FIG. 1A

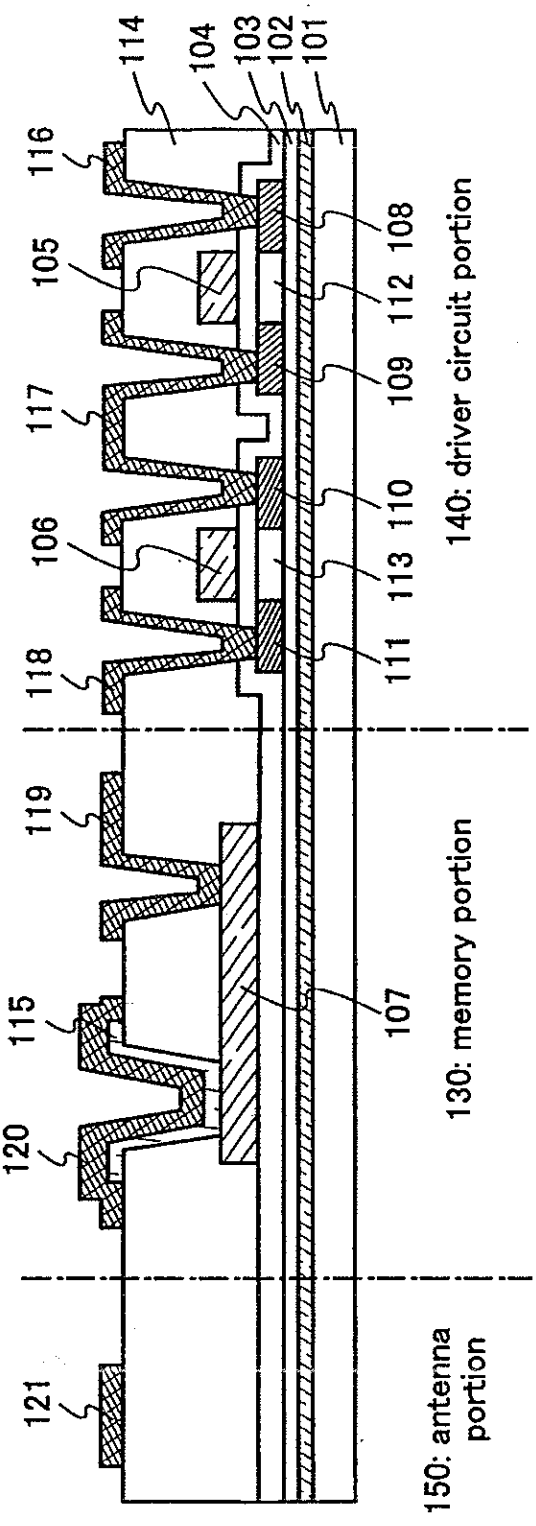

114
104
103
102
101
116
105
108
112
117
109
106
110
113
118
111
119
107
115
120
121
140: driver circuit portion
130: memory portion
150: antenna portion

FIG. 1B

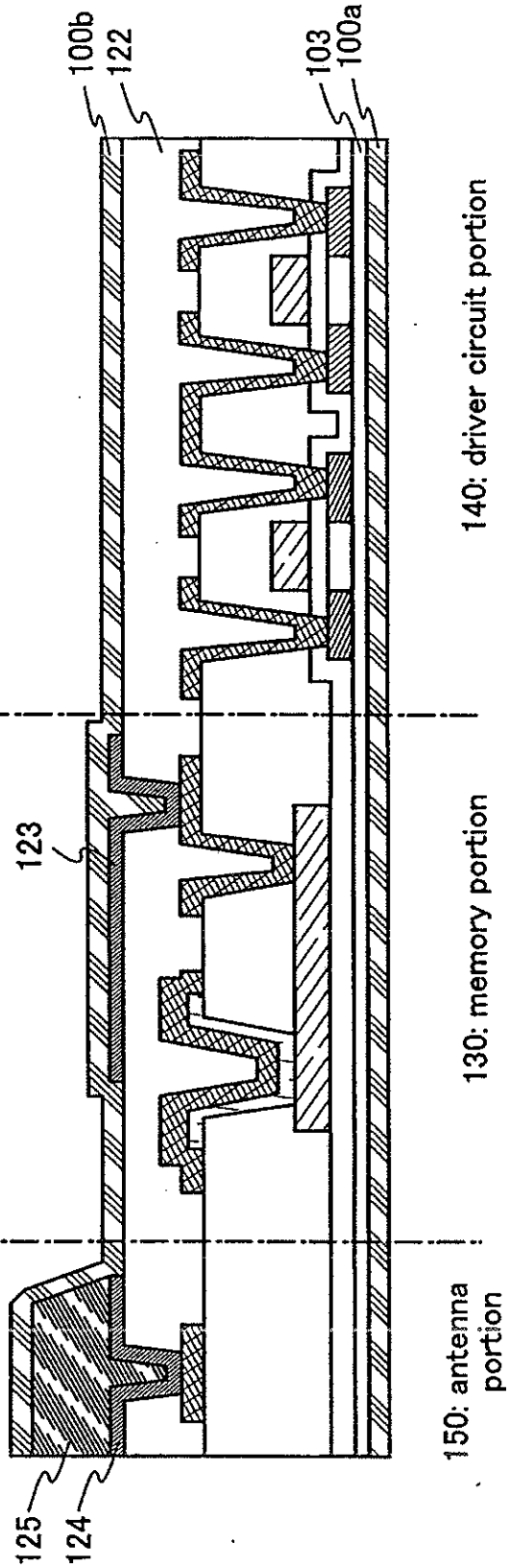

100b
122
103
100a
123
125
124
140: driver circuit portion
130: memory portion
150: antenna portion

