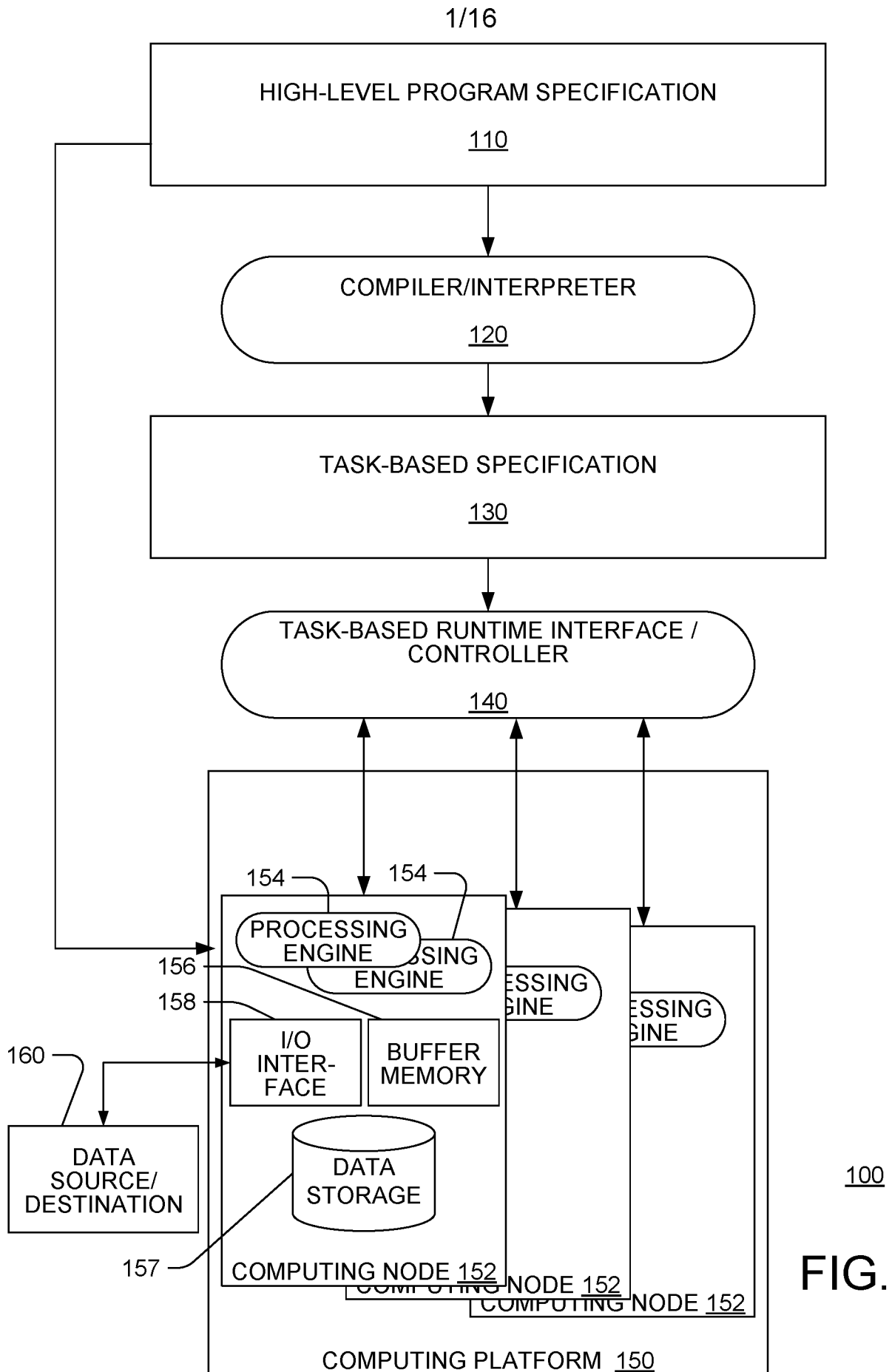
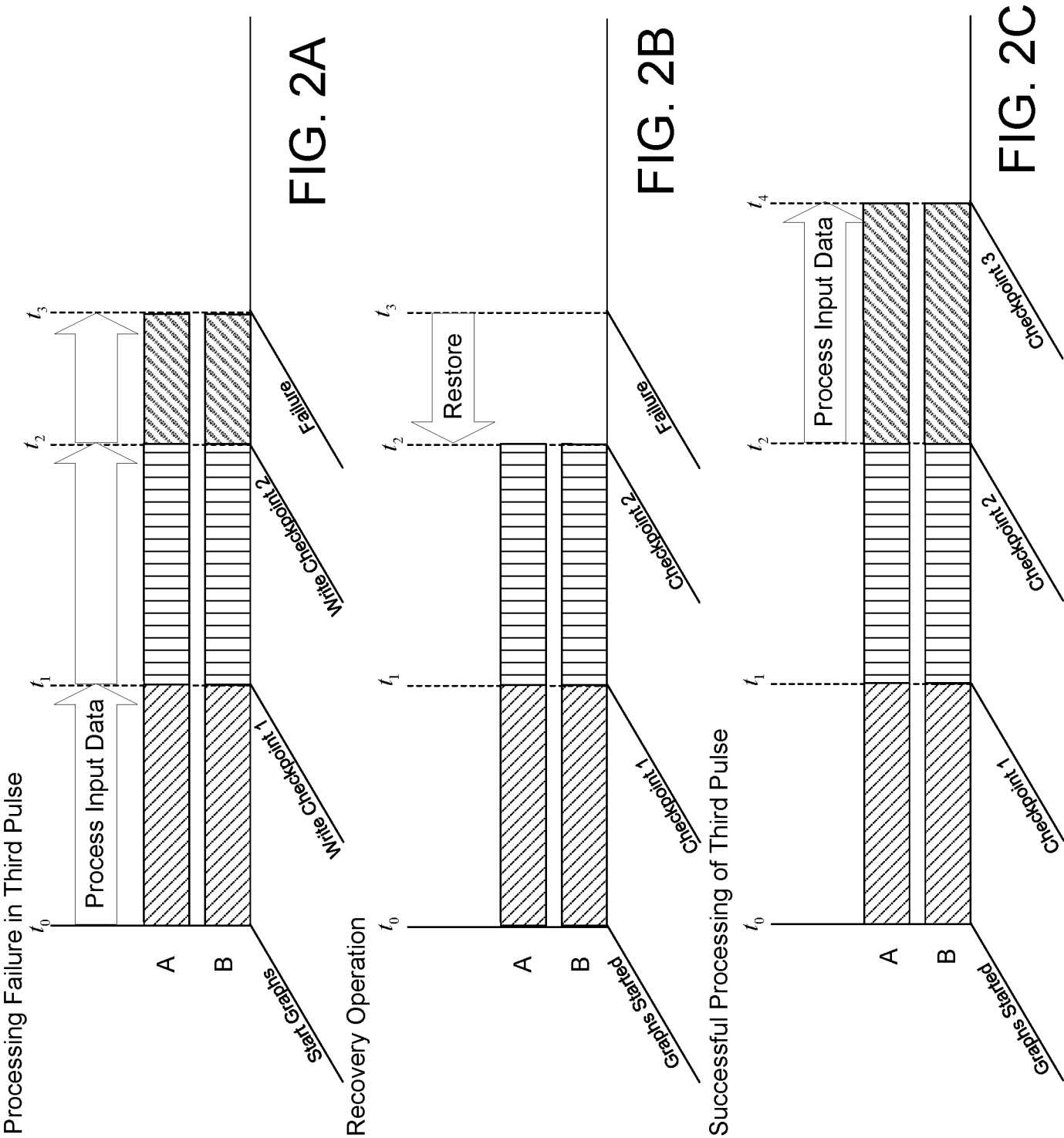






