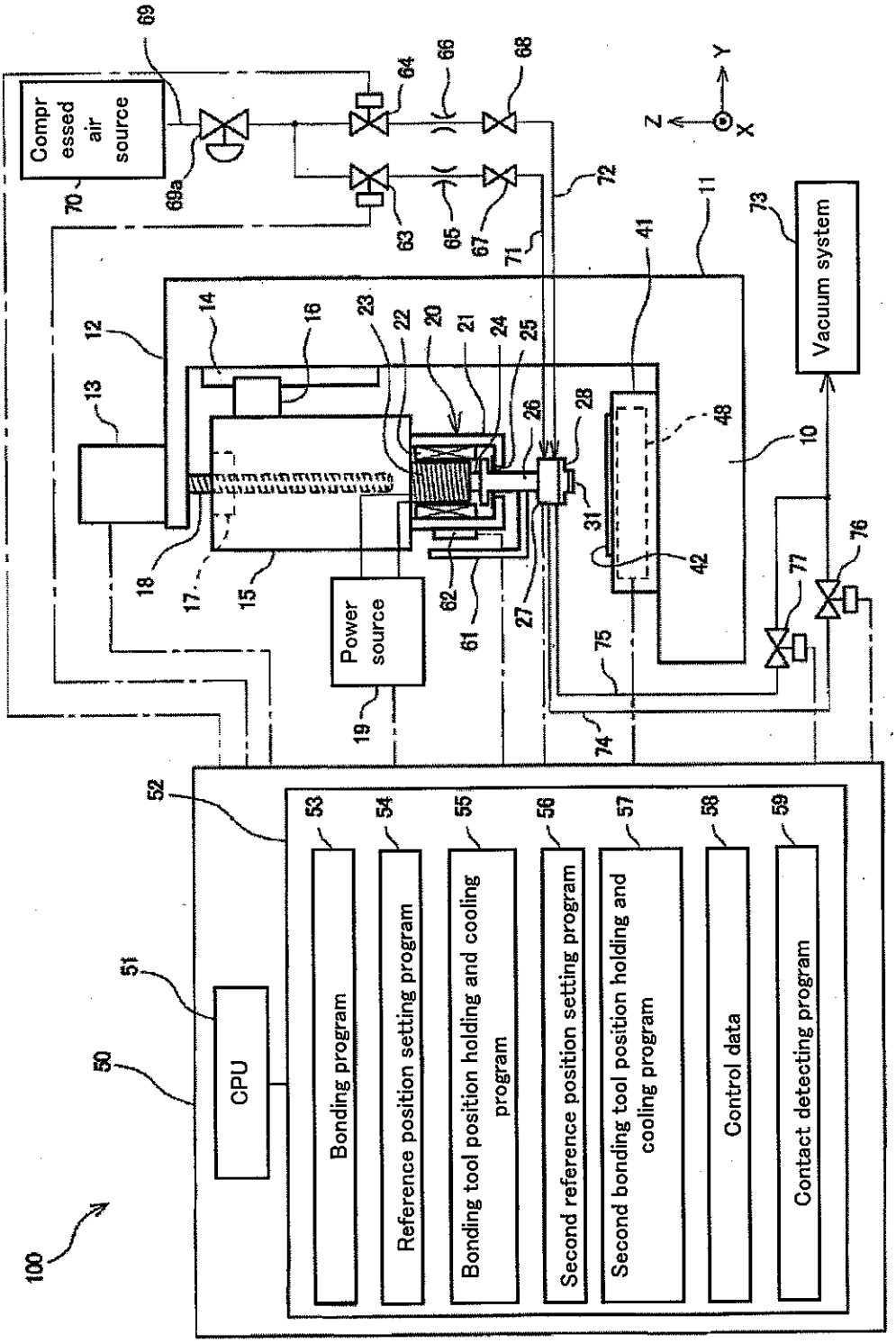

Compressed air source
Vacuum system
Power source
CPU
Bonding program
Reference position setting program
Bonding tool position holding and cooling program
Second reference position setting program
Second bonding tool position holding and cooling program
Control data
Contact detecting program
100
50
51
52
53
54
55
56
57
58
59
10
11
12
13
14
15
16
17
18
19
20
21
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31
41
42
48
61
62
63
64
65
66
67
68
69
69a
70
71
72
73
74
75
76
77
X
Y
Z

