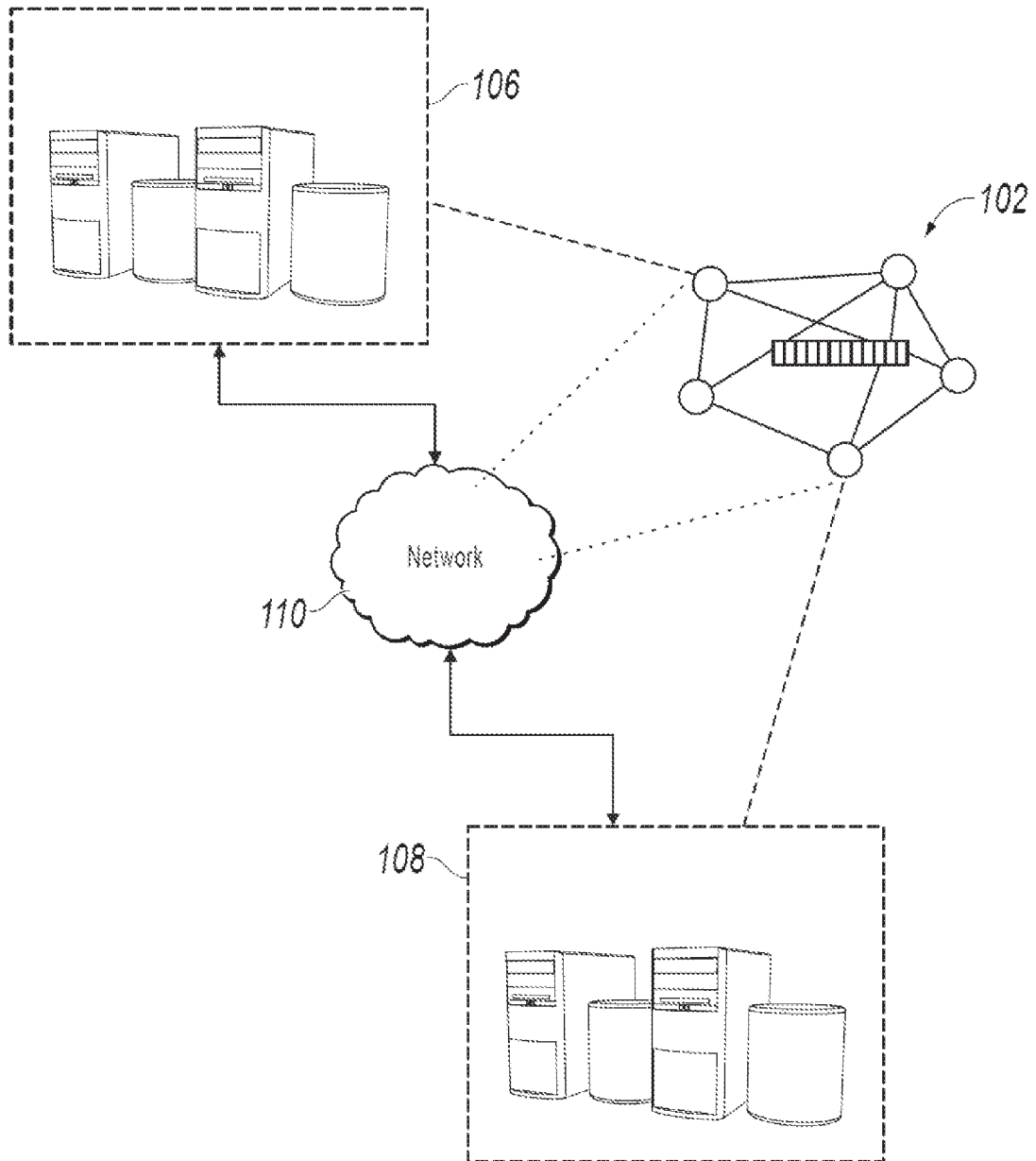


**FIG. 1**