Pulsed Ingestion Processing with Checkpoints

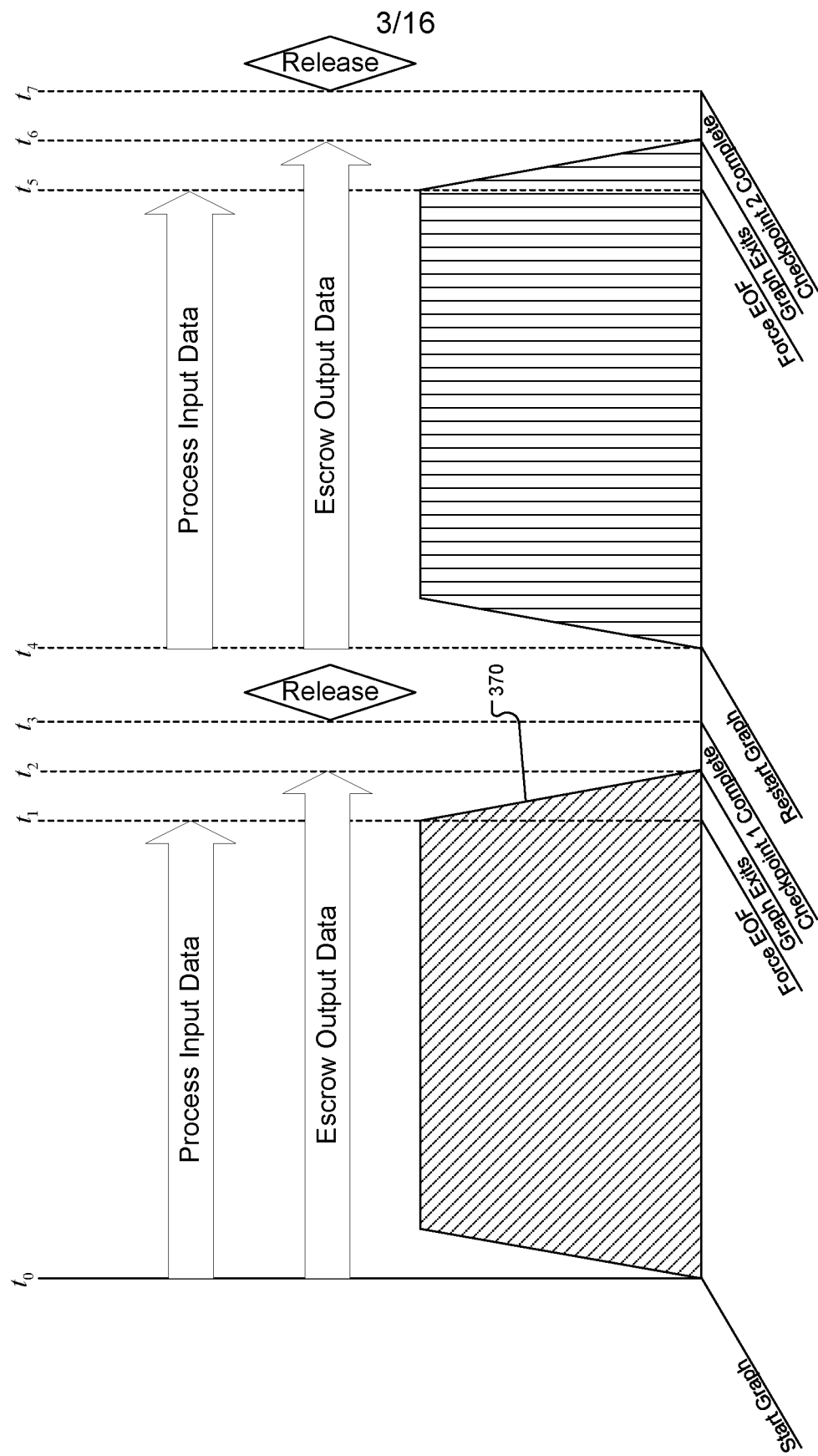


FIG. 3

Checkpoint Based Recovery Procedure

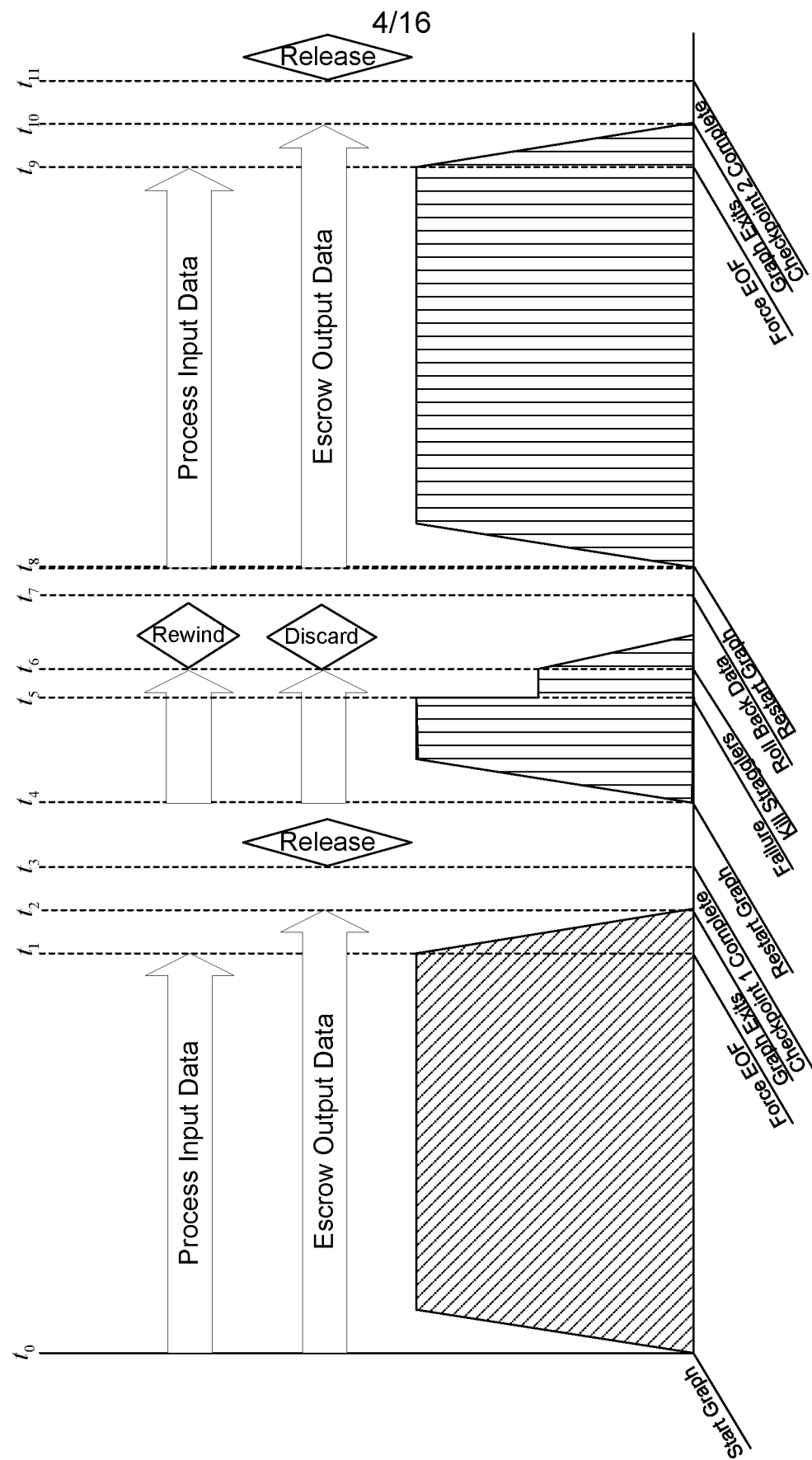


