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(54) **METHOD FOR AUTOMATICALLY CLASSIFYING TRAFFIC IN A PACKET COMMUNICATIONS NETWORK**

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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 0 days.

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Related U.S. Application Data

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(51) Int. Cl.^{7} **G06F 15/173**
(52) **U.S. Cl.** **709/224**; 709/223; 709/230; 709/238; 709/242; 370/230; 370/235; 370/252; 370/355; 370/356
(58) **Field of Search** 709/223–226, 709/230, 235–236, 238–239, 242, 246; 370/229–230, 235, 252–253, 355–356, 401, 466–469

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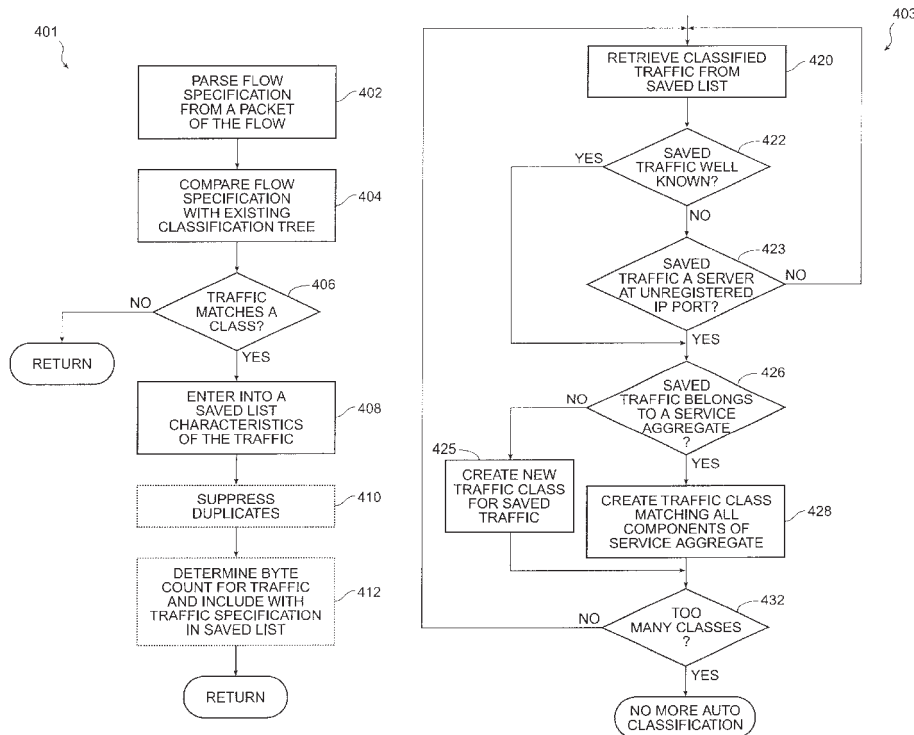|				
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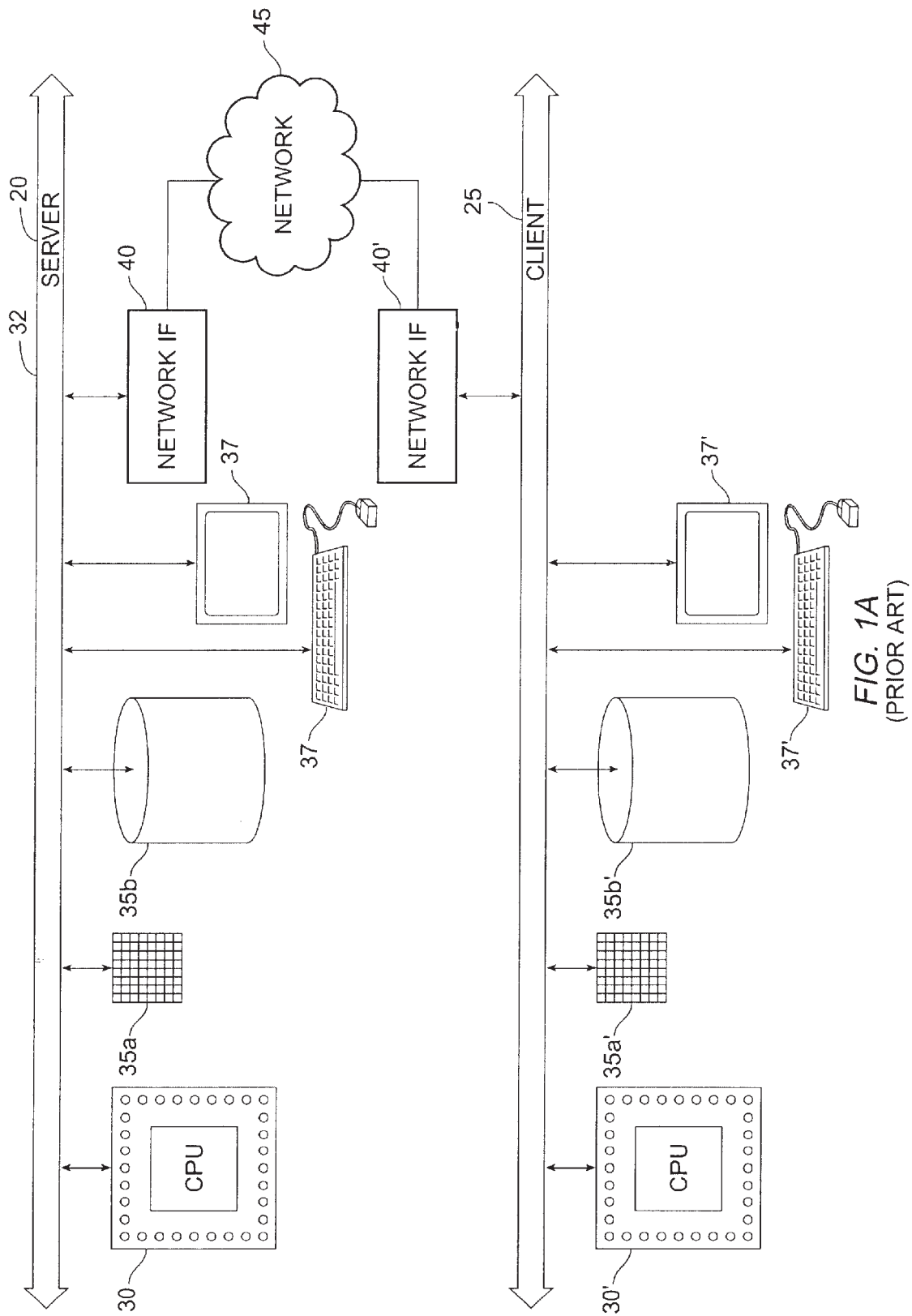Primary Examiner—Zarni Maung
Assistant Examiner—Bharat Barot
(74) Attorney, Agent, or Firm—Townsend and Townsend and Crew LLP; Kenneth R. Allen

