0 8 DEC 2005

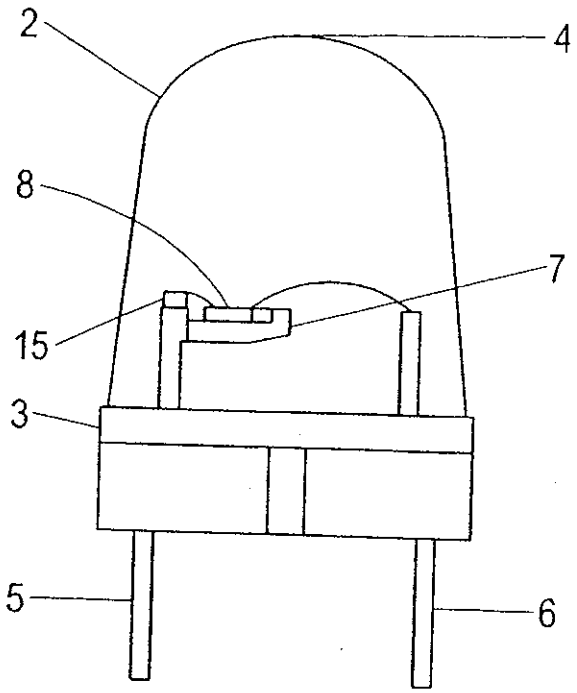


FIG. 1

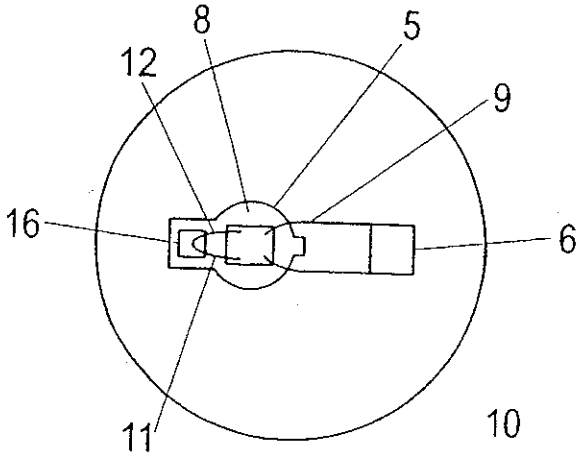


FIG. 2

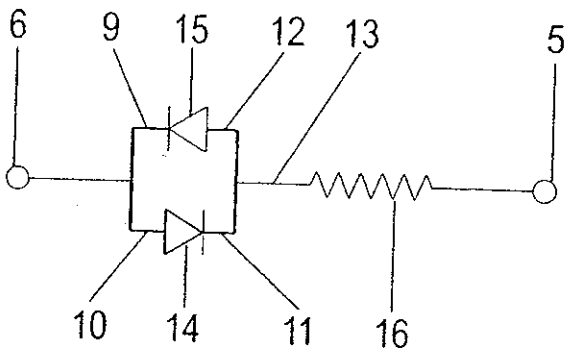
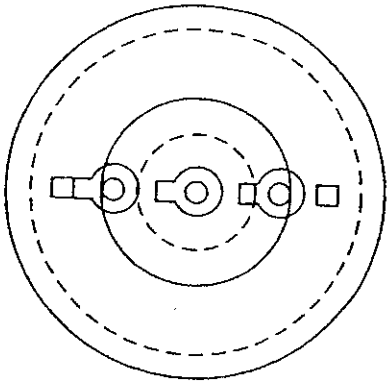


FIG. 3

FIG. 7



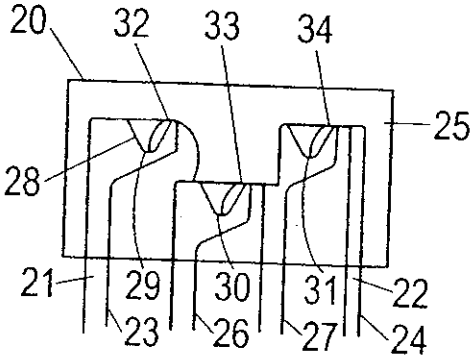


FIG. 4

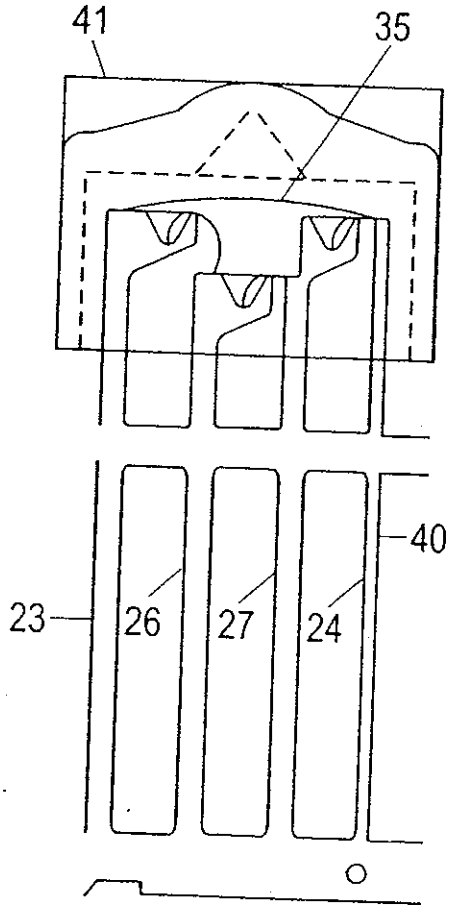
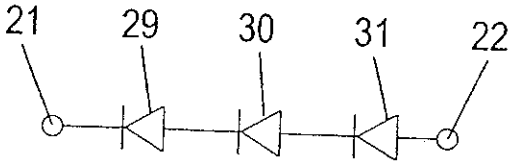


