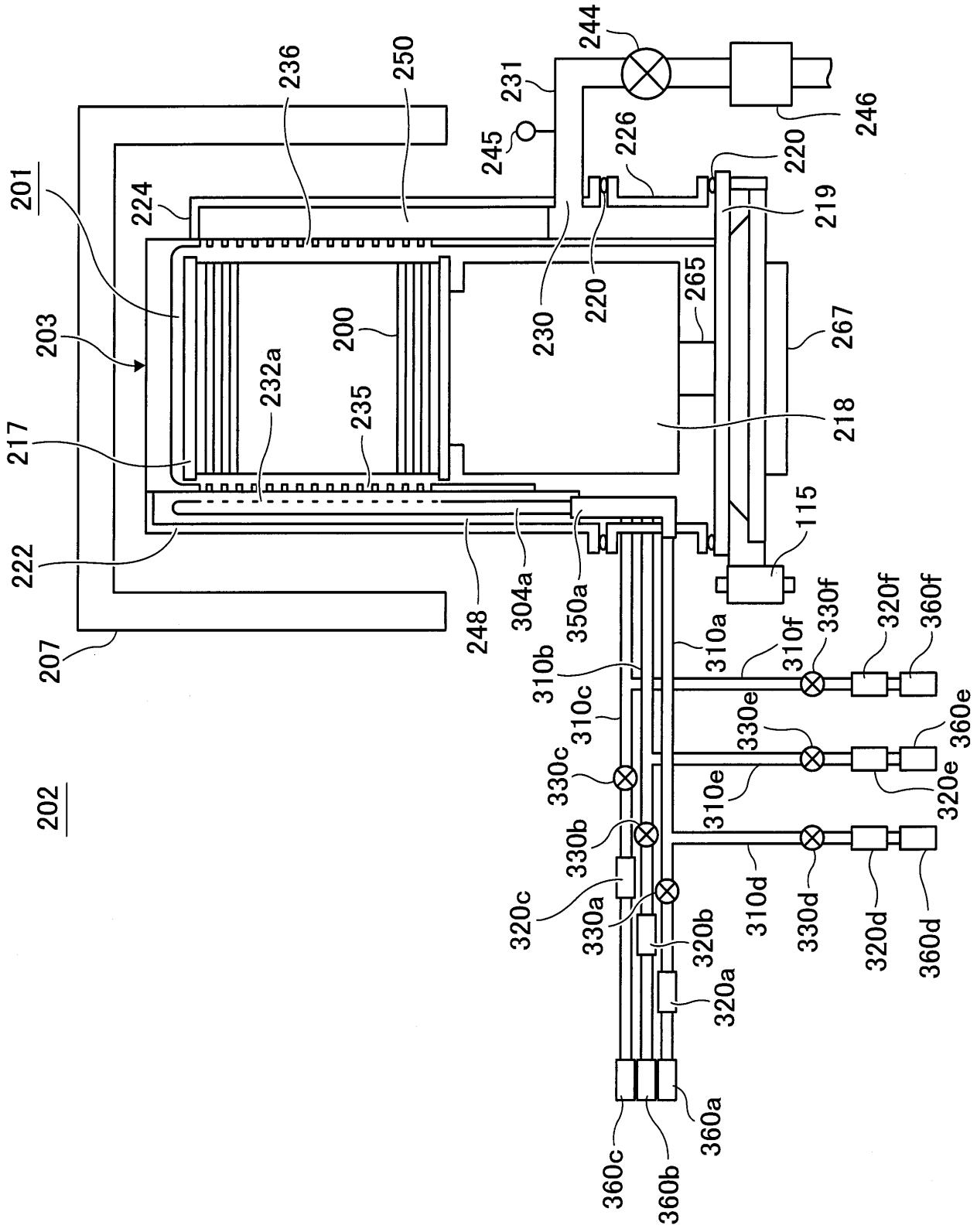
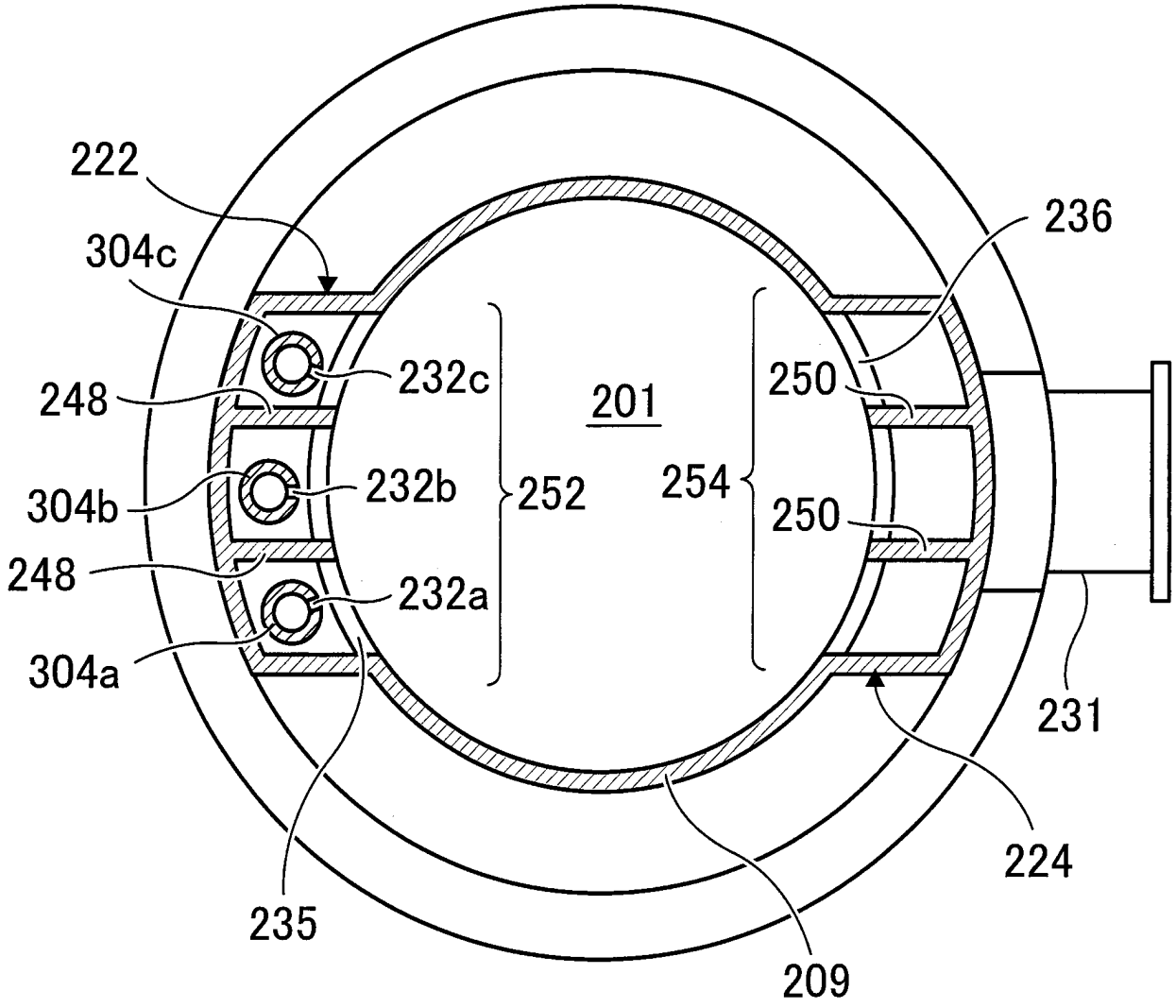
[Figures]

