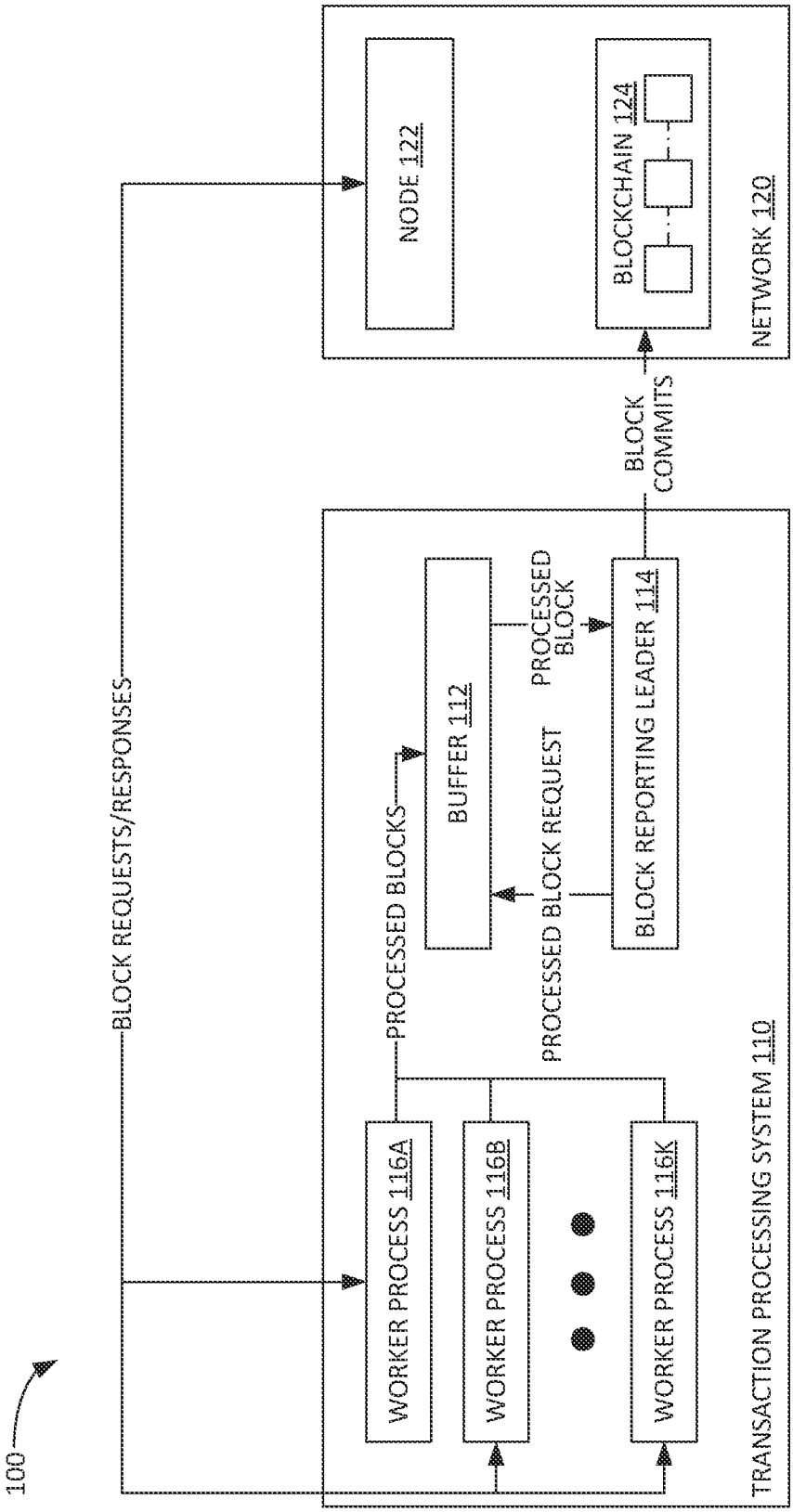
100
BLOCK REQUESTS/RESPONSES
NODE 122
BLOCKCHAIN 124
NETWORK 120
BLOCK COMMITS
BUFFER 112
PROCESSED BLOCK
BLOCK REPORTING LEADER 114
PROCESSED BLOCKS
PROCESSED BLOCK REQUEST
WORKER PROCESS 116A
WORKER PROCESS 116B
WORKER PROCESS 116K
TRANSACTION PROCESSING SYSTEM 110