FIG. 2

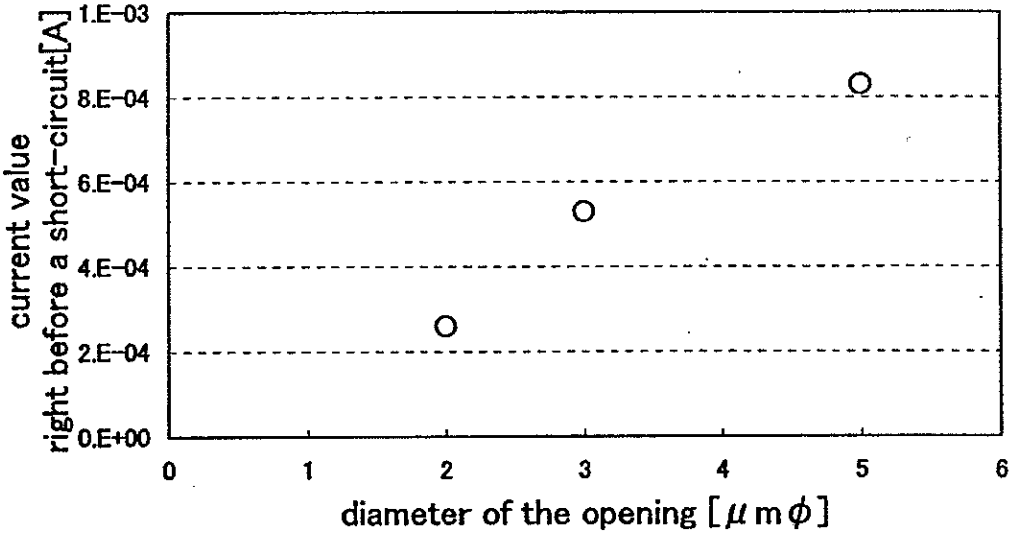

current value right before a short-circuit[A]
1.E-03
8.E-04
6.E-04
4.E-04
2.E-04
0.E+00
0
1
2
3
4
5
6
diameter of the opening [μmφ]

FIG. 3

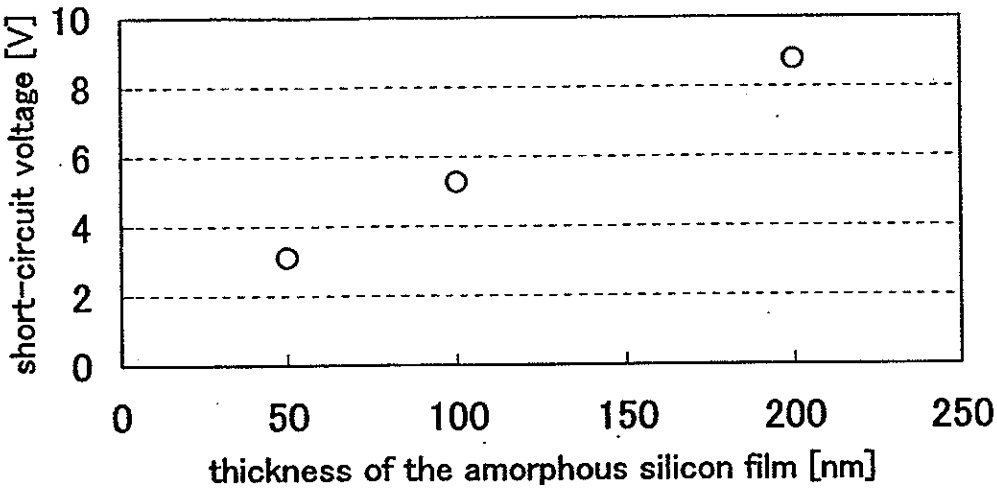

short-circuit voltage [V]
10
8
6
4
2
0
0
50
100
150
200
250
thickness of the amorphous silicon film [nm]

FIG. 4

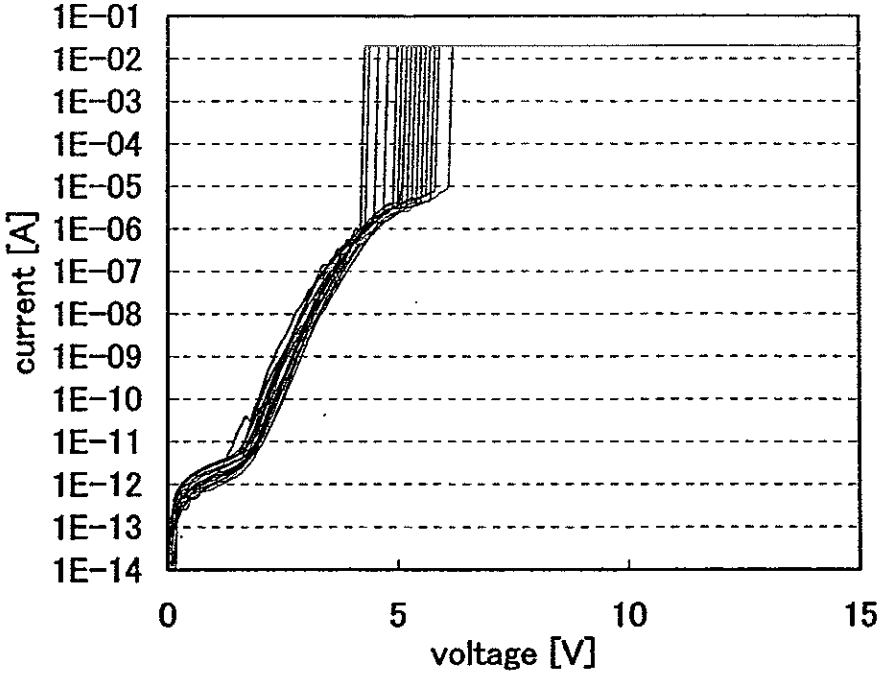

1E-01
1E-02
1E-03
1E-04
1E-05
1E-06
1E-07
1E-08
1E-09
1E-10
1E-11
1E-12
1E-13
1E-14
current [A]
0
5
10
15
voltage [V]