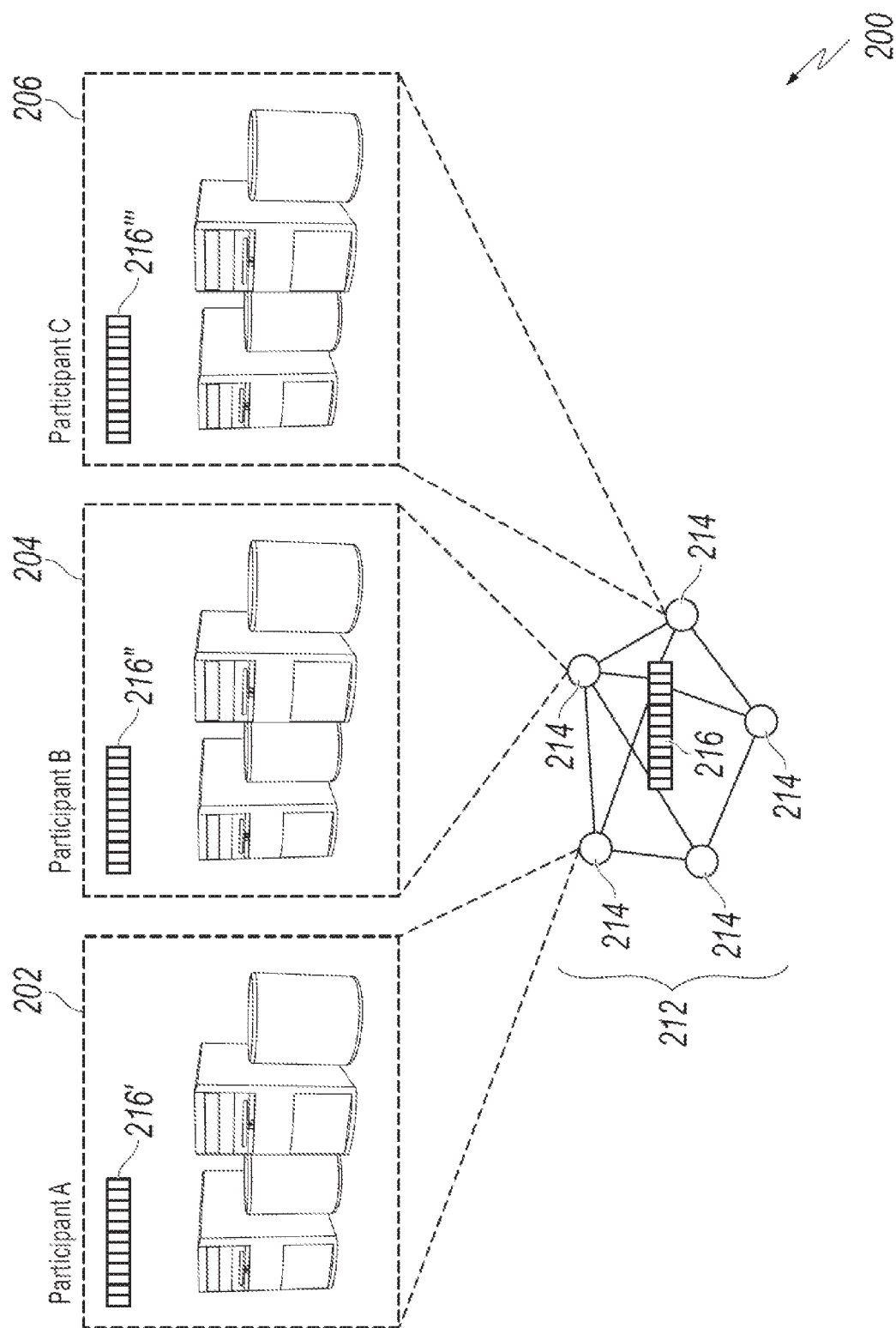
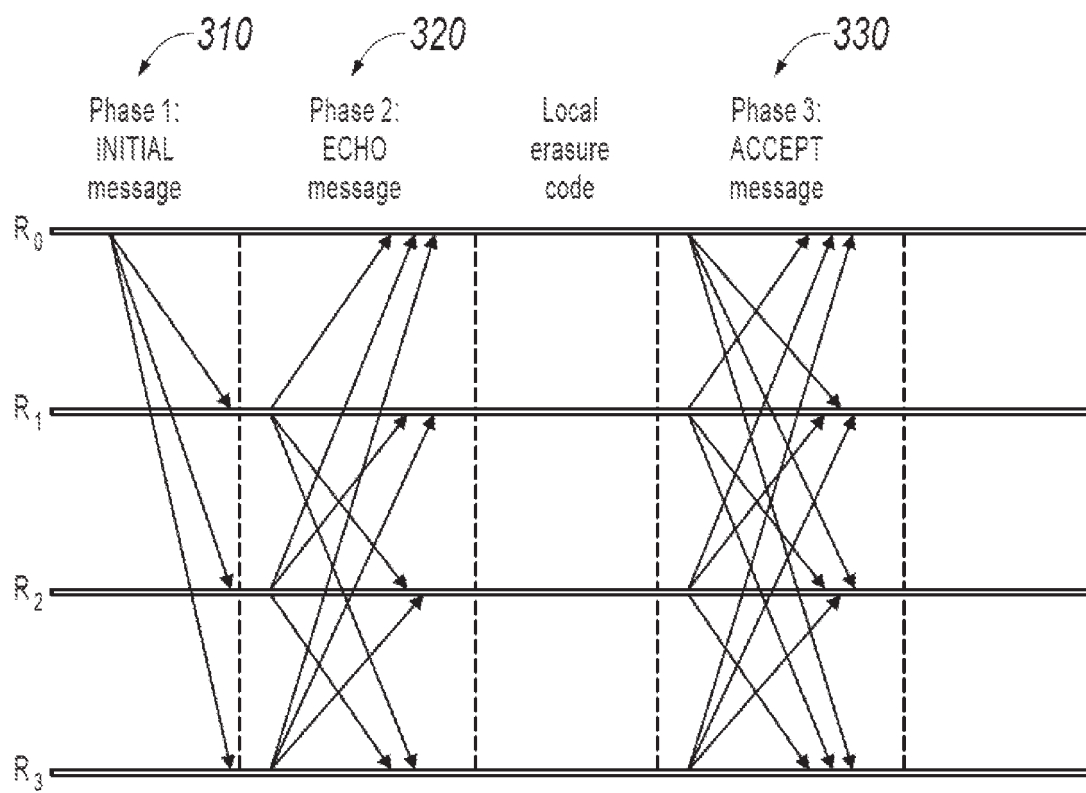


