FIG. 1

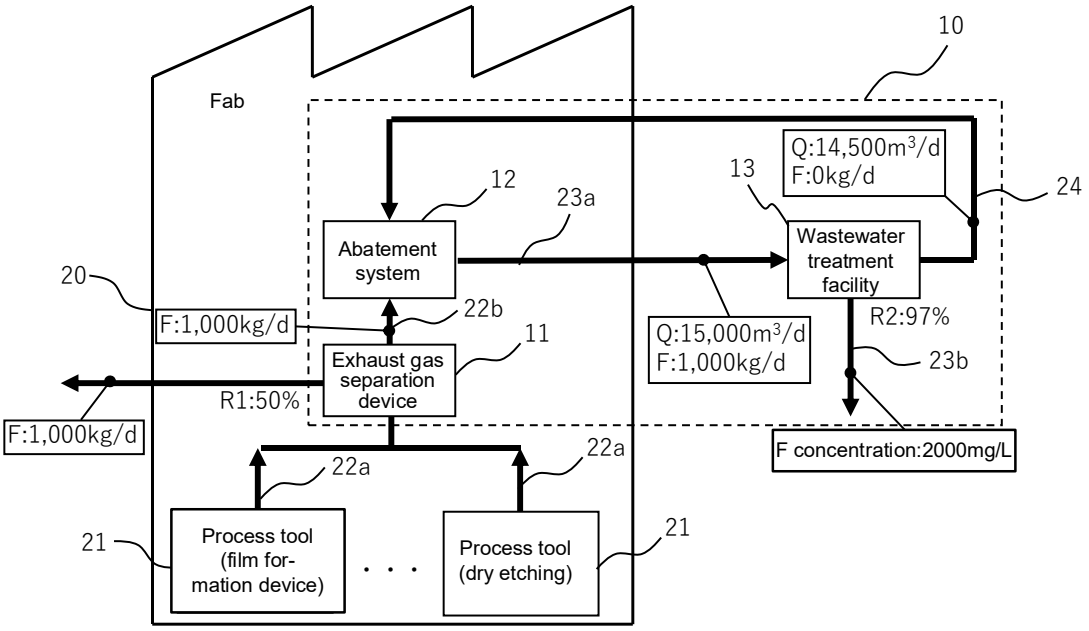

10
Fab
Q:14,500m3/d
F:0kg/d
13
24
12
23a
Abatement system
Wastewater treatment facility
20
F:1,000kg/d
22b
11
Q:15,000m3/d
F:1,000kg/d
R2:97%
23b
Exhaust gas separation device
R1:50%
F:1,000kg/d
F concentration:2000mg/L
22a
22a
21
Process tool (film for-mation device)
Process tool (dry etching)
21

