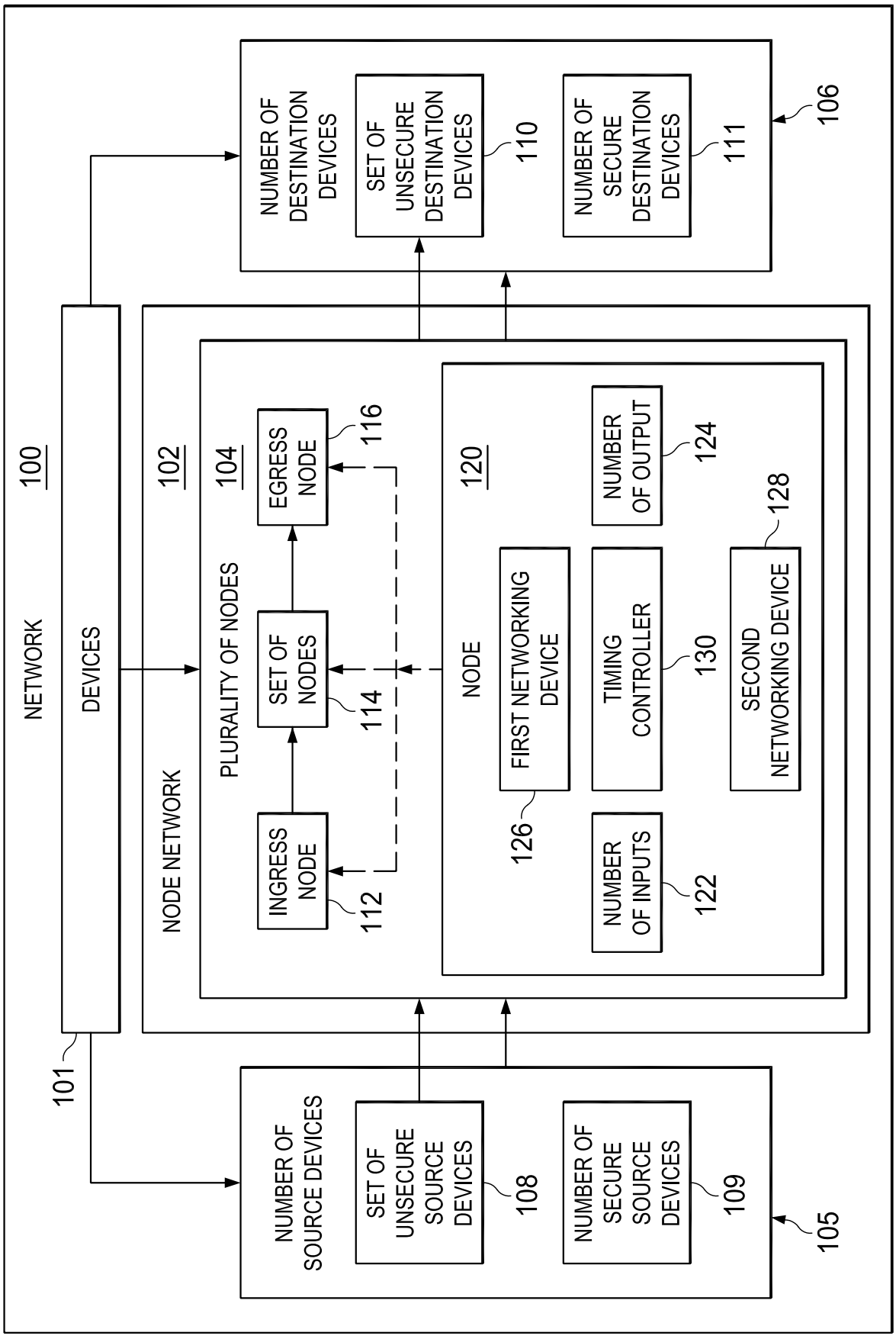

NETWORK
100
DEVICES
101
NODE NETWORK
102
PLURALITY OF NODES
104
INGRESS NODE
112
SET OF NODES
114
EGRESS NODE
116
NODE
120
FIRST NETWORKING DEVICE
126
NUMBER OF INPUTS
122
TIMING CONTROLLER
130
NUMBER OF OUTPUT
124
SECOND NETWORKING DEVICE
128
NUMBER OF SOURCE DEVICES
105
SET OF UNSECURE SOURCE DEVICES
108
NUMBER OF SECURE SOURCE DEVICES
109
NUMBER OF DESTINATION DEVICES
106
SET OF UNSECURE DESTINATION DEVICES
110
NUMBER OF SECURE DESTINATION DEVICES
111

