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Yung et al.

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(54) **HEURISTIC BEHAVIOR PATTERN MATCHING OF DATA FLOWS IN ENHANCED NETWORK TRAFFIC CLASSIFICATION**

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H04L 12/26 (2006.01)

(52) **U.S. Cl.** **370/253**; 370/235; 370/252; 709/224

(58) **Field of Classification Search** 370/223, 370/224, 229, 230, 231, 236.1, 238, 235, 370/253, 252; 709/224, 226, 233, 235, 246
See application file for complete search history.

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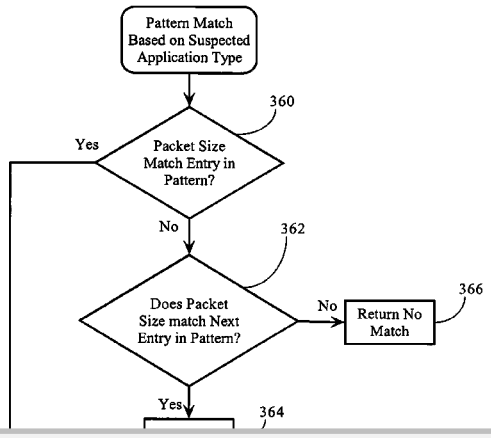
(57) **ABSTRACT**

Methods, apparatuses and systems facilitating enhanced classification of network traffic that extends beyond analysis of explicitly presented packet attributes and holistically analyzes data flows, and in some implementations, related data flows against known application behavior patterns to classify the data flows. Implementations of the present invention facilitate the classification of encrypted or compressed network traffic, or where the higher layer information in the data flows are formatted according to a non-public or proprietary protocol.

31 Claims, 11 Drawing Sheets



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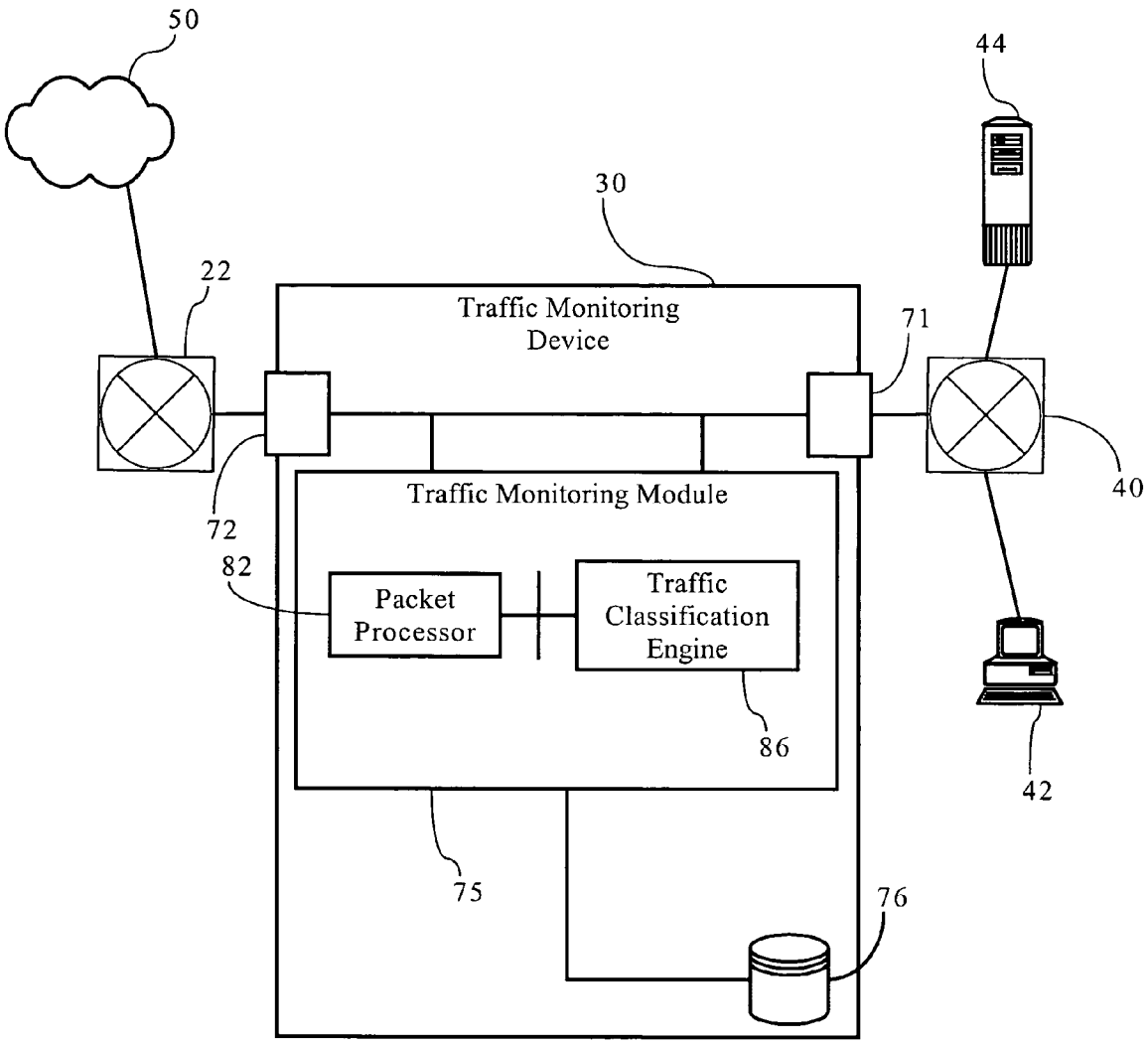

