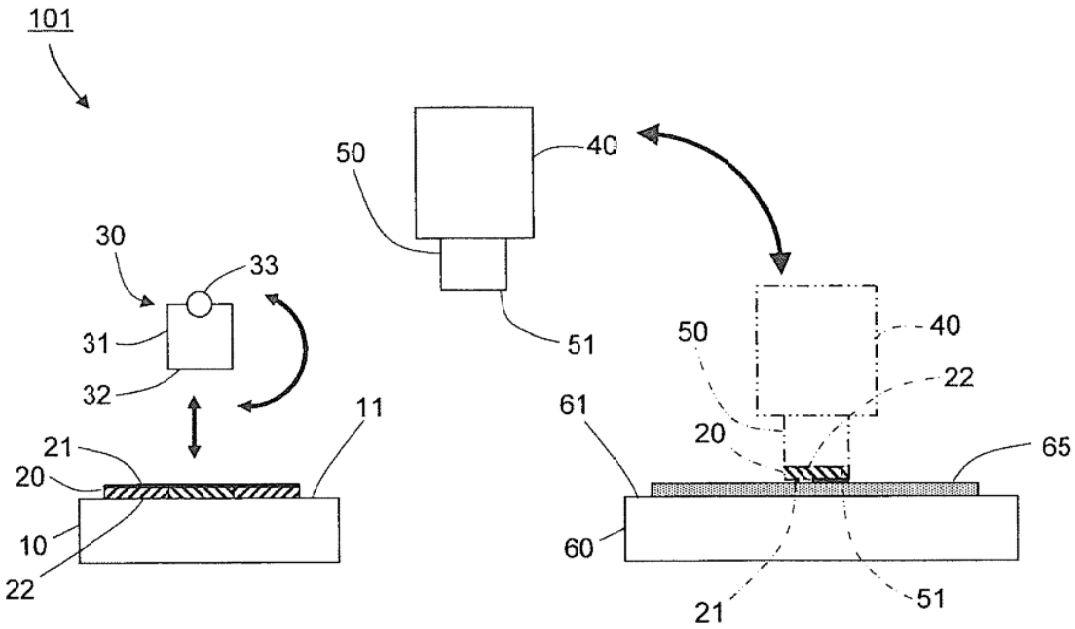

101
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22
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61
20
65
60
21
51