(57) **ABSTRACT**

In a packet communication environment, a method is provided for automatically classifying packet flows for use in allocating bandwidth resources by a rule of assignment of a service level. The method comprises applying individual instances of traffic classification paradigms to packet network flows based on selectable information obtained from a plurality of layers of a multi-layered communication protocol in order to define a characteristic class, then mapping the flow to the defined traffic class. It is useful to note that the automatic classification is sufficiently robust to classify a complete enumeration of the possible traffic.
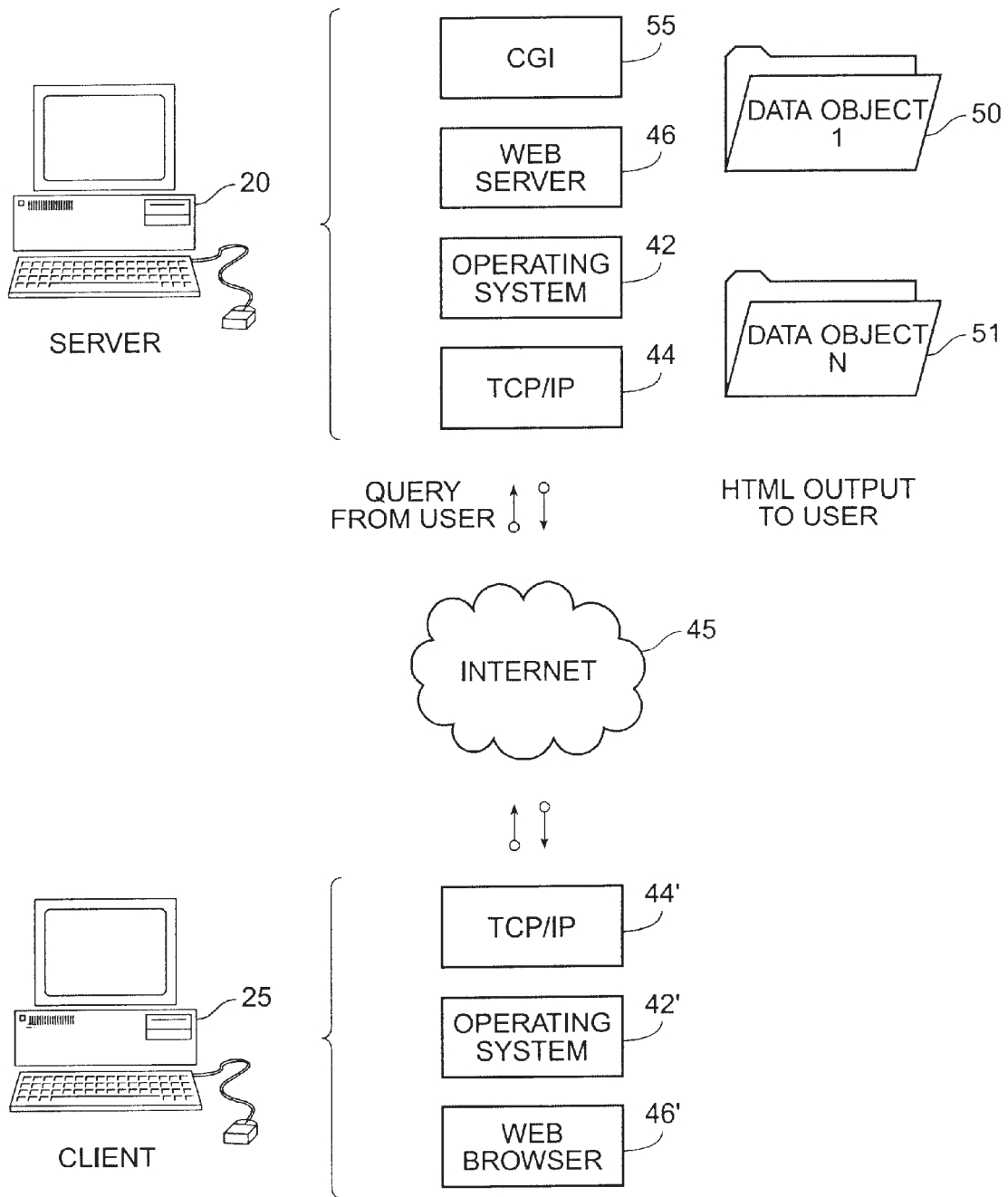
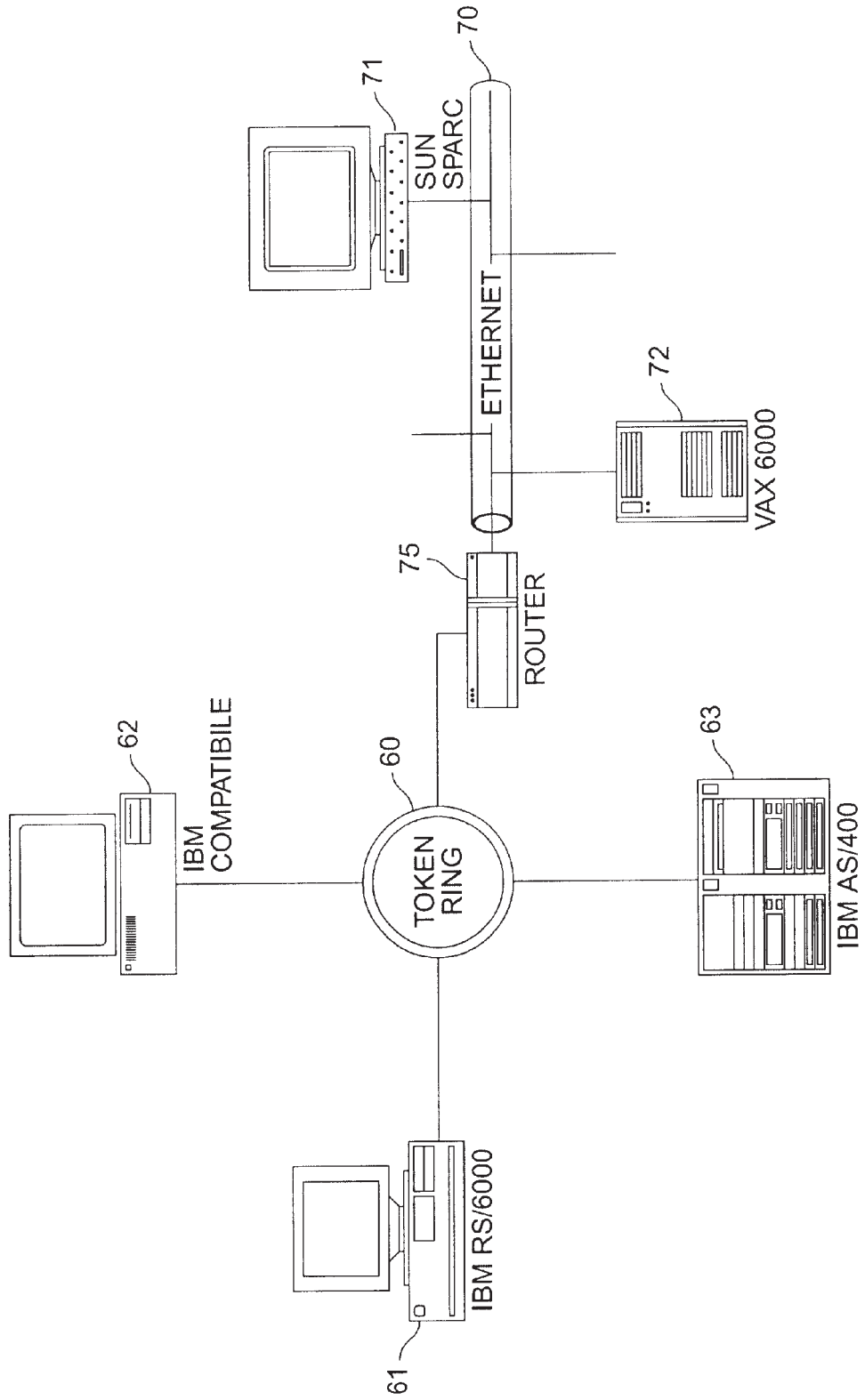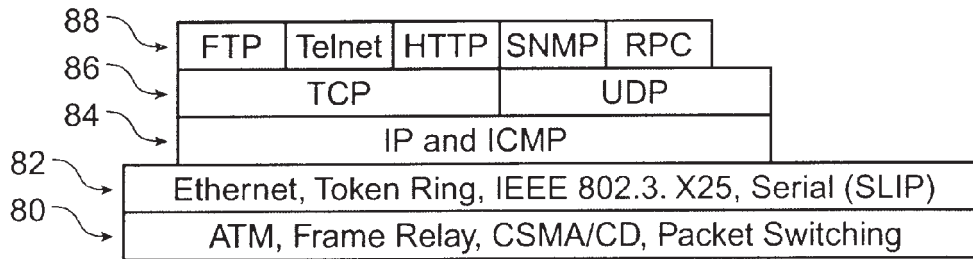**15 Claims, 7 Drawing Sheets**