FIG. 2

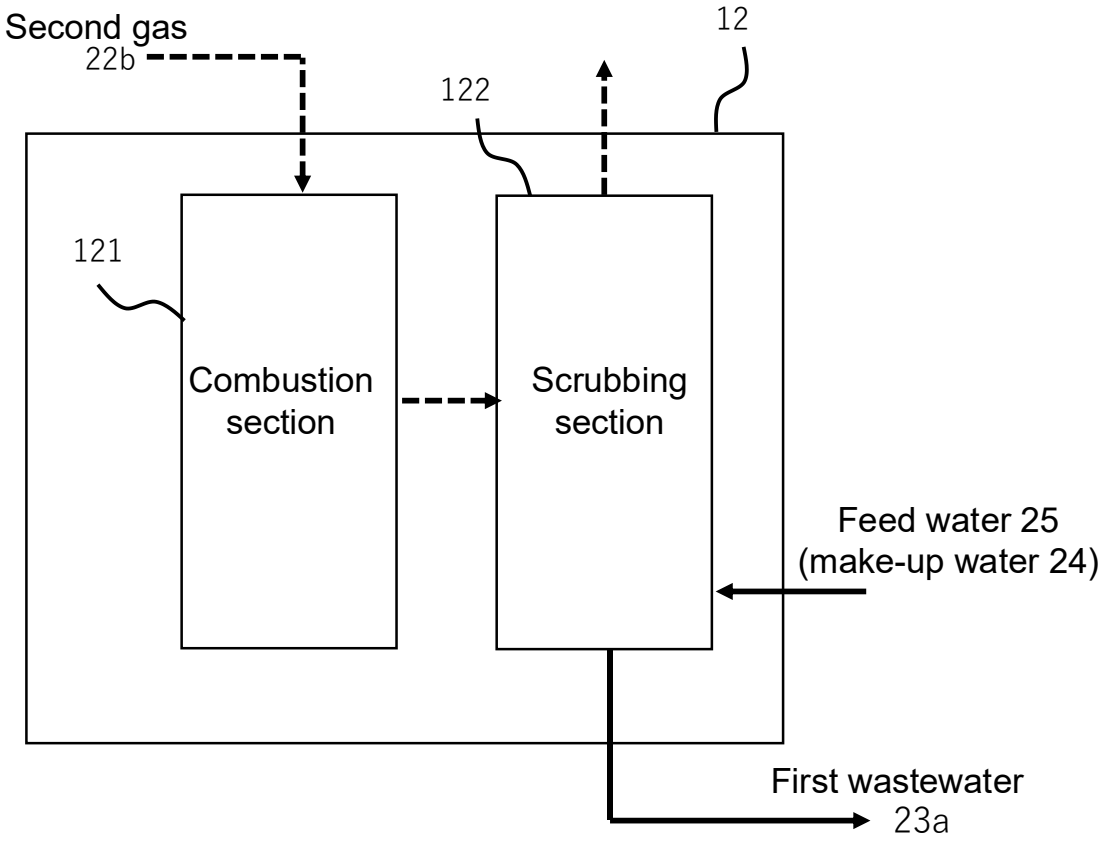

Second gas
22b
12
122
121
Combustion section
Scrubbing section
Feed water 25
(make-up water 24)
First wastewater
23a

FIG. 3

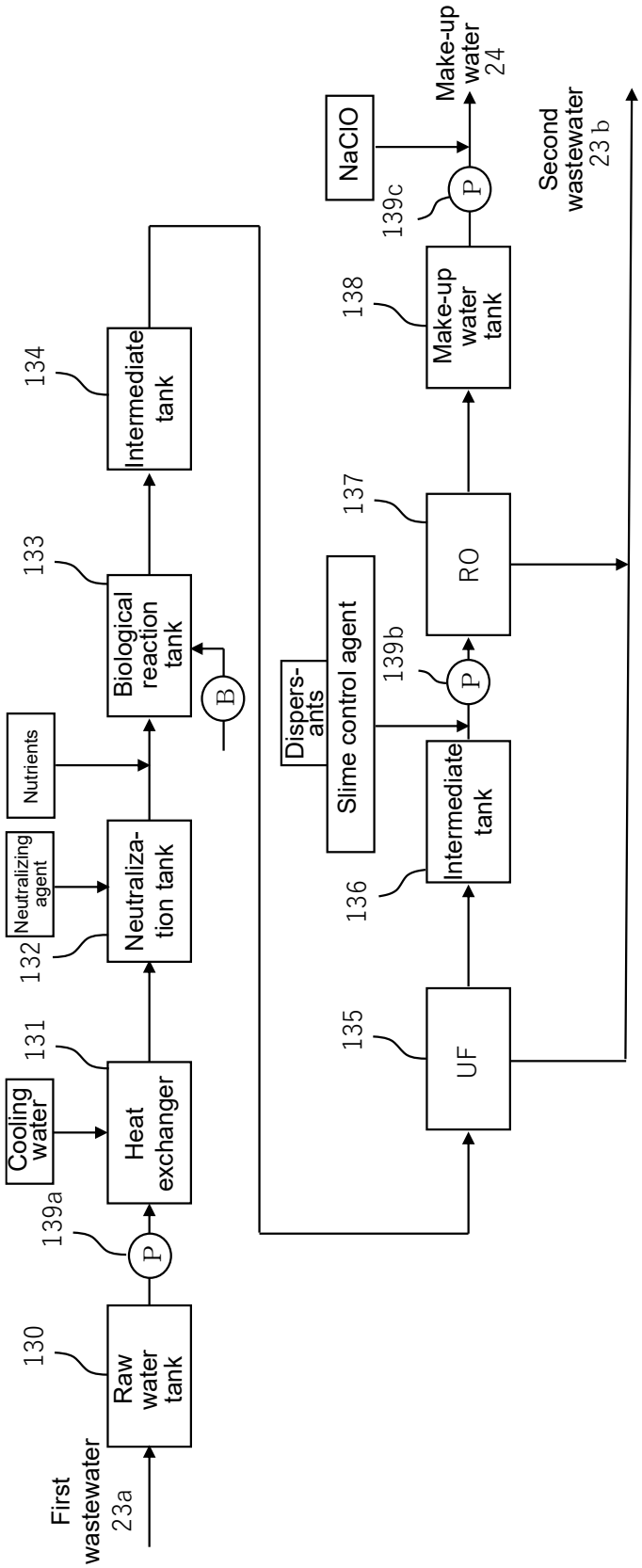

First wastewater 23a
130
Raw water tank
139a
P
131
Heat exchanger
Cooling water
132
Neutralization tank
Neutralizing agent
Nutrients
133
Biological reaction tank
B
134
Intermediate tank
135
UF
136
Intermediate tank
Dispers-ants
Slime control agent
139b
P
137
RO
138
Make-up water tank
139c
P
NaClO
Make-up water 24
Second wastewater 23b