FIG. 2

300
**FIG. 3**

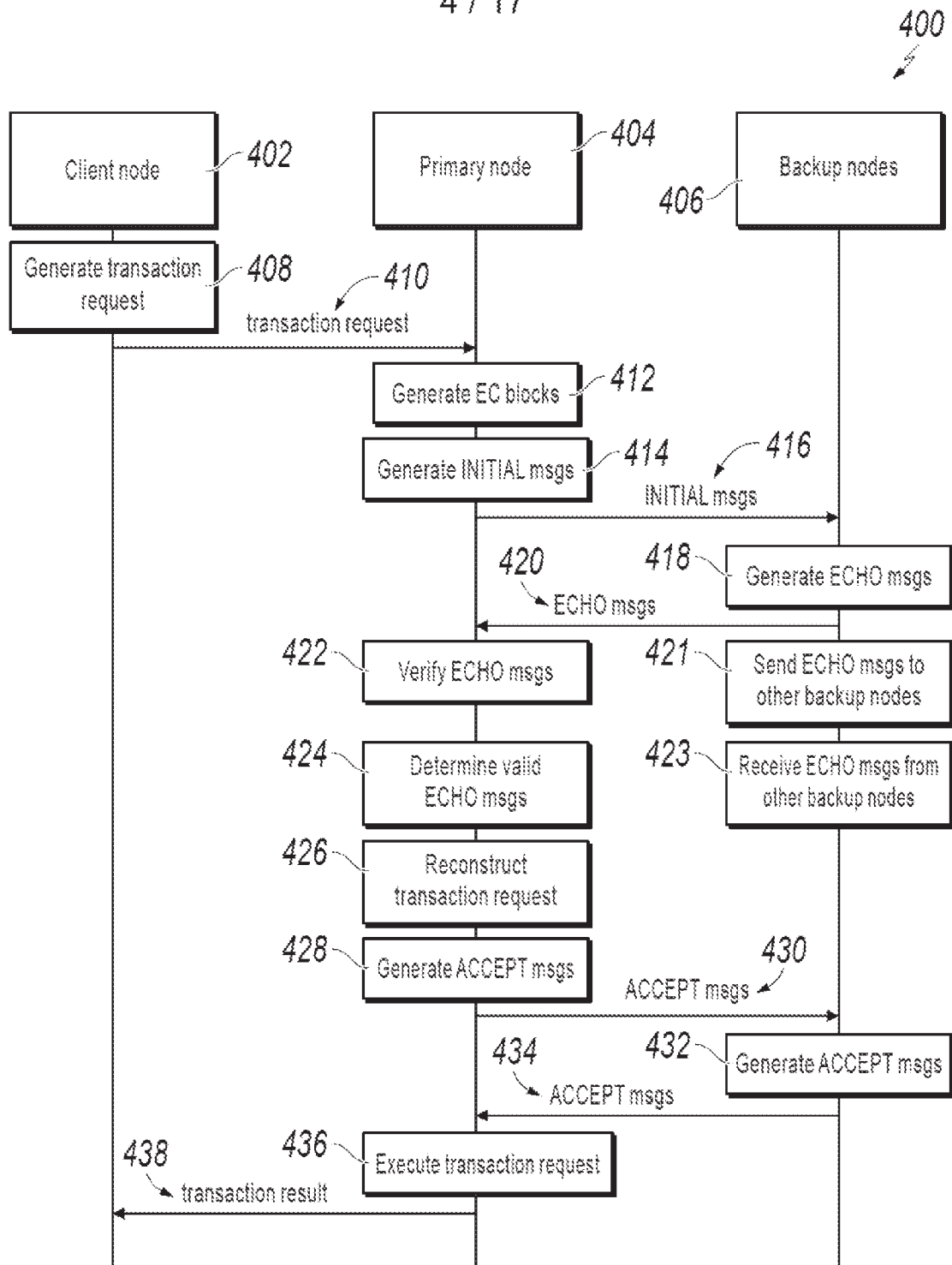


FIG. 4

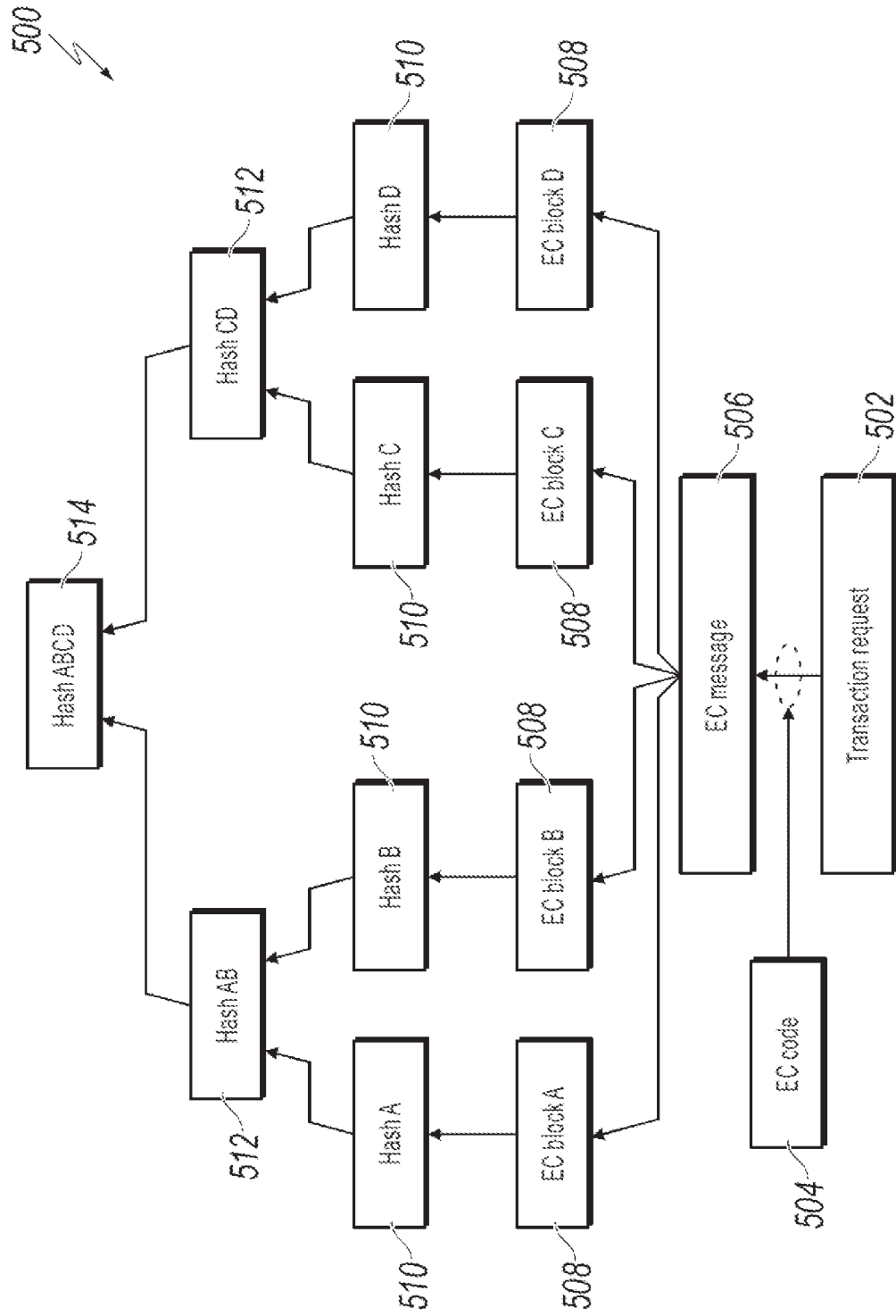


FIG. 5

Initial<epoch, tx_root_hash, ec_block_hash, ec_block, seq, j>
