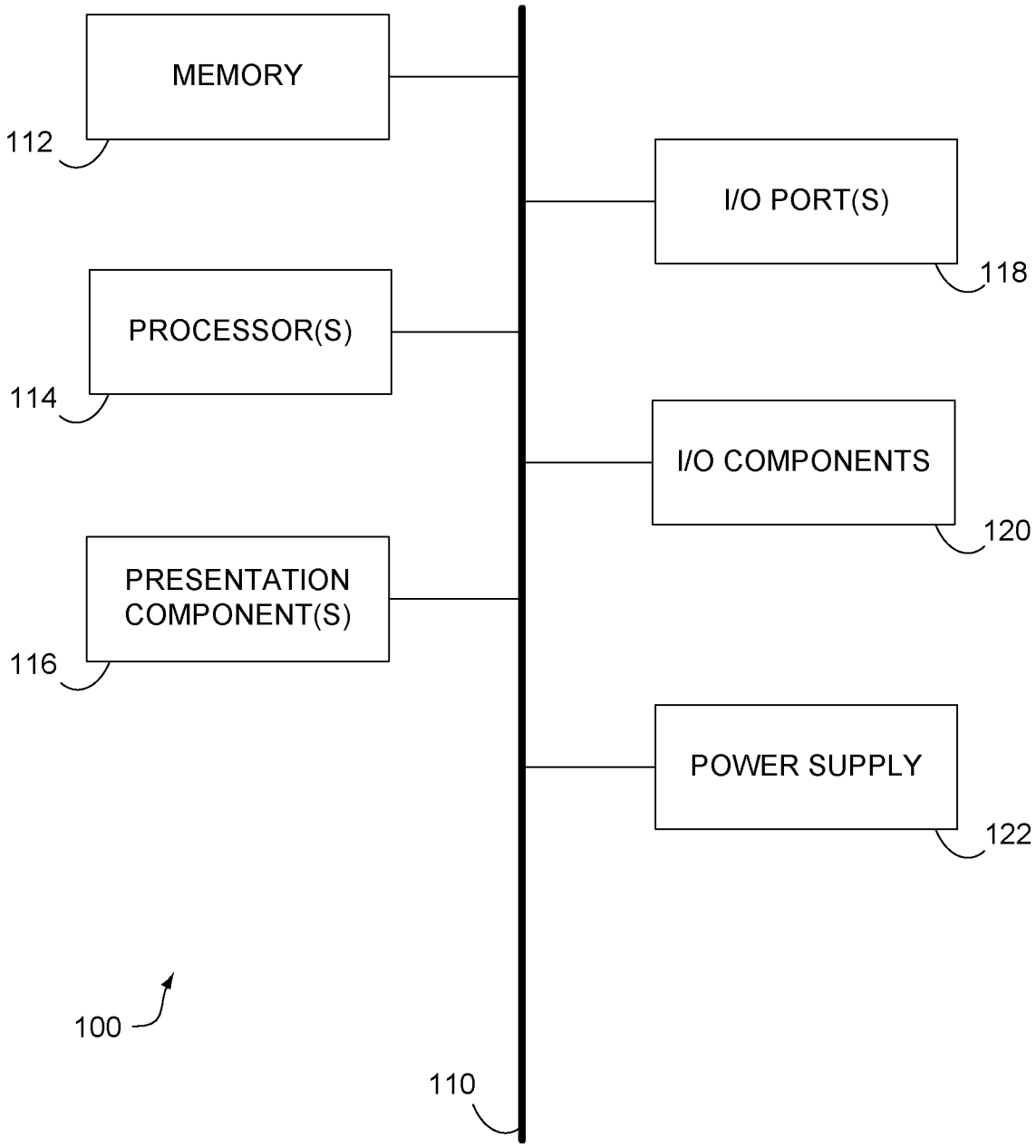

MEMORY
112
PROCESSOR(S)
114
PRESENTATION COMPONENT(S)
116
I/O PORT(S)
118
I/O COMPONENTS
120
POWER SUPPLY
122
100
110

FIG. 1.

