FIG. 1

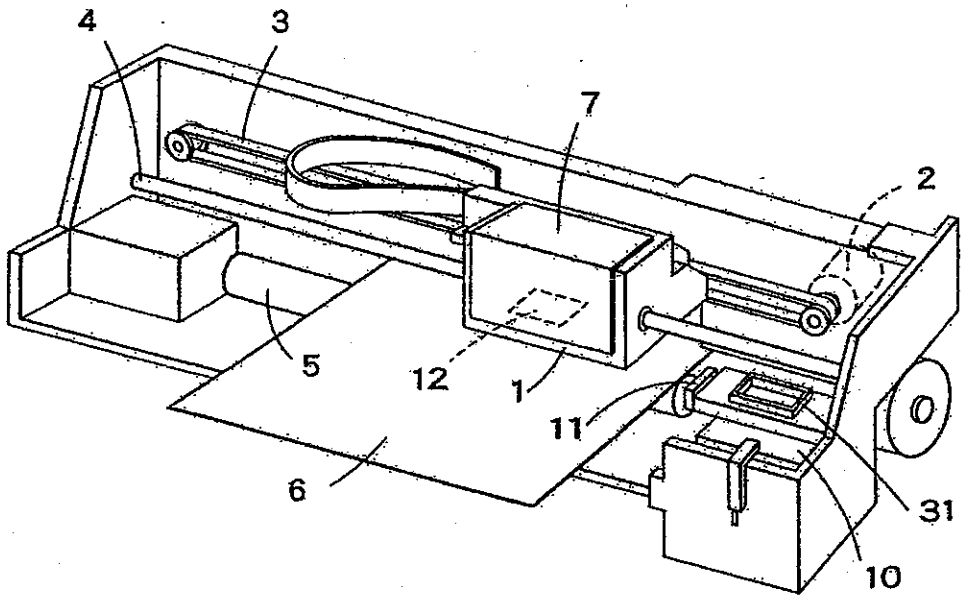


FIG.2

A－A

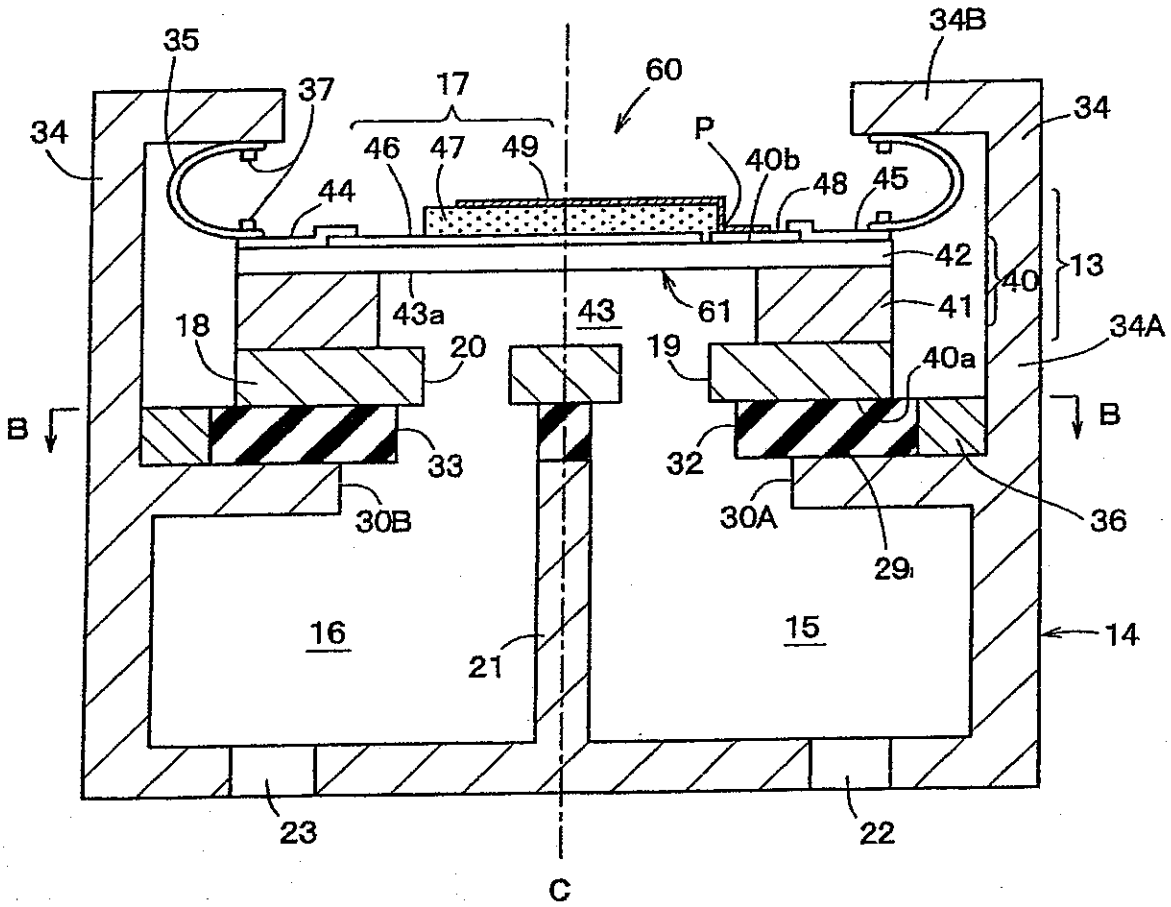
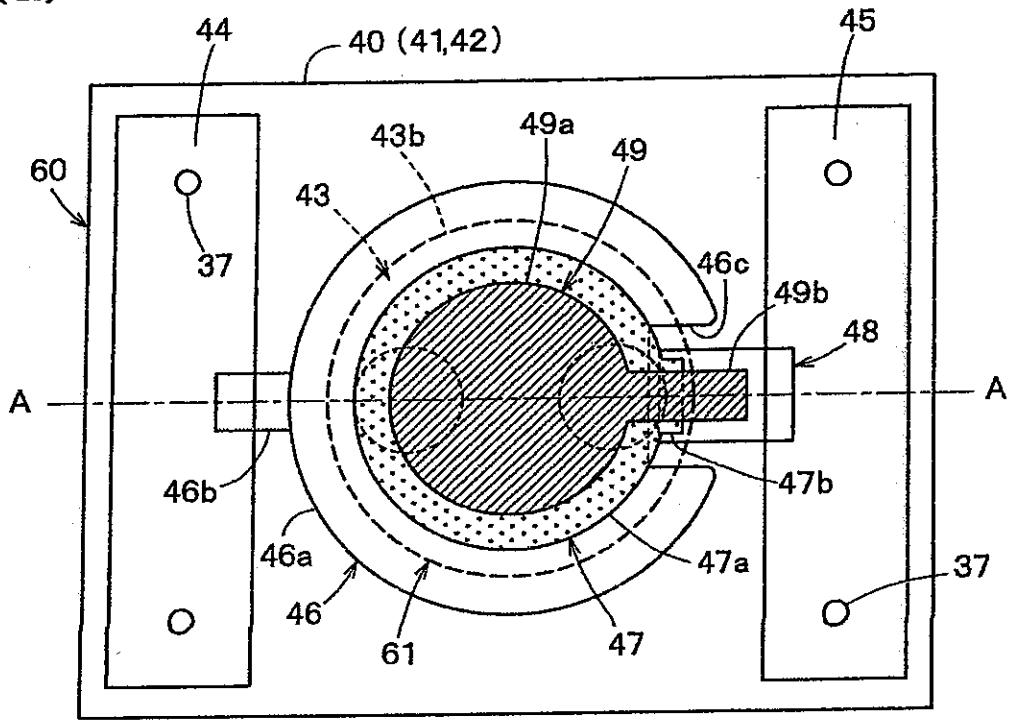

35
37
17
60
34B
34
34
46
47
49
P
40b
48
45
44
42
40
13
43a
43
61
41
18
20
19
40a
34A
B
B
33
32
30B
30A
36
29
16
15
14
21
23
22
C

FIG.3

(a)


44
40 (41,42)
45
60
43b
49a
49
43
37
46c
49b
48
A
A
46b
47b
46a
47a
37
46
61
47

(b)

