FIG. 1

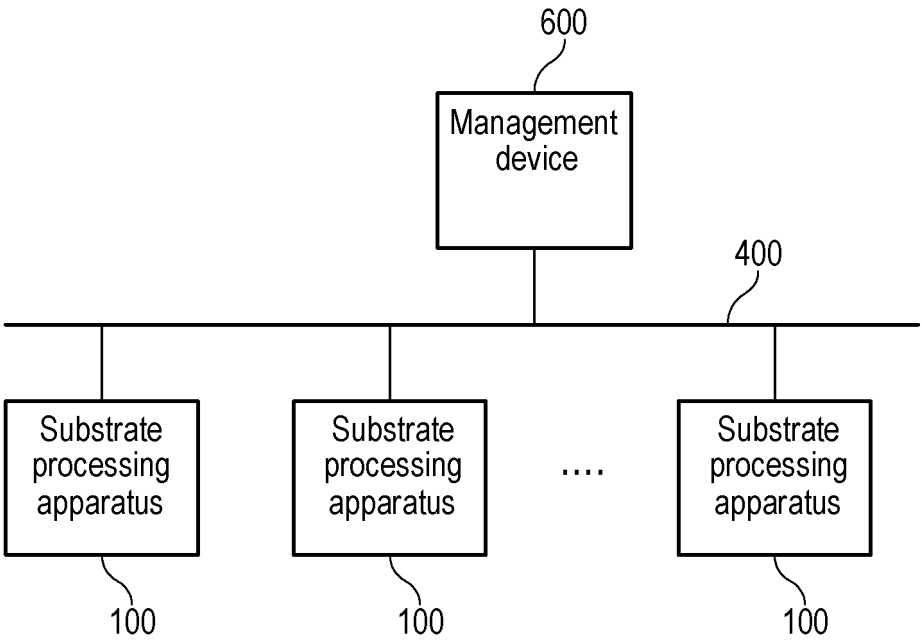

600
Management device
400
Substrate processing apparatus
Substrate processing apparatus
....
Substrate processing apparatus
100
100
100

