FIG. 1

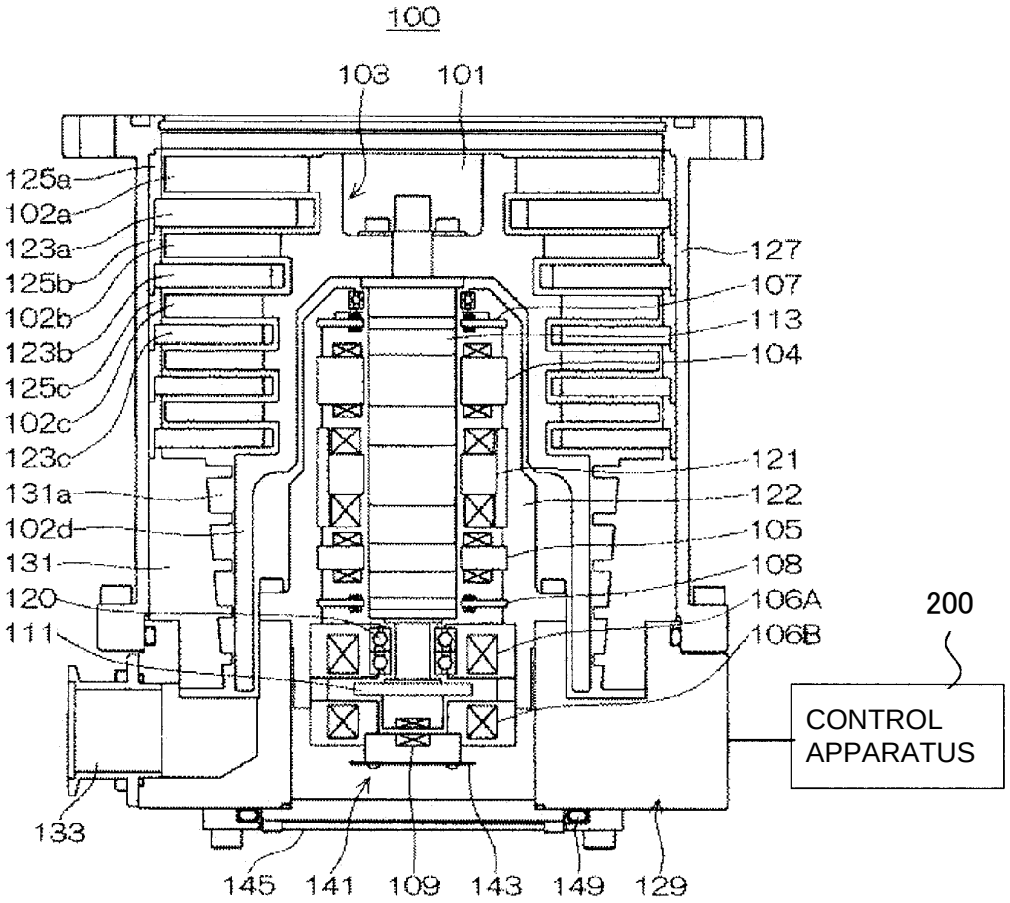

100
103
101
125a
102a
123a
125b
102b
123b
125c
102c
123c
131a
102d
131
120
111
133
145
141
109
143
149
129
127
107
113
104
121
122
105
108
106A
106B
200
CONTROL APPARATUS