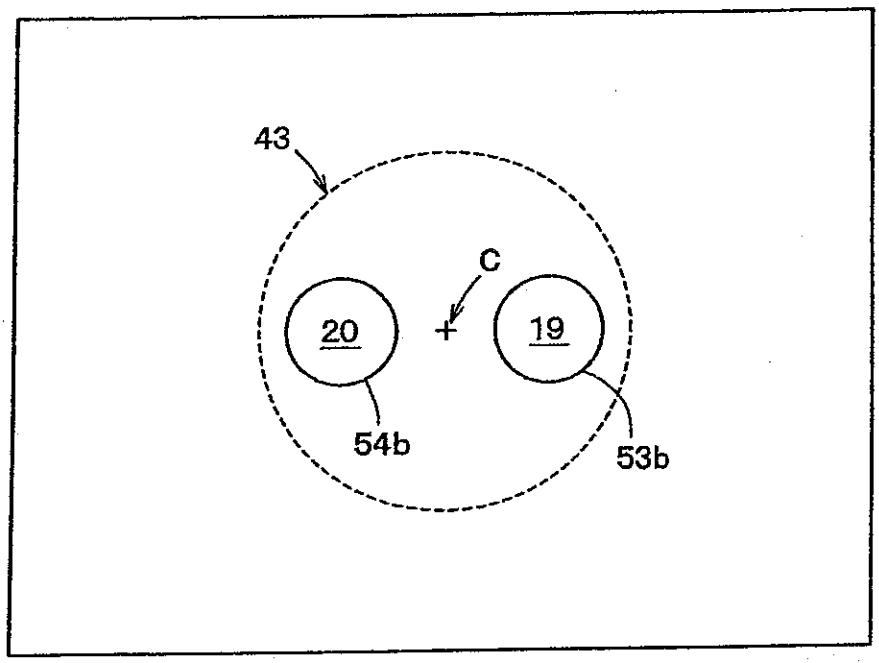

43
C
20
19
54b
53b

FIG.4

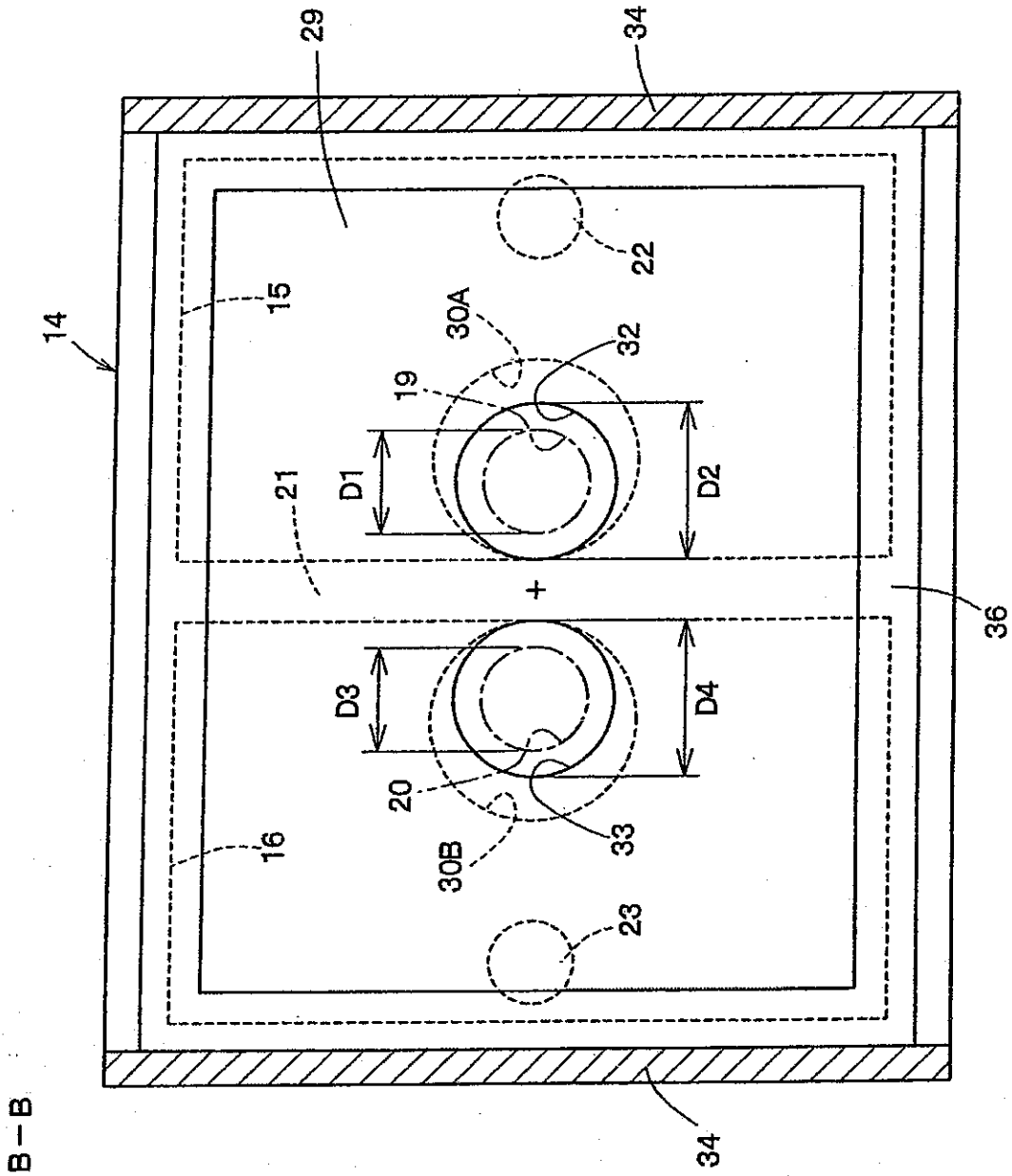
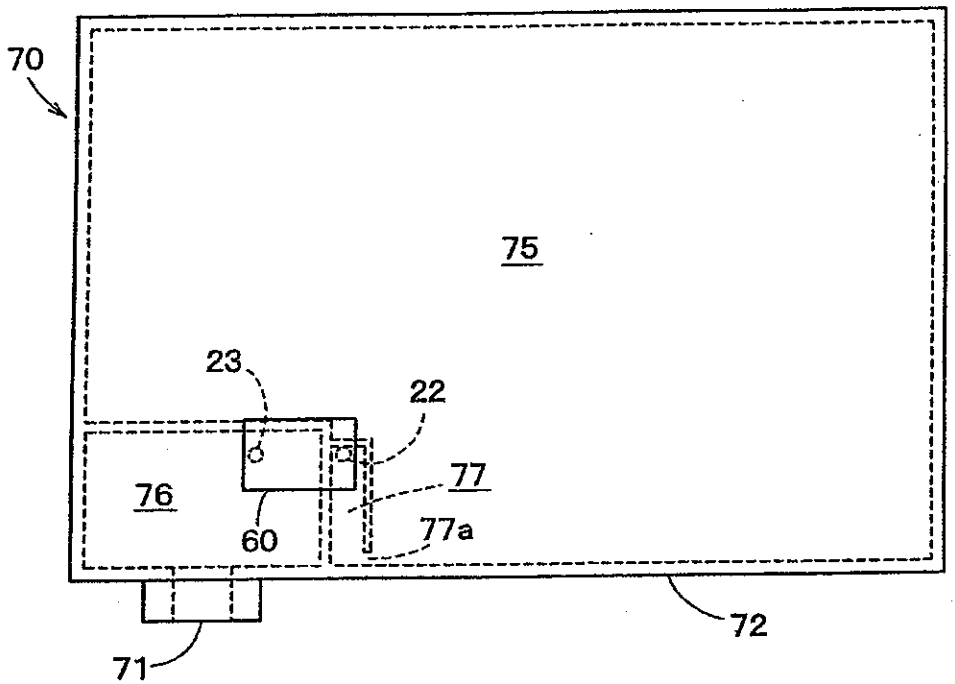


FIG. 5

(a)



(b)

