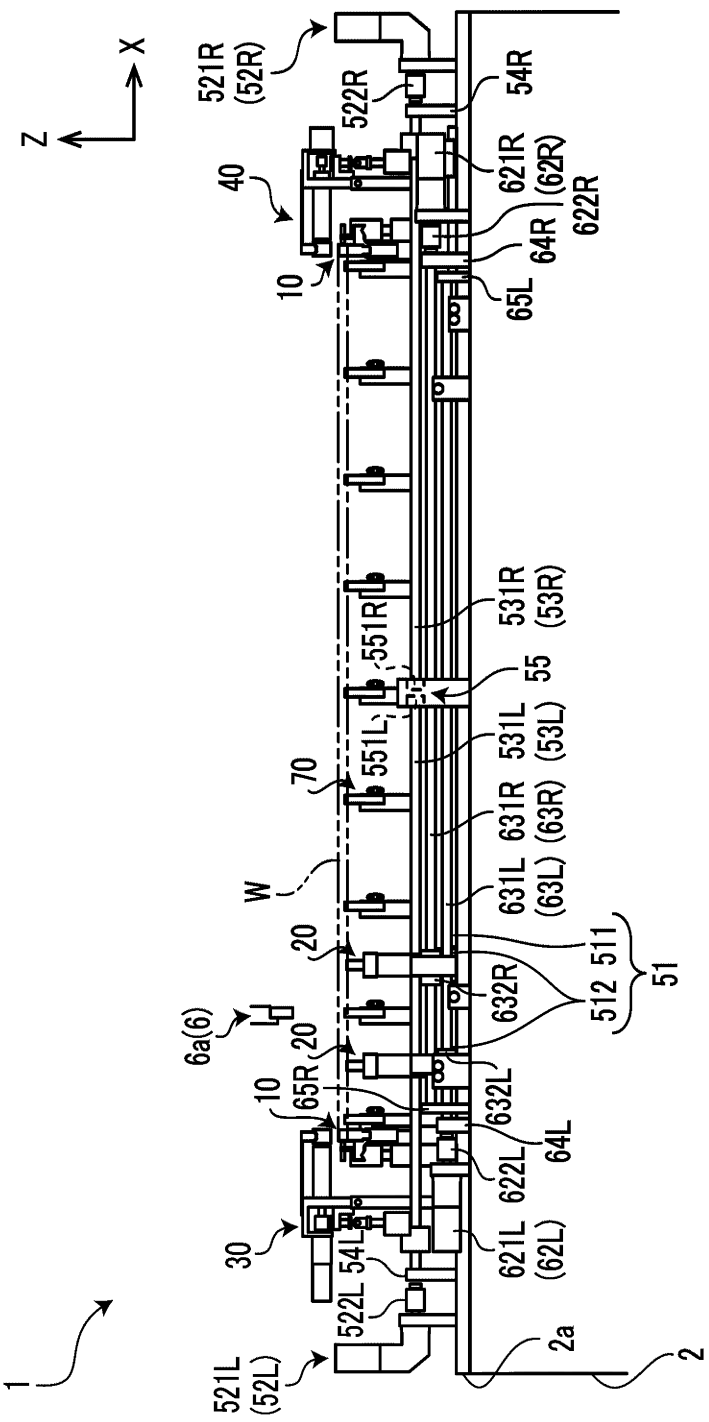

Z
X
1
521L (52L)
521R (52R)
522L
522R
54L
54R
30
40
10
621L (62L)
621R (62R)
622L
622R
64L
64R
65L
65R
631L (63L)
631R (63R)
632L
632R
531L (53L)
531R (53R)
551L
551R
55
70
W
20
6a(6)
511
512
51
2a
2