Echo<epoch, tx_root_hash, ec_block_hash, ec_block, seq, sign_proof, j>
Accept<epoch, tx_root_hash, seq, sign_proofs, j>

FIG. 6

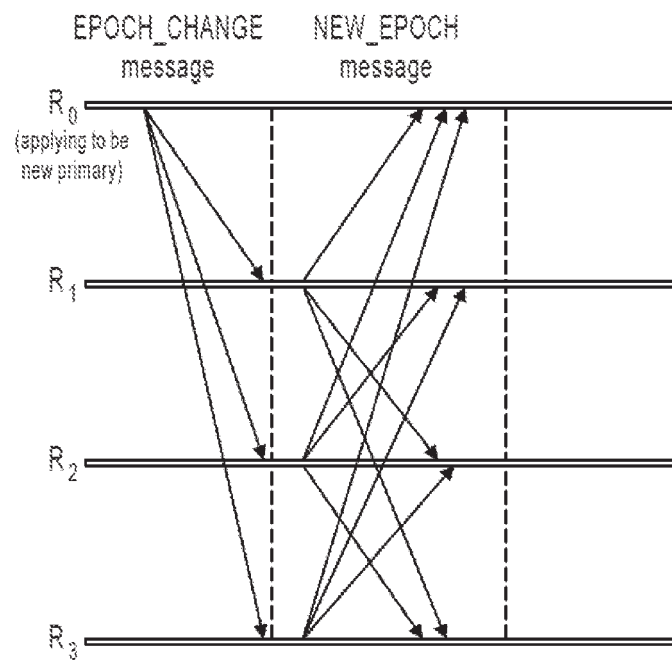
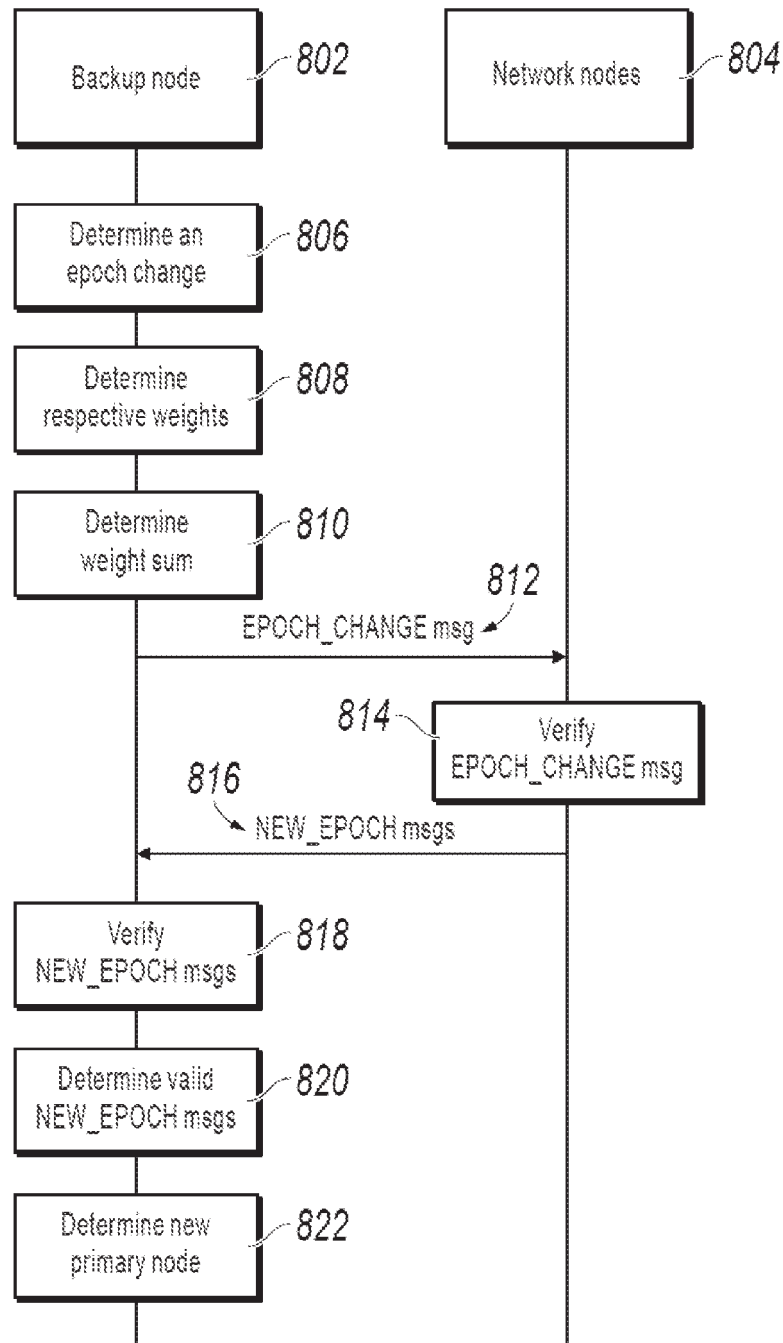