Fig._1

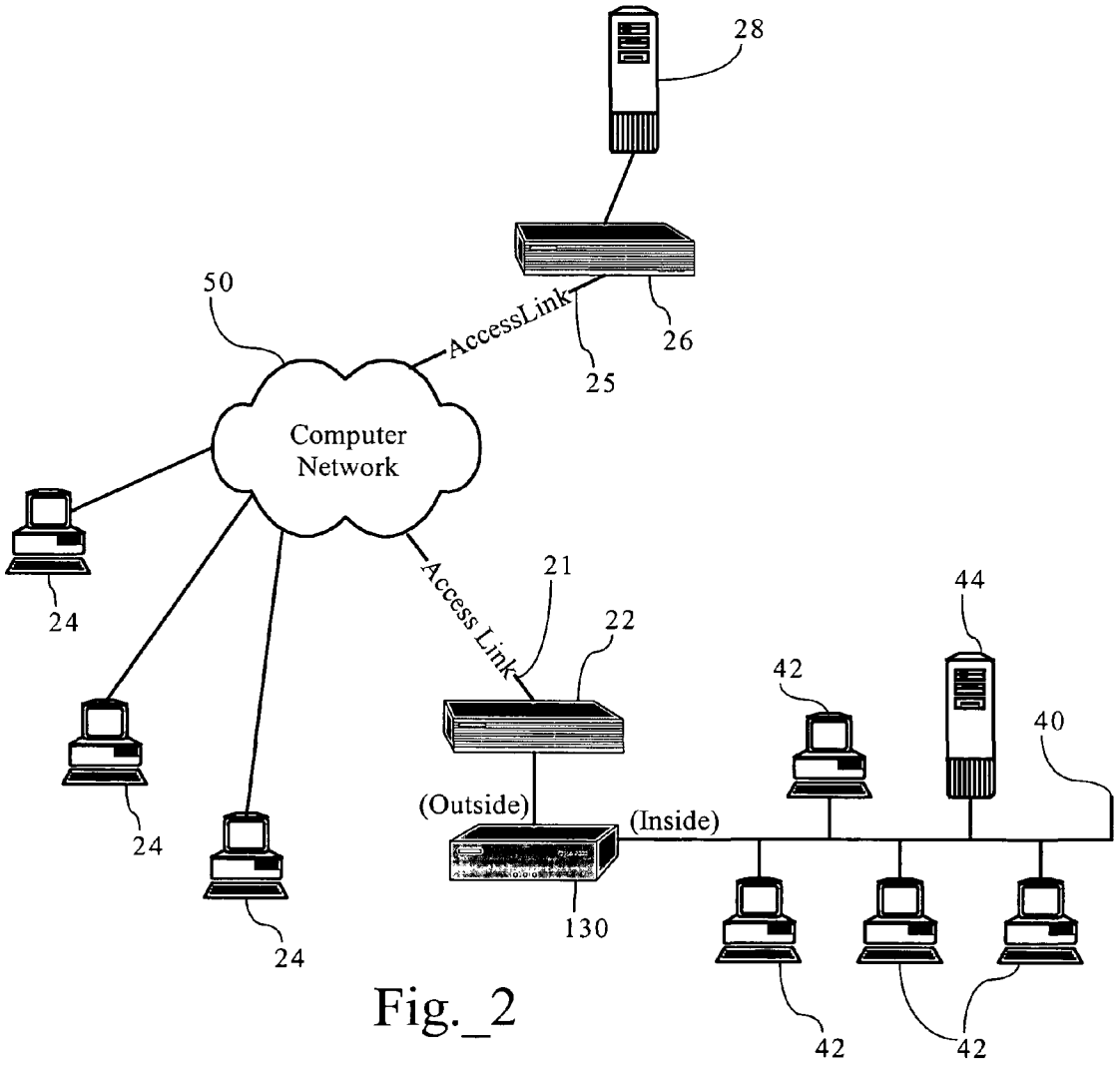

Fig._2

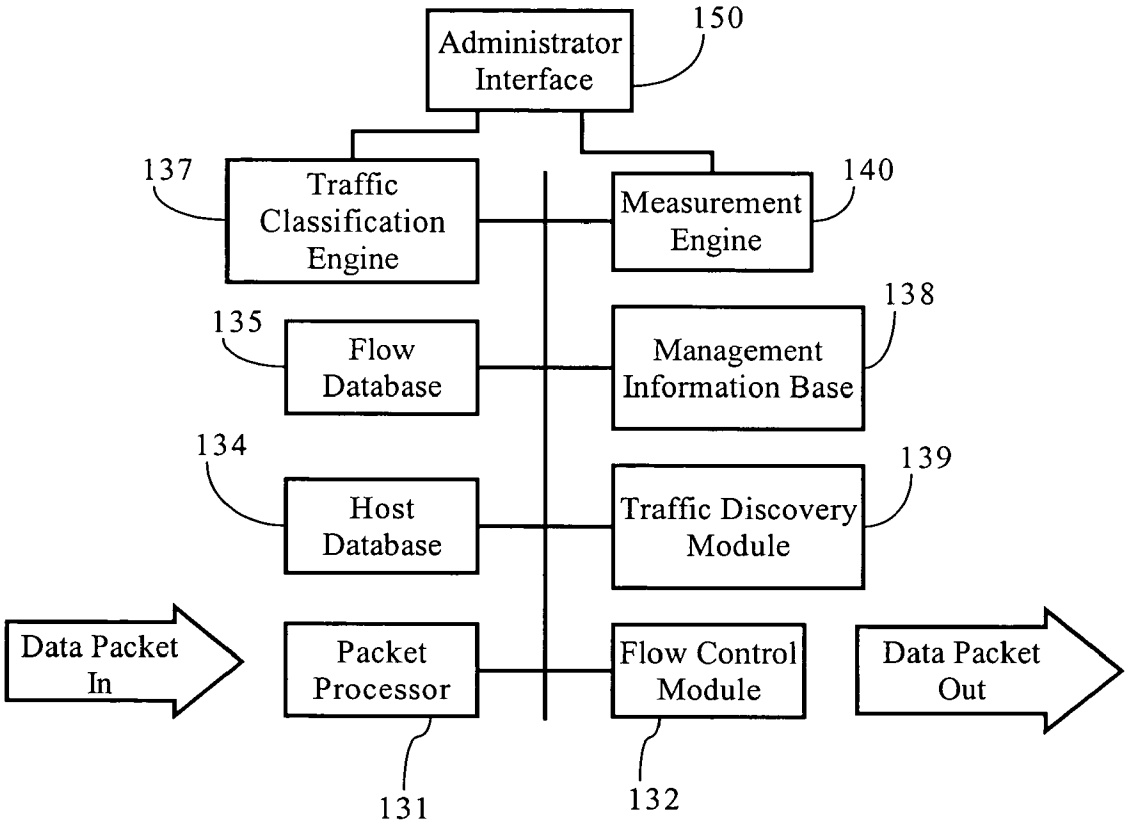

Fig._3

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