EXHIBIT 1006

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Karol et al.

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(54) **TECHNIQUE FOR INTERNETWORKING TRAFFIC ON CONNECTIONLESS AND CONNECTION-ORIENTED NETWORKS**

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(52) U.S. Cl. **370/237**; 370/466; 370/477; 370/401; 370/412; 370/352; 370/353; 370/354; 370/355; 370/356; 370/236; 370/230.1; 370/389; 370/395.1; 370/395.5; 370/395.65

(58) Field of Search 370/229, 230.1, 370/235, 236, 237, 238, 352–353, 354, 355, 356, 357, 359, 389, 392, 395.1, 395.5, 395.51, 395.52, 395.65, 395.7, 395.72, 400, 401, 410, 412, 419, 428, 429, 465, 466, 468, 477

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(57) **ABSTRACT**

Traffic on a connectionless (CL) network, such as IP packets, can be routed onto a connection a connection oriented (CO) network, such as an ATM telephony network, when it is advantageous to do so from a user or service provider viewpoint, without affecting the ability of users to continue to use existing applications. Routing is controlled by nodes called CL-CO gateways, with connectivity to both the CL network and the Co network. When CL traffic originating at a source reached these gateway nodes, a decision is made whether to continue carrying the information in the CL mode, or to redirect the traffic to a CO network. In accordance with one embodiment of the present invention, each CL-Co gateway includes hardware and software modules that typically comprise (a) interfaces to the Co network, (b) interfaces to the CL network (c) a moderately sized packet buffer for temporarily storing packets waiting for CO network setup or turnaround; (d) a database for storing forwarding, flow control header translation and other information, and (e) a processor containing logic for controlling the gateway packet handling operations.
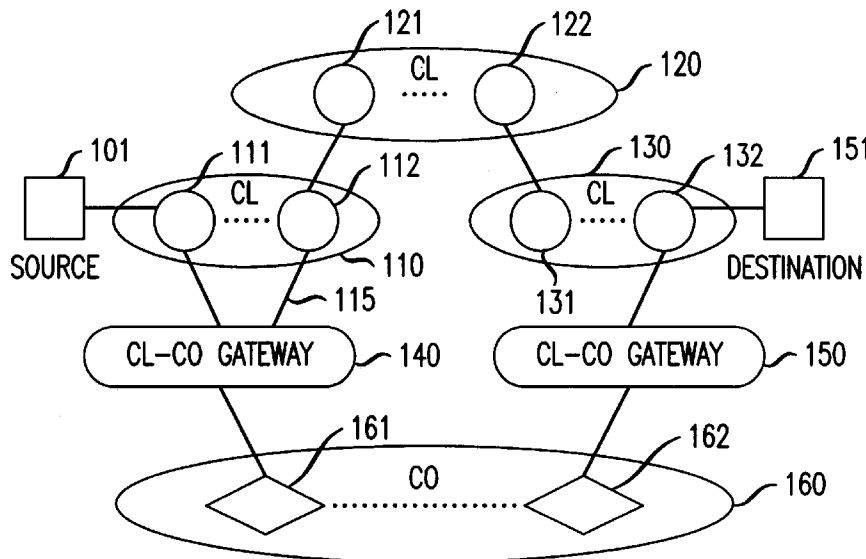
19 Claims, 9 Drawing Sheets