FIG. 1

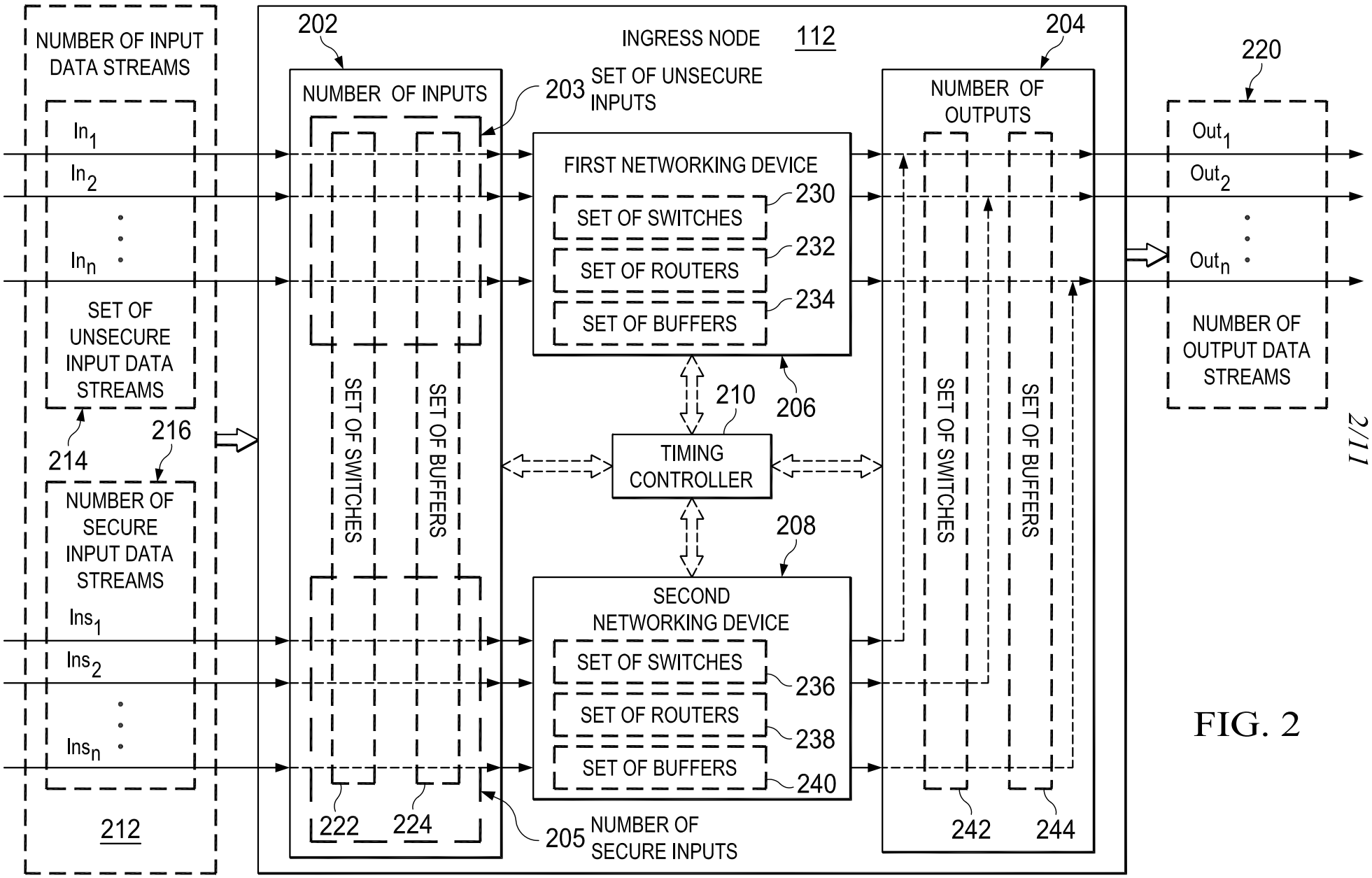

NUMBER OF INPUT DATA STREAMS
In1
In2
Inn
SET OF UNSECURE INPUT DATA STREAMS
214
216
NUMBER OF SECURE INPUT DATA STREAMS
Ins1
Ins2
Insn
212
202
NUMBER OF INPUTS
203
SET OF UNSECURE INPUTS
SET OF SWITCHES
SET OF BUFFERS
222
224
205
NUMBER OF SECURE INPUTS
INGRESS NODE 112
FIRST NETWORKING DEVICE
230
SET OF SWITCHES
232
SET OF ROUTERS
234
SET OF BUFFERS
206
210
TIMING CONTROLLER
208
SECOND NETWORKING DEVICE
236
SET OF SWITCHES
238
SET OF ROUTERS
240
SET OF BUFFERS
204
NUMBER OF OUTPUTS
SET OF SWITCHES
SET OF BUFFERS
242
244
220
Out1
Out2
Outn
NUMBER OF OUTPUT DATA STREAMS