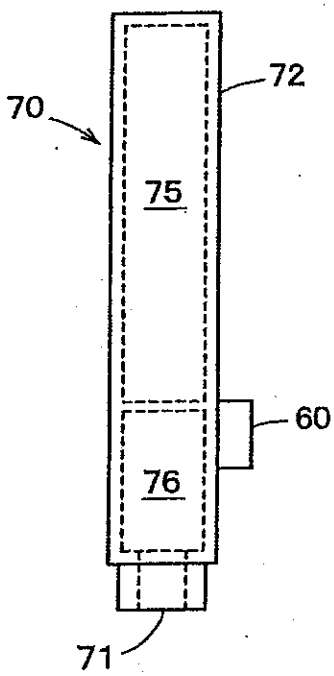


FIG. 6

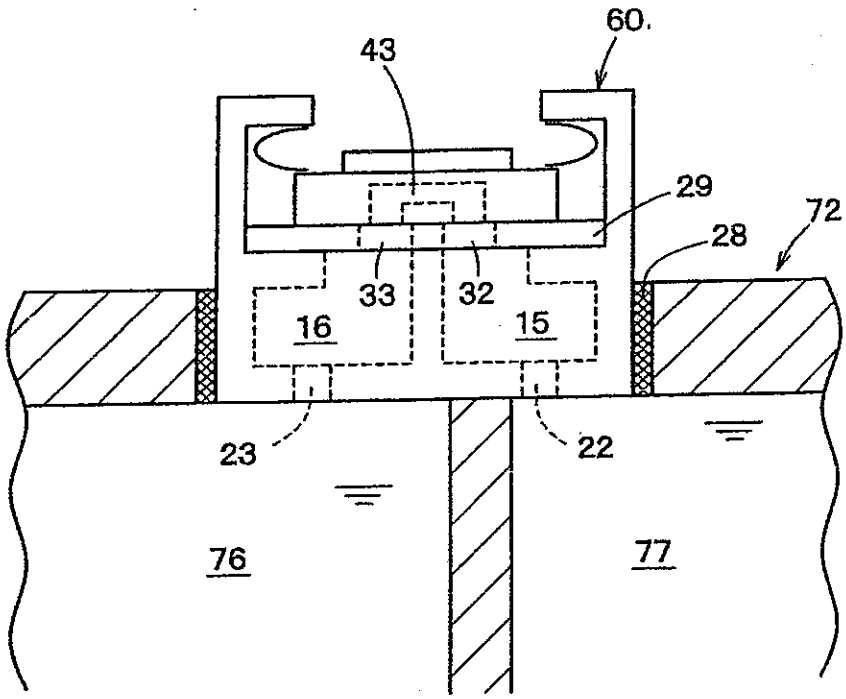


FIG. 7

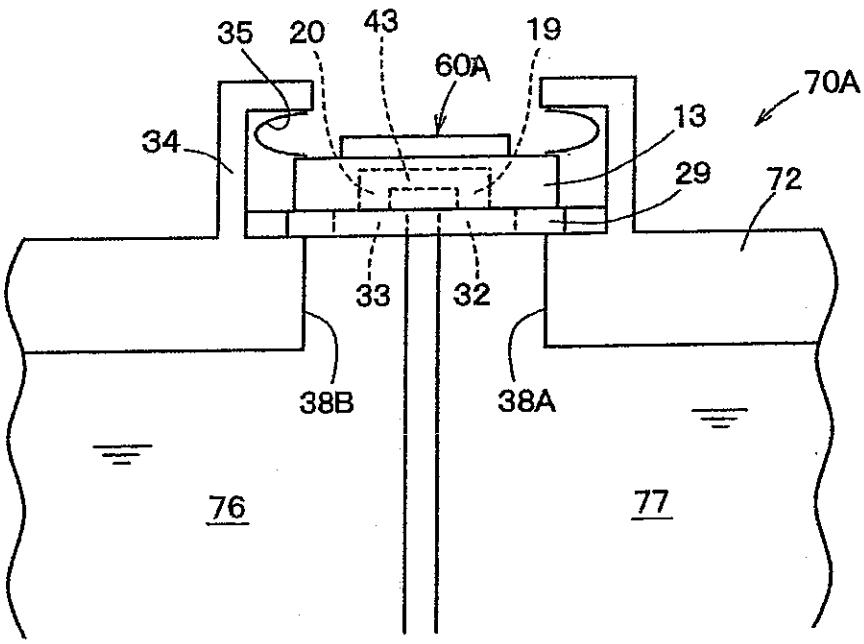


FIG. 8

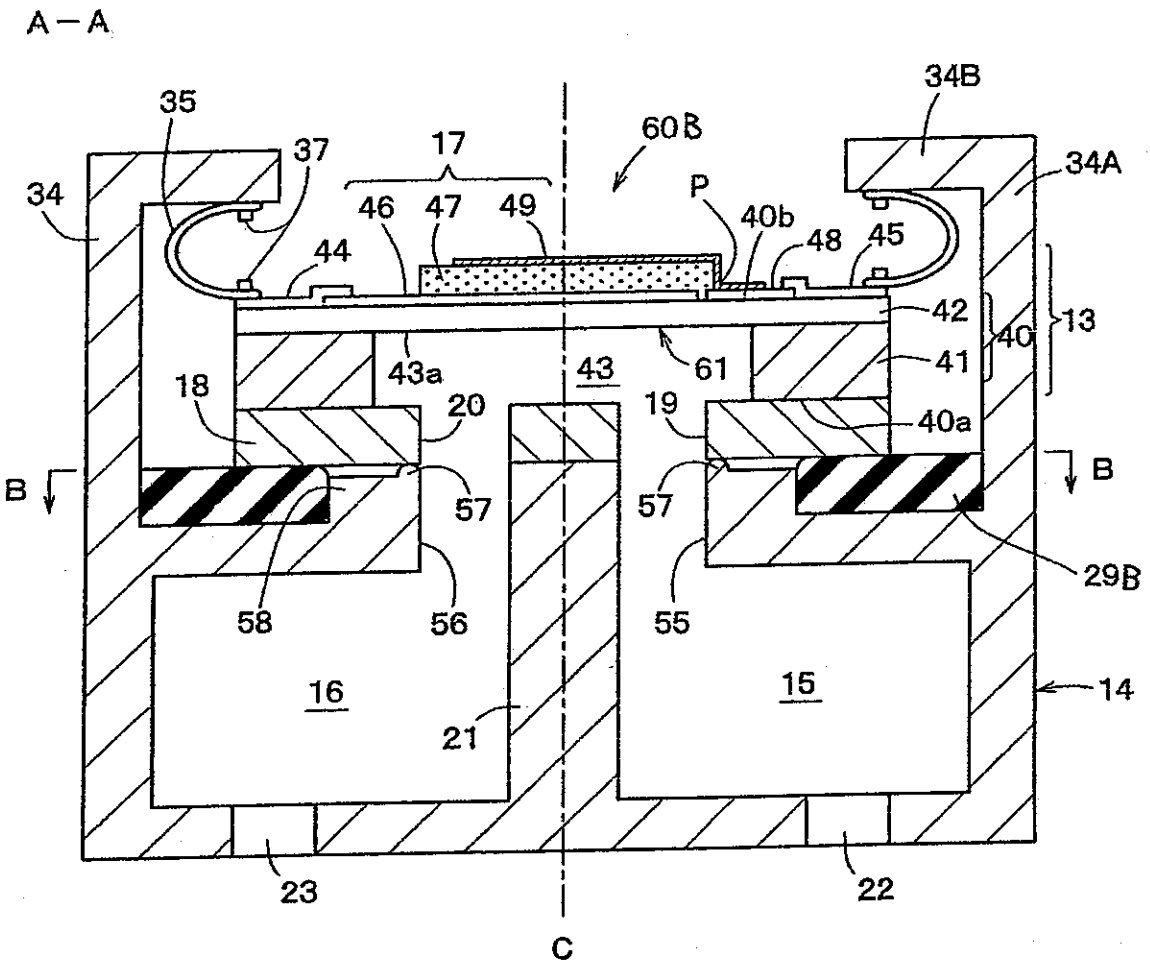
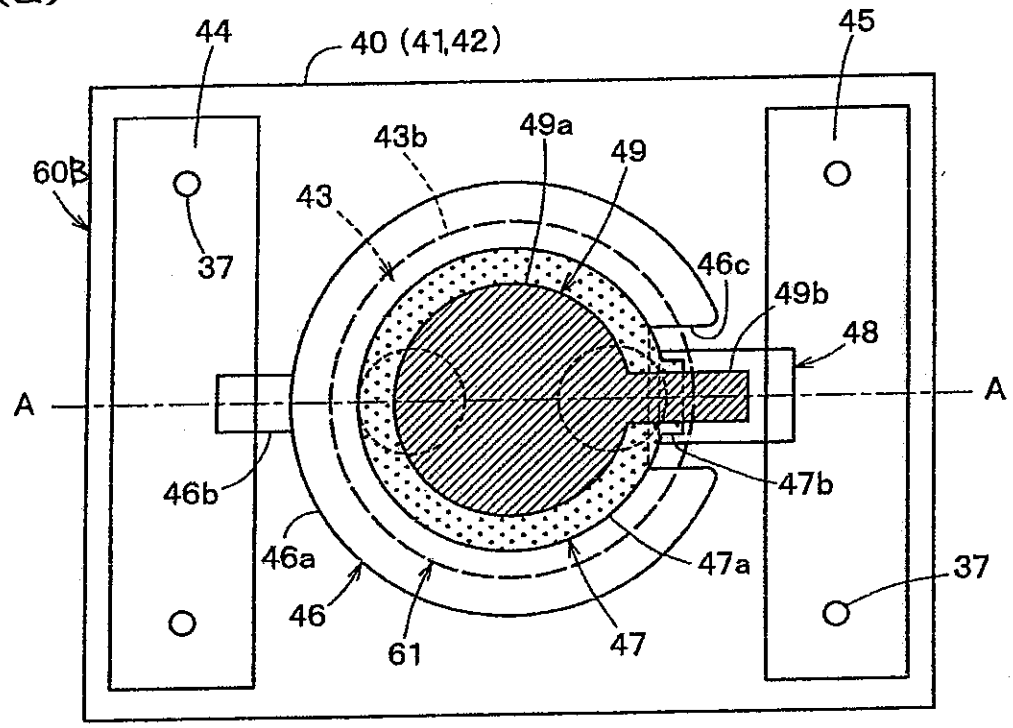

A－A
35
37
17
60B
34B
34A
34
46
47
49
P
40b
48
45
44
42
13
40
41
43a
43
61
18
20
19
40a
B
B
57
57
29B
58
56
55
16
15
14
21
23
22
C

FIG. 9

(a)


44
40 (41,42)
45
60B
43b
49a
49
43
37
46c
49b
48
A
A
46b
47b
46a
47a
37
46
61
47

(b)

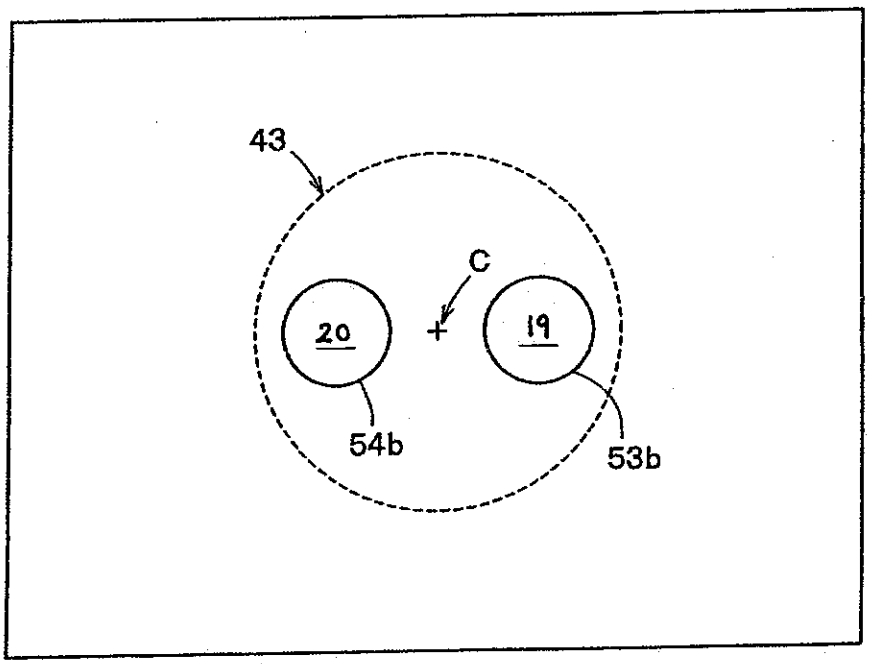

43
C
20
19
54b
53b

FIG. 10

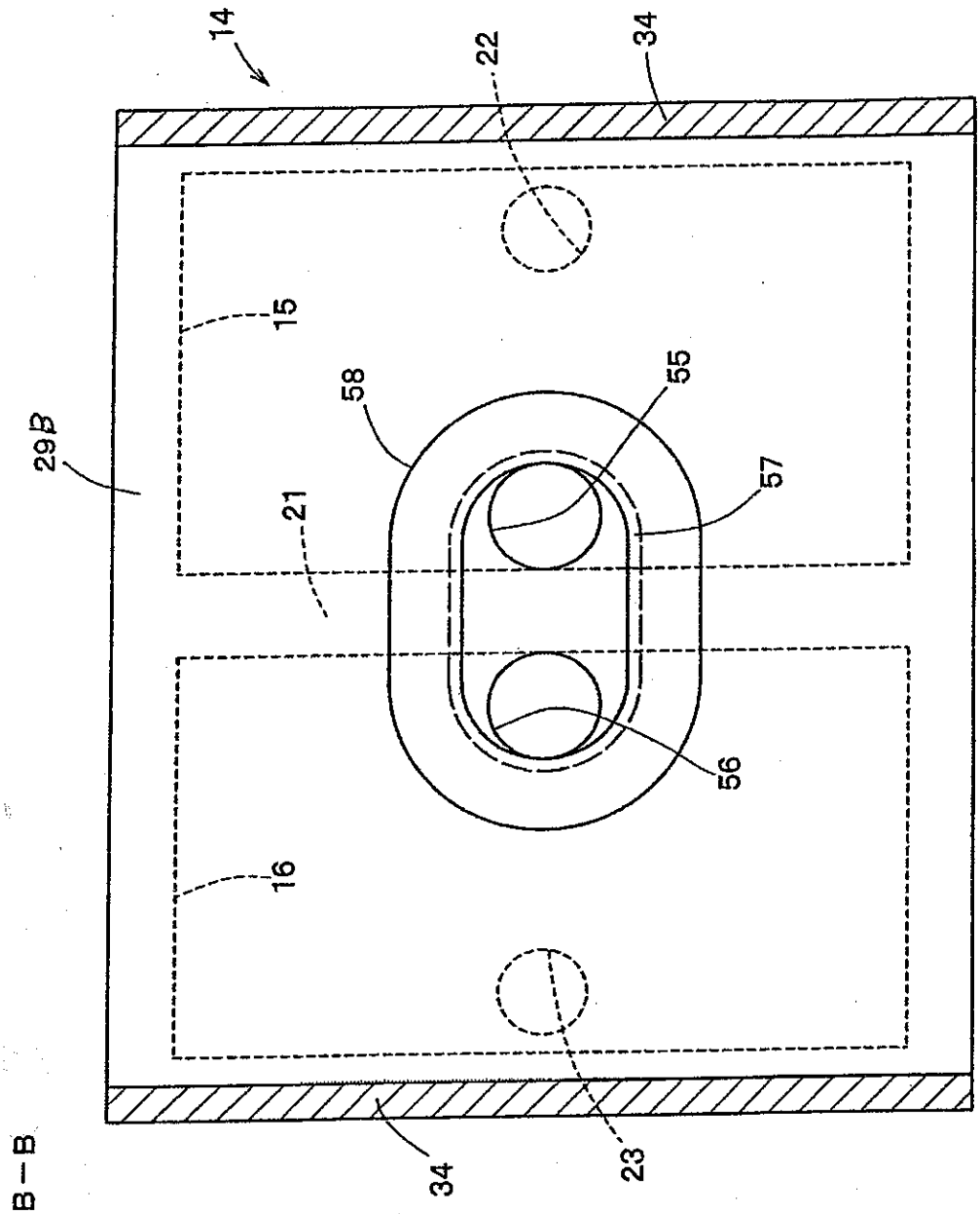
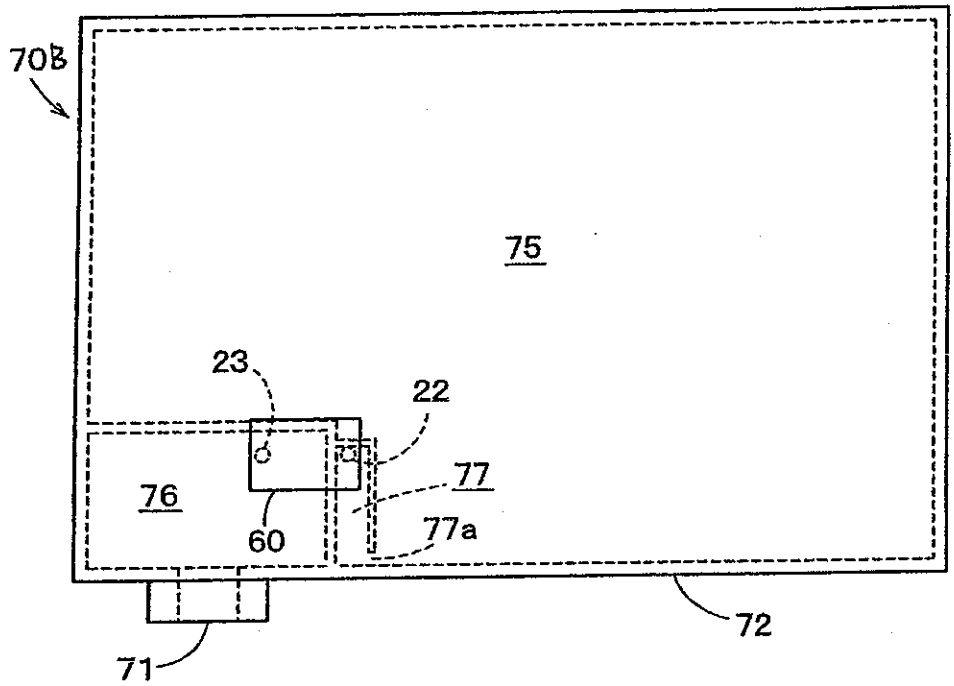


