FIG. 1

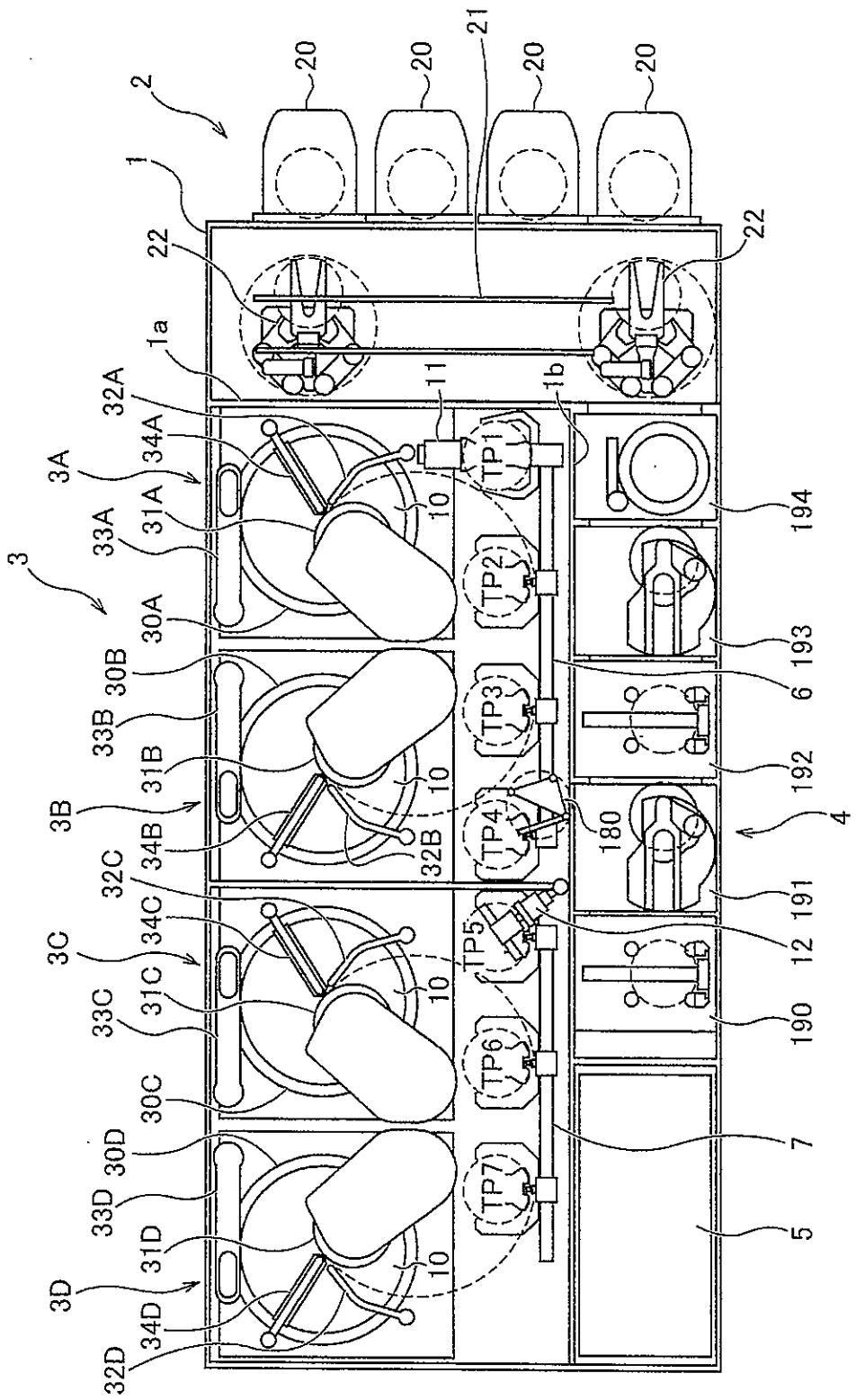

2
1
20
21
22
1a
1b
11
3
3A
3B
3C
3D
32A
34A
31A
33A
30A
30B
33B
31B
34B
32B
32C
34C
31C
33C
30C
30D
33D
31D
34D
32D
10
TP1
TP2
TP3
TP4
TP5
TP6
TP7
6
7
12
4
180
190
191
192
193
194
5