FIG. 1

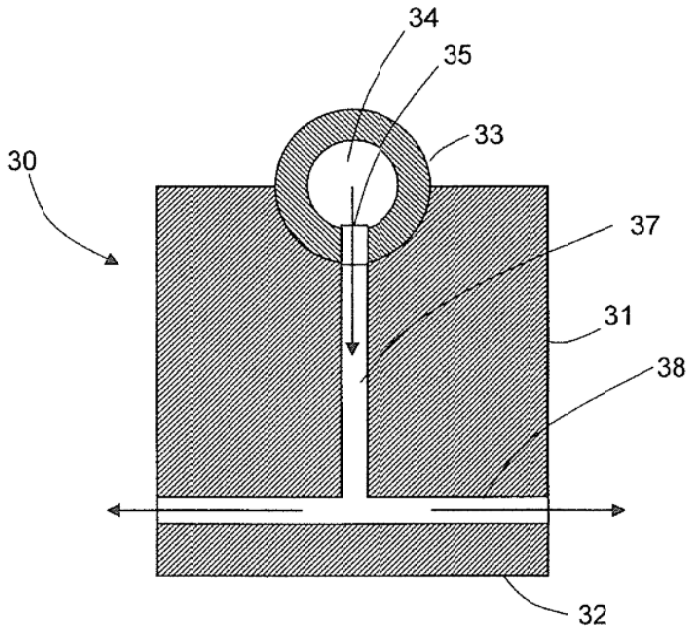

34
35
33
30
37
31
38
32

FIG. 2

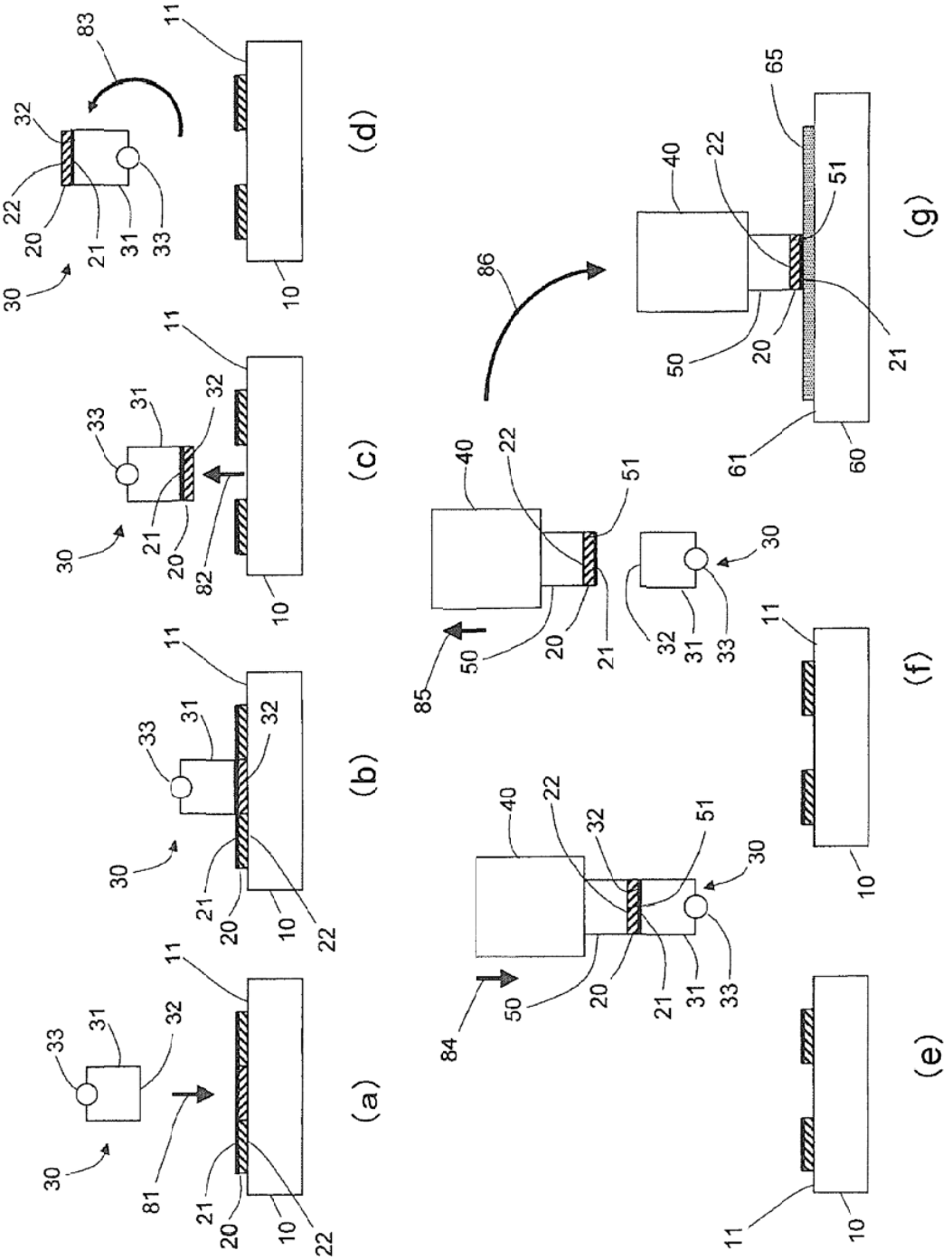


FIG. 3

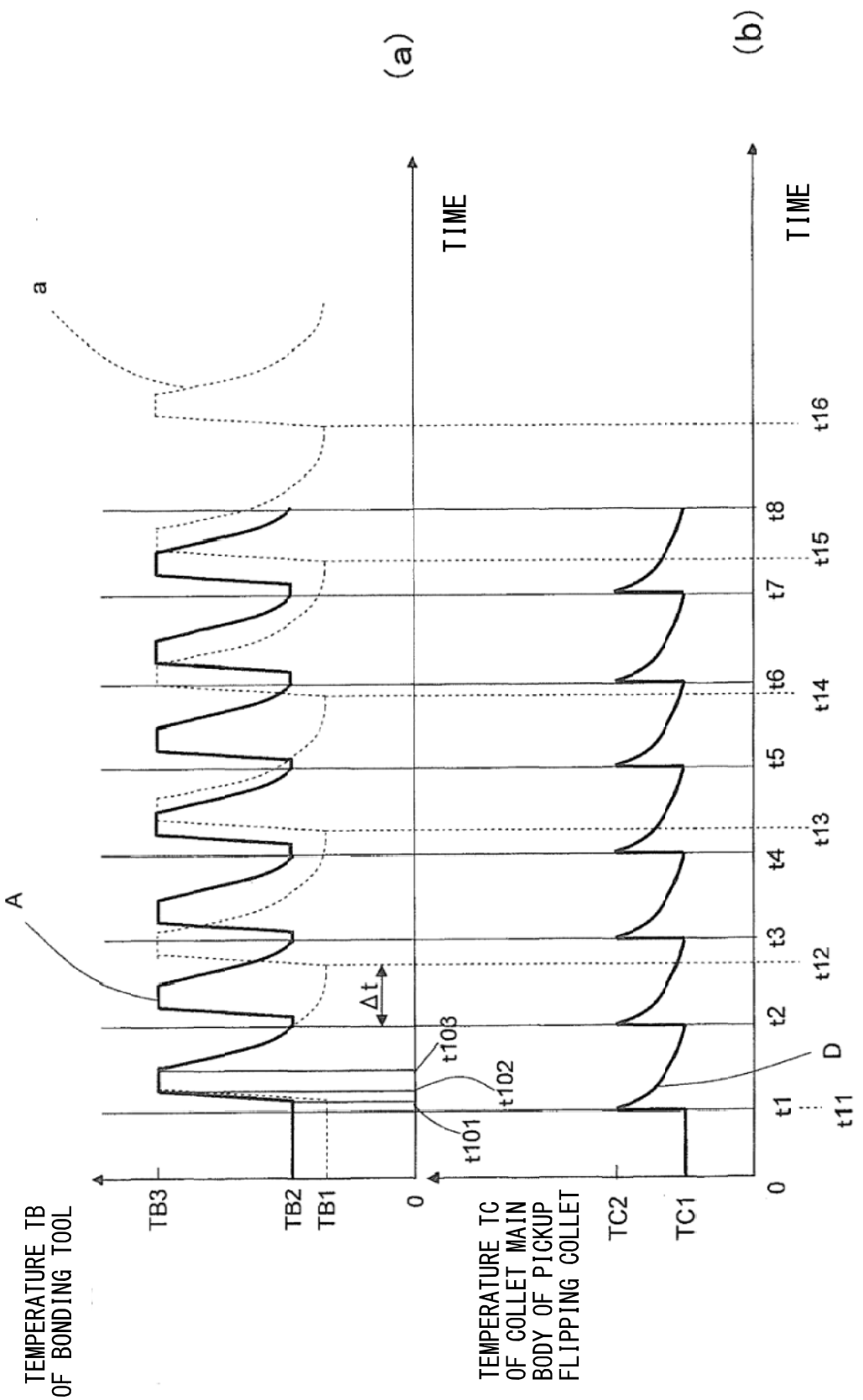

(a)
(b)
TIME
TIME
TEMPERATURE TB
OF BONDING TOOL
TEMPERATURE TC
OF COLLET MAIN
BODY OF PICKUP
FLIPPING COLLET
TB3
TB2
TB1
0
TC2
TC1
0
a
A
D
Δt
t101
t102
t103
t1
t2
t3
t4
t5
t6
t7
t8
t11
t12
t13
t14
t15
t16

FIG. 4

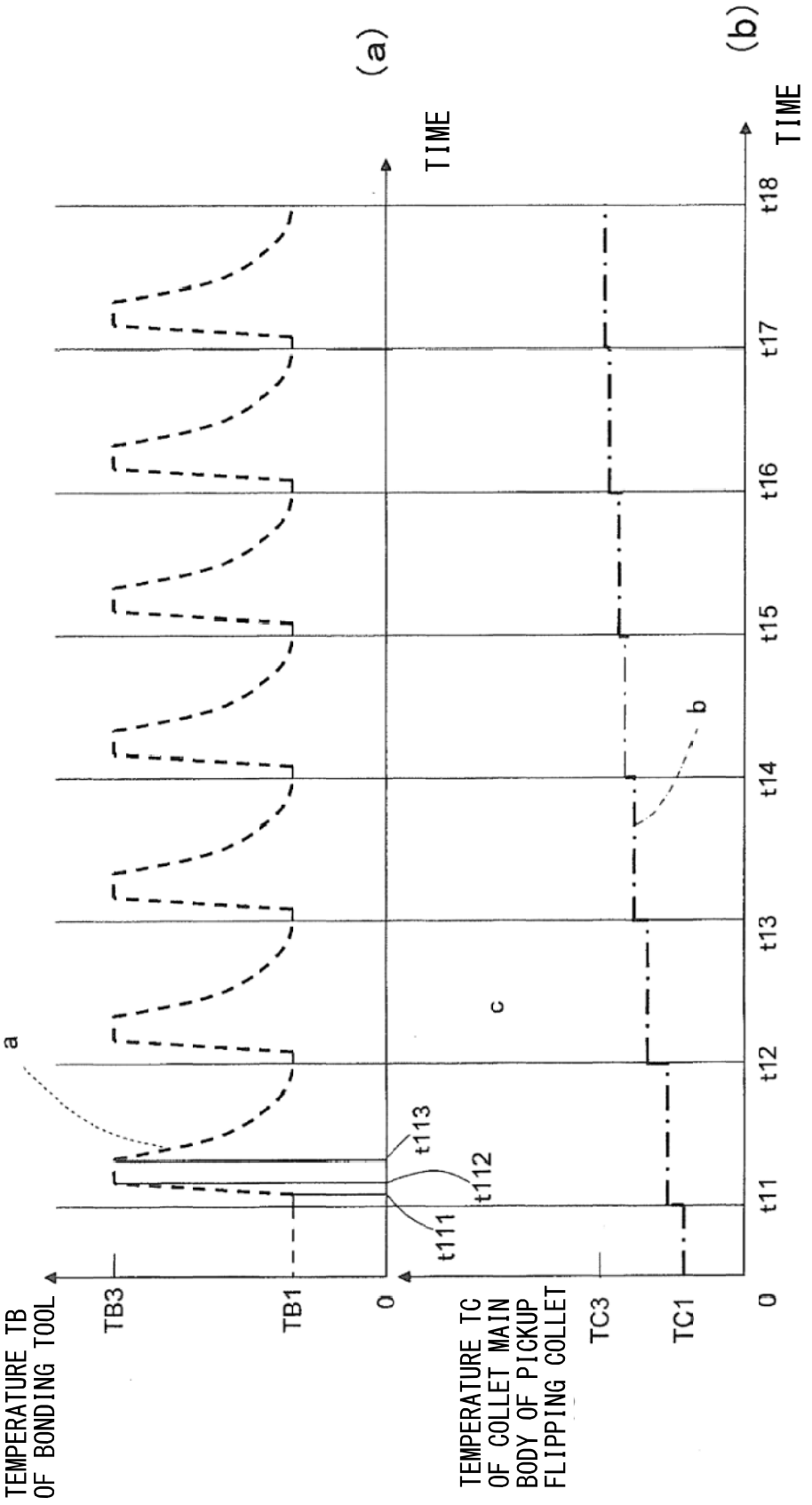

TEMPERATURE TB
OF BONDING TOOL
TB3
TB1
0
(a)
TIME
a
t113
t112
t111
c
b
TEMPERATURE TC
OF COLLET MAIN
BODY OF PICKUP
FLIPPING COLLET
TC3
TC1
0
(b)
TIME
t11
t12
t13
t14
t15
t16
t17
t18