FIG. 4

Multiple Graph Pulsed Ingestion Processing with Checkpoints

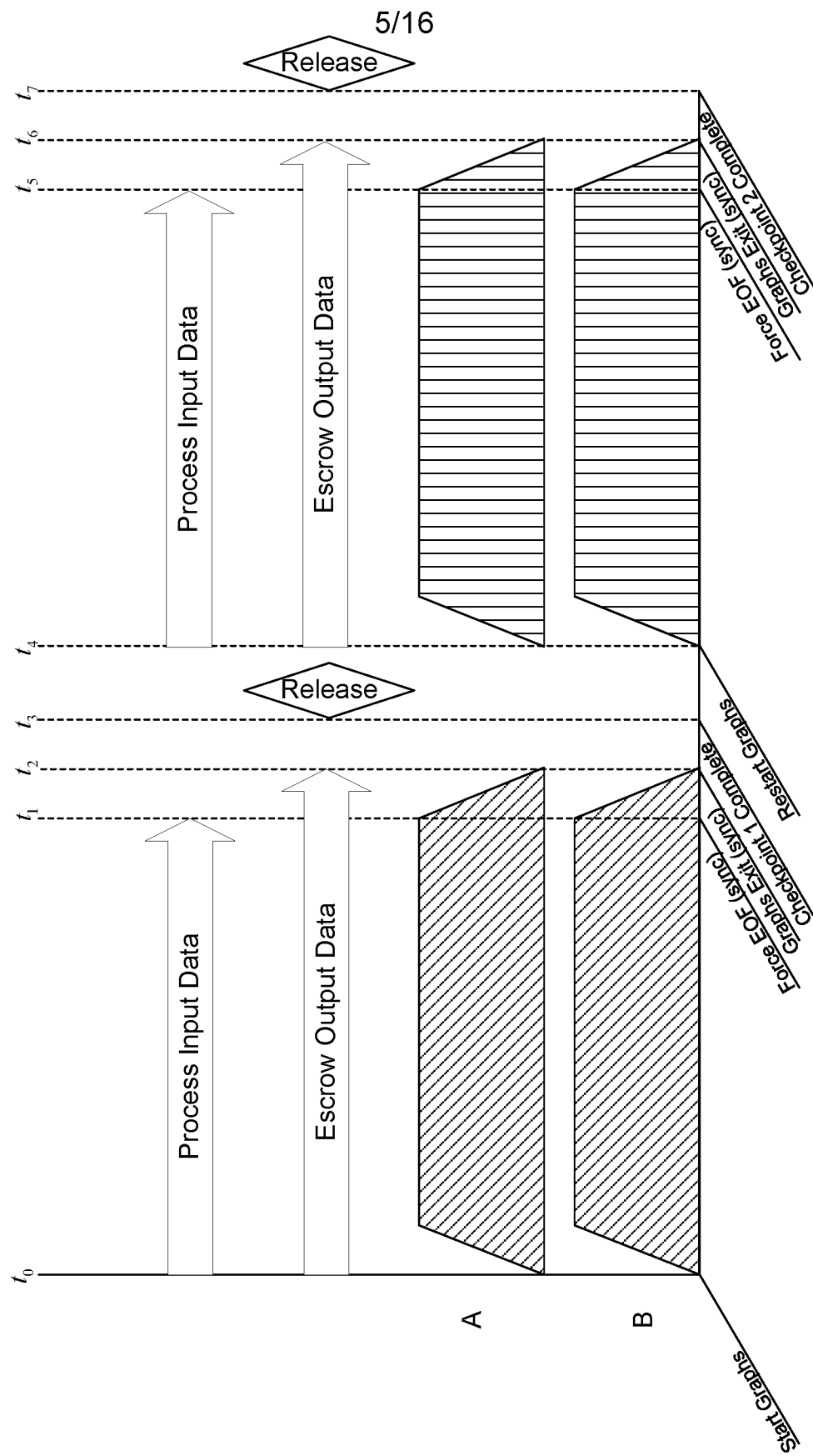


FIG. 5

Pipelined Pulsed Ingestion Processing with Checkpoints