FIG. 2

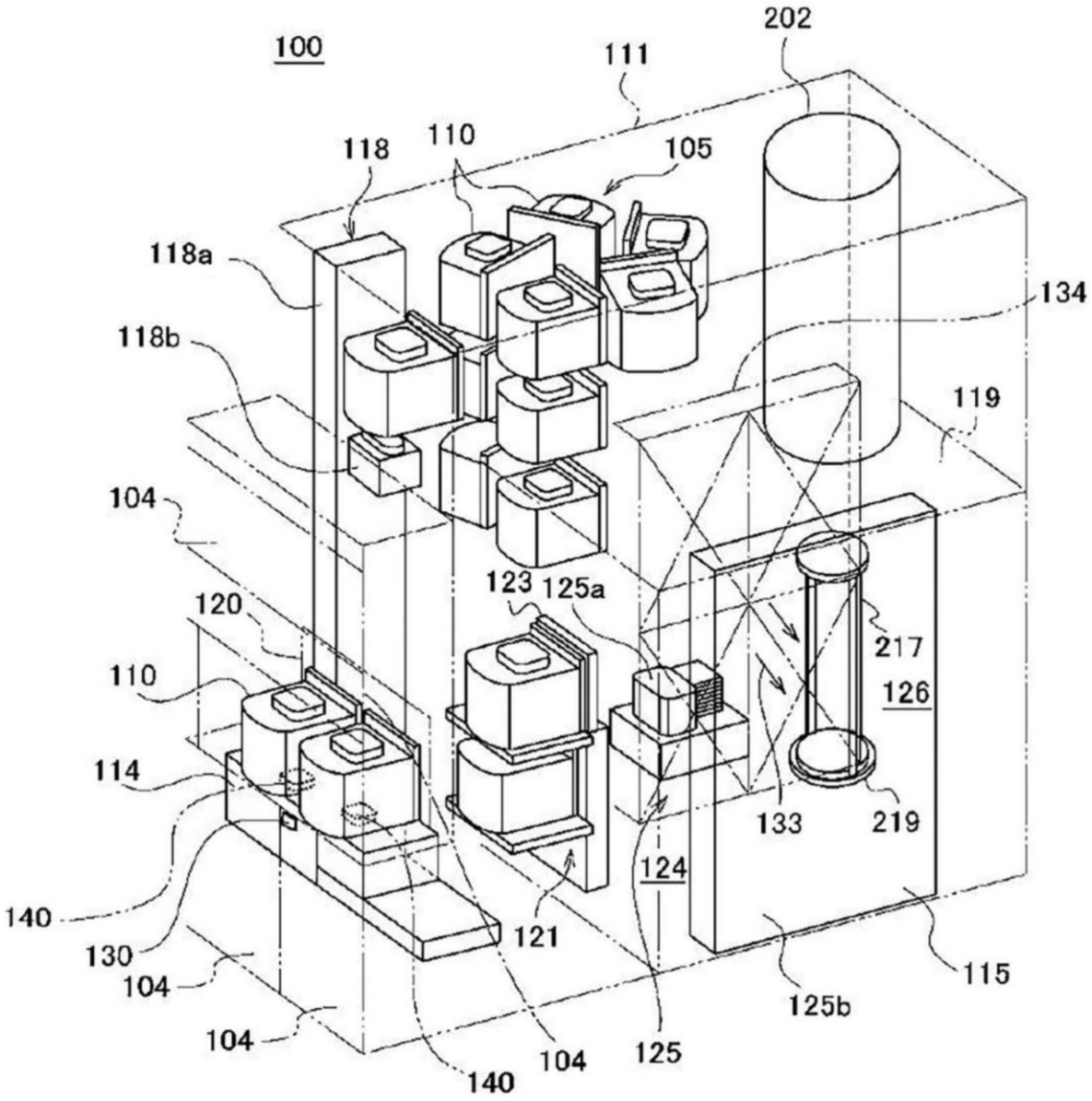

100
111
202
118
110
105
118a
134
118b
119
104
123
125a
120
217
110
126
114
133
219
124
140
121
130
115
104
125b
104
104
125
140

FIG. 3

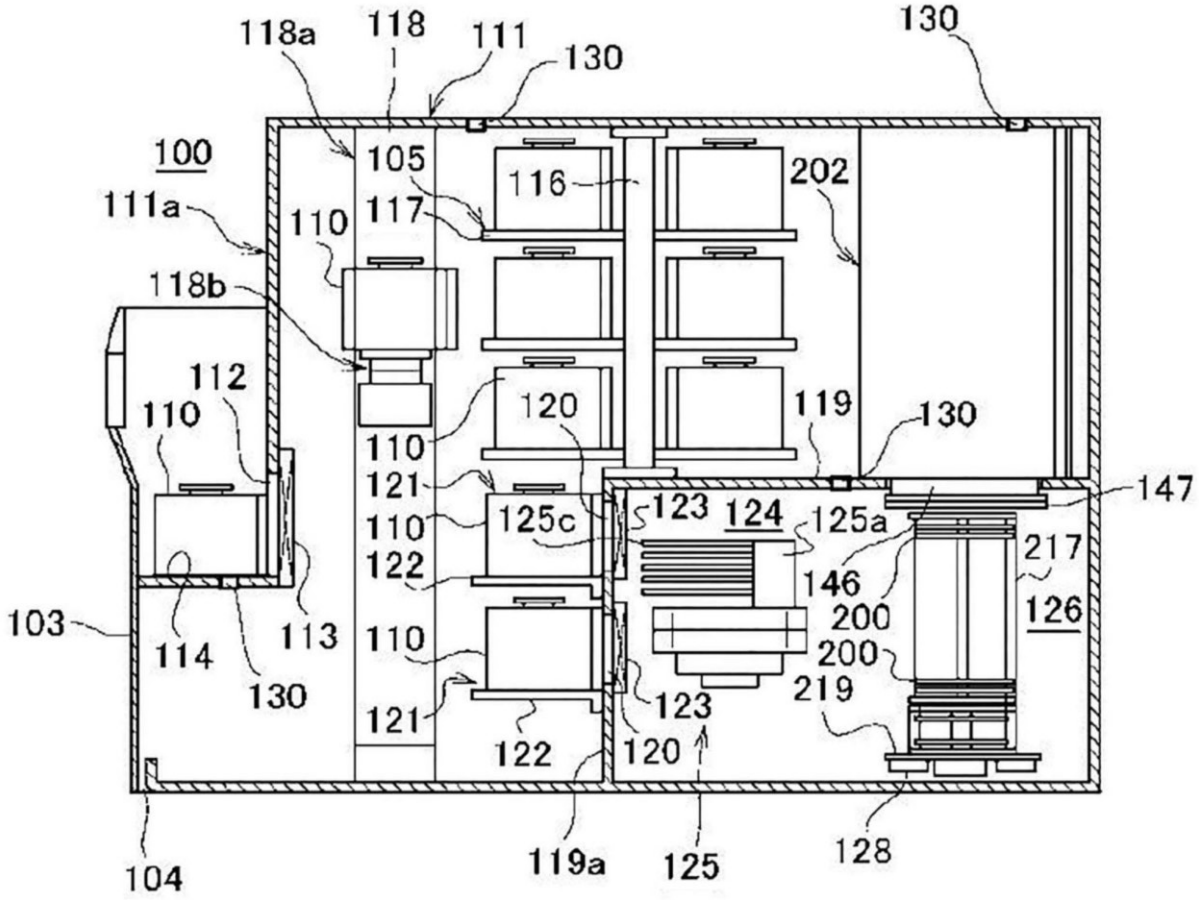

118a
118
111
130
130
100
105
116
202
111a
110
117
118b
112
110
120
119
130
110
121
147
123
124
125a
110
125c
217
122
146
126
103
200
113
110
200
114
130
219
123
121
122
120
104
119a
125
128