FIG. 5

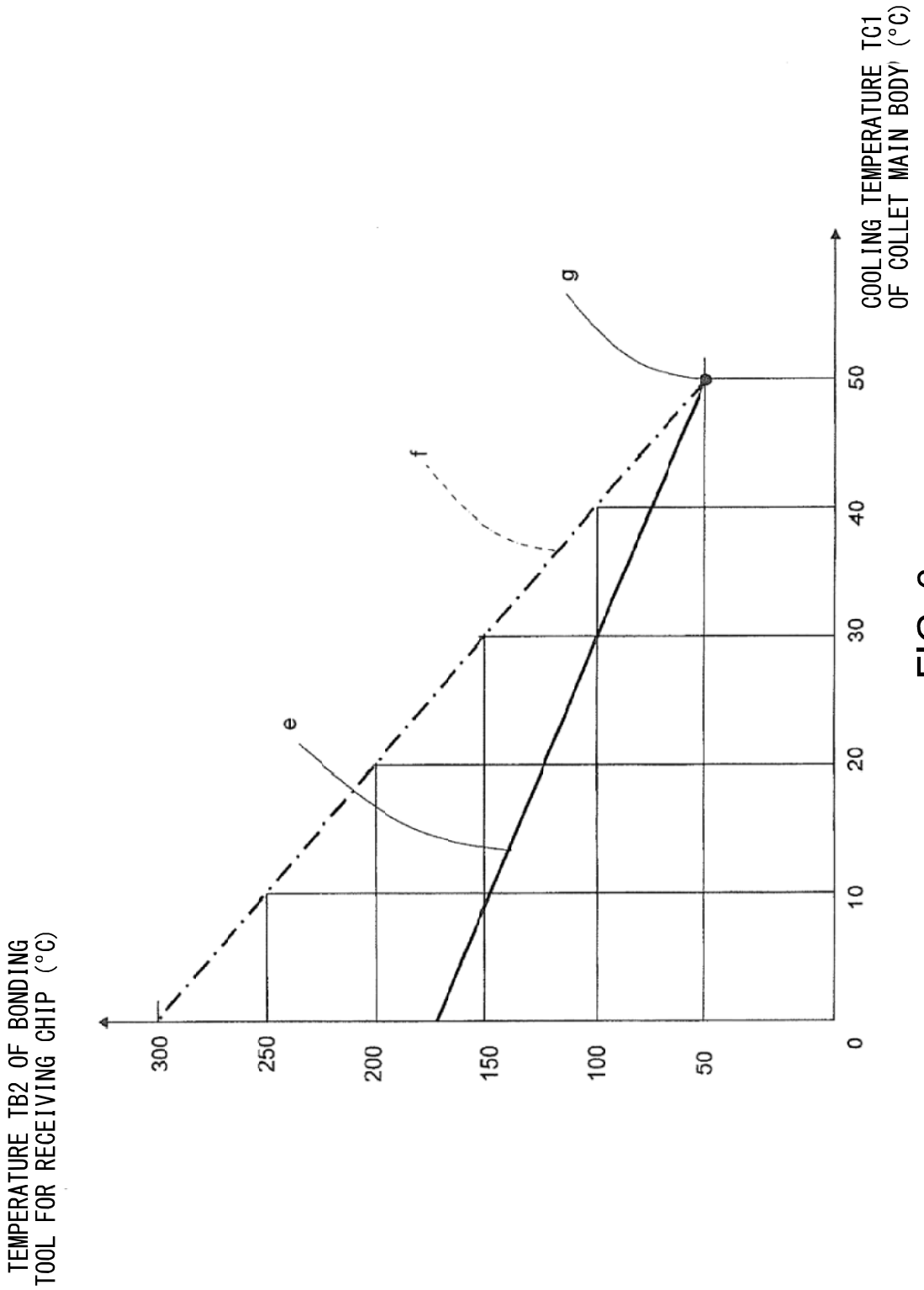
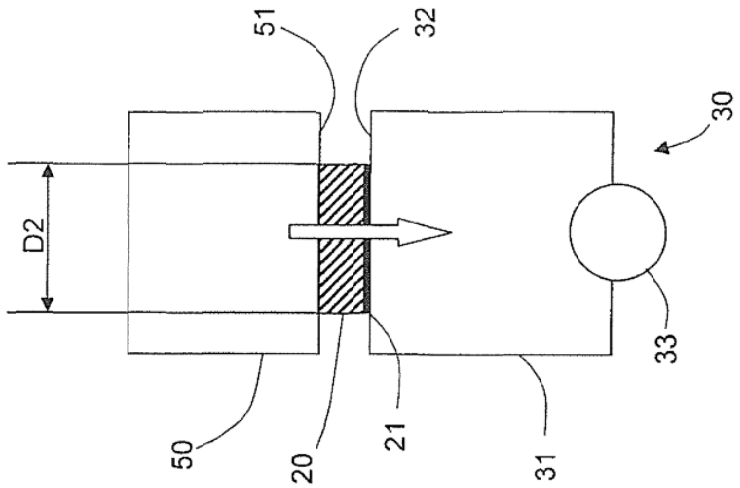
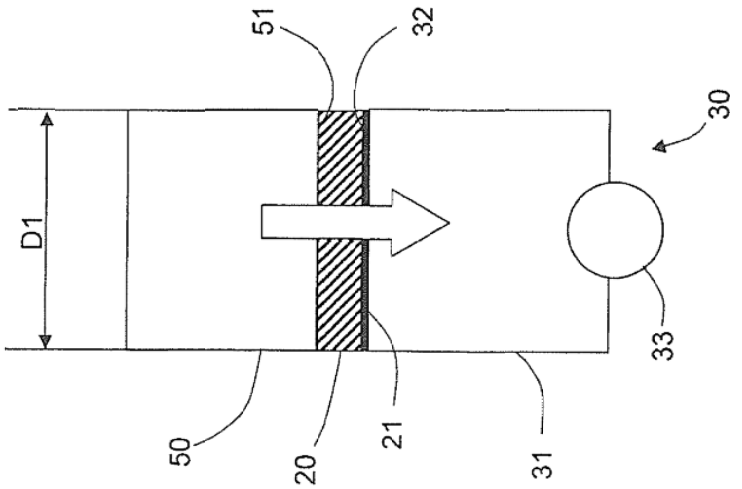

TEMPERATURE TB2 OF BONDING TOOL FOR RECEIVING CHIP (°C)
300
250
200
150
100
50
0
10
20
30
40
50
COOLING TEMPERATURE TC1 OF COLLET MAIN BODY (°C)
e
f
g

FIG. 6



(b)



(a)