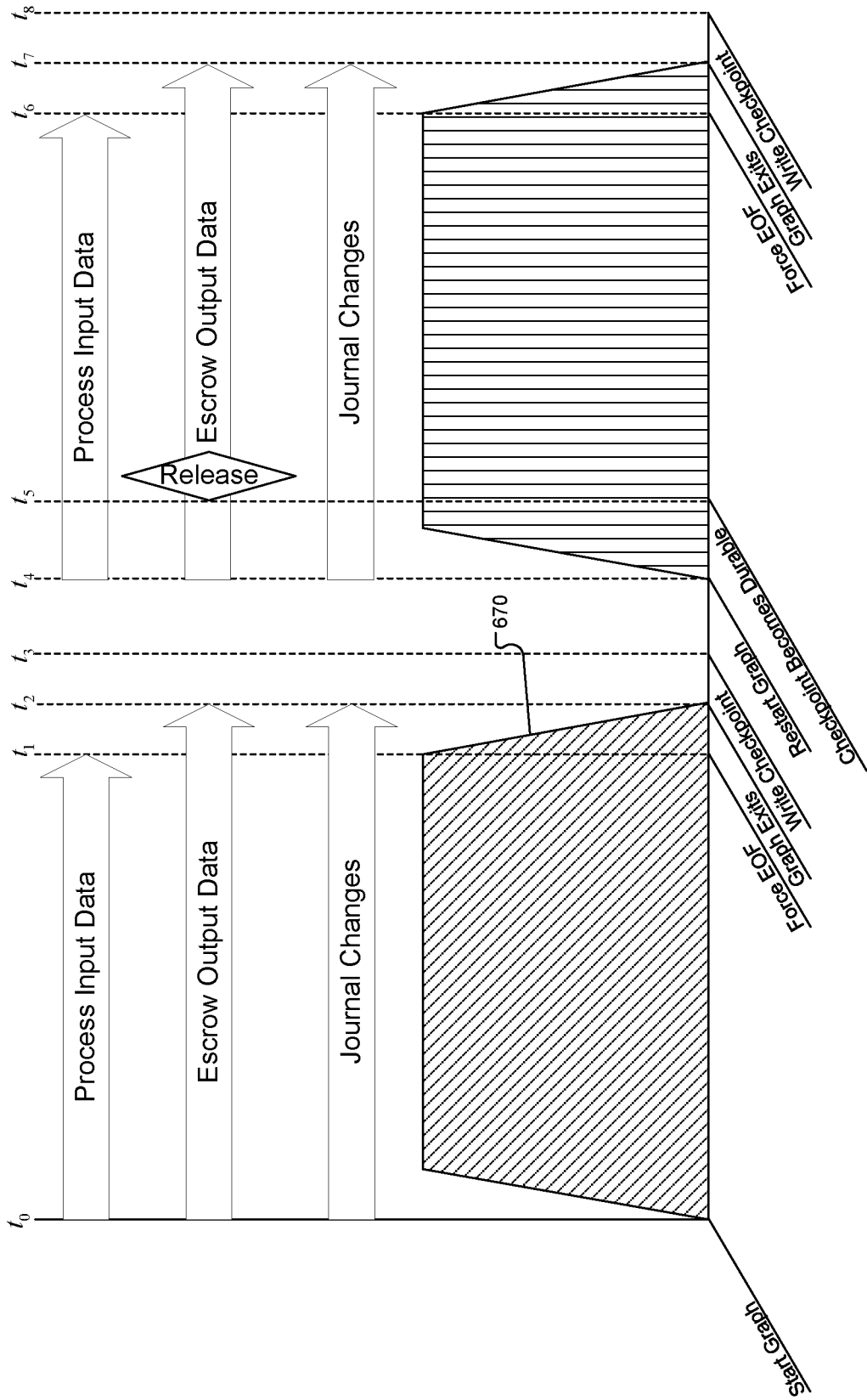


FIG. 6

Pulsed Ingestion Processing Computing System

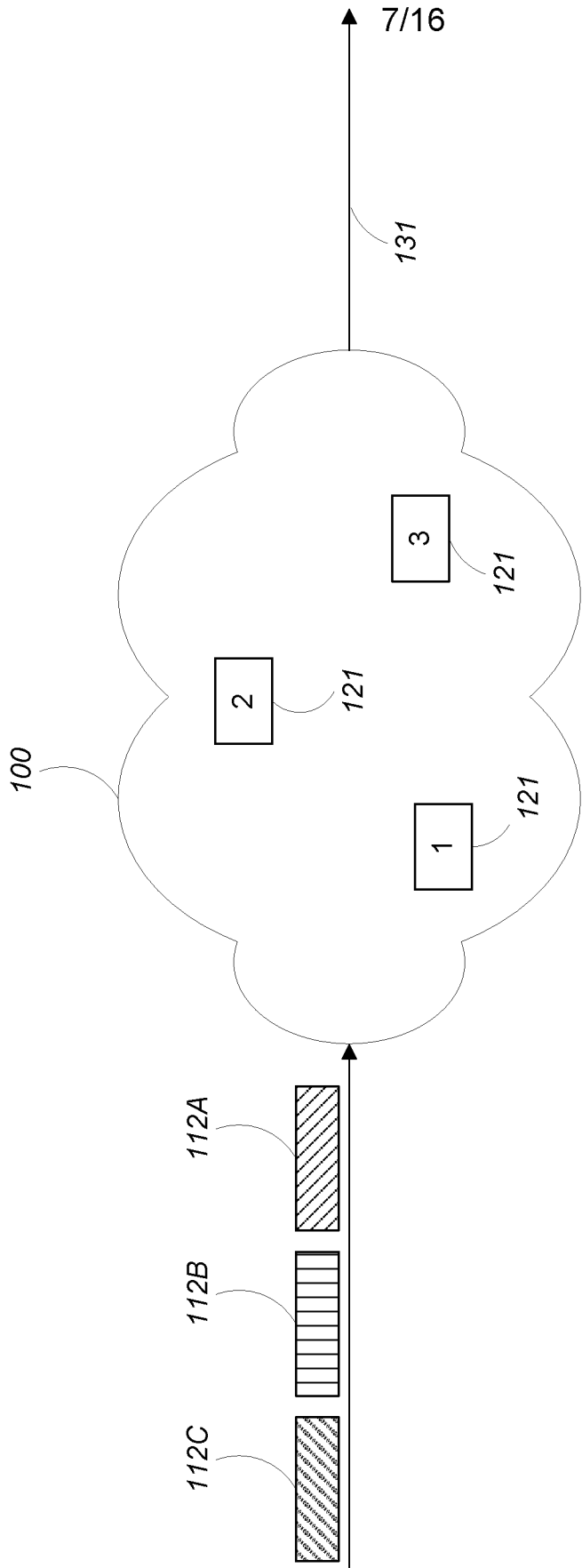