FIG. 6

FIG. 5



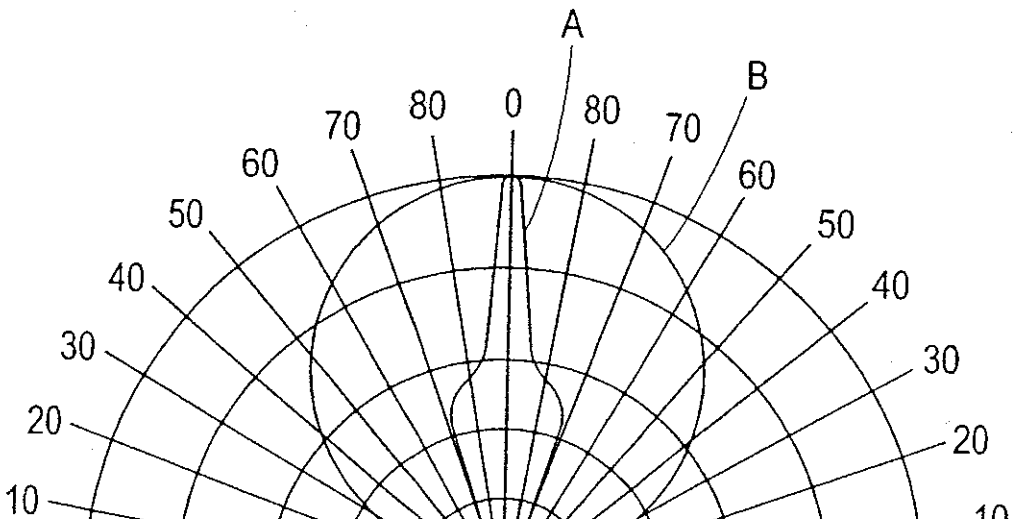

A
B
0
80
80
70
70
60
60
50
50
40
40
30
30
20
20
10
10
RELATIVE INTENSITY
I_o / I_v
0.2
0.4
0.6
0.8
1.0

FIG. 8

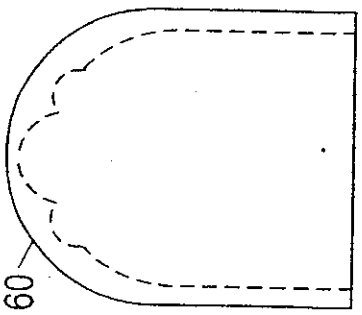


FIG. 13

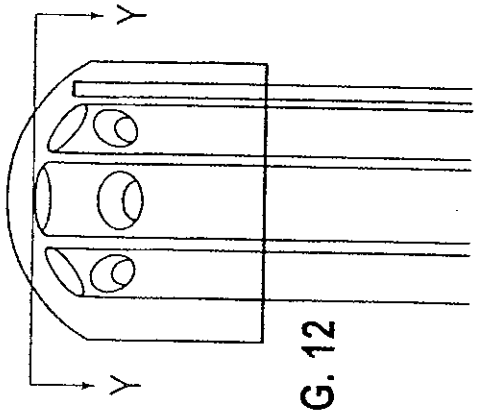


FIG. 12