FIG. 7

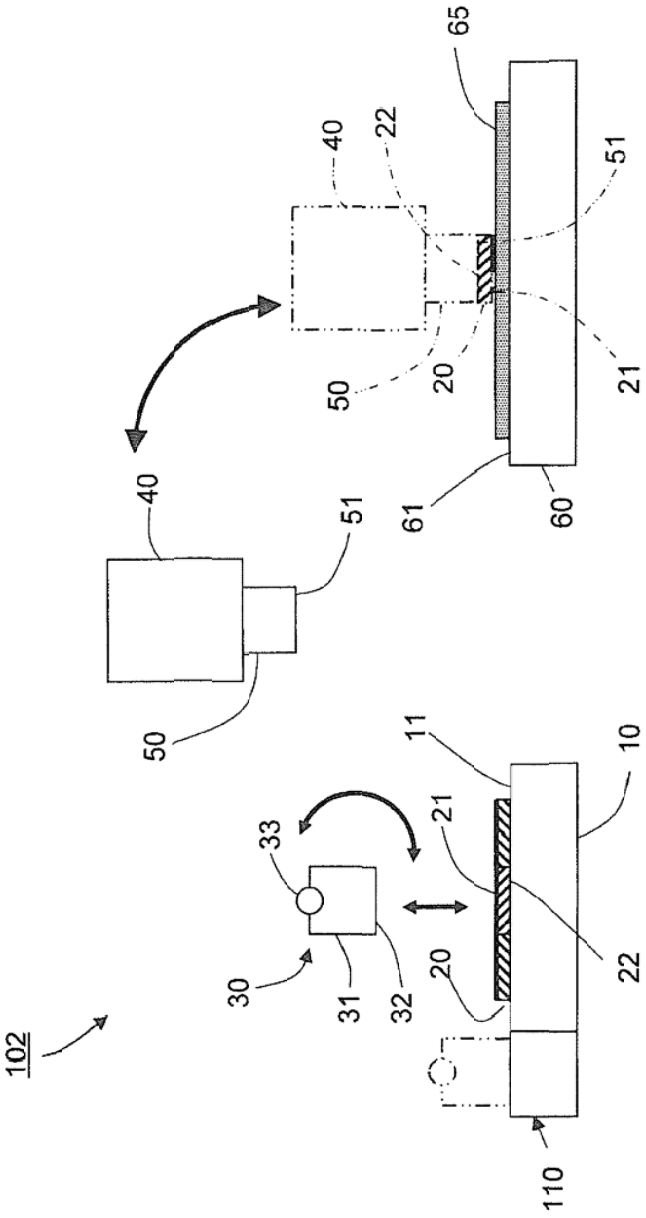


FIG. 8

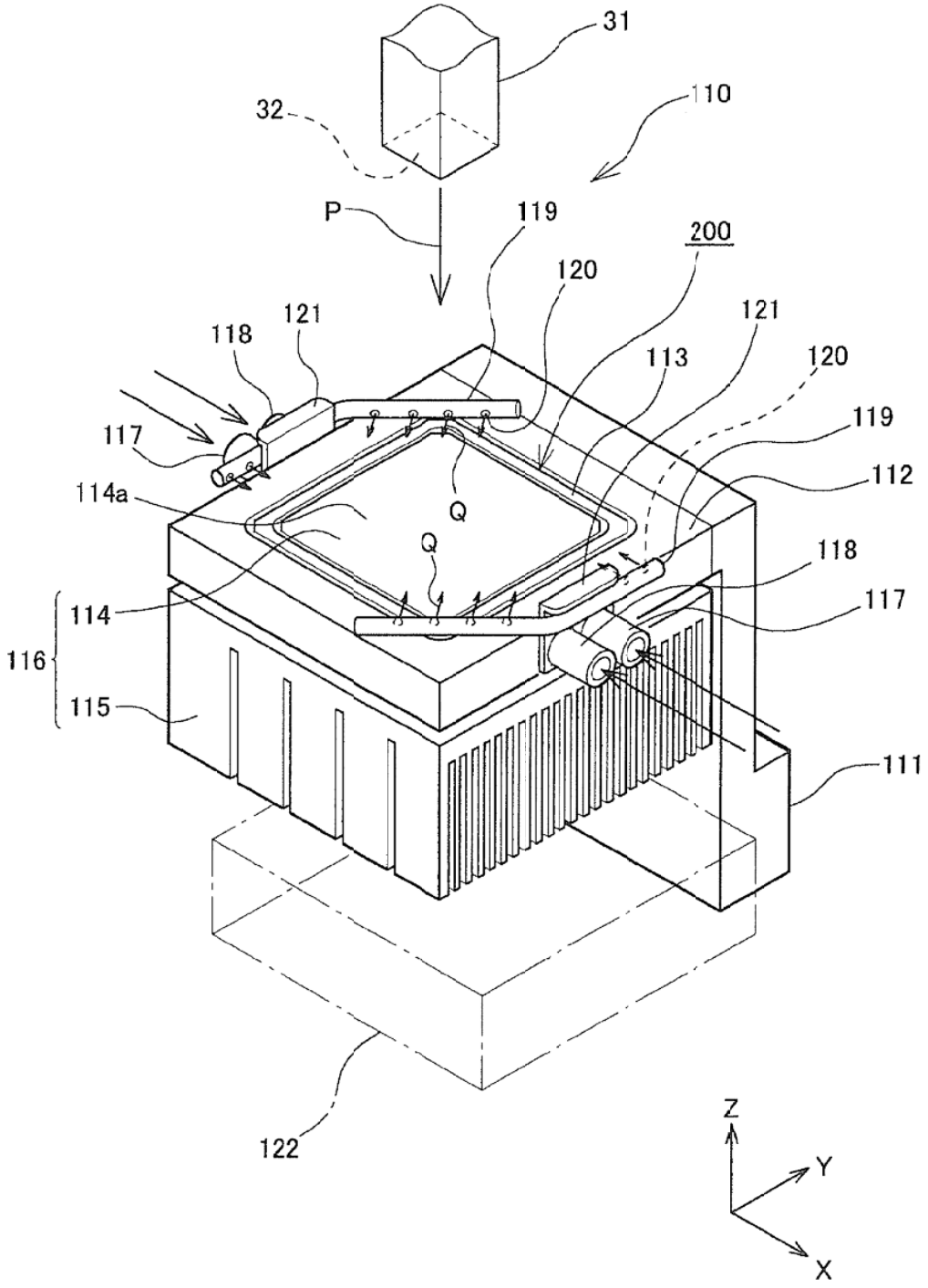

31
32
110
P
119
200
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121
118
121
113
120
117
119
112
114a
Q
Q
118
114
117
116
115
111
122
Z
Y
X