FIG.1

FIG. 2 A

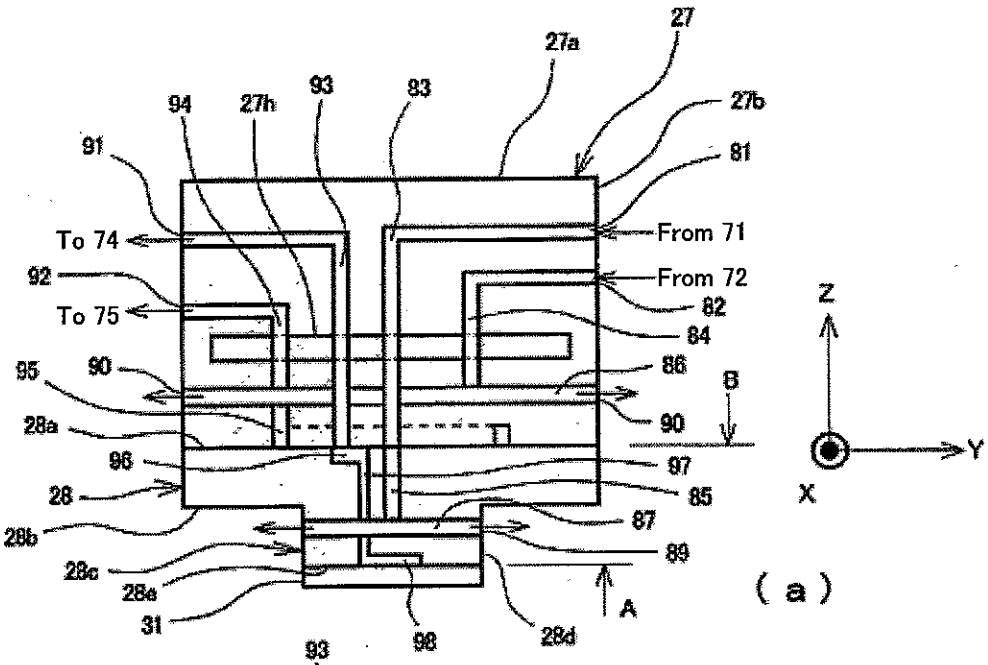


FIG. 2 B

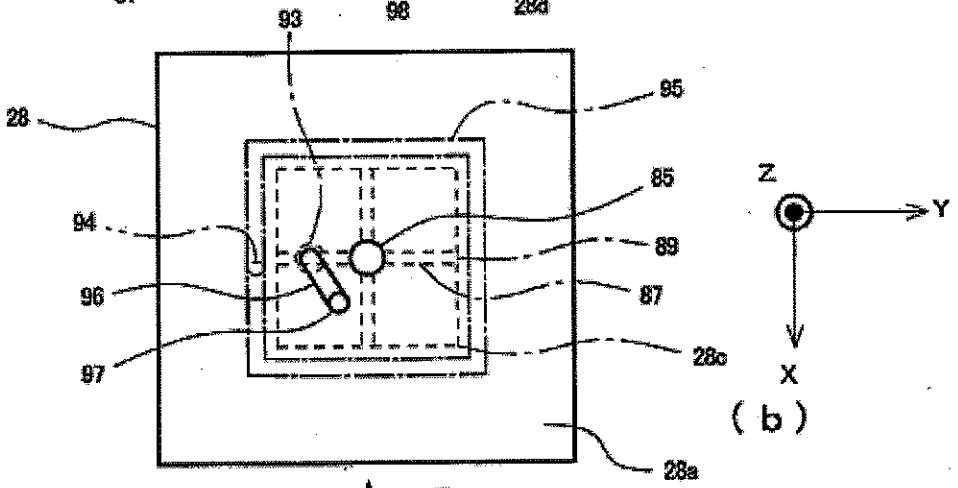
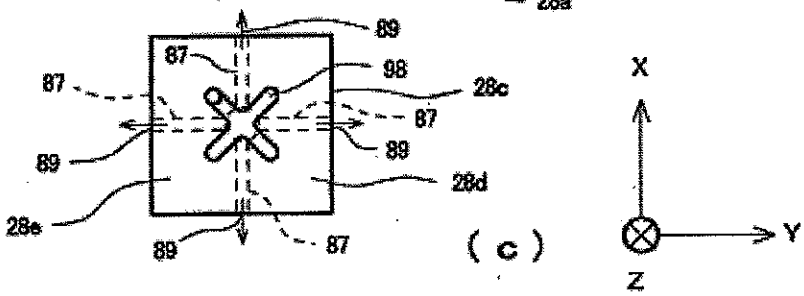