FIG. 1

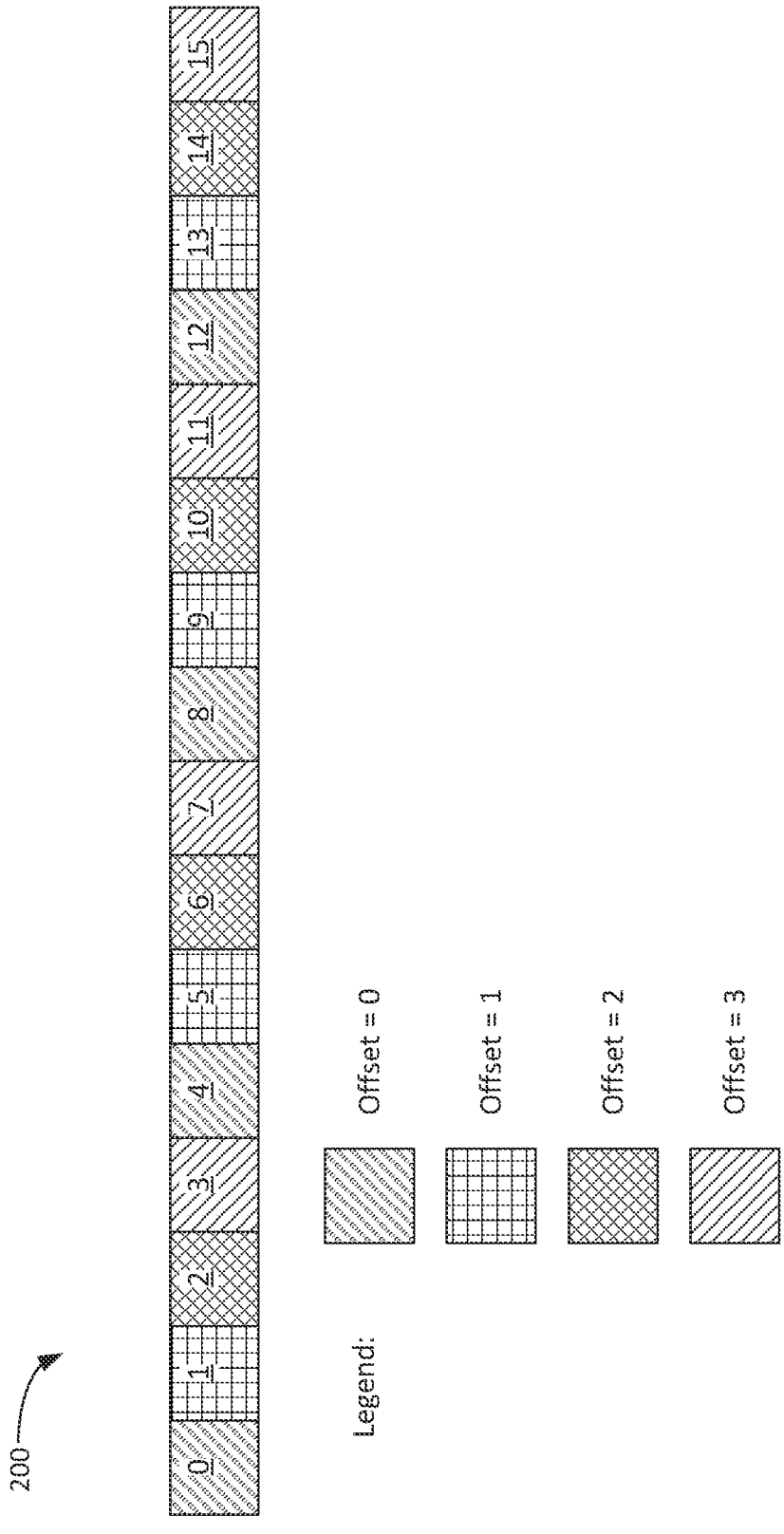
200
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Legend:
Offset = 0
Offset = 1
Offset = 2
Offset = 3