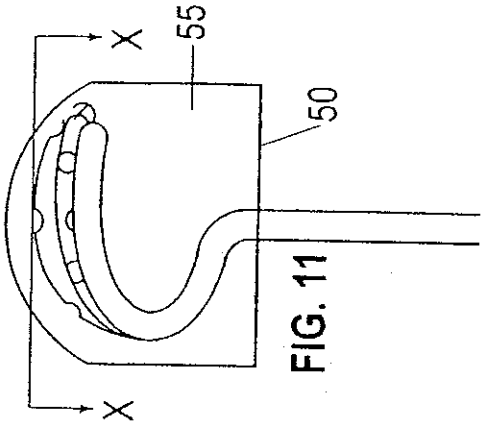


FIG. 11

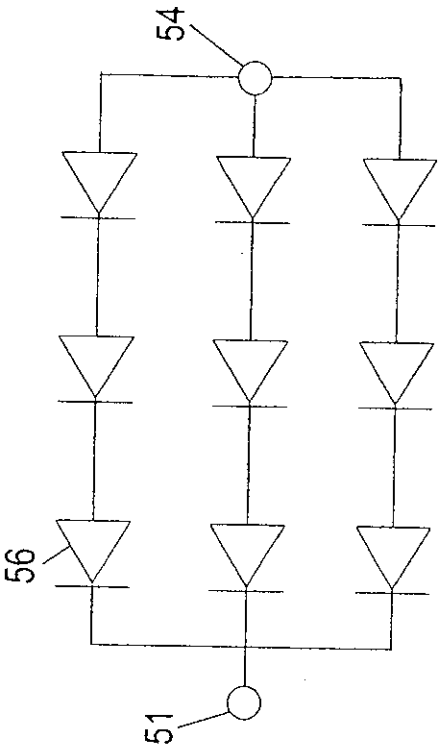


FIG. 10

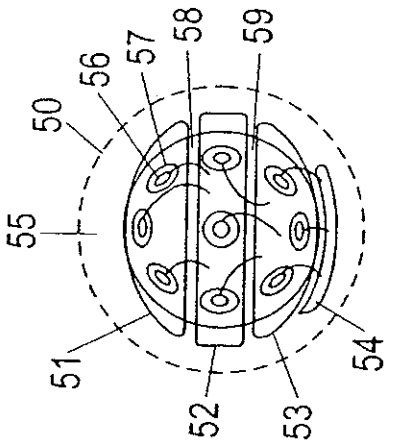


FIG. 9

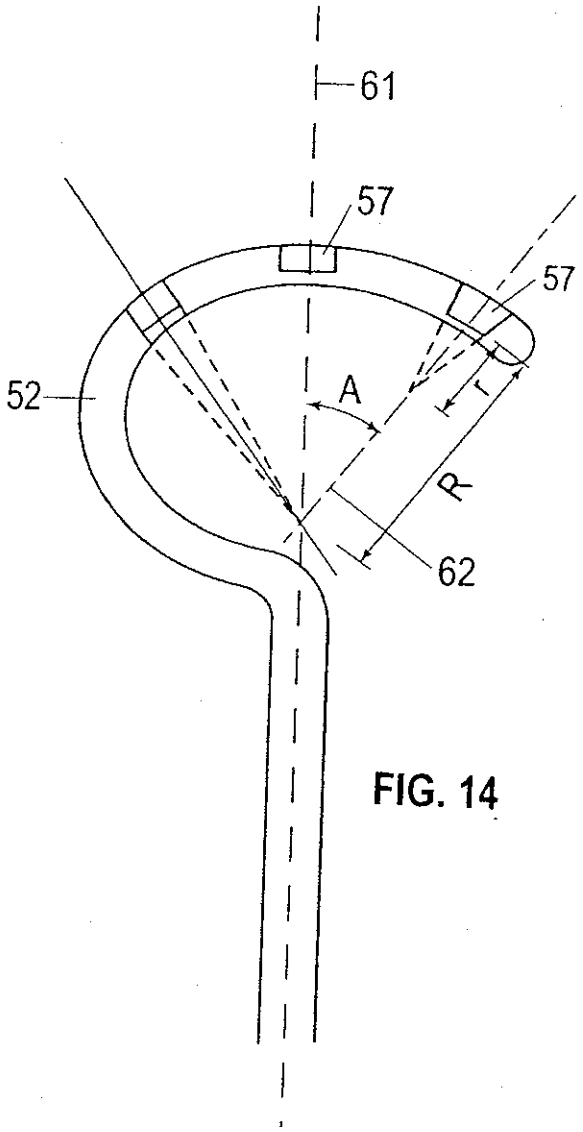


FIG. 14

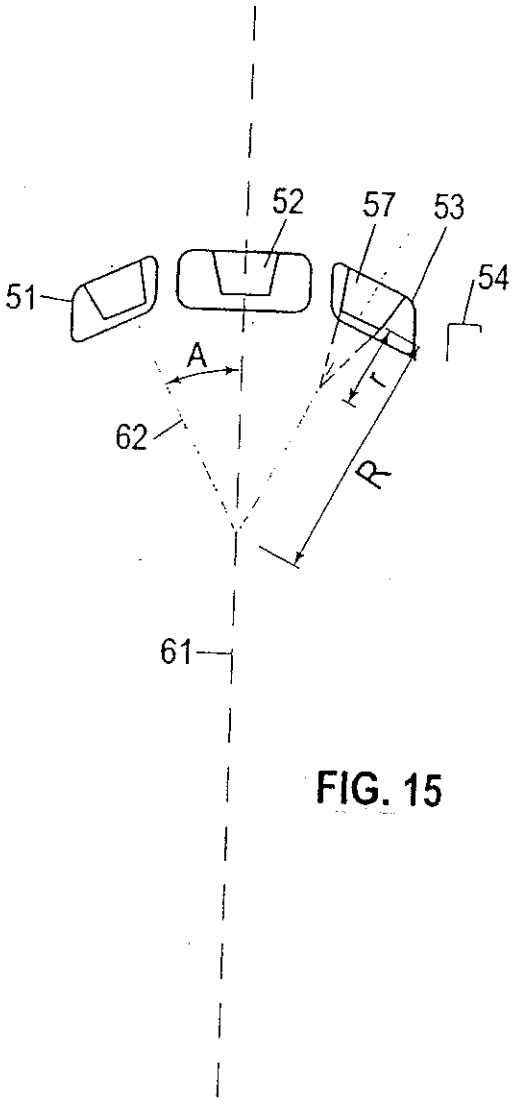


FIG. 15

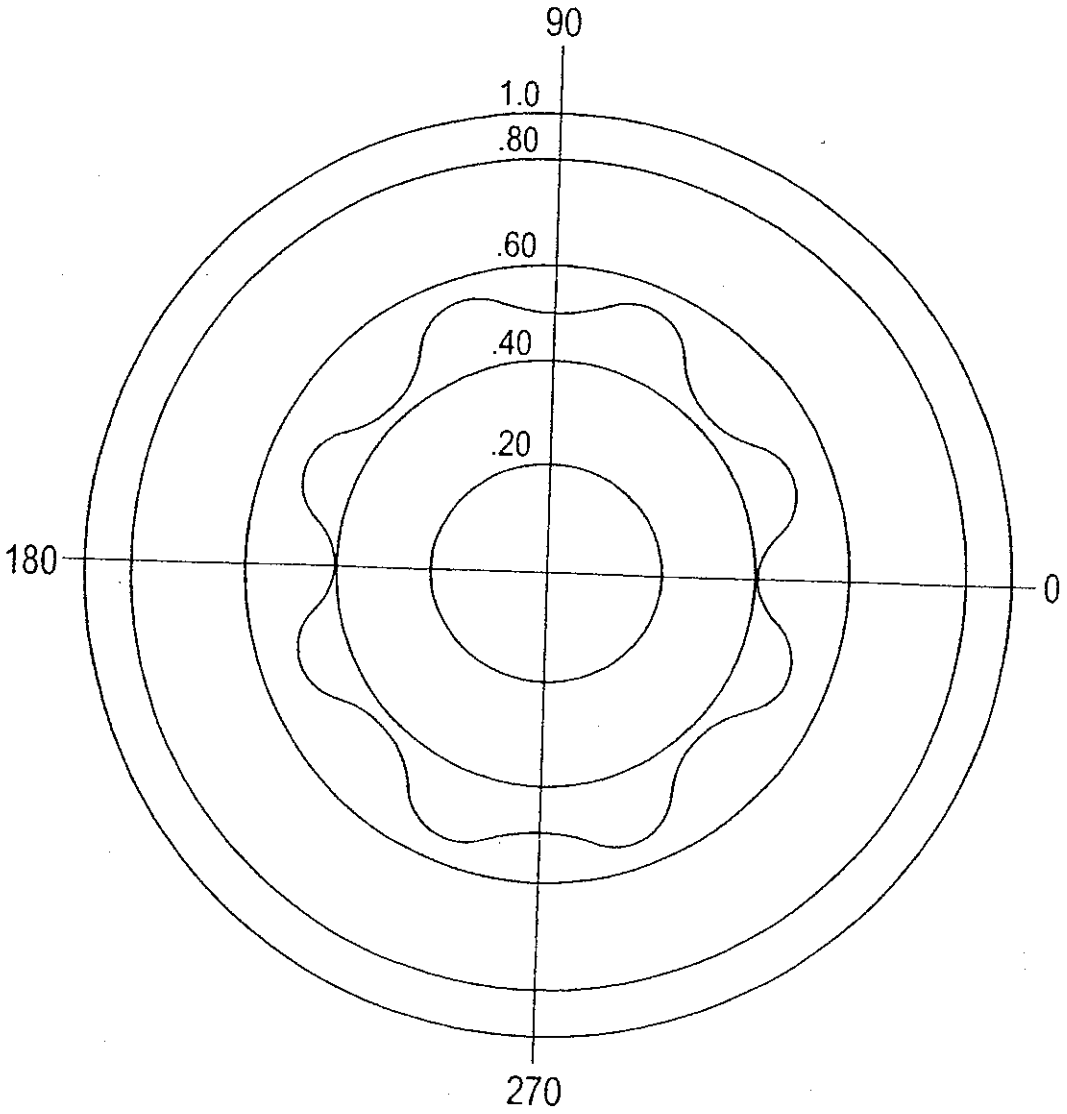