FIG. 2

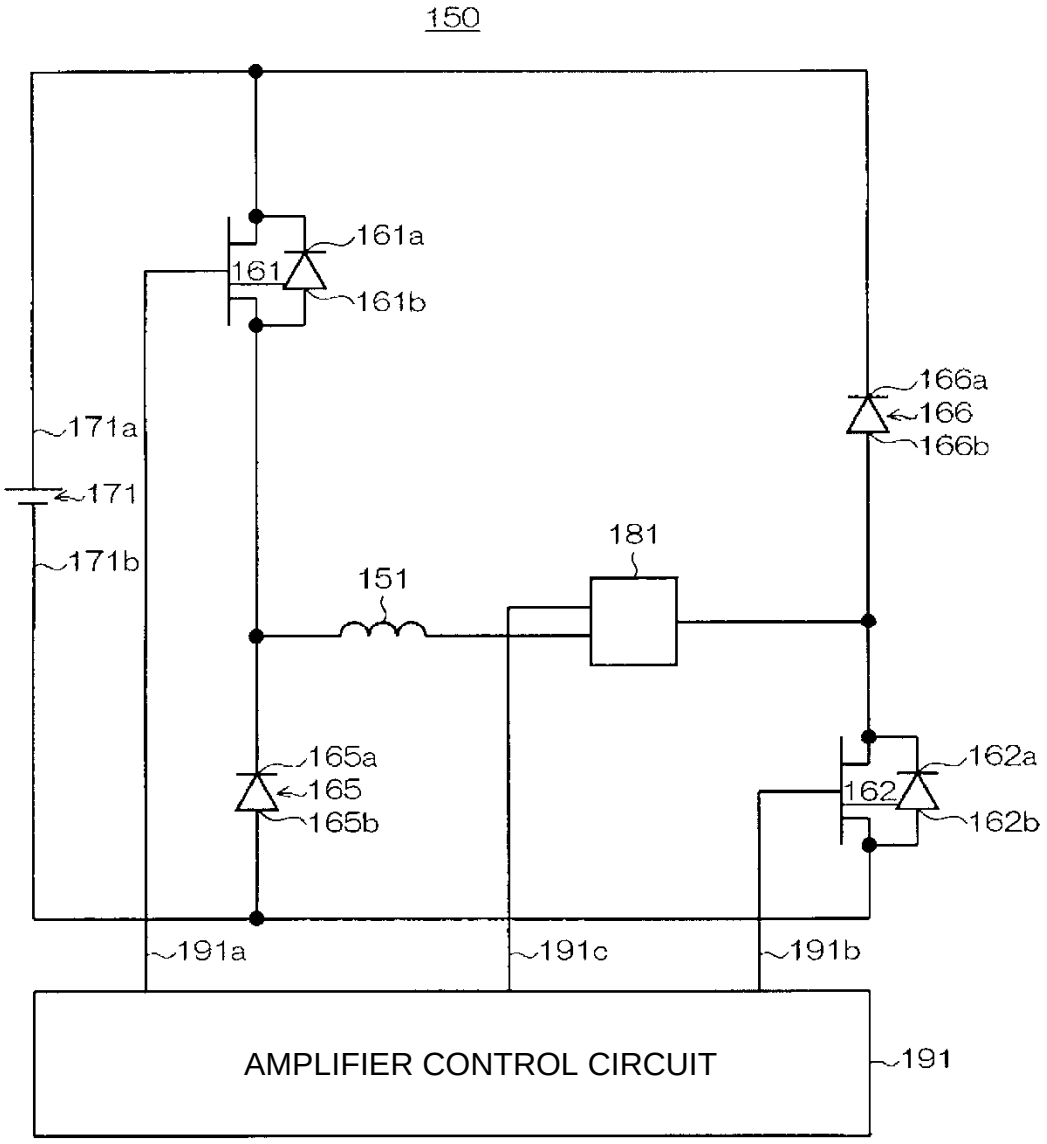

150
161a
161
161b
166a
166
166b
171a
171
171b
181
151
165a
165
165b
162a
162
162b
191a
191c
191b
AMPLIFIER CONTROL CIRCUIT
191