FIG. 2

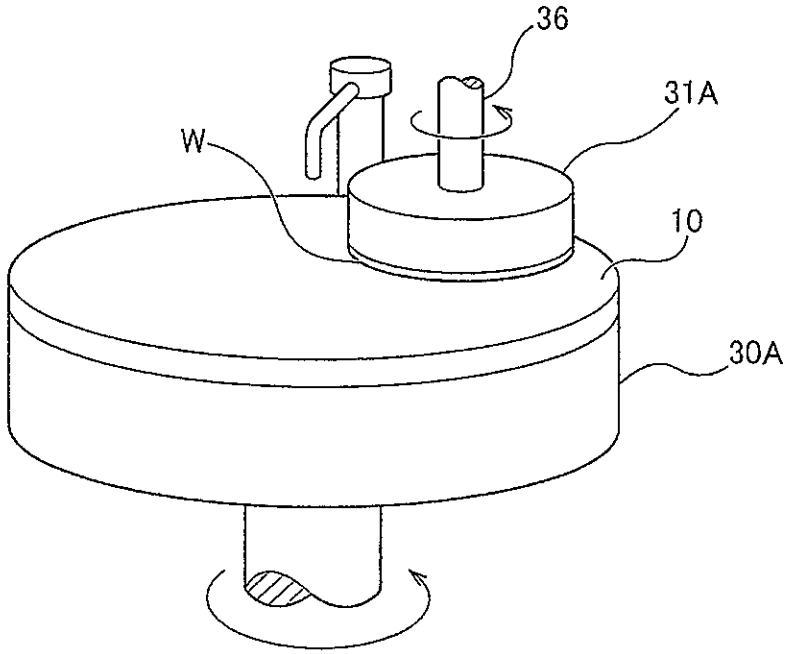


FIG. 3A

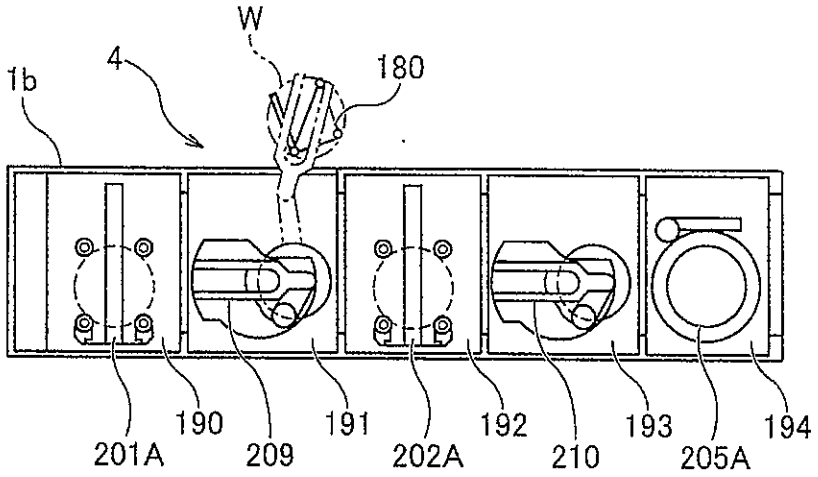

W
4
180
1b
201A
190
209
191
202A
192
210
193
205A
194

FIG. 3B

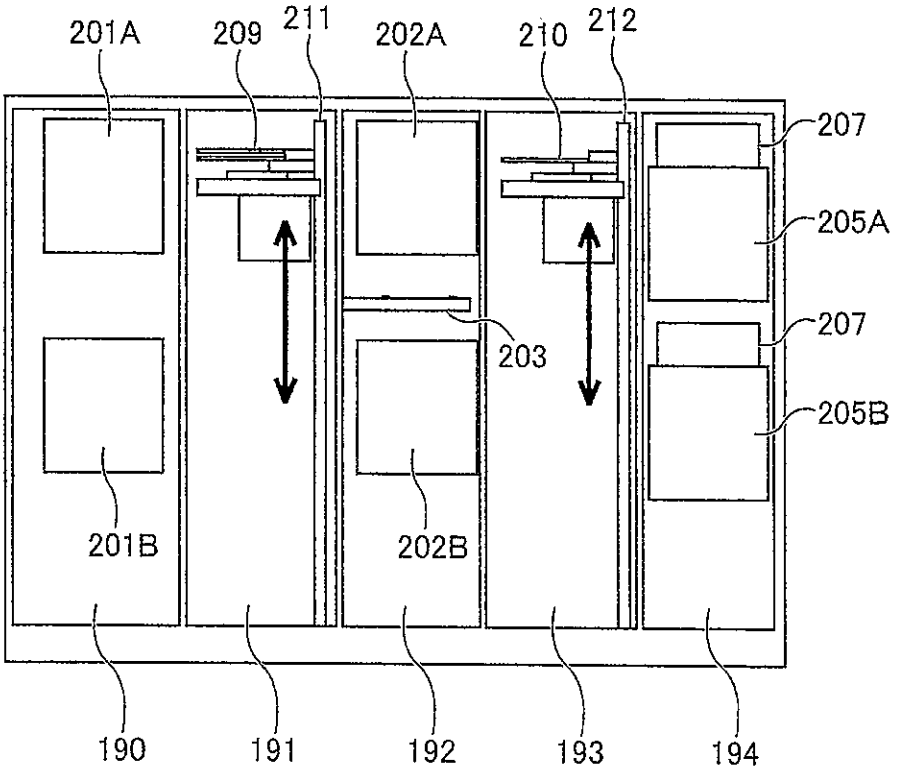

201A
209
211
202A
210
212
207
205A
207
205B
203
201B
202B
190
191
192
193
194

FIG. 4

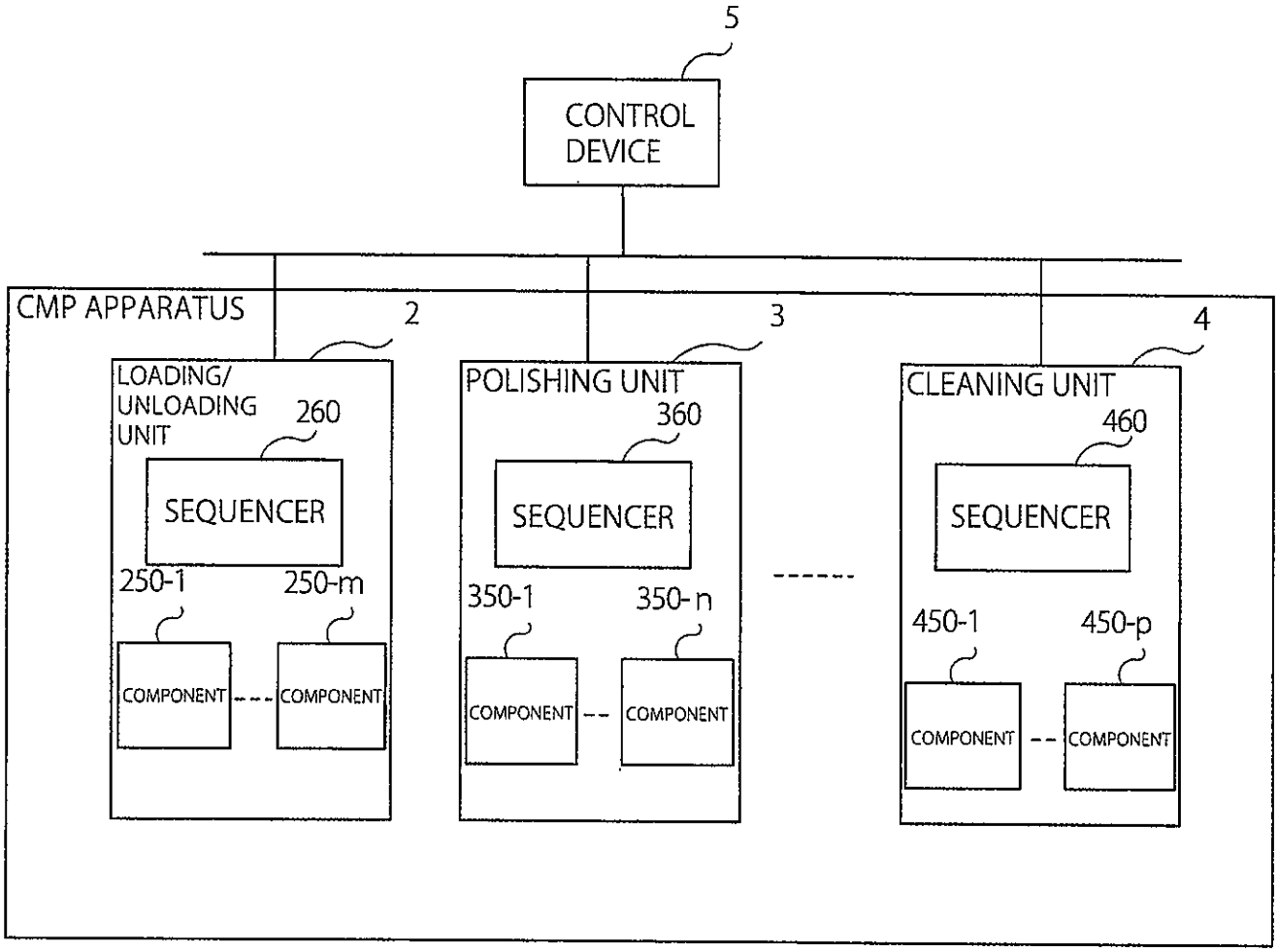

5
CONTROL DEVICE
CMP APPARATUS
2
3
4
LOADING/ UNLOADING UNIT
260
SEQUENCER
250-1
250-m
COMPONENT
COMPONENT
POLISHING UNIT
360
SEQUENCER
350-1
350-n
COMPONENT
COMPONENT
CLEANING UNIT
460
SEQUENCER
450-1
450-p
COMPONENT
COMPONENT

FIG. 5

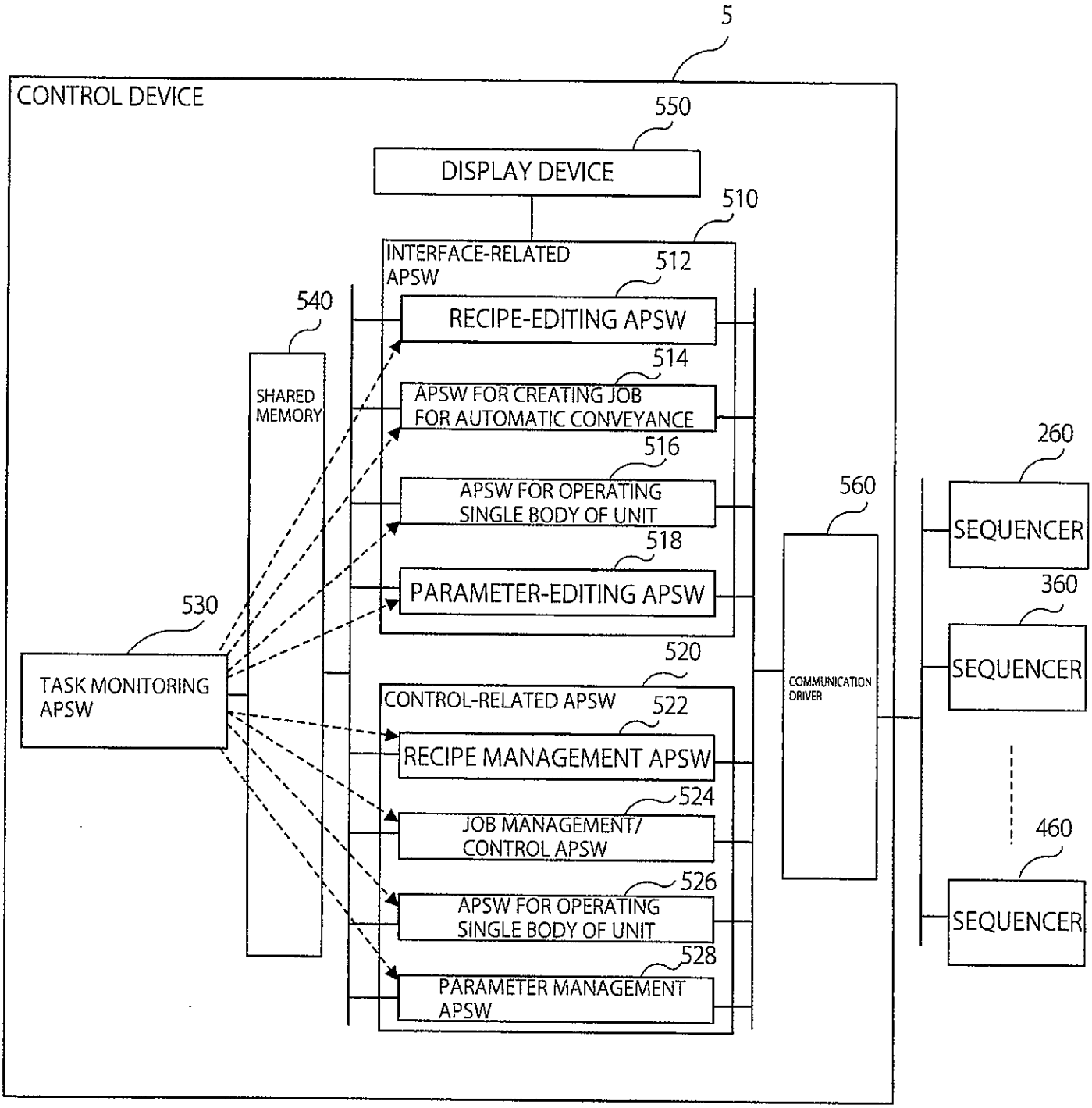

5
CONTROL DEVICE
550
DISPLAY DEVICE
510
INTERFACE-RELATED APSW
512
RECIPE-EDITING APSW
514
APSW FOR CREATING JOB FOR AUTOMATIC CONVEYANCE
516
APSW FOR OPERATING SINGLE BODY OF UNIT
518
PARAMETER-EDITING APSW
540
SHARED MEMORY
530
TASK MONITORING APSW
520
CONTROL-RELATED APSW
522
RECIPE MANAGEMENT APSW
524
JOB MANAGEMENT/ CONTROL APSW
526
APSW FOR OPERATING SINGLE BODY OF UNIT
528
PARAMETER MANAGEMENT APSW
560
COMMUNICATION DRIVER
260
SEQUENCER
360
SEQUENCER
460
SEQUENCER

