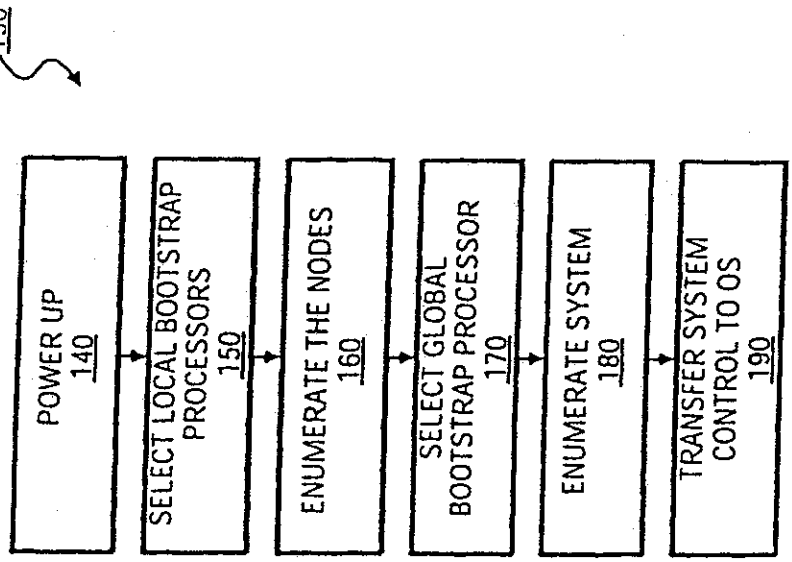

130
POWER UP 140
SELECT LOCAL BOOTSTRAP PROCESSORS 150
ENUMERATE THE NODES 160
SELECT GLOBAL BOOTSTRAP PROCESSOR 170
ENUMERATE SYSTEM 180
TRANSFER SYSTEM CONTROL TO OS 190

FIG. 1B

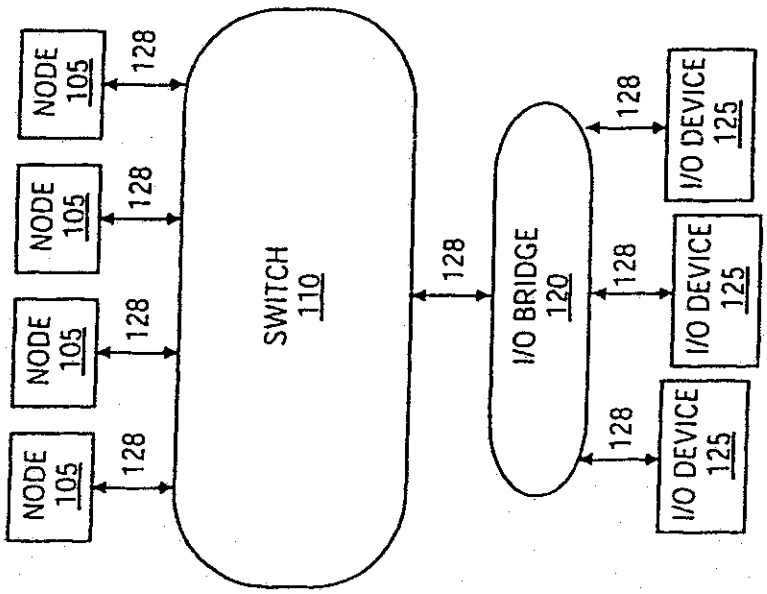

NODE 105
NODE 105
NODE 105
NODE 105
128
128
128
128
SWITCH 110
128
I/O BRIDGE 120
128
128
128
I/O DEVICE 125
I/O DEVICE 125
I/O DEVICE 125
100