FIG. 9

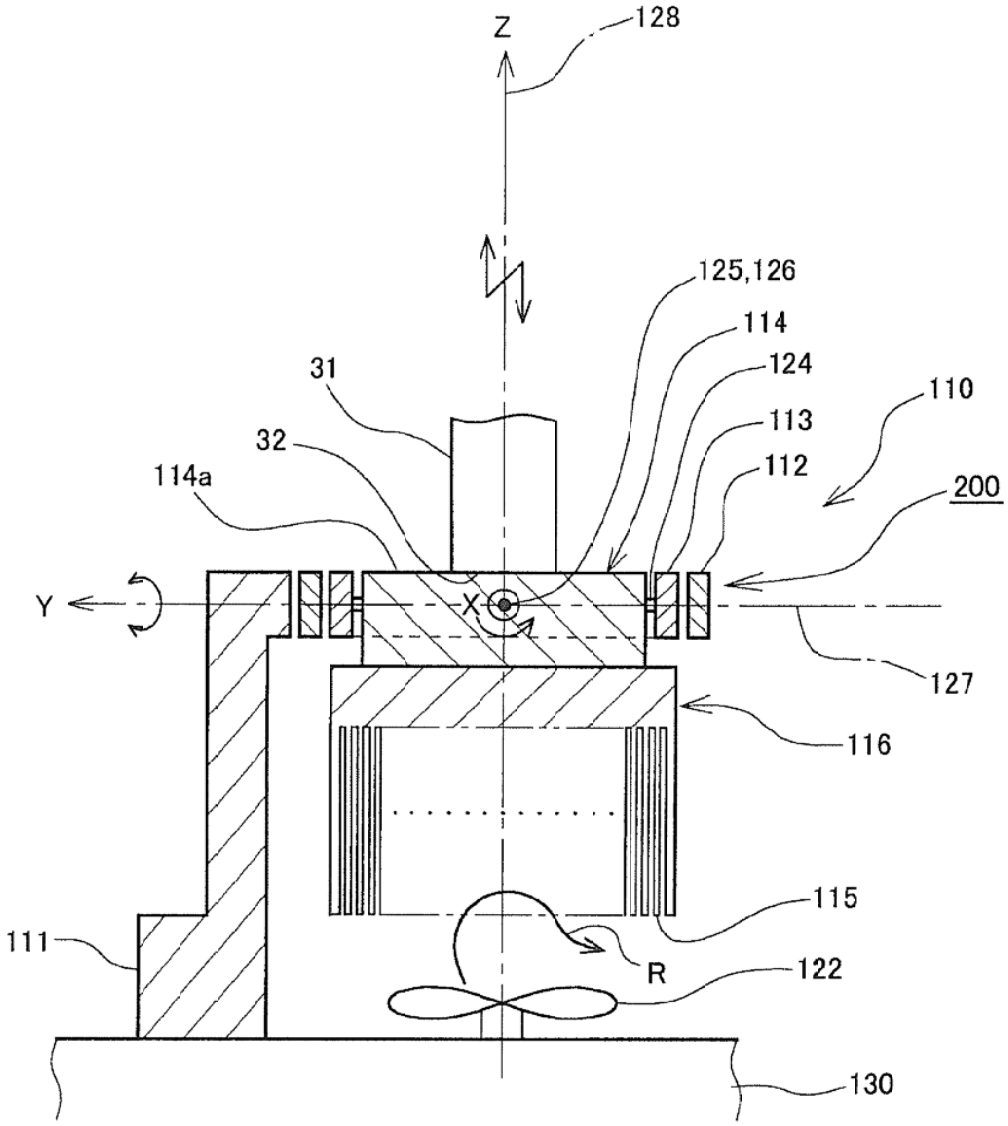

Z
128
125,126
114
124
110
31
113
32
112
114a
200
Y
X
127
116
115
111
R
122
130

FIG. 10

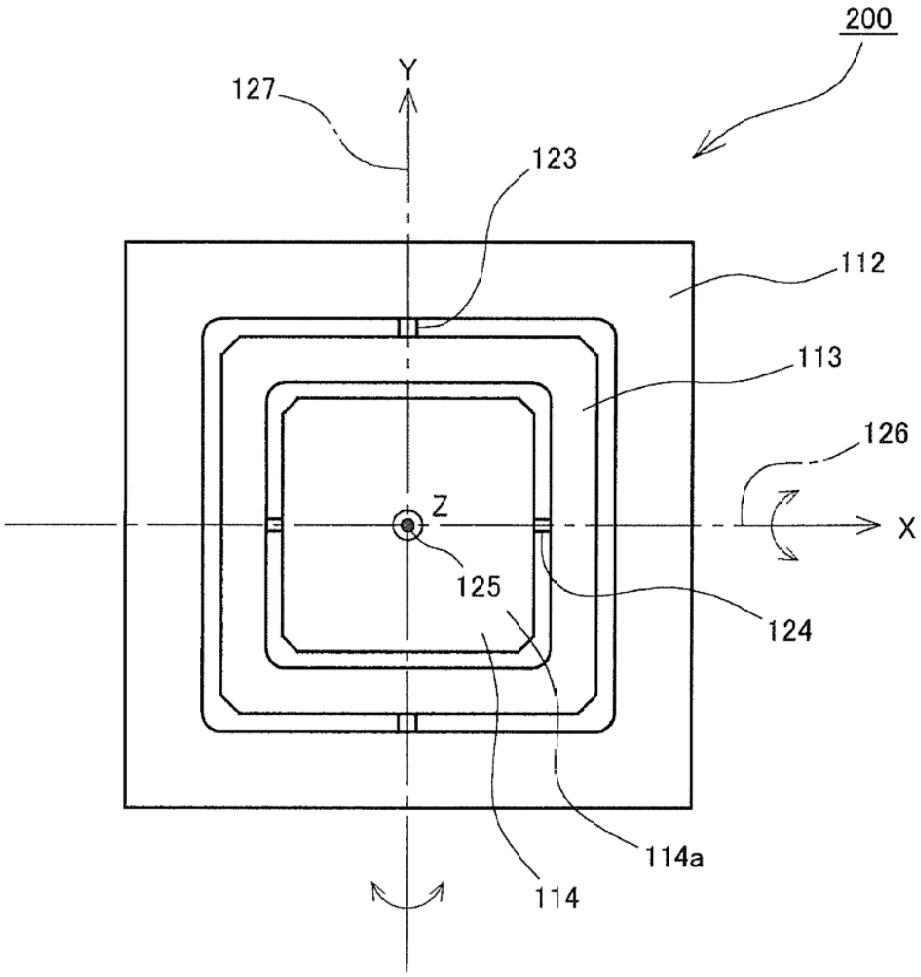


FIG. 11

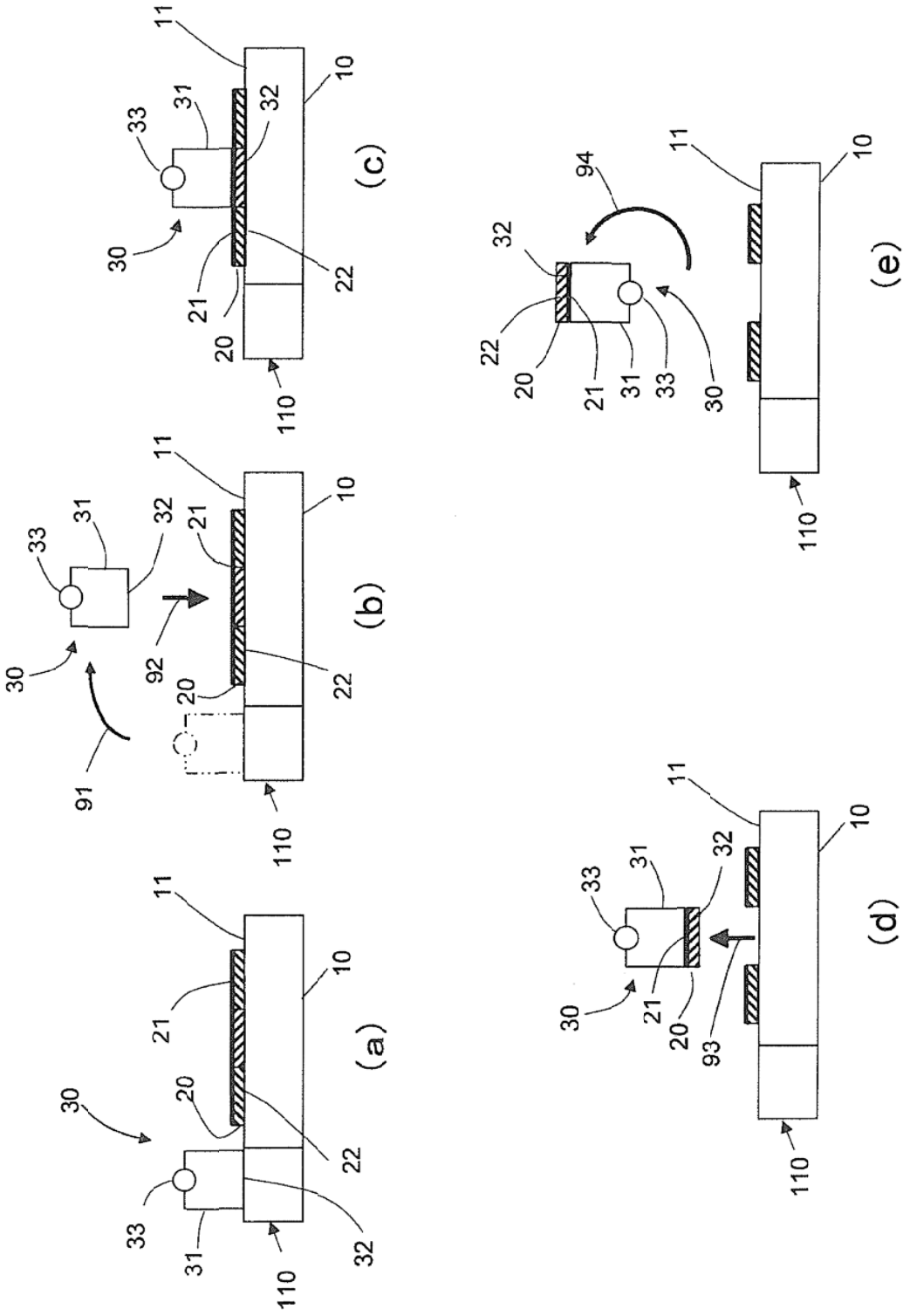


FIG. 12

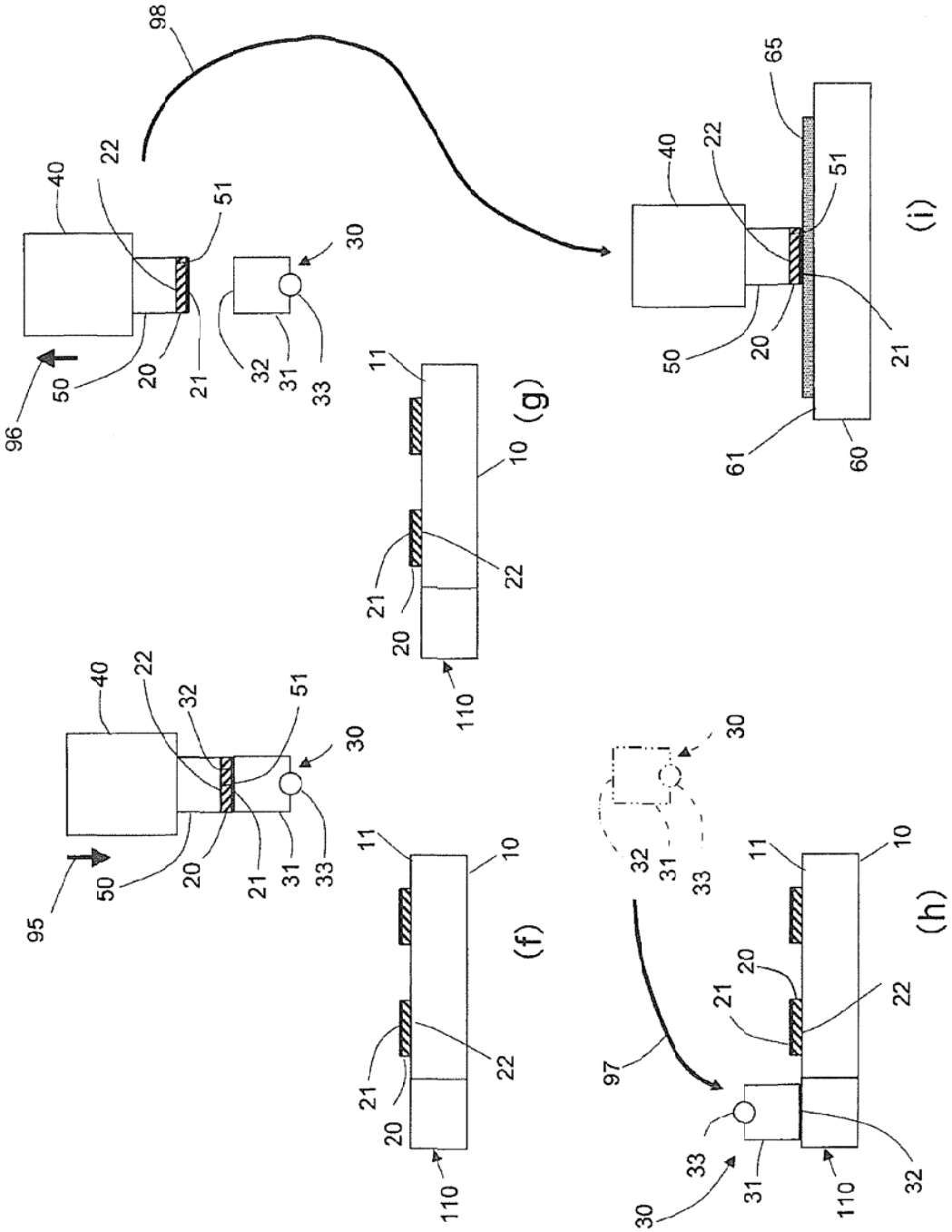

98
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(i)
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32
51
30
95
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31
33
(f)
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22
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33
30
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(h)
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22
33
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110
32