FIG. 11

(a)



(b)

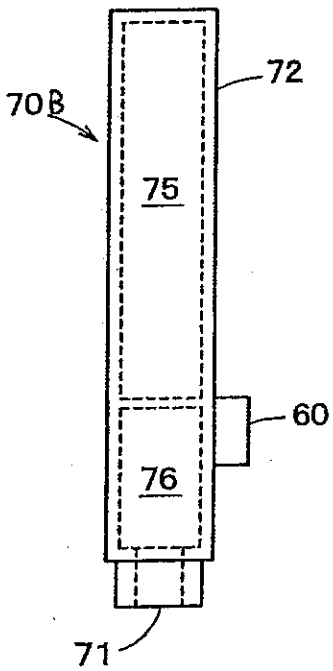


FIG. 12

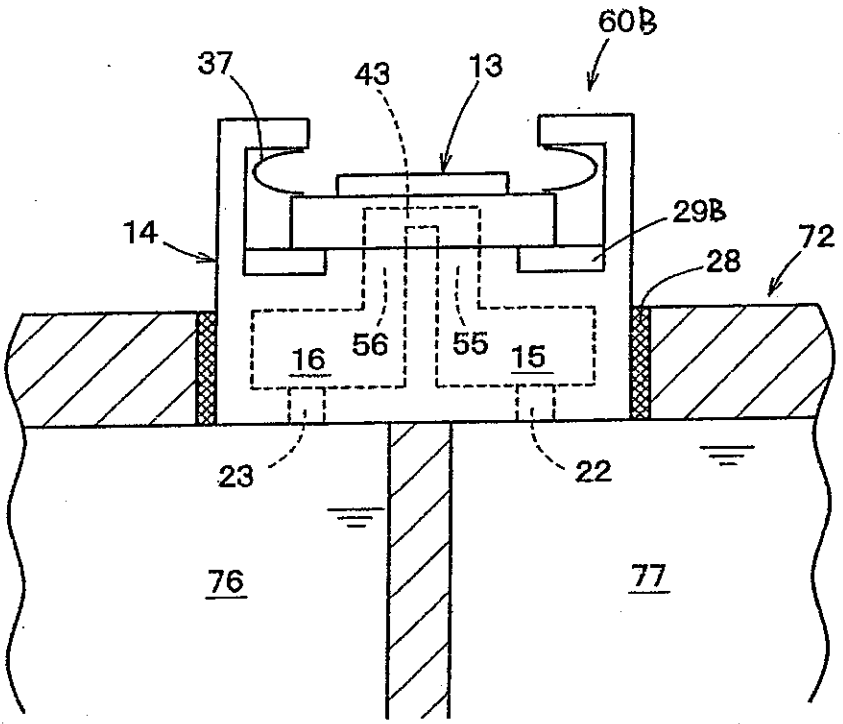


FIG. 13

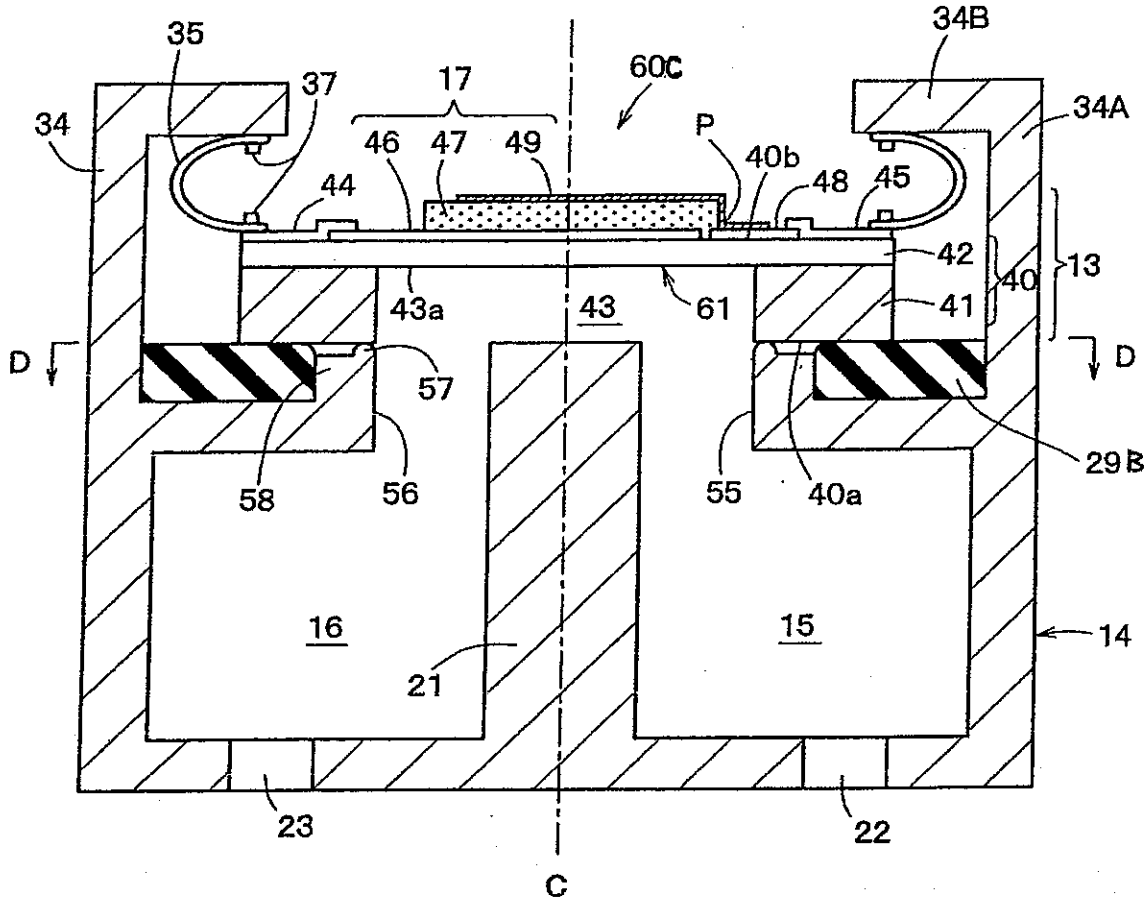

35
37
17
60C
34B
34
46
47
49
P
40b
34A
44
48
45
42
40
13
43a
43
61
41
D
D
57
58
56
55
40a
29B
16
15
14
21
23
22
C