FIG. 1

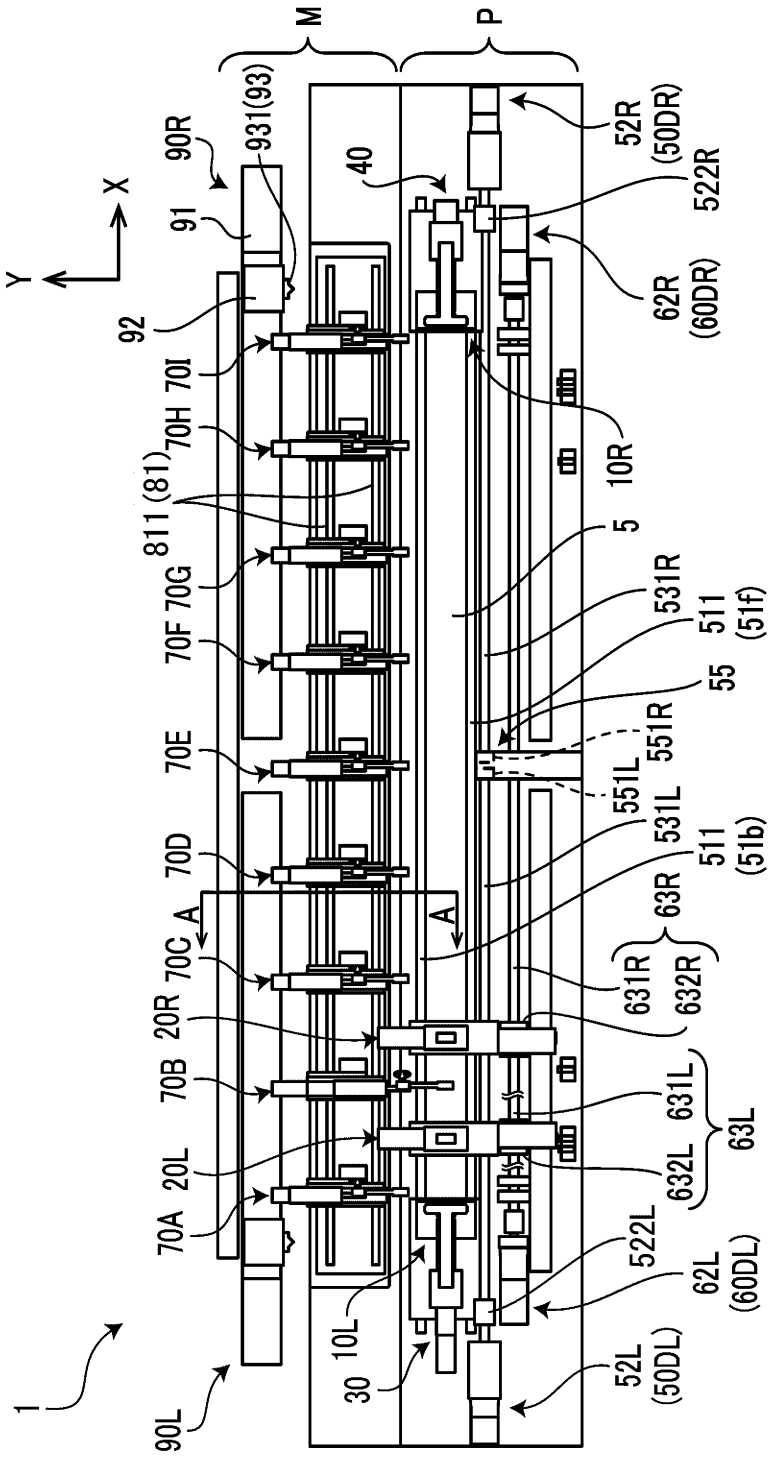

M
P
X
Y
1
90L
90R
91
92
931(93)
40
52R (50DR)
522R
62R (60DR)
10R
5
531R
511 (51f)
55
551R
551L
531L
511 (51b)
63R
631R
632R
631L
632L
63L
522L
62L (60DL)
52L (50DL)
10L
30
70A
20L
70B
20R
70C
70D
70E
70F
70G
811 (81)
70H
70I
A
A