FIG. 1A

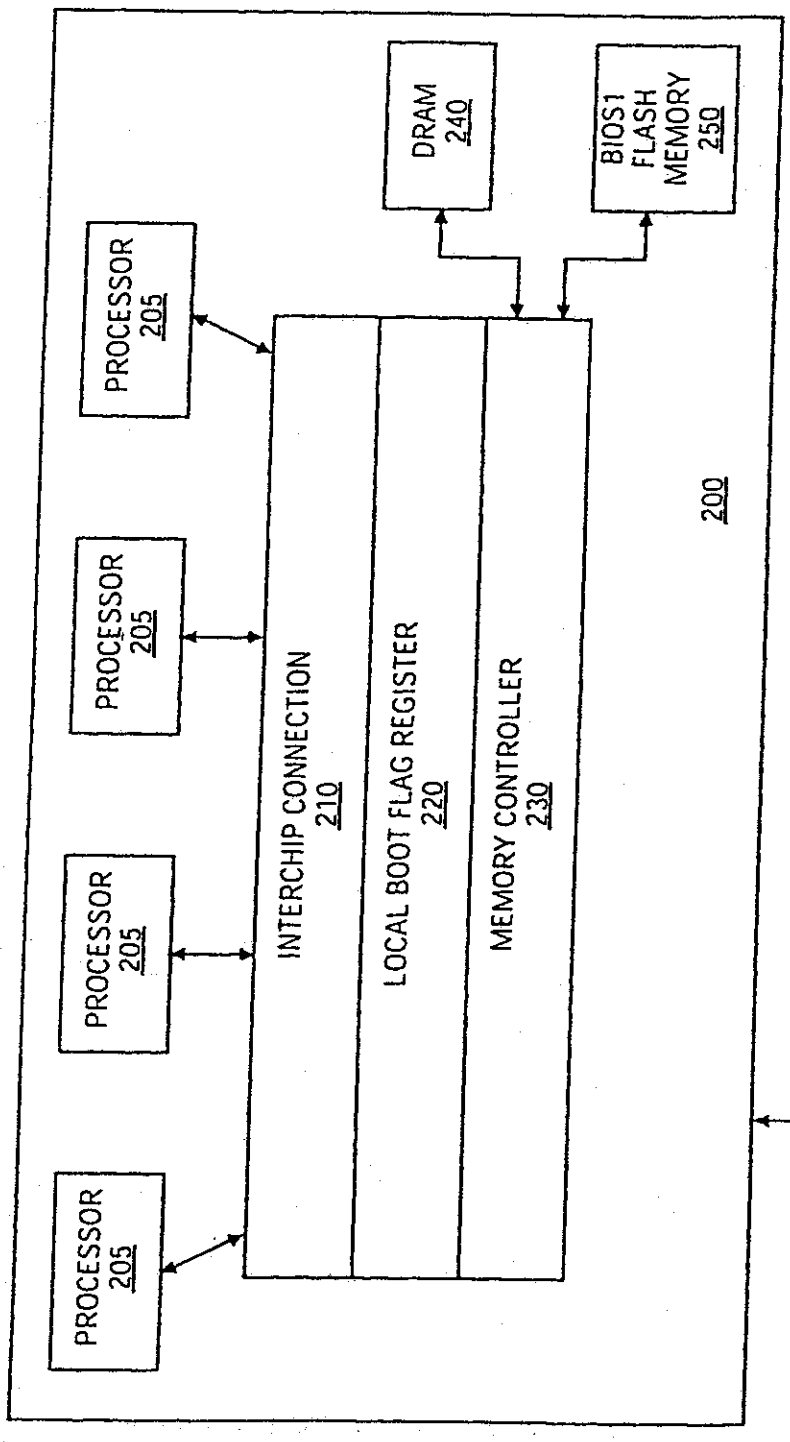

PROCESSOR 205
PROCESSOR 205
PROCESSOR 205
PROCESSOR 205
INTERCHIP CONNECTION 210
LOCAL BOOT FLAG REGISTER 220
MEMORY CONTROLLER 230
DRAM 240
BIOS1 FLASH MEMORY 250
200
260
LINK INTERFACE TO SYSTEM

FIG. 2

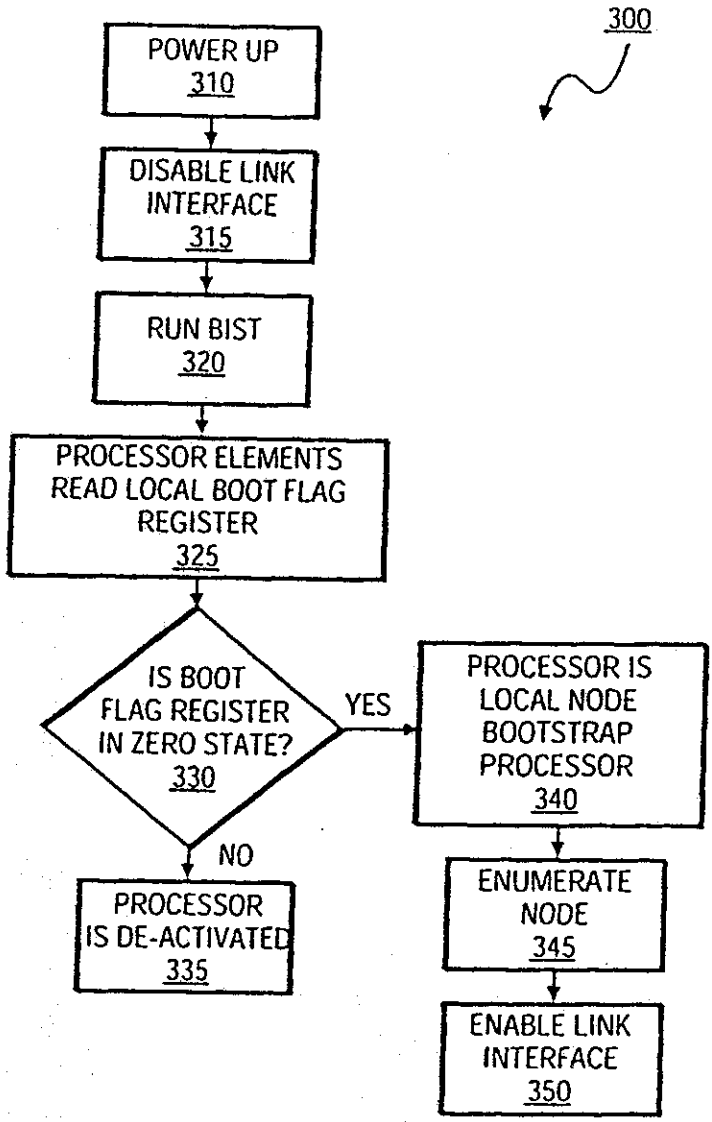

300
POWER UP
310
DISABLE LINK INTERFACE
315
RUN BIST
320
PROCESSOR ELEMENTS READ LOCAL BOOT FLAG REGISTER
325
IS BOOT FLAG REGISTER IN ZERO STATE?
330
YES
NO
PROCESSOR IS LOCAL NODE BOOTSTRAP PROCESSOR
340
PROCESSOR IS DE-ACTIVATED
335
ENUMERATE NODE
345
ENABLE LINK INTERFACE
350