FIG. 16

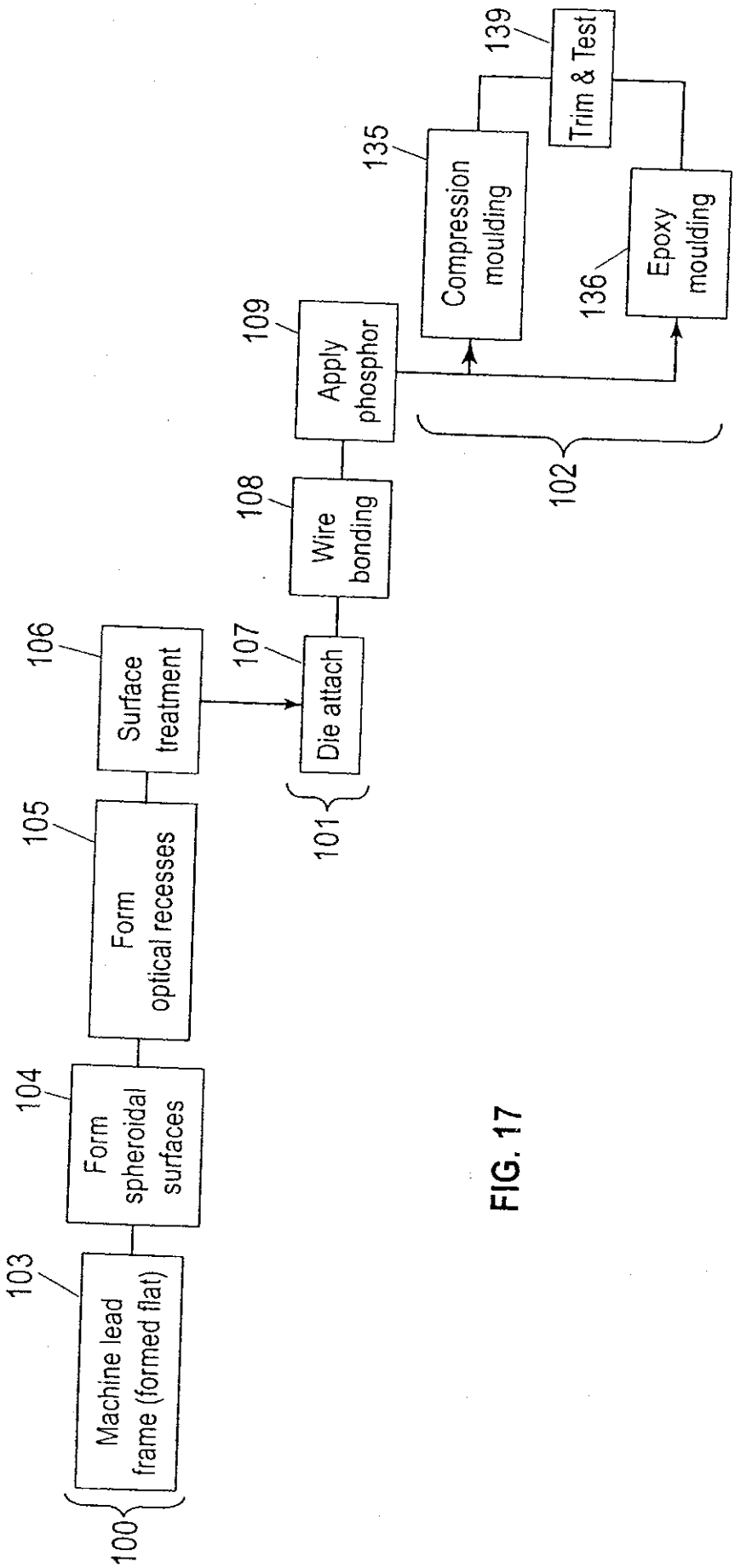

Machine lead frame (formed flat)
103
Form spheroidal surfaces
104
Form optical recesses
105
Surface treatment
106
Die attach
107
Wire bonding
108
Apply phosphor
109
Compression moulding
135
Epoxy moulding
136
Trim & Test
139
100
101
102