FIG. 4

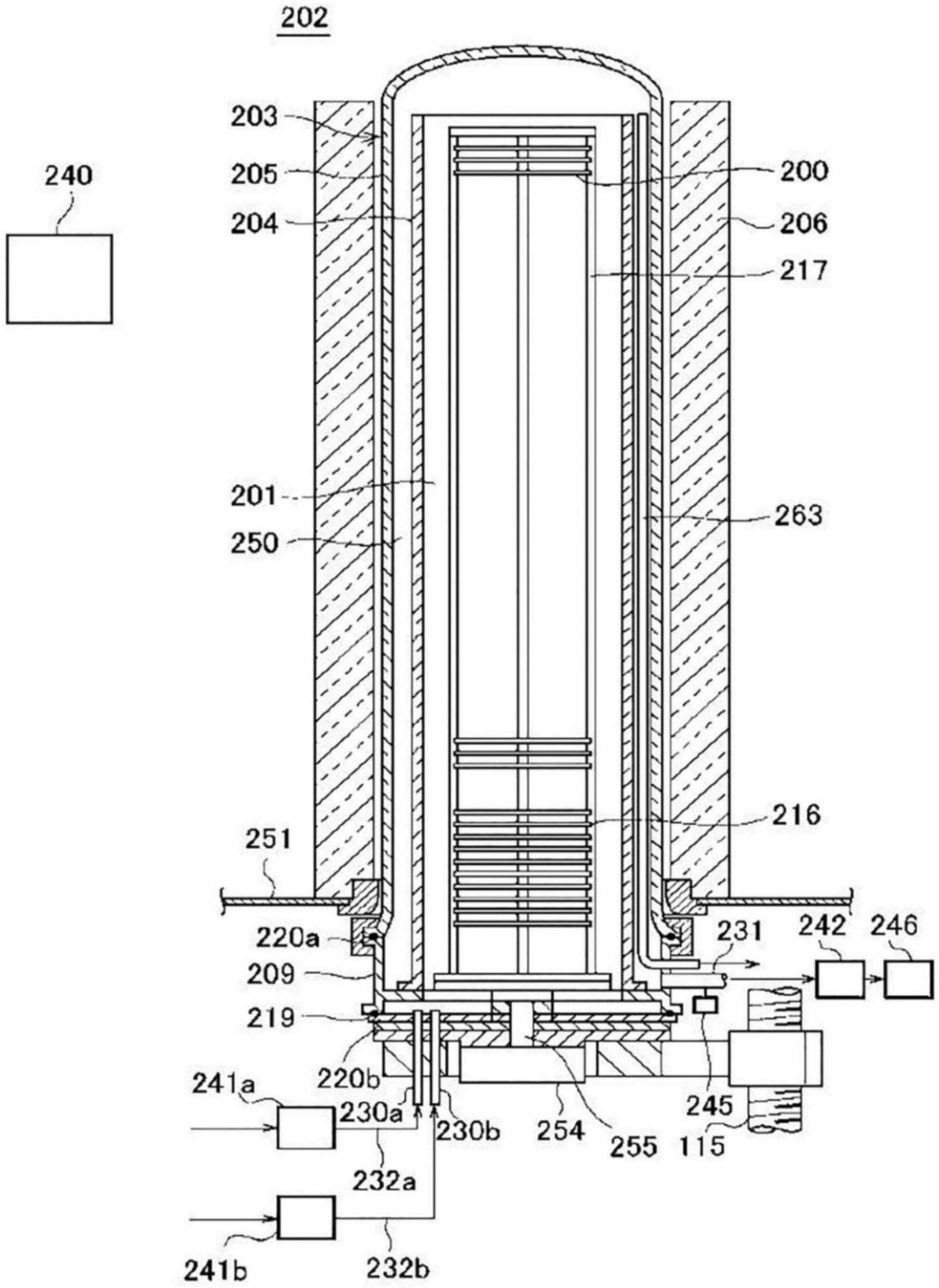

202
203
205
204
240
200
206
217
201
250
263
216
251
220a
209
219
231
242
246
241a
220b
230a
230b
254
255
245
115
232a
241b
232b