FIG. 3

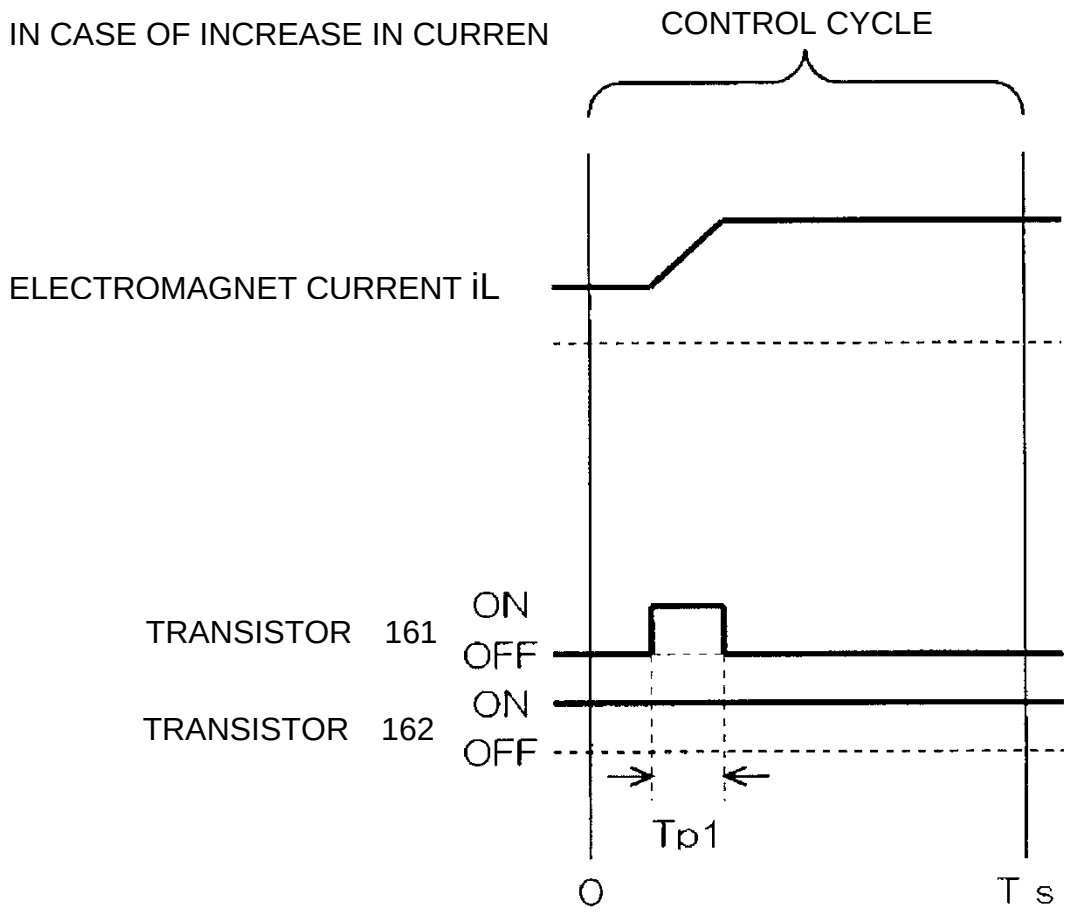

IN CASE OF INCREASE IN CURREN
CONTROL CYCLE
ELECTROMAGNET CURRENT iL
TRANSISTOR 161
ON
OFF
TRANSISTOR 162
ON
OFF
Tp1
O
T s