FIG. 2

FIG. 3

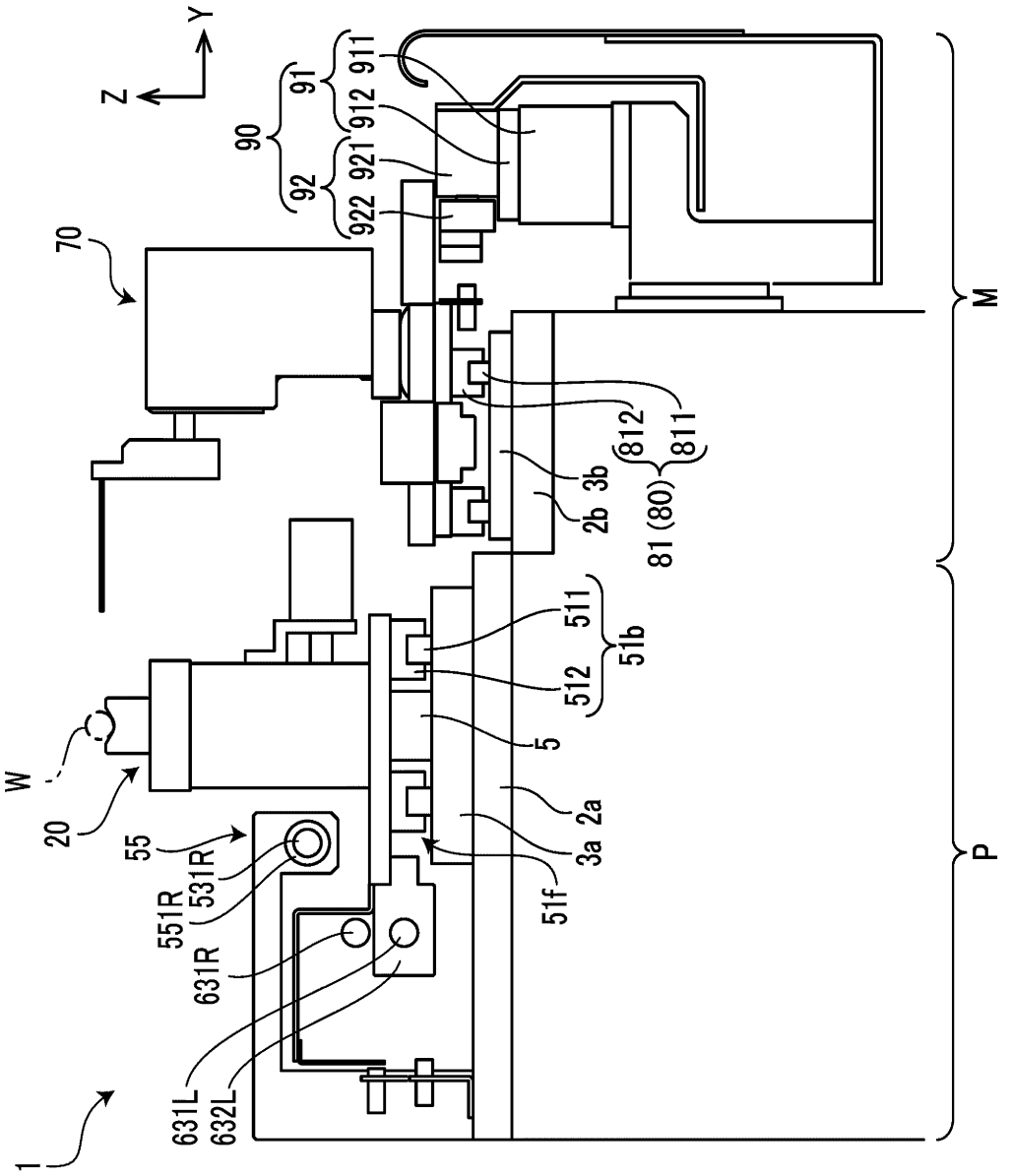
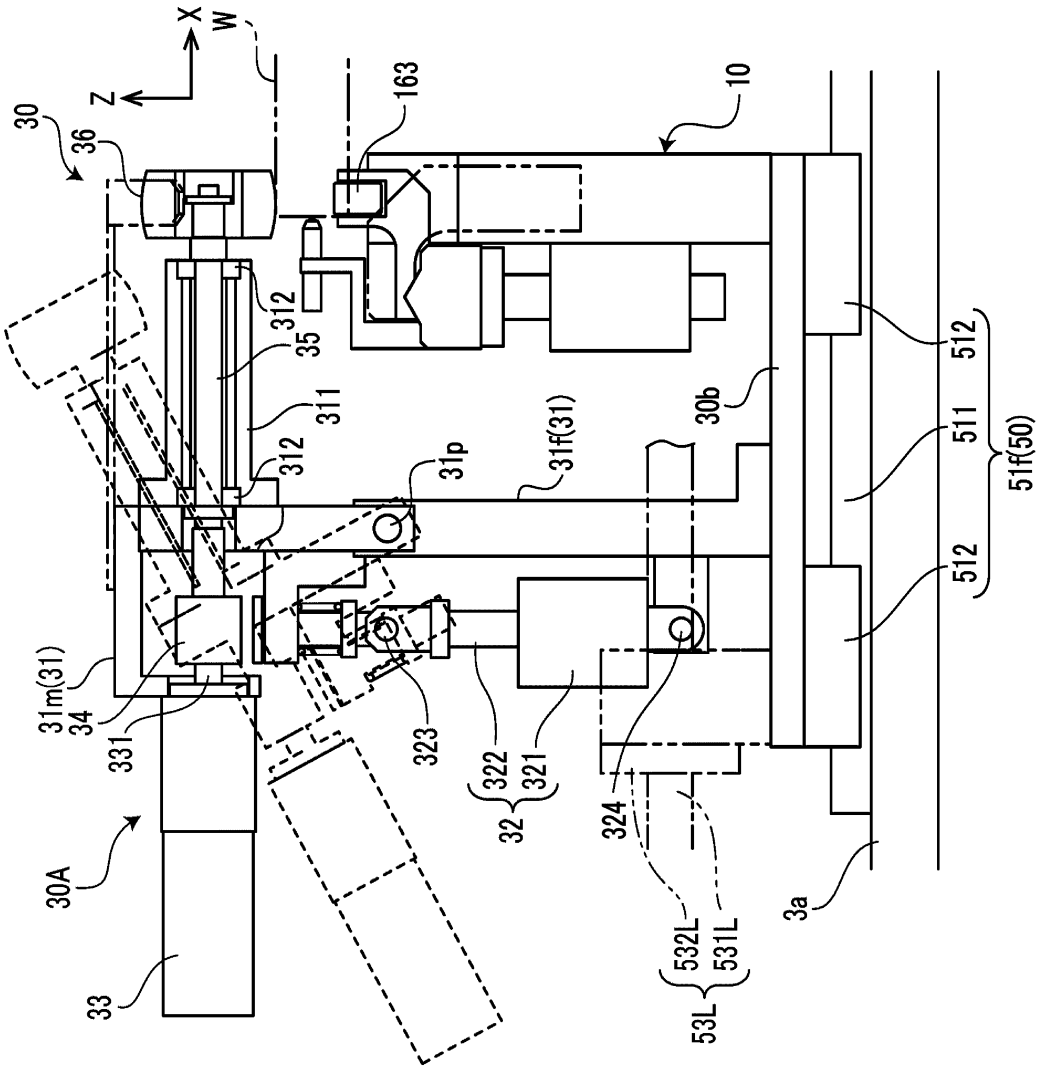

Y
Z
90
91
911
912
92
921
922
70
811
812
81 (80)
3b
2b
511
512
51b
5
2a
3a
51f
W
20
55
551R
531R
631R
631L
632L
1
M
P

FIG. 4


X
W
Z
30
36
163
10
312
35
311
312
31p
31f(31)
30b
512
511
512
51f(50)
31m(31)
34
331
323
322
321
32
324
532L
531L
53L
3a
30A
33