FIG. 4

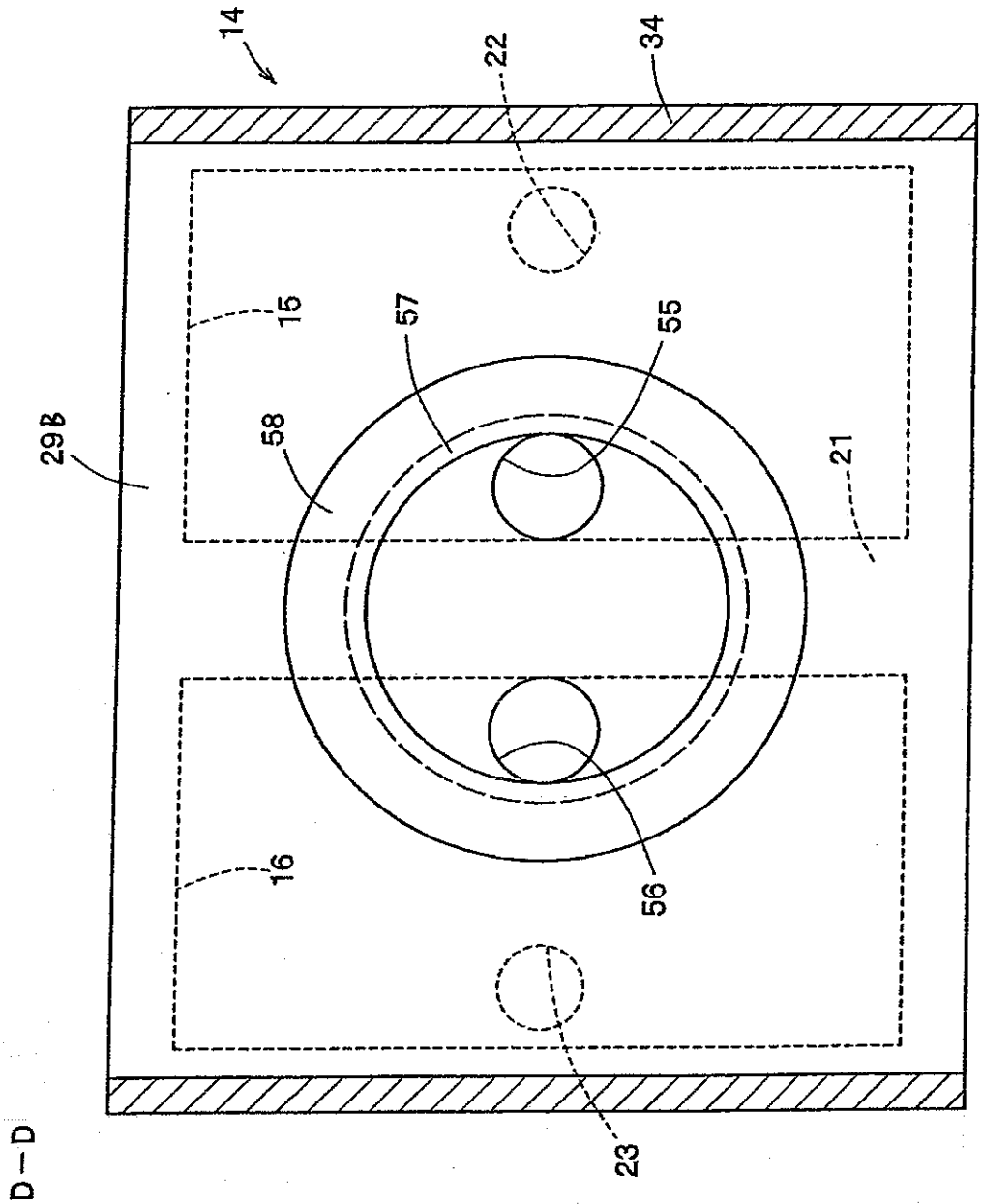


FIG. 15

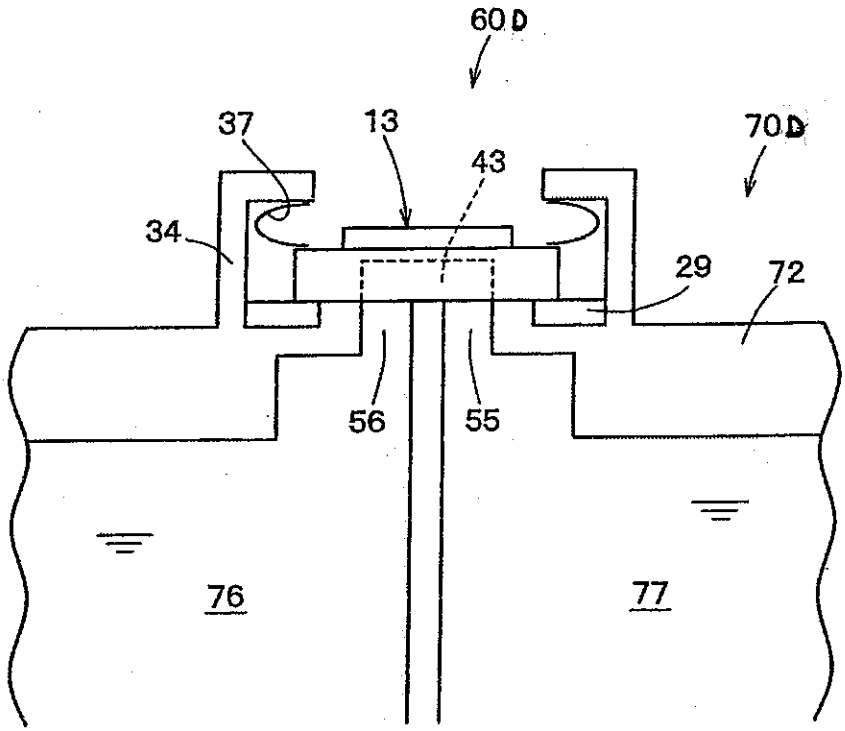
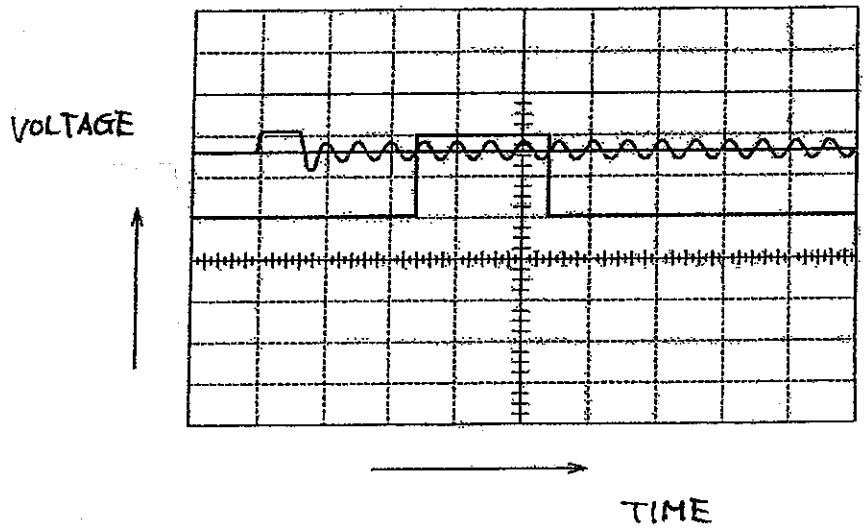


FIG. 16

(a)



(b)

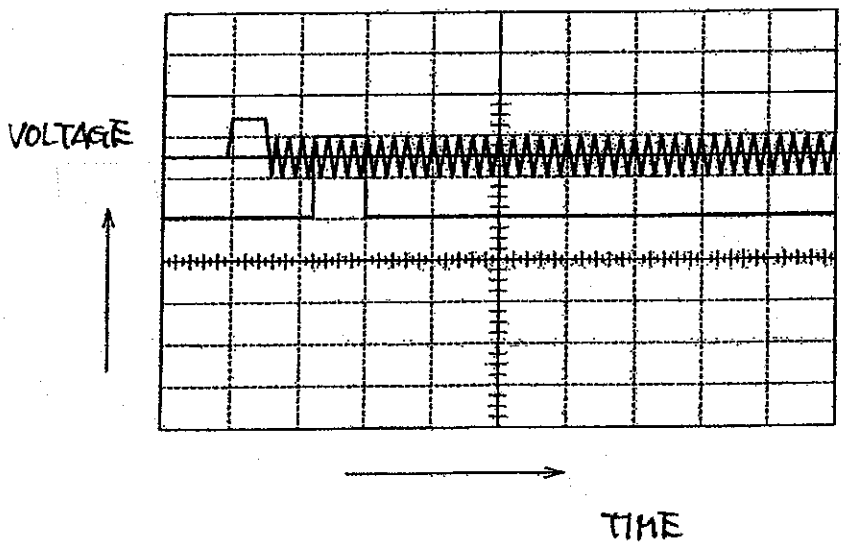


Fig. 17

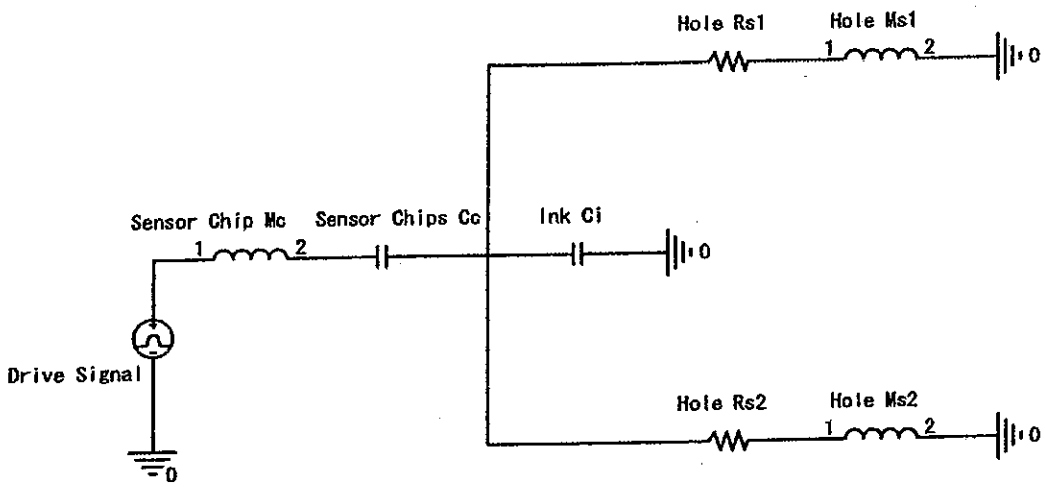

Hole Rs1
Hole Ms1
1
2
0
Sensor Chip Mc
Sensor Chips Cc
Ink Ci
1
2
0
Drive Signal
Hole Rs2
Hole Ms2
1
2
0
0

