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Cheesman et al.

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(54) **TELECOMMUNICATIONS SWITCHES AND METHODS FOR THEIR OPERATION**

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(58) **Field of Search** 370/352, 389, 370/395.21, 395.4–395.43, 395.52, 392, 412–414, 229–230, 474–475, 466–468, 397–399, 395.72, 415–418, 428–429

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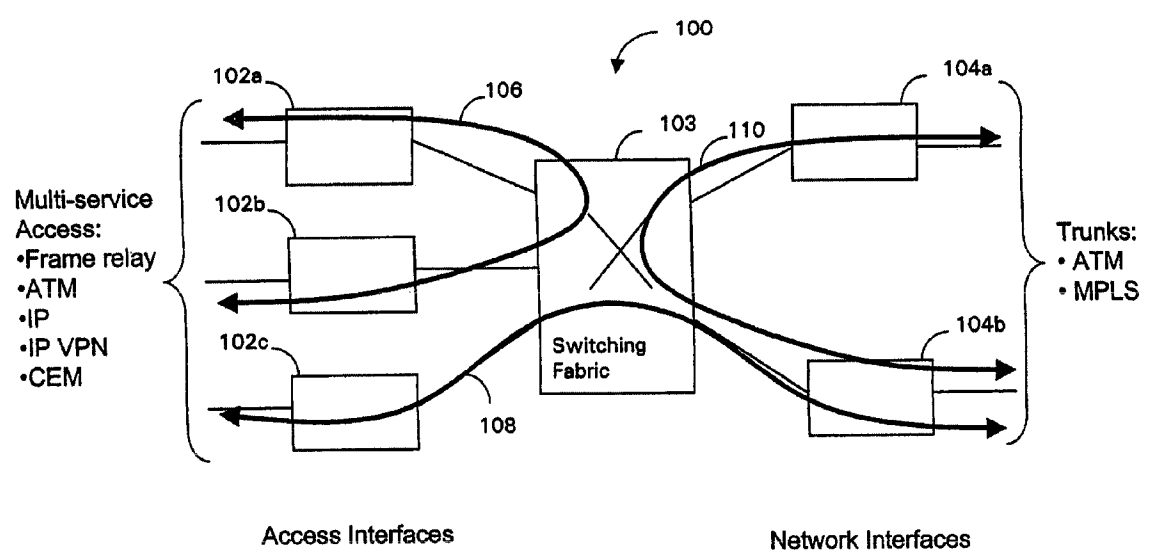(74) *Attorney, Agent, or Firm*—Jean-Pierre Fortin