FIG. 7A

Processing of First Pulse

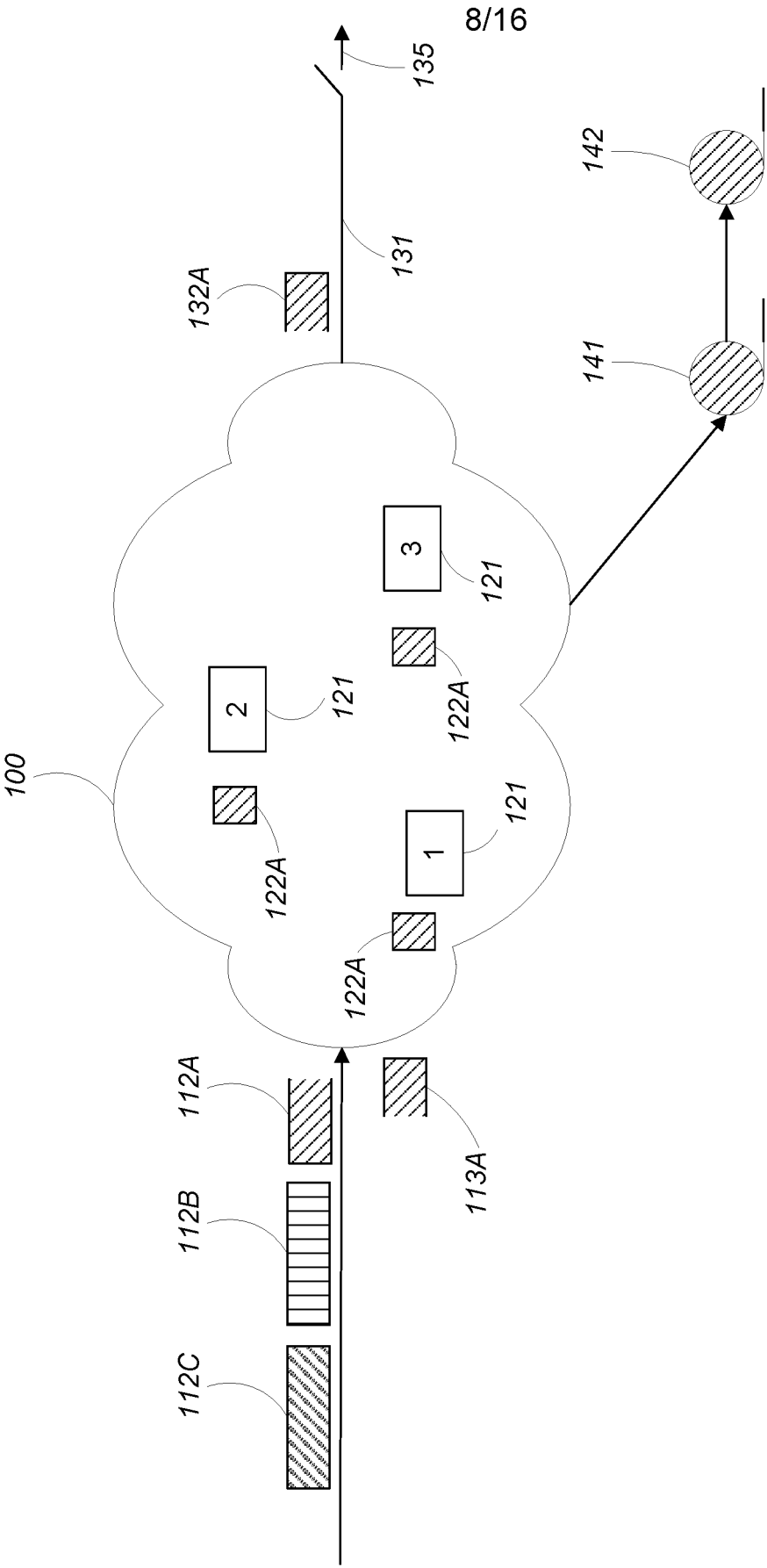


FIG. 7B

Completion of Processing of First Pulse, First Output Pulse Held in Escrow