FIG. 4

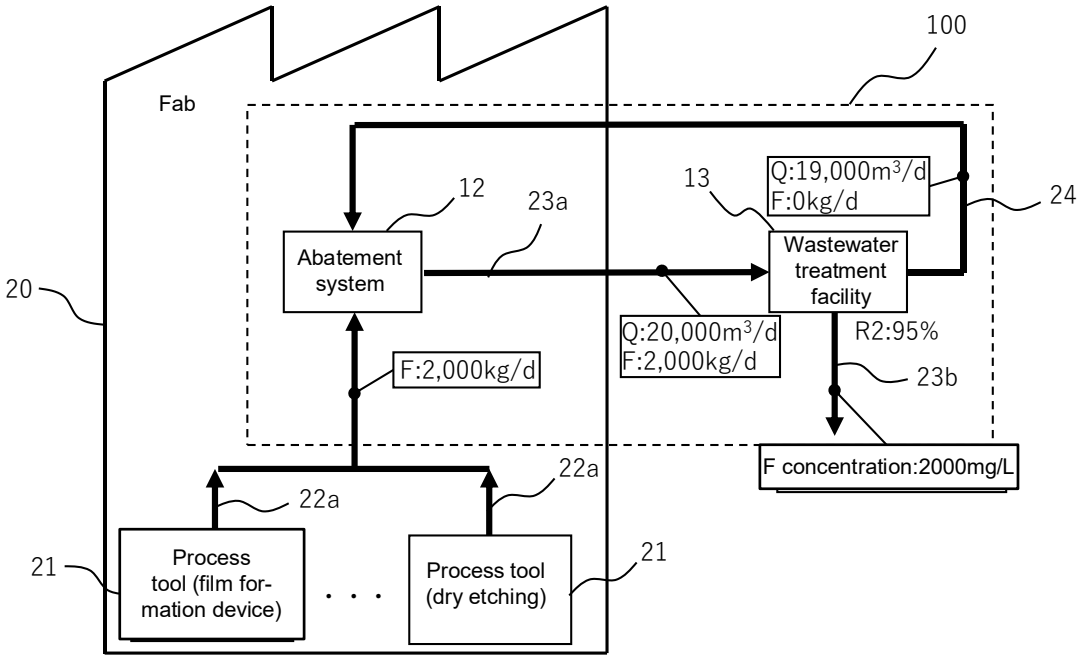

100
Fab
12
23a
13
Q:19,000m³/d
F:0kg/d
24
Abatement system
Wastewater treatment facility
20
Q:20,000m³/d
F:2,000kg/d
R2:95%
F:2,000kg/d
23b
F concentration:2000mg/L
22a
22a
21
Process tool (film formation device)
Process tool (dry etching)
21