FIG. 13

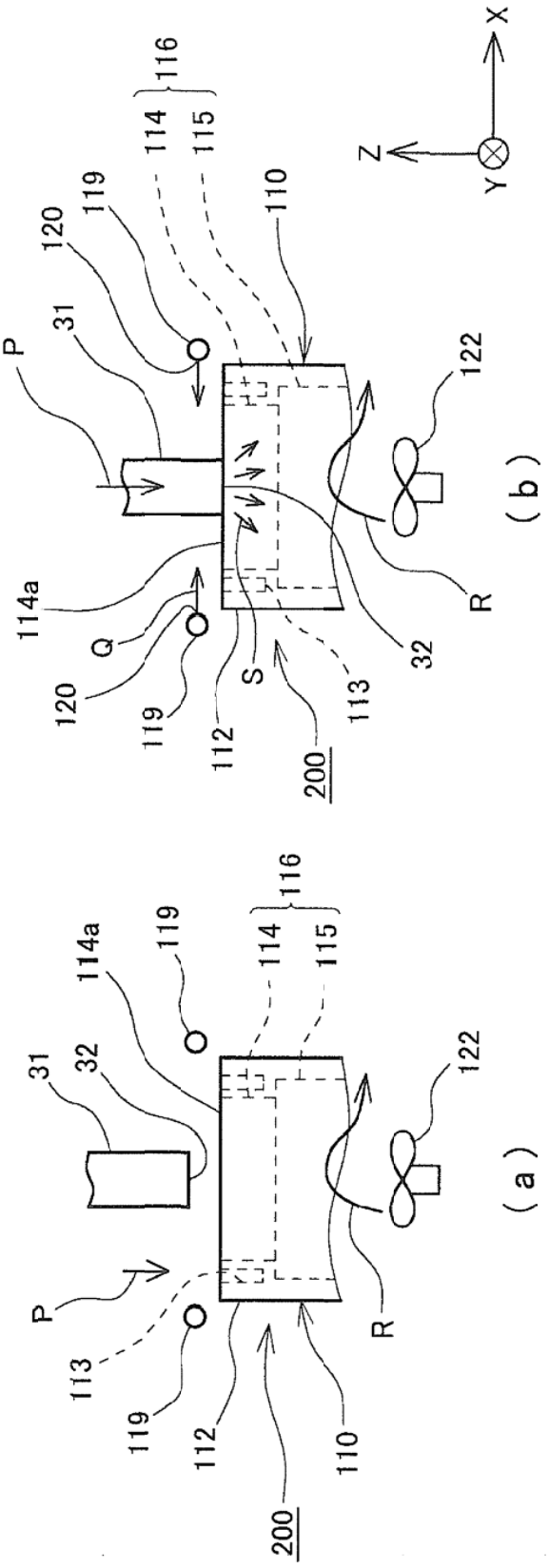


FIG. 14

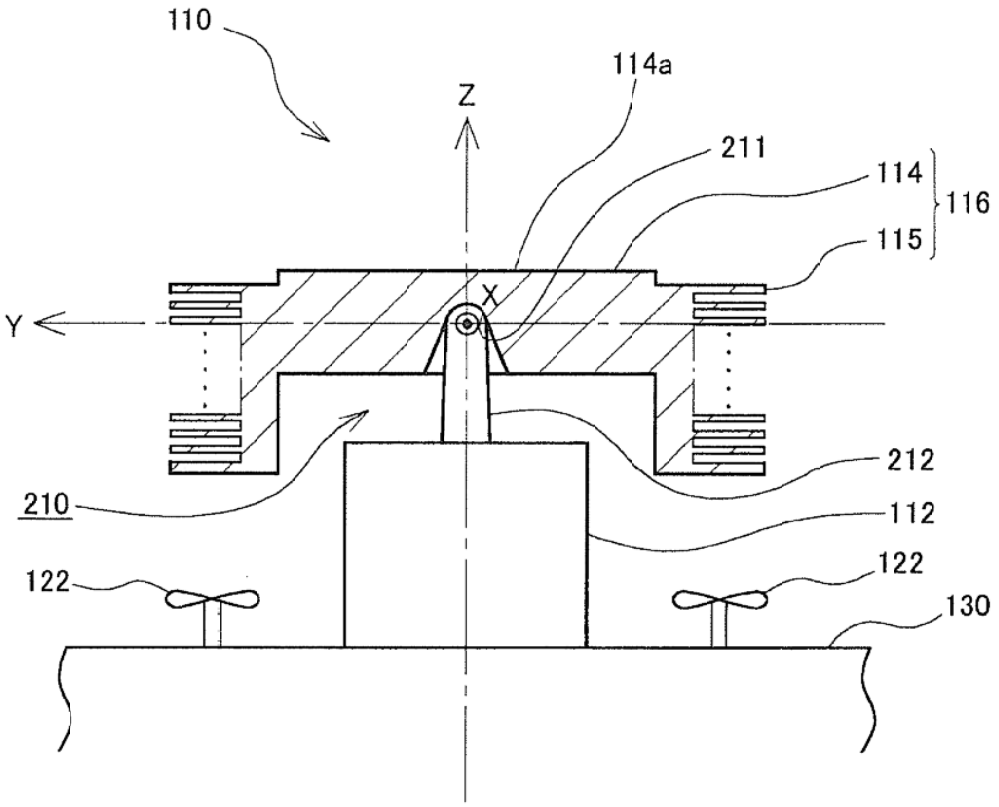


FIG. 15

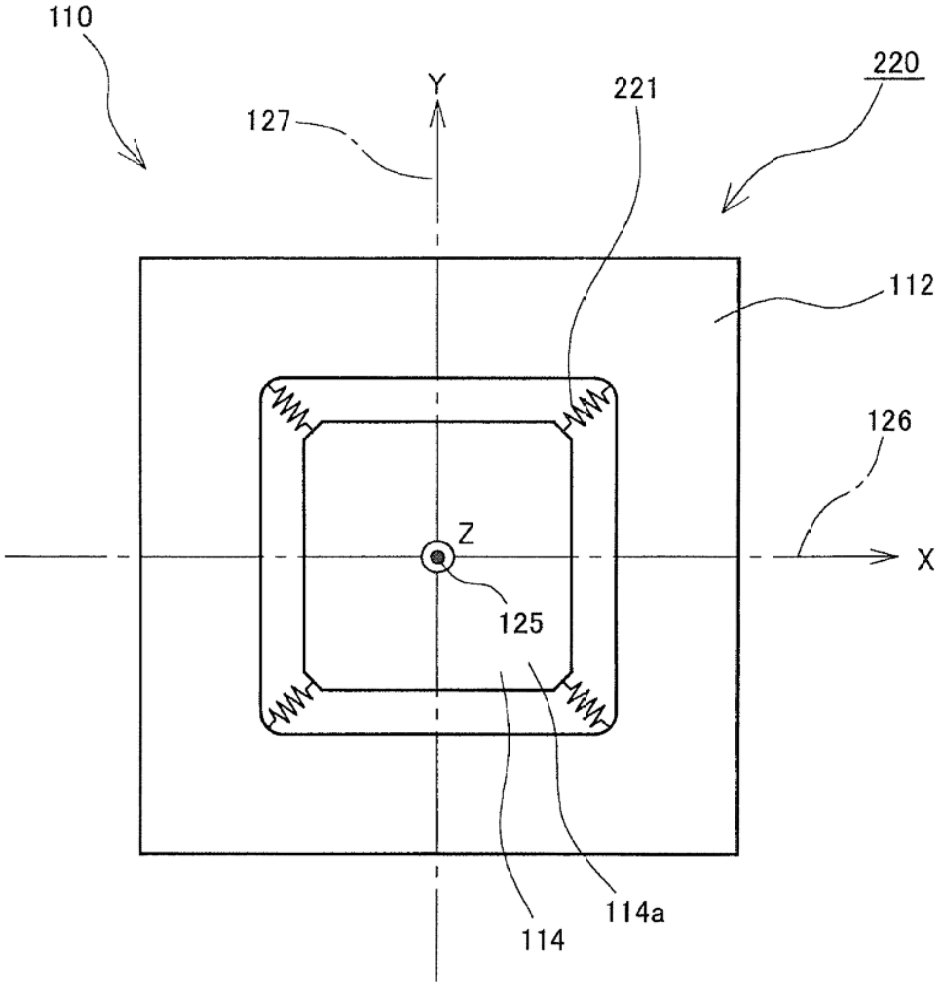


FIG. 16

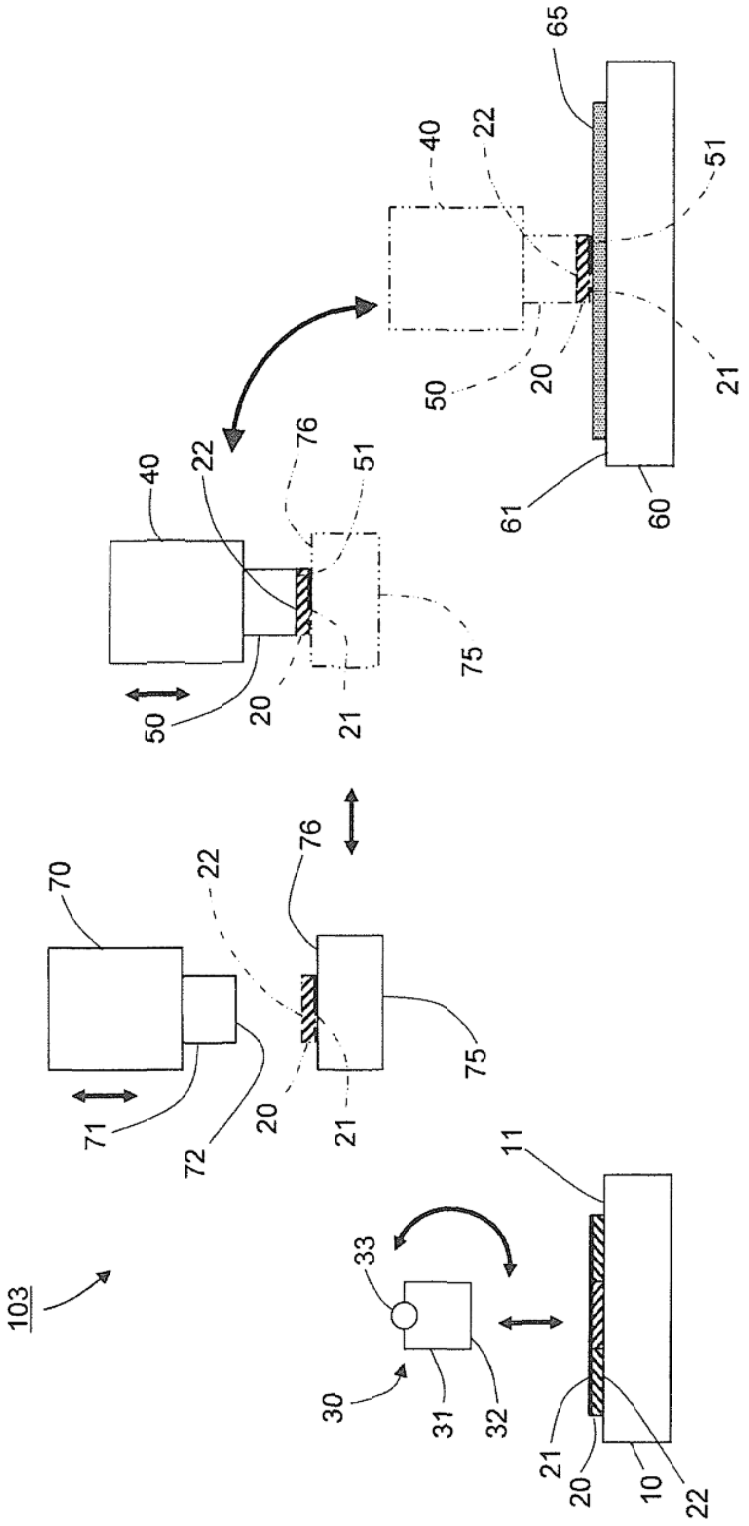