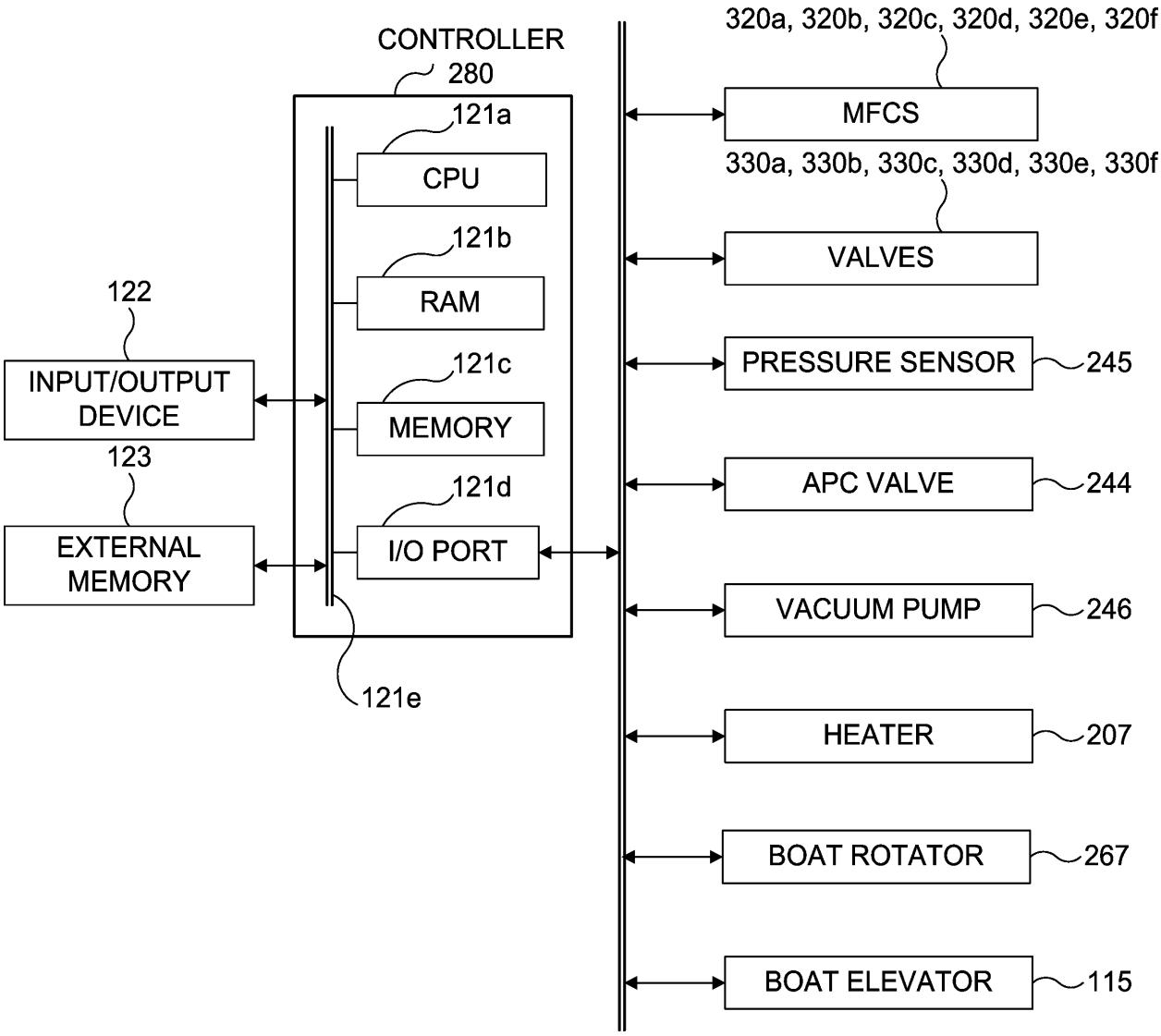
[Figure 1]