FIG. 3A

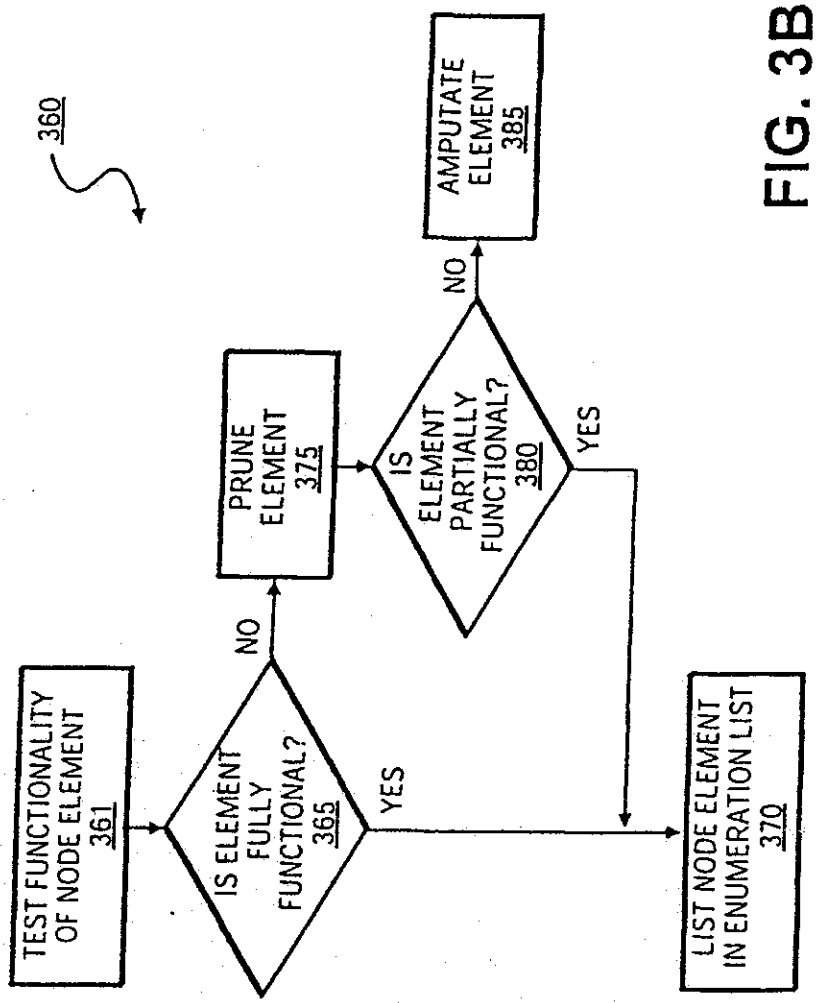

360
TEST FUNCTIONALITY OF NODE ELEMENT 361
IS ELEMENT FULLY FUNCTIONAL? 365
NO
YES
PRUNE ELEMENT 375
IS ELEMENT PARTIALLY FUNCTIONAL? 380
NO
YES
AMPUTATE ELEMENT 385
LIST NODE ELEMENT IN ENUMERATION LIST 370