(57) **ABSTRACT**

A telecommunications switch for switching protocol data units across communications links connecting the switch into a communications network and supporting multiple service types concurrently is disclosed. The switch includes an ingress processor for receiving protocol data units from a communications link, an egress processor for transmitting protocol data units onto another communications link, and a switching fabric for routing protocol data units from the ingress processor to the egress processor. The switch includes a structure of queues and schedulers that is arranged to provide concurrent class-based and flow-based queuing and scheduling of the protocol data units. This arrangement allows an amount of switching bandwidth to be guaranteed to protocol data units belonging to a given flow and allows classes of service within the flow to be allocated a relative proportion of that bandwidth. The structure is re-configurable in its interconnection of queues and schedulers via a link list in which pointers to the queues and schedulers are stored and updated as required.
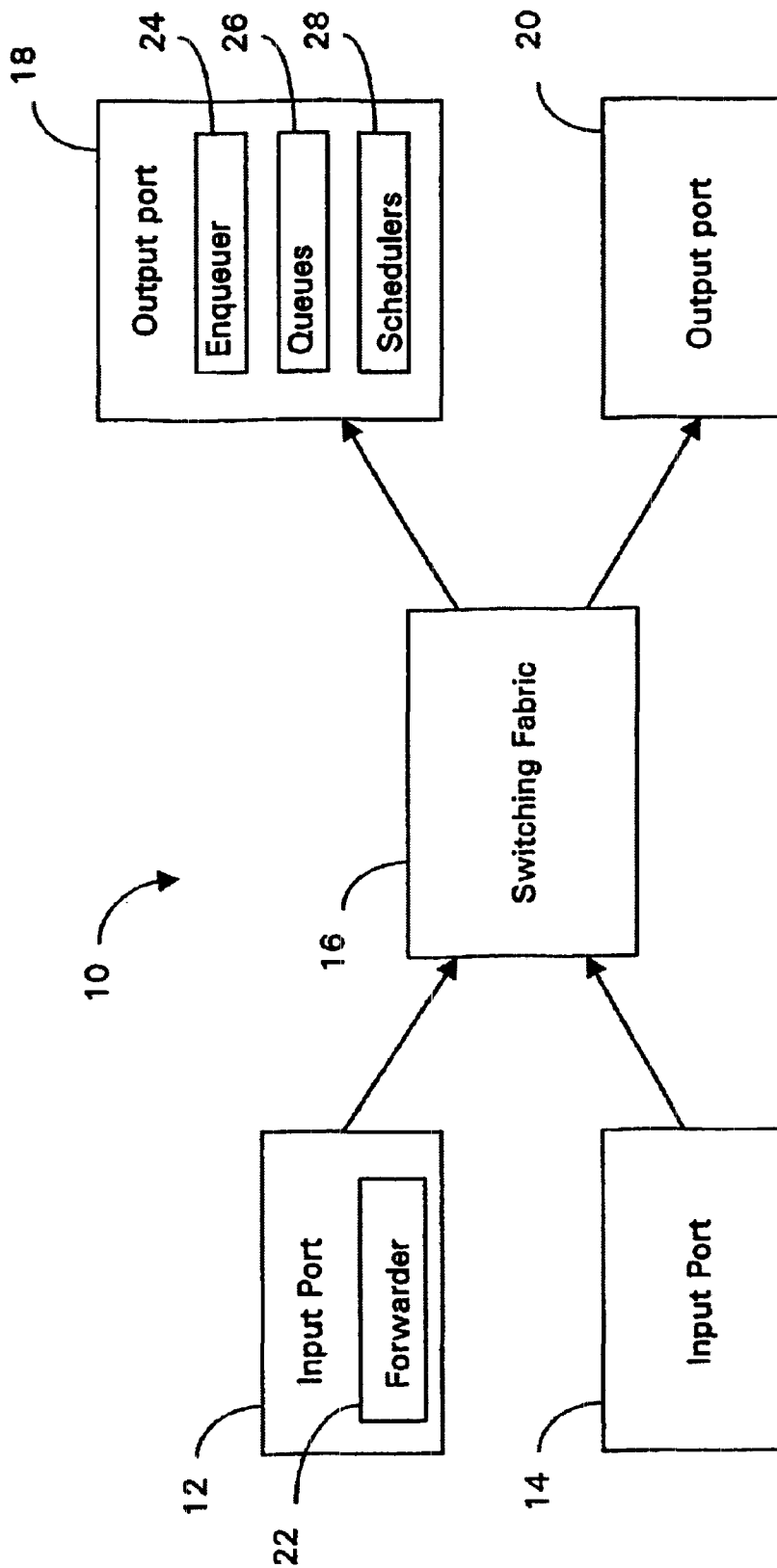
19 Claims, 8 Drawing Sheets