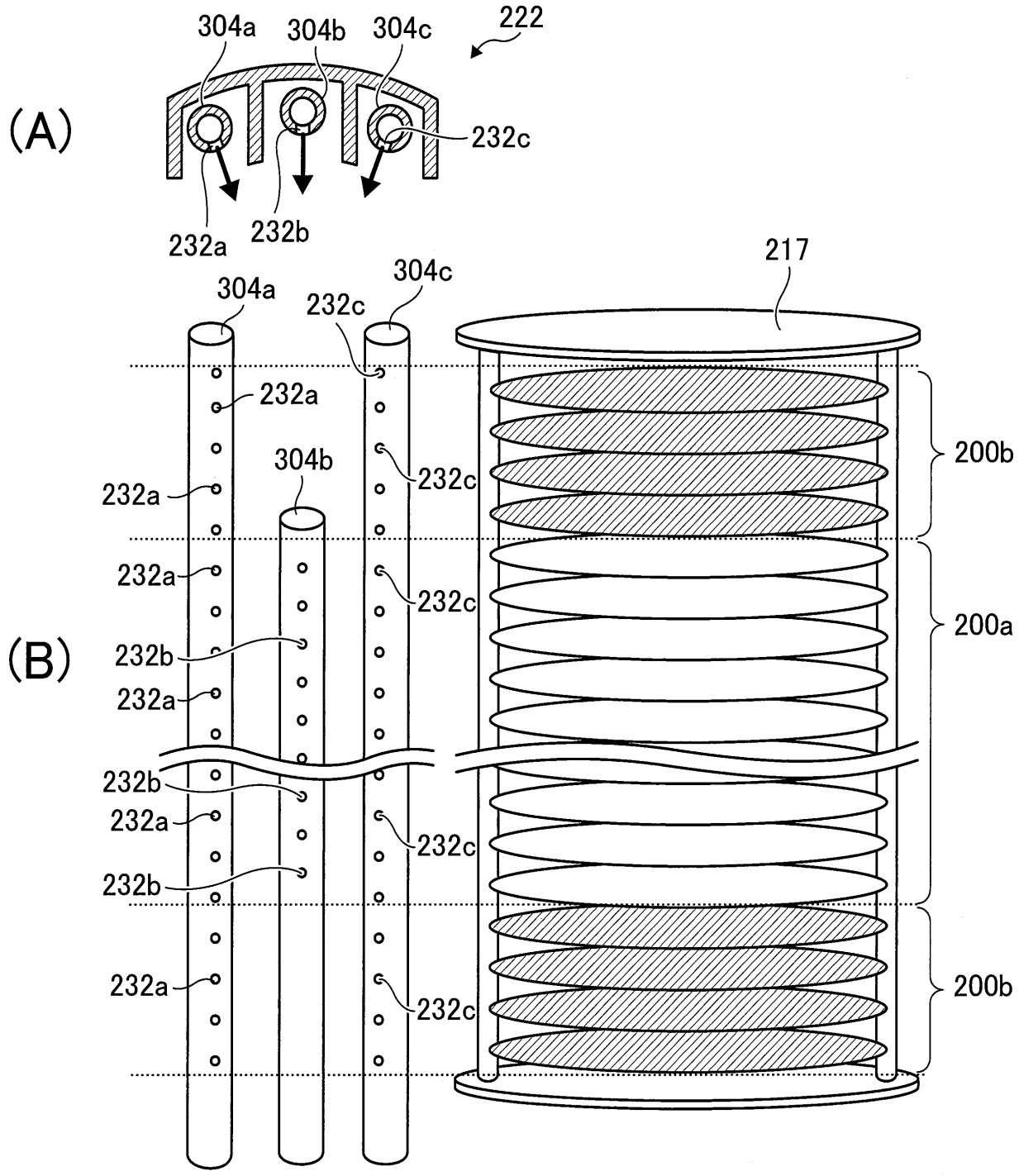
[Figure 2]


222
304c
248
232c
201
236
250
304b
232b
252
254
250
248
232a
304a
231
235
224
209

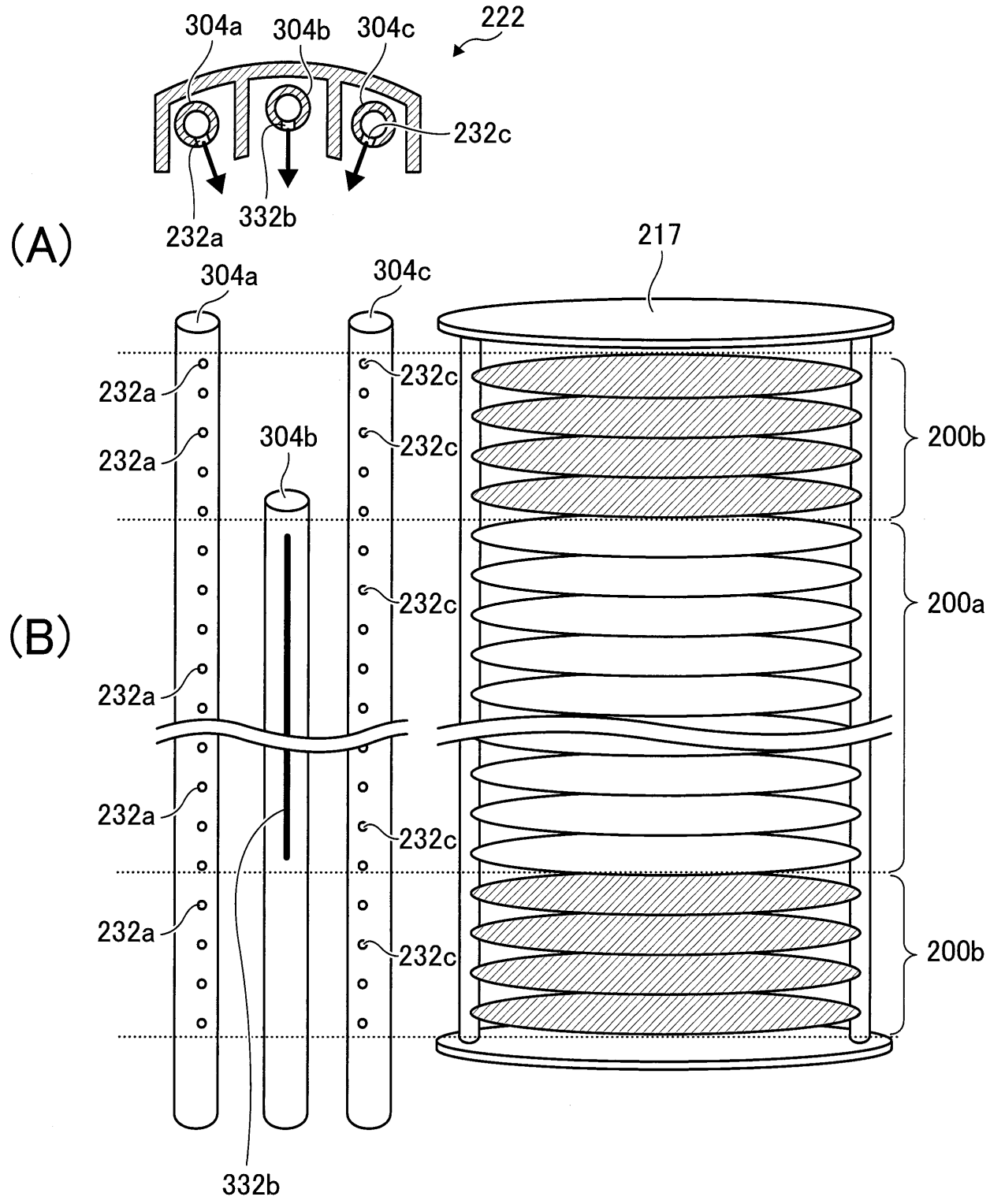
[Figure 3]