FIG. 6A

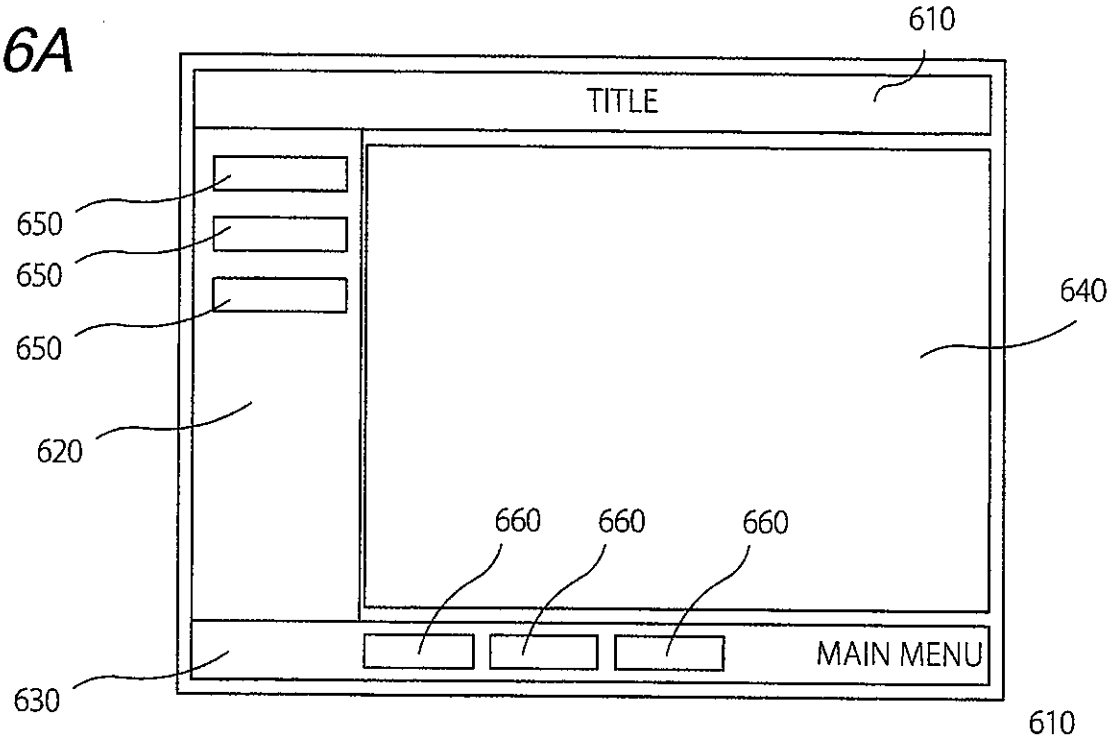


FIG. 6B

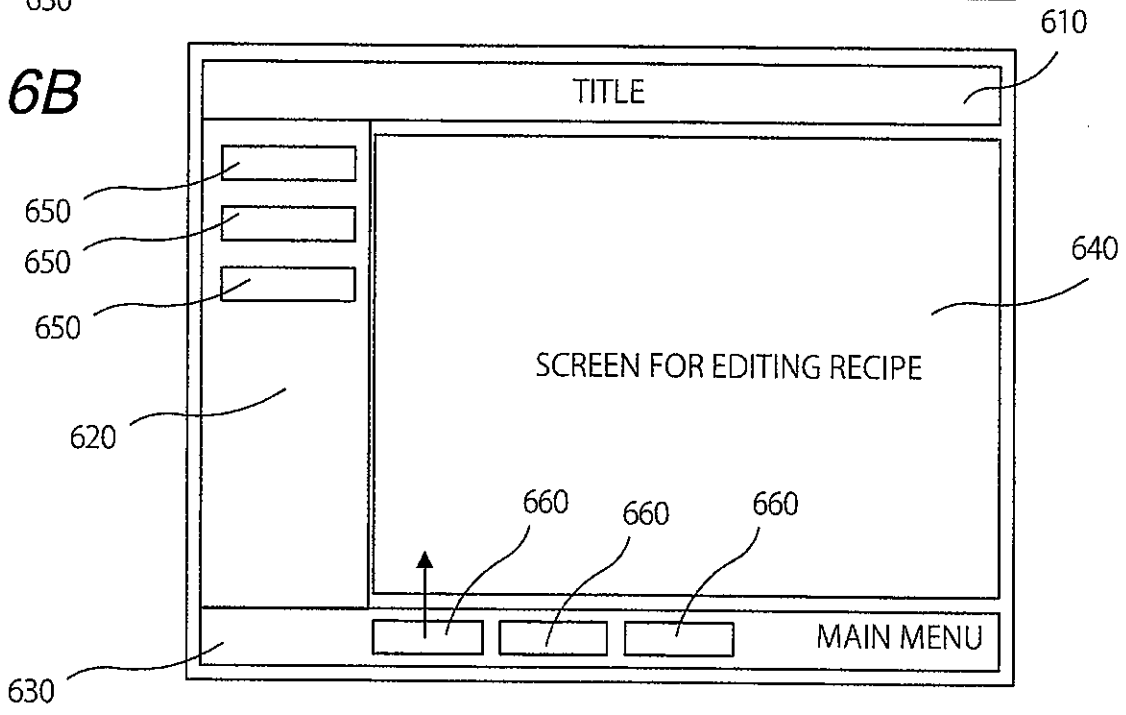


FIG. 6C

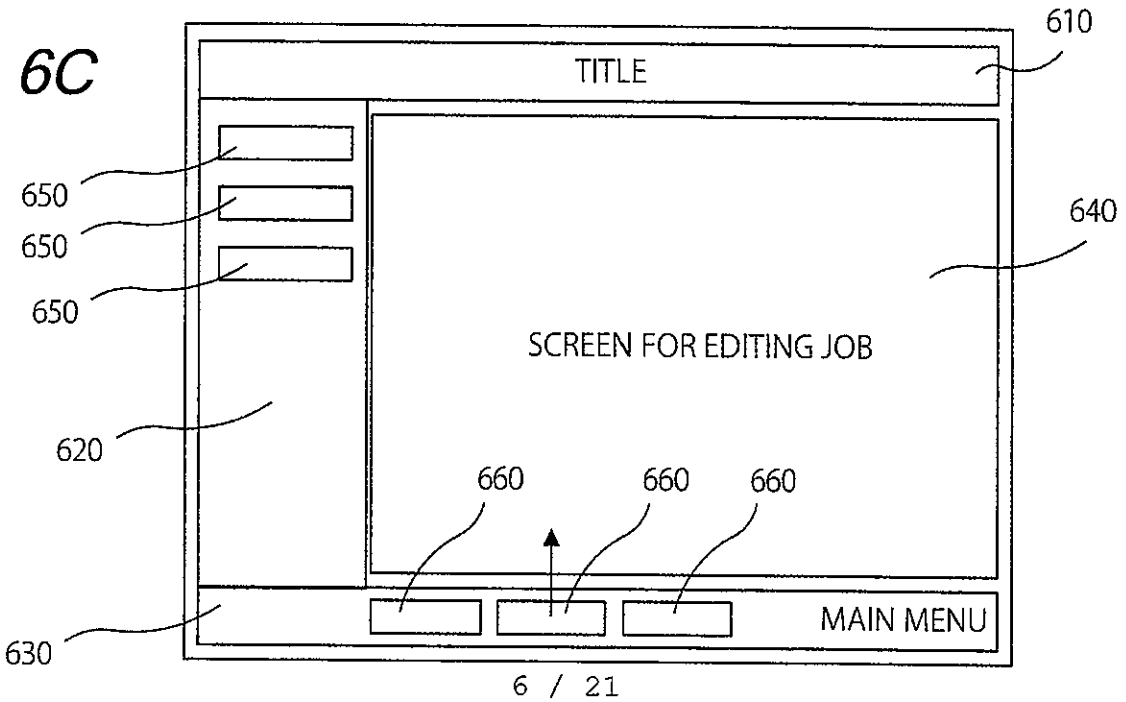


FIG. 7

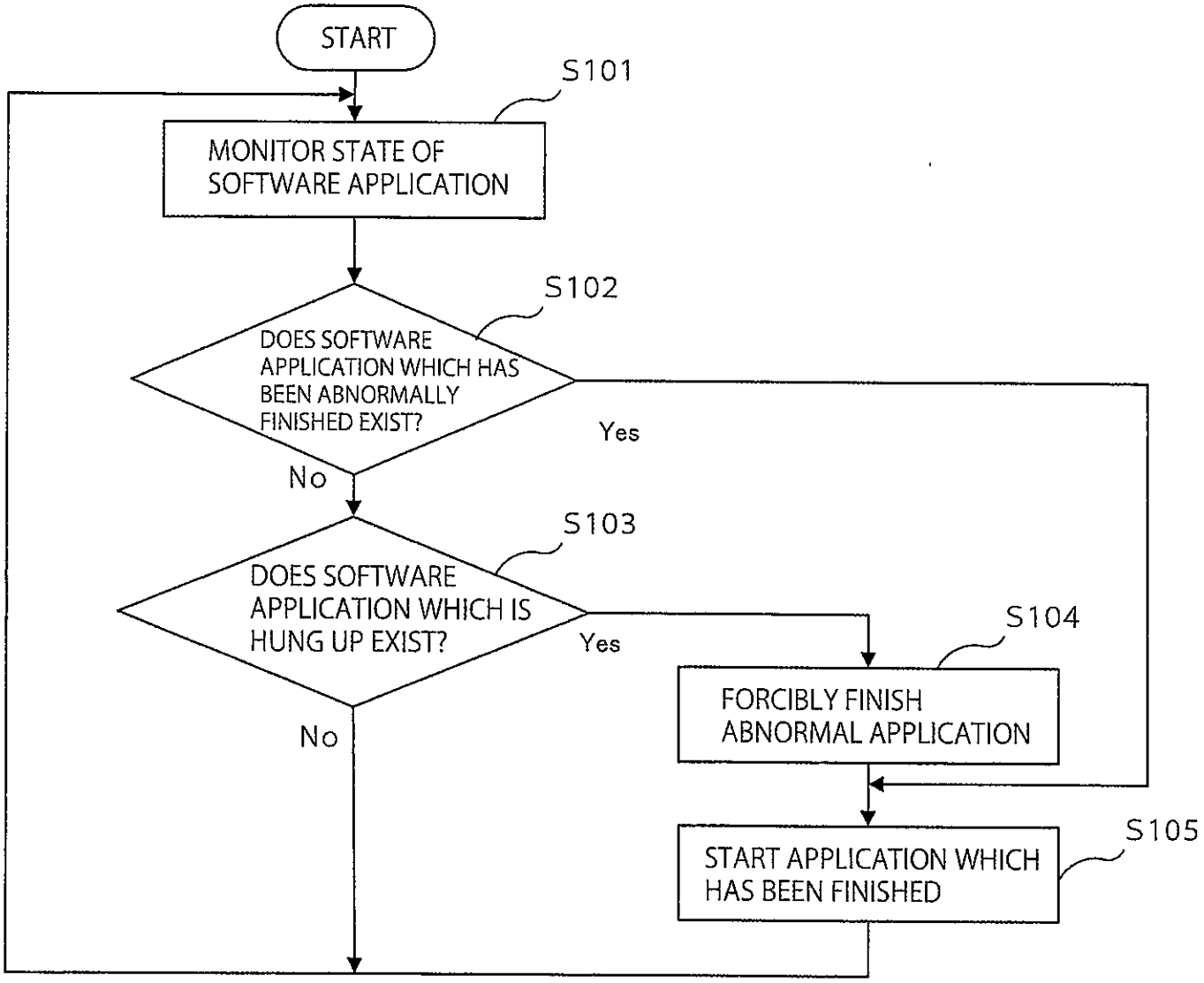

START
S101
MONITOR STATE OF SOFTWARE APPLICATION
S102
DOES SOFTWARE APPLICATION WHICH HAS BEEN ABNORMALLY FINISHED EXIST?
Yes
No
S103
DOES SOFTWARE APPLICATION WHICH IS HUNG UP EXIST?
Yes
No
S104
FORCIBLY FINISH ABNORMAL APPLICATION
S105
START APPLICATION WHICH HAS BEEN FINISHED