FIG. 1 Prior Art
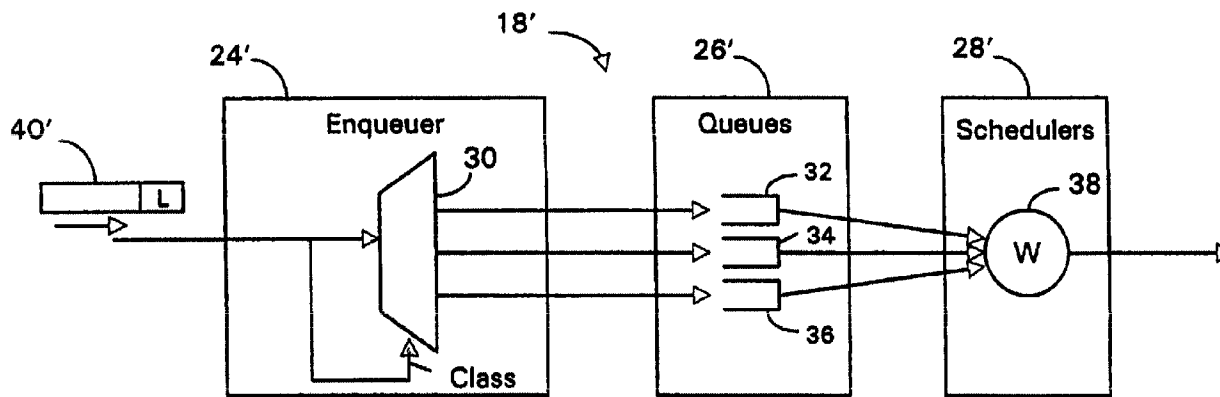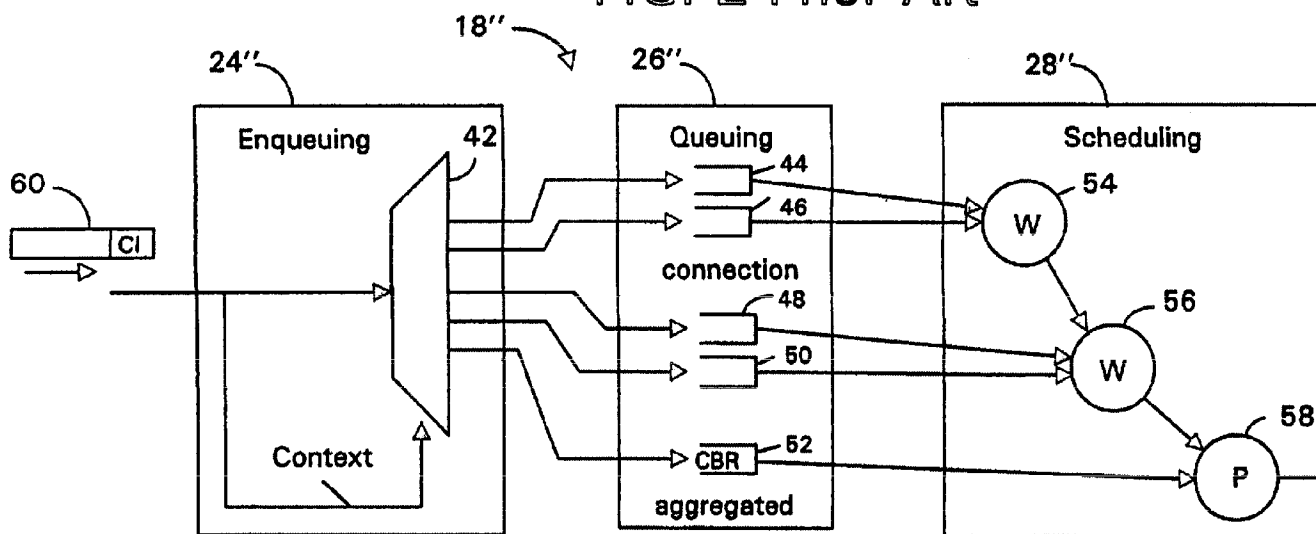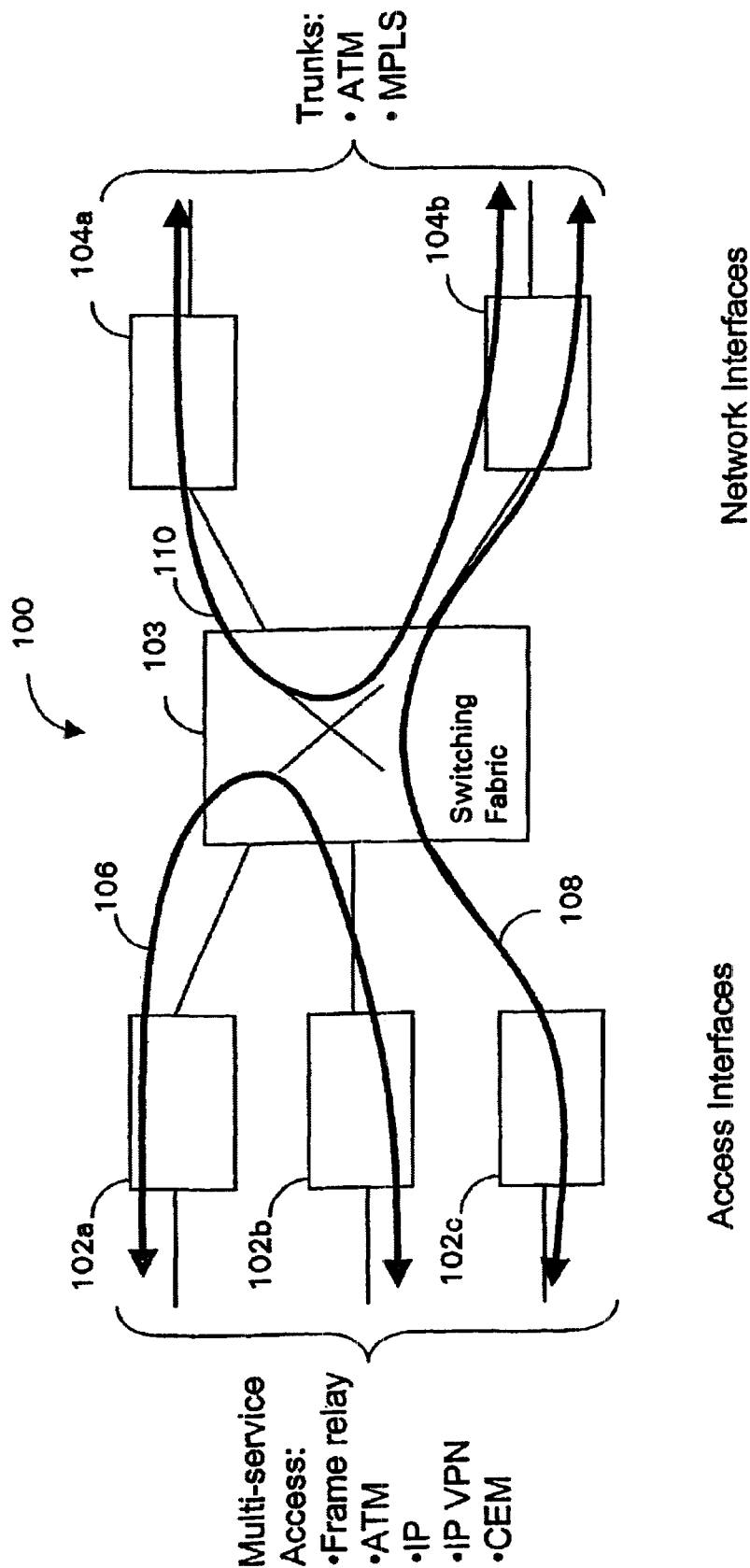