FIG. 5

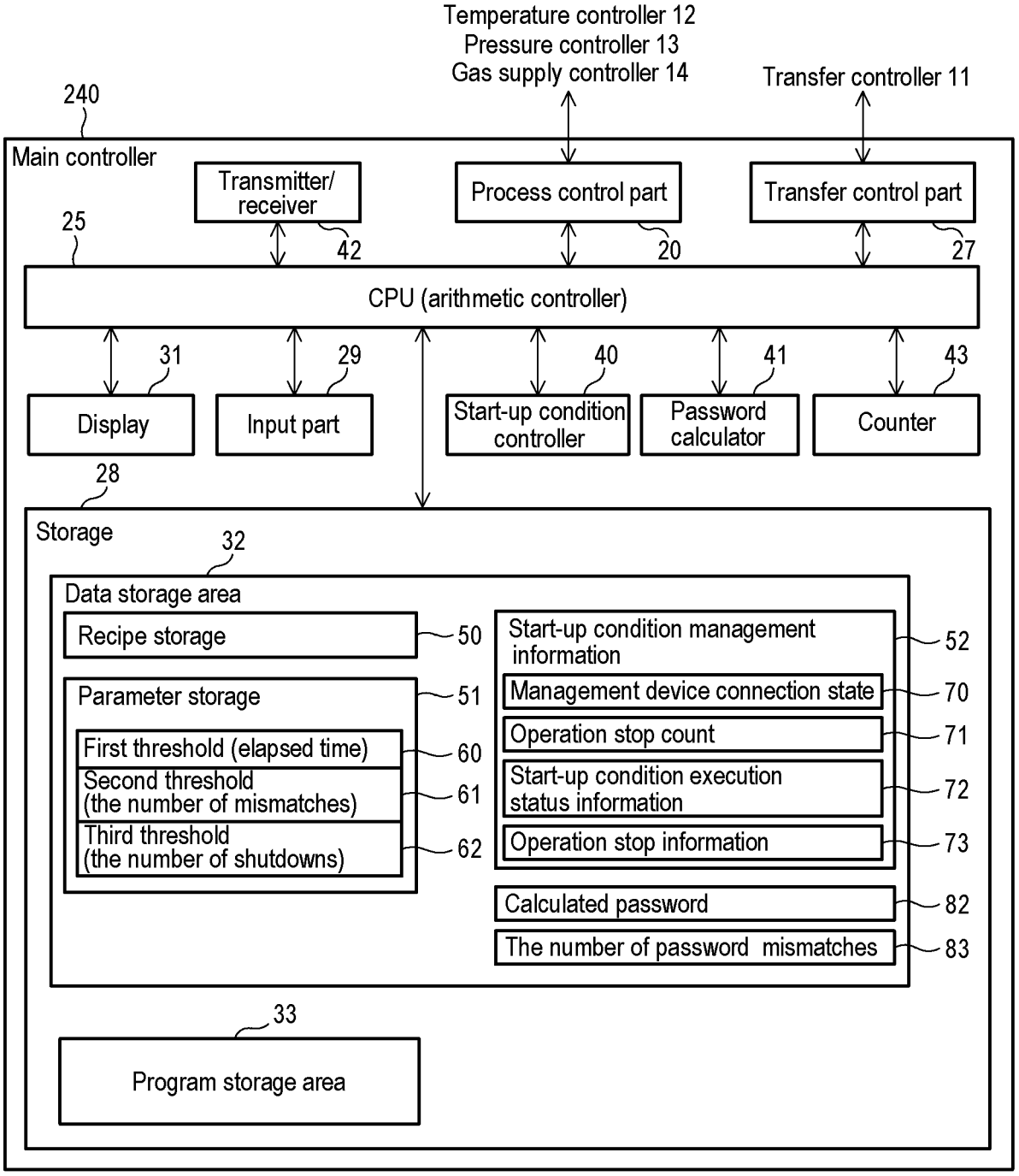

Temperature controller 12
Pressure controller 13
Gas supply controller 14
Transfer controller 11
240
Main controller
Transmitter/ receiver
Process control part
Transfer control part
25
42
20
27
CPU (arithmetic controller)
31
29
40
41
43
Display
Input part
Start-up condition controller
Password calculator
Counter
28
Storage
32
Data storage area
Recipe storage
50
Start-up condition management information
52
Parameter storage
51
Management device connection state
70
First threshold (elapsed time)
60
Operation stop count
71
Second threshold (the number of mismatches)
61
Start-up condition execution status information
72
Third threshold (the number of shutdowns)
62
Operation stop information
73
Calculated password
82
The number of password mismatches
83
33
Program storage area

FIG. 6

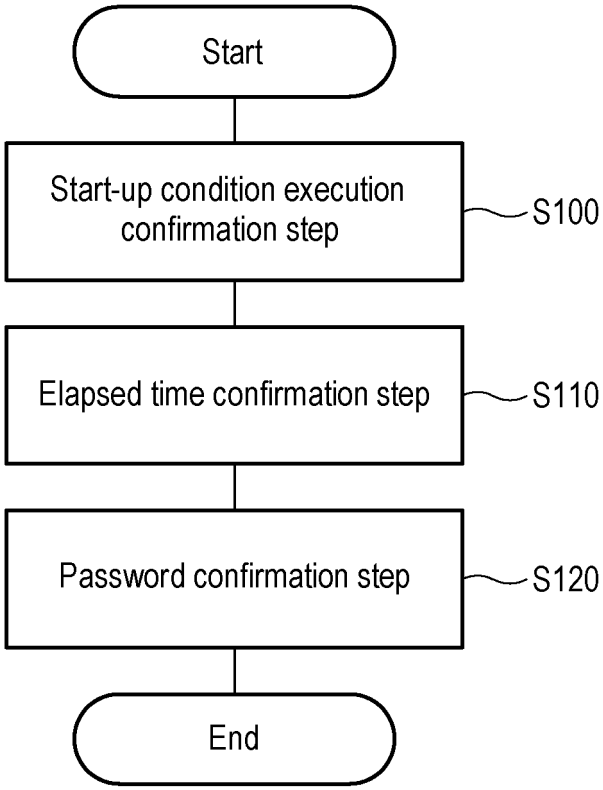

Start
Start-up condition execution confirmation step
S100
Elapsed time confirmation step
S110
Password confirmation step
S120
End