FIG. 8

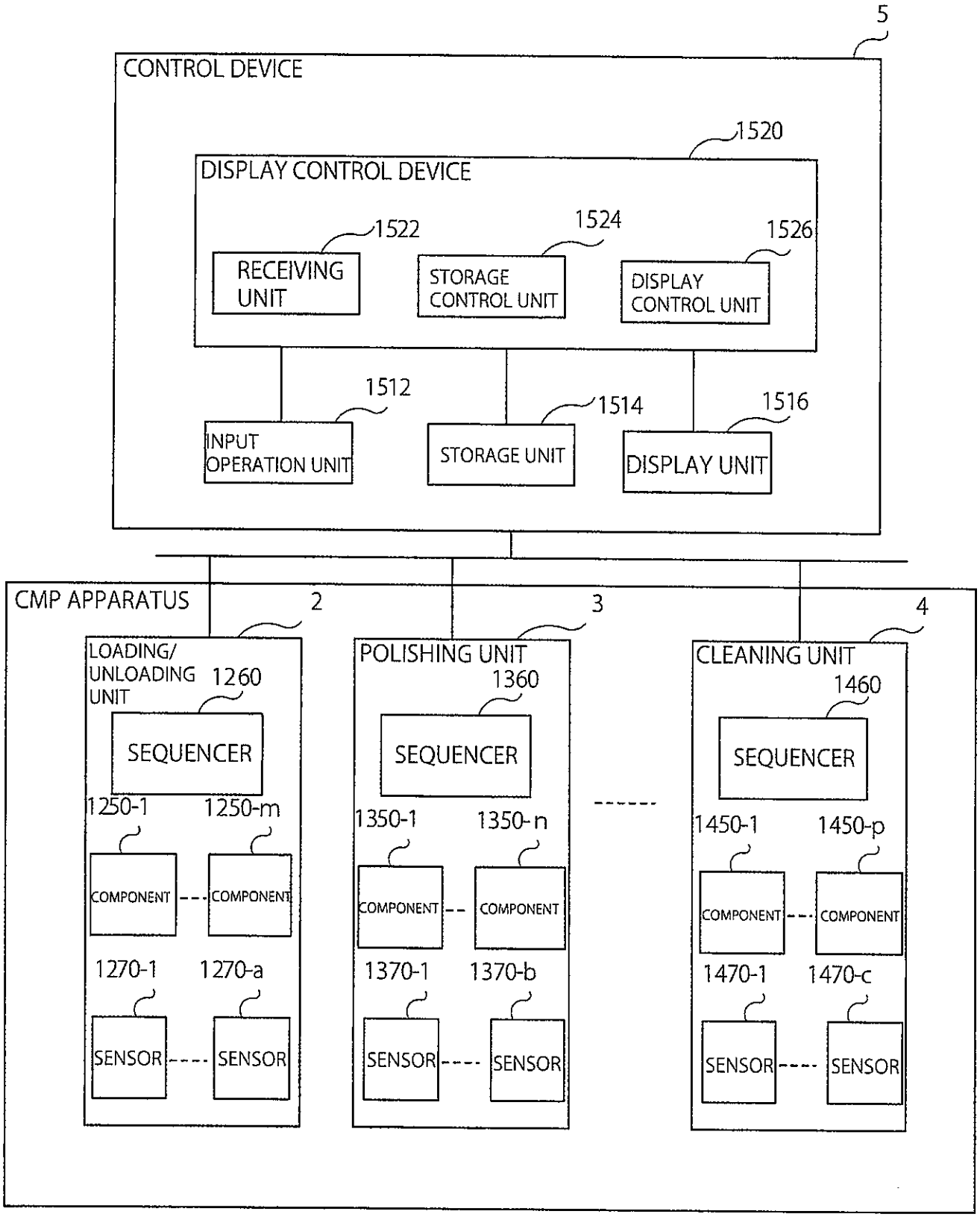

5
CONTROL DEVICE
1520
DISPLAY CONTROL DEVICE
1522
RECEIVING UNIT
1524
STORAGE CONTROL UNIT
1526
DISPLAY CONTROL UNIT
1512
INPUT OPERATION UNIT
1514
STORAGE UNIT
1516
DISPLAY UNIT
CMP APPARATUS
2
LOADING/ UNLOADING UNIT
1260
SEQUENCER
1250-1
1250-m
COMPONENT
COMPONENT
1270-1
1270-a
SENSOR
SENSOR
3
POLISHING UNIT
1360
SEQUENCER
1350-1
1350-n
COMPONENT
COMPONENT
1370-1
1370-b
SENSOR
SENSOR
4
CLEANING UNIT
1460
SEQUENCER
1450-1
1450-p
COMPONENT
COMPONENT
1470-1
1470-c
SENSOR
SENSOR

FIG. 9

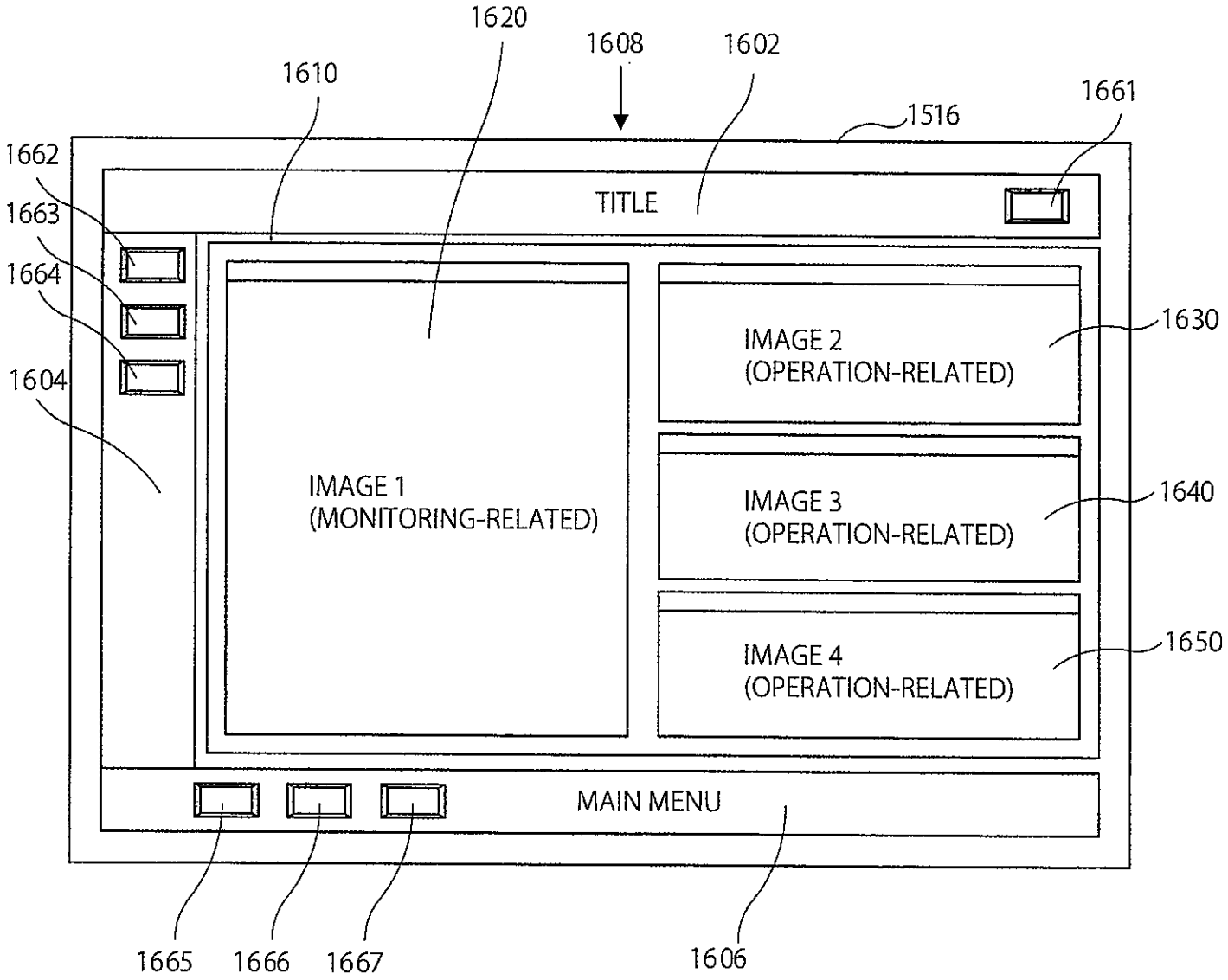

1620
1608
1602
1610
1661
1516
1662
TITLE
1663
1664
1630
IMAGE 2
(OPERATION-RELATED)
1604
IMAGE 1
(MONITORING-RELATED)
1640
IMAGE 3
(OPERATION-RELATED)
1650
IMAGE 4
(OPERATION-RELATED)
MAIN MENU
1665
1666
1667
1606