FIG. 18

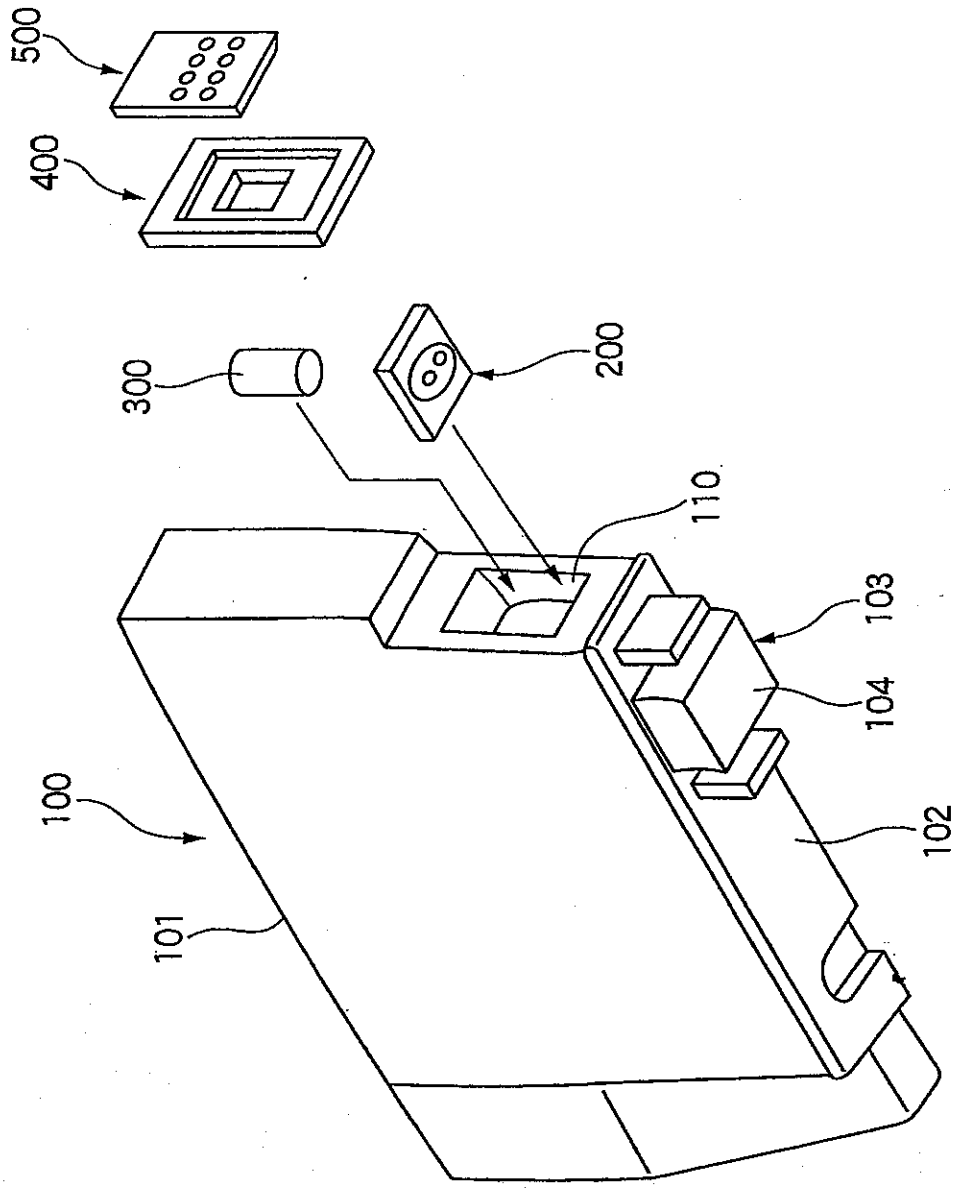


FIG. 19

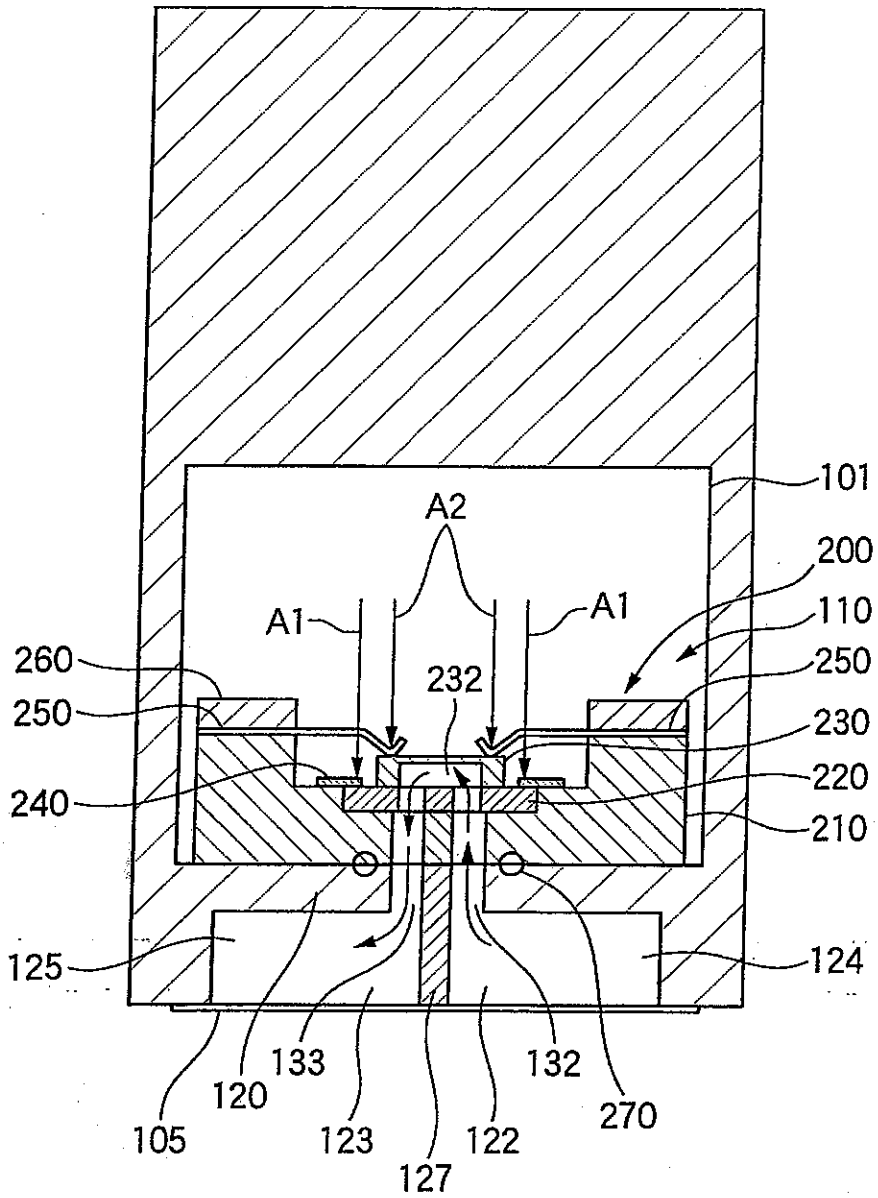

101
A2
200
A1
A1
110
260
232
250
250
230
240
220
210
125
124
133
132
120
270
105
123
122
127

FIG. 20

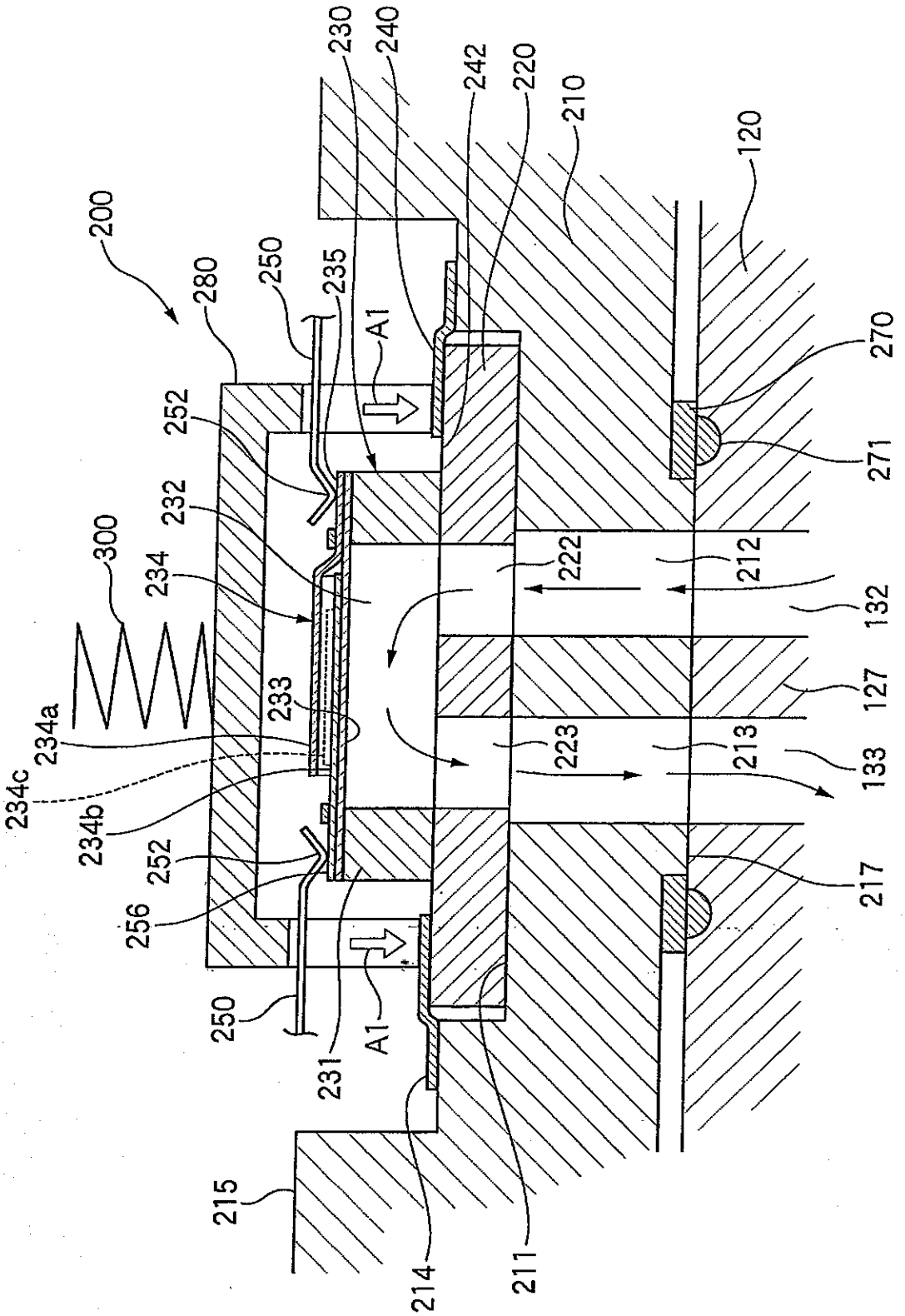

200
280
250
235
230
240
242
220
210
120
A1
270
271
252
232
300
234
222
212
132
234a
233
127
234c
223
213
133
234b
252
217
256
250
231
A1
215
214
211

FIG. 21

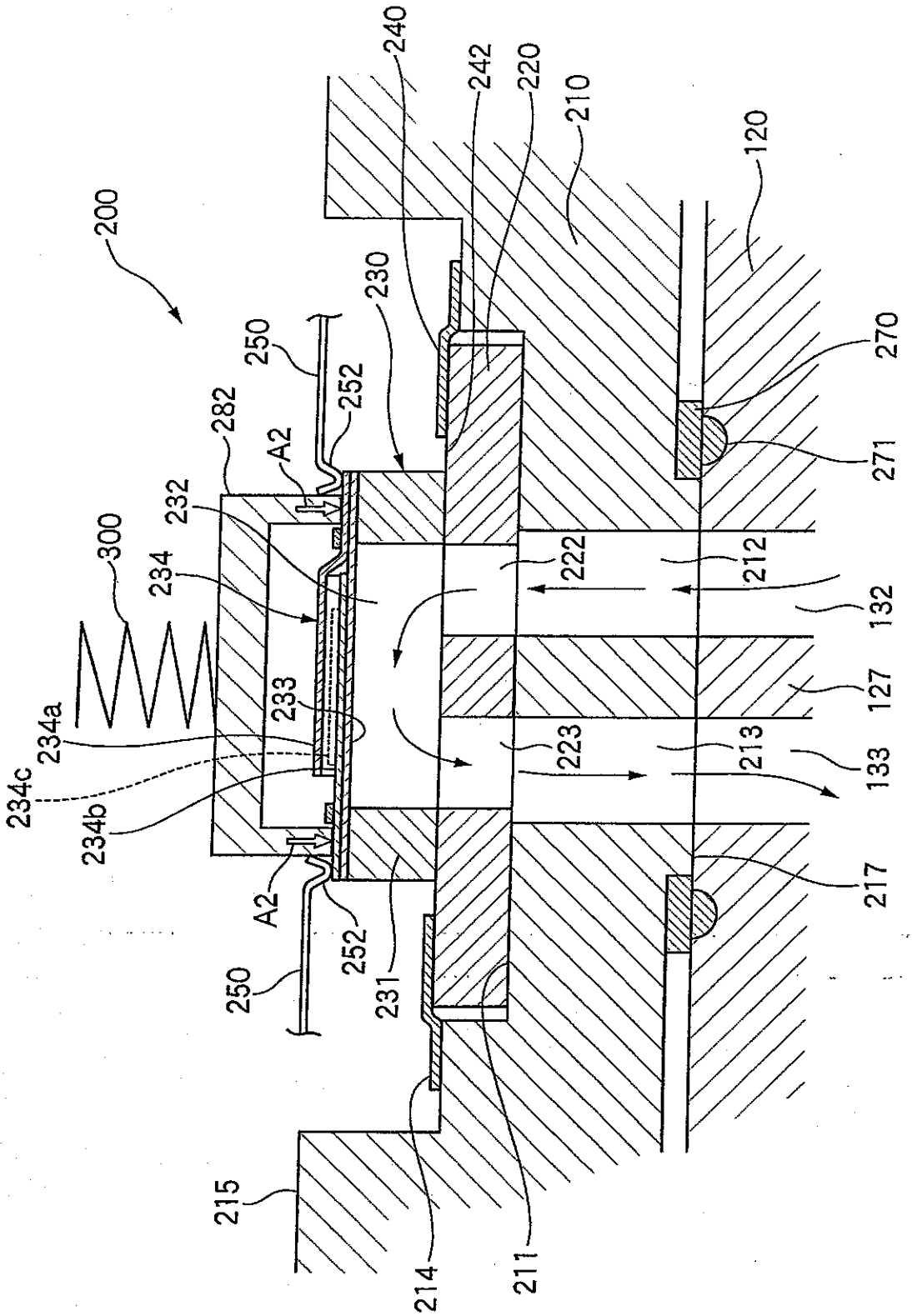

200
240
242
220
210
120
230
250
252
282
A2
232
300
234
234a
234c
234b
233
222
212
132
127
223
213
133
217
270
271
215
214
211
231