FIG. 17

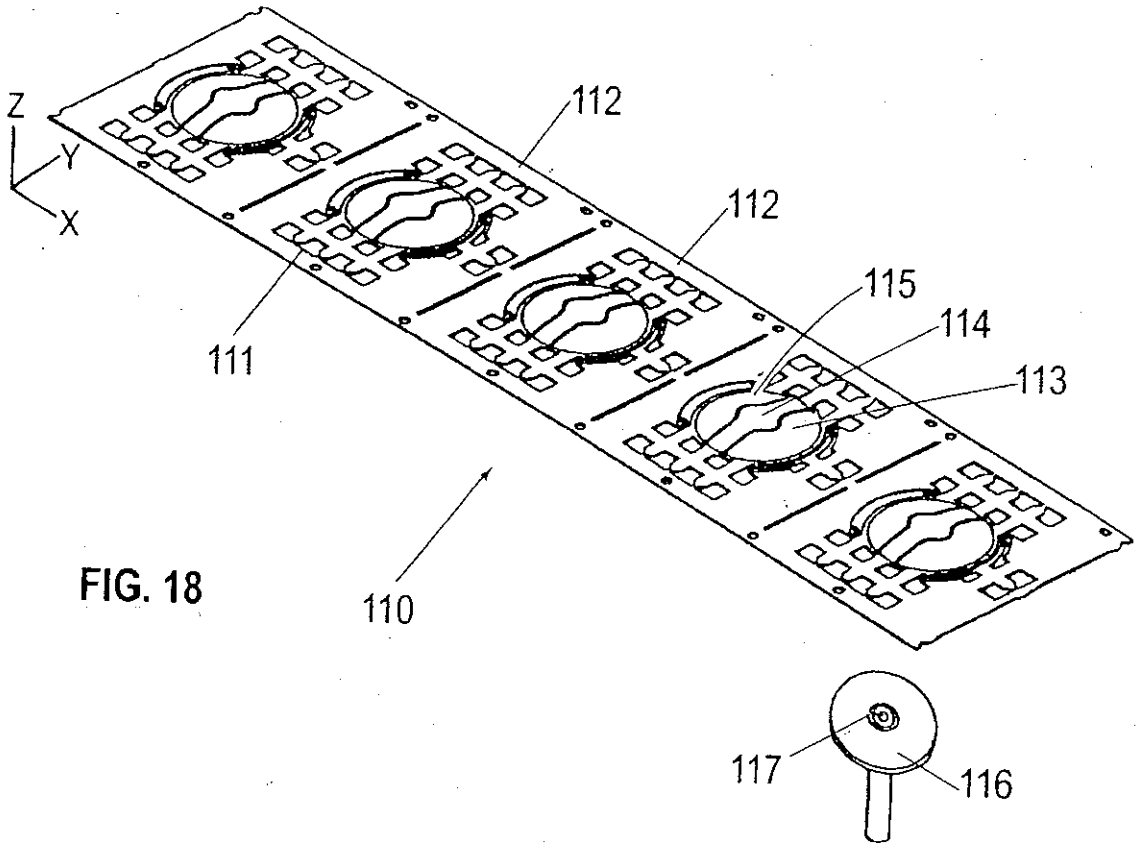


FIG. 18

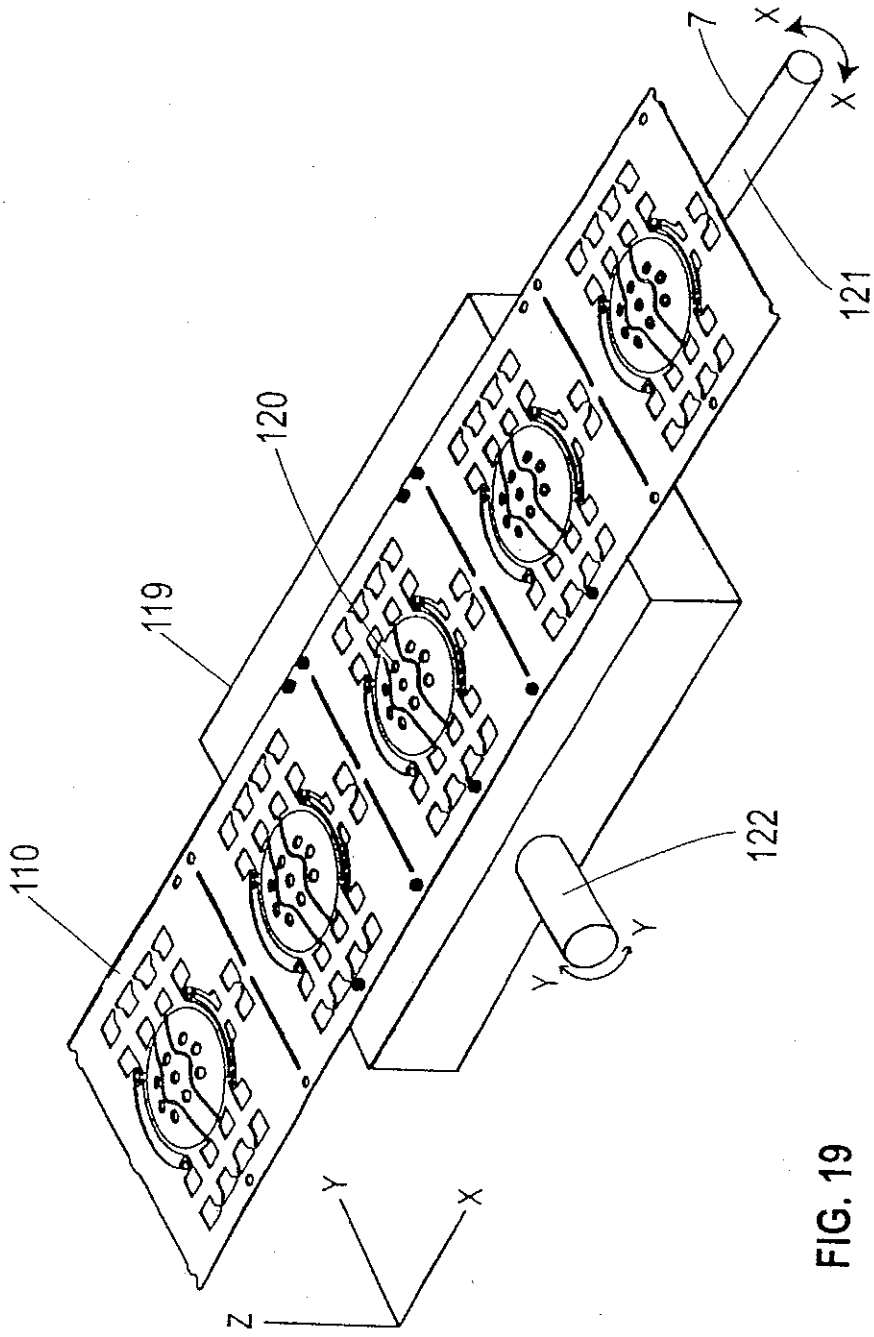


FIG. 19