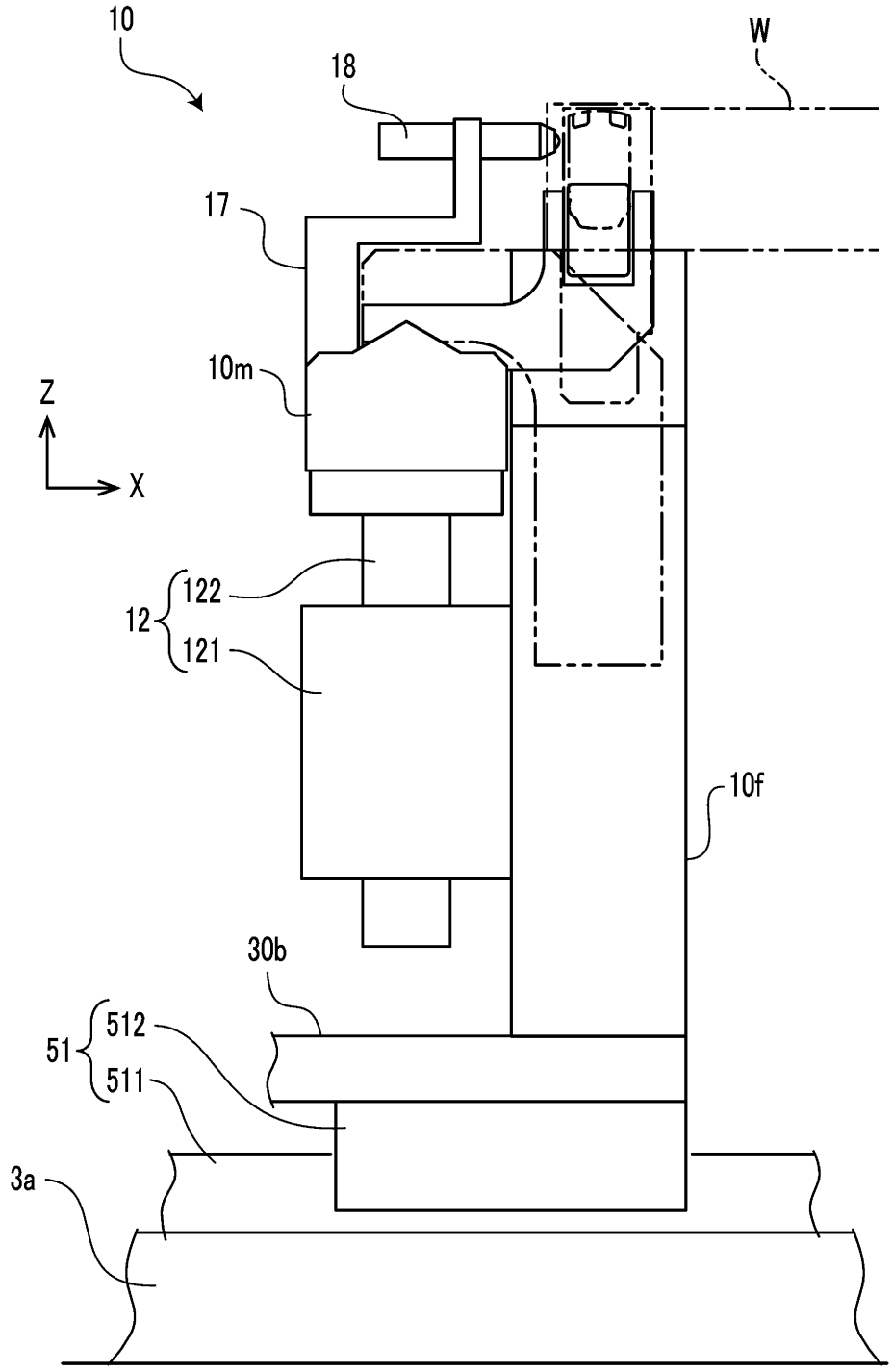


FIG. 5

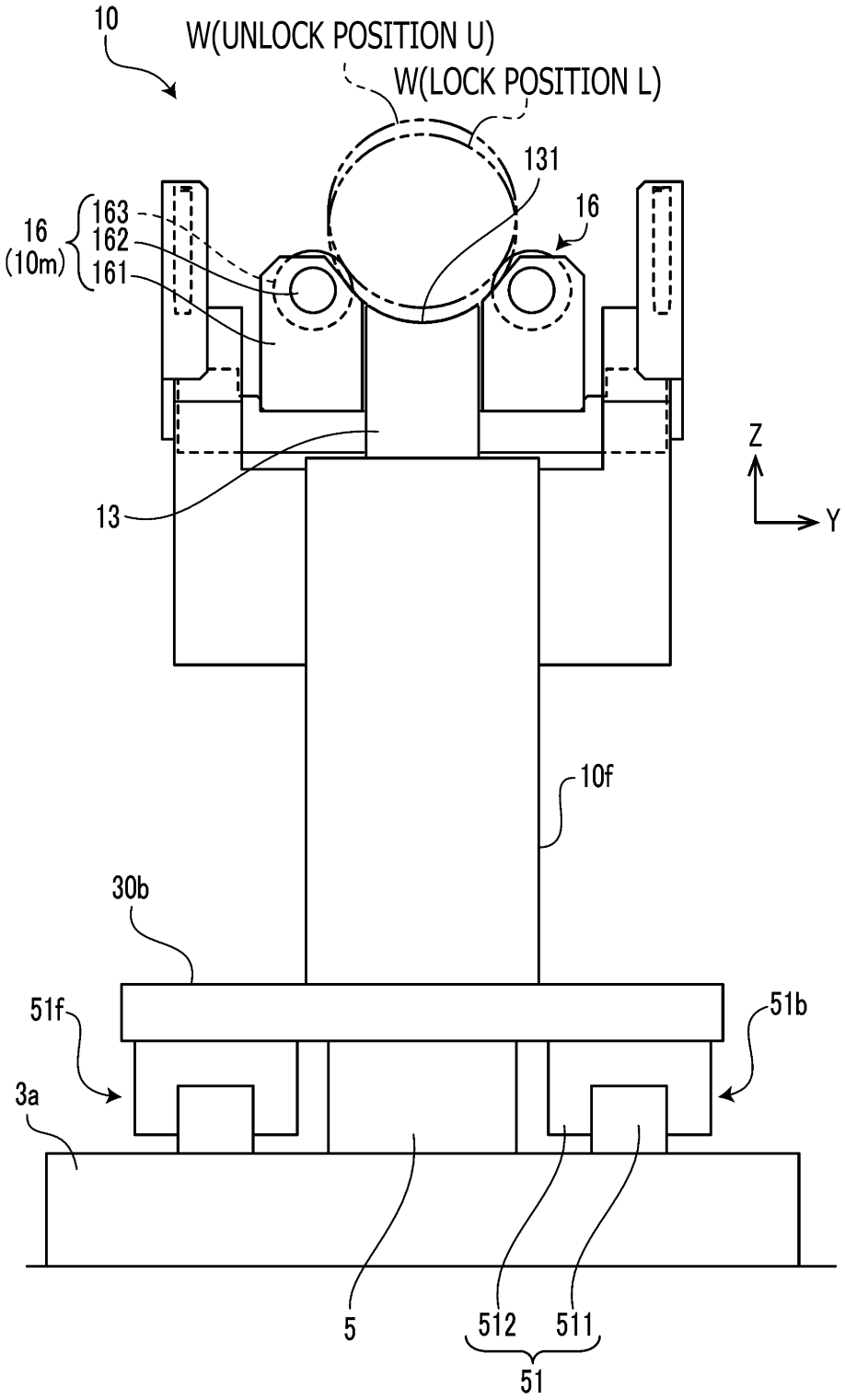

10
W(UNLOCK POSITION U)
W(LOCK POSITION L)
131
16
163
16
162
(10m)
161
13
Z
Y
10f