FIG. 5

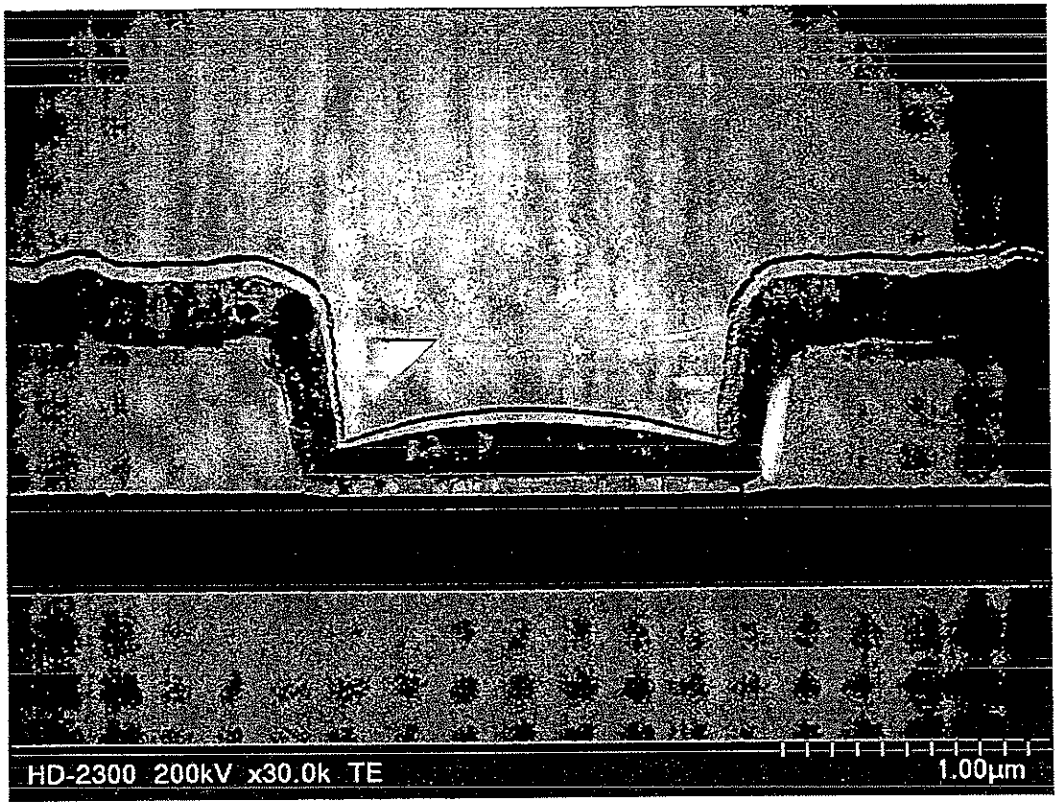


FIG. 6A



FIG. 6B

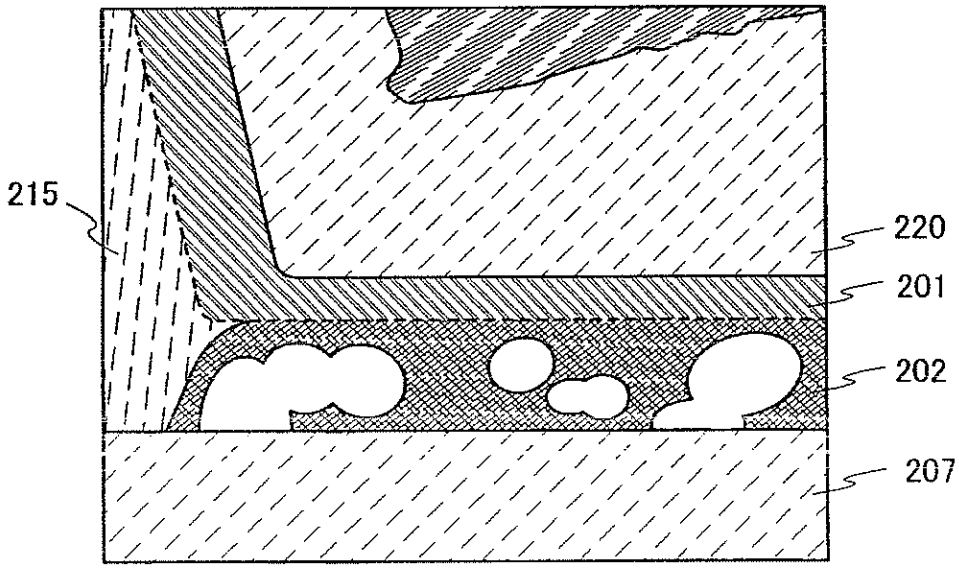


FIG. 7A

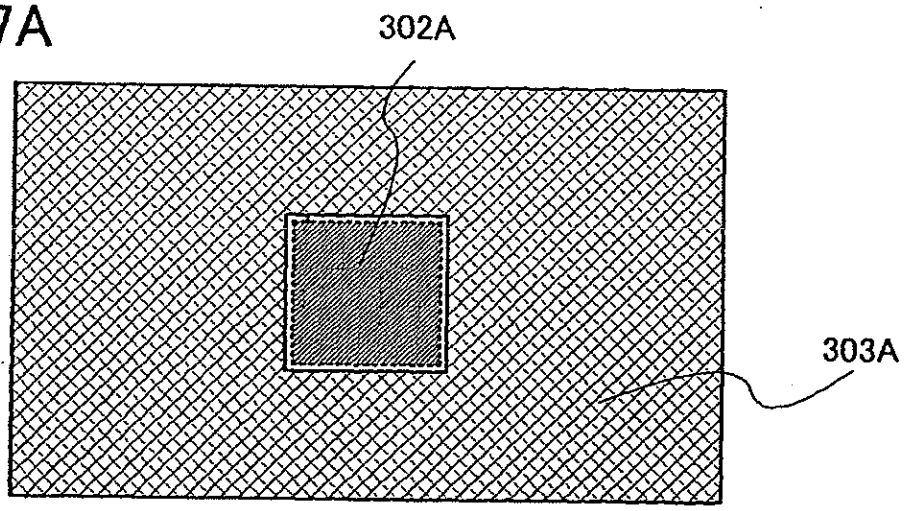


FIG. 7B

