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Natchu

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(54) **MECHANISM FOR IDENTIFYING AND PENALIZING MISBEHAVING FLOWS IN A NETWORK**

(75) Inventor: **Vishnu Natchu**, Santa Clara, CA (US)

(73) Assignee: **Sable Networks, Inc.**, Santa Clara, CA (US)

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(51) **Int. Cl.**

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G06F 11/00 (2006.01)
G08C 15/00 (2006.01)
H04J 1/16 (2006.01)
H04J 3/14 (2006.01)
H04L 1/00 (2006.01)
H04L 12/26 (2006.01)

(52) **U.S. Cl.** **370/229**

(58) **Field of Classification Search** 370/229-236
See application file for complete search history.

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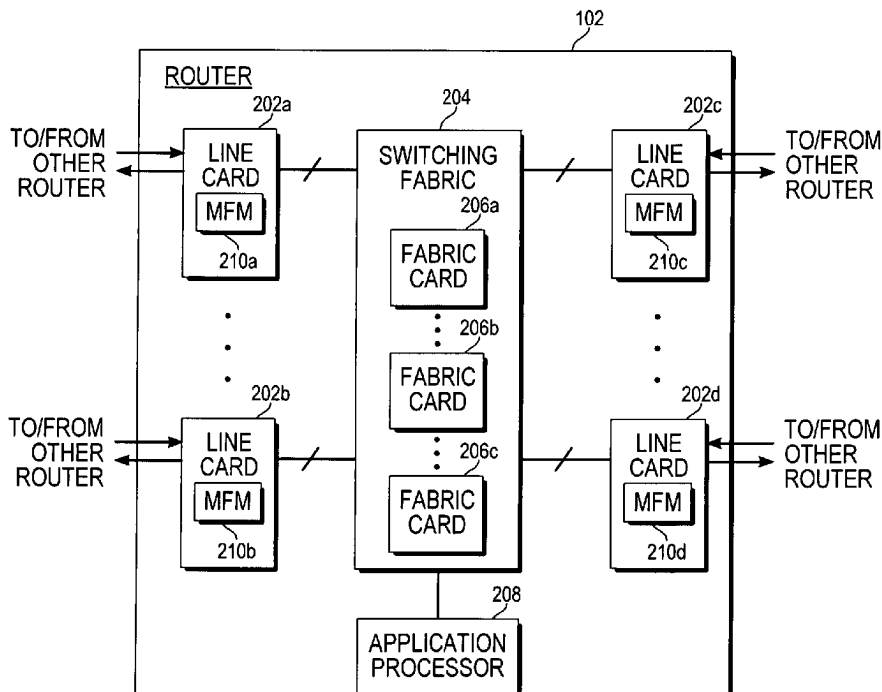
Primary Examiner — Xavier Szewai Wong

(74) *Attorney, Agent, or Firm* — West & Associates, A PC; Stuart J. West; Shaun N. Sluman

(57) **ABSTRACT**

A mechanism is disclosed for identifying and penalizing misbehaving flows in a network. In one implementation, a set of behavioral statistics are maintained for each flow. These behavioral statistics are updated as information packets belonging to a flow are processed. Based upon these behavioral statistics, a determination is made as to whether a flow is exhibiting undesirable behavior. If so, a penalty is imposed on the flow. In one implementation, this penalty causes packets belonging to the flow to have a higher probability of being dropped than packets belonging to other flows that do not exhibit undesirable behavior. In one implementation, in addition to penalizing the flow, this penalty also has the effect of correcting the flow's behavior such that the flow exhibits less undesirable behavior after the penalty than before. By correcting the flow's behavior, the penalty makes it possible for the flow to become a non-misbehaving flow.