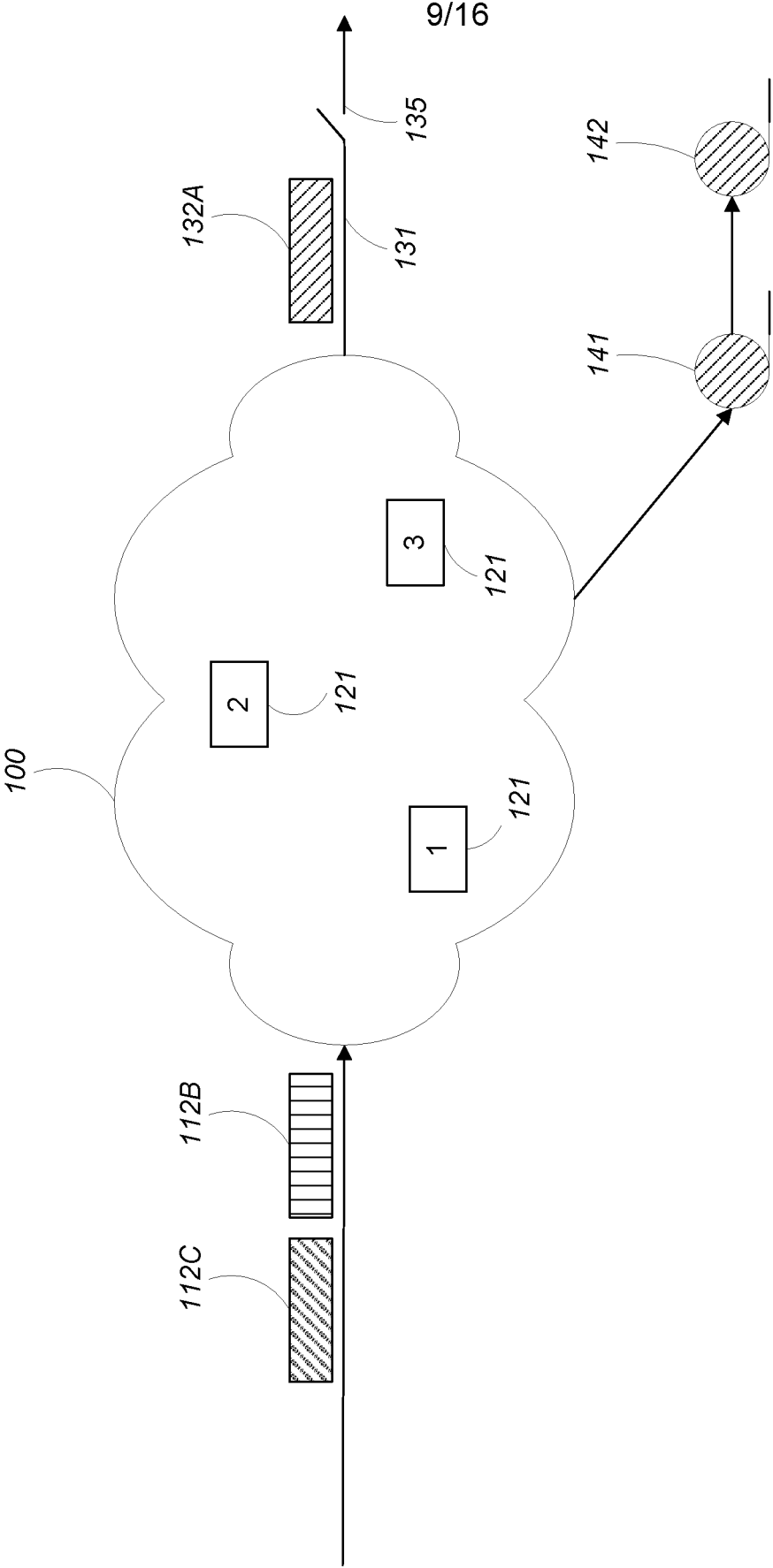


FIG. 7C

Processing of Second Pulse

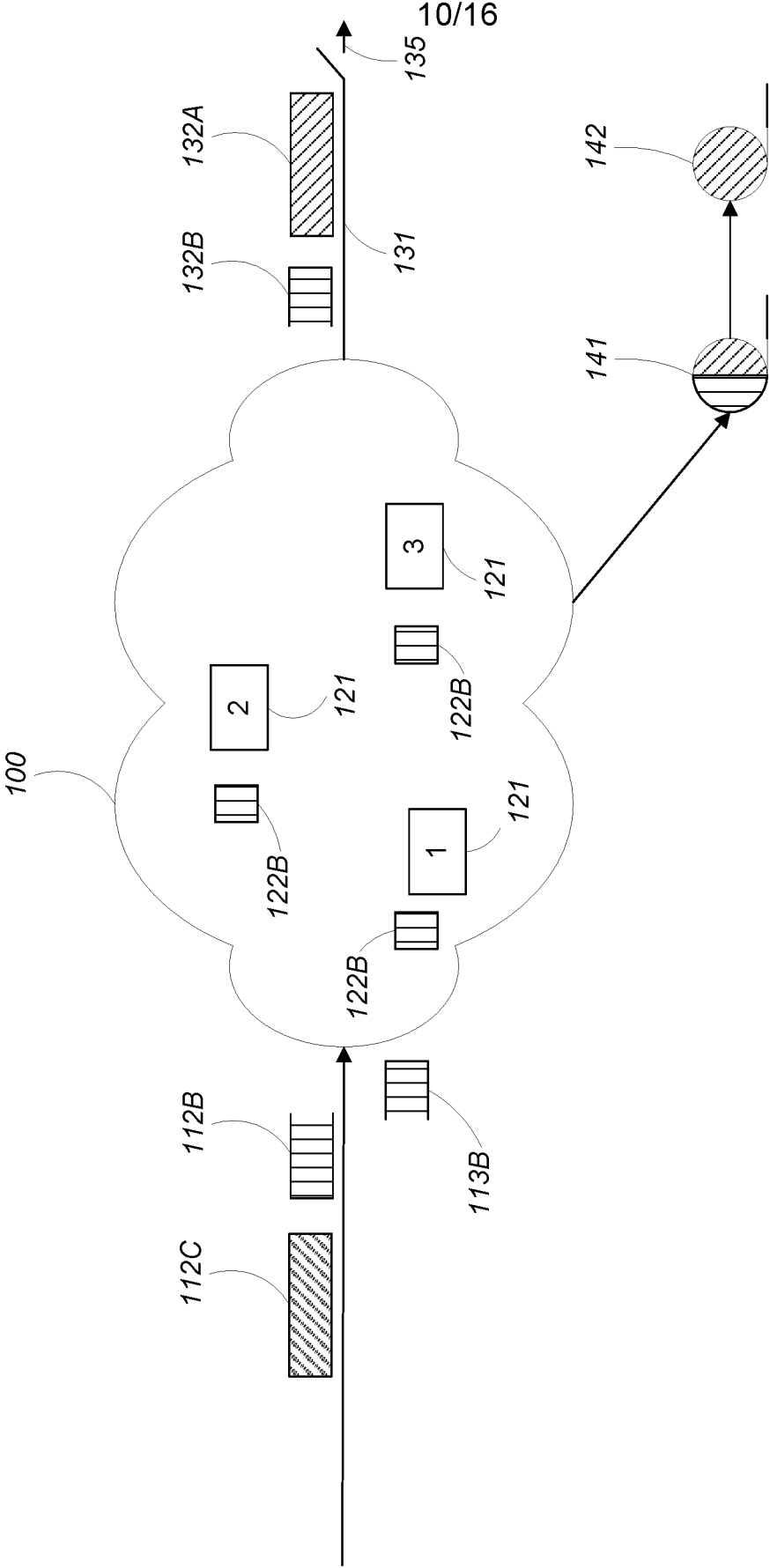
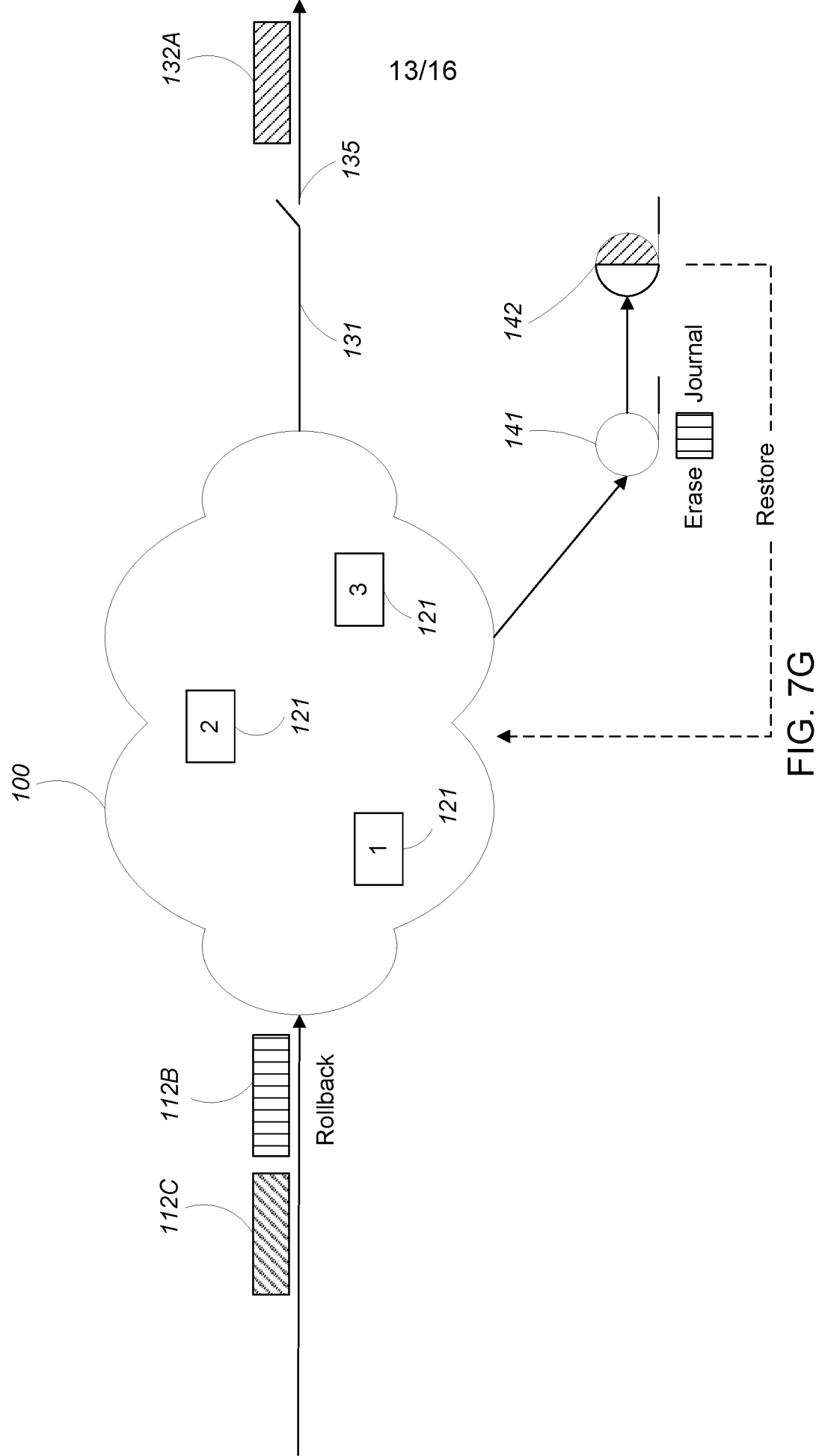