FIG. 3B

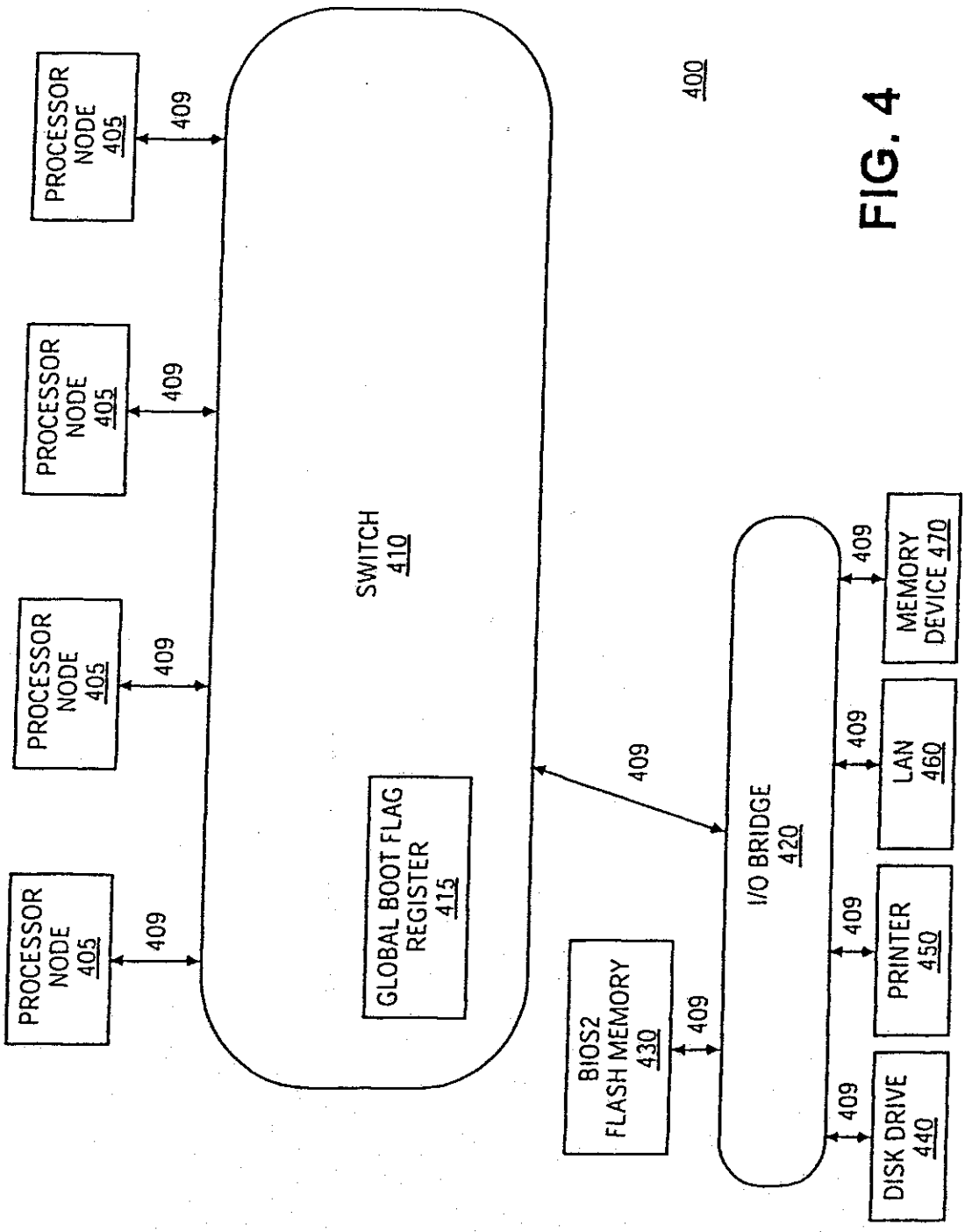

400
PROCESSOR NODE 405
PROCESSOR NODE 405
PROCESSOR NODE 405
PROCESSOR NODE 405
409
409
409
409
SWITCH 410
GLOBAL BOOT FLAG REGISTER 415
409
I/O BRIDGE 420
BIOS2 FLASH MEMORY 430
409
409
409
409
409
MEMORY DEVICE 470
LAN 460
PRINTER 450
DISK DRIVE 440