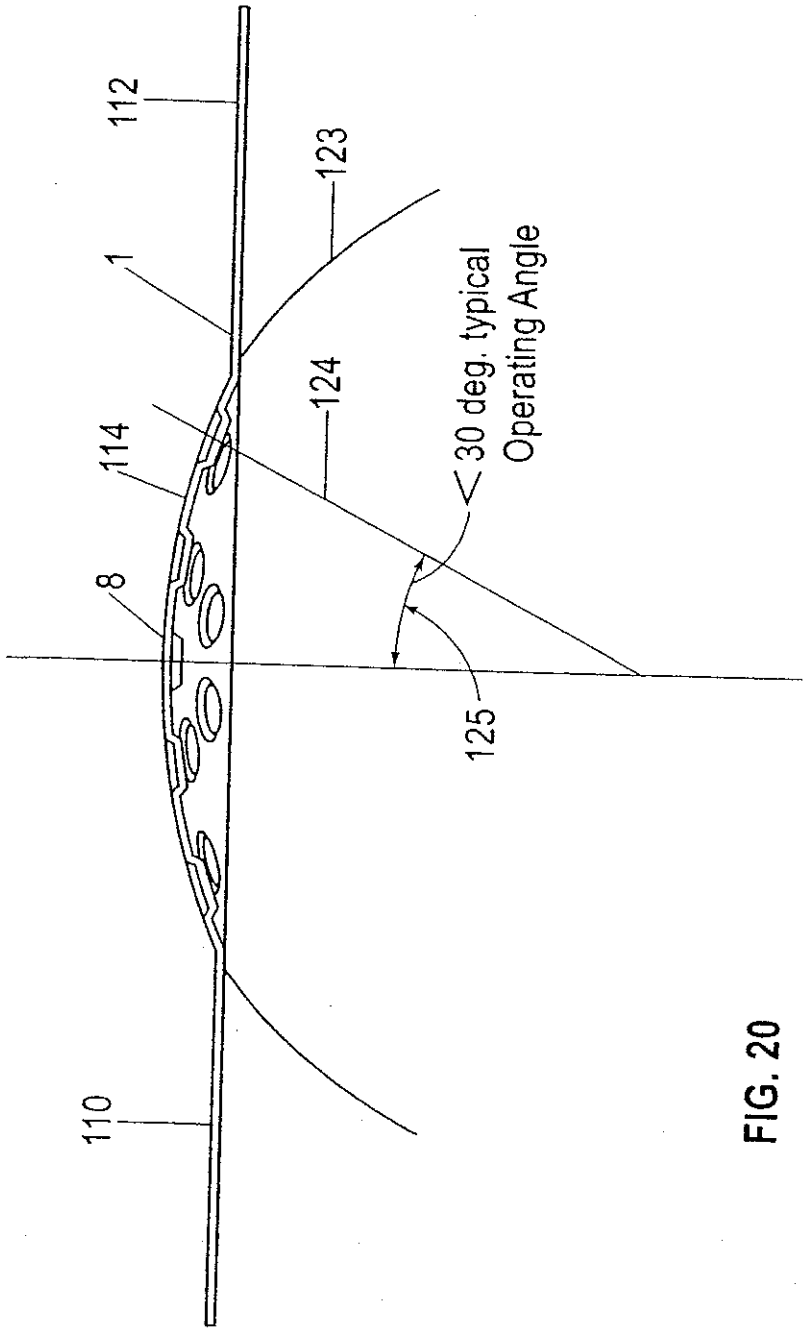


FIG. 20

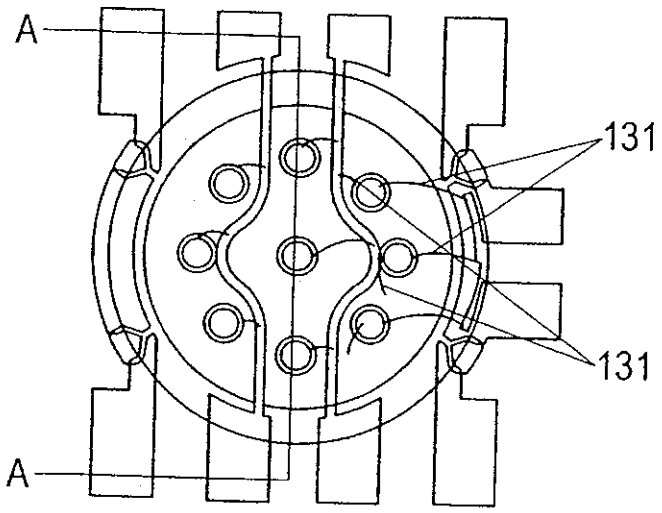


FIG. 21a

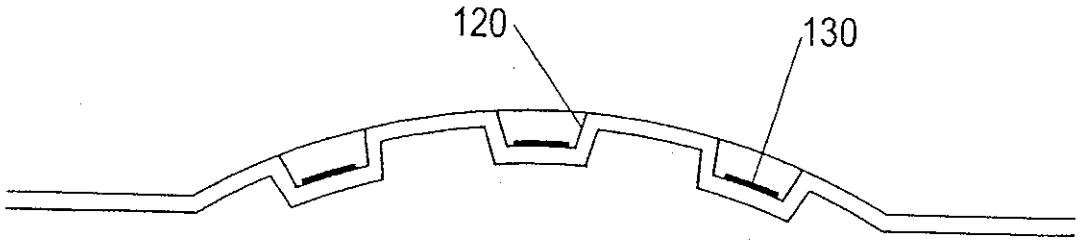