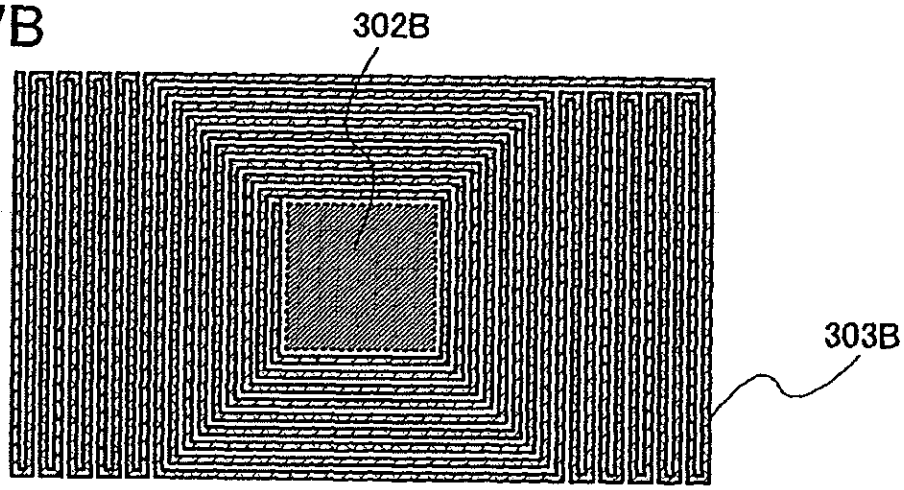


FIG. 7C

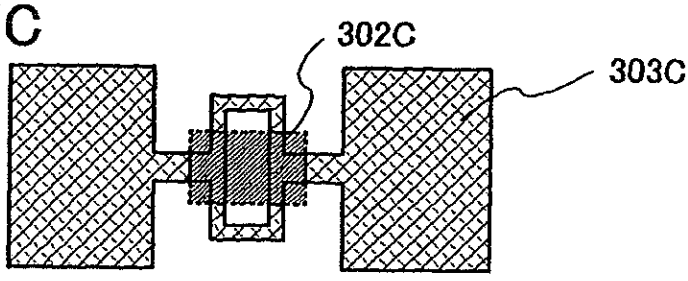


FIG. 7D

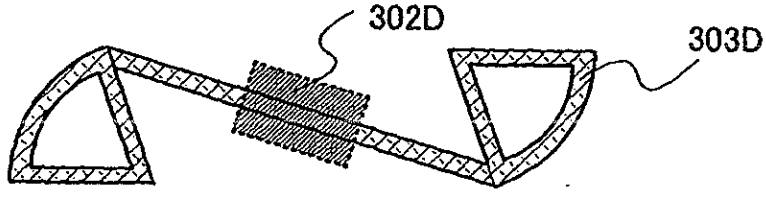
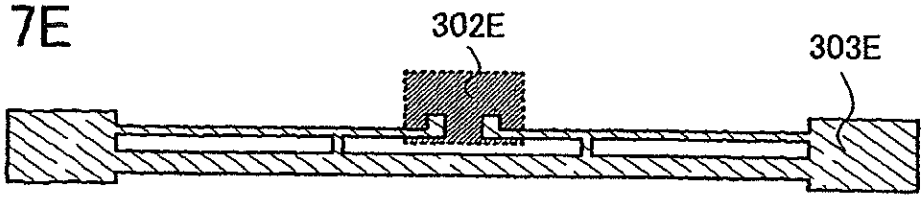