FIG. 2

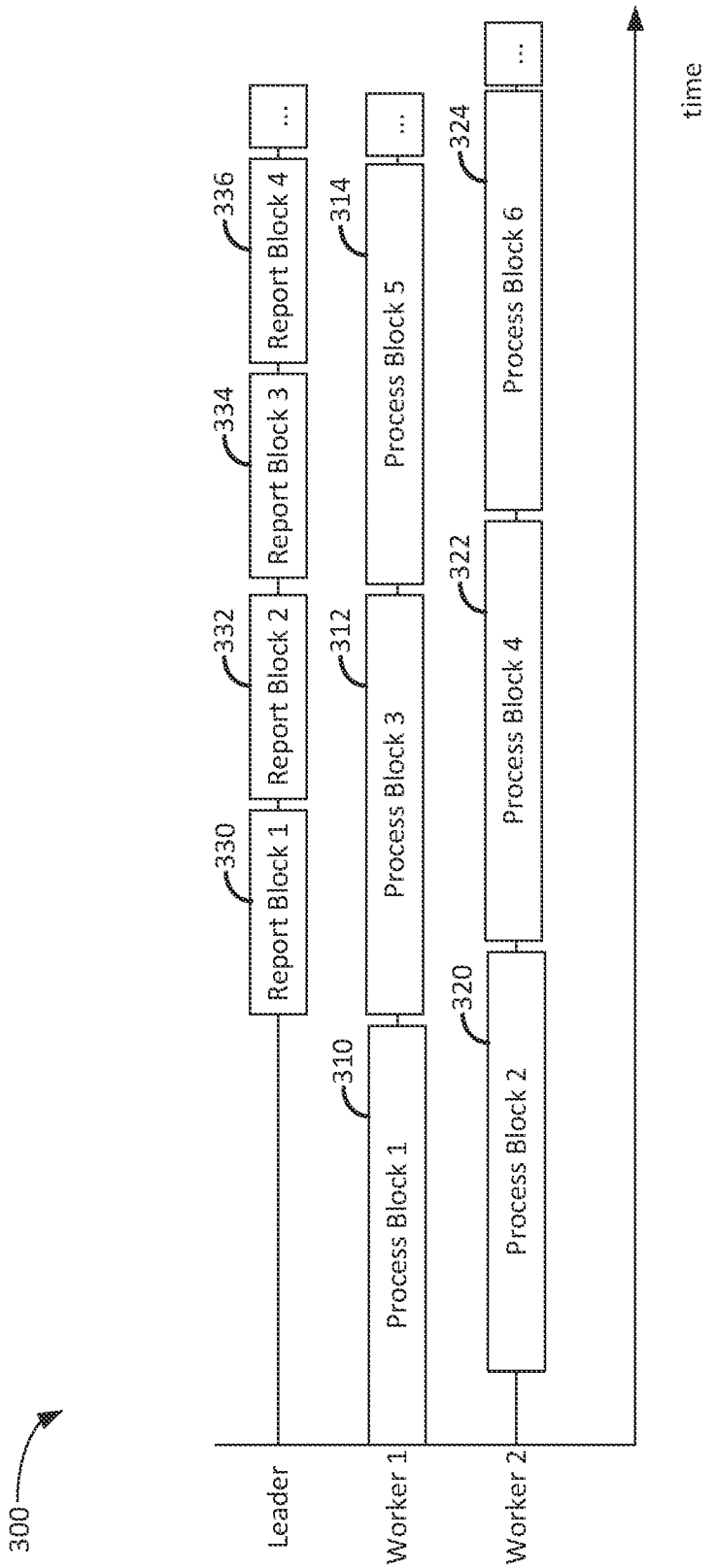
300
Leader
Worker 1
Worker 2
time
Report Block 1
Report Block 2
Report Block 3
Report Block 4
...
Process Block 1
Process Block 2
Process Block 3
Process Block 4
Process Block 5
Process Block 6
...
330
332
334
336
310
320
312
322
314
324