44 Claims, 5 Drawing Sheets



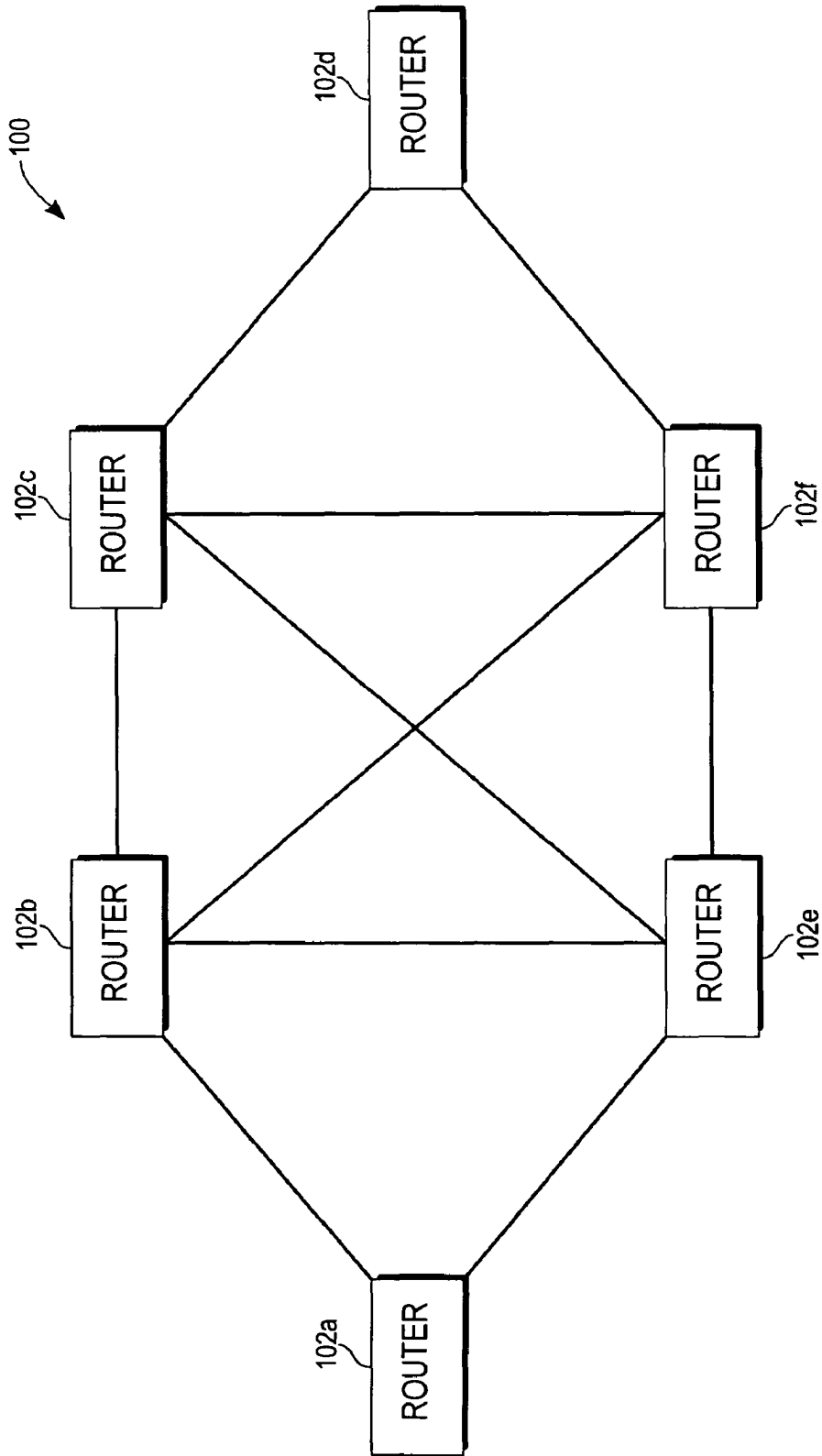