FIG. 5

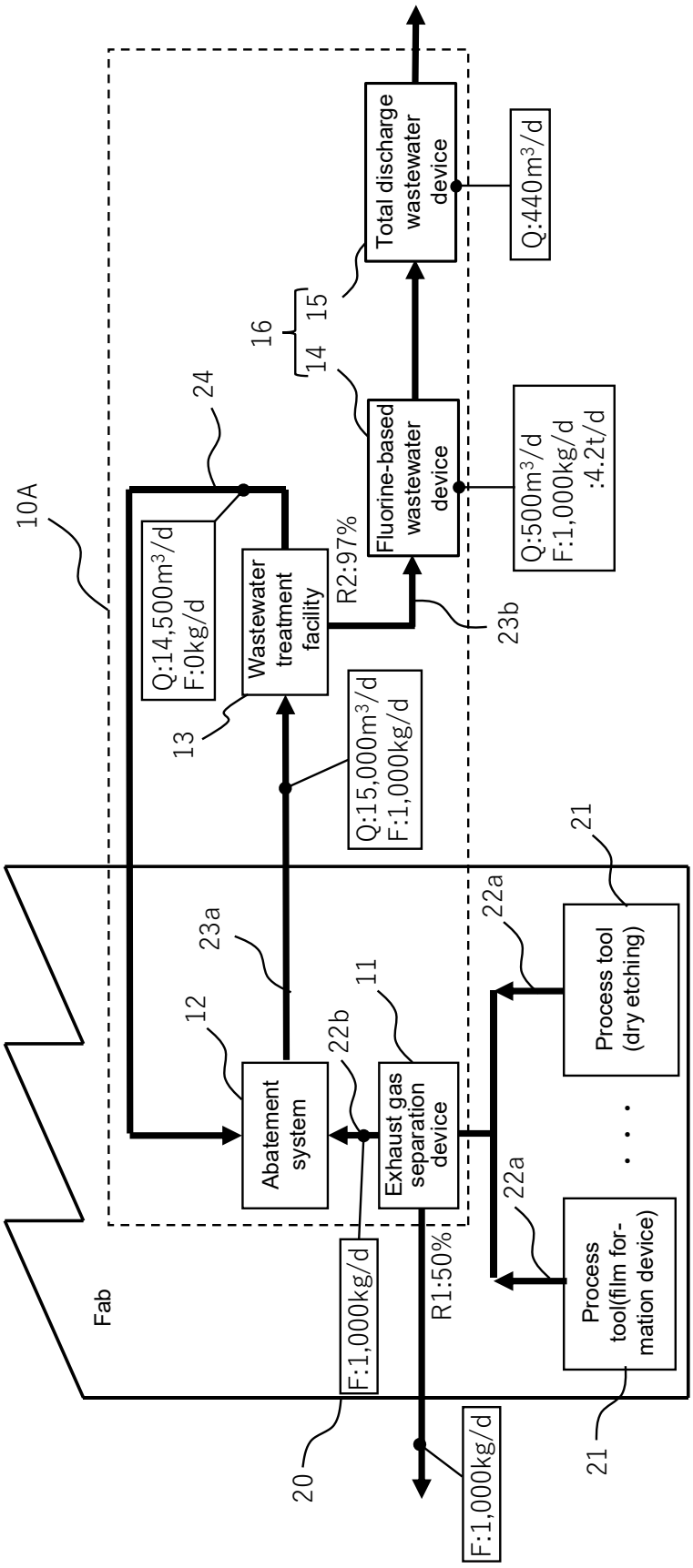

10A
Fab
Abatement system
Exhaust gas separation device
Wastewater treatment facility
Fluorine-based wastewater device
Total discharge wastewater device
Process tool (dry etching)
Process tool(film formation device)
Q:14,500m³/d F:0kg/d
Q:15,000m³/d F:1,000kg/d
Q:500m³/d F:1,000kg/d :4.2t/d
Q:440m³/d
F:1,000kg/d
F:1,000kg/d
R1:50%
R2:97%
11
12
13
14
15
16
20
21
22a
22b
23a
23b
24

FIG. 6

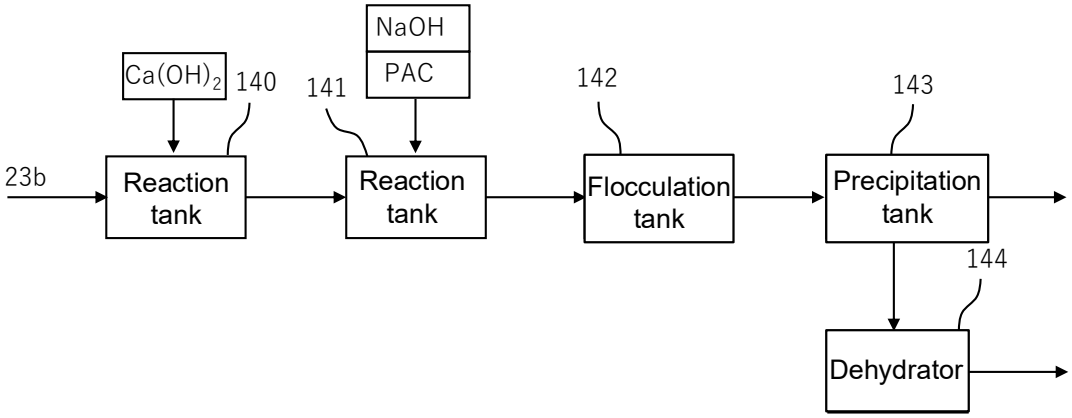

NaOH
PAC
Ca(OH)2
140
141
142
143
23b
Reaction tank
Reaction tank
Flocculation tank
Precipitation tank
144
Dehydrator