30b
51f
51b
3a
5
512
511
51

FIG. 6

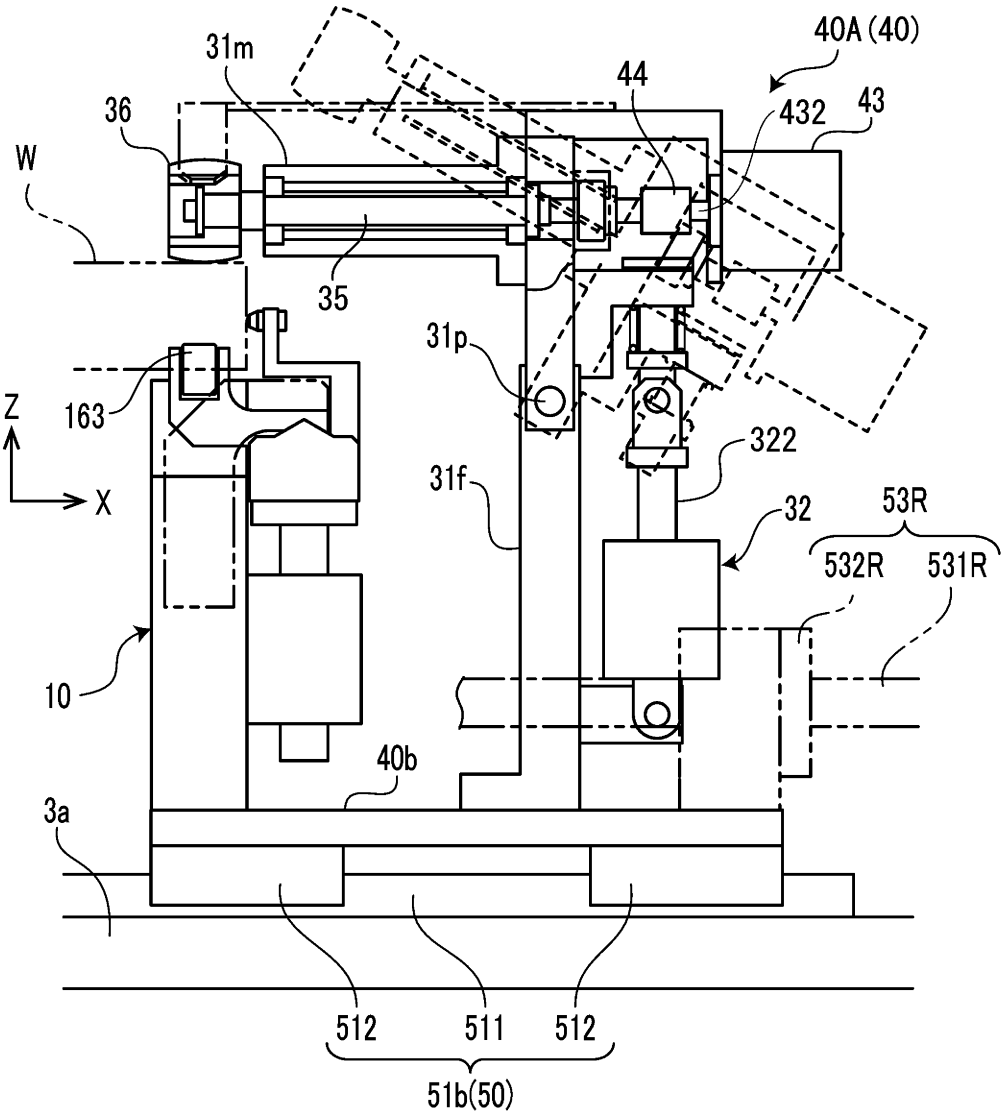

40A (40)
31m
44
36
432
43
W
35
31p
Z
163
322
31f
32
53R
X
532R
531R
10
40b
3a
512
511
512
51b(50)

