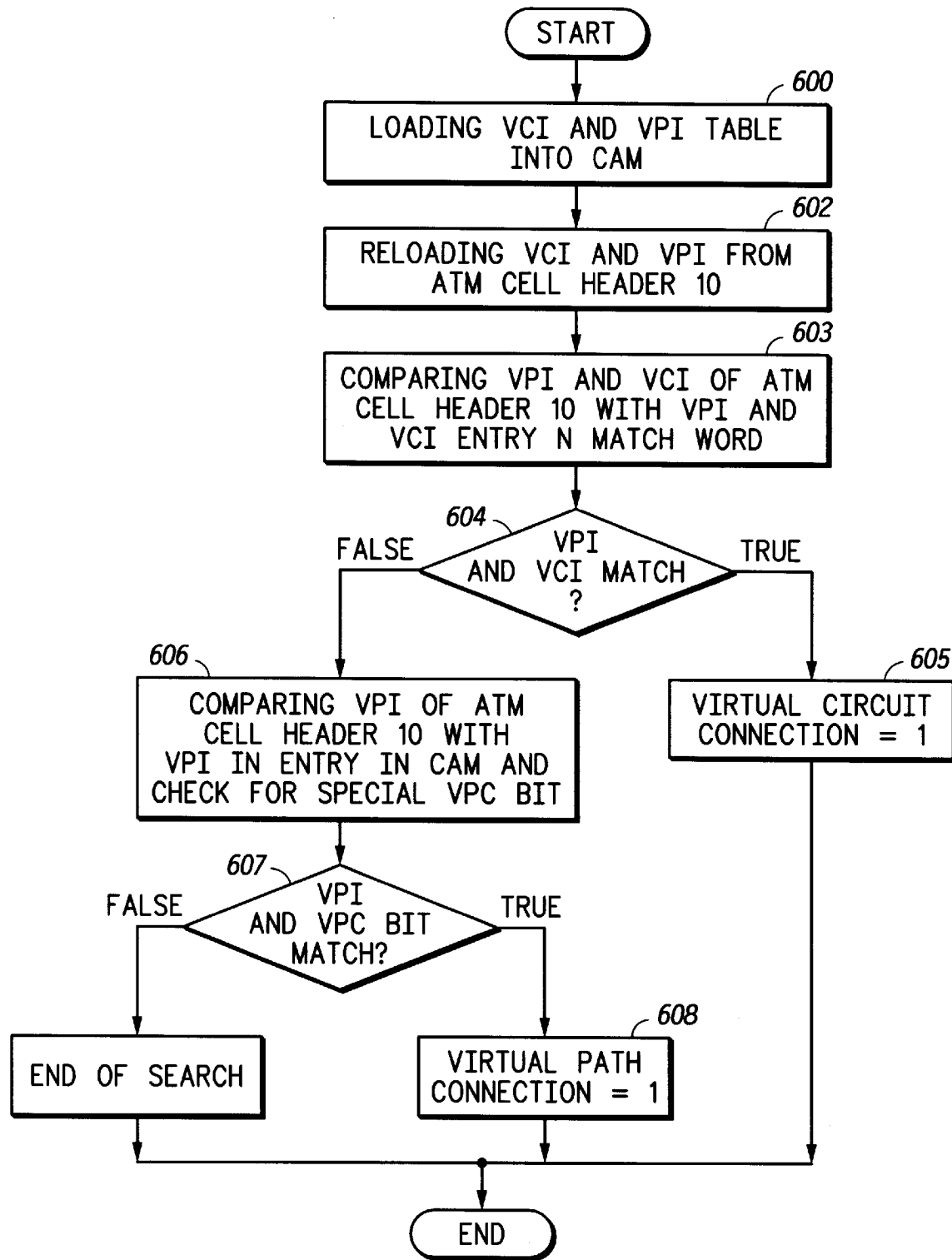
400

FIG. 4



500

FIG. 5



600

FIG. 6

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