FIG. 10

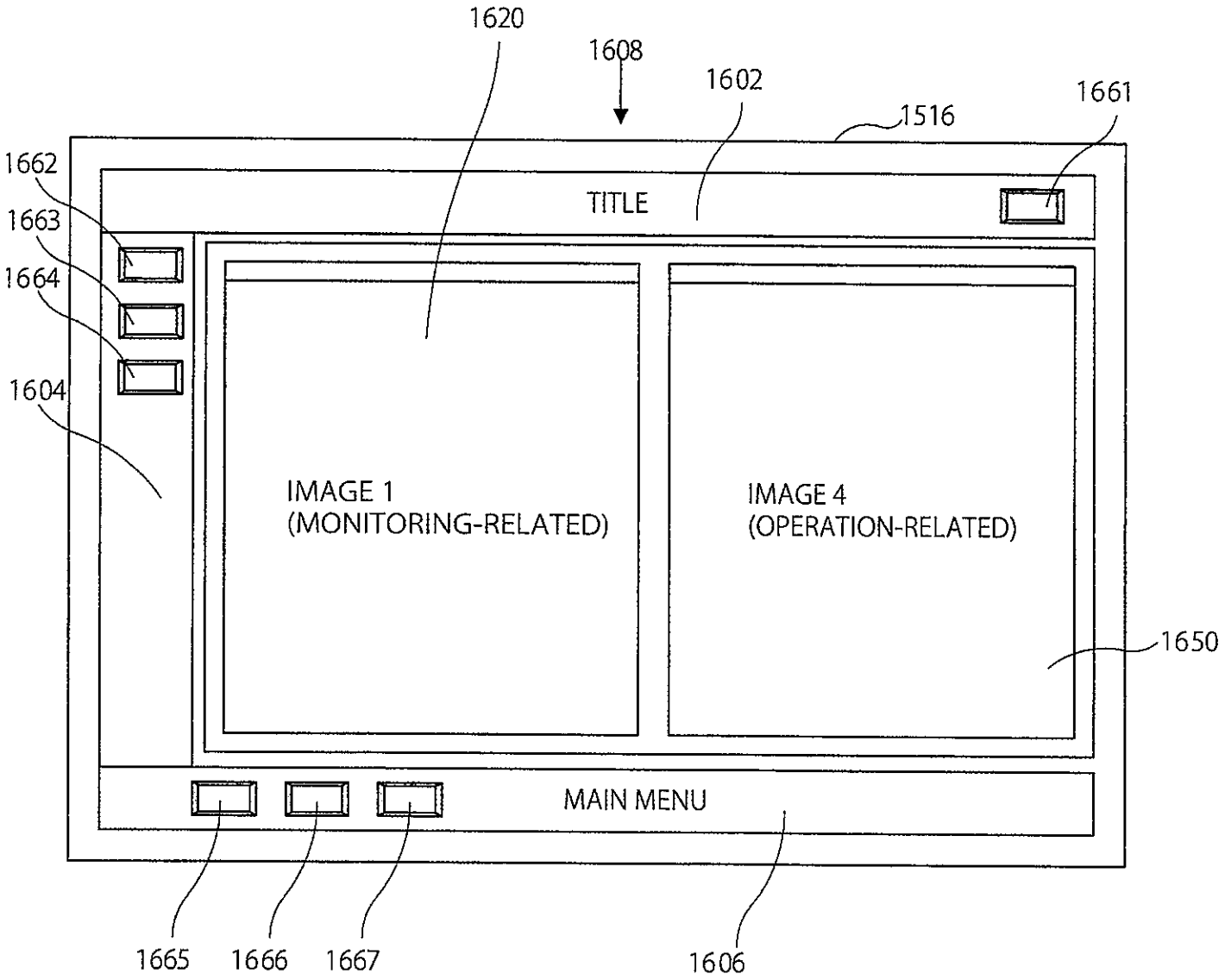

1620
1608
1602
1661
1516
1662
TITLE
1663
1664
1604
IMAGE 1
(MONITORING-RELATED)
IMAGE 4
(OPERATION-RELATED)
1650
MAIN MENU
1665
1666
1667
1606

FIG. 11

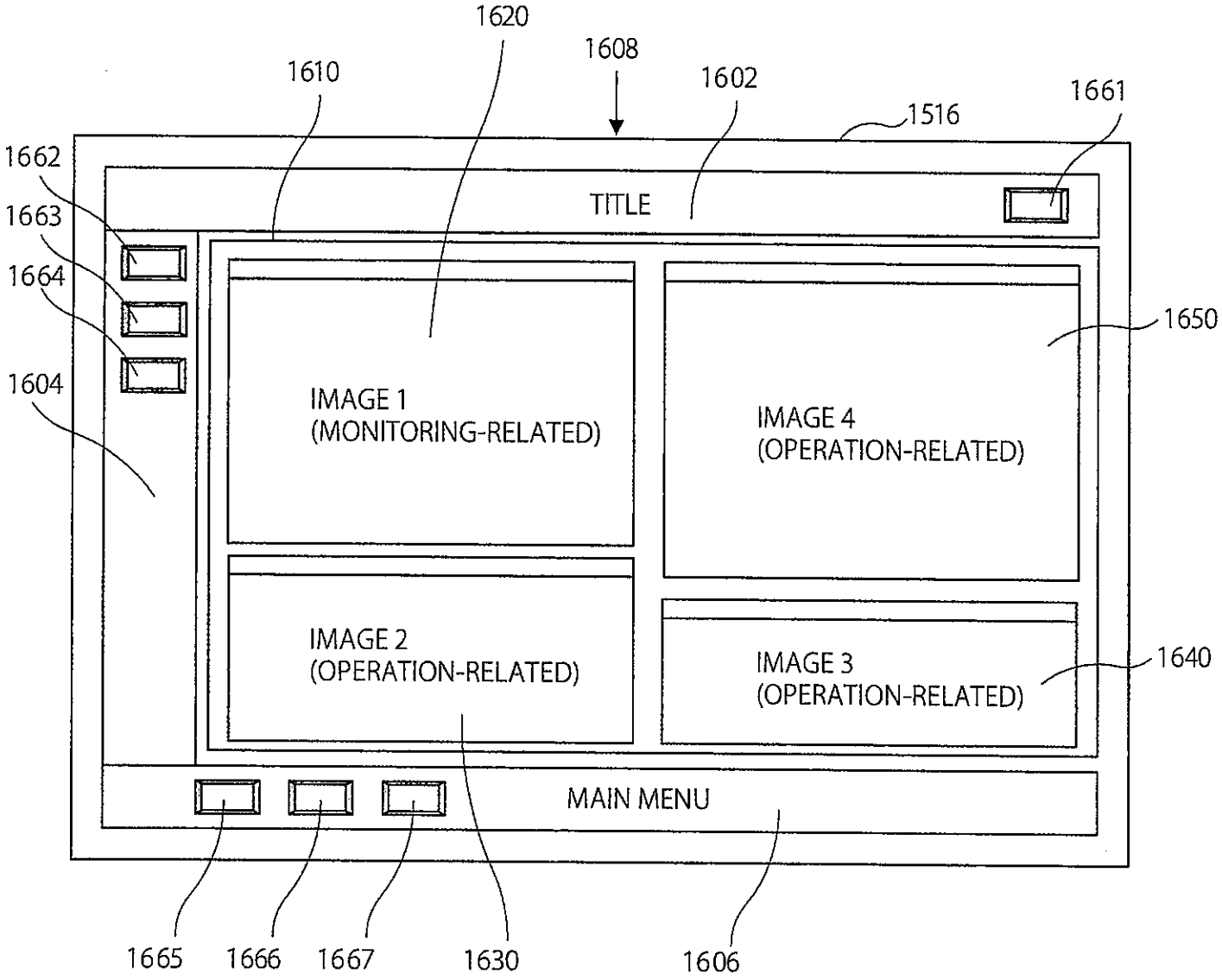

1620
1608
1610
1602
1661
1516
1662
TITLE
1663
1664
1650
1604
IMAGE 1
(MONITORING-RELATED)
IMAGE 4
(OPERATION-RELATED)
IMAGE 2
(OPERATION-RELATED)
IMAGE 3
(OPERATION-RELATED)
1640
MAIN MENU
1665
1666
1667
1630
1606

FIG. 12

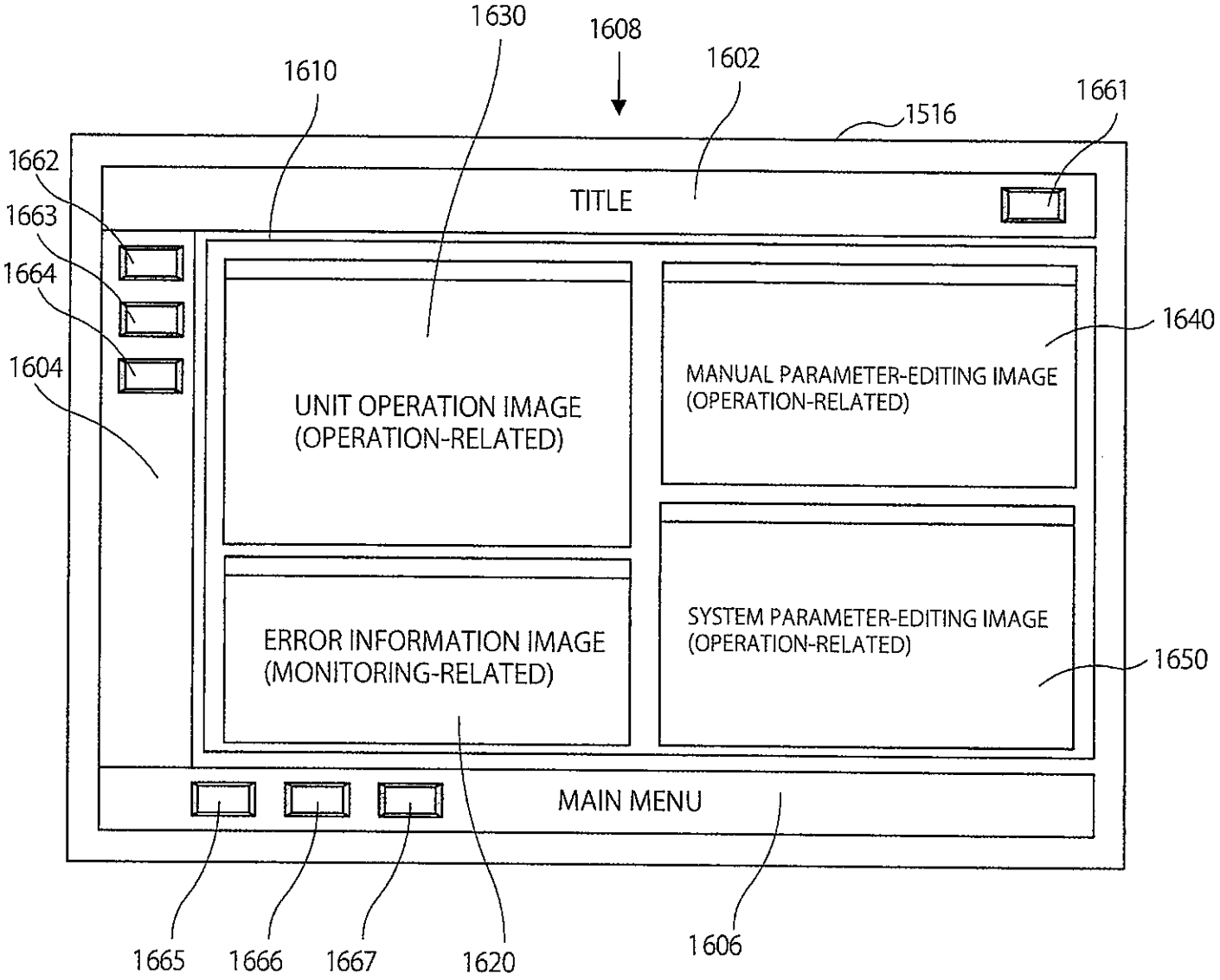

1630
1608
1610
1602
1661
1516
1662
TITLE
1663
1664
1640
1604
UNIT OPERATION IMAGE
(OPERATION-RELATED)
MANUAL PARAMETER-EDITING IMAGE
(OPERATION-RELATED)
ERROR INFORMATION IMAGE
(MONITORING-RELATED)
SYSTEM PARAMETER-EDITING IMAGE
(OPERATION-RELATED)
1650
MAIN MENU
1665
1666
1667
1620
1606