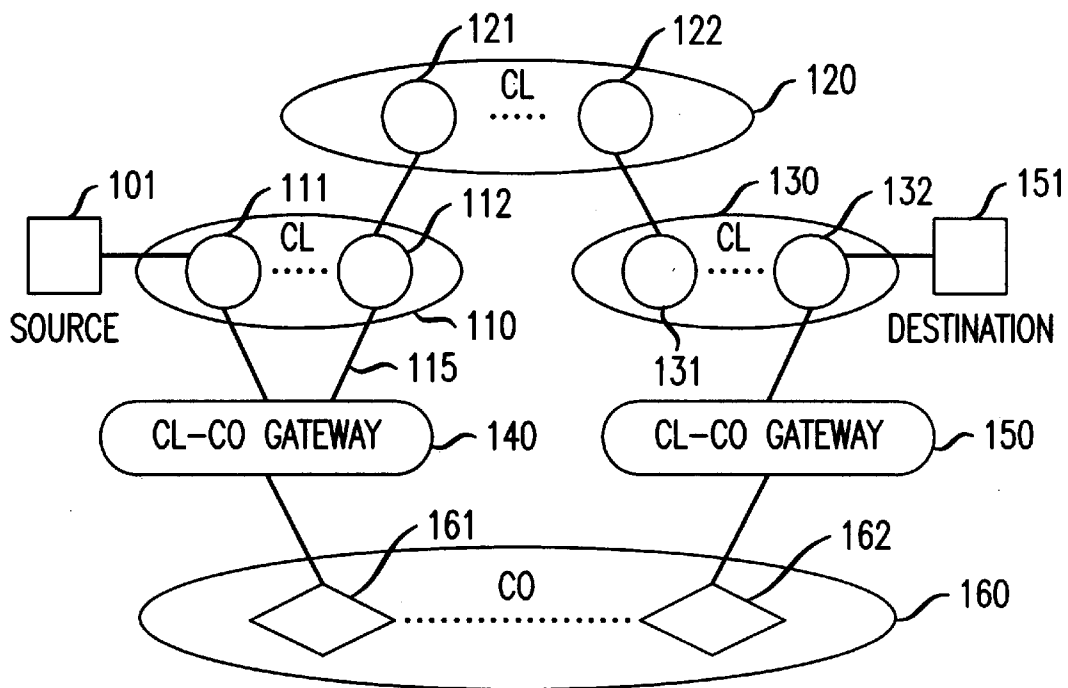## *FIG. 1*

FIG. 2

FIG. 3

WDM NETWORK 321
WDM OPTICAL ADMs/CROSSCONNECTS
322
322
322

STM NETWORK 311
STM SWITCHES (PDH/ SONET/SDH)
312
312
312

ATM NETWORK 301
ATM SWITCHES
302
302
302

CONNECTION-ORIENTED (CO)