FIG. 4

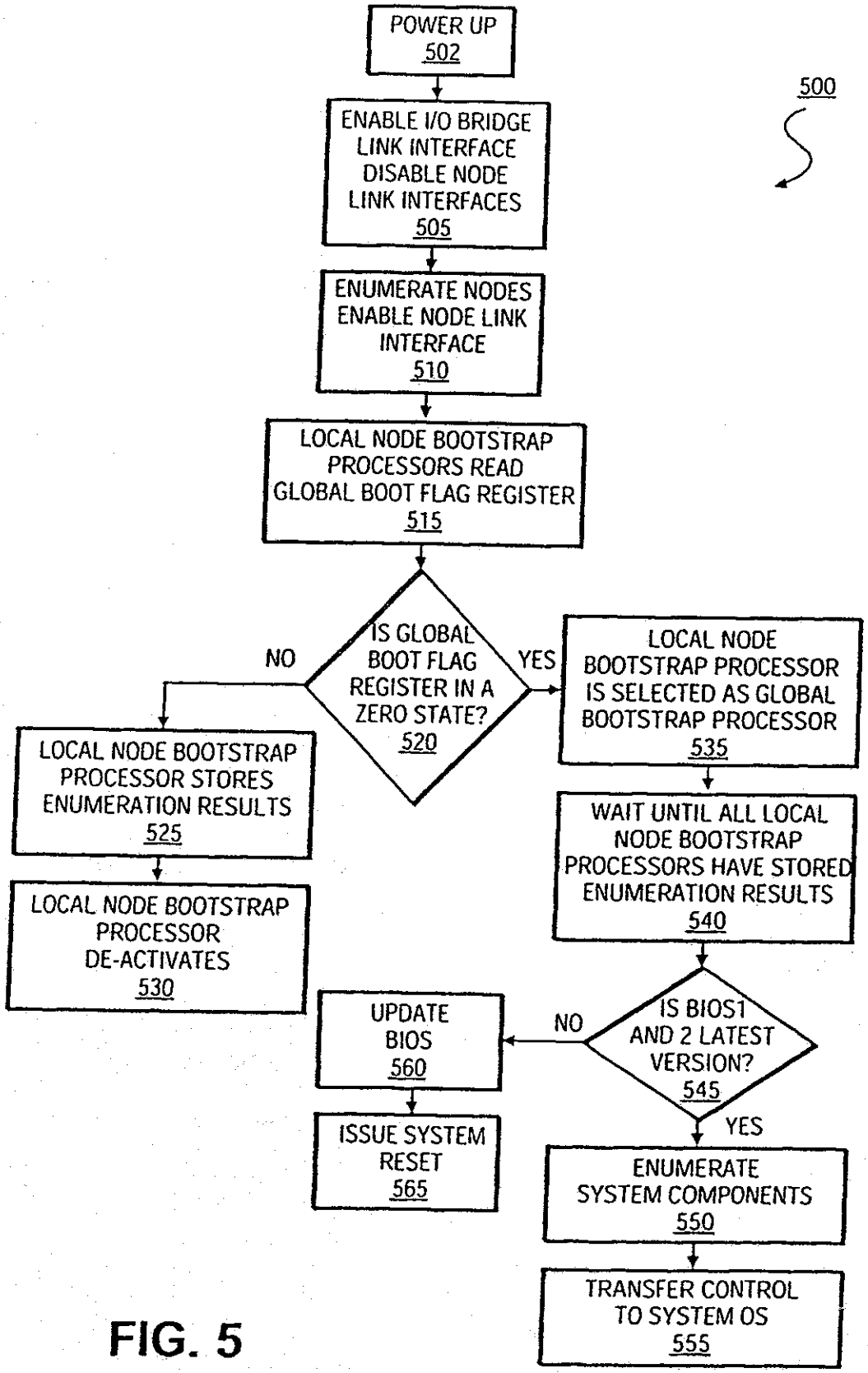

POWER UP
502
500
ENABLE I/O BRIDGE LINK INTERFACE DISABLE NODE LINK INTERFACES
505
ENUMERATE NODES ENABLE NODE LINK INTERFACE
510
LOCAL NODE BOOTSTRAP PROCESSORS READ GLOBAL BOOT FLAG REGISTER
515
IS GLOBAL BOOT FLAG REGISTER IN A ZERO STATE?
520
NO
YES
LOCAL NODE BOOTSTRAP PROCESSOR STORES ENUMERATION RESULTS
525
LOCAL NODE BOOTSTRAP PROCESSOR DE-ACTIVATES
530
LOCAL NODE BOOTSTRAP PROCESSOR IS SELECTED AS GLOBAL BOOTSTRAP PROCESSOR
535
WAIT UNTIL ALL LOCAL NODE BOOTSTRAP PROCESSORS HAVE STORED ENUMERATION RESULTS
540
IS BIOS1 AND 2 LATEST VERSION?
545
NO
YES
UPDATE BIOS
560
ISSUE SYSTEM RESET
565
ENUMERATE SYSTEM COMPONENTS
550
TRANSFER CONTROL TO SYSTEM OS
555