CONTROLLER
280
121a
CPU
121b
RAM
121c
MEMORY
121d
I/O PORT
121e
122
INPUT/OUTPUT DEVICE
123
EXTERNAL MEMORY
320a, 320b, 320c, 320d, 320e, 320f
MFCS
330a, 330b, 330c, 330d, 330e, 330f
VALVES
PRESSURE SENSOR
245
APC VALVE
244
VACUUM PUMP
246
HEATER
207
BOAT ROTATOR
267
BOAT ELEVATOR
115

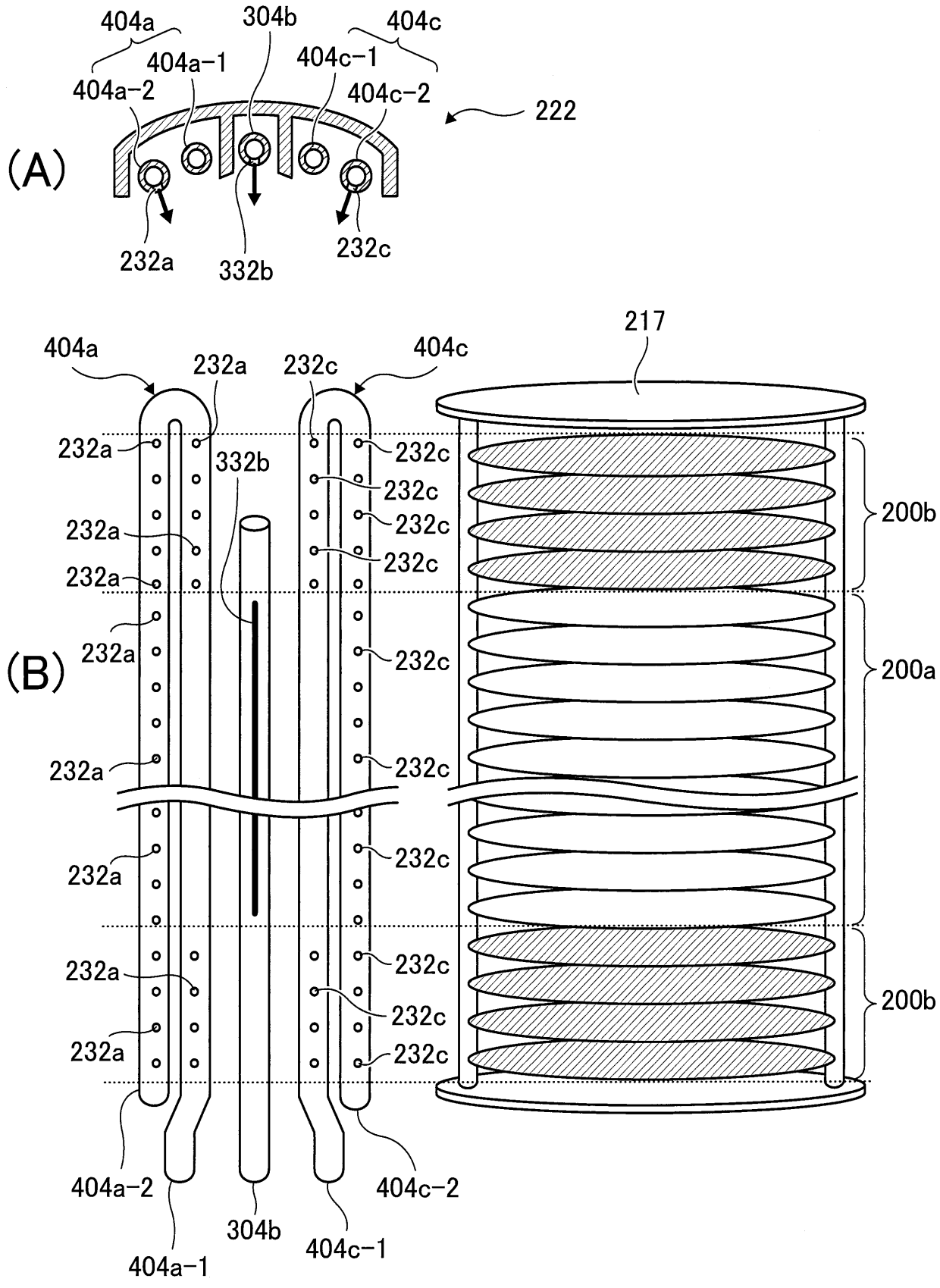
[Figure 4]


(A)
304a
304b
304c
222
232c
232a
232b
(B)
217
304a
232c
304c
232a
304b
232a
232c
232a
232c
232b
232a
232b
232a
232c
232b
232a
232c
200b
200a
200b