FIG. 7

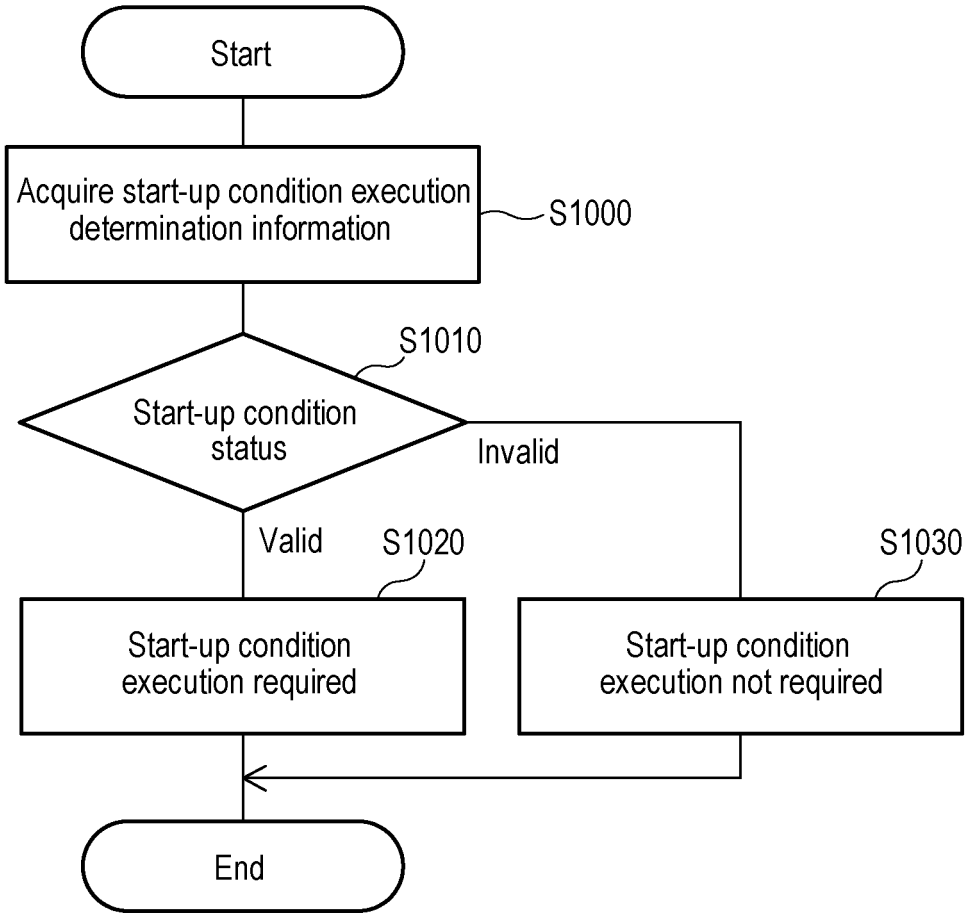

Start
Acquire start-up condition execution determination information
S1000
S1010
Start-up condition status
Invalid
Valid
S1020
S1030
Start-up condition execution required
Start-up condition execution not required
End