FIG. 4

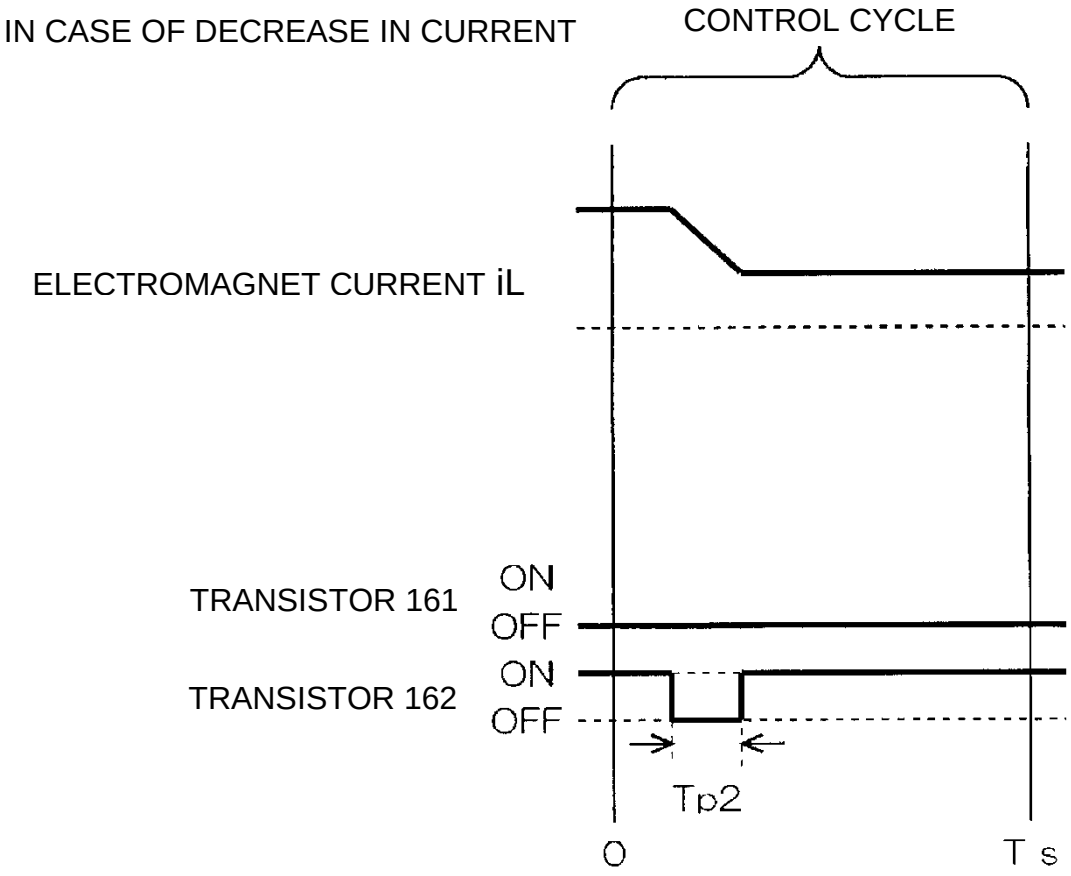

IN CASE OF DECREASE IN CURRENT
CONTROL CYCLE
ELECTROMAGNET CURRENT iL
TRANSISTOR 161
ON
OFF
TRANSISTOR 162
ON
OFF
Tp2
O
T s