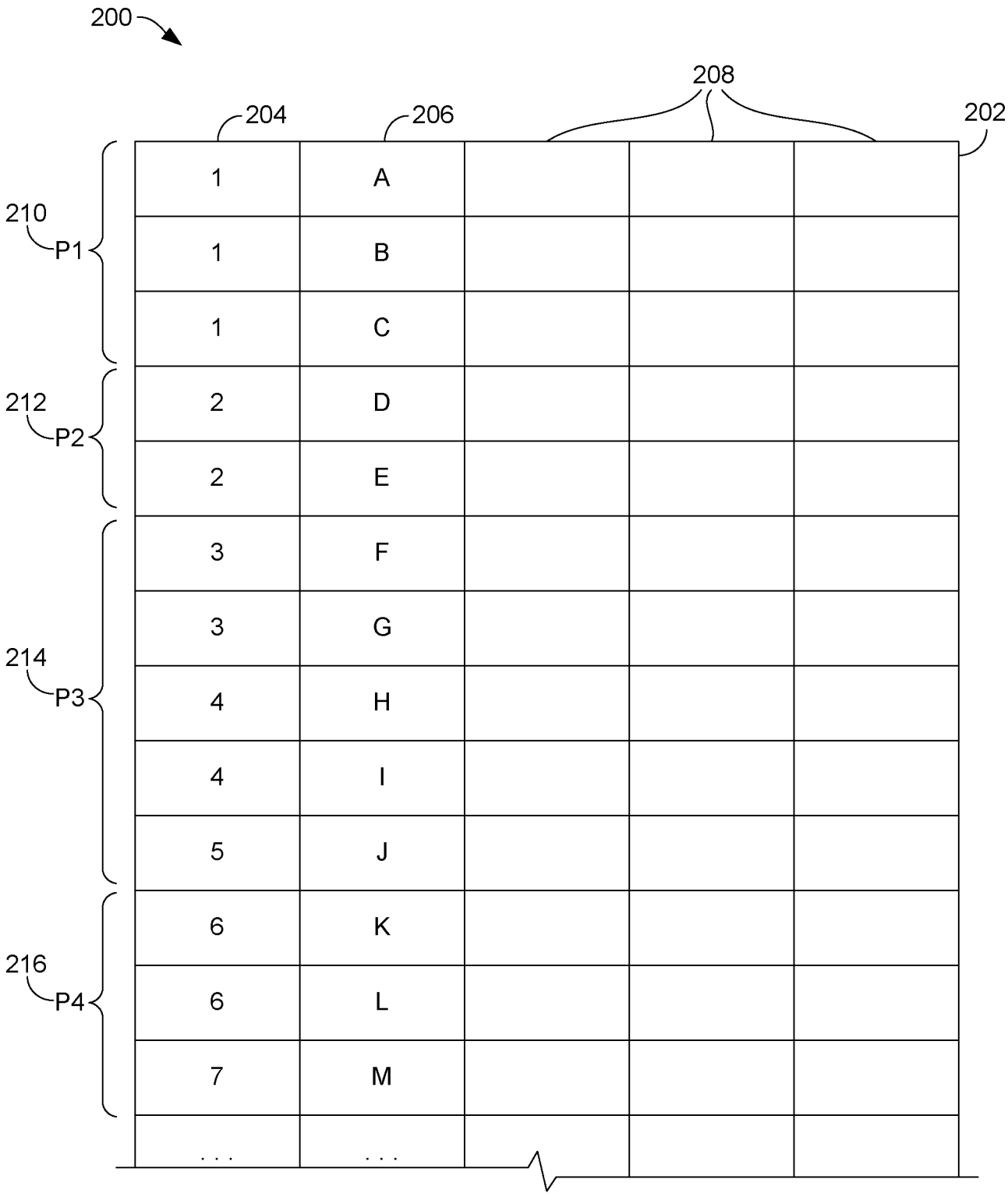

200
208
204
206
202
210
P1
212
P2
214
P3
216
P4
1 A
1 B
1 C
2 D
2 E
3 F
3 G
4 H
4 I
5 J
6 K
6 L
7 M
. . . . . .

FIG. 2.