FIG. 2 C



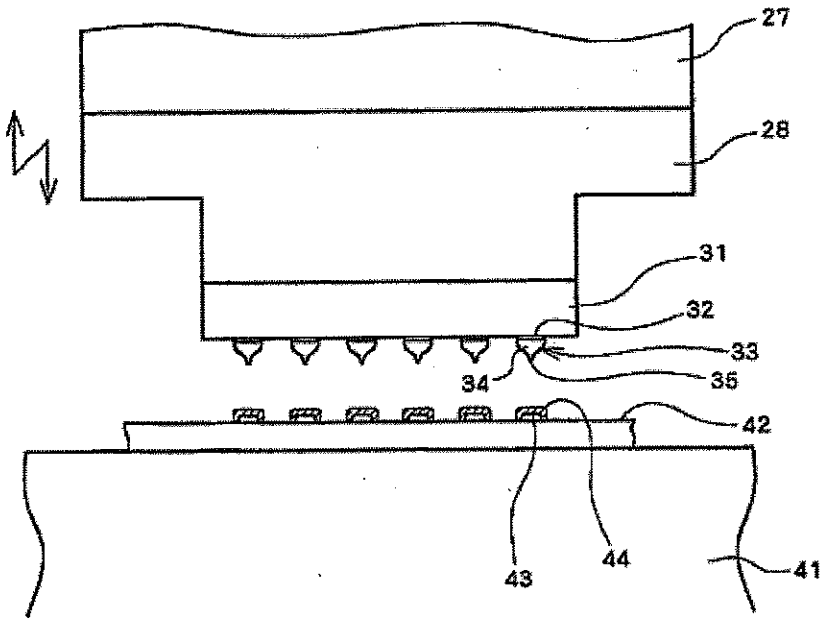


FIG. 3

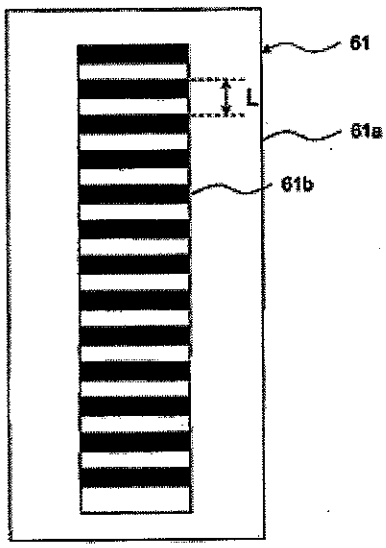


FIG. 4

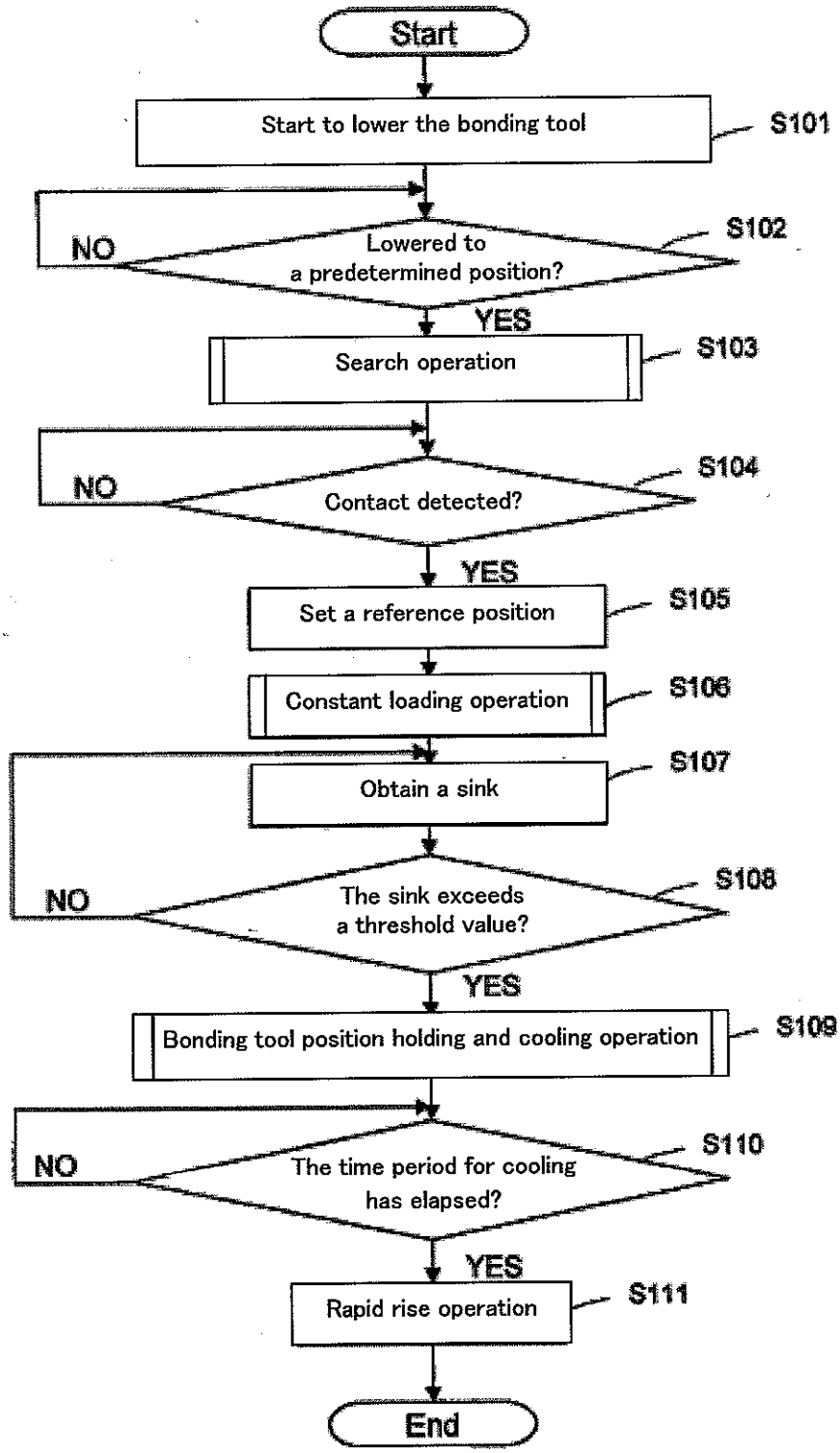

Start
Start to lower the bonding tool
S101
NO
Lowered to a predetermined position?
S102
YES
Search operation
S103
NO
Contact detected?
S104
YES
Set a reference position
S105
Constant loading operation
S106
Obtain a sink
S107
NO
The sink exceeds a threshold value?
S108
YES
Bonding tool position holding and cooling operation
S109
NO
The time period for cooling has elapsed?
S110
YES
Rapid rise operation
S111
End