FIG. 2

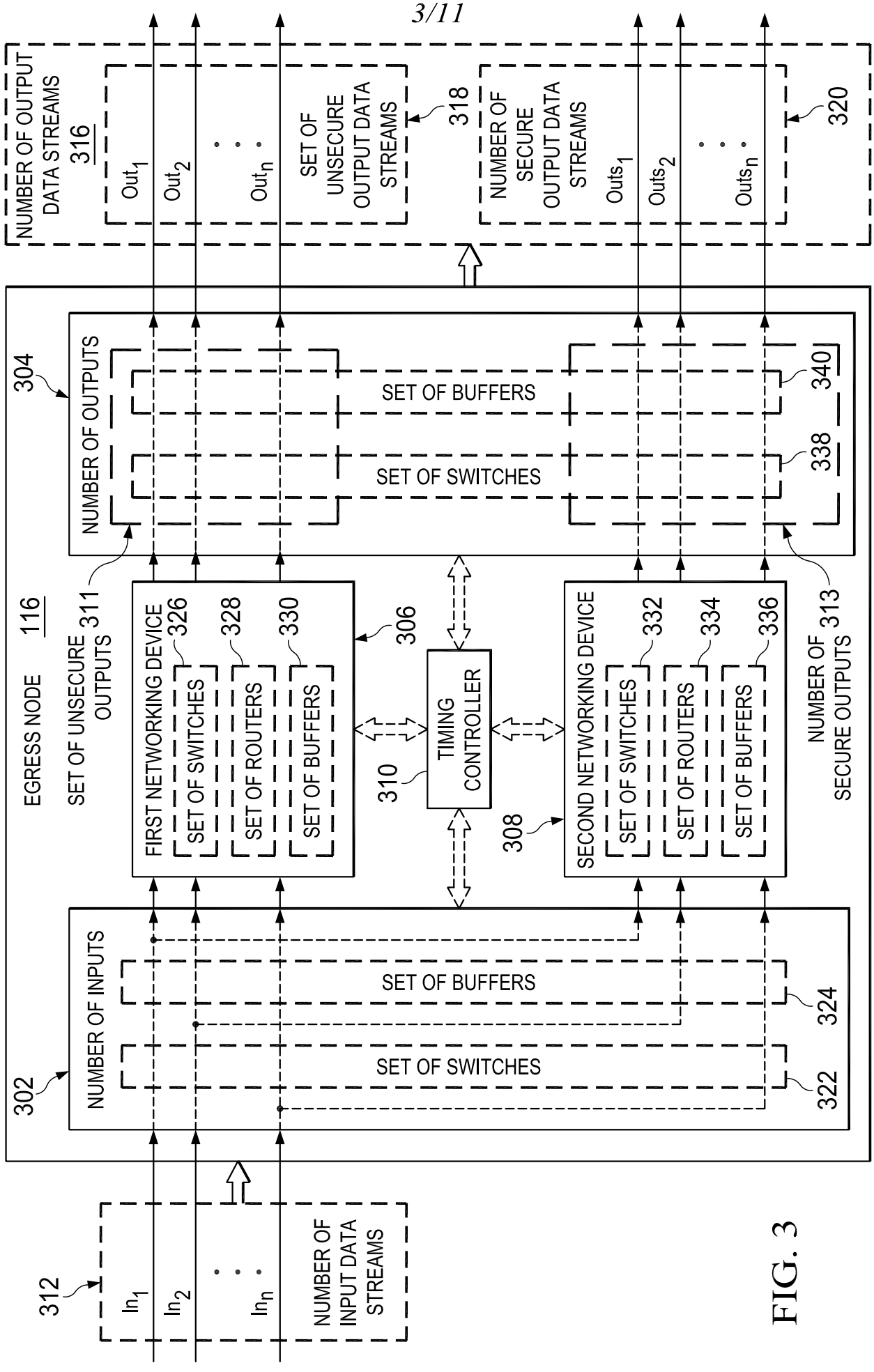

NUMBER OF OUTPUT DATA STREAMS
316
Out1
Out2
Outn
SET OF UNSECURE OUTPUT DATA STREAMS
318
NUMBER OF SECURE OUTPUT DATA STREAMS
Outs1
Outs2
Outsn
320
304
NUMBER OF OUTPUTS
SET OF BUFFERS
340
SET OF SWITCHES
338
EGRESS NODE
116
SET OF UNSECURE OUTPUTS
311
FIRST NETWORKING DEVICE
326
SET OF SWITCHES
328
SET OF ROUTERS
330
SET OF BUFFERS
306
TIMING CONTROLLER
310
308
SECOND NETWORKING DEVICE
SET OF SWITCHES
332
SET OF ROUTERS
334
SET OF BUFFERS
336
NUMBER OF SECURE OUTPUTS
313
302
NUMBER OF INPUTS
SET OF BUFFERS
324
SET OF SWITCHES
322
312
In1
In2
Inn
NUMBER OF INPUT DATA STREAMS