FIG. 21b

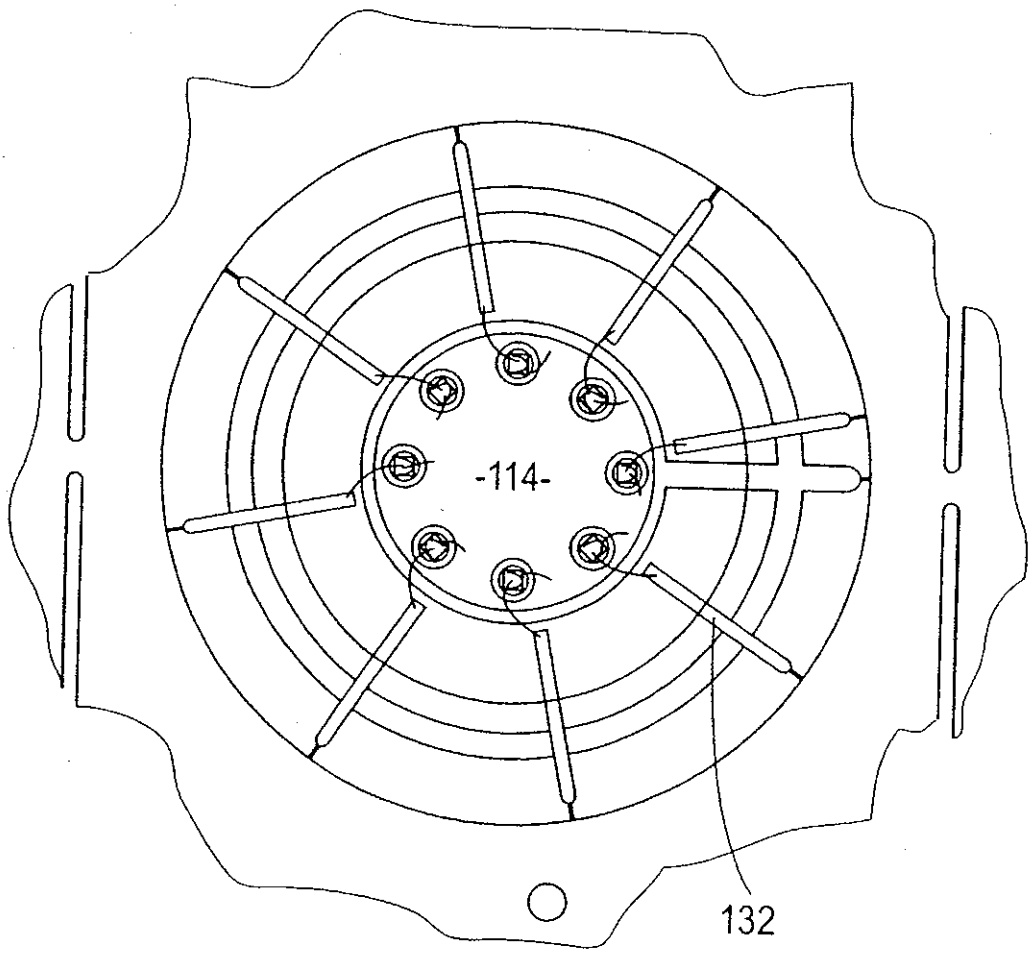


FIG. 22

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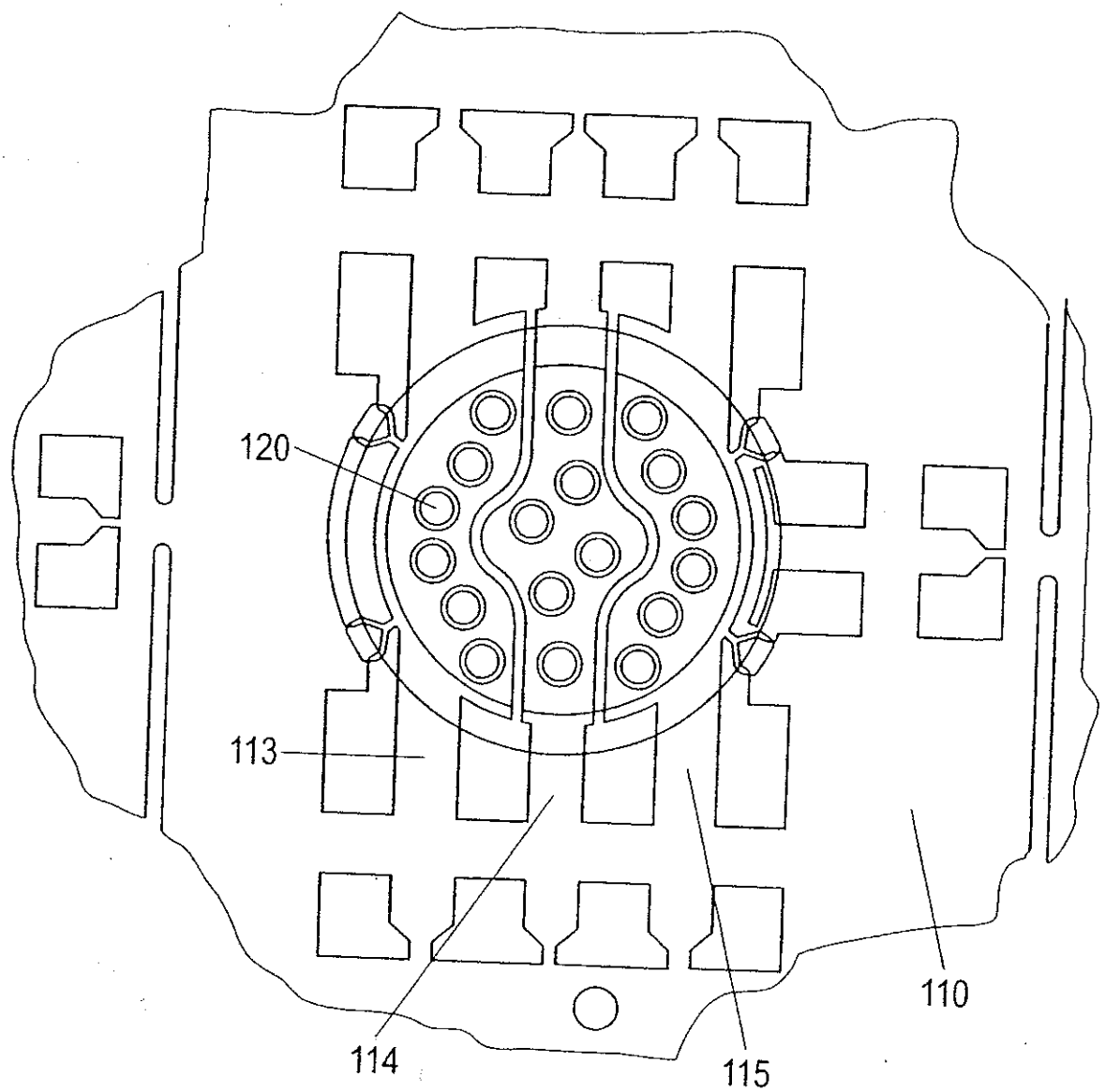