FIG. 5

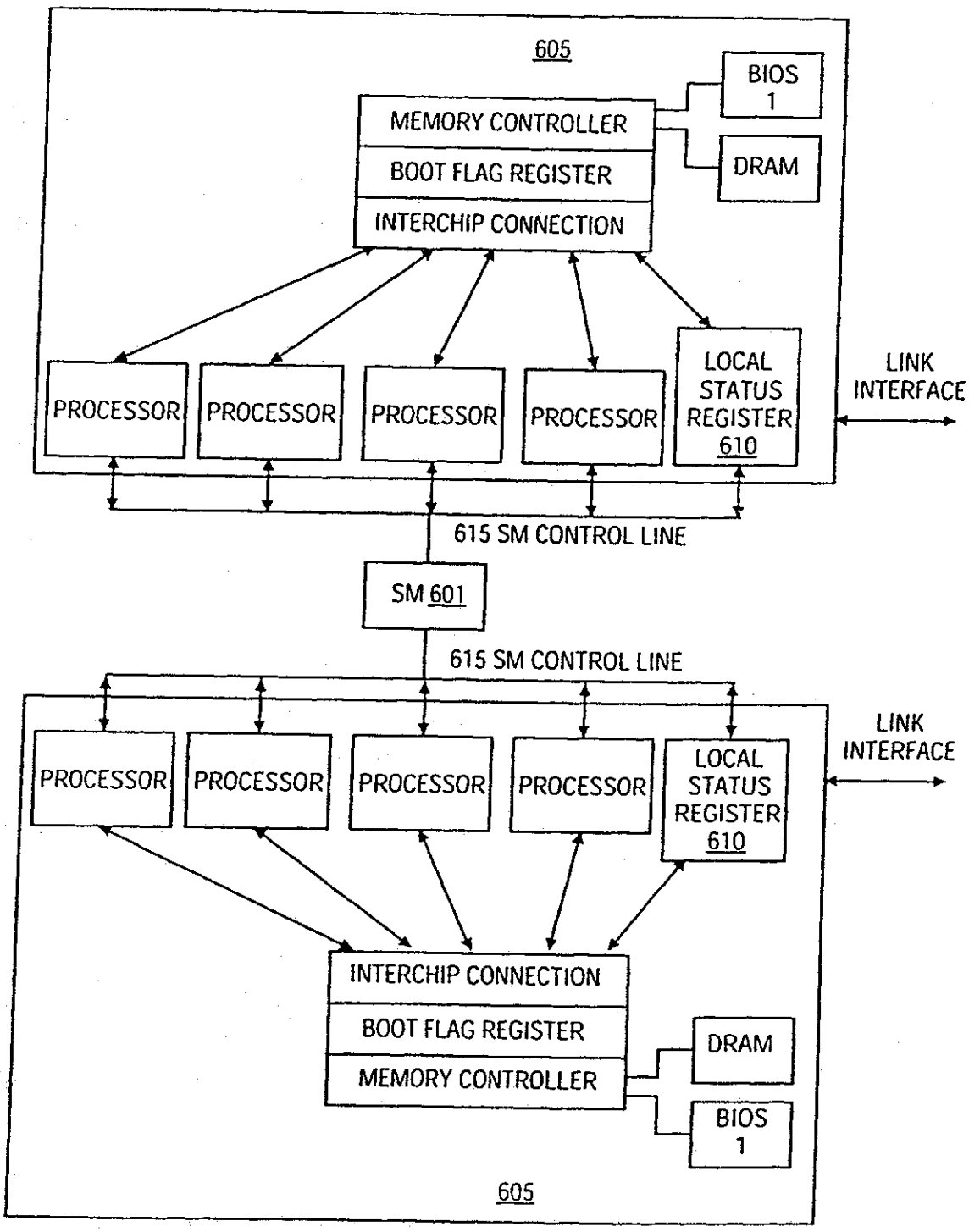

605
BIOS 1
MEMORY CONTROLLER
DRAM
BOOT FLAG REGISTER
INTERCHIP CONNECTION
PROCESSOR
PROCESSOR
PROCESSOR
PROCESSOR
LOCAL STATUS REGISTER 610
LINK INTERFACE
615 SM CONTROL LINE
SM 601
615 SM CONTROL LINE
PROCESSOR
PROCESSOR
PROCESSOR
PROCESSOR
LOCAL STATUS REGISTER 610
LINK INTERFACE
INTERCHIP CONNECTION
BOOT FLAG REGISTER
MEMORY CONTROLLER
DRAM
BIOS 1
605
600