FIG. 3

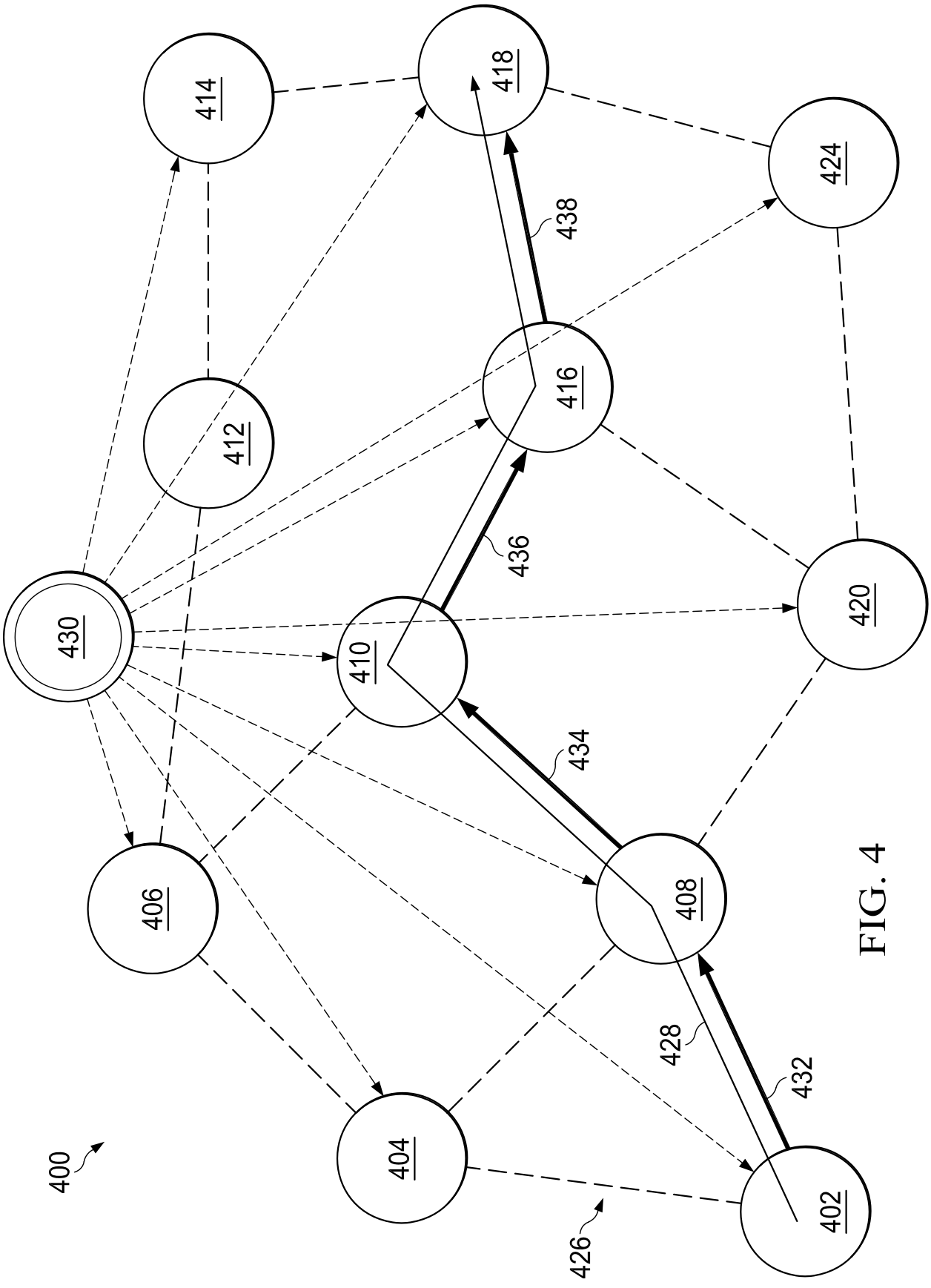

400
402
404
406
408
410
412
414
416
418
420
424
426
428
430
432
434
436
438

FIG. 4

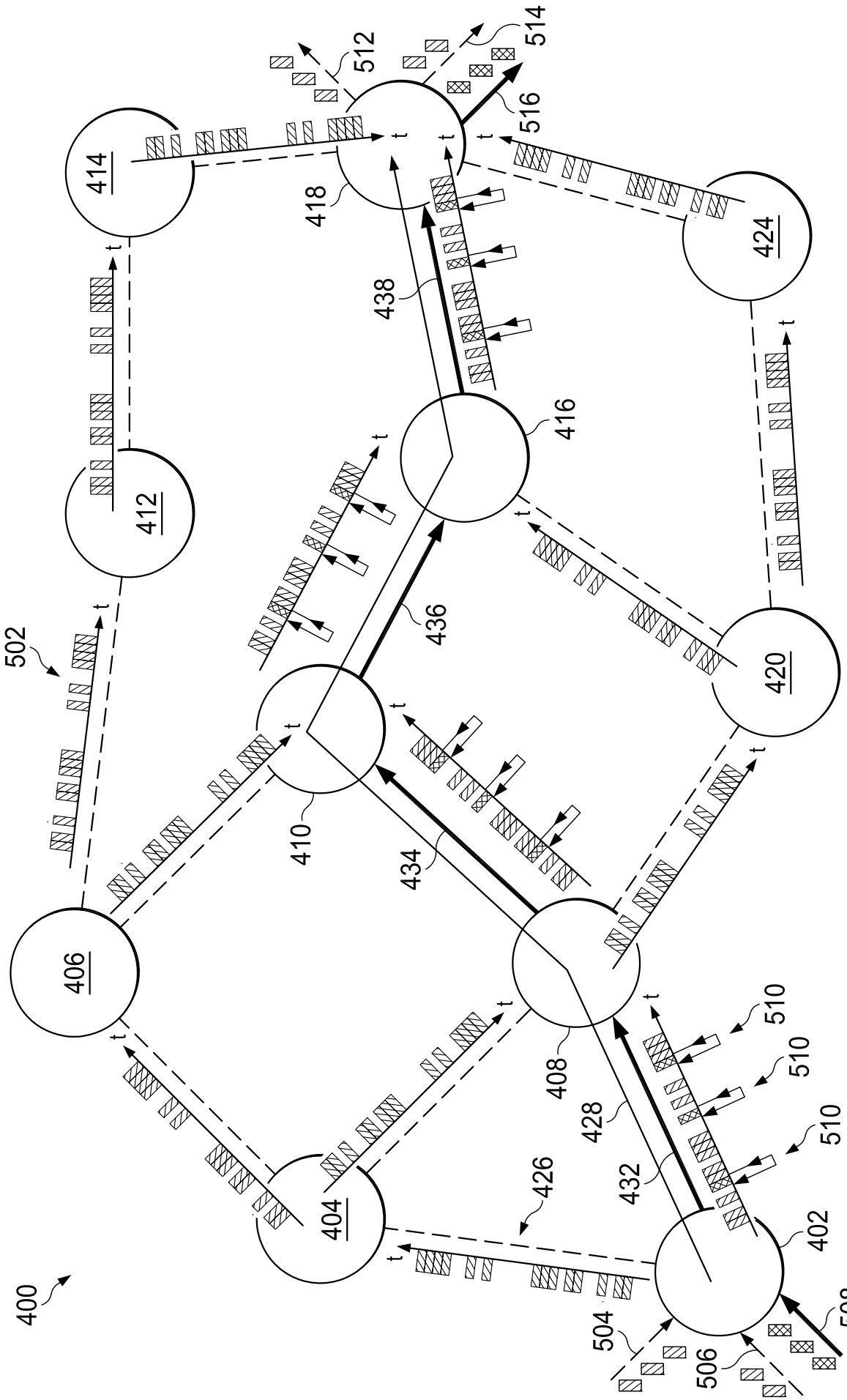

400
402
404
406
408
410
412
414
416
418
420
424
426
428
432
434
436
438
502
504
506
508
510
512
514
516
t