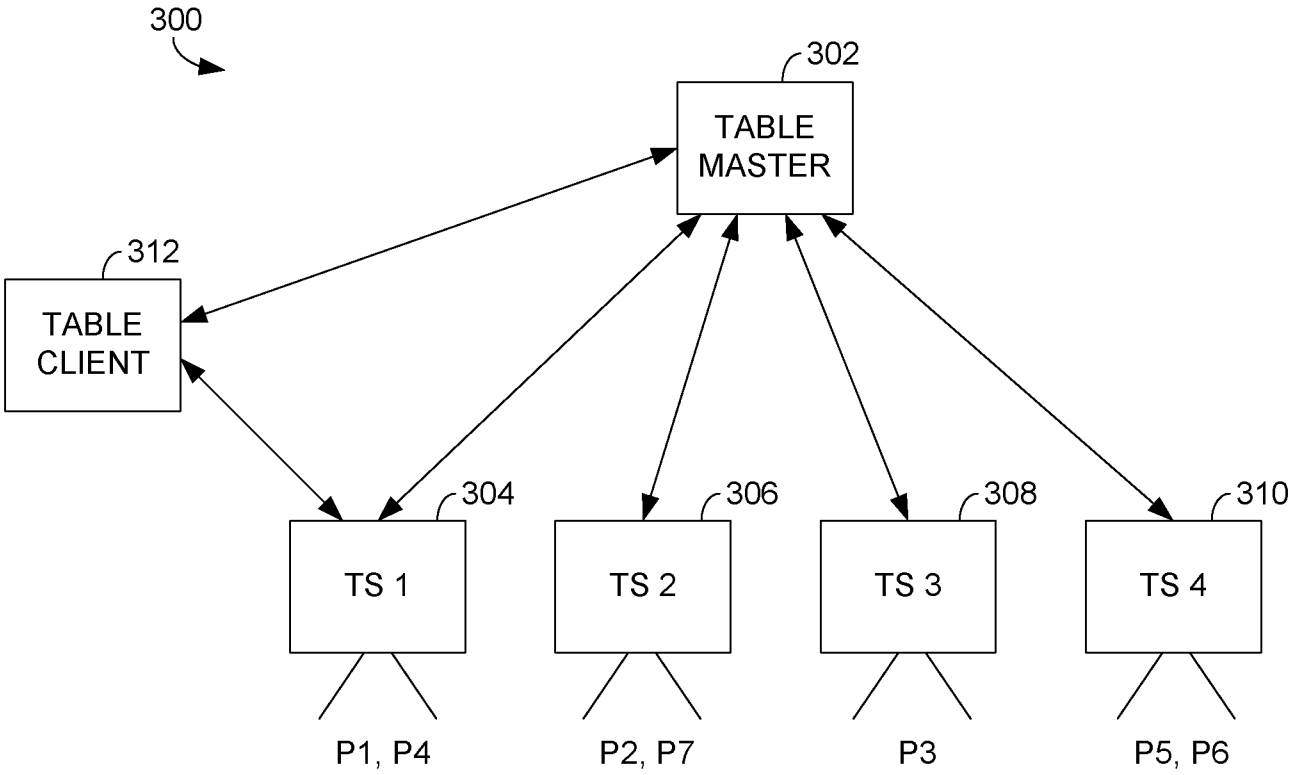

300
302
TABLE MASTER
312
TABLE CLIENT
304
306
308
310
TS 1
TS 2
TS 3
TS 4
P1, P4
P2, P7
P3
P5, P6

FIG. 3.

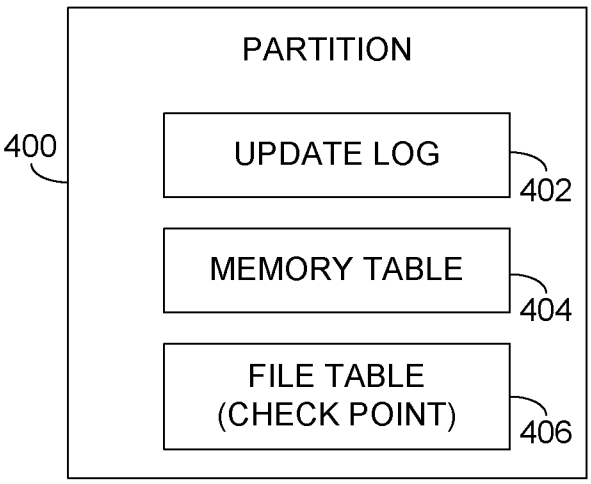

PARTITION
400
UPDATE LOG
402
MEMORY TABLE
404
FILE TABLE (CHECK POINT)
406

FIG. 4.