FIG. 5

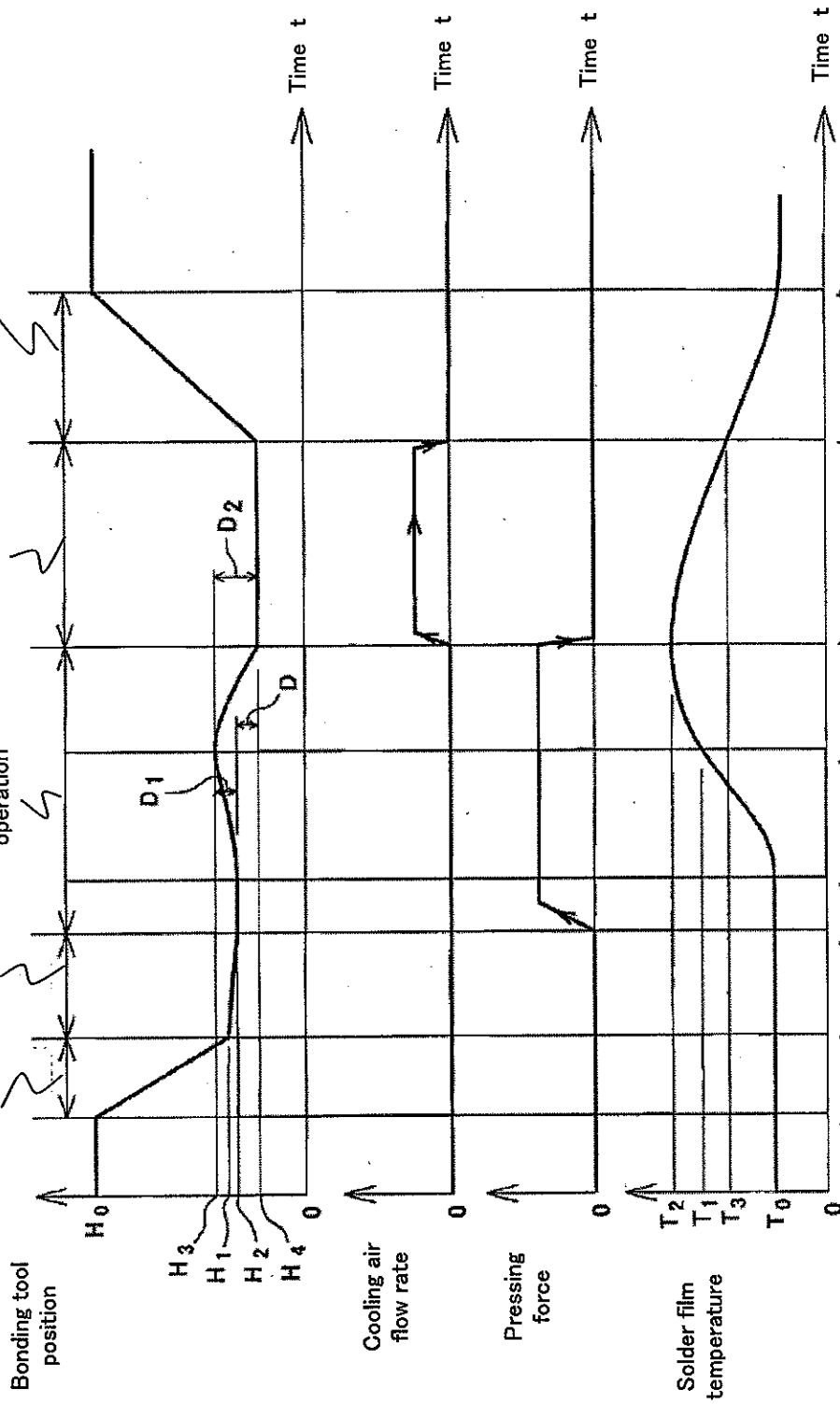

Lowering operation
Search operation
Constant loading operation
Bonding tool position holding and cooling operation
Rapid rise operation
Bonding tool position
Cooling air flow rate
Pressing force
Solder film temperature
Time t
H0
H3
H1
H2
H4
D1
D2
D
T2
T1
T3
T0
0
t1
t2
t3
t4
t5
t6
t7
t8