FIG. 8

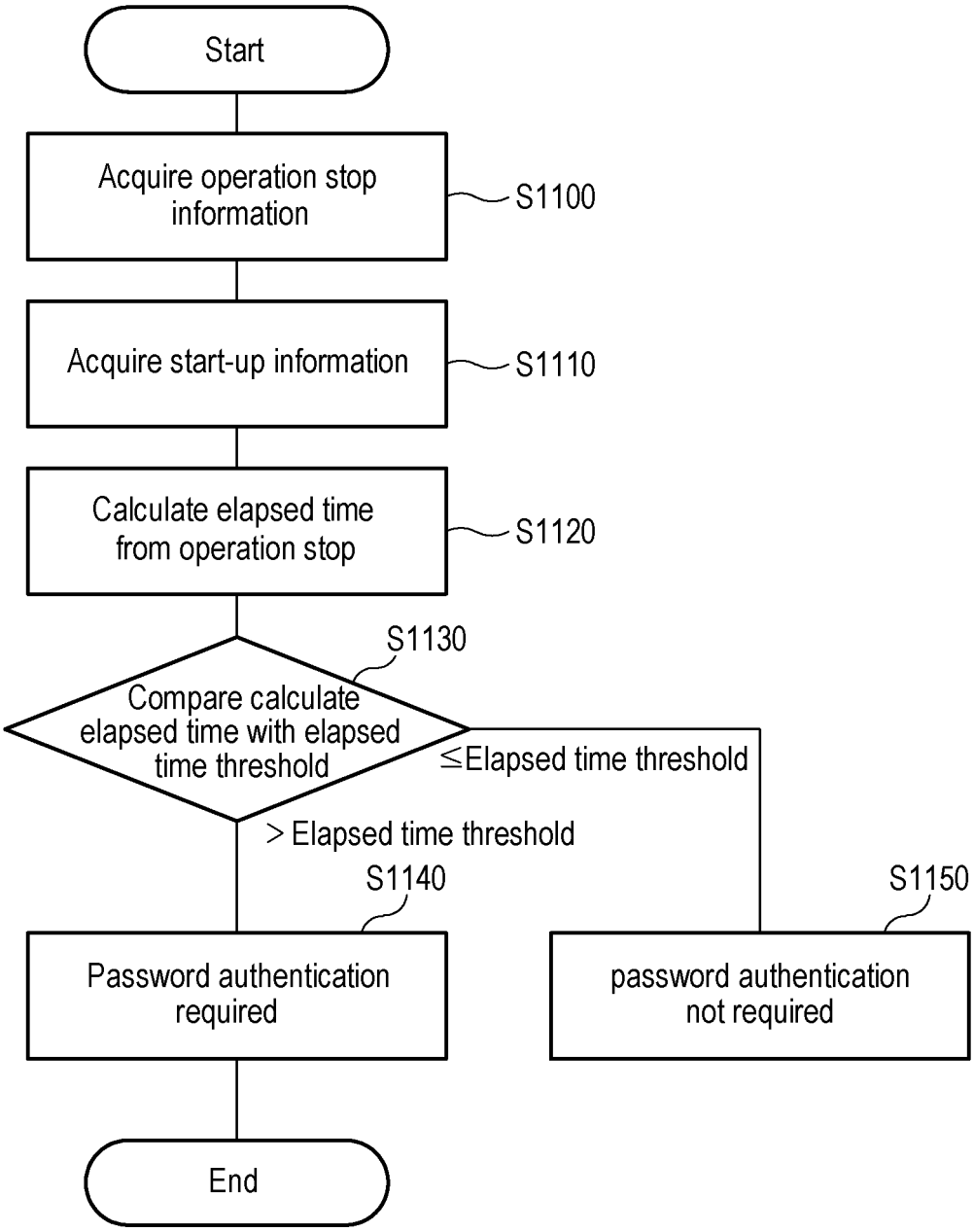

Start
Acquire operation stop information
S1100
Acquire start-up information
S1110
Calculate elapsed time from operation stop
S1120
S1130
Compare calculate elapsed time with elapsed time threshold
≤Elapsed time threshold
> Elapsed time threshold
S1140
S1150
Password authentication required
password authentication not required
End

FIG. 9

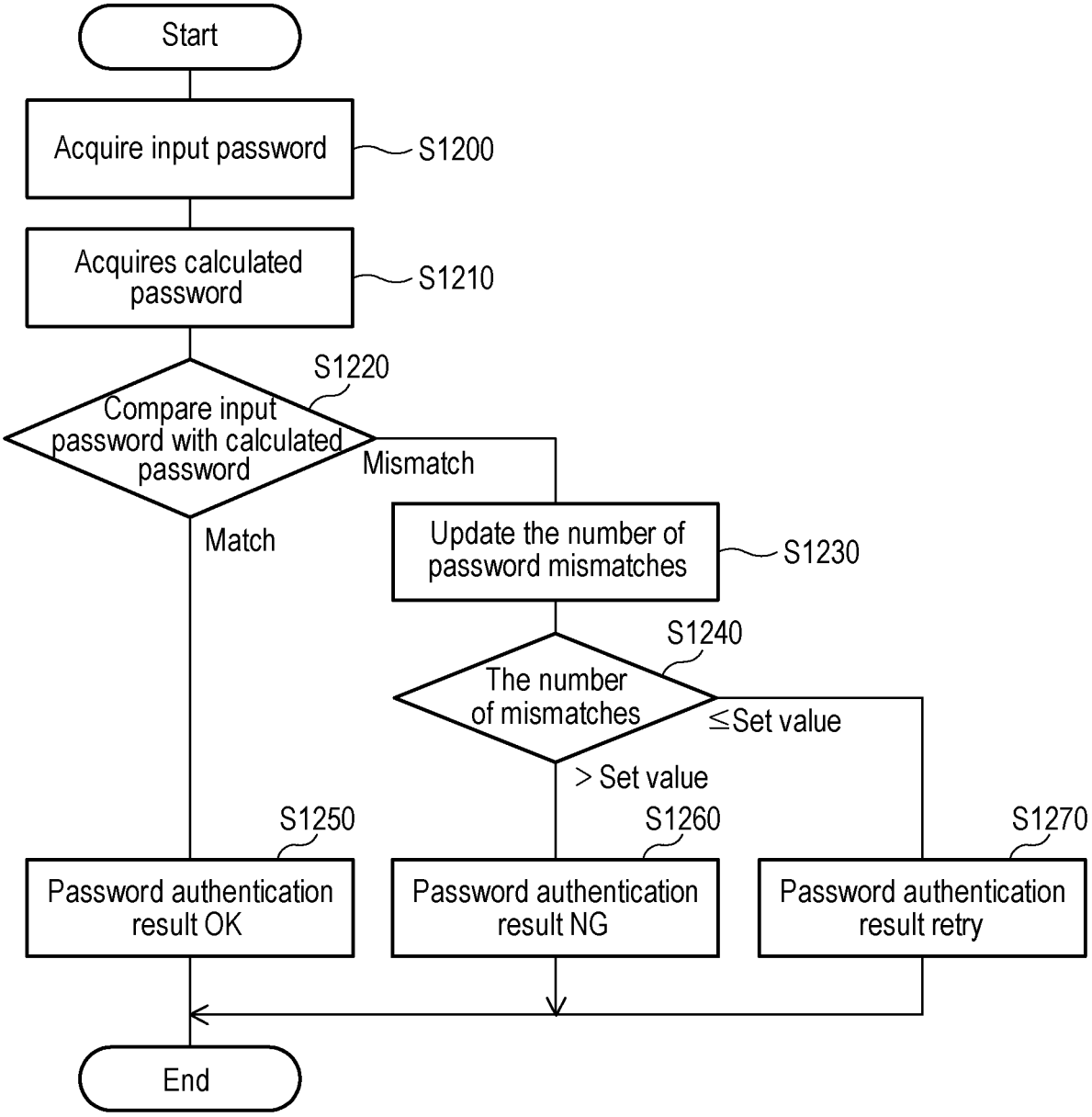

Start
Acquire input password
S1200
Acquires calculated password
S1210
S1220
Compare input password with calculated password
Mismatch
Match
Update the number of password mismatches
S1230
S1240
The number of mismatches
≤Set value
> Set value
S1250
S1260
S1270
Password authentication result OK
Password authentication result NG
Password authentication result retry
End