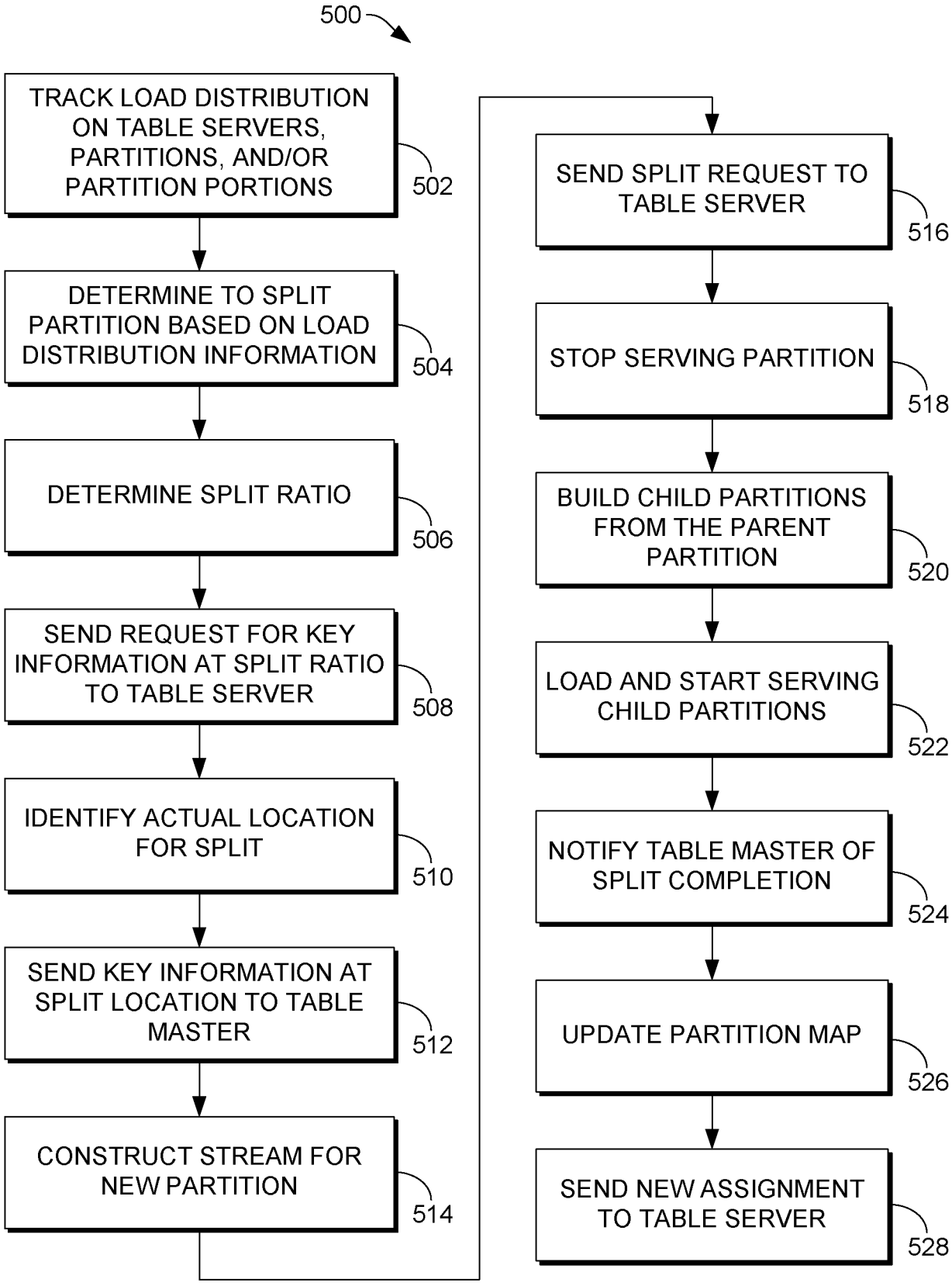

500
TRACK LOAD DISTRIBUTION ON TABLE SERVERS, PARTITIONS, AND/OR PARTITION PORTIONS
502
DETERMINE TO SPLIT PARTITION BASED ON LOAD DISTRIBUTION INFORMATION
504
DETERMINE SPLIT RATIO
506
SEND REQUEST FOR KEY INFORMATION AT SPLIT RATIO TO TABLE SERVER
508
IDENTIFY ACTUAL LOCATION FOR SPLIT
510
SEND KEY INFORMATION AT SPLIT LOCATION TO TABLE MASTER
512
CONSTRUCT STREAM FOR NEW PARTITION
514
SEND SPLIT REQUEST TO TABLE SERVER
516
STOP SERVING PARTITION
518
BUILD CHILD PARTITIONS FROM THE PARENT PARTITION
520
LOAD AND START SERVING CHILD PARTITIONS
522
NOTIFY TABLE MASTER OF SPLIT COMPLETION
524
UPDATE PARTITION MAP
526
SEND NEW ASSIGNMENT TO TABLE SERVER
528

FIG. 5.