FIG. 7

**FIG. 8**

```
Epoch_change <weight, epoch+1, Echo(), Accept(), j>  
Echo {<epoch, seq, sign_proof, j>}  
Accept {<epoch, tx_root_hash, sign_proofs, seq, j>}  
New_epoch <epoch+1, i, j, seq, ec_digest>
```

FIG. 9

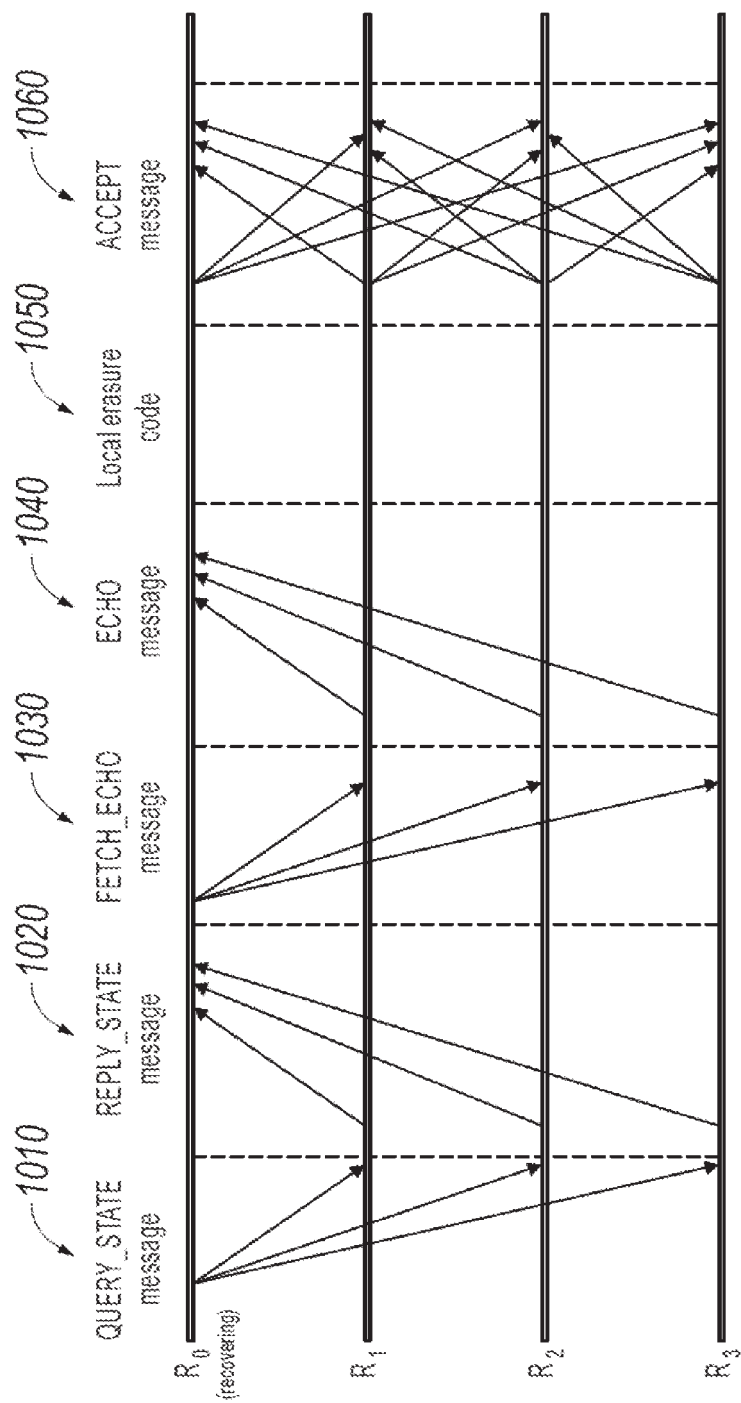
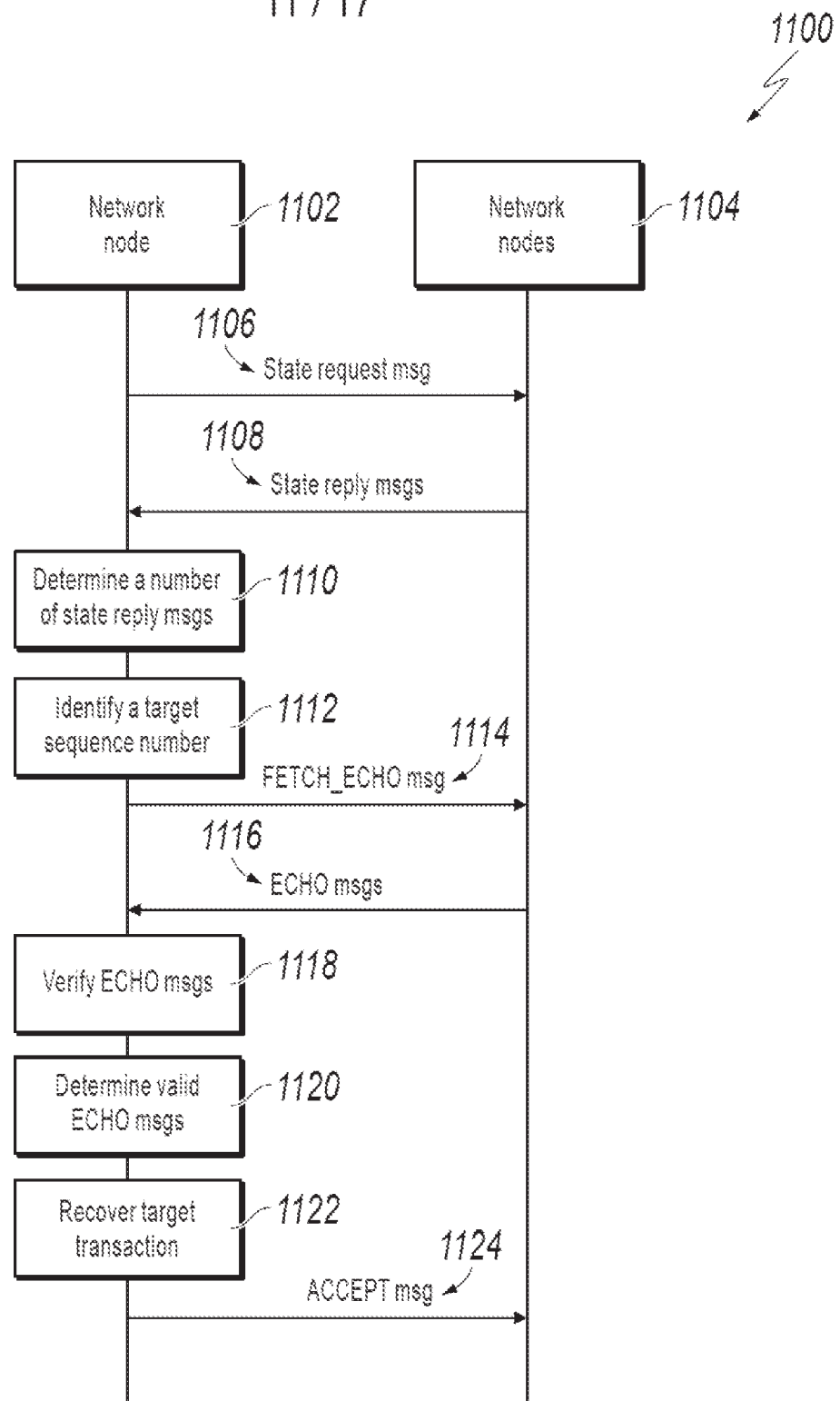
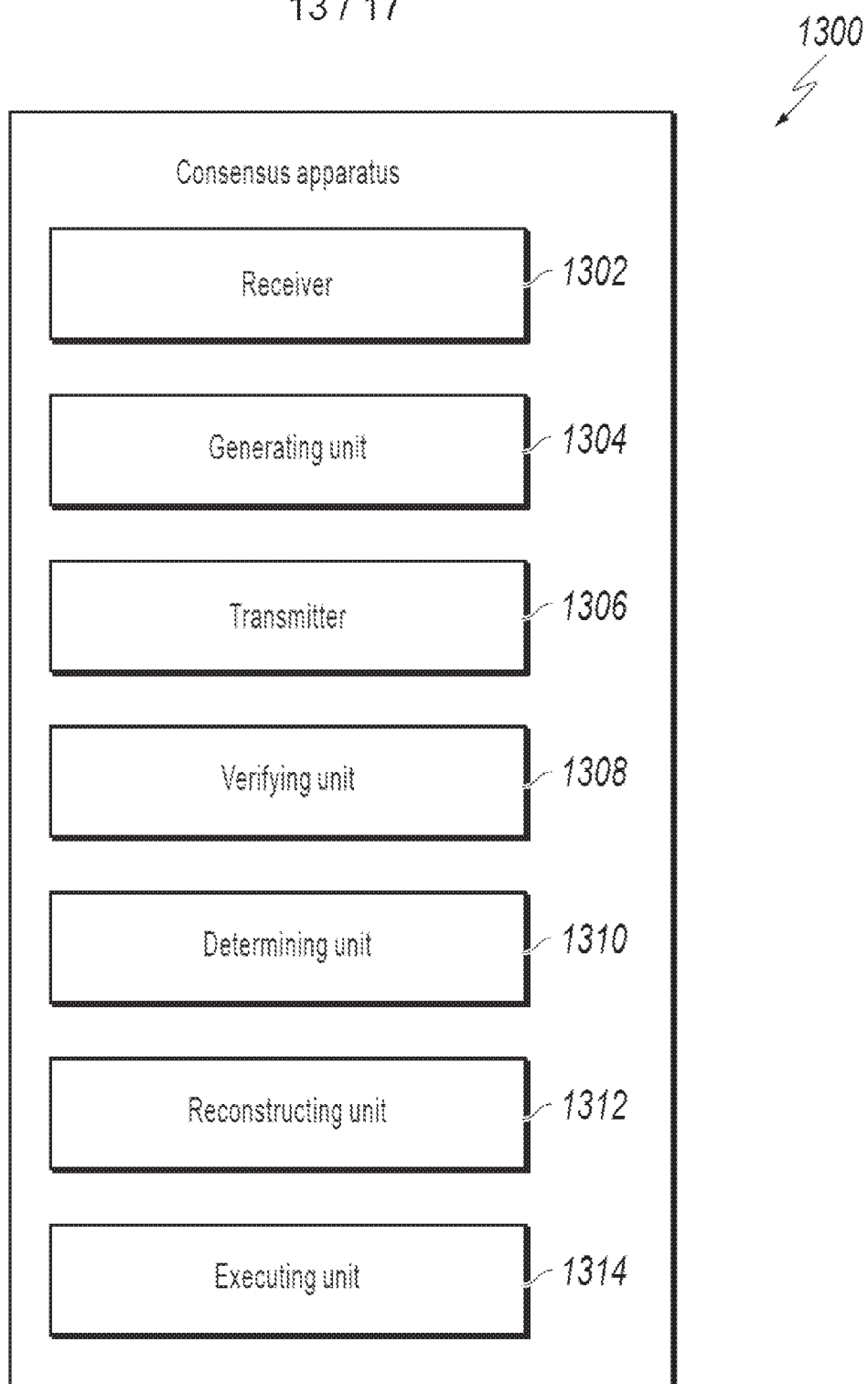