FIG. 7

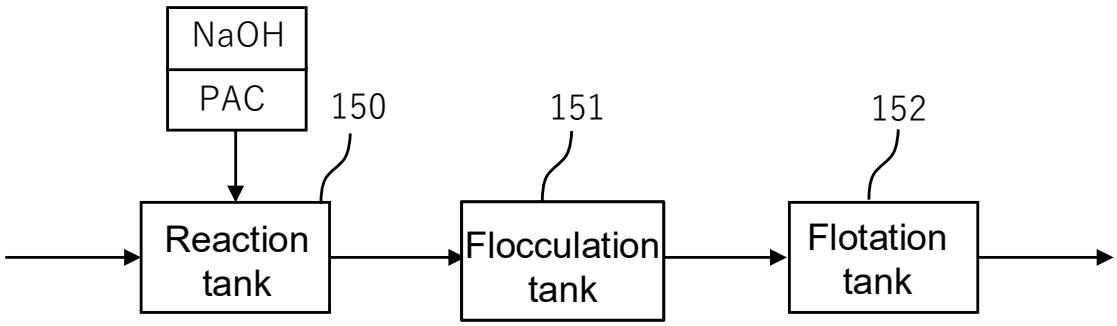

NaOH
PAC
150
151
152
Reaction tank
Flocculation tank
Flotation tank

FIG. 8

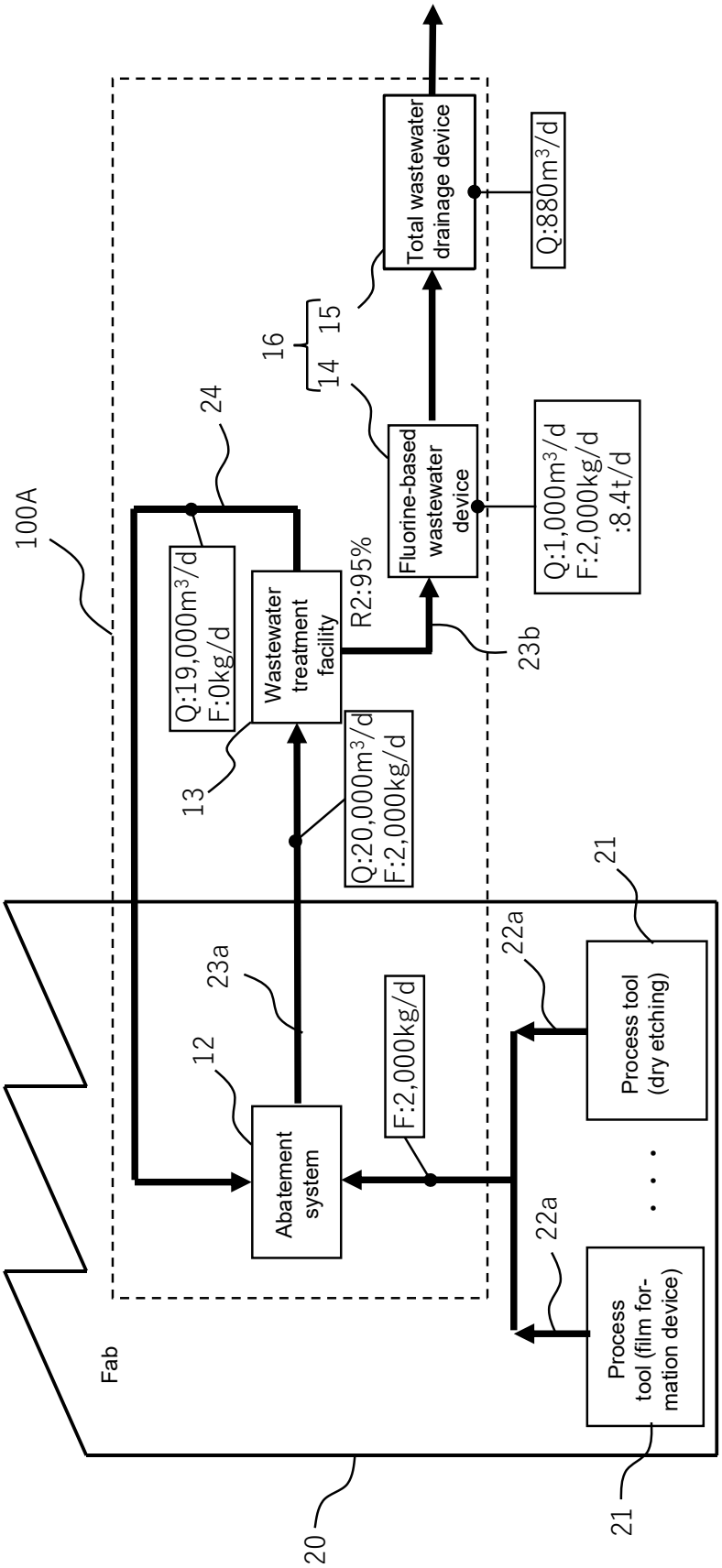

100A
Fab
20
Abatement system
12
Wastewater treatment facility
13
R2:95%
Q:19,000m³/d
F:0kg/d
24
Q:20,000m³/d
F:2,000kg/d
F:2,000kg/d
23a
23b
Fluorine-based wastewater device
Q:1,000m³/d
F:2,000kg/d
:8.4t/d
16
14
15
Total wastewater drainage device
Q:880m³/d
Process tool (dry etching)
Process tool (film formation device)
21
22a
22a
21