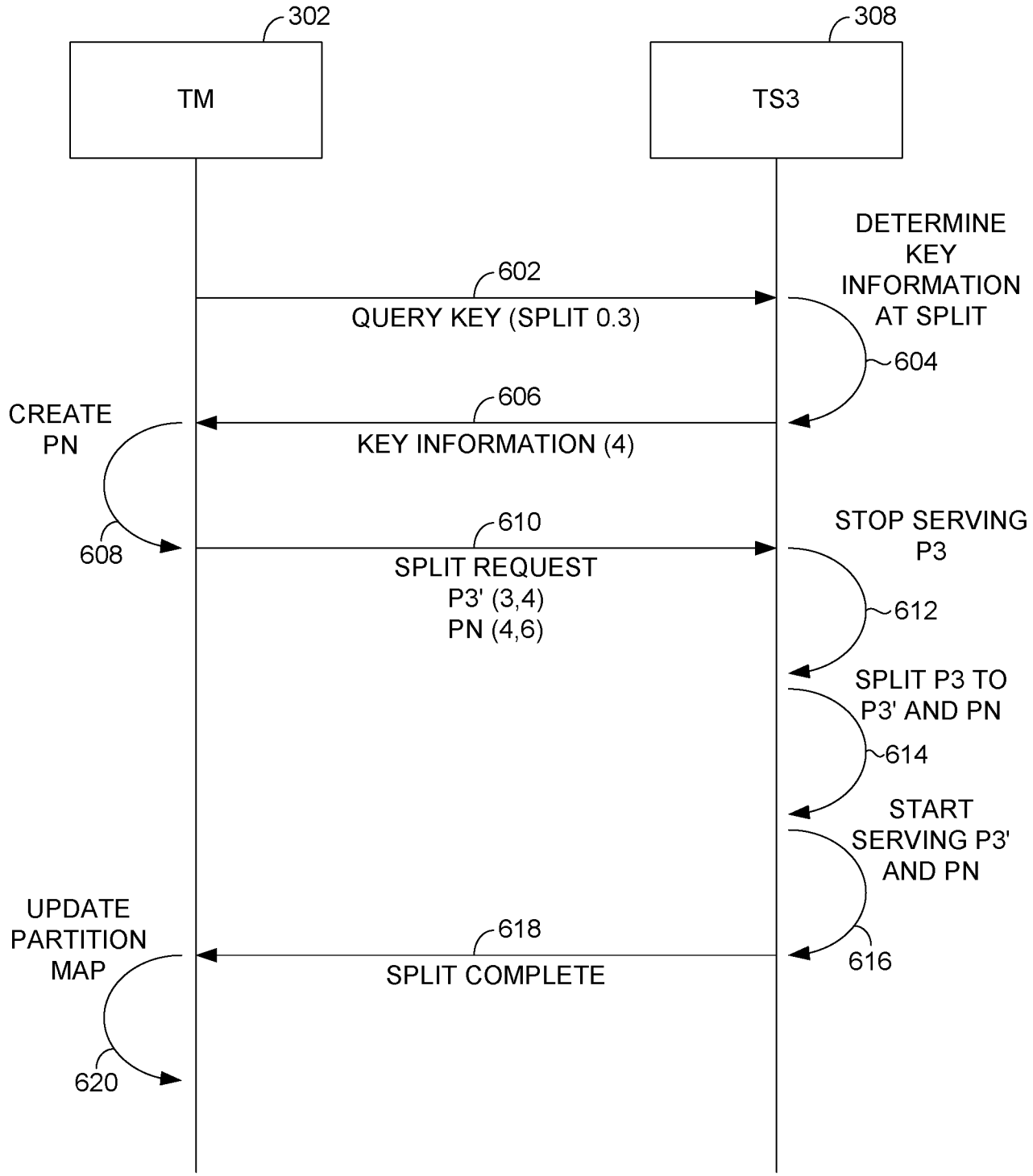

302
TM
308
TS3
DETERMINE KEY INFORMATION AT SPLIT
604
602
QUERY KEY (SPLIT 0.3)
606
KEY INFORMATION (4)
CREATE PN
608
610
SPLIT REQUEST
P3' (3,4)
PN (4,6)
STOP SERVING P3
612
SPLIT P3 TO P3' AND PN
614
START SERVING P3' AND PN
616
618
SPLIT COMPLETE
UPDATE PARTITION MAP
620

FIG. 6.