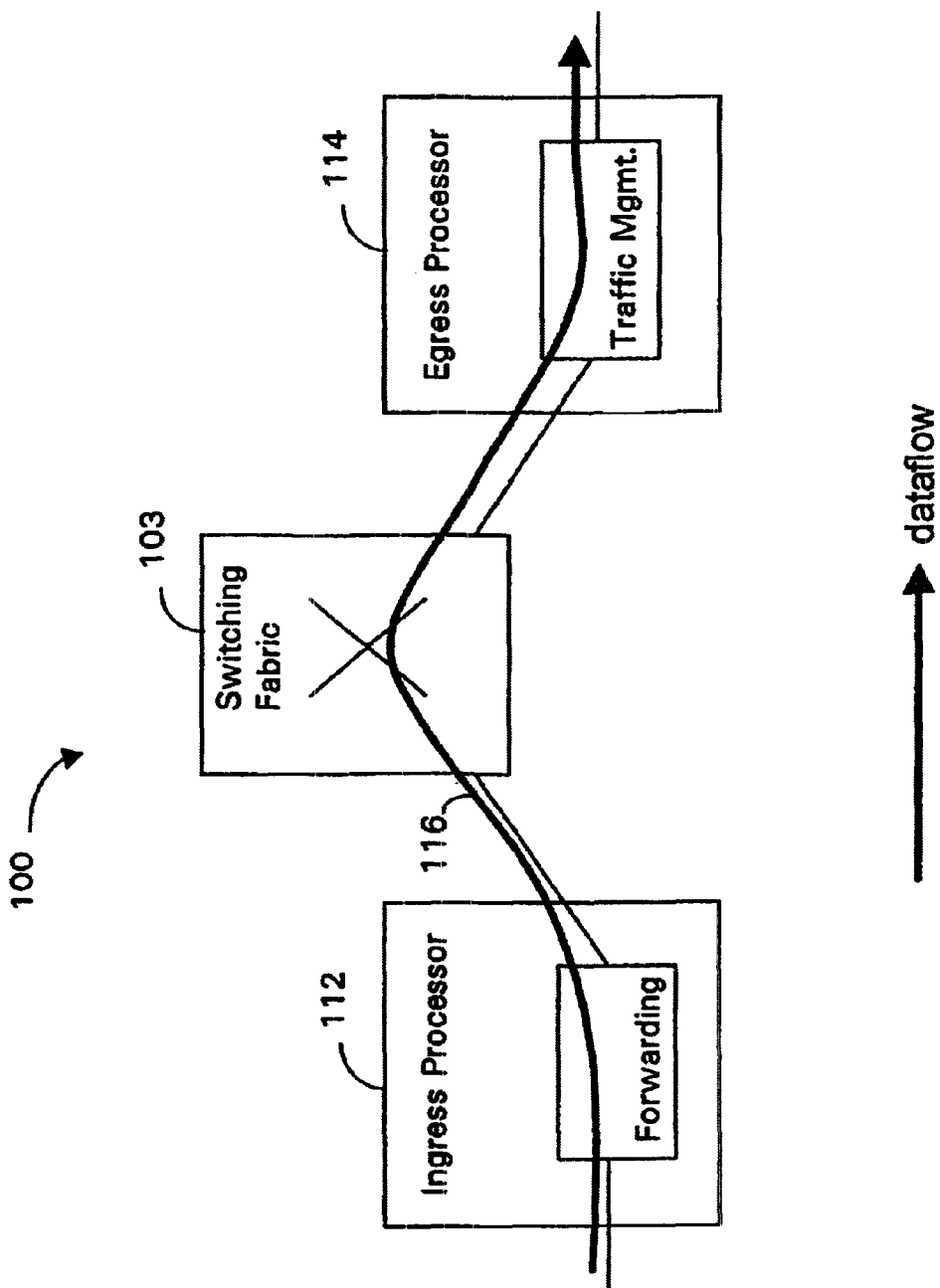
FIG. 2 Prior Art

FIG. 3 Prior Art

FIG. 4

FIG. 5

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