FIG. 9

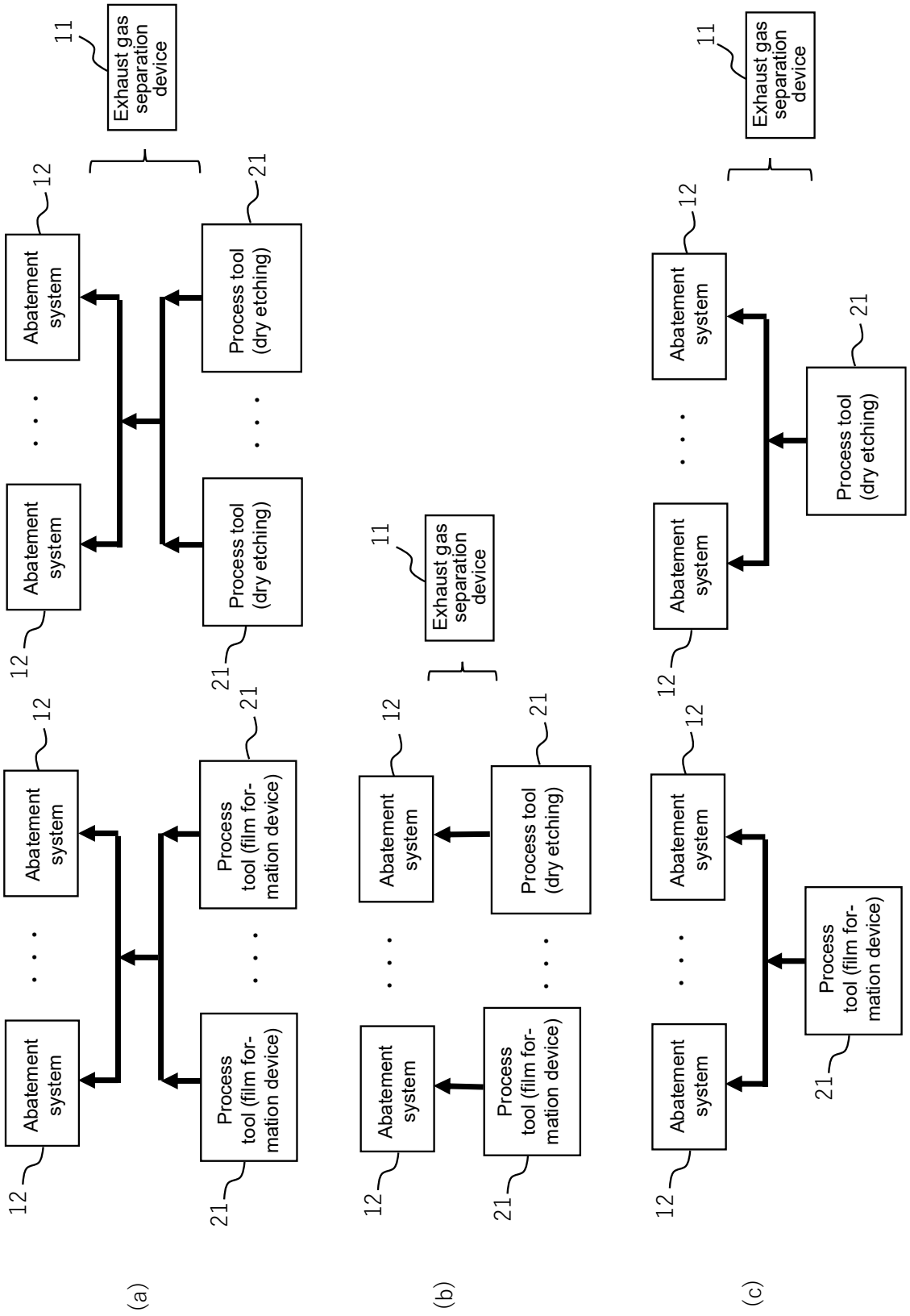

11
Exhaust gas separation device
12
Abatement system
21
Process tool (dry etching)
Process tool (film formation device)
(a)
(b)
(c)