Fig. 1

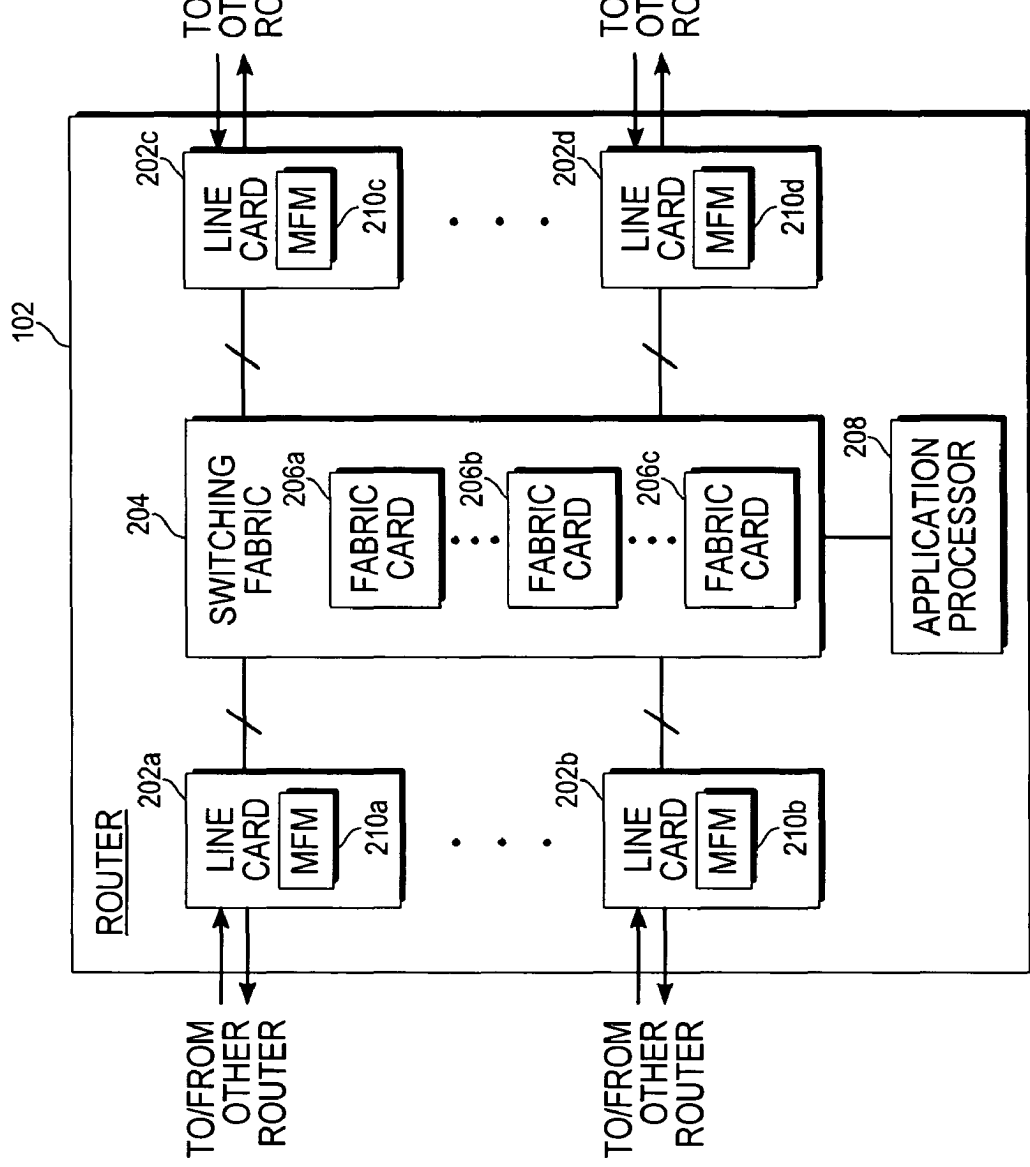


Fig. 2