FIG. 6A

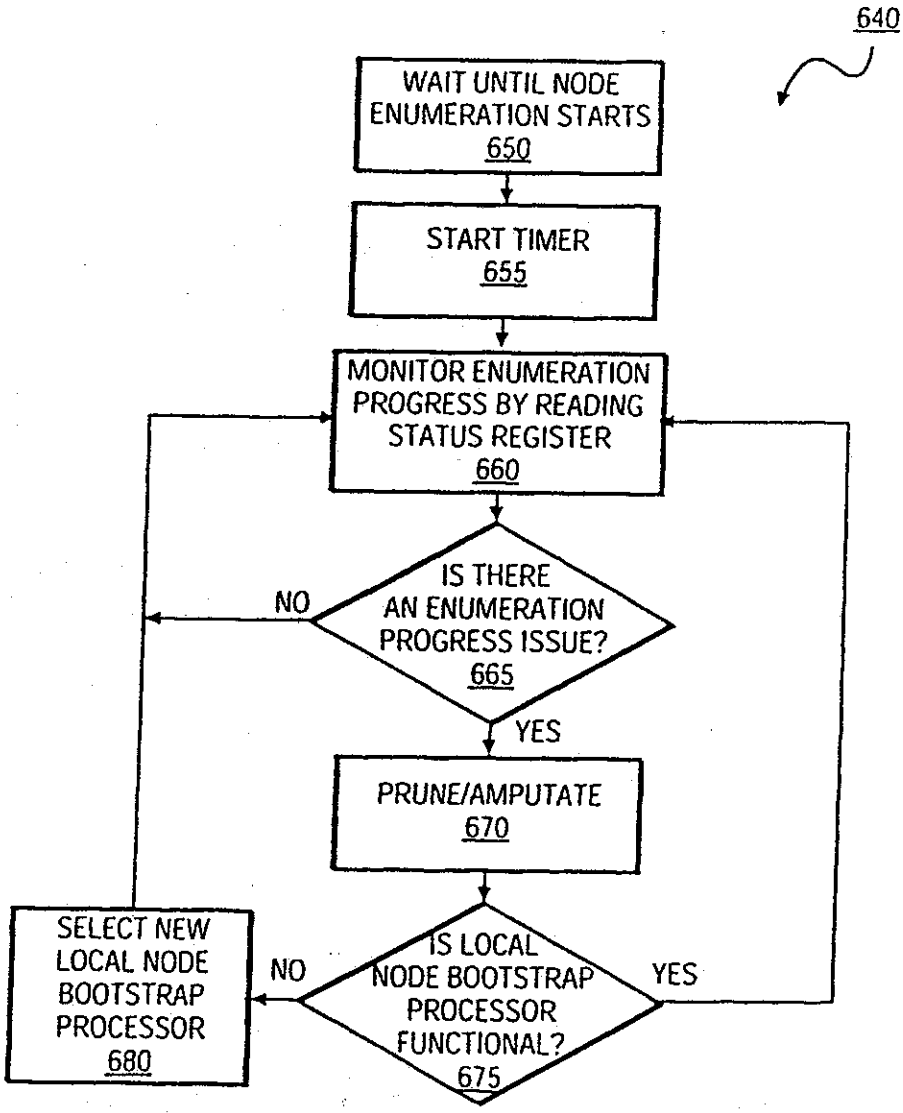

640
WAIT UNTIL NODE ENUMERATION STARTS 650
START TIMER 655
MONITOR ENUMERATION PROGRESS BY READING STATUS REGISTER 660
IS THERE AN ENUMERATION PROGRESS ISSUE? 665
NO
YES
PRUNE/AMPUTATE 670
IS LOCAL NODE BOOTSTRAP PROCESSOR FUNCTIONAL? 675
NO
YES
SELECT NEW LOCAL NODE BOOTSTRAP PROCESSOR 680

FIG. 6B

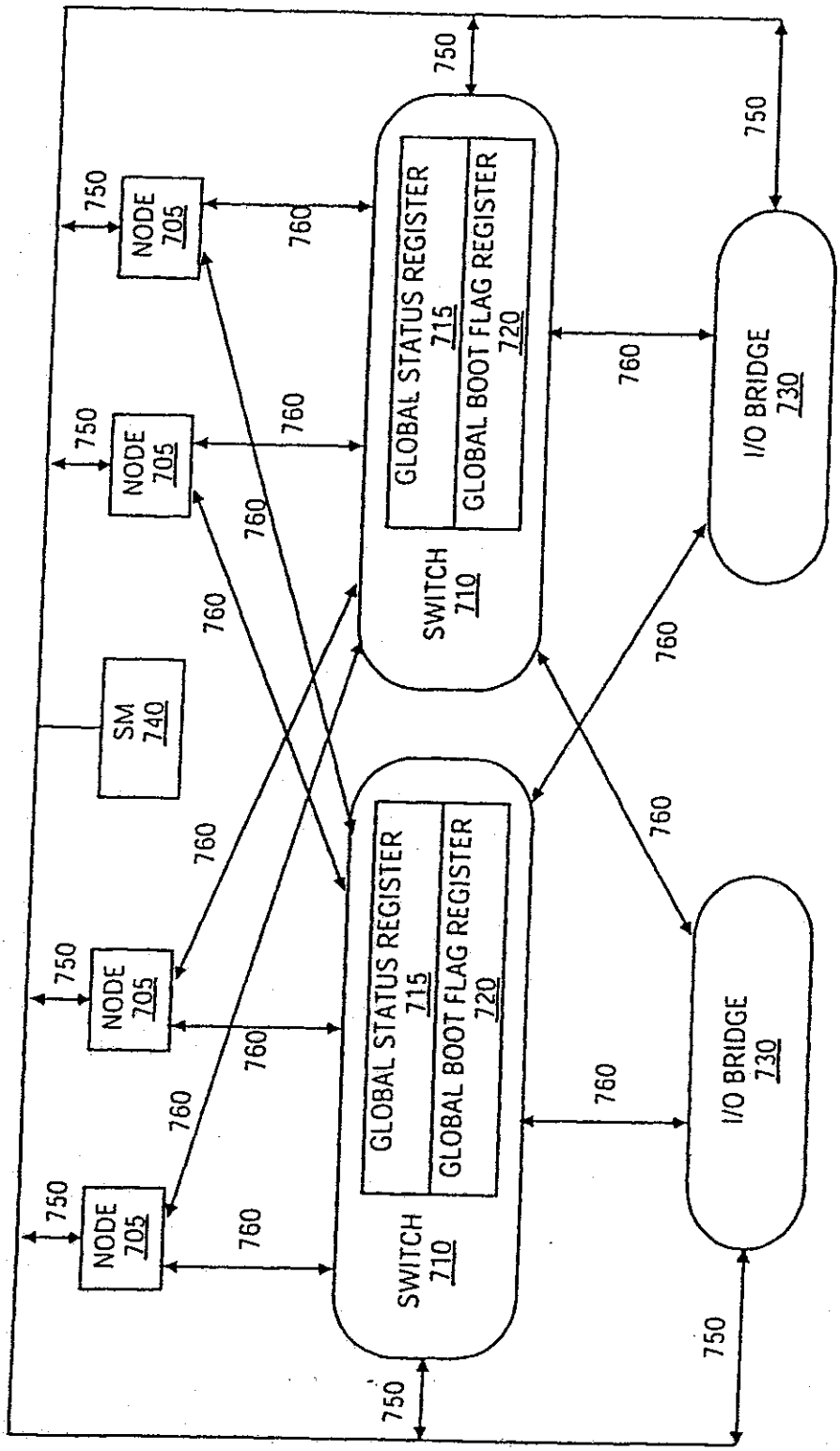

700
NODE 705
NODE 705
NODE 705
NODE 705
SM 740
SWITCH 710
GLOBAL STATUS REGISTER 715
GLOBAL BOOT FLAG REGISTER 720
SWITCH 710
GLOBAL STATUS REGISTER 715
GLOBAL BOOT FLAG REGISTER 720
I/O BRIDGE 730
I/O BRIDGE 730
750
760