FIG. 10

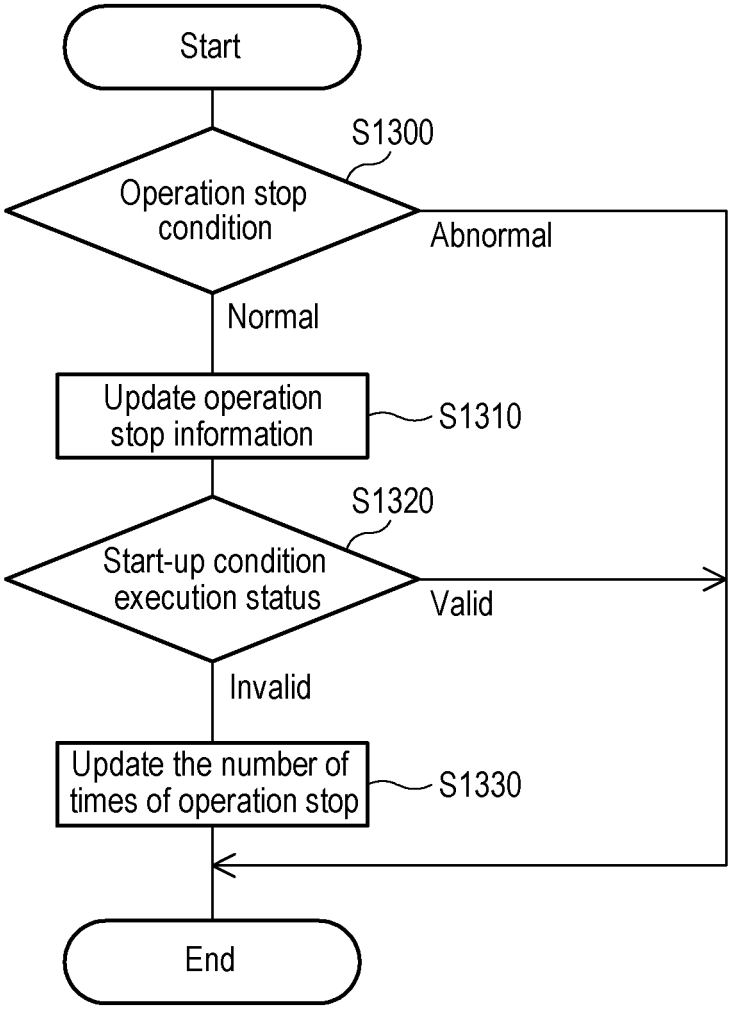

Start
S1300
Operation stop condition
Abnormal
Normal
Update operation stop information
S1310
S1320
Start-up condition execution status
Valid
Invalid
Update the number of times of operation stop
S1330
End

FIG. 11

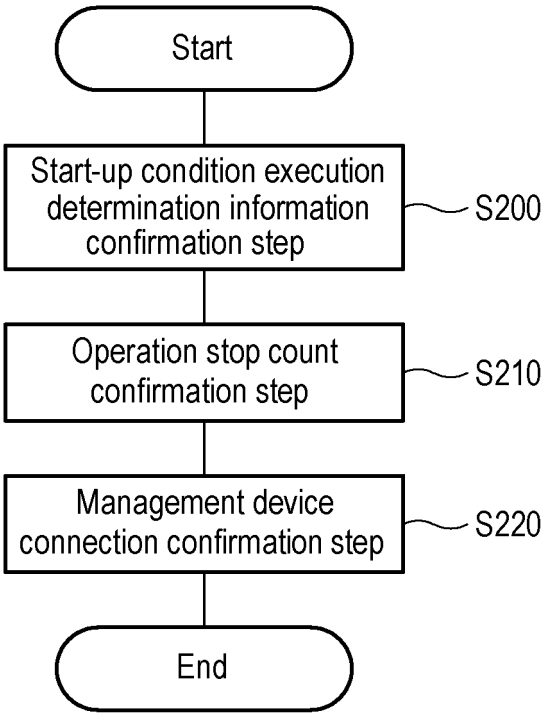

Start
Start-up condition execution determination information confirmation step
S200
Operation stop count confirmation step
S210
Management device connection confirmation step
S220
End