FIG. 7

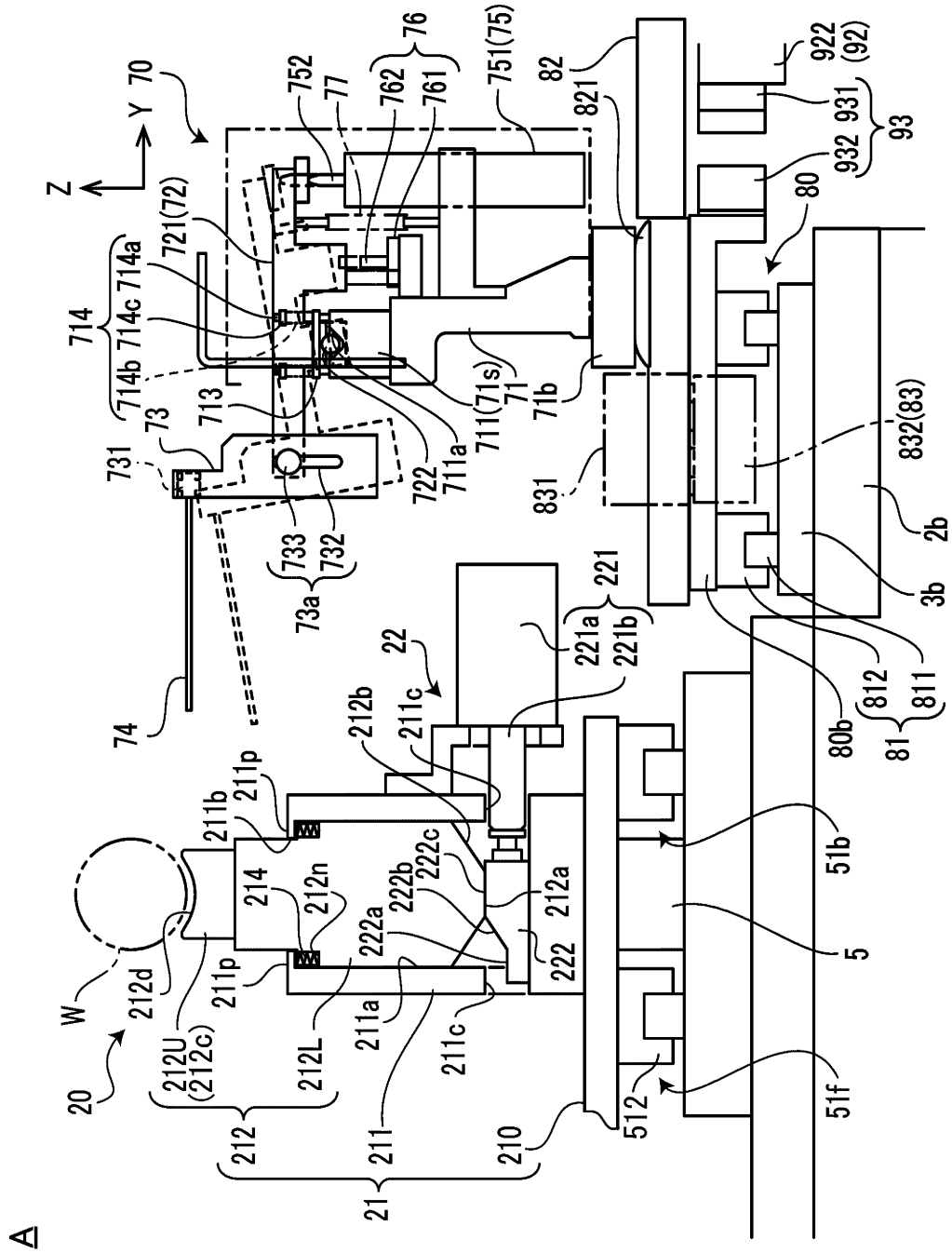

A
W
20
212
212U
(212c)
212d
212L
211
21
210
211p
211b
214
212n
211a
211c
222a
222b
222c
222
212a
22
212b
211c
74
731
73
714
714b
714c
714a
721(72)
713
722
711a
711(71s)
71
71b
733
732
73a
752
77
762
761
76
751(75)
82
821
831
221
221a
221b
512
5
51b
51f
80
80b
81
812
811
832(83)
2b
3b
922
(92)
931
932
93
Z
Y
70