FIG. 7D





Recovery Procedure After Failure in Processing of Second Pulse



Distributed Pipelined Pulsed Ingestion Processing with Checkpoints

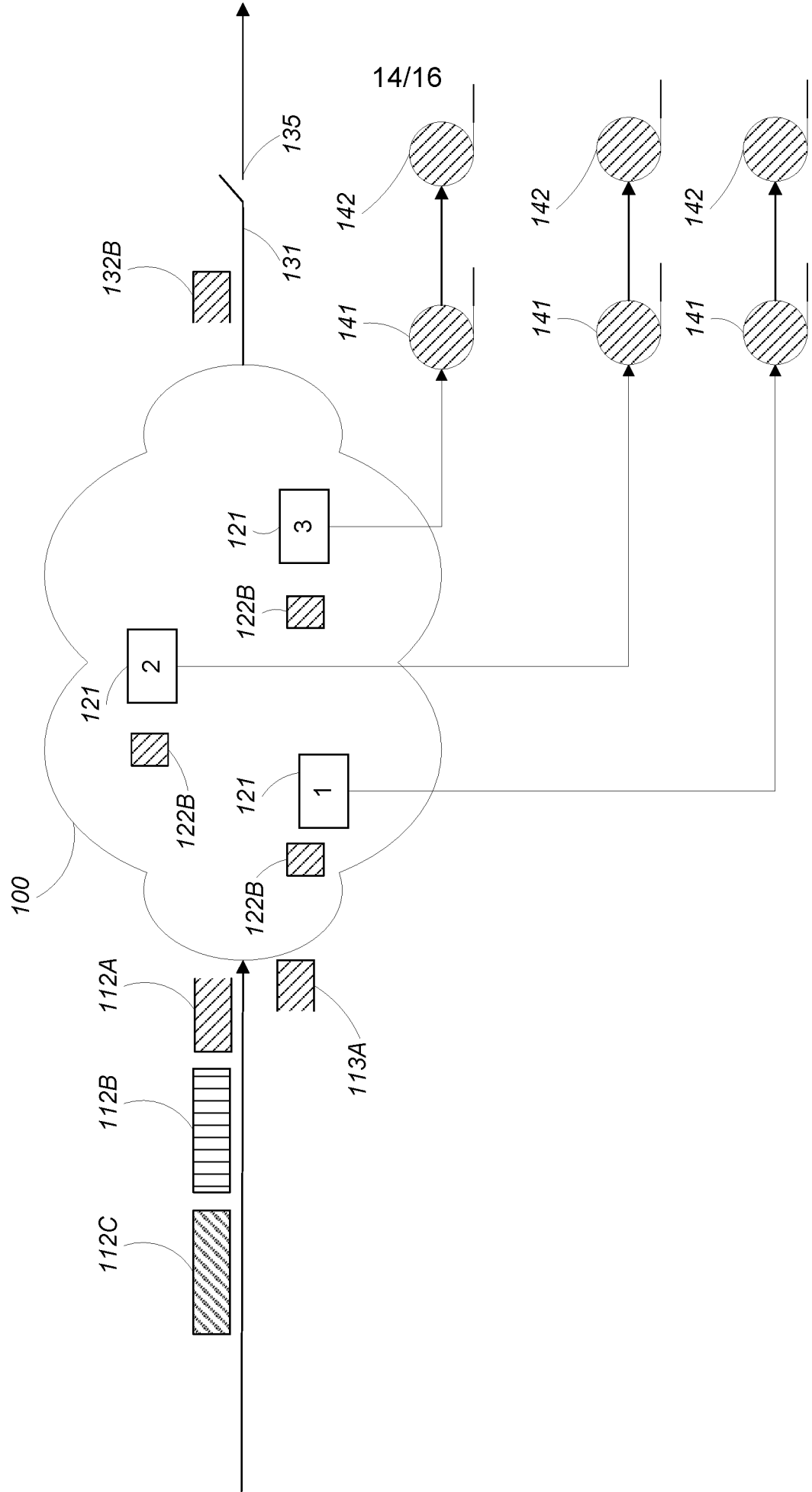
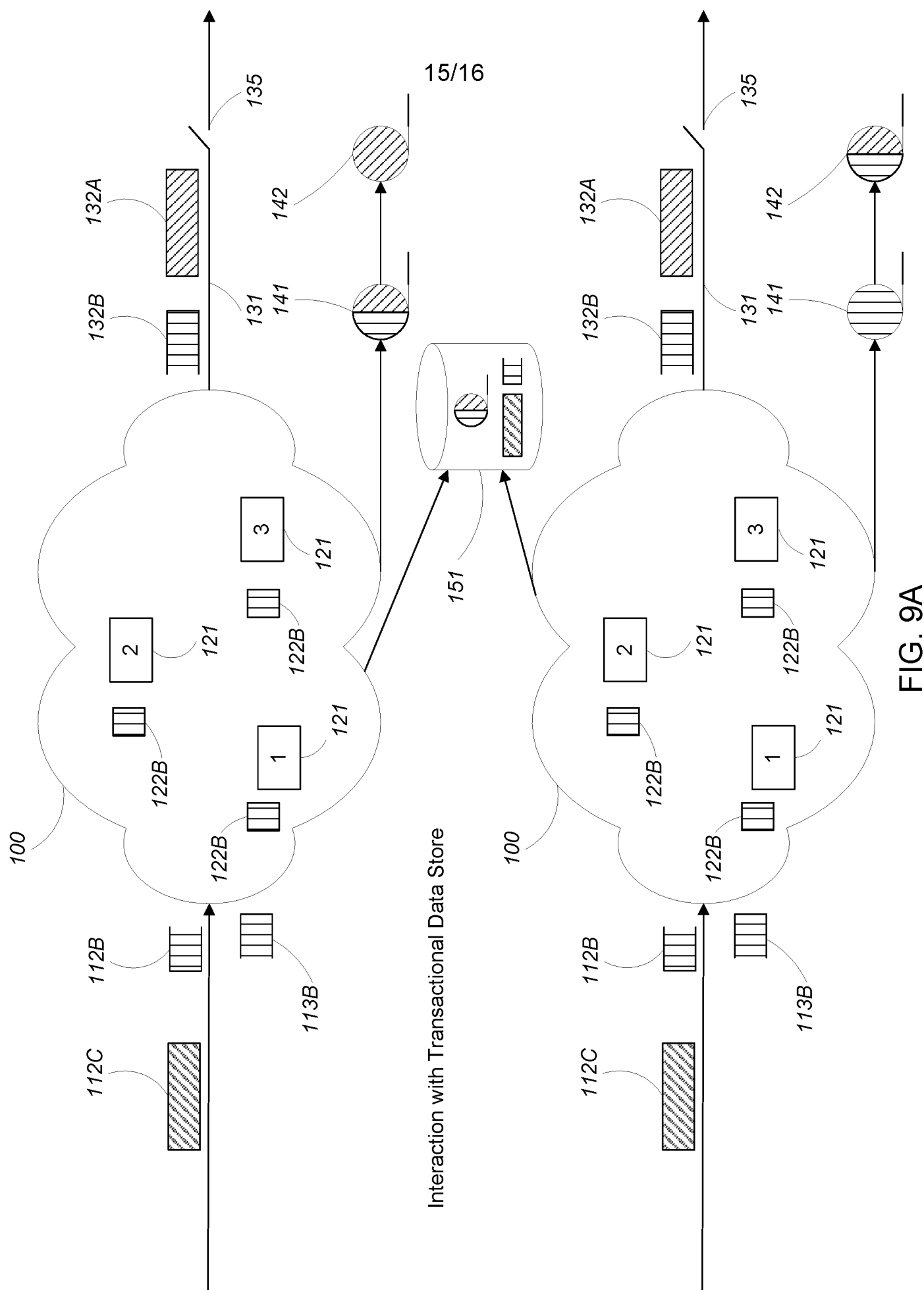