FIG. 1A
(PRIOR ART)

FIG. 1B
(PRIOR ART)

FIG. 1C
(PRIOR ART)

88	FTP	Telnet	HTTP	SNMP	RPC
86	TCP			UDP	
84	IP and ICMP				
82	Ethernet, Token Ring, IEEE 802.3. X25, Serial (SLIP)				
80	ATM, Frame Relay, CSMA/CD, Packet Switching				

LEGEND
88   Session/Application Layer
86   Transport Layer
84   Network Layer
82   Data Link Layer
80   Physical Layer

FIG. 1D
(PRIOR ART)

FIG. 2A

DOCKET ALARM
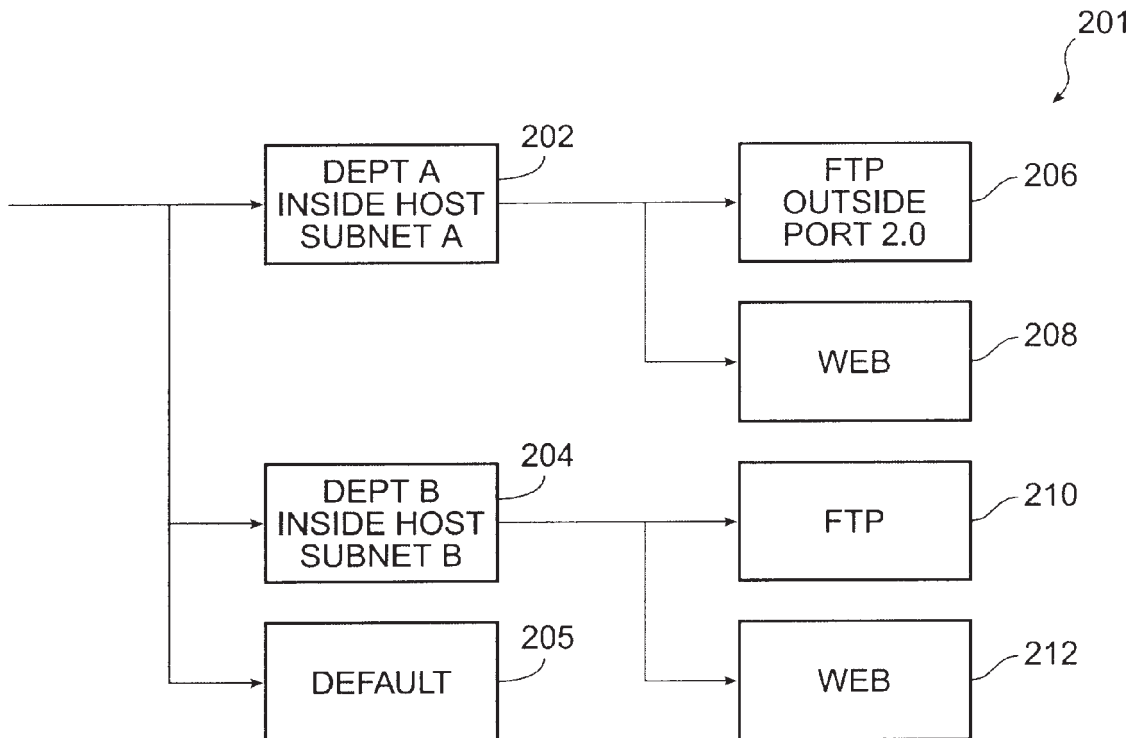
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