FIG. 8

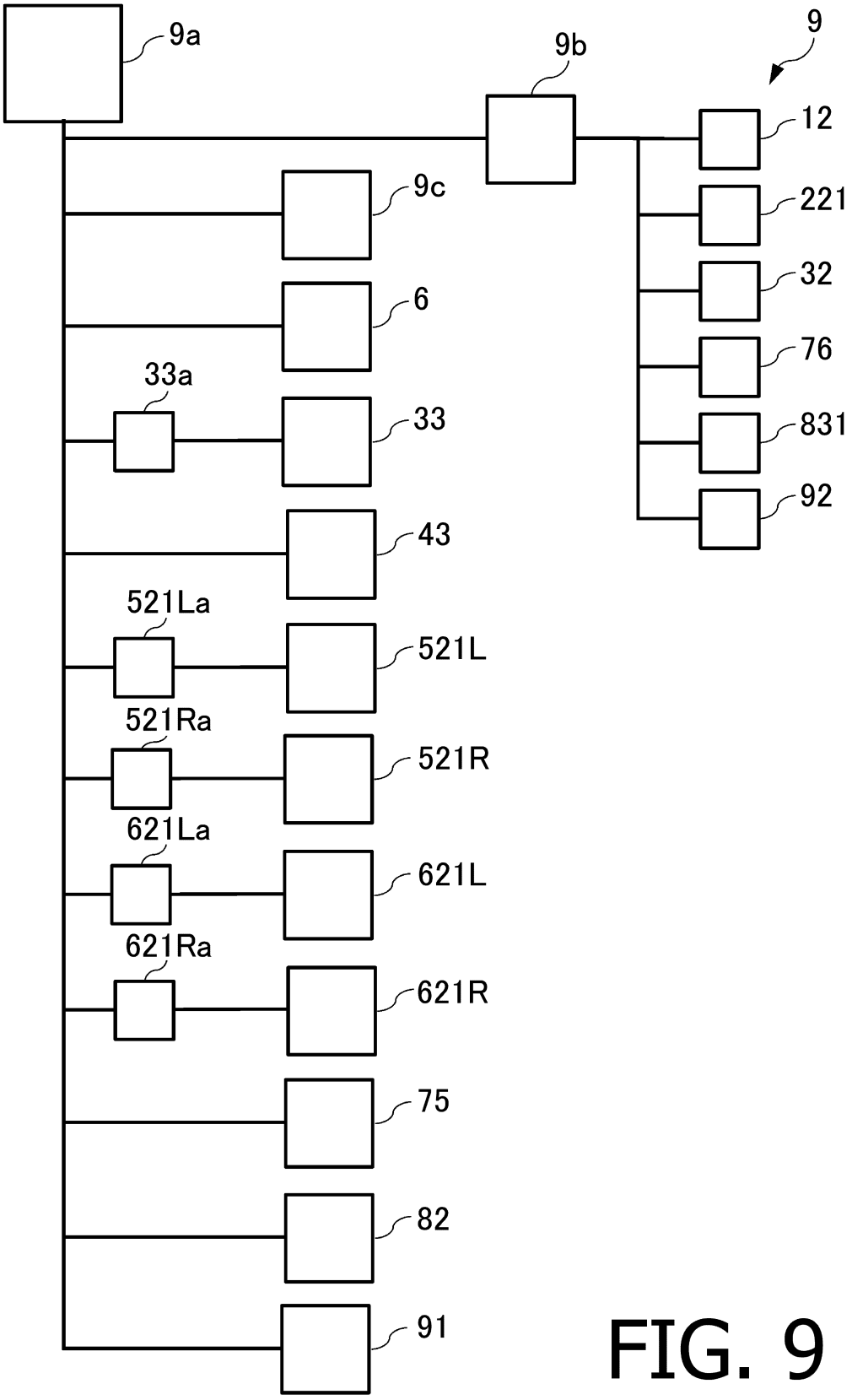

9a
9b
9
12
9c
221
6
32
33a
76
33
831
43
92
521La
521L
521Ra
521R
621La
621L
621Ra
621R
75
82
91