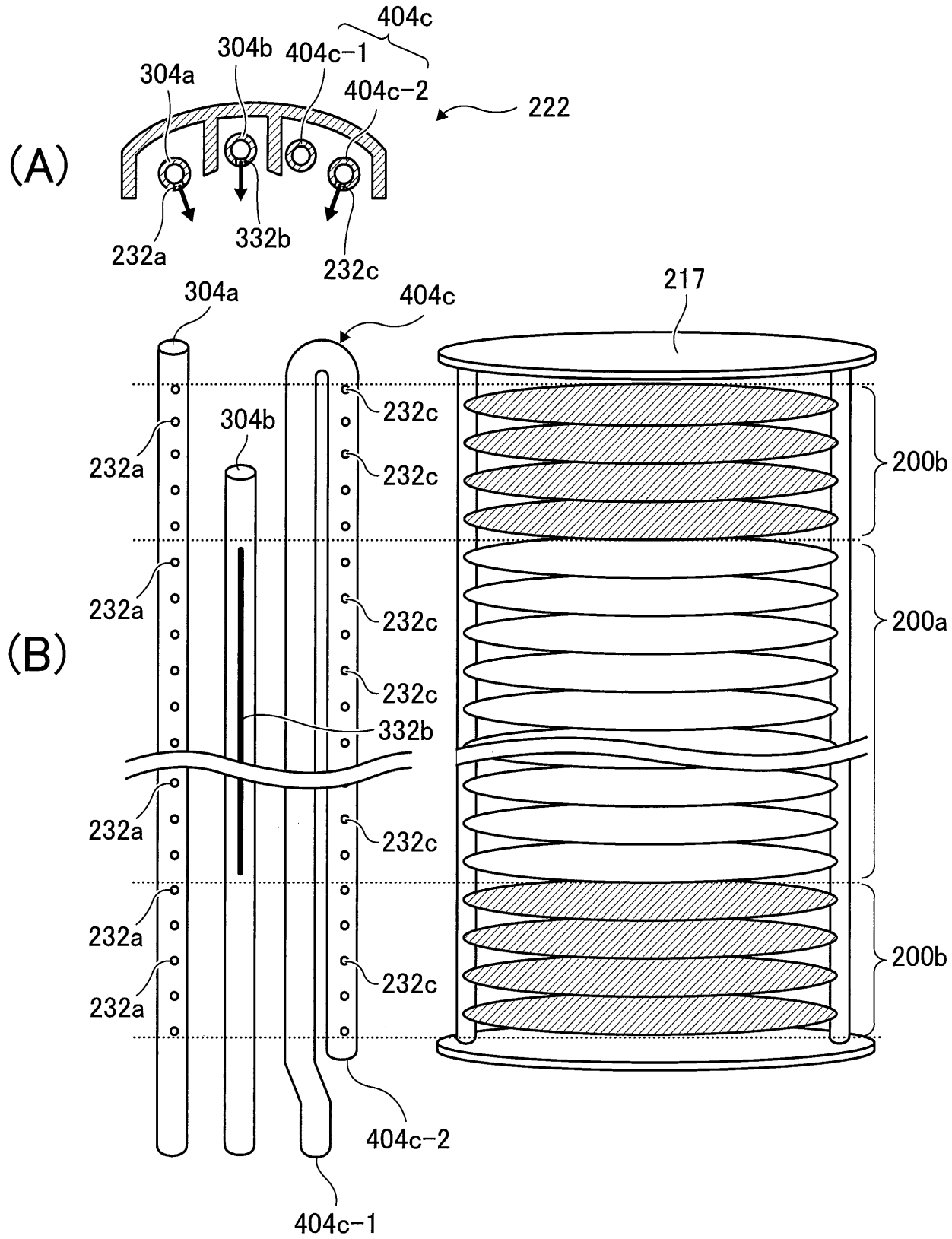
[Figure 5]


(A)
304a
304b
304c
222
232c
232a
332b
(B)
217
304a
304c
304b
232a
232c
200b
200a
332b

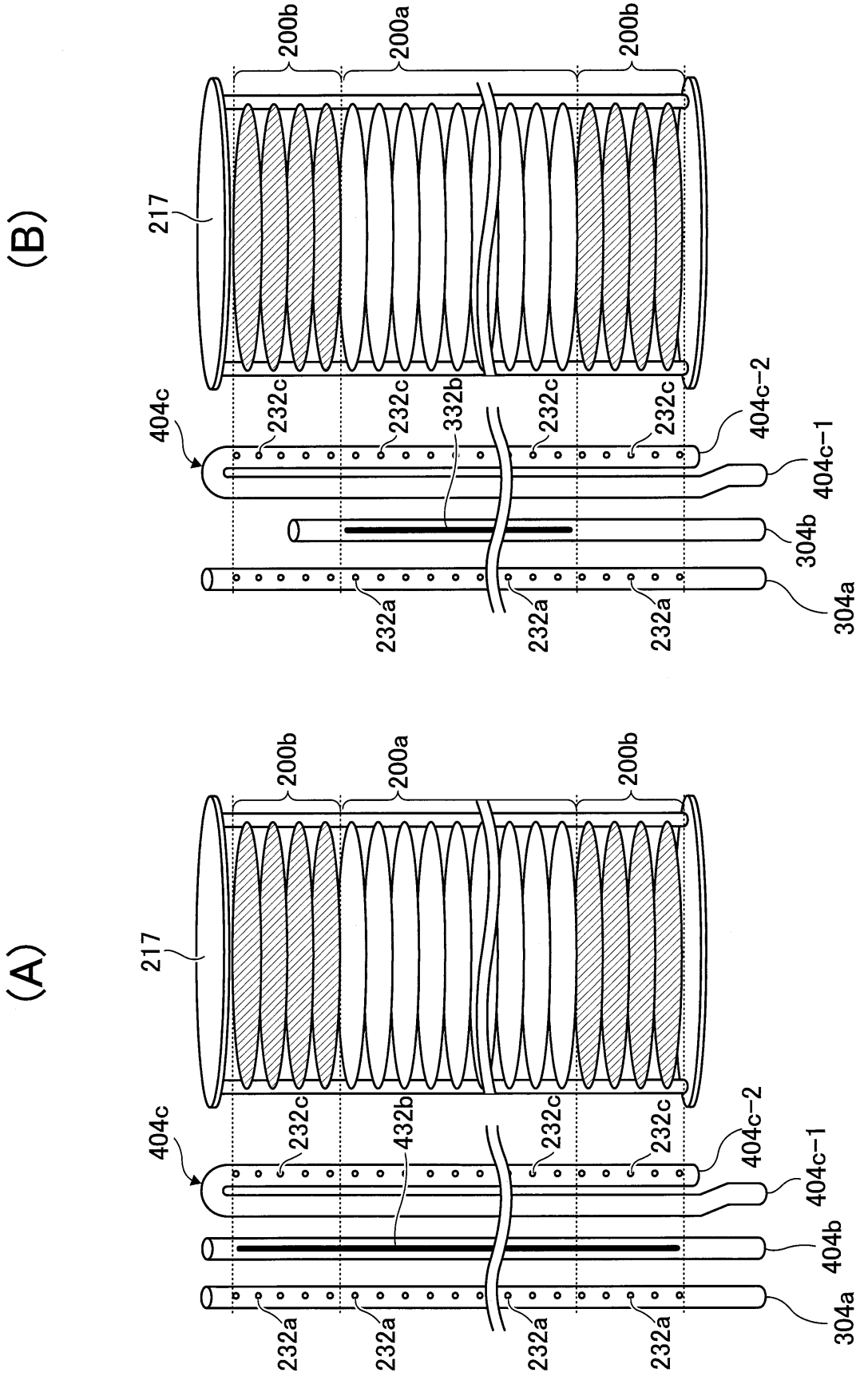
[Figure 6]