FIG. 7E



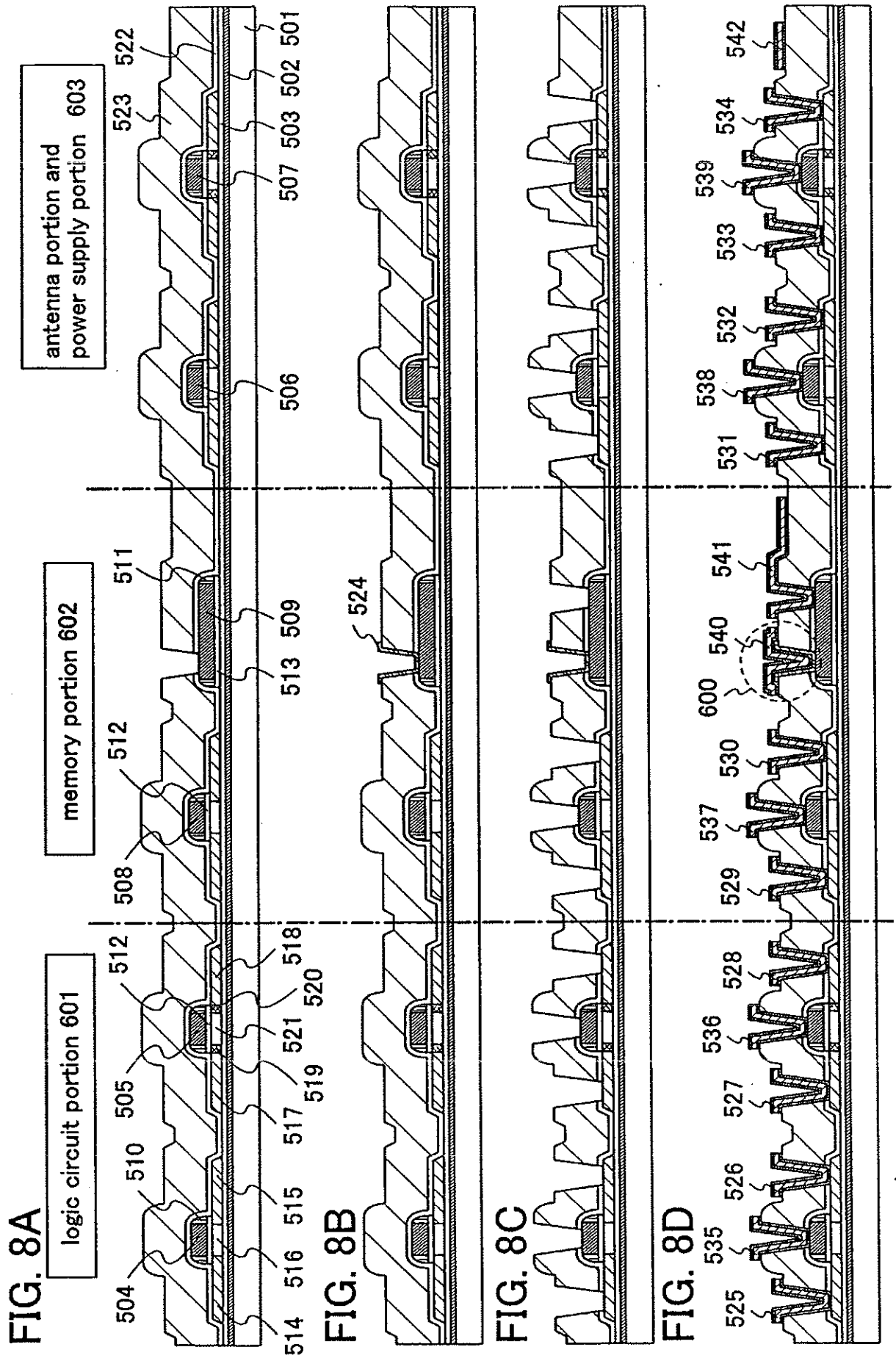


FIG. 8A

FIG. 8B

FIG. 8C

FIG. 8D

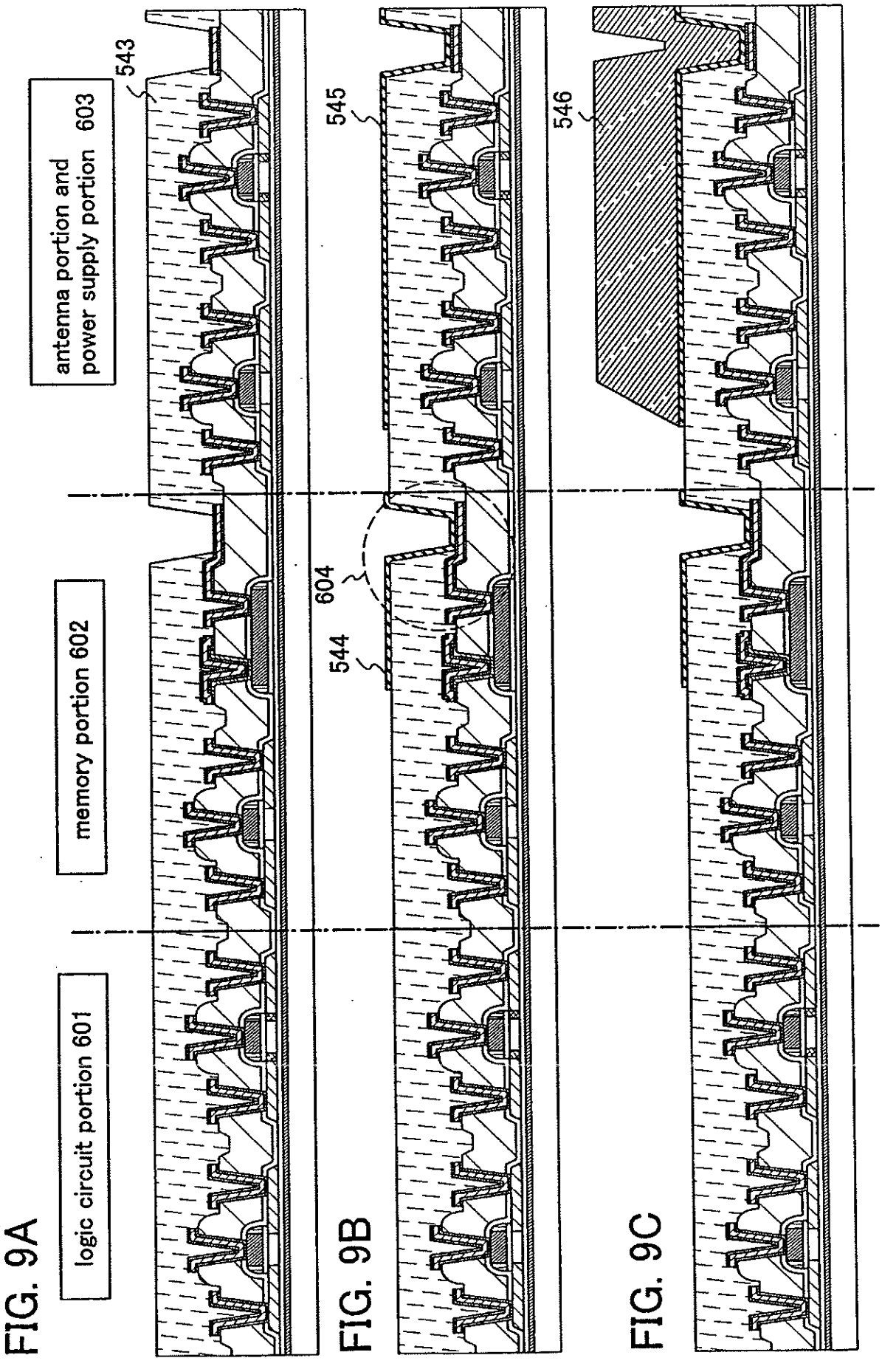


FIG. 9A

FIG. 9B

FIG. 9C

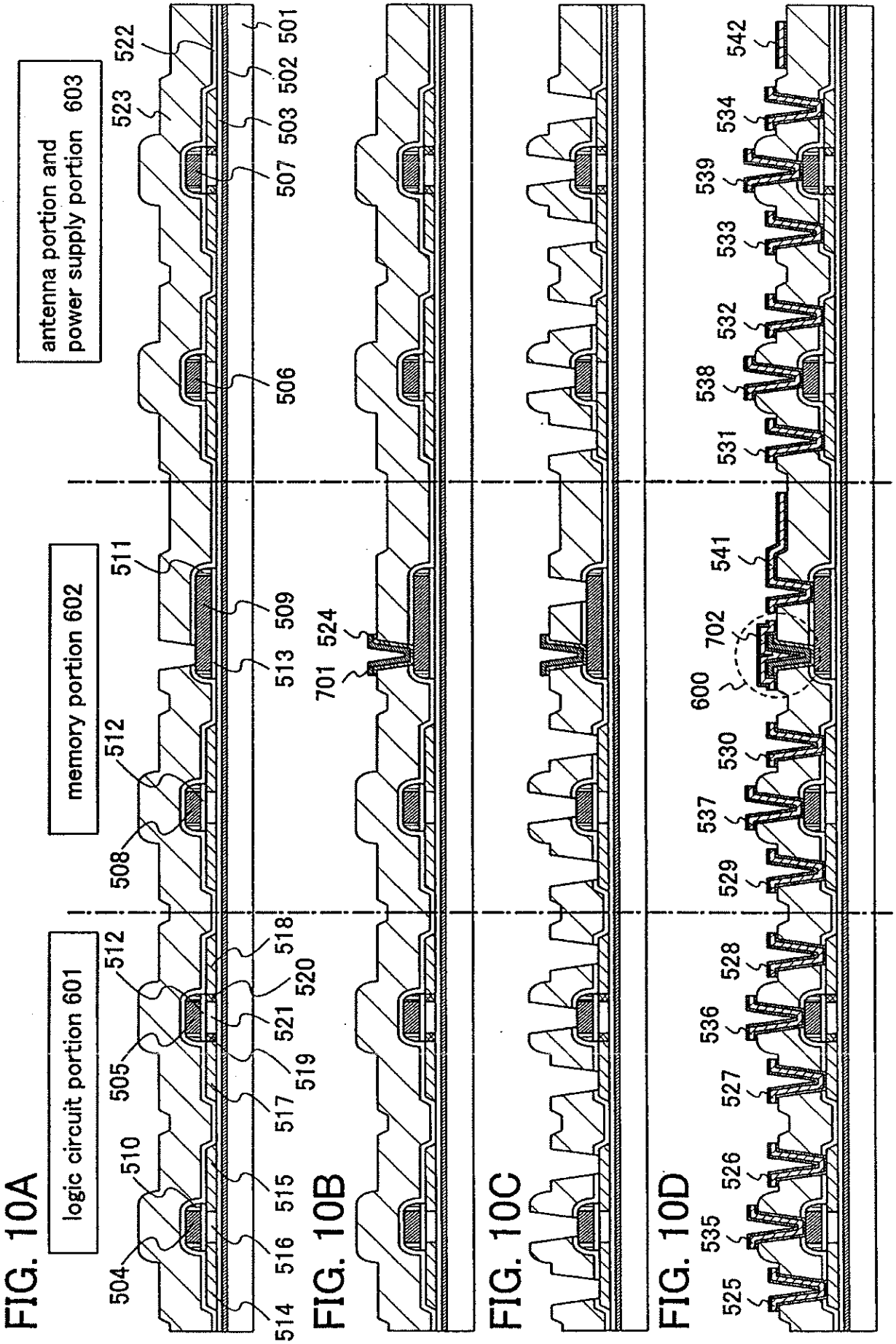