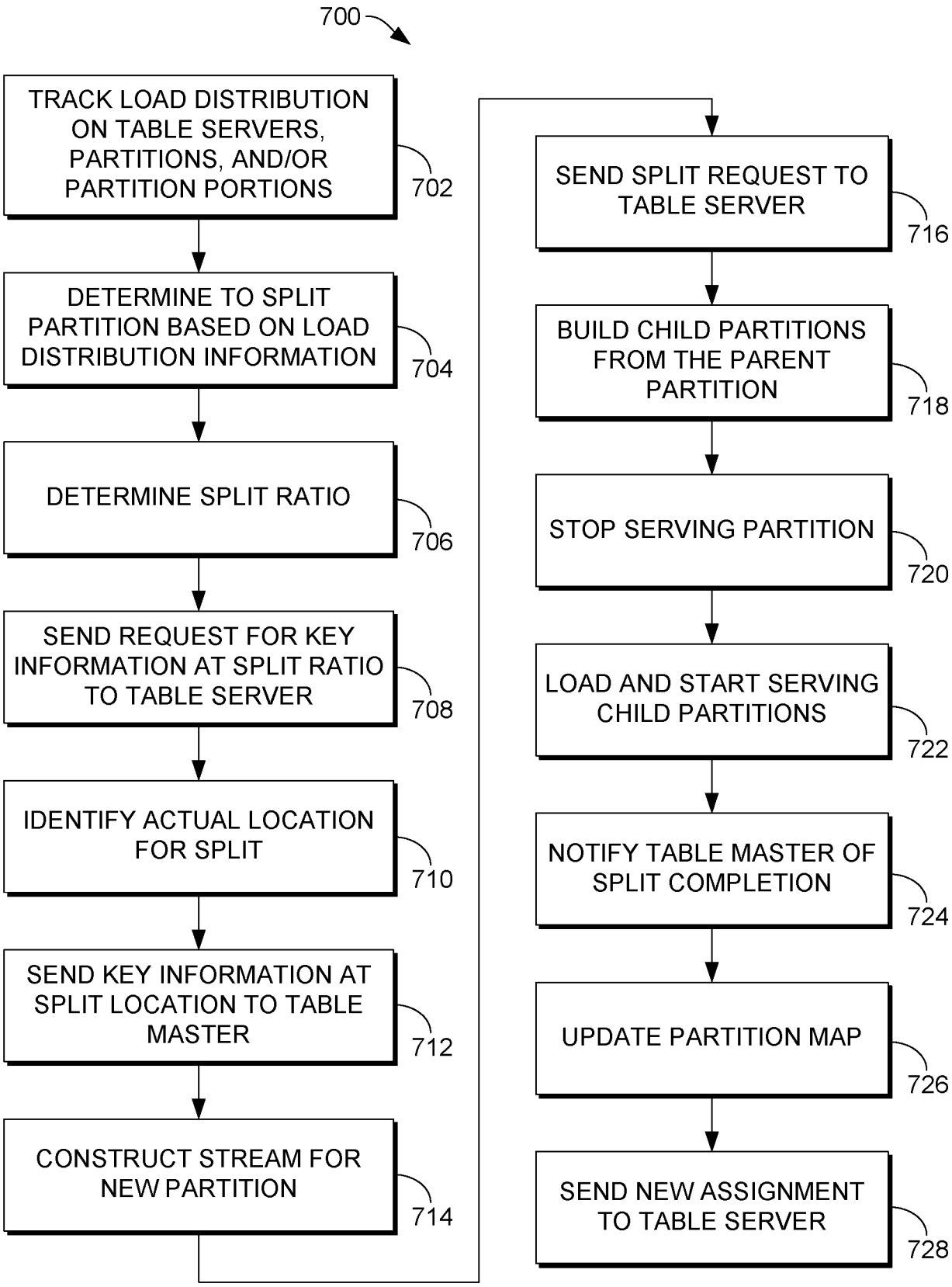

700
TRACK LOAD DISTRIBUTION ON TABLE SERVERS, PARTITIONS, AND/OR PARTITION PORTIONS
702
DETERMINE TO SPLIT PARTITION BASED ON LOAD DISTRIBUTION INFORMATION
704
DETERMINE SPLIT RATIO
706
SEND REQUEST FOR KEY INFORMATION AT SPLIT RATIO TO TABLE SERVER
708
IDENTIFY ACTUAL LOCATION FOR SPLIT
710
SEND KEY INFORMATION AT SPLIT LOCATION TO TABLE MASTER
712
CONSTRUCT STREAM FOR NEW PARTITION
714
SEND SPLIT REQUEST TO TABLE SERVER
716
BUILD CHILD PARTITIONS FROM THE PARENT PARTITION
718
STOP SERVING PARTITION
720
LOAD AND START SERVING CHILD PARTITIONS
722
NOTIFY TABLE MASTER OF SPLIT COMPLETION
724
UPDATE PARTITION MAP
726
SEND NEW ASSIGNMENT TO TABLE SERVER
728

FIG. 7.