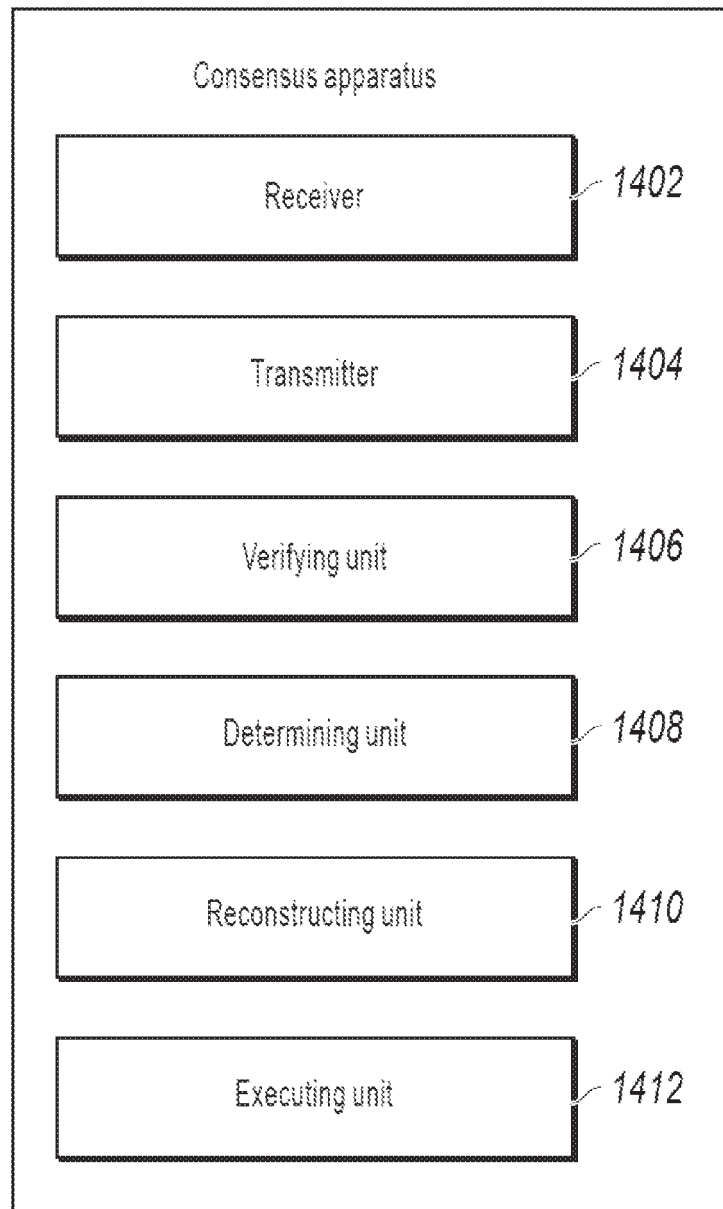
FIG. 10

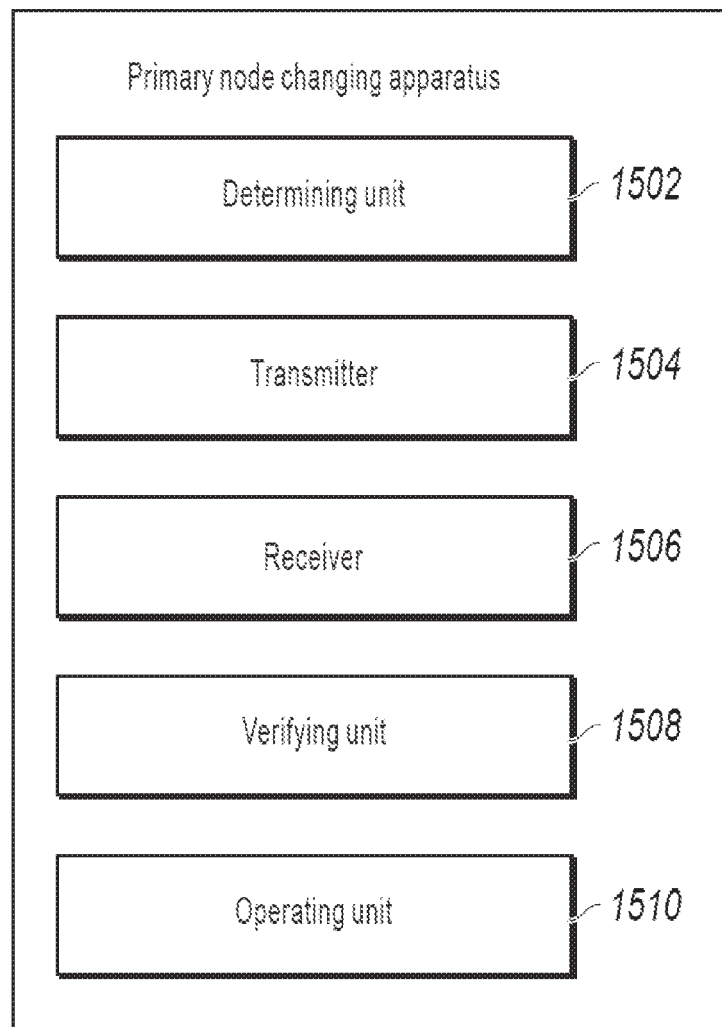
**FIG. 11**

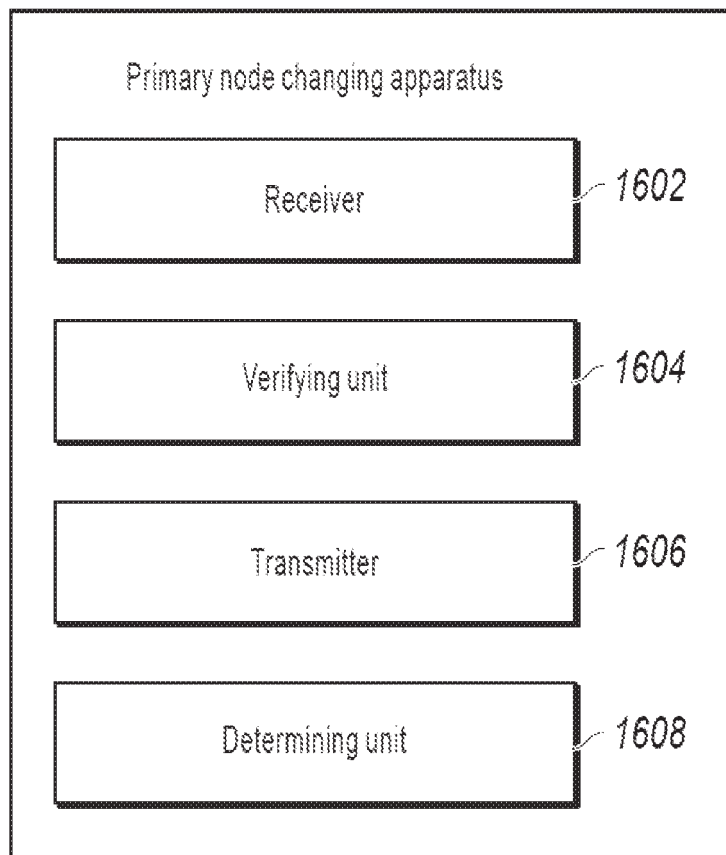
Query_state <j, seq>