FIG. 10A

FIG. 10B

FIG. 10C

FIG. 10D

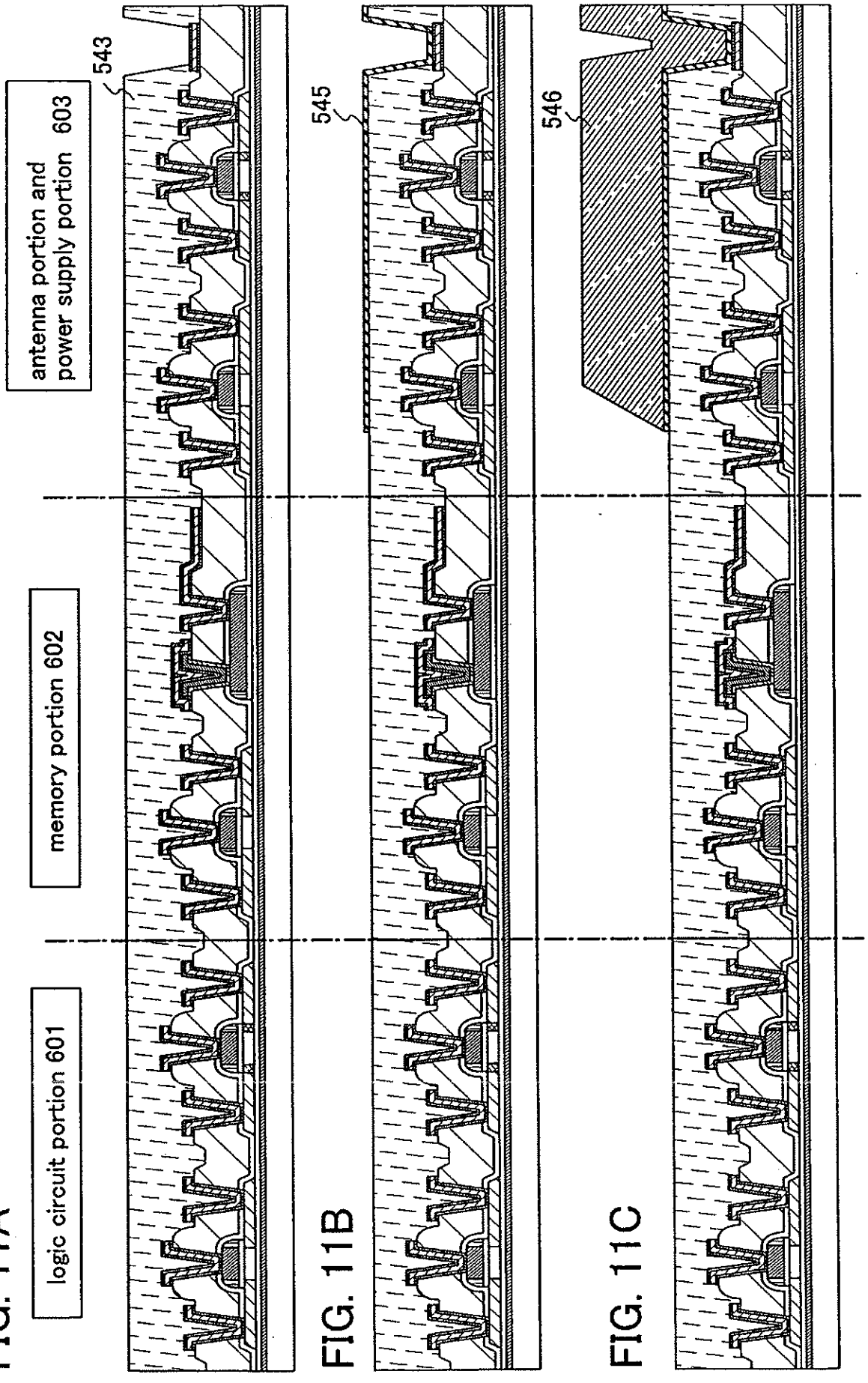


FIG. 11A

FIG. 11B

FIG. 11C

FIG. 12

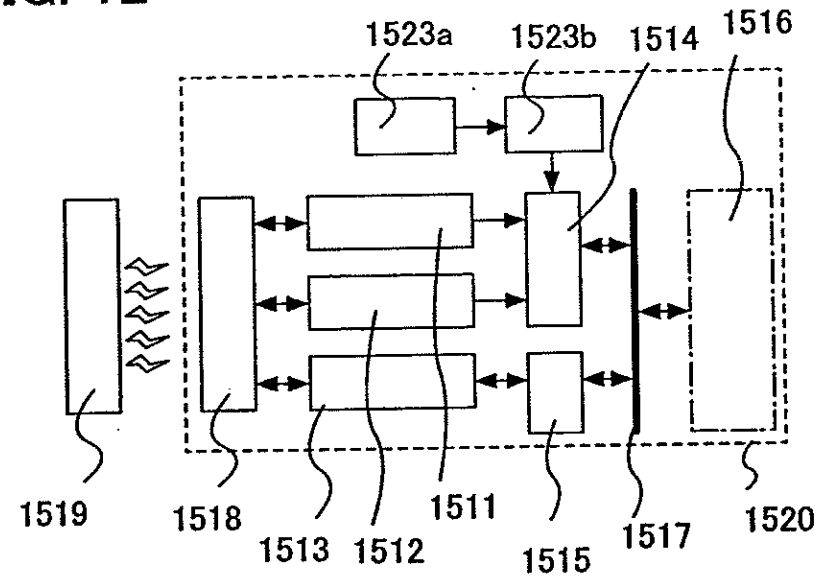

1523a
1523b
1514
1516
1519
1518
1513