FIG. 6

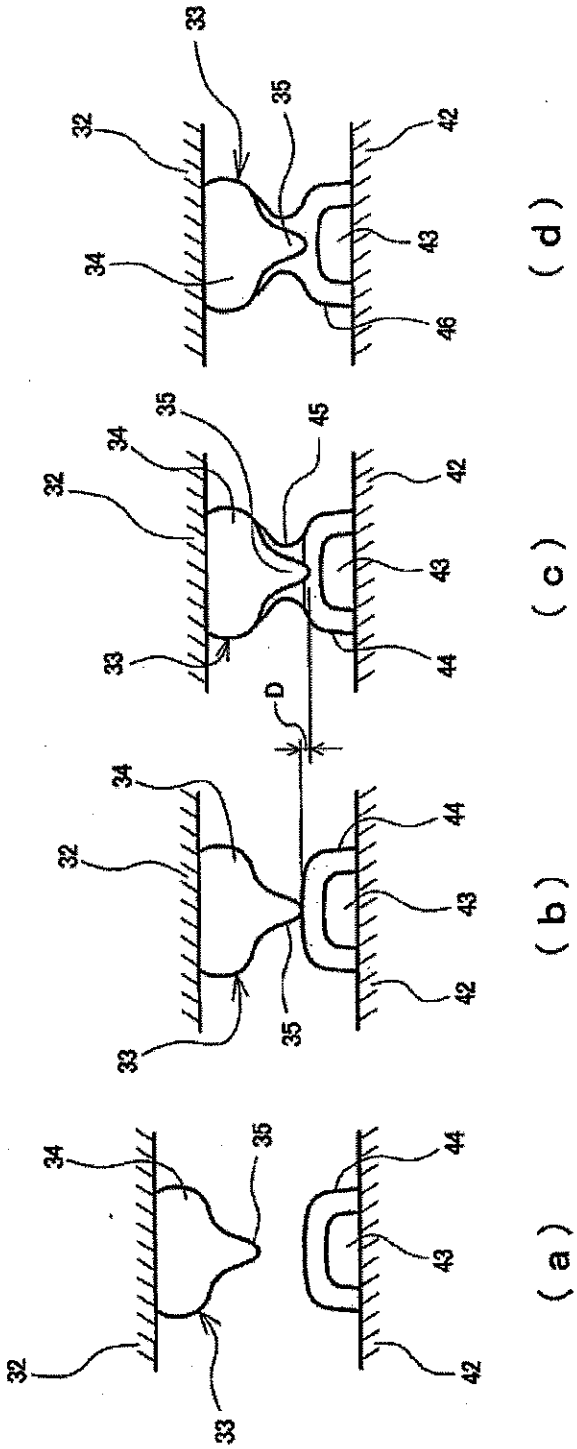


FIG. 7

FIG. 8 A

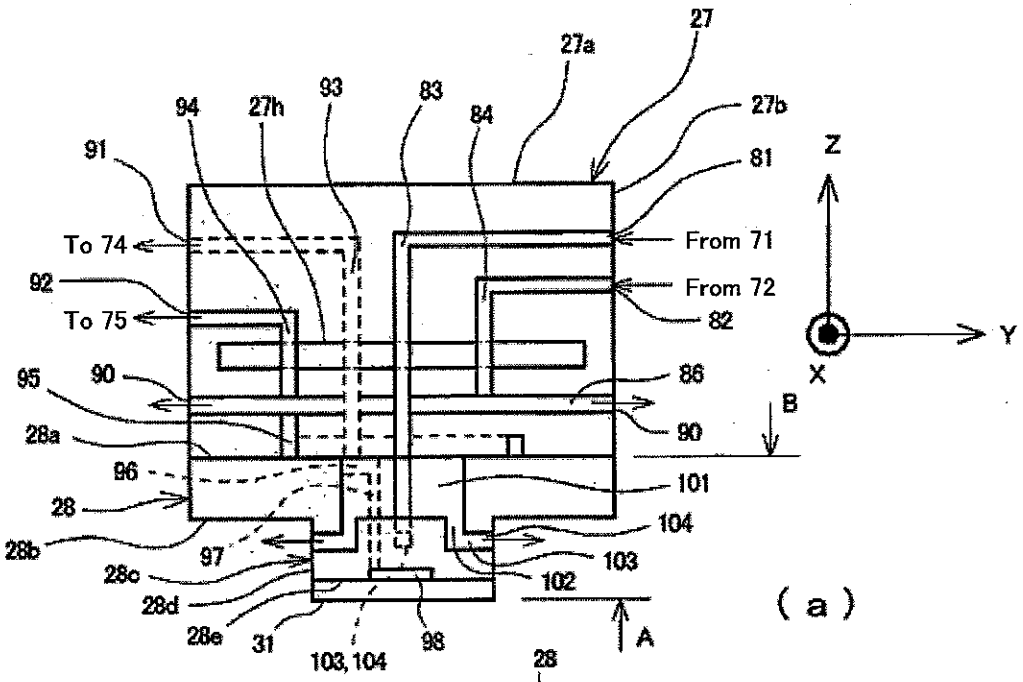


FIG. 8 B

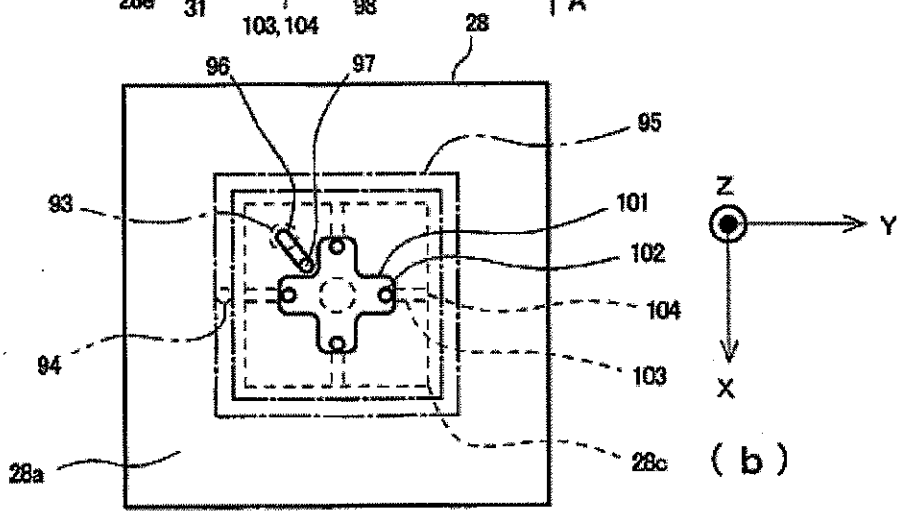


FIG. 8 C