IP NETWORK 308
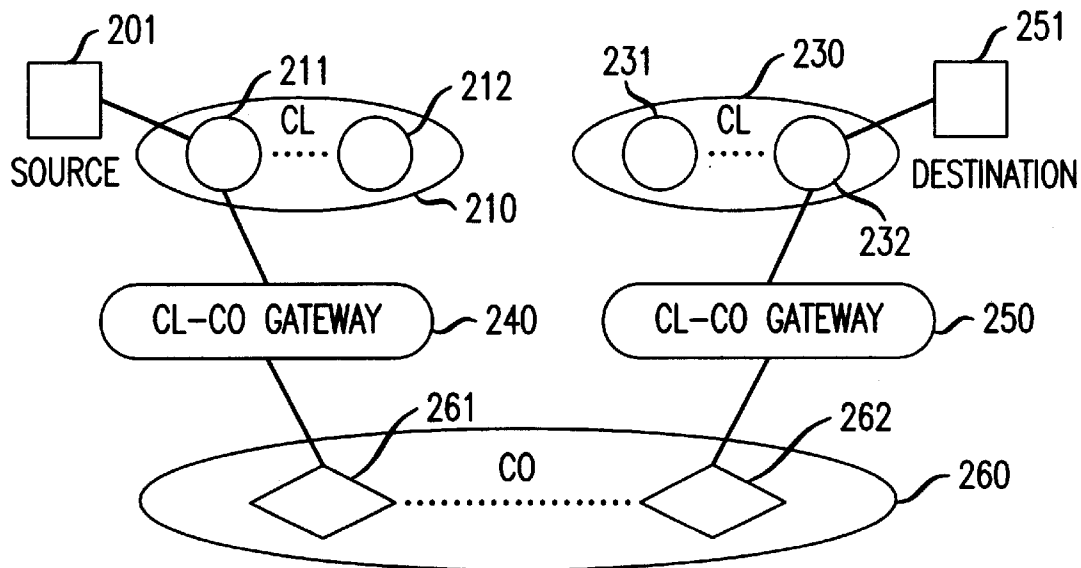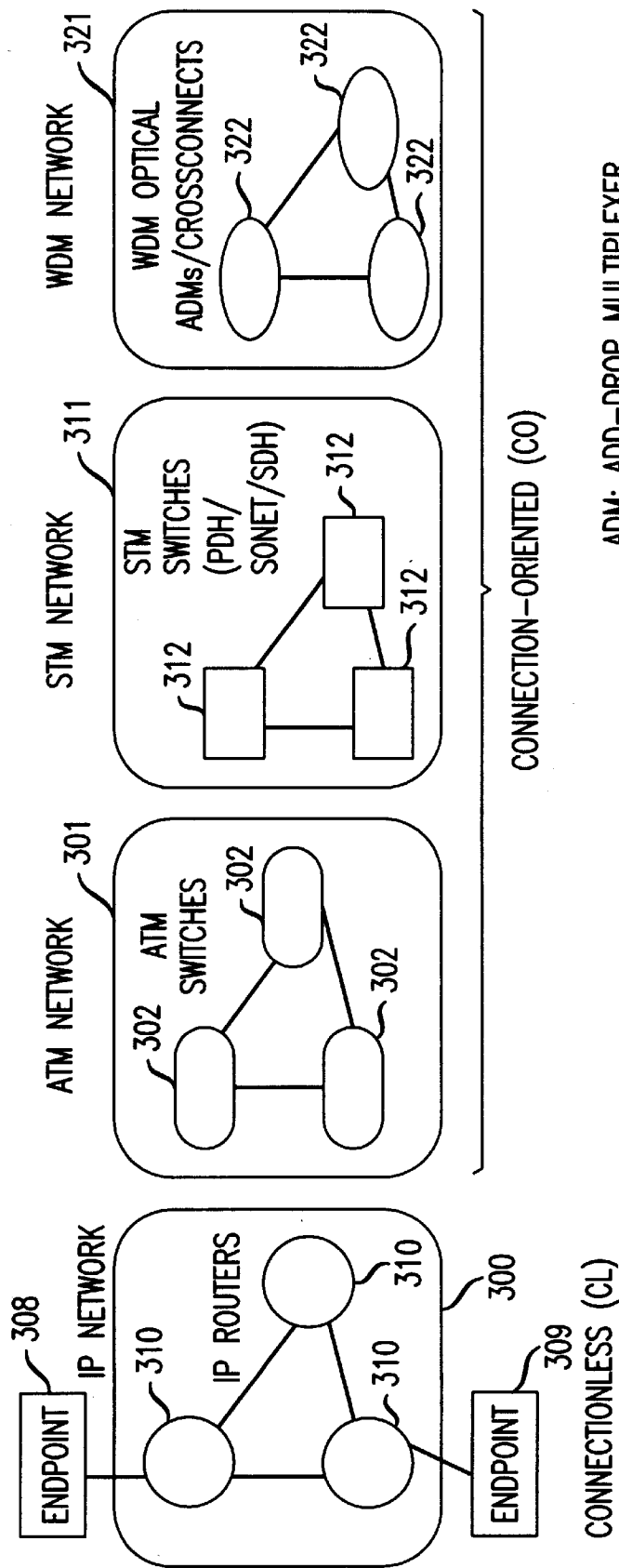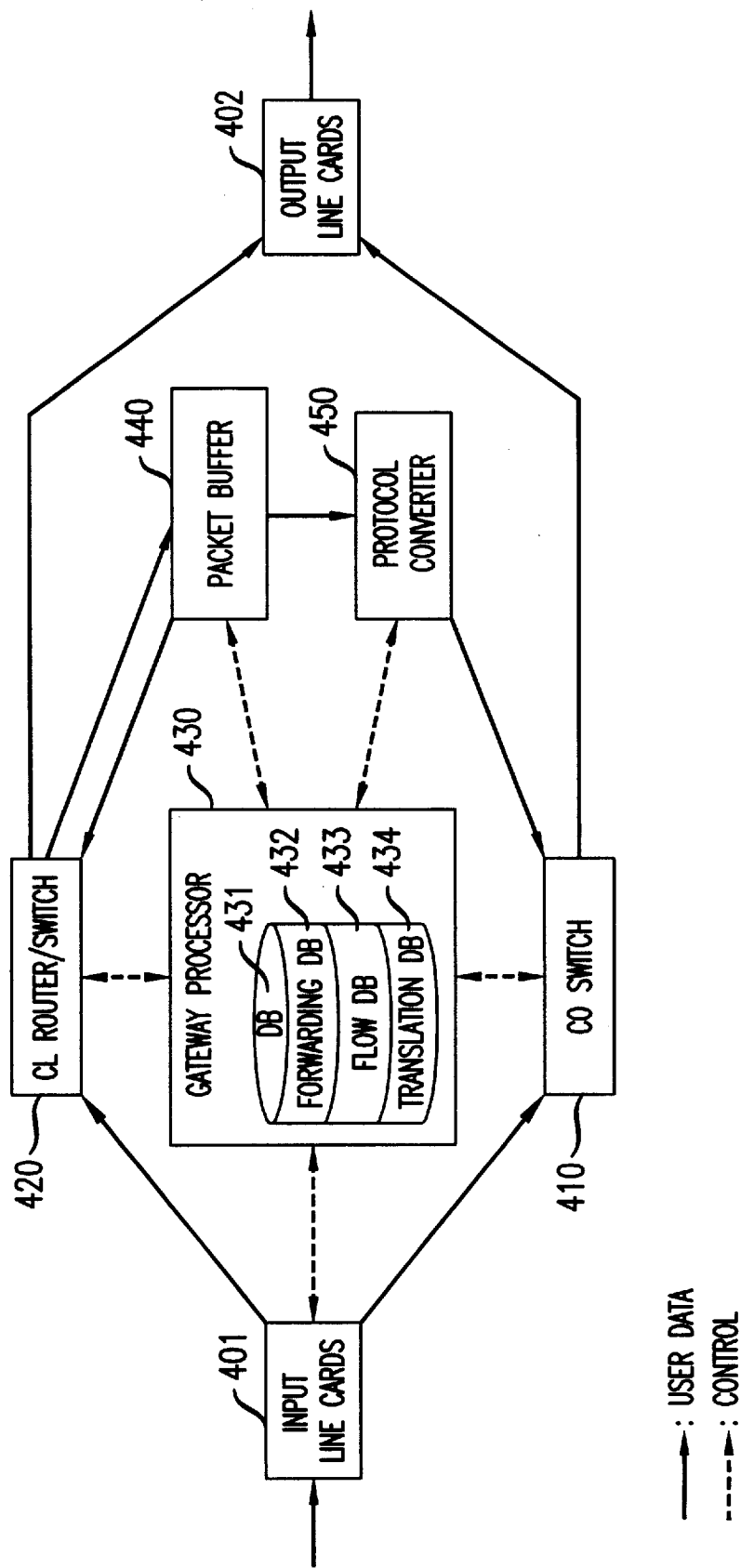IP ROUTERS
310
310
310
ENDPOINT
ENDPOINT 309
300
CONNECTIONLESS (CL)

ADM: ADD-DROP MULTIPLEXER
PDH: PLESIOCHRONOUS DIGITAL HIERARCHY
SDH: SYNCHRONOUS DIGITAL HIERARCHY
SONET: SYNCHRONOUS OPTICAL NETWORK
STM: SYNCHRONOUS TRANSFER MODE
WDM: WAVELENGTH DIVISION MULIPLEX

FIG. 4

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