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FIG. 17

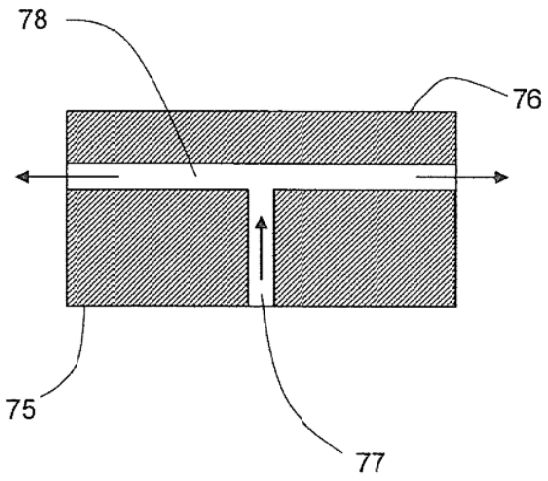


FIG. 18

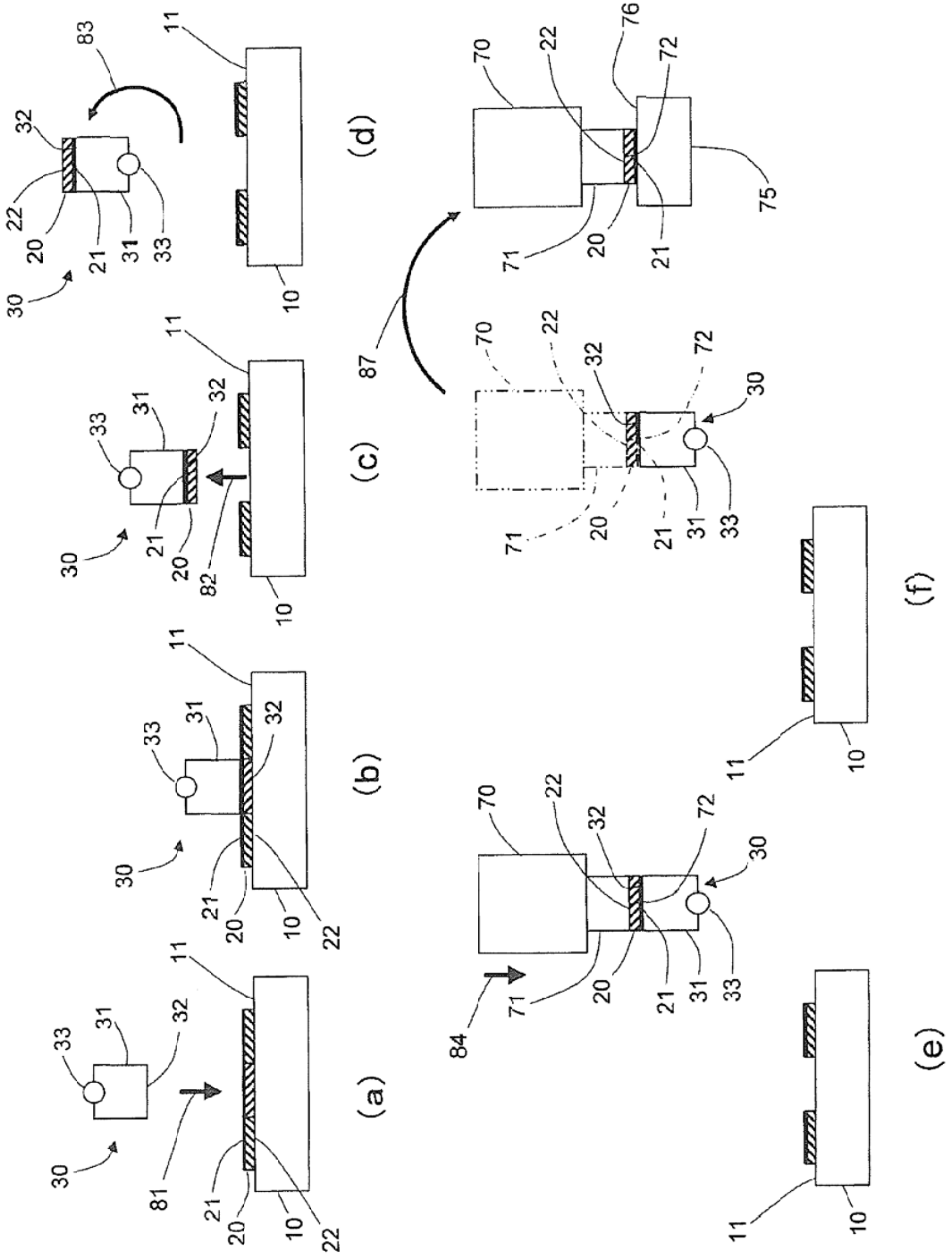


FIG. 19

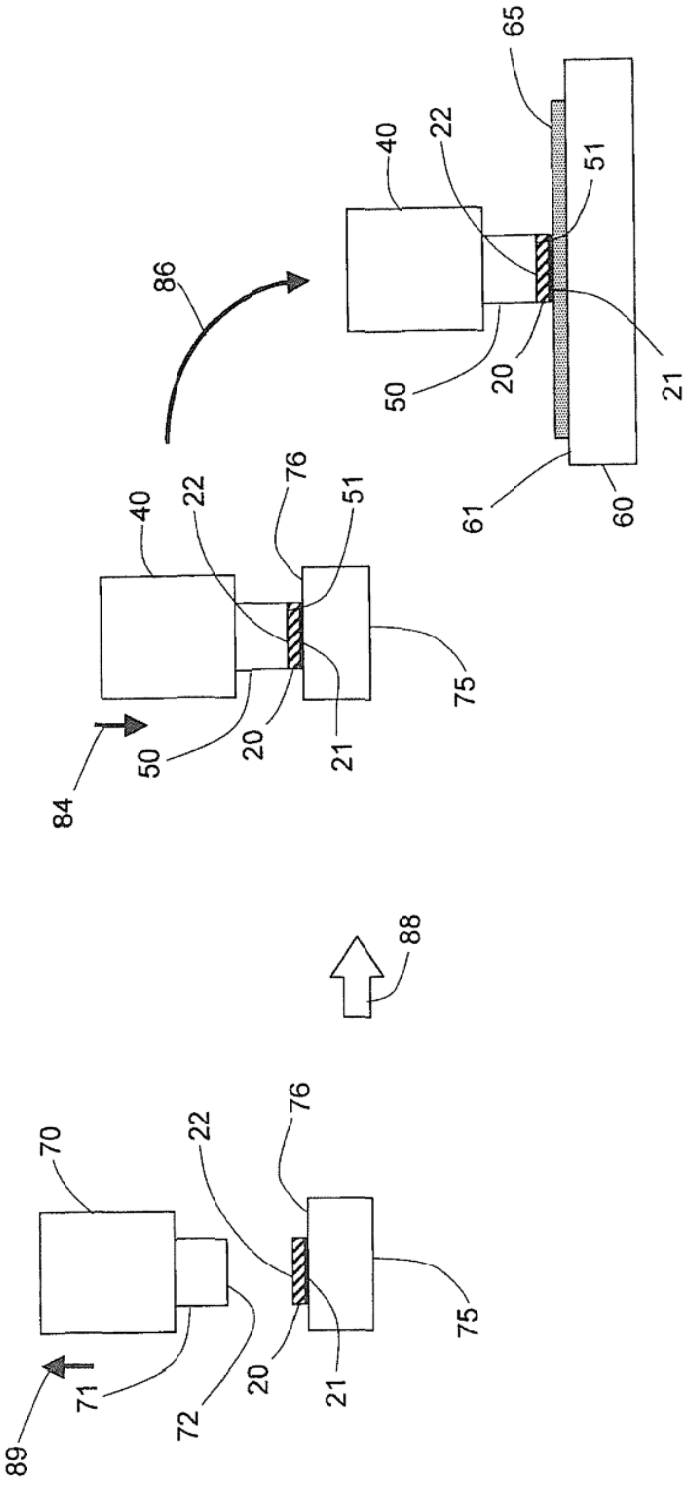

89
71
72