FIG. 5

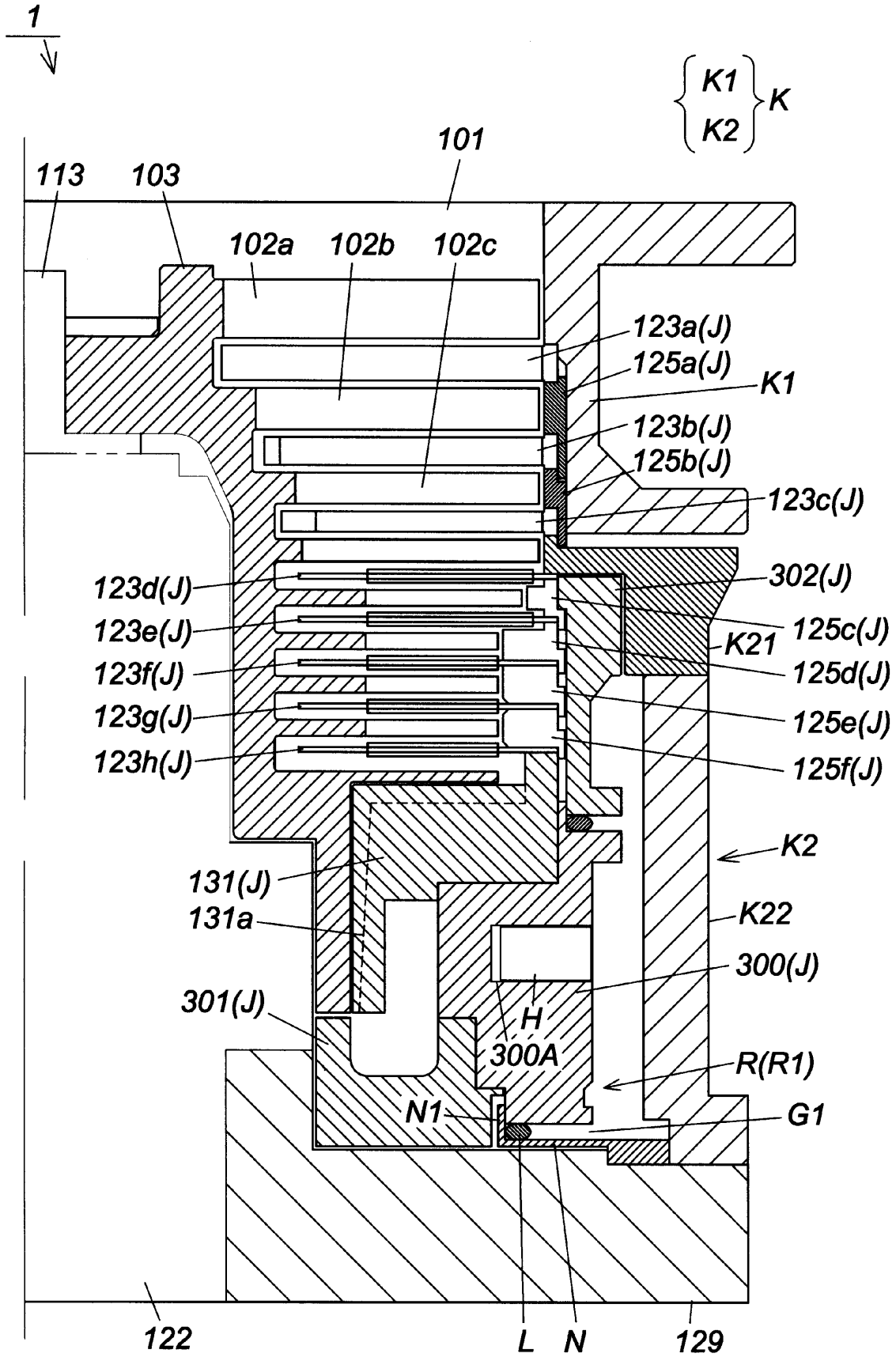

1
K1
K2
K
101
113
103
102a
102b
102c
123a(J)
125a(J)
K1
123b(J)
125b(J)
123c(J)
123d(J)
123e(J)
123f(J)
123g(J)
123h(J)
302(J)
125c(J)
K21
125d(J)
125e(J)
125f(J)
K2
131(J)
131a
K22
300(J)
301(J)
H
300A
R(R1)
N1
G1
122
L
N
129