(A)
404a
304b
404c
404a-1
404c-1
404a-2
404c-2
222
232a
332b
232c
(B)
217
404a
232a
232c
404c
332b
200b
200a
404a-2
404a-1
304b
404c-1
404c-2

[Figure 7]

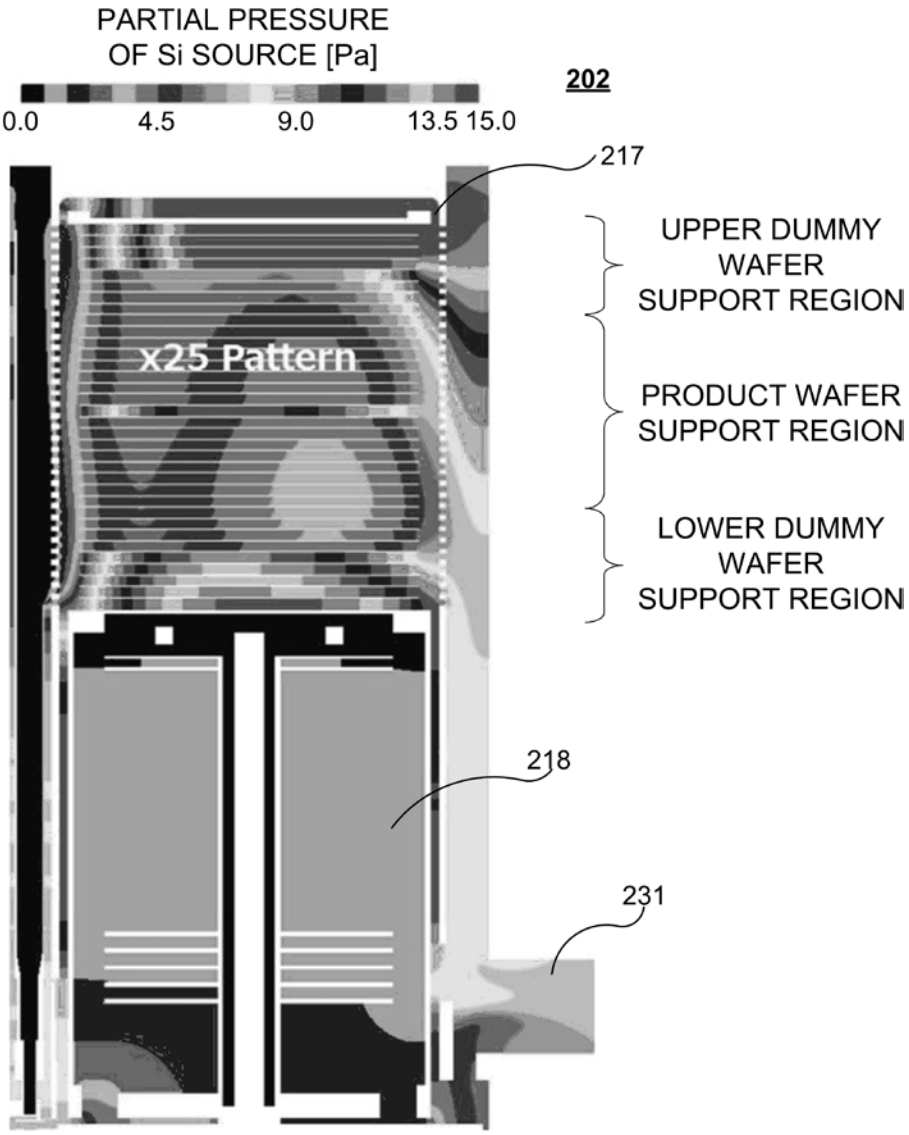

(A)
404c
304b
404c-1
304a
404c-2
222
232a
332b
232c
(B)
304a
404c
217
304b
232c
232a
200b
200a
332b
404c-2
404c-1

[Figure 8]

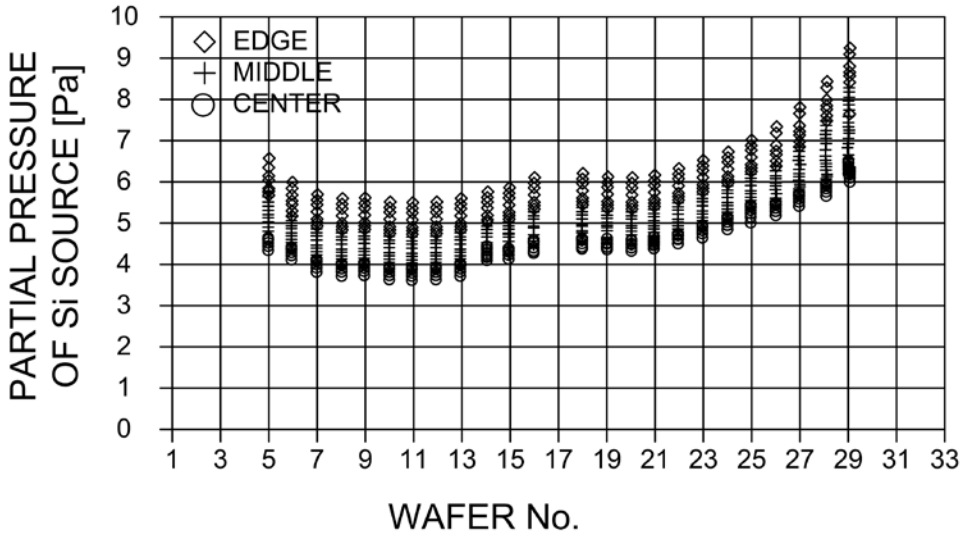

(A)
200b
200a
200b
217
404c
232c
432b
404c-2
404c-1
404b
304a
232a
(B)
200b
200a
200b
217
404c
232c
332b
404c-2
404c-1
304b
304a
232a