1512
1511
1515
1517
1520

FIG. 13A

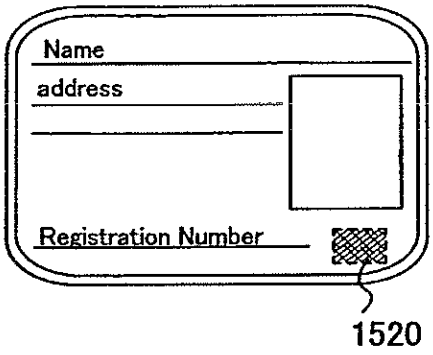


FIG. 13B

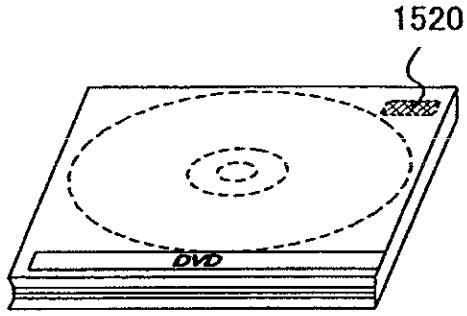


FIG. 13C

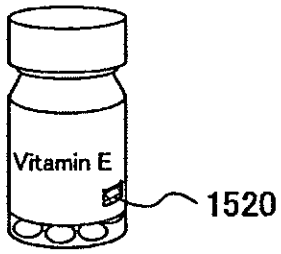


FIG. 13D