FIG. 3

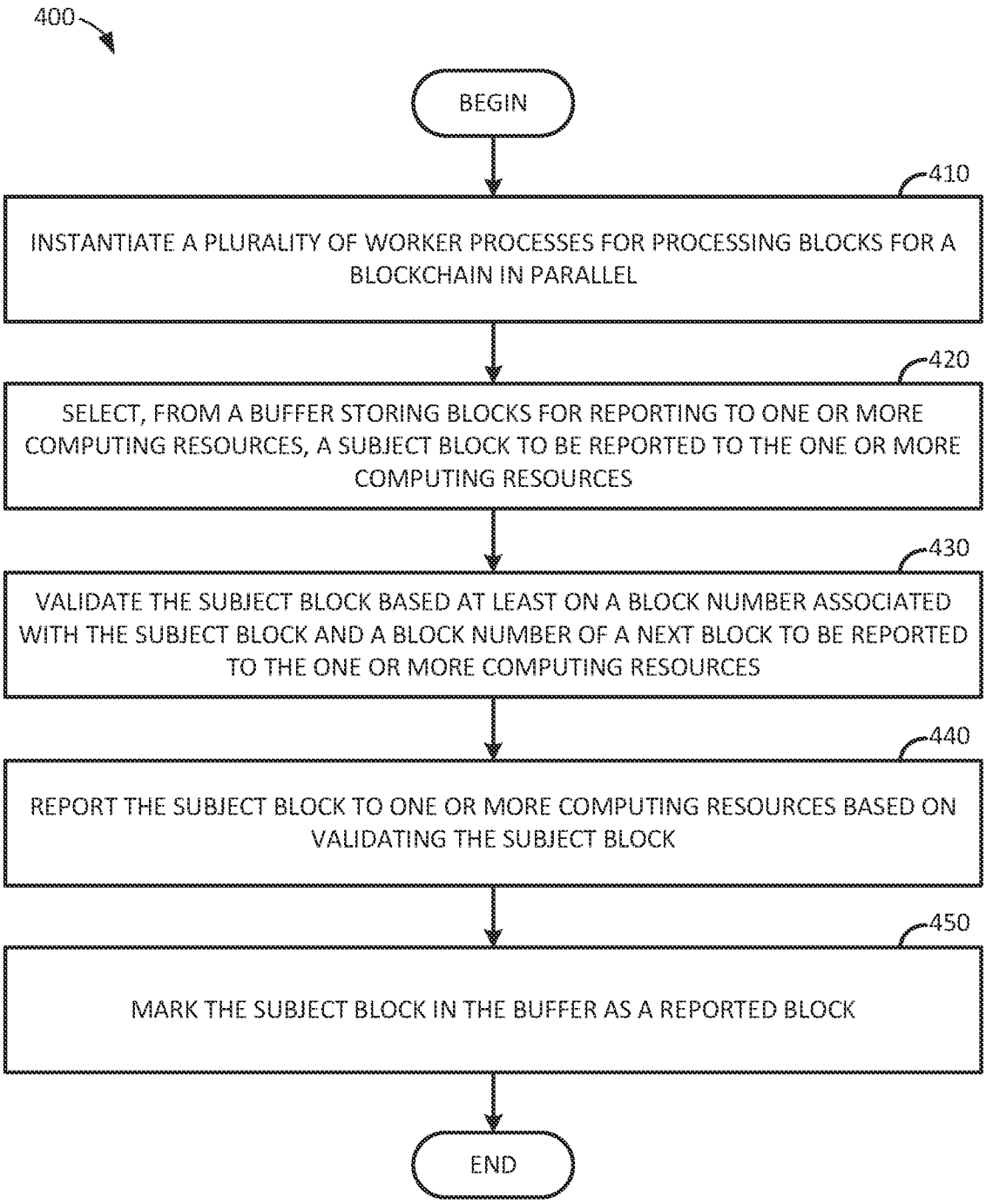
400
BEGIN
410
INSTANTIATE A PLURALITY OF WORKER PROCESSES FOR PROCESSING BLOCKS FOR A BLOCKCHAIN IN PARALLEL
420
SELECT, FROM A BUFFER STORING BLOCKS FOR REPORTING TO ONE OR MORE COMPUTING RESOURCES, A SUBJECT BLOCK TO BE REPORTED TO THE ONE OR MORE COMPUTING RESOURCES
430
VALIDATE THE SUBJECT BLOCK BASED AT LEAST ON A BLOCK NUMBER ASSOCIATED WITH THE SUBJECT BLOCK AND A BLOCK NUMBER OF A NEXT BLOCK TO BE REPORTED TO THE ONE OR MORE COMPUTING RESOURCES
440
REPORT THE SUBJECT BLOCK TO ONE OR MORE COMPUTING RESOURCES BASED ON VALIDATING THE SUBJECT BLOCK
450
MARK THE SUBJECT BLOCK IN THE BUFFER AS A REPORTED BLOCK
END