FIG. 6

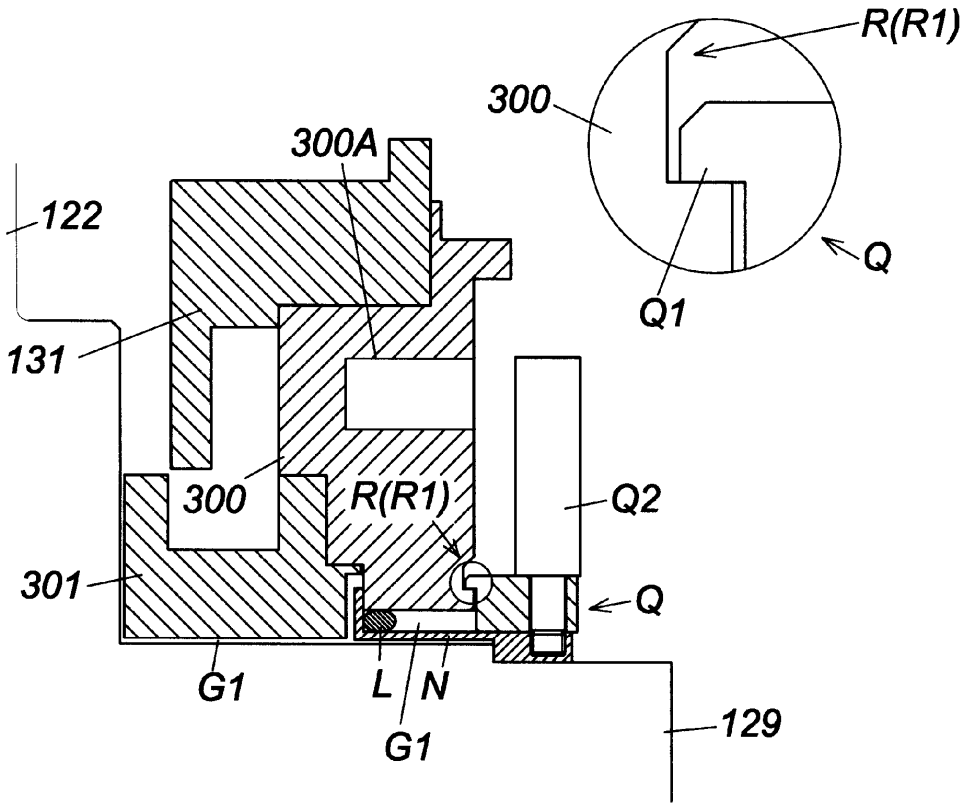


FIG. 7

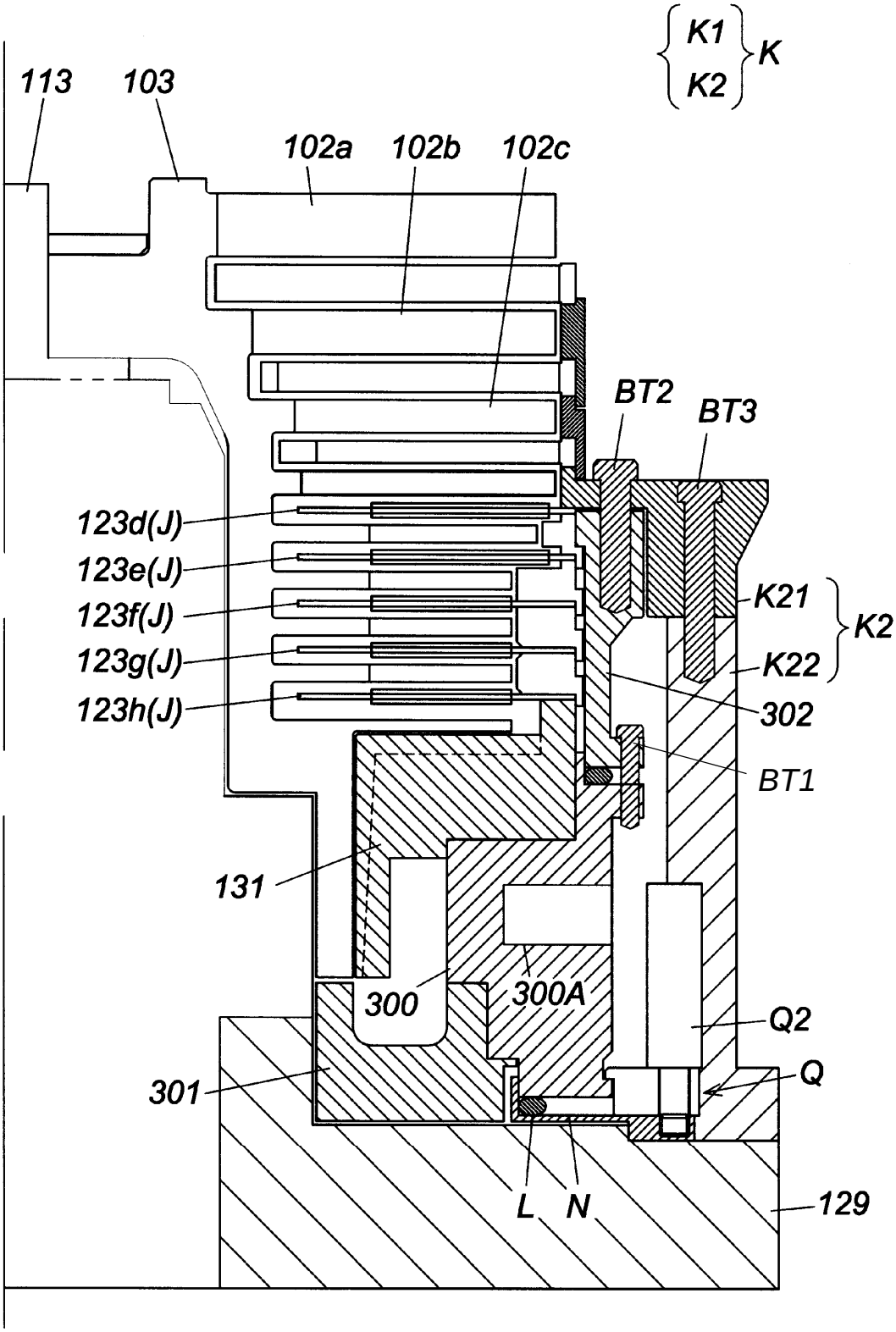

K1
K2
K
113
103
102a
102b
102c
BT2
BT3
123d(J)
123e(J)
123f(J)
123g(J)
123h(J)
K21
K22
K2
302
BT1
131
300
300A
Q2
Q
301
L
N
129