FIG. 7

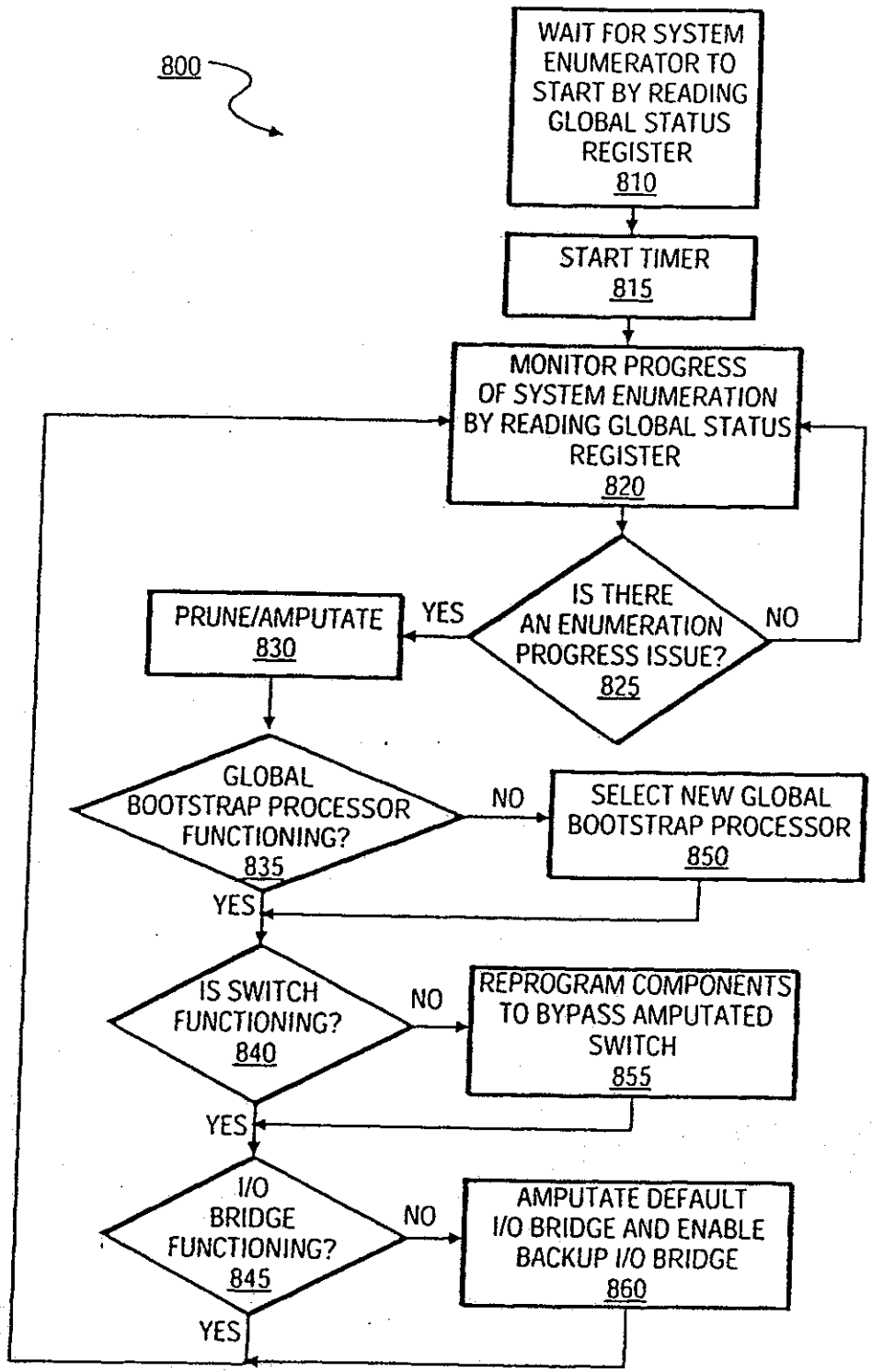

800
WAIT FOR SYSTEM ENUMERATOR TO START BY READING GLOBAL STATUS REGISTER 810
START TIMER 815
MONITOR PROGRESS OF SYSTEM ENUMERATION BY READING GLOBAL STATUS REGISTER 820
IS THERE AN ENUMERATION PROGRESS ISSUE? 825
YES
NO
PRUNE/AMPUTATE 830
GLOBAL BOOTSTRAP PROCESSOR FUNCTIONING? 835
NO
SELECT NEW GLOBAL BOOTSTRAP PROCESSOR 850
YES
IS SWITCH FUNCTIONING? 840
NO
REPROGRAM COMPONENTS TO BYPASS AMPUTATED SWITCH 855
YES
I/O BRIDGE FUNCTIONING? 845
NO
AMPUTATE DEFAULT I/O BRIDGE AND ENABLE BACKUP I/O BRIDGE 860
YES

FIG. 8