FIG. 10

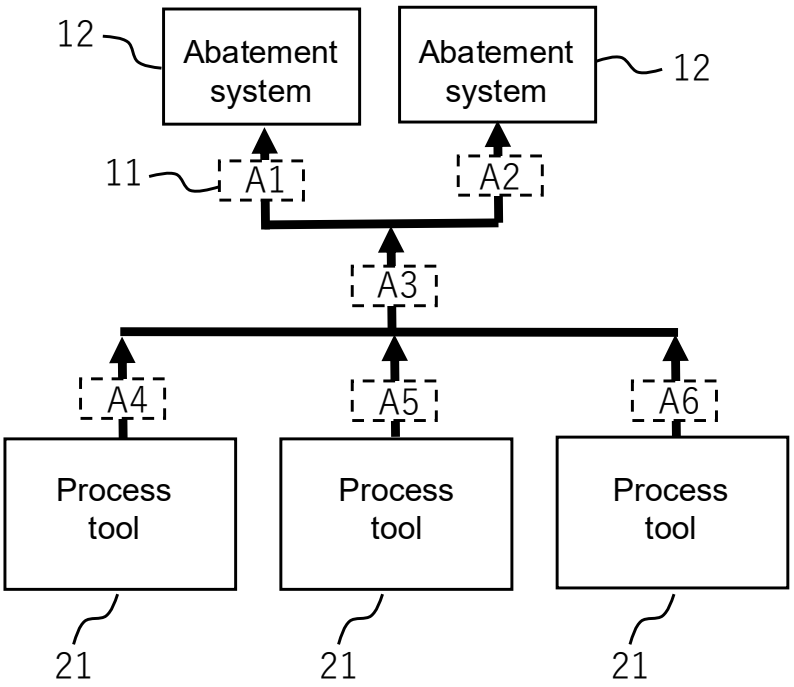

12
Abatement system
Abatement system
12
11
A1
A2
A3
A4
A5
A6
Process tool
Process tool
Process tool
21
21
21

FIG. 11

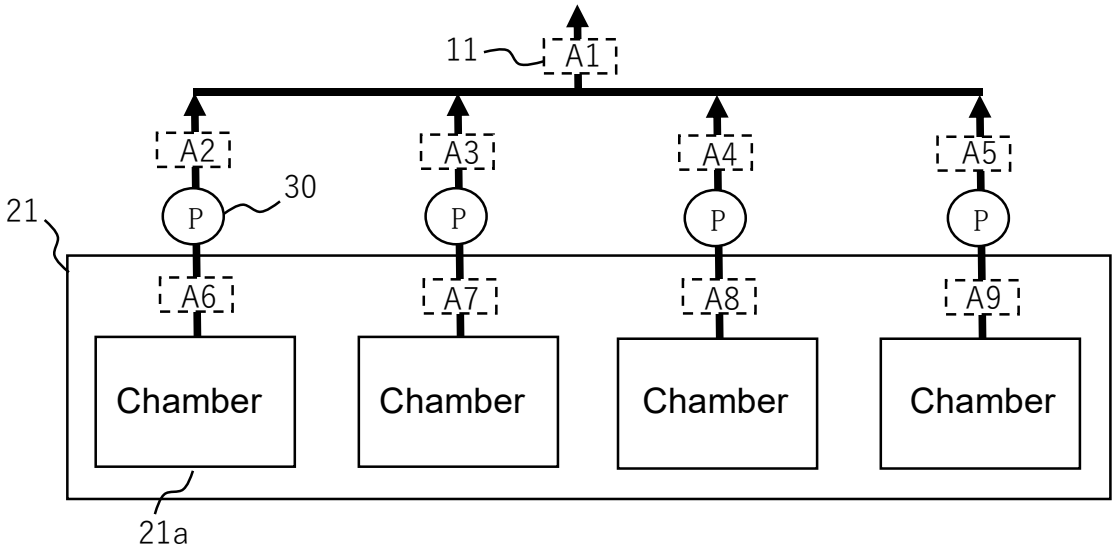

11
A1
A2
A3
A4
A5
21
30
P
P
P
P
A6
A7
A8
A9
Chamber
Chamber
Chamber
Chamber
21a

FIG. 12