FIG. 8



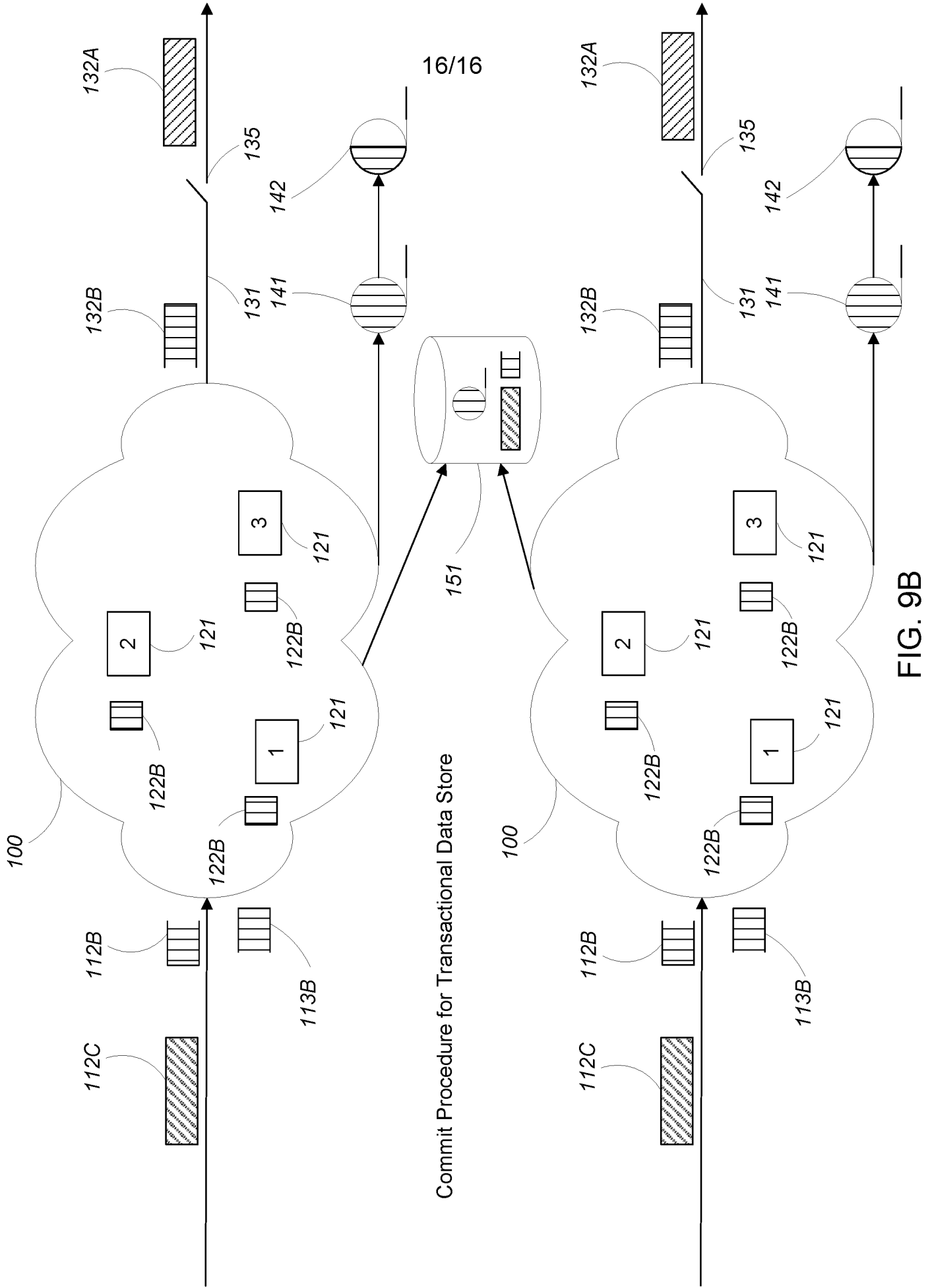


FIG. 9B