FIG. 12

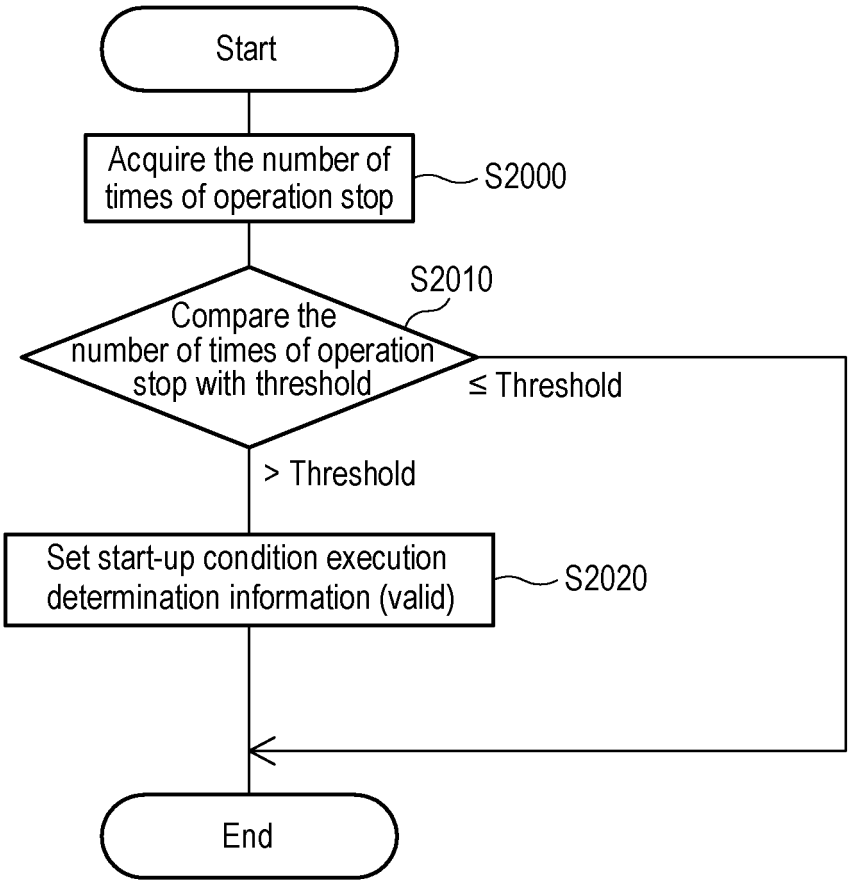
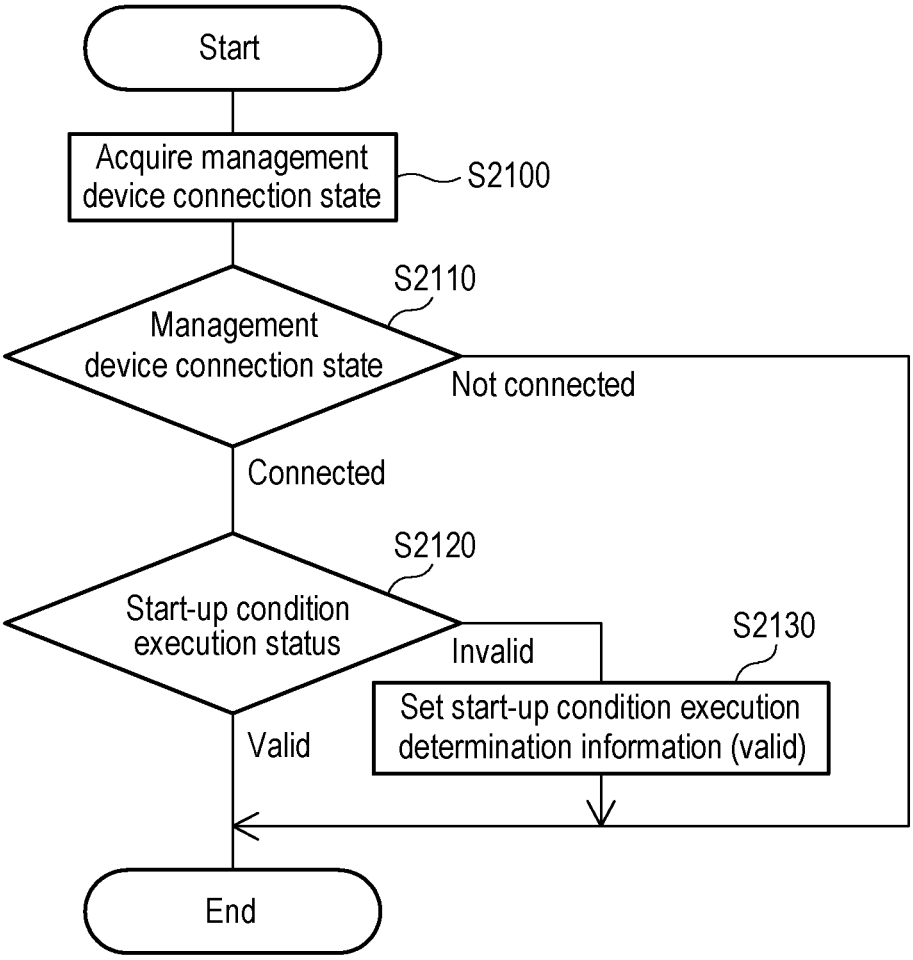

Start
Acquire the number of times of operation stop
S2000
S2010
Compare the number of times of operation stop with threshold
≤ Threshold
> Threshold
Set start-up condition execution determination information (valid)
S2020
End

FIG. 13


Start
Acquire management device connection state
S2100
S2110
Management device connection state
Not connected
Connected
S2120
Start-up condition execution status
Invalid
S2130
Set start-up condition execution determination information (valid)
Valid
End