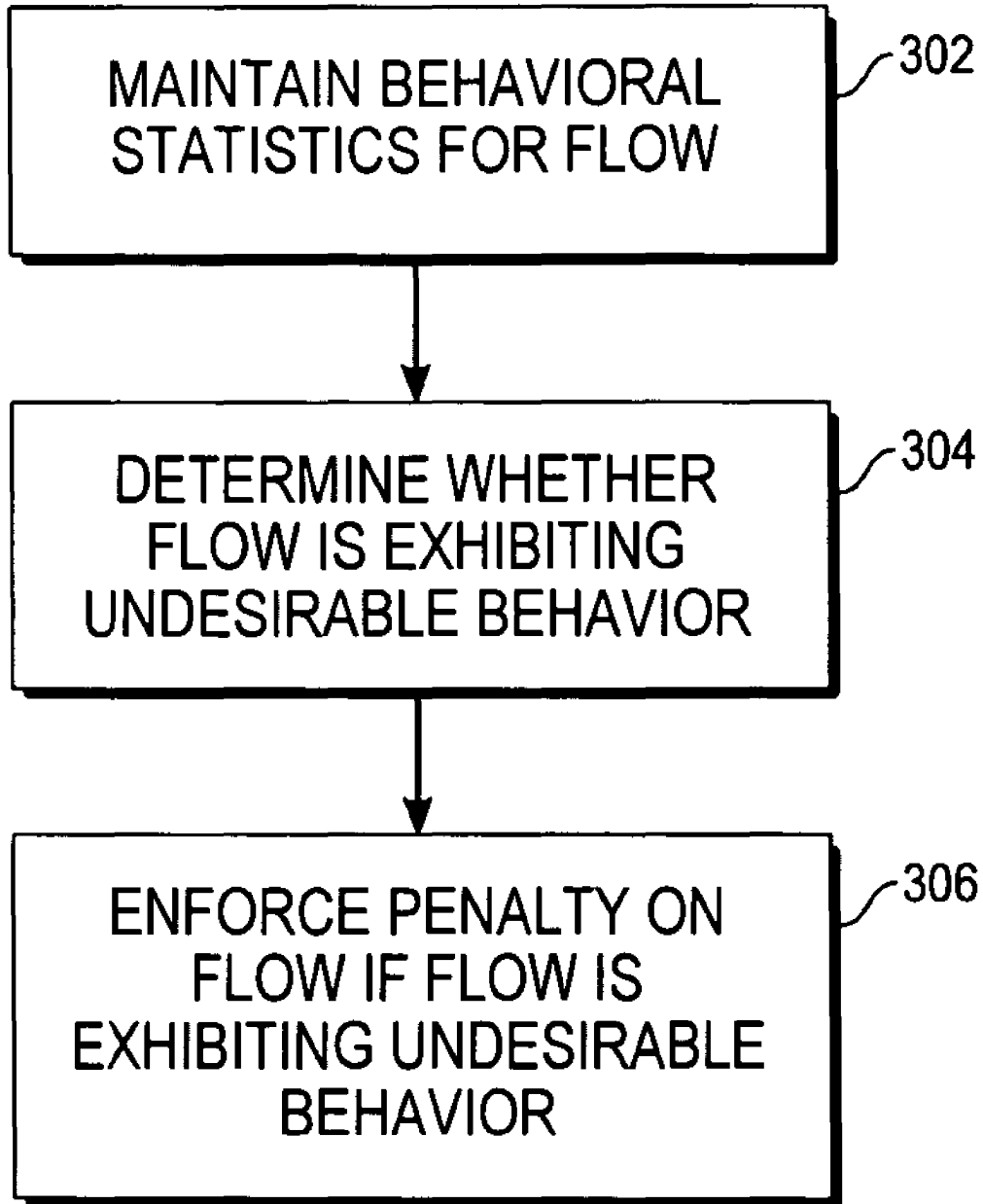


Fig. 3

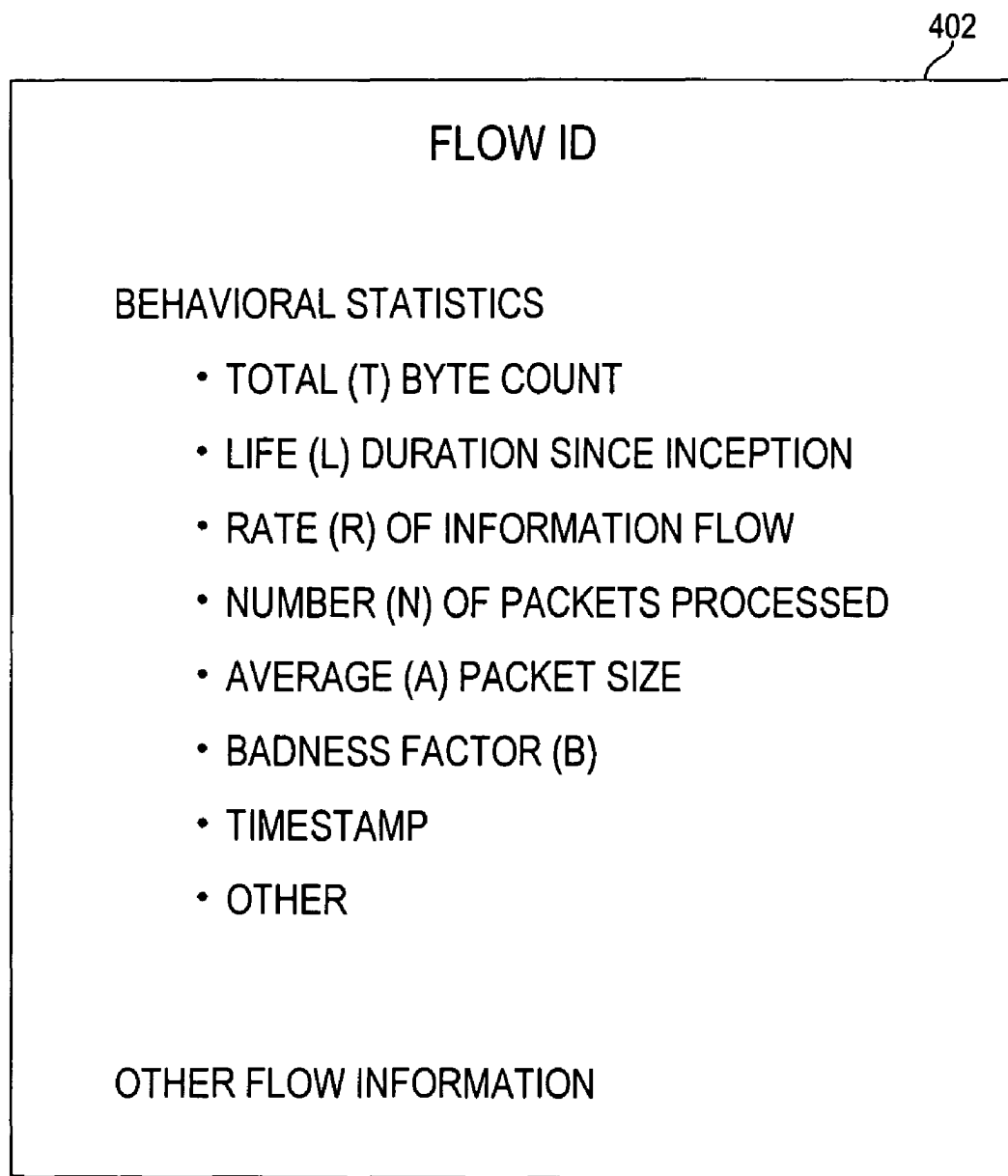


Fig. 4

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