FIG 22

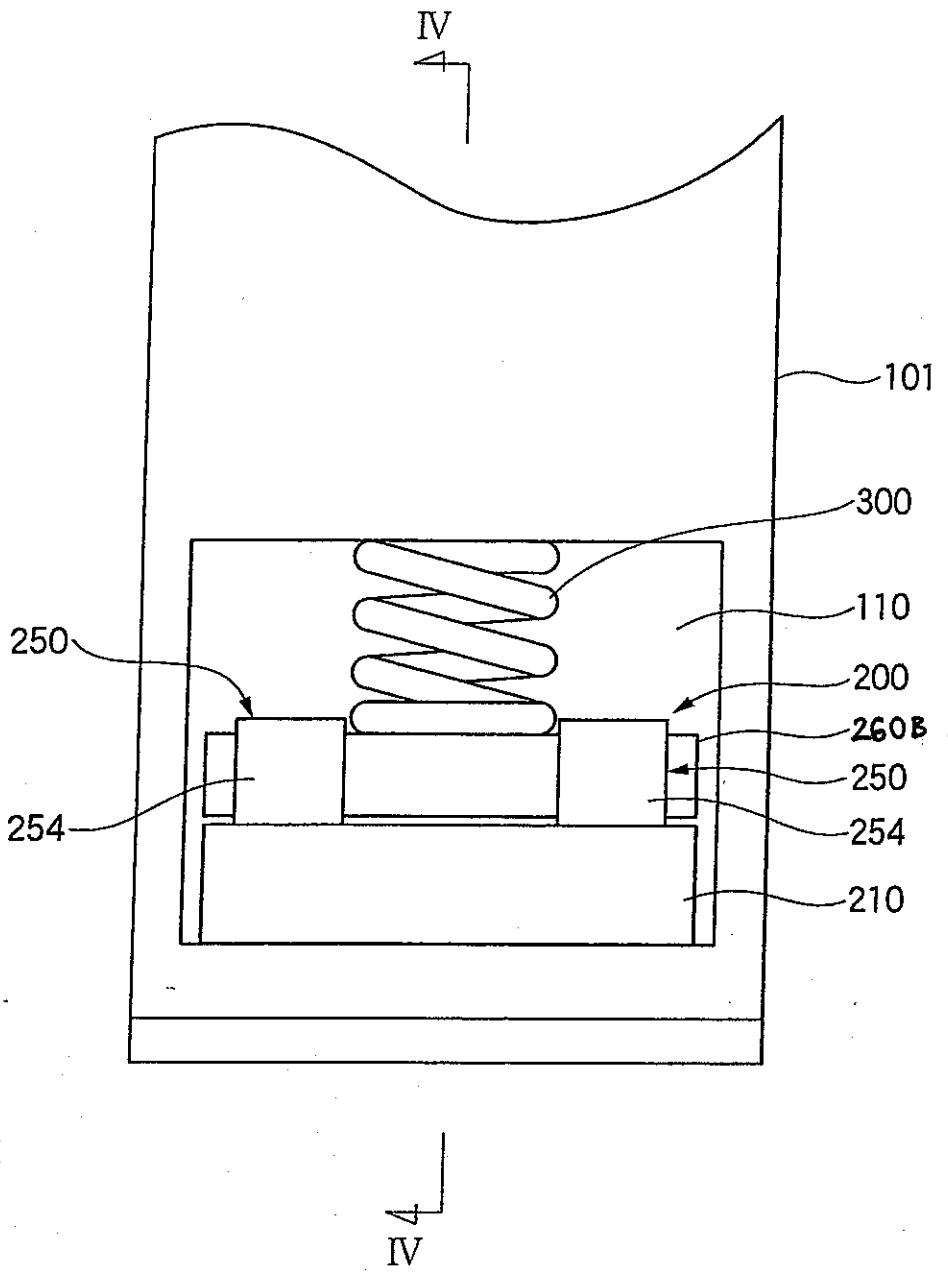


FIG. 23

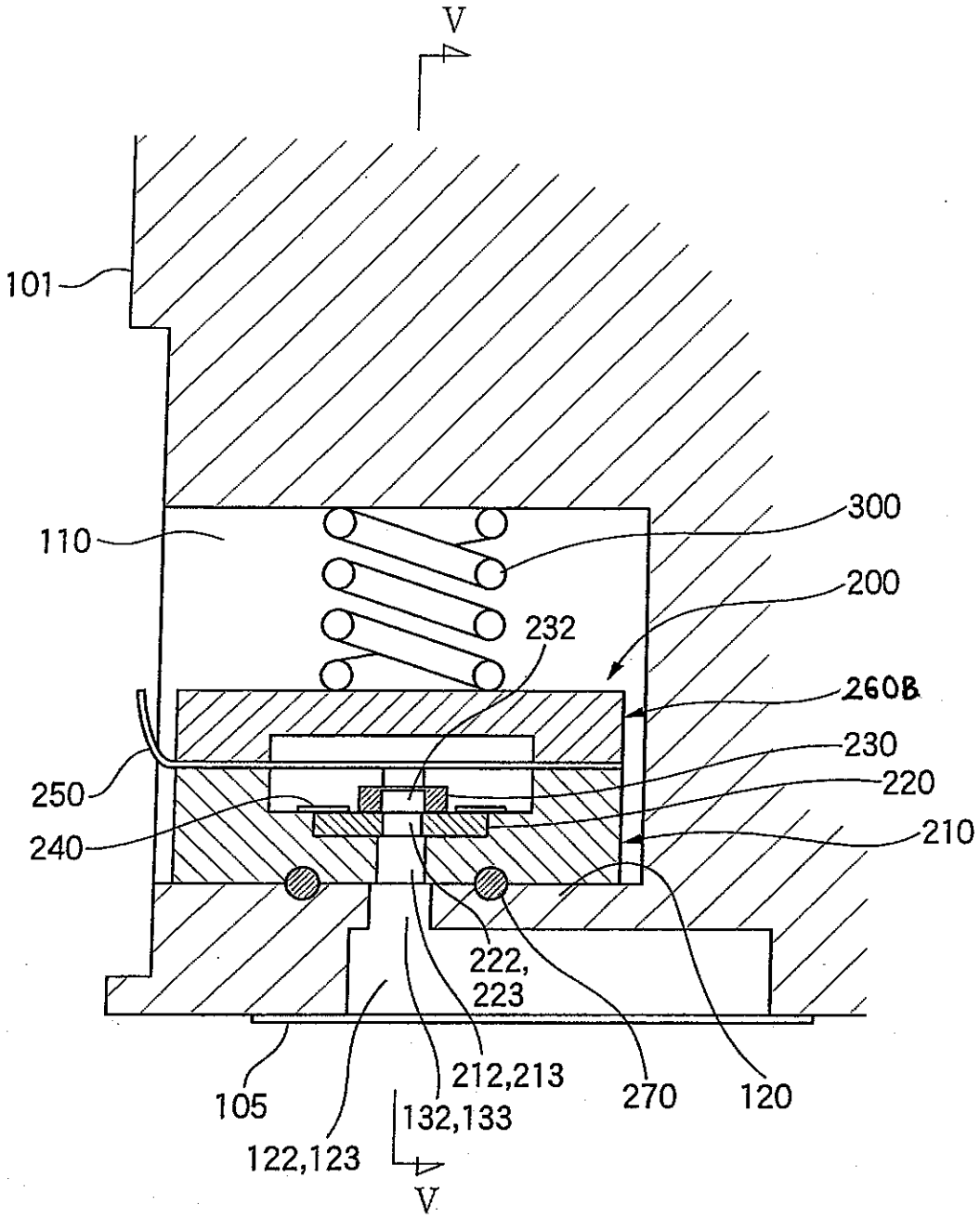

V
101
110
300
200
232
260B
230
220
250
240
210
222,
223
212,213
270
120
105
132,133
122,123
V

FIG. 24

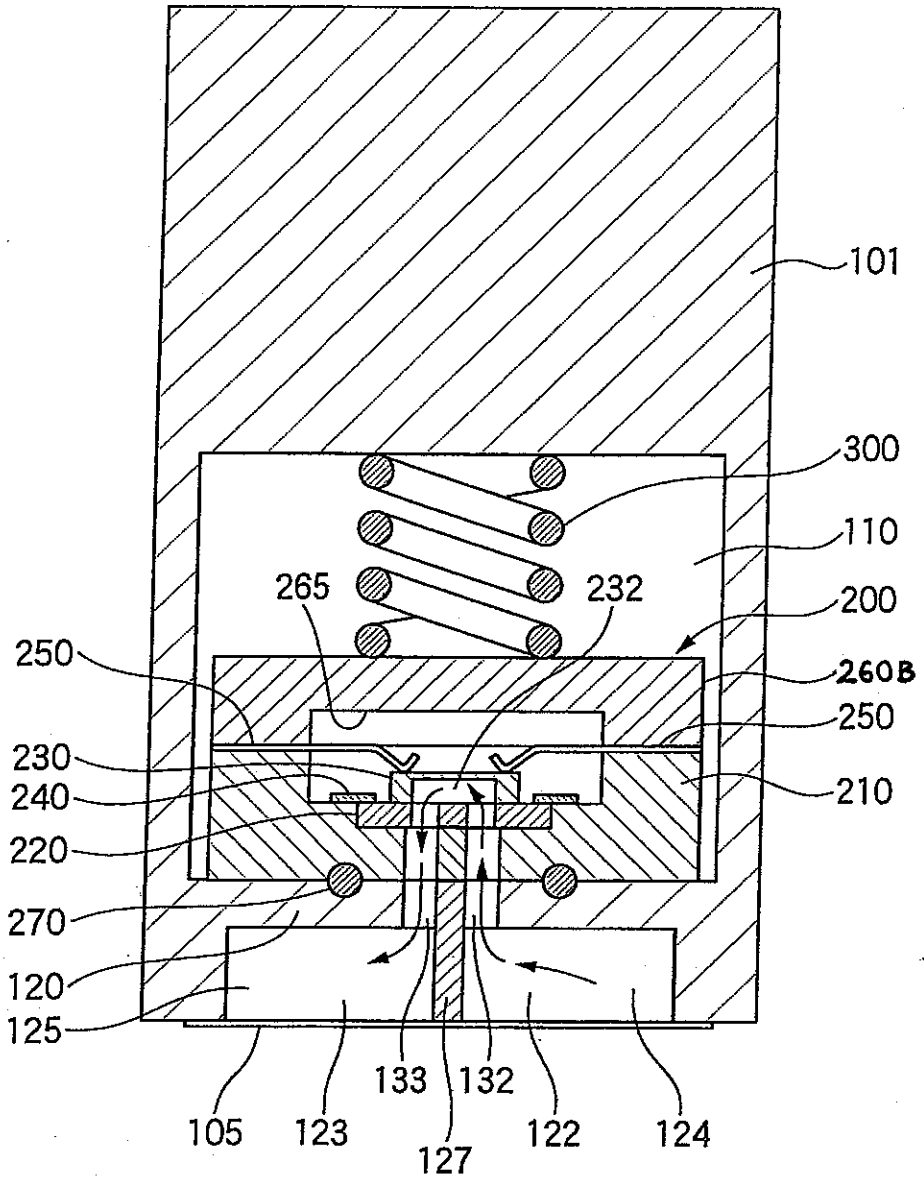

101
300
110
265
232
200
250
260B
250
230
240
210
220
270
120
125
133
132
105
123
127
122
124

FIG.25

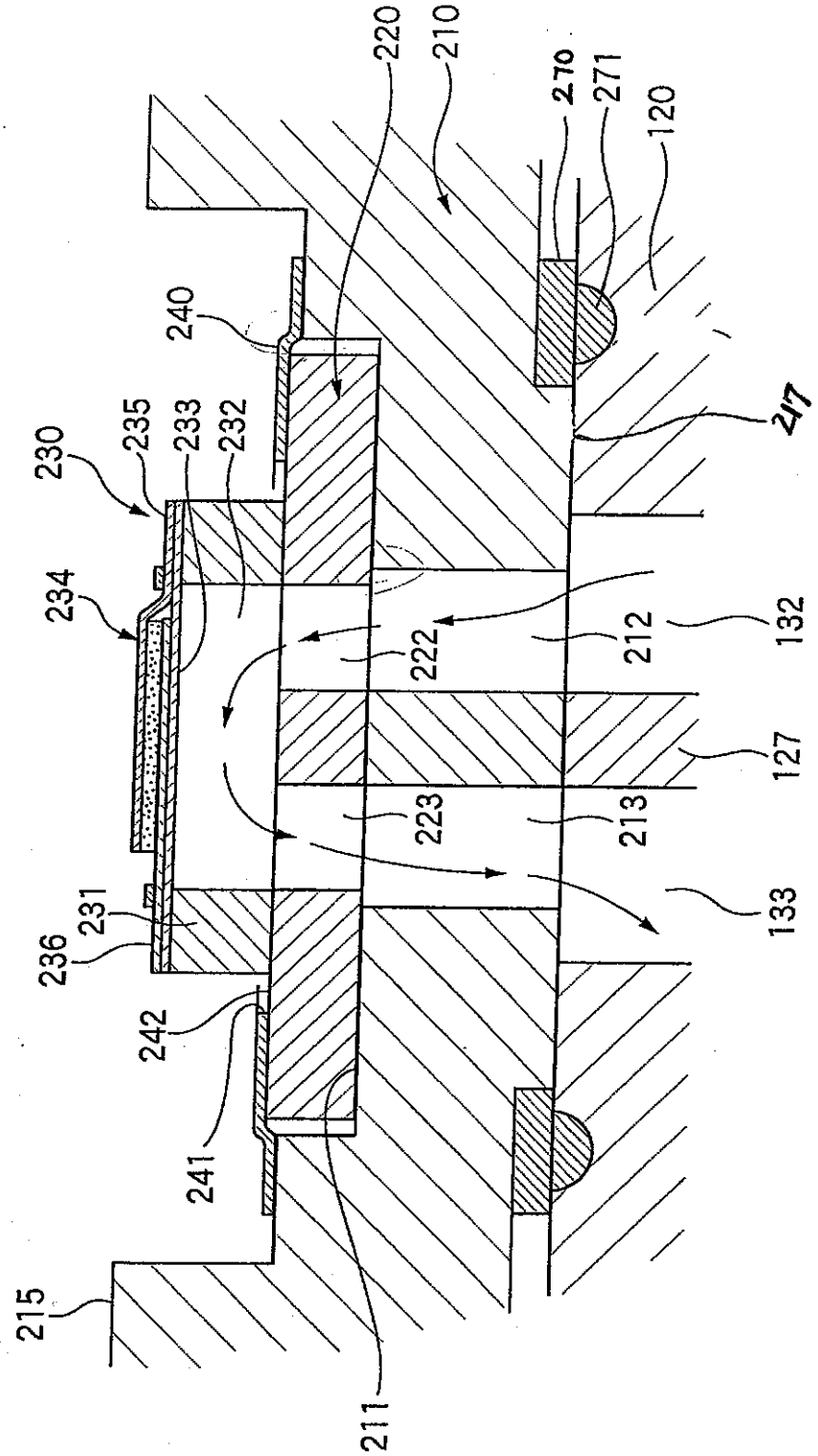

220
210
270
271
120
240
235
233
232
230