FIG. 13

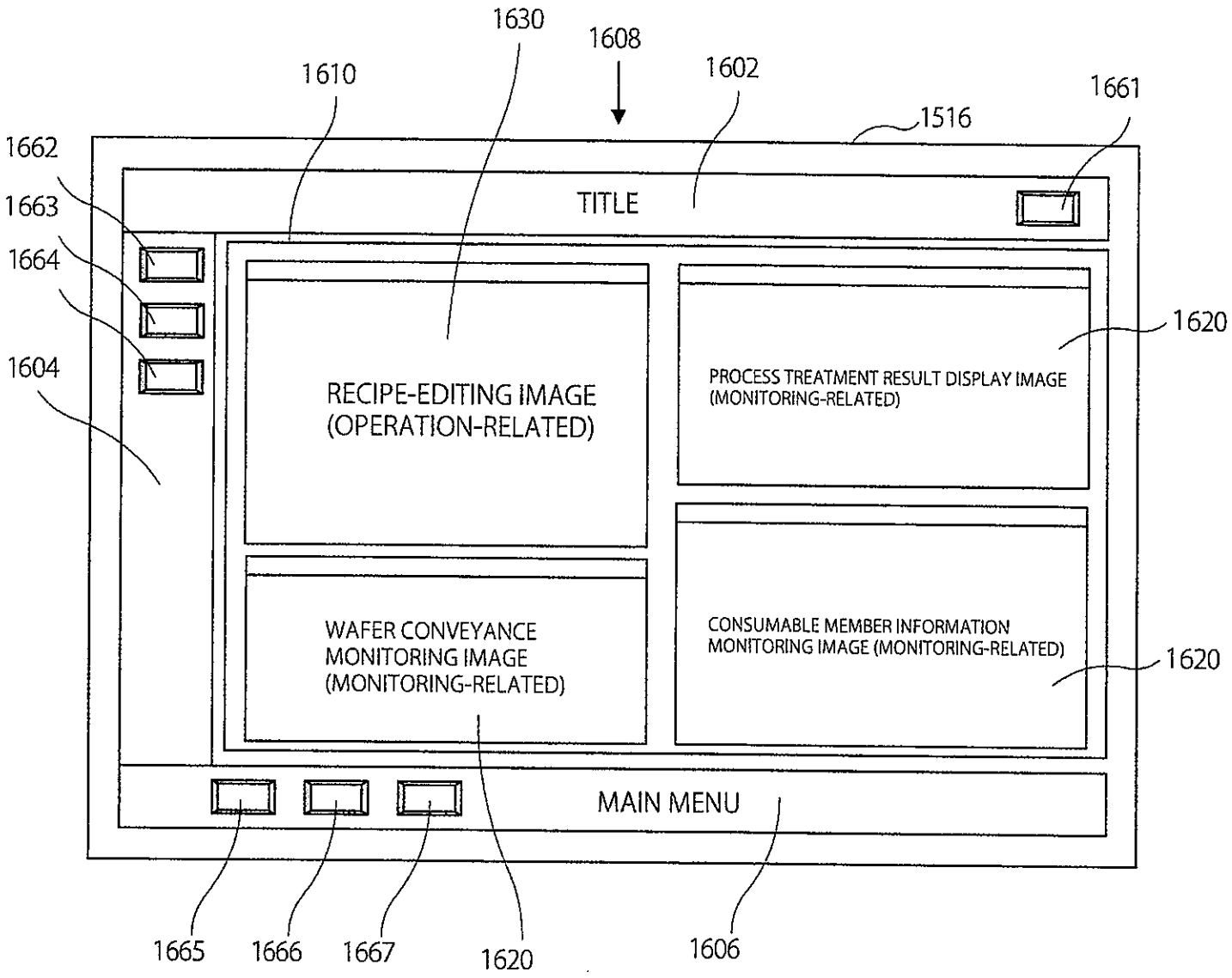

1630
1608
1610
1602
1661
1516
1662
TITLE
1663
1664
1604
RECIPE-EDITING IMAGE
(OPERATION-RELATED)
PROCESS TREATMENT RESULT DISPLAY IMAGE
(MONITORING-RELATED)
1620
WAFER CONVEYANCE
MONITORING IMAGE
(MONITORING-RELATED)
CONSUMABLE MEMBER INFORMATION
MONITORING IMAGE (MONITORING-RELATED)
1620
MAIN MENU
1665
1666
1667
1620
1606

FIG. 14

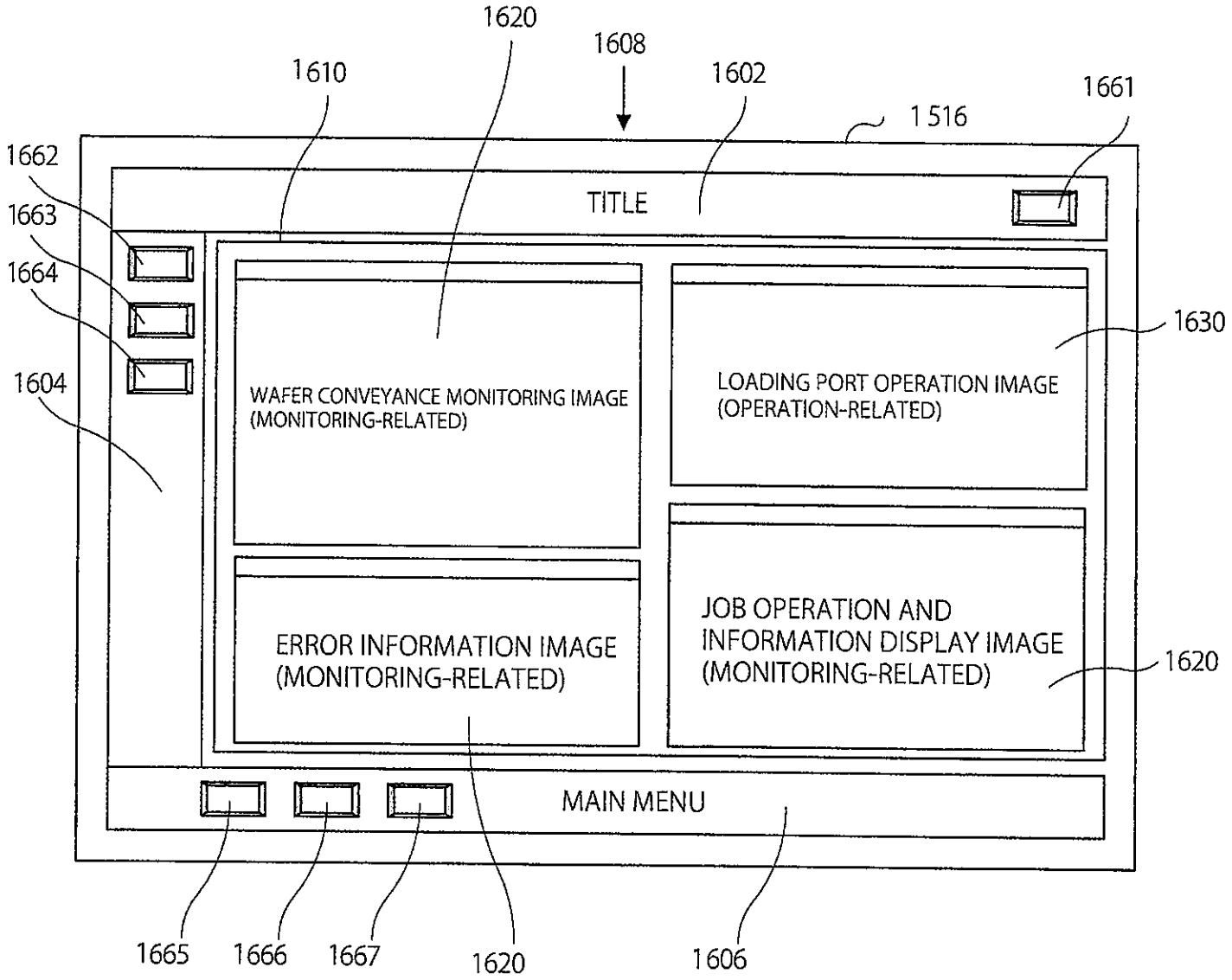

1620
1608
1610
1602
1661
1516
1662
TITLE
1663
1664
1630
1604
WAFER CONVEYANCE MONITORING IMAGE
(MONITORING-RELATED)
LOADING PORT OPERATION IMAGE
(OPERATION-RELATED)
JOB OPERATION AND
INFORMATION DISPLAY IMAGE
(MONITORING-RELATED)
1620
ERROR INFORMATION IMAGE
(MONITORING-RELATED)
MAIN MENU
1665
1666
1667
1620
1606