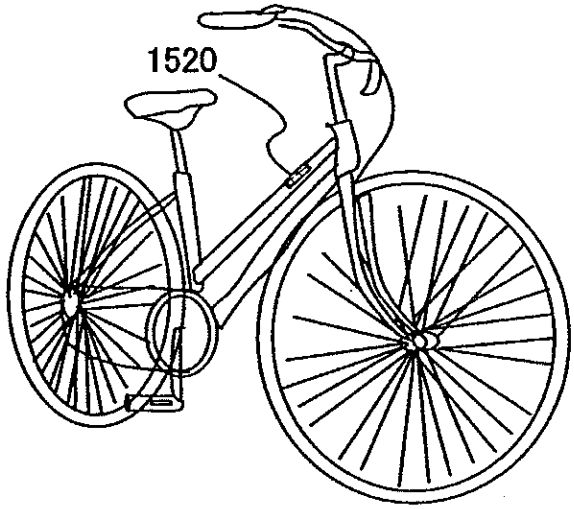


FIG. 13E

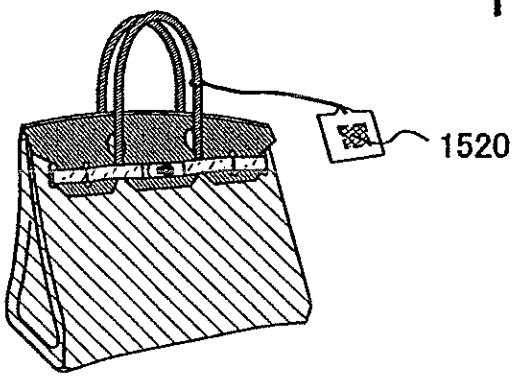


FIG. 13F

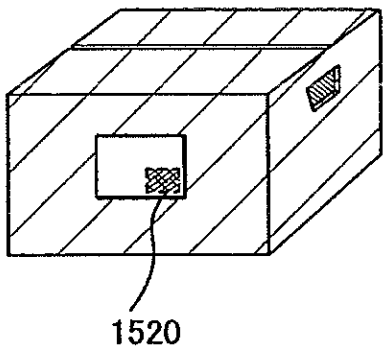


FIG. 14

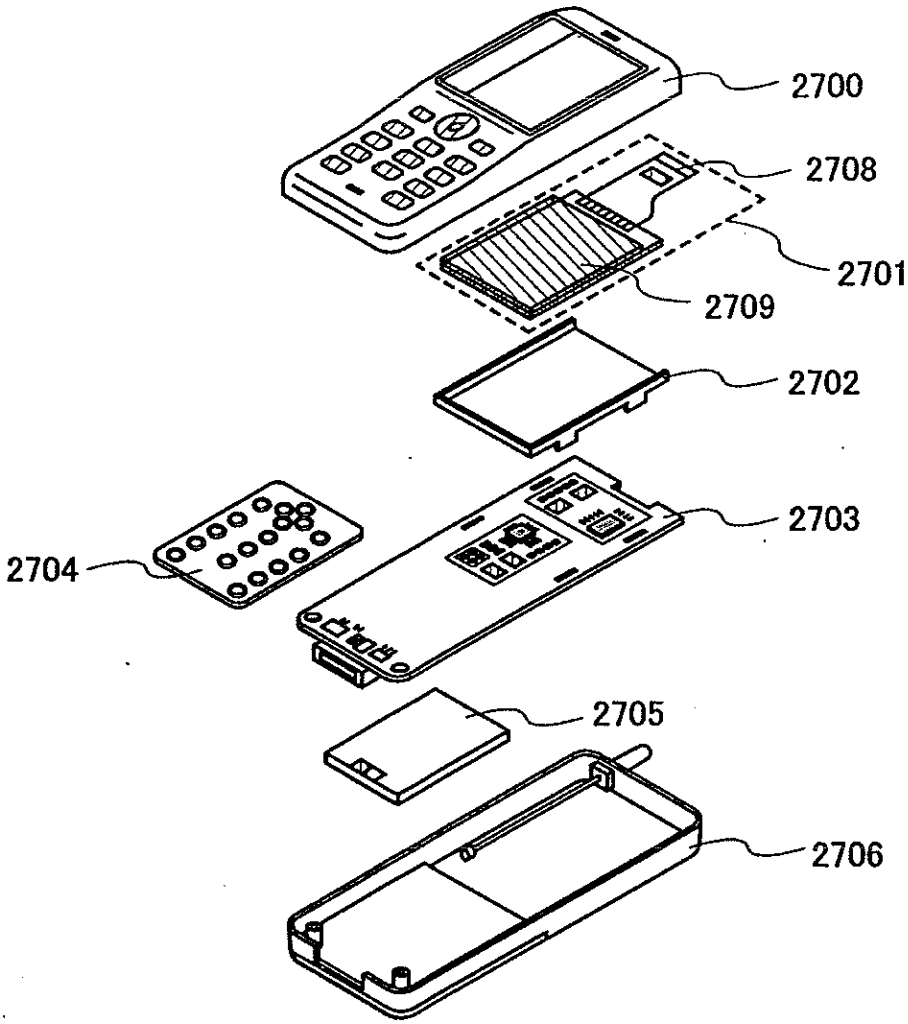


FIG. 15