FIG. 23

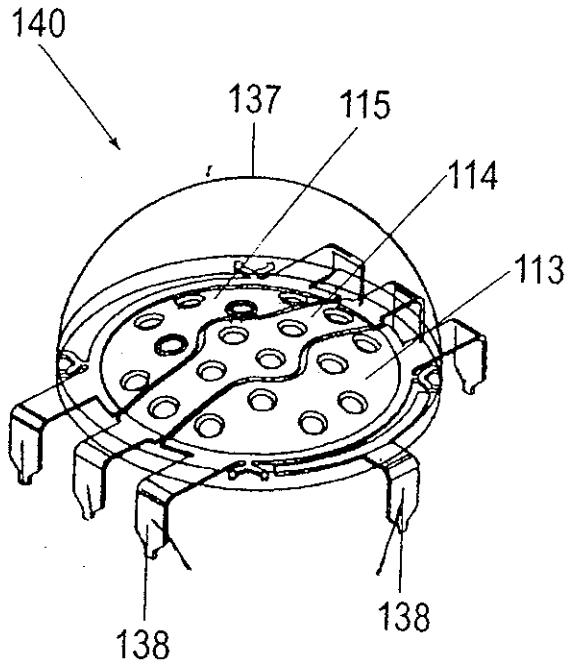


FIG. 24

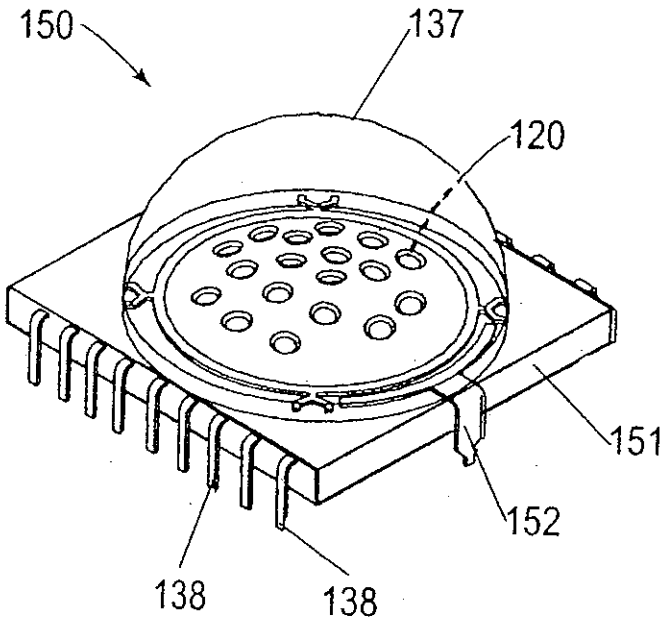


FIG. 25