217
234
222
212
132
127
223
213
133
231
236
242
241
215
211

FIG.26

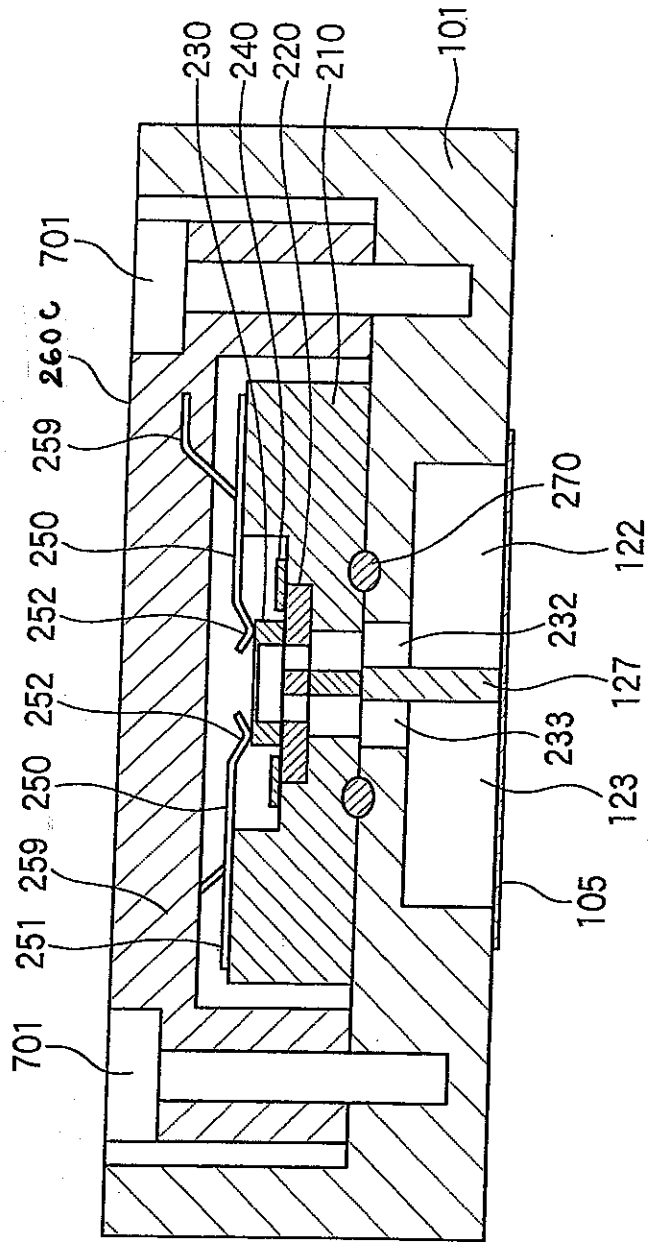

230
240
220
210
101
701
260c
259
250
252
252
250
259
251
701
270
122
232
127
233
123
105

FIG.27

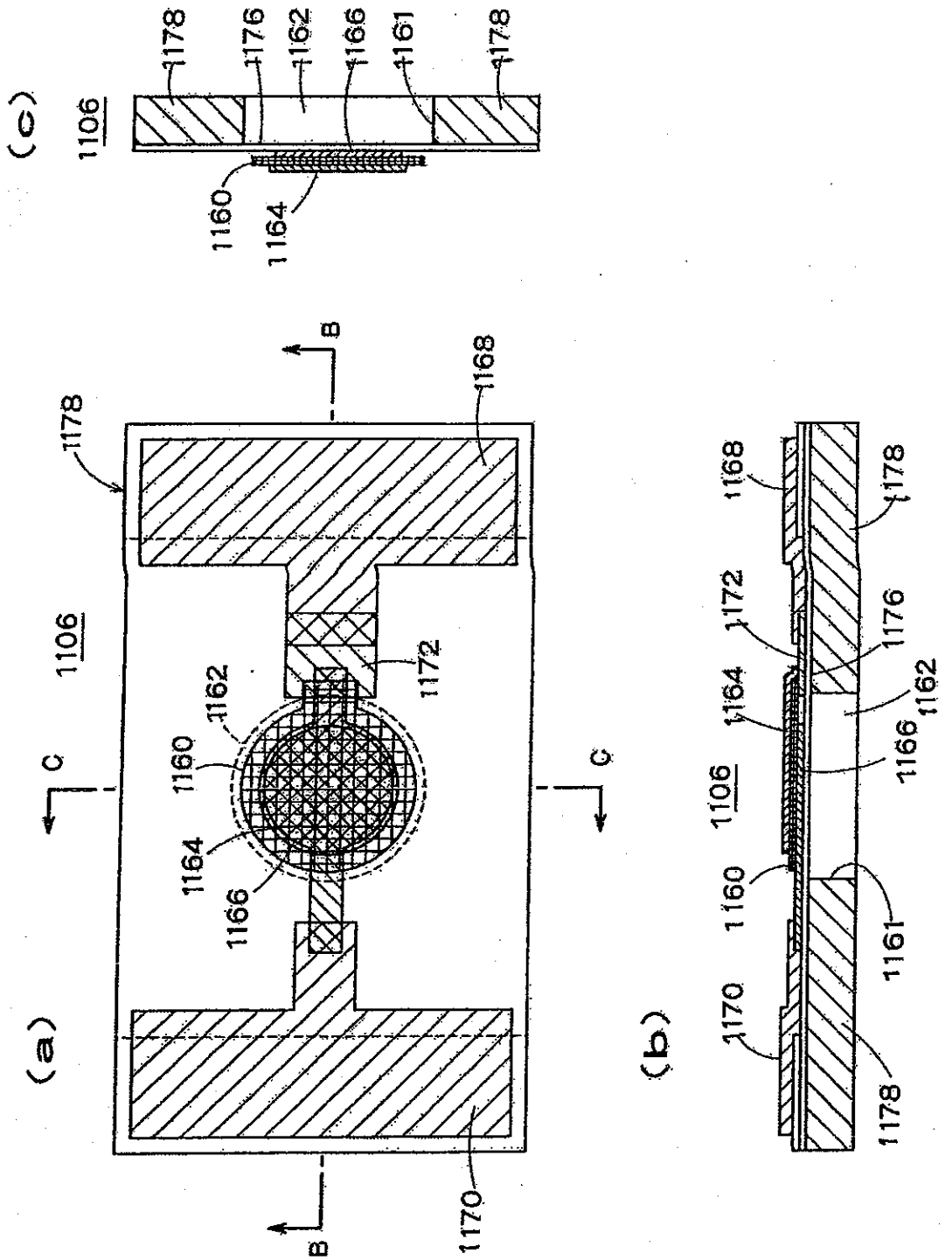

(c)
1106
1178
1176
1162
1166
1161
1178
1160
1164
(a)
1106
1178
1168
B
B
C
C
1172
1162
1160
1164
1166
1170
(b)
1168
1178
1172
1176
1164
1162
1166
1106
1160
1161
1170
1178

FIG.28