FIG. 5

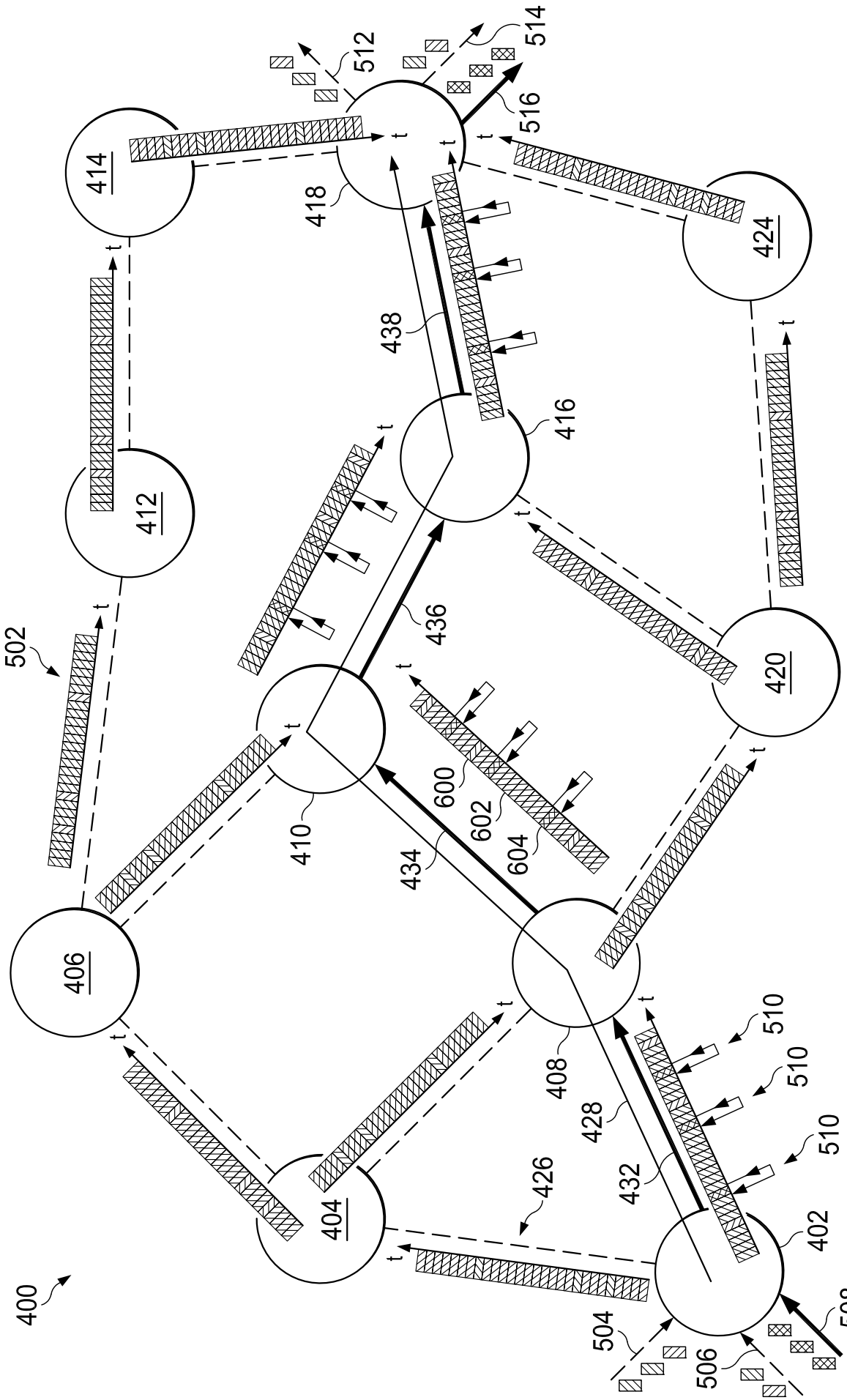

400
402
404
406
408
410
412
414
416
418
420
424
426
428
432
434
436
438
502
504
506
508
510
512
514
516
600
602
604
t

FIG. 6

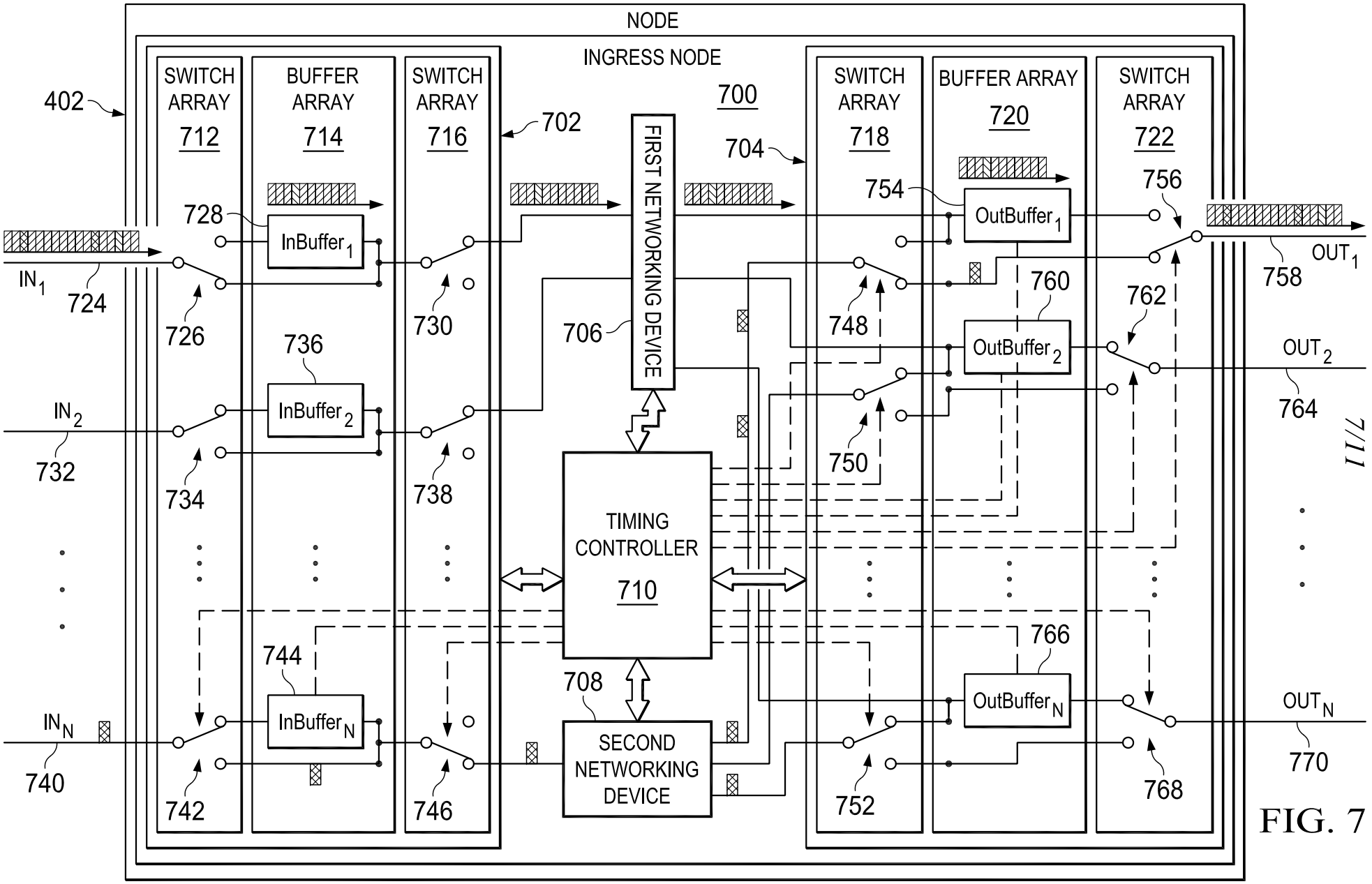

NODE
INGRESS NODE
402
700
702
704
706
SWITCH ARRAY 712
BUFFER ARRAY 714
SWITCH ARRAY 716
FIRST NETWORKING DEVICE
SWITCH ARRAY 718
BUFFER ARRAY 720
SWITCH ARRAY 722
728
InBuffer 1
IN 1
724
726
730
736
InBuffer 2
IN 2
732
734
738
744
InBuffer N
IN N
740
742
746
TIMING CONTROLLER 710
708
SECOND NETWORKING DEVICE
754
OutBuffer 1
756
OUT 1
758
760
OutBuffer 2
762
OUT 2
764
748
750
766
OutBuffer N
OUT N
770
752
768
7/11