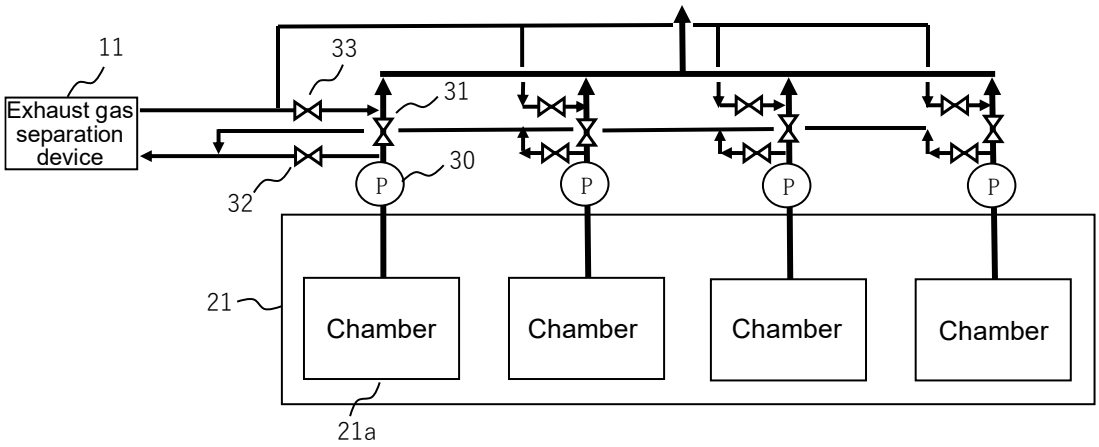
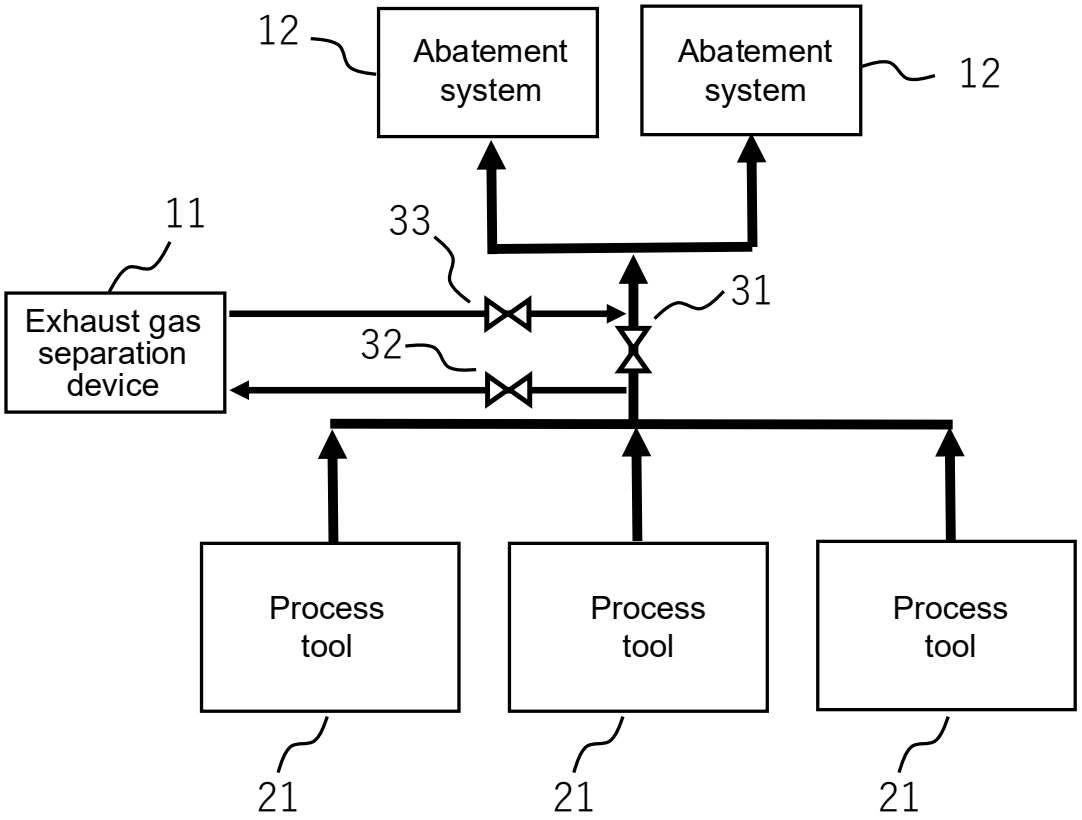

11
Exhaust gas separation device
33
31
32
30
P
P
P
P
21
Chamber
Chamber
Chamber
Chamber
21a

FIG. 13


12
Abatement system
Abatement system
12
11
33
31
32
Exhaust gas separation device
Process tool
Process tool
Process tool
21
21
21