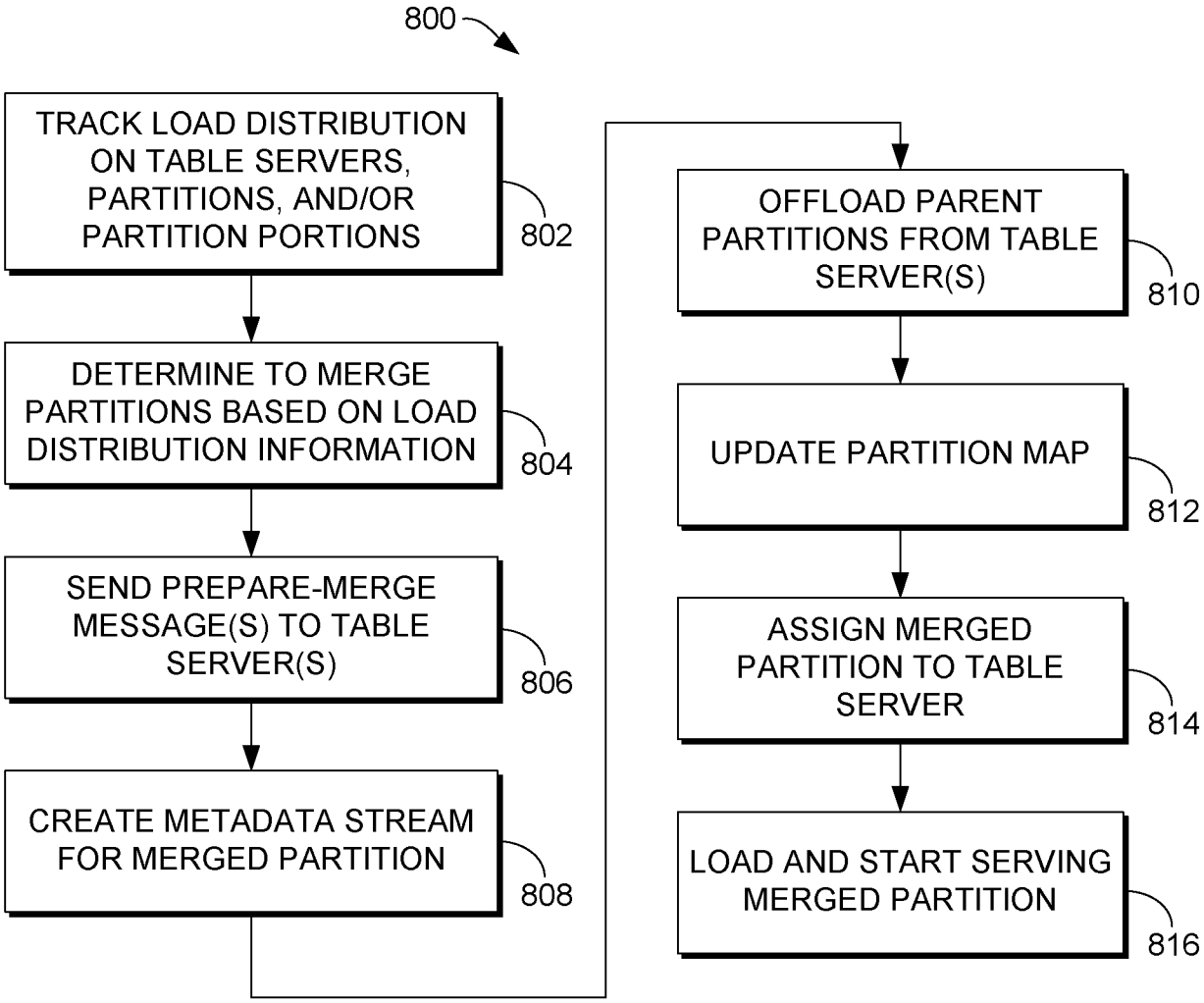

800
TRACK LOAD DISTRIBUTION ON TABLE SERVERS, PARTITIONS, AND/OR PARTITION PORTIONS
802
DETERMINE TO MERGE PARTITIONS BASED ON LOAD DISTRIBUTION INFORMATION
804
SEND PREPARE-MERGE MESSAGE(S) TO TABLE SERVER(S)
806
CREATE METADATA STREAM FOR MERGED PARTITION
808
OFFLOAD PARENT PARTITIONS FROM TABLE SERVER(S)
810
UPDATE PARTITION MAP
812
ASSIGN MERGED PARTITION TO TABLE SERVER
814
LOAD AND START SERVING MERGED PARTITION
816

FIG. 8.