FIG. 7

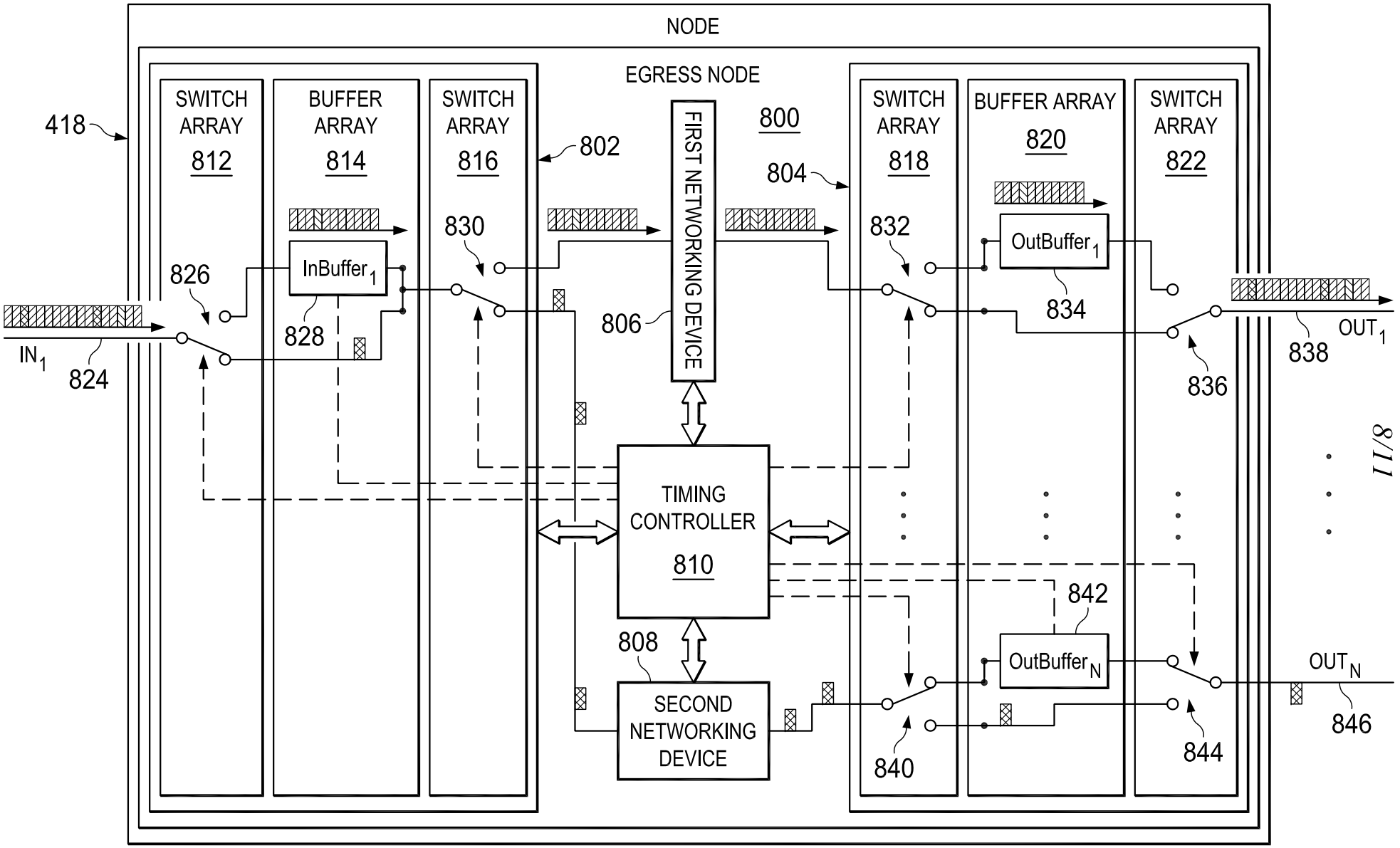

NODE
EGRESS NODE
418
SWITCH ARRAY 812
BUFFER ARRAY 814
SWITCH ARRAY 816
802
800
FIRST NETWORKING DEVICE
804
SWITCH ARRAY 818
BUFFER ARRAY 820
SWITCH ARRAY 822
830
832
826
InBuffer 1
OutBuffer 1
828
834
806
IN 1
824
838
OUT 1
836
TIMING CONTROLLER 810
842
808
OutBuffer N
OUT N
SECOND NETWORKING DEVICE
840
844
846