Reply_state <j, last_seq>
Fetch_echo <j, last_seq+1>

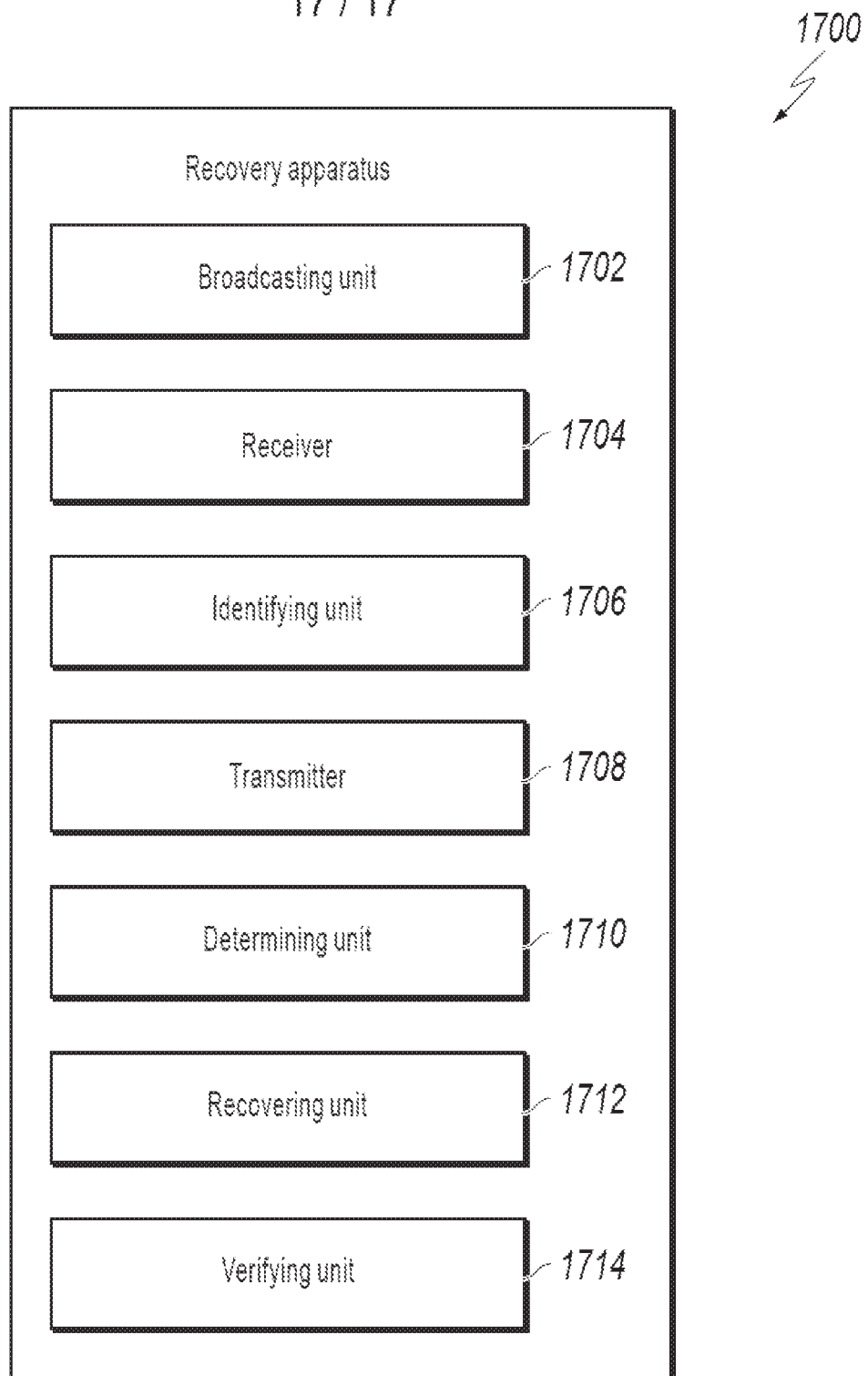
FIG. 12

**FIG. 13**

1400
**FIG. 14**

**FIG. 15**

**FIG. 16**

**FIG. 17**