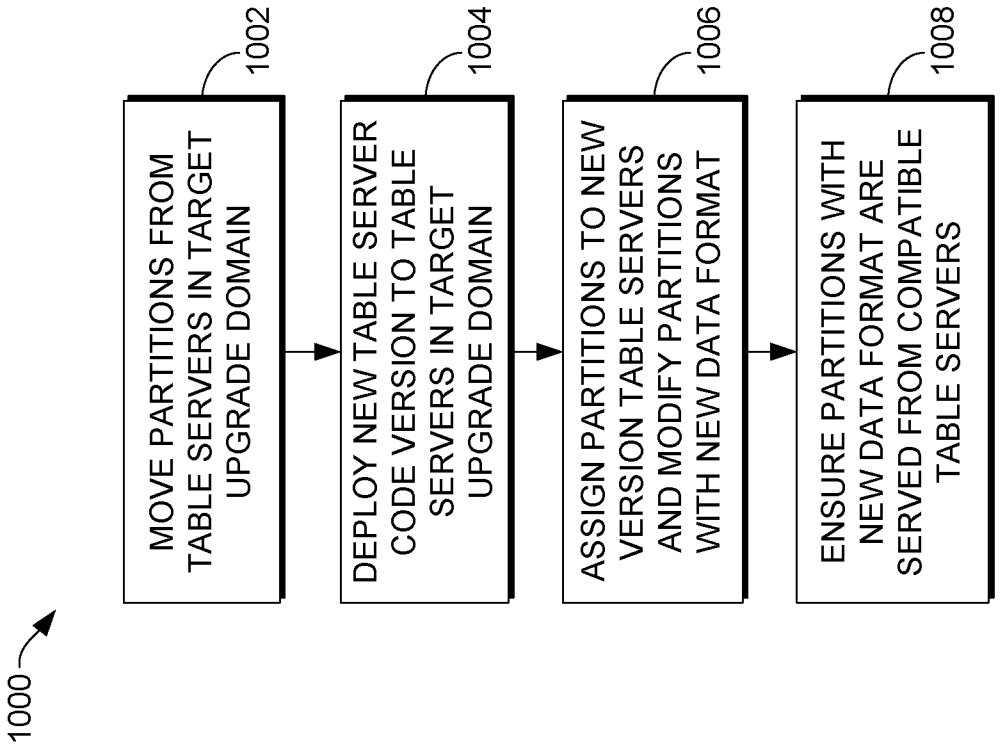

1000
MOVE PARTITIONS FROM TABLE SERVERS IN TARGET UPGRADE DOMAIN
1002
DEPLOY NEW TABLE SERVER CODE VERSION TO TABLE SERVERS IN TARGET UPGRADE DOMAIN
1004
ASSIGN PARTITIONS TO NEW VERSION TABLE SERVERS AND MODIFY PARTITIONS WITH NEW DATA FORMAT
1006
ENSURE PARTITIONS WITH NEW DATA FORMAT ARE SERVED FROM COMPATIBLE TABLE SERVERS
1008

FIG. 10.

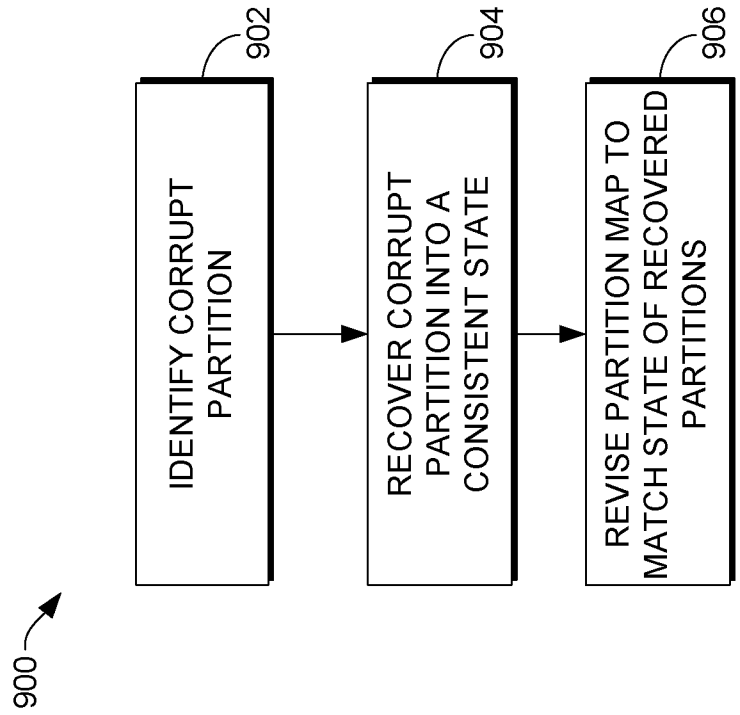

900
IDENTIFY CORRUPT PARTITION
902
RECOVER CORRUPT PARTITION INTO A CONSISTENT STATE
904
REVISE PARTITION MAP TO MATCH STATE OF RECOVERED PARTITIONS
906

FIG. 9.