FIG. 8

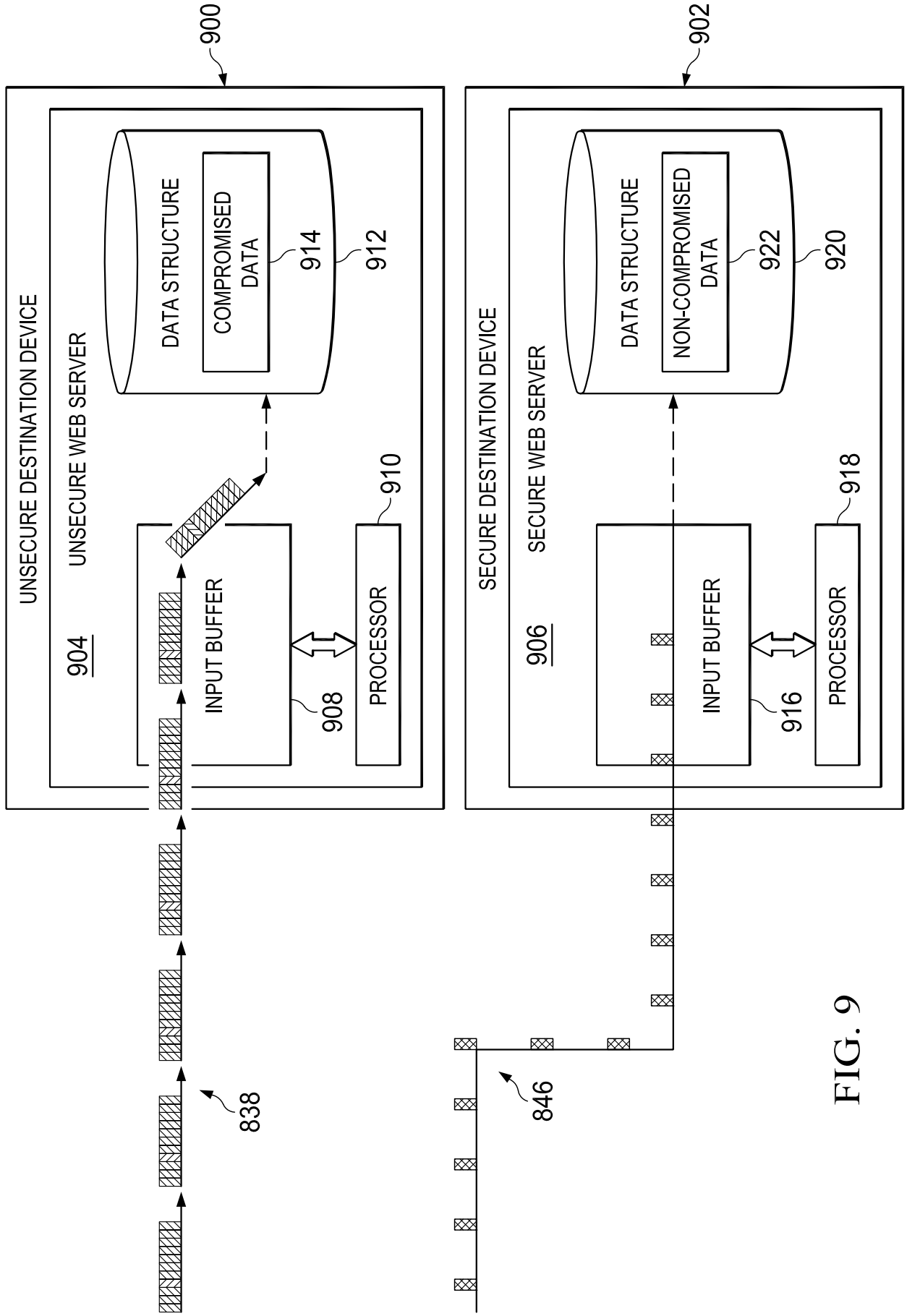

900
902
UNSECURE DESTINATION DEVICE
UNSECURE WEB SERVER
904
DATA STRUCTURE
COMPROMISED DATA
914
912
INPUT BUFFER
908
PROCESSOR
910
838
SECURE DESTINATION DEVICE
SECURE WEB SERVER
906
DATA STRUCTURE
NON-COMPROMISED DATA
922
920
INPUT BUFFER
916
PROCESSOR
918
846

FIG. 9

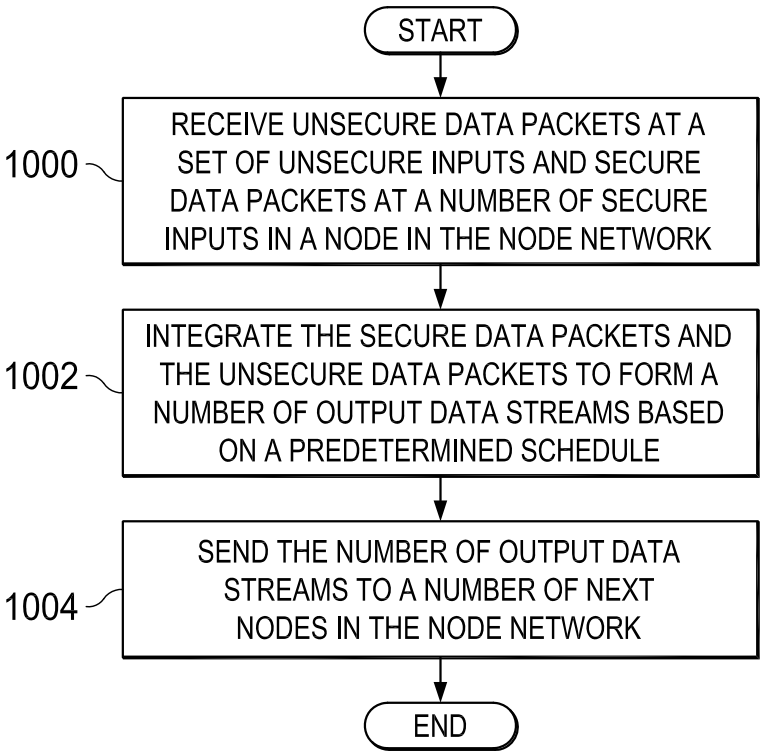

START
RECEIVE UNSECURE DATA PACKETS AT A SET OF UNSECURE INPUTS AND SECURE DATA PACKETS AT A NUMBER OF SECURE INPUTS IN A NODE IN THE NODE NETWORK
1000
INTEGRATE THE SECURE DATA PACKETS AND THE UNSECURE DATA PACKETS TO FORM A NUMBER OF OUTPUT DATA STREAMS BASED ON A PREDETERMINED SCHEDULE
1002
SEND THE NUMBER OF OUTPUT DATA STREAMS TO A NUMBER OF NEXT NODES IN THE NODE NETWORK
1004
END