FIG. 4

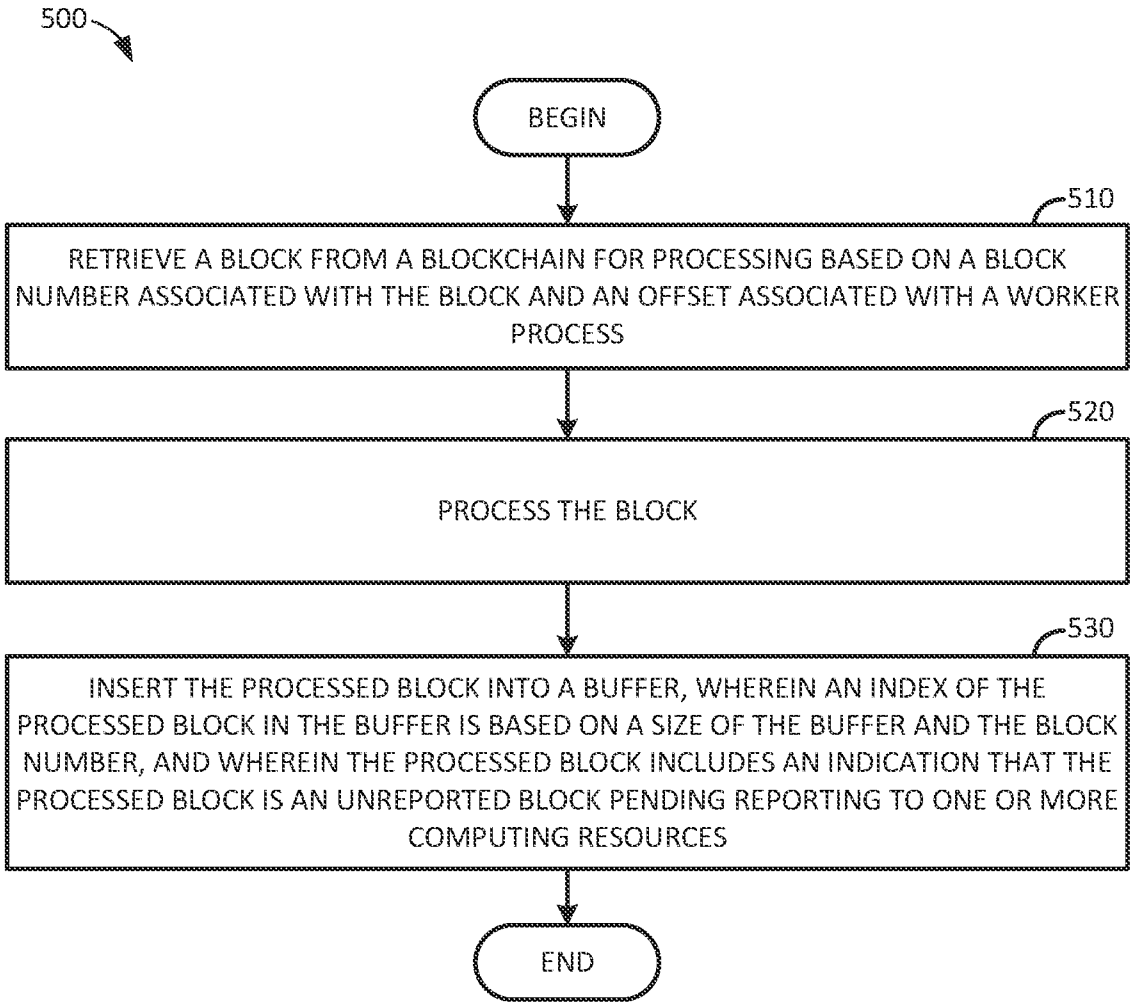
500
BEGIN
510
RETRIEVE A BLOCK FROM A BLOCKCHAIN FOR PROCESSING BASED ON A BLOCK NUMBER ASSOCIATED WITH THE BLOCK AND AN OFFSET ASSOCIATED WITH A WORKER PROCESS
520
PROCESS THE BLOCK
530
INSERT THE PROCESSED BLOCK INTO A BUFFER, WHEREIN AN INDEX OF THE PROCESSED BLOCK IN THE BUFFER IS BASED ON A SIZE OF THE BUFFER AND THE BLOCK NUMBER, AND WHEREIN THE PROCESSED BLOCK INCLUDES AN INDICATION THAT THE PROCESSED BLOCK IS AN UNREPORTED BLOCK PENDING REPORTING TO ONE OR MORE COMPUTING RESOURCES
END