[Figure 9]

(A)

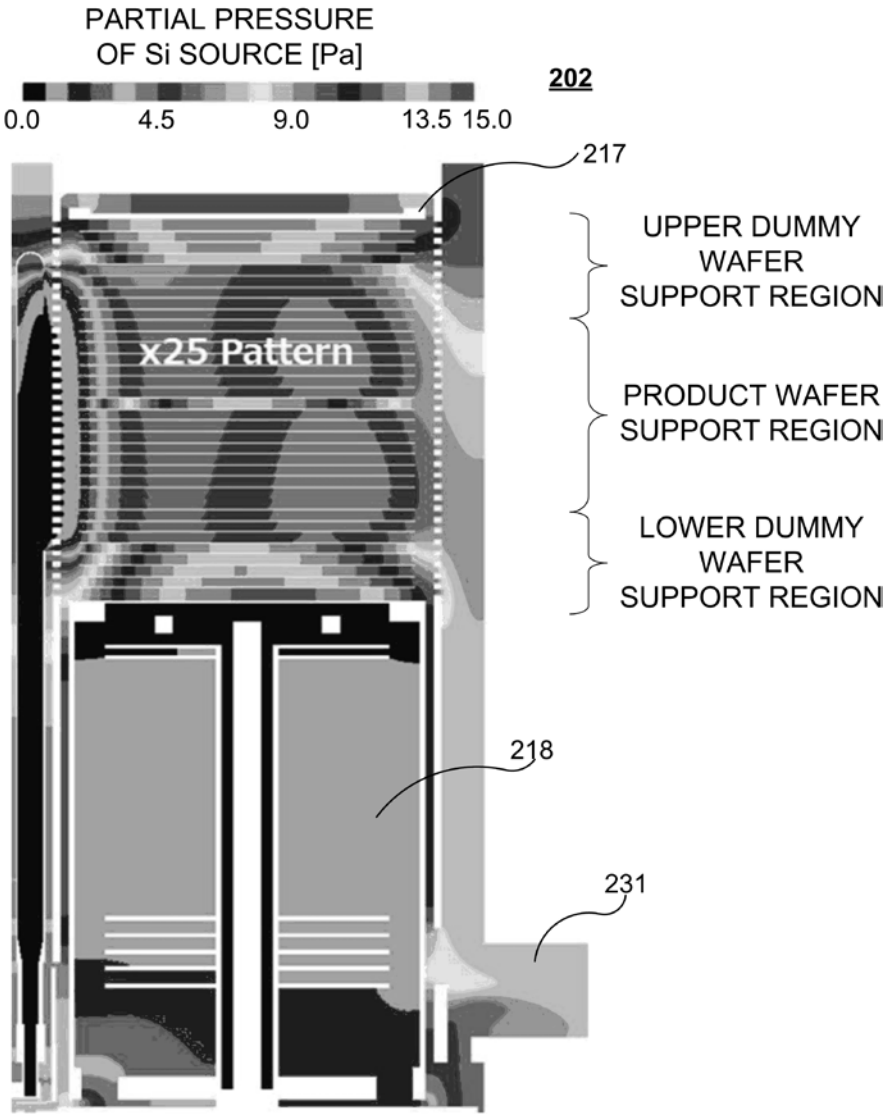

PARTIAL PRESSURE
OF Si SOURCE [Pa]
202
0.0
4.5
9.0
13.5 15.0
217
UPPER DUMMY
WAFER
SUPPORT REGION
x25 Pattern
PRODUCT WAFER
SUPPORT REGION
LOWER DUMMY
WAFER
SUPPORT REGION
218
231

(B)

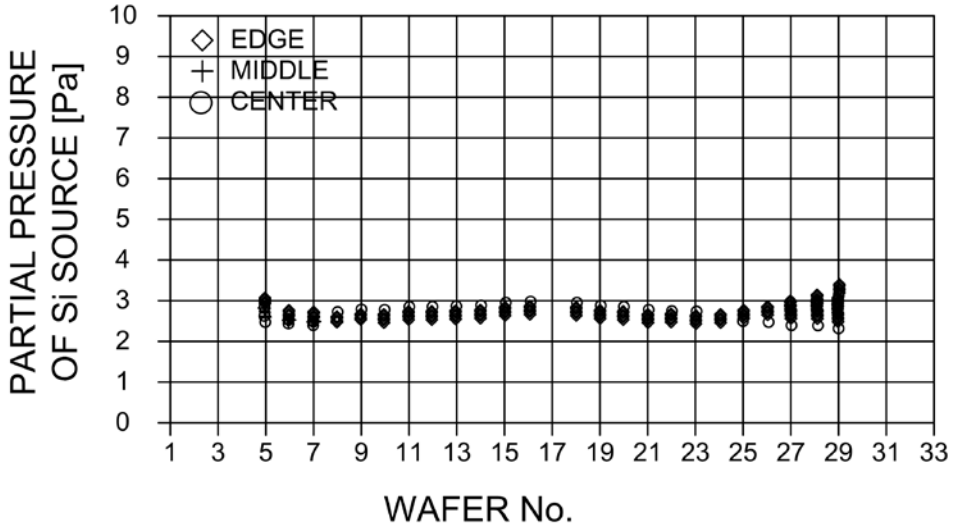

PARTIAL PRESSURE
OF Si SOURCE [Pa]
EDGE
MIDDLE
CENTER
0
1
2
3
4
5
6
7
8
9
10
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33
WAFER No.