FIG. 10

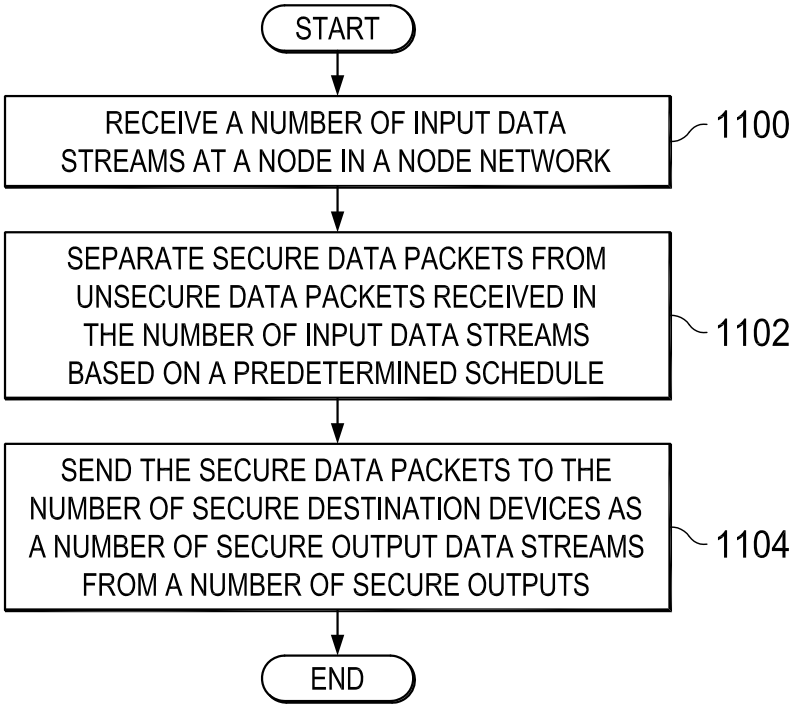
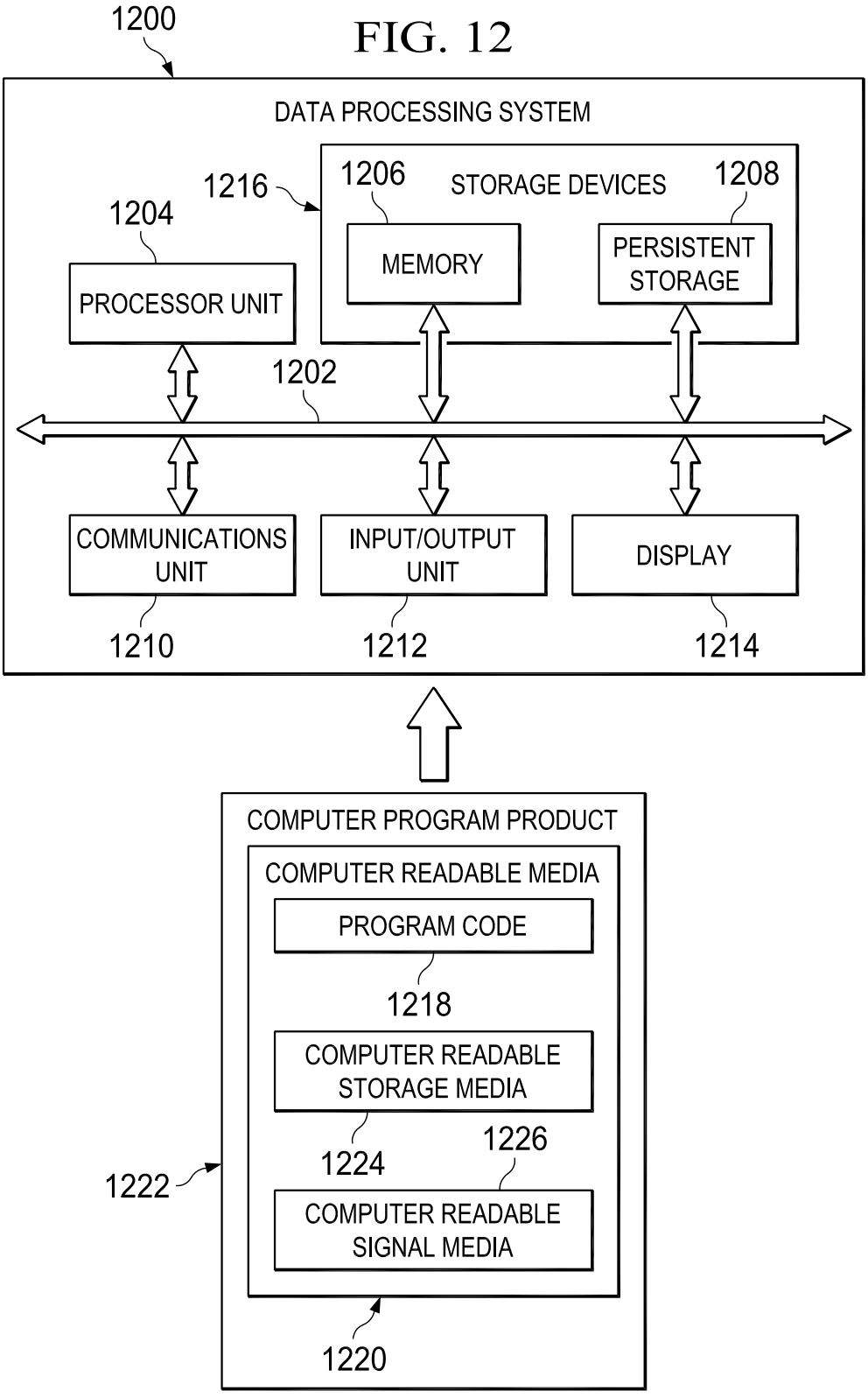

START
RECEIVE A NUMBER OF INPUT DATA STREAMS AT A NODE IN A NODE NETWORK
1100
SEPARATE SECURE DATA PACKETS FROM UNSECURE DATA PACKETS RECEIVED IN THE NUMBER OF INPUT DATA STREAMS BASED ON A PREDETERMINED SCHEDULE
1102
SEND THE SECURE DATA PACKETS TO THE NUMBER OF SECURE DESTINATION DEVICES AS A NUMBER OF SECURE OUTPUT DATA STREAMS FROM A NUMBER OF SECURE OUTPUTS
1104
END

FIG. 11

FIG. 12


1200
DATA PROCESSING SYSTEM
1216
1206
STORAGE DEVICES
1208
1204
MEMORY
PERSISTENT STORAGE
PROCESSOR UNIT
1202
COMMUNICATIONS UNIT
INPUT/OUTPUT UNIT
DISPLAY
1210
1212
1214
COMPUTER PROGRAM PRODUCT
COMPUTER READABLE MEDIA
PROGRAM CODE
1218
COMPUTER READABLE STORAGE MEDIA
1224
1226
1222
COMPUTER READABLE SIGNAL MEDIA
1220