FIG. 5

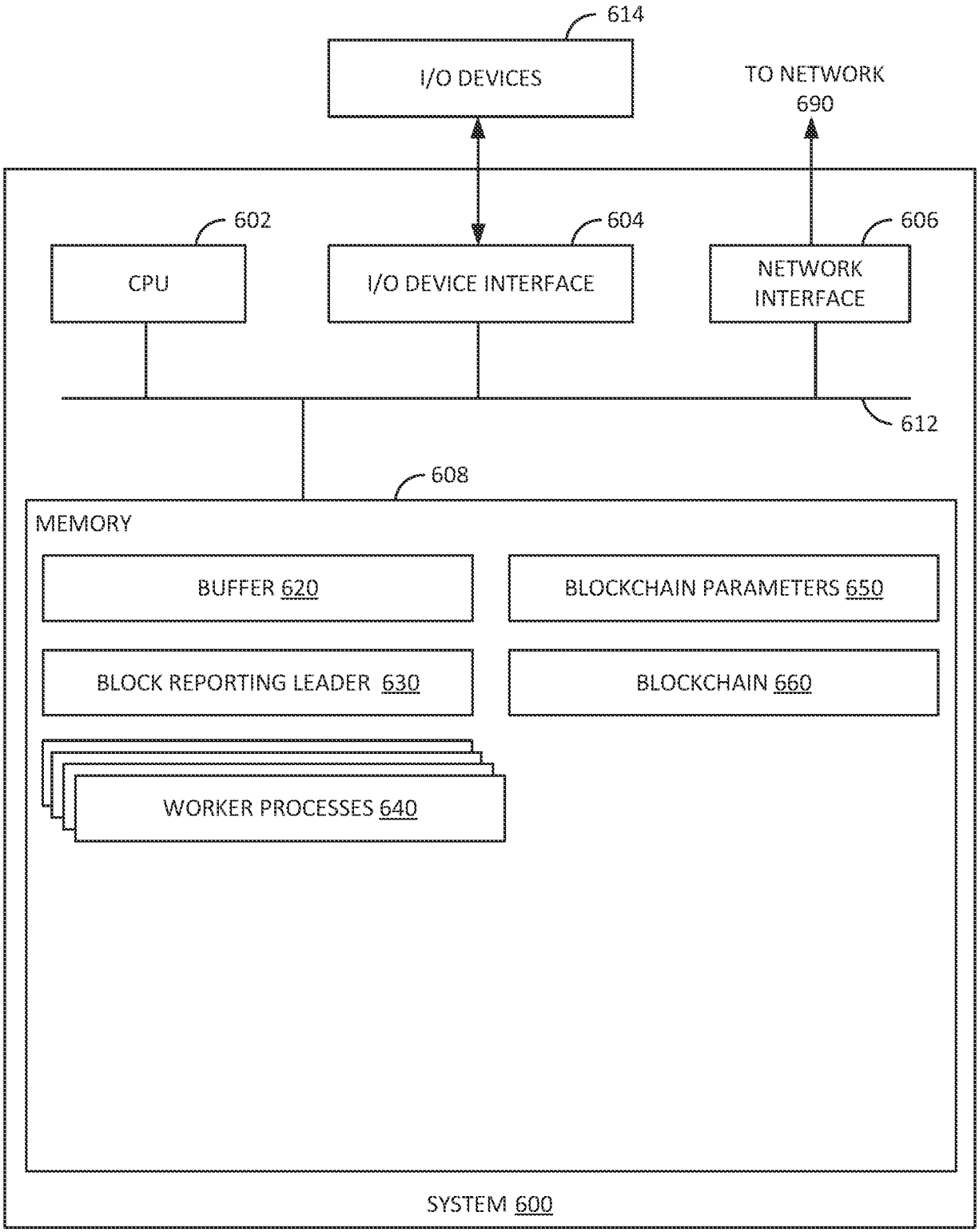
614
I/O DEVICES
TO NETWORK
690
602
CPU
604
I/O DEVICE INTERFACE
606
NETWORK
INTERFACE
612
608
MEMORY
BUFFER 620
BLOCKCHAIN PARAMETERS 650
BLOCK REPORTING LEADER 630
BLOCKCHAIN 660
WORKER PROCESSES 640
SYSTEM 600

FIG. 6