[Figure 10]

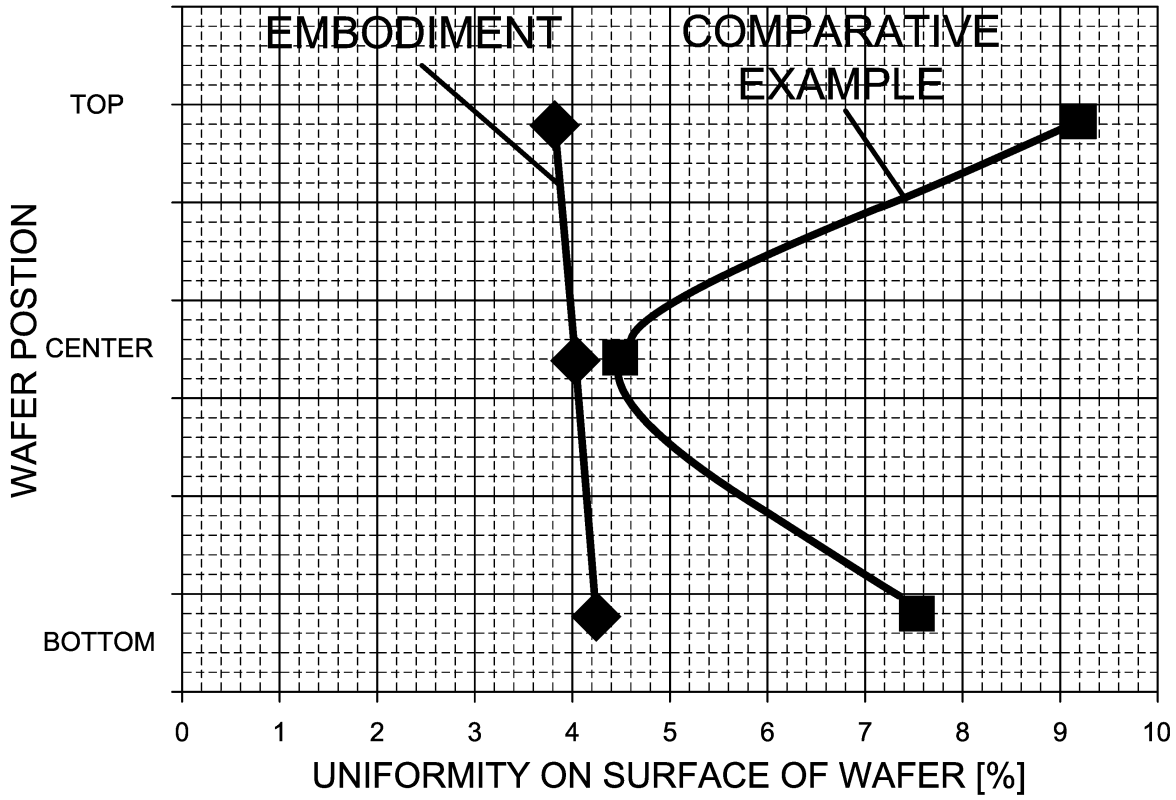
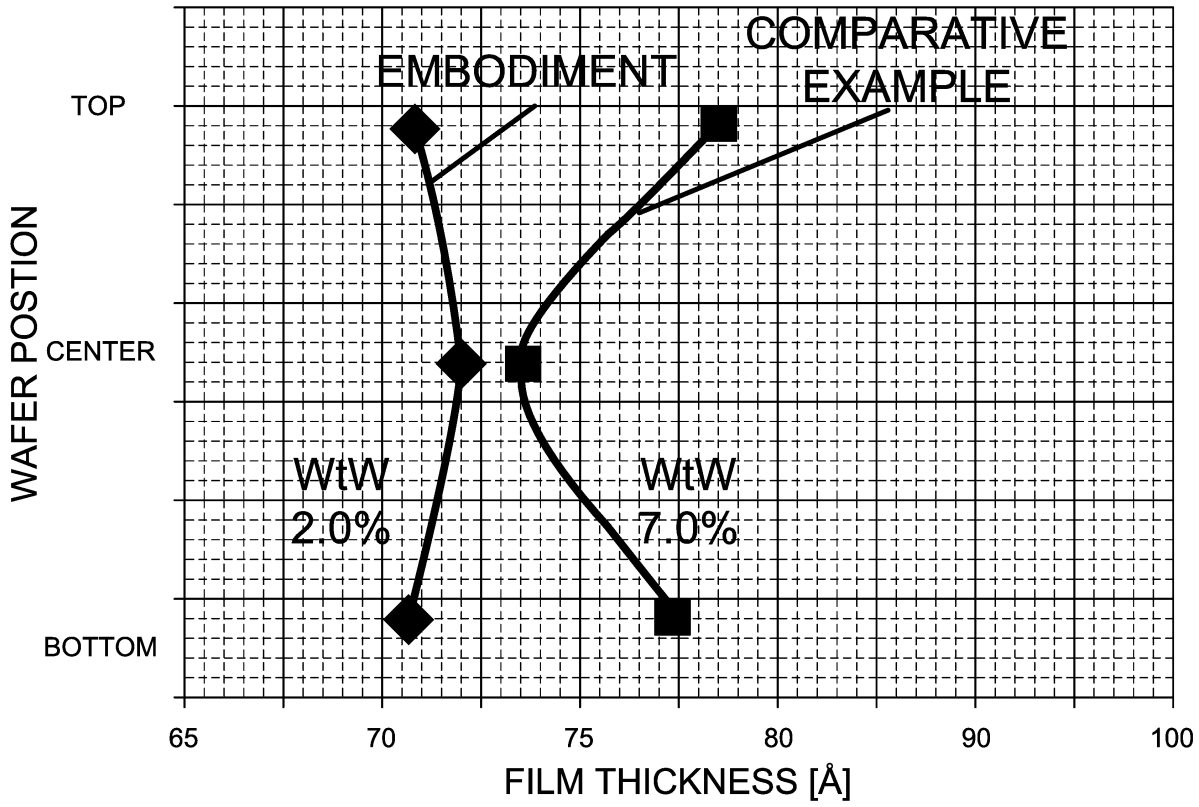
(A)


PARTIAL PRESSURE
OF Si SOURCE [Pa]
202
0.0
4.5
9.0
13.5
15.0
217
UPPER DUMMY WAFER SUPPORT REGION
x25 Pattern
PRODUCT WAFER SUPPORT REGION
LOWER DUMMY WAFER SUPPORT REGION
218
231

(B)


PARTIAL PRESSURE
OF Si SOURCE [Pa]
EDGE
MIDDLE
CENTER
0
1
2
3
4
5
6
7
8
9
10
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
WAFER No.

[Figure 11]



[Figure 12]