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(g)
84
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65
(h)

FIG. 20

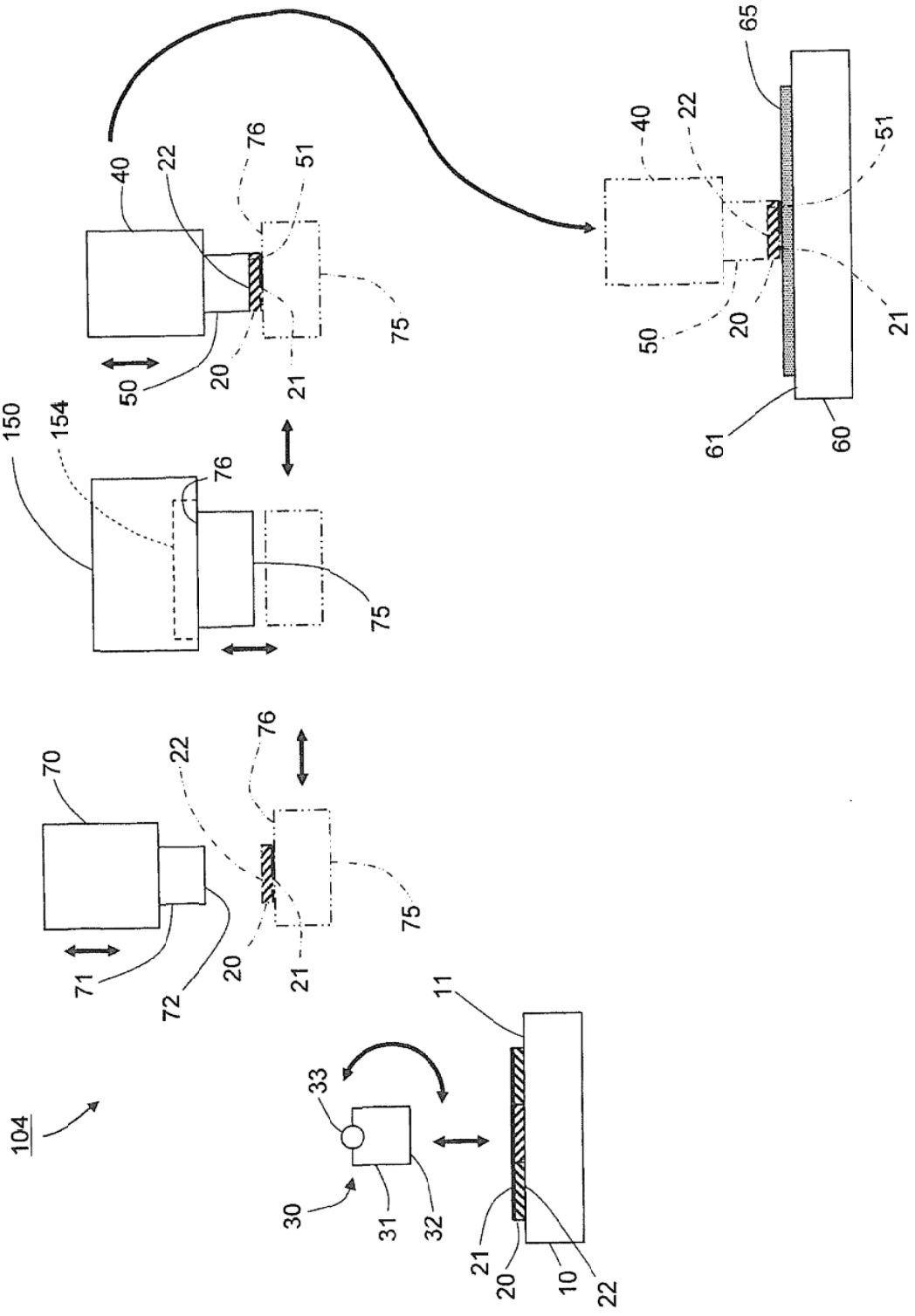

104
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FIG. 21