FIG. 8

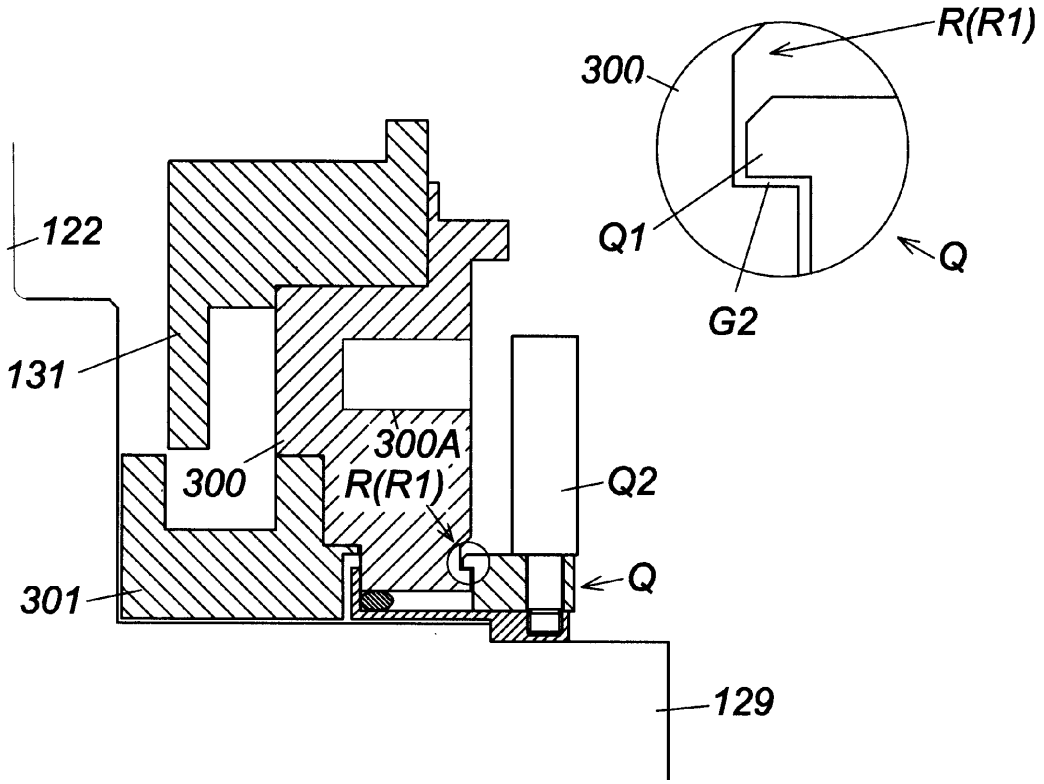


FIG. 9

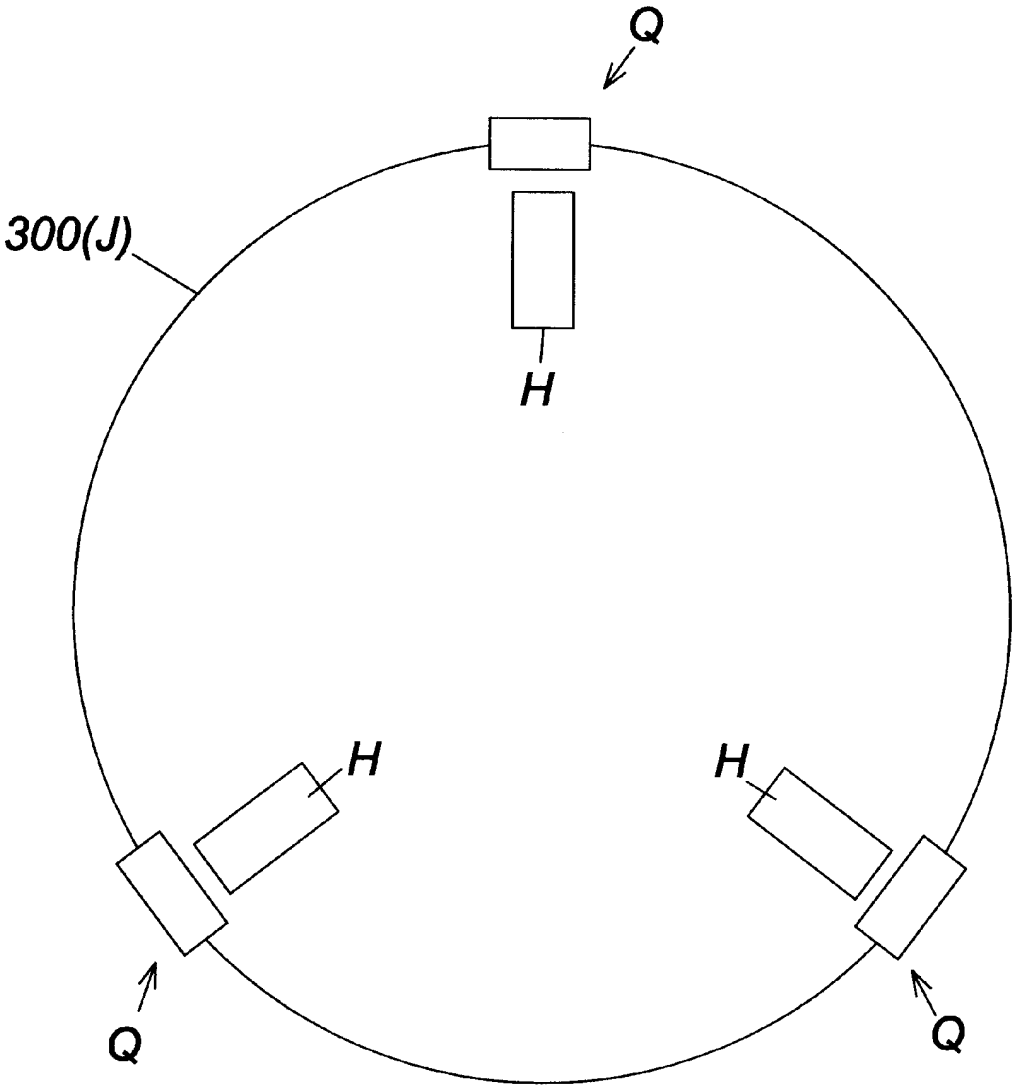


FIG. 10

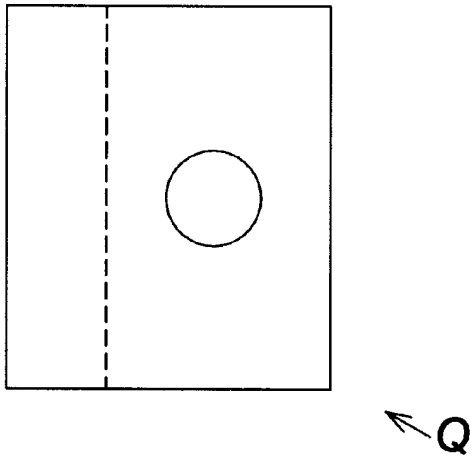


FIG. 11