FIG. 15

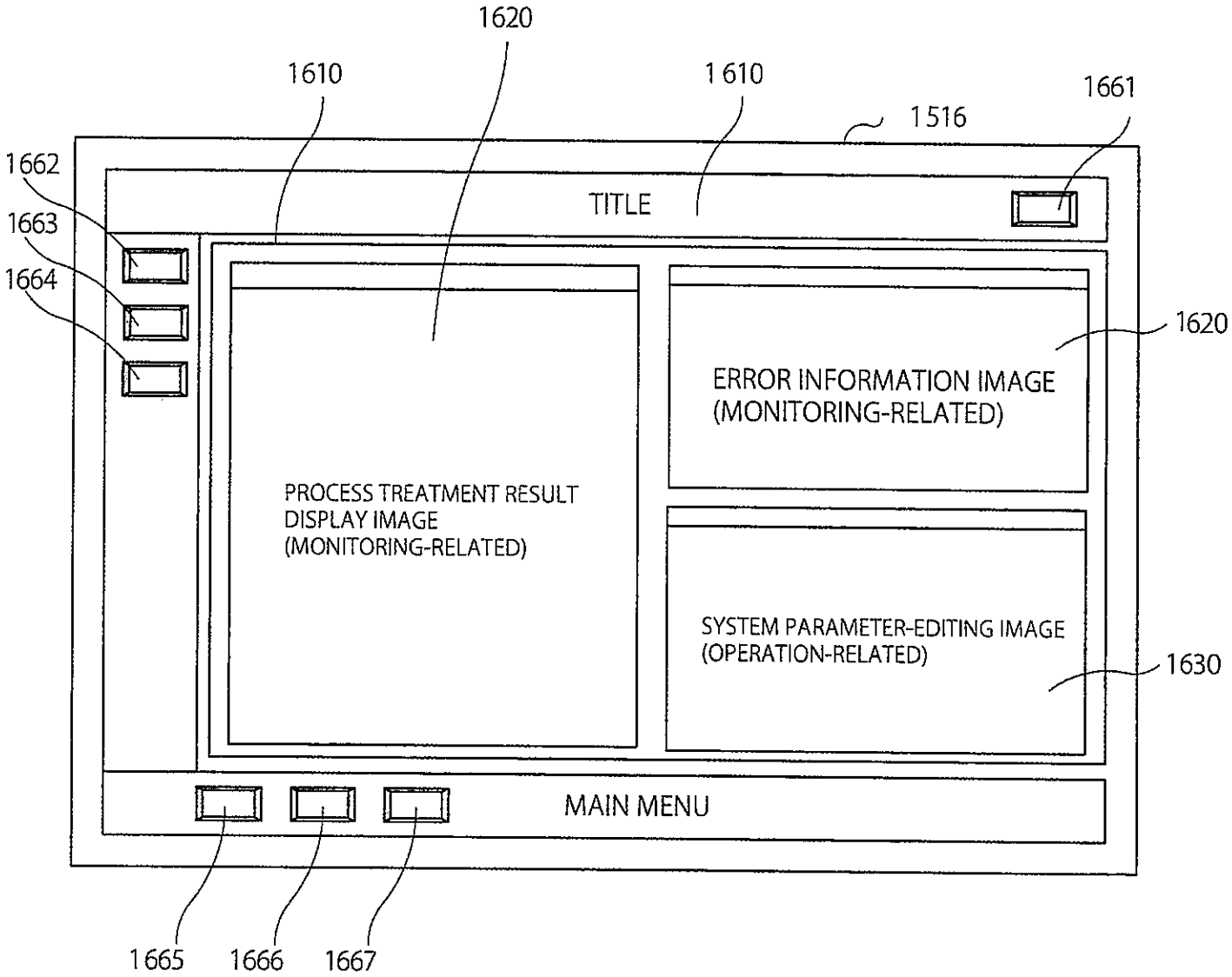

1620
1610
1610
1661
1516
1662
TITLE
1663
1664
1620
ERROR INFORMATION IMAGE
(MONITORING-RELATED)
PROCESS TREATMENT RESULT
DISPLAY IMAGE
(MONITORING-RELATED)
SYSTEM PARAMETER-EDITING IMAGE
(OPERATION-RELATED)
1630
MAIN MENU
1665
1666
1667

FIG. 16

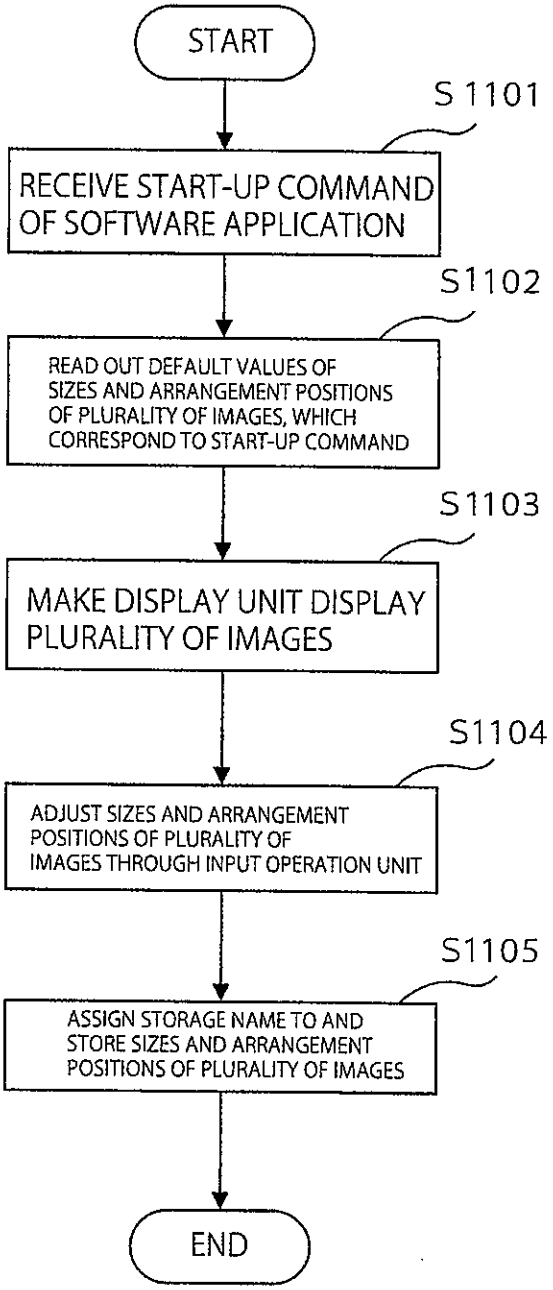

START
S1101
RECEIVE START-UP COMMAND OF SOFTWARE APPLICATION
S1102
READ OUT DEFAULT VALUES OF SIZES AND ARRANGEMENT POSITIONS OF PLURALITY OF IMAGES, WHICH CORRESPOND TO START-UP COMMAND
S1103
MAKE DISPLAY UNIT DISPLAY PLURALITY OF IMAGES
S1104
ADJUST SIZES AND ARRANGEMENT POSITIONS OF PLURALITY OF IMAGES THROUGH INPUT OPERATION UNIT
S1105
ASSIGN STORAGE NAME TO AND STORE SIZES AND ARRANGEMENT POSITIONS OF PLURALITY OF IMAGES
END

FIG. 17

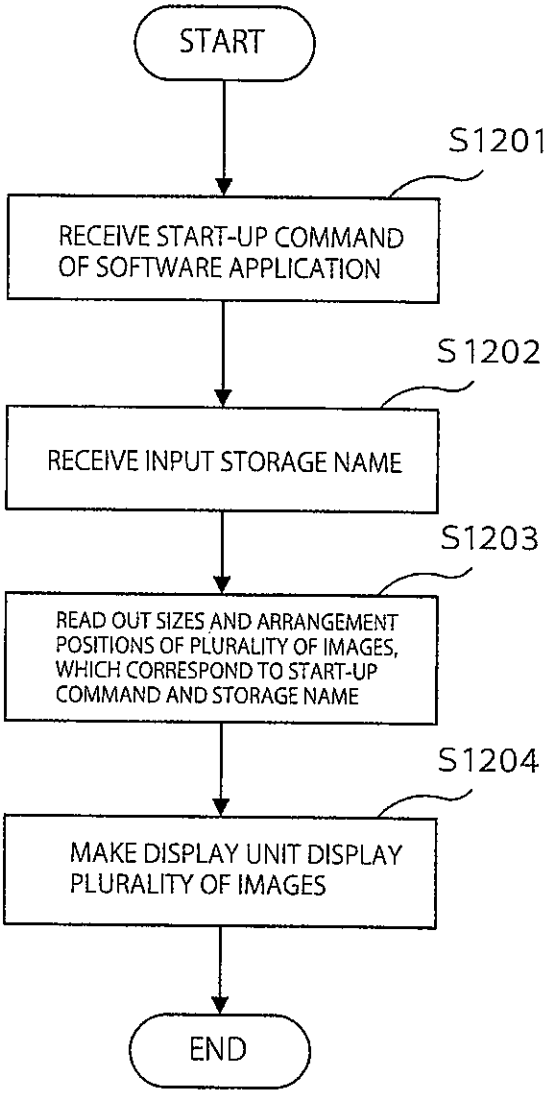

START
S1201
RECEIVE START-UP COMMAND OF SOFTWARE APPLICATION
S1202
RECEIVE INPUT STORAGE NAME
S1203
READ OUT SIZES AND ARRANGEMENT POSITIONS OF PLURALITY OF IMAGES, WHICH CORRESPOND TO START-UP COMMAND AND STORAGE NAME
S1204
MAKE DISPLAY UNIT DISPLAY PLURALITY OF IMAGES
END

FIG. 18

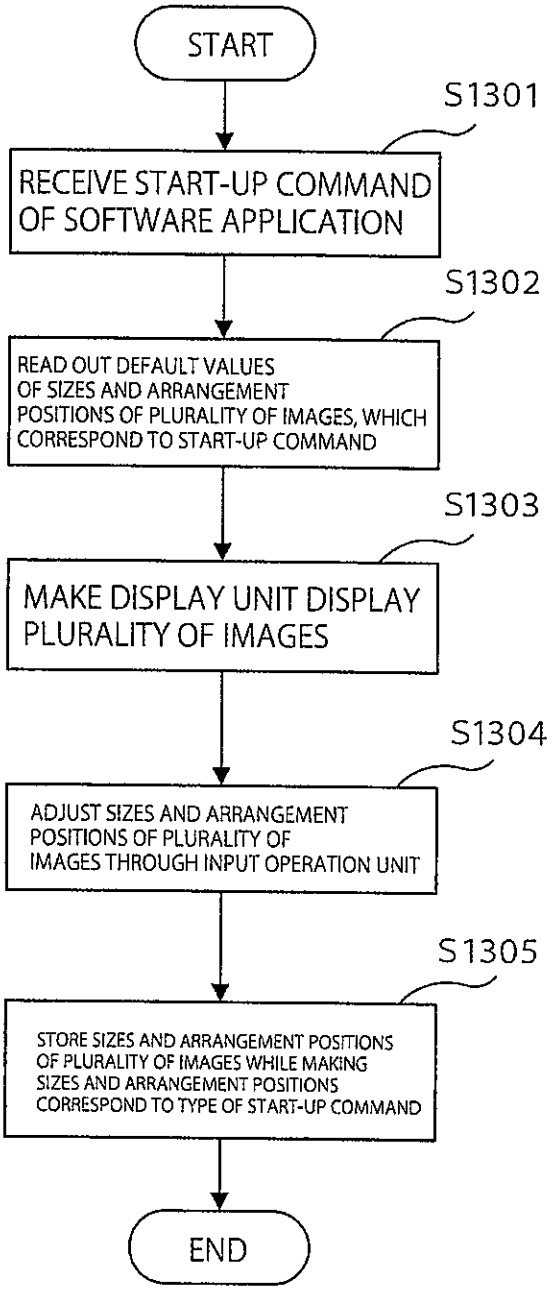

START
S1301
RECEIVE START-UP COMMAND OF SOFTWARE APPLICATION
S1302
READ OUT DEFAULT VALUES OF SIZES AND ARRANGEMENT POSITIONS OF PLURALITY OF IMAGES, WHICH CORRESPOND TO START-UP COMMAND
S1303
MAKE DISPLAY UNIT DISPLAY PLURALITY OF IMAGES
S1304
ADJUST SIZES AND ARRANGEMENT POSITIONS OF PLURALITY OF IMAGES THROUGH INPUT OPERATION UNIT
S1305
STORE SIZES AND ARRANGEMENT POSITIONS OF PLURALITY OF IMAGES WHILE MAKING SIZES AND ARRANGEMENT POSITIONS CORRESPOND TO TYPE OF START-UP COMMAND
END

FIG. 19

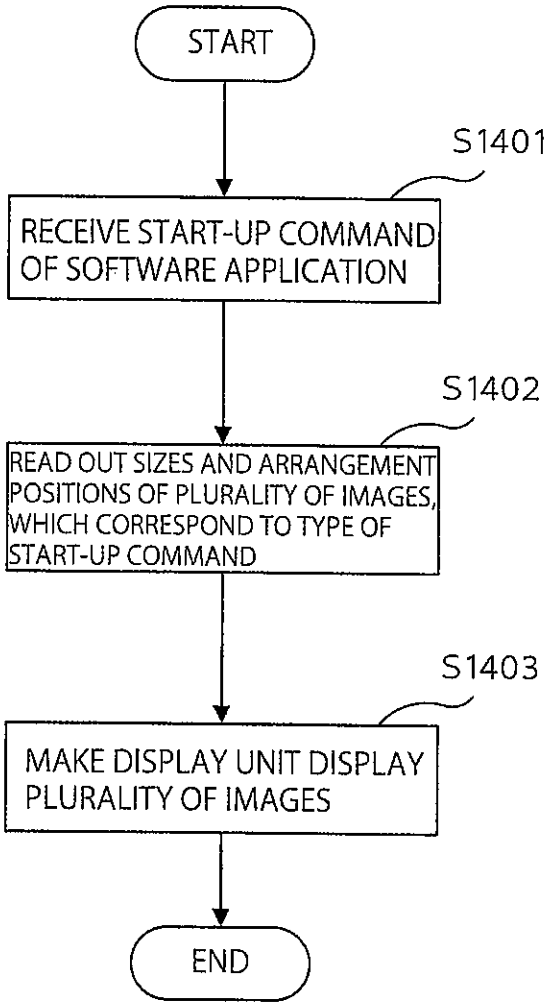

START
S1401
RECEIVE START-UP COMMAND OF SOFTWARE APPLICATION
S1402
READ OUT SIZES AND ARRANGEMENT POSITIONS OF PLURALITY OF IMAGES, WHICH CORRESPOND TO TYPE OF START-UP COMMAND
S1403
MAKE DISPLAY UNIT DISPLAY PLURALITY OF IMAGES
END

FIG. 20

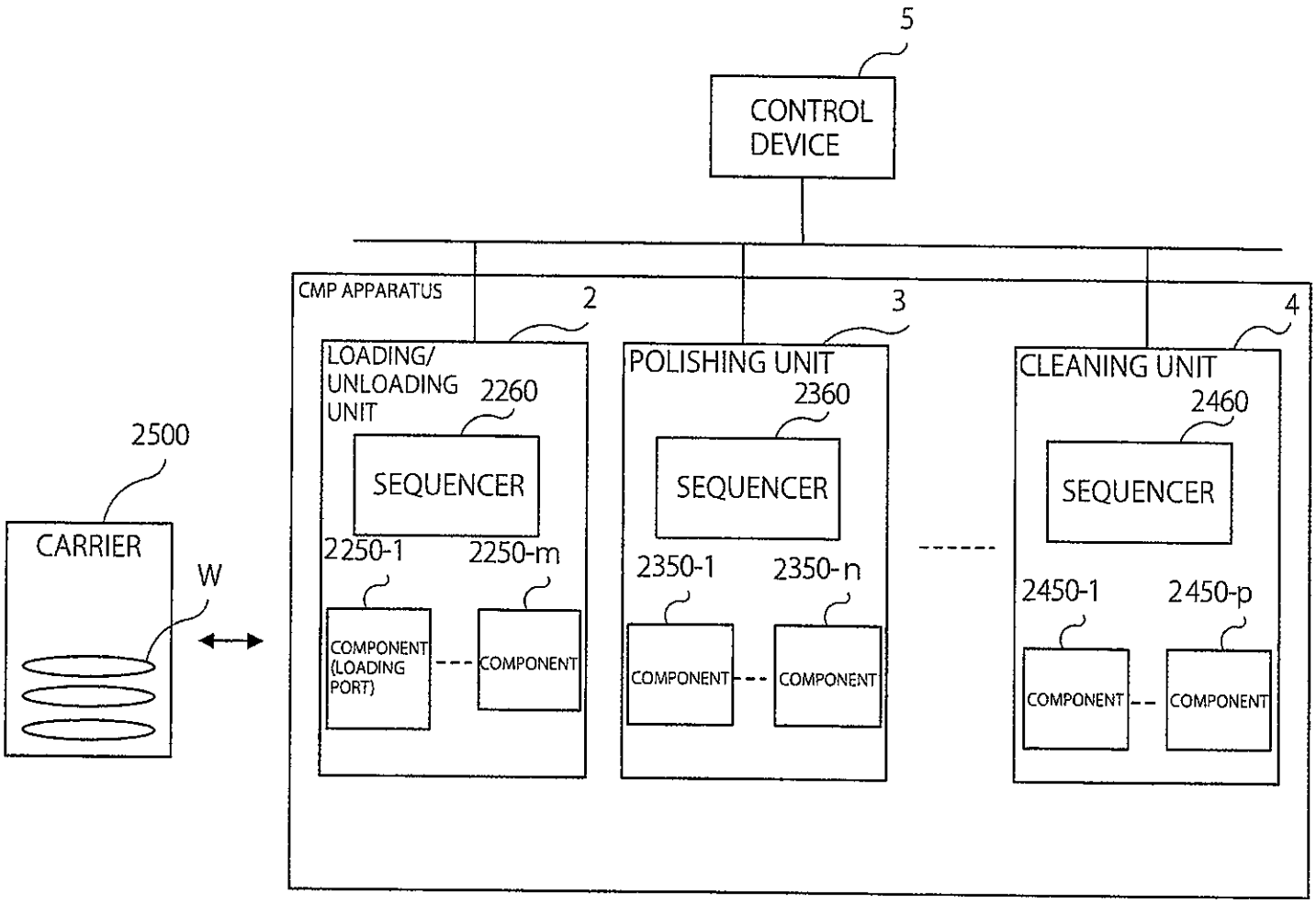
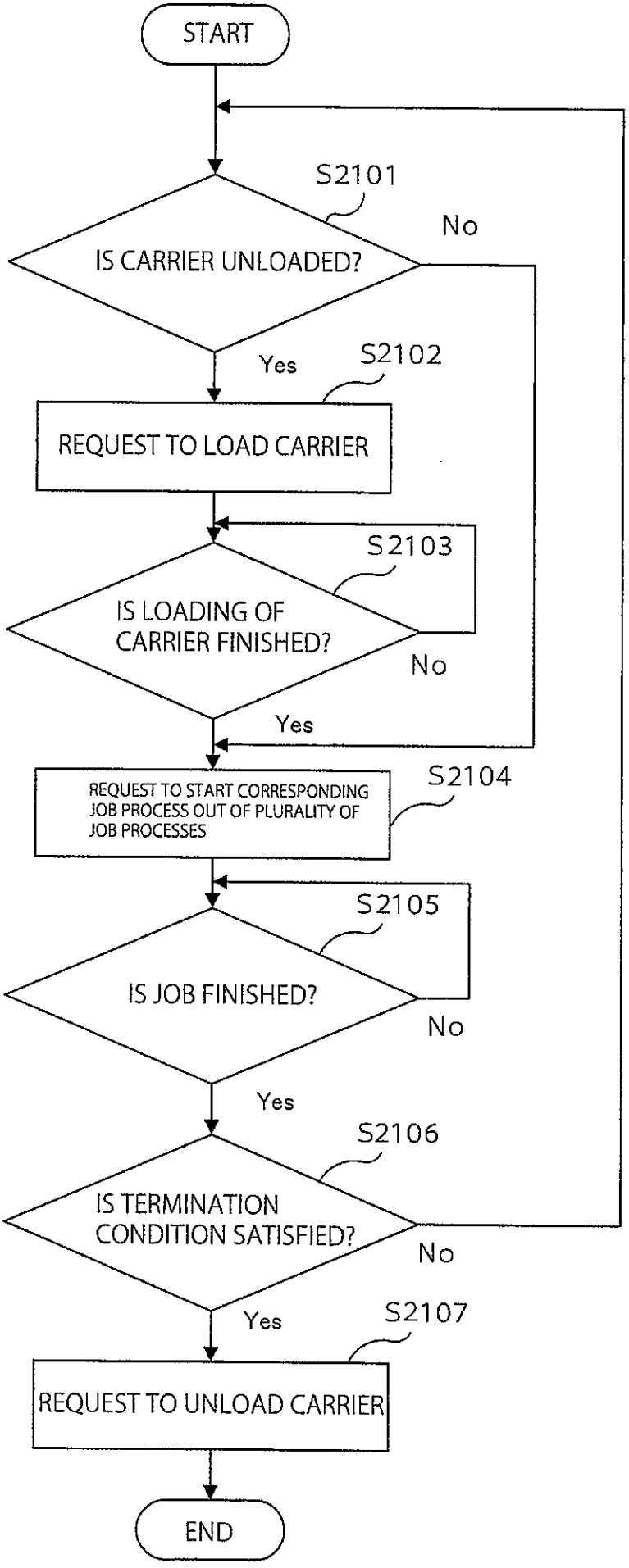

5
CONTROL DEVICE
CMP APPARATUS
2
3
4
LOADING/ UNLOADING UNIT
2260
SEQUENCER
2250-1
2250-m
COMPONENT (LOADING PORT)
COMPONENT
POLISHING UNIT
2360
SEQUENCER
2350-1
2350-n
COMPONENT
COMPONENT
CLEANING UNIT
2460
SEQUENCER
2450-1
2450-p
COMPONENT
COMPONENT
2500
CARRIER
W

FIG. 21


START
S2101
IS CARRIER UNLOADED?
No
Yes
S2102
REQUEST TO LOAD CARRIER
S2103
IS LOADING OF CARRIER FINISHED?
No
Yes
S2104
REQUEST TO START CORRESPONDING JOB PROCESS OUT OF PLURALITY OF JOB PROCESSES
S2105
IS JOB FINISHED?
No
Yes
S2106
IS TERMINATION CONDITION SATISFIED?
No
Yes
S2107
REQUEST TO UNLOAD CARRIER
END