FIG. 9

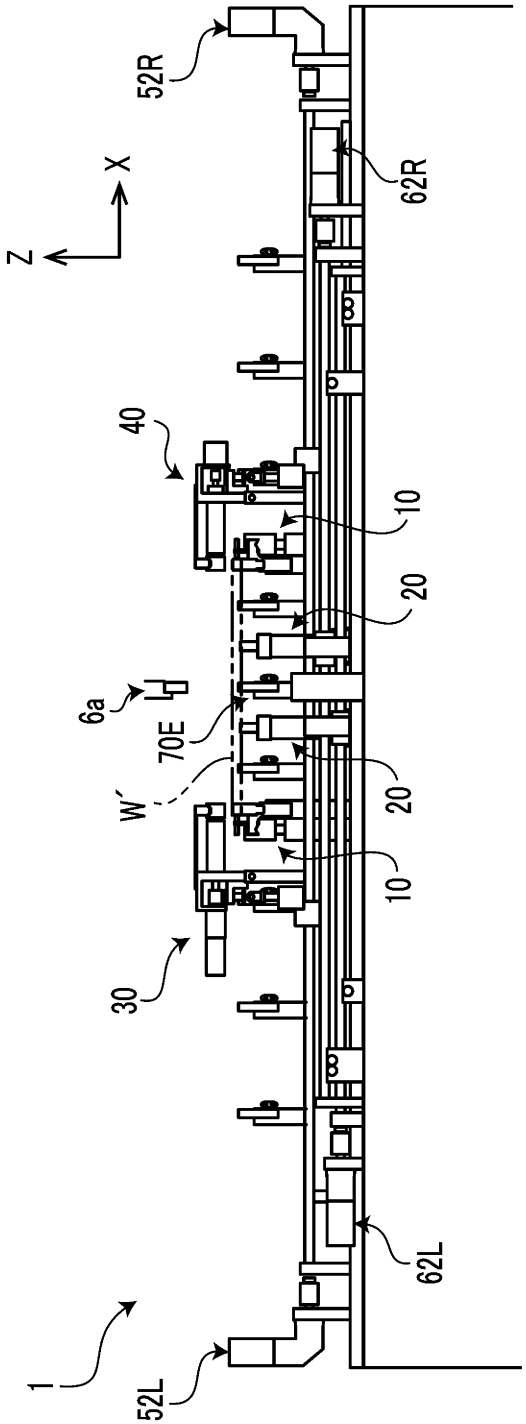


FIG. 10

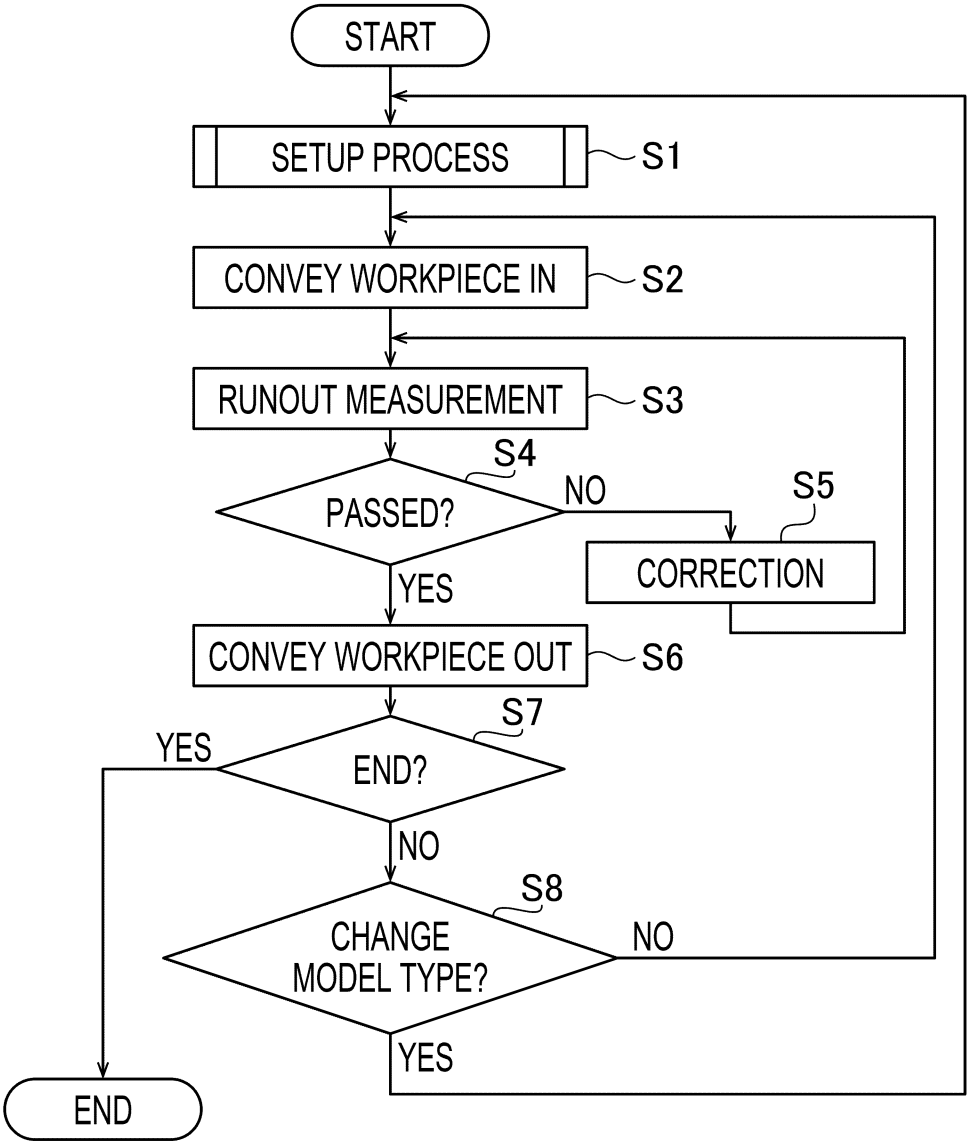

START
SETUP PROCESS
S1
CONVEY WORKPIECE IN
S2
RUNOUT MEASUREMENT
S3
S4
PASSED?
NO
S5
CORRECTION
YES
CONVEY WORKPIECE OUT
S6
S7
YES
END?
NO
S8
CHANGE
MODEL TYPE?
NO
YES
END

FIG. 11

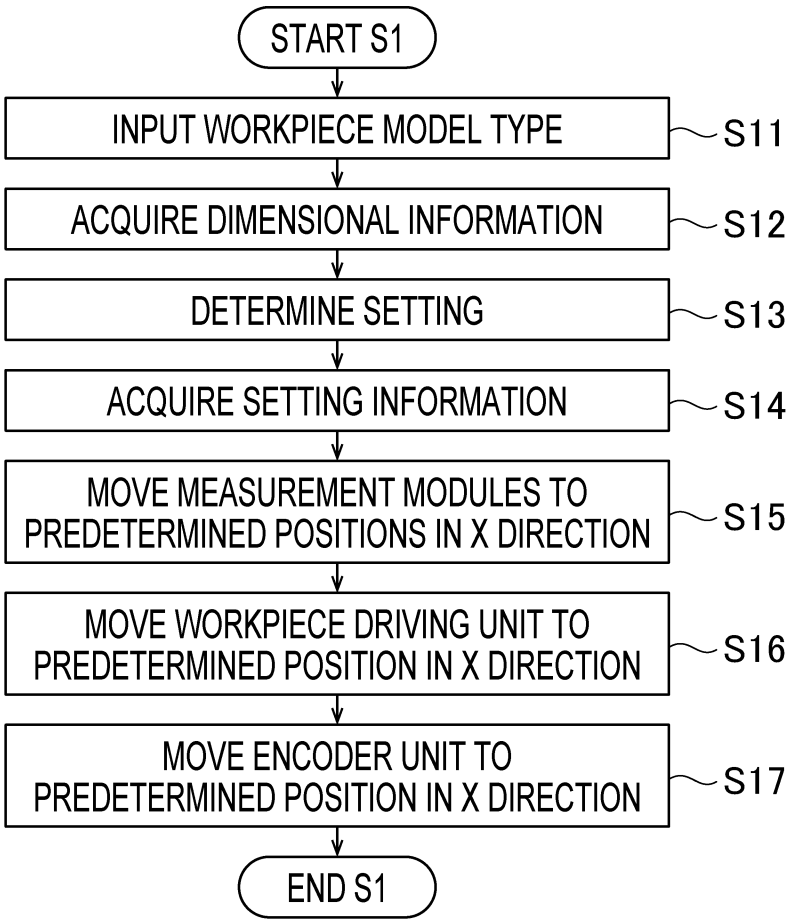

START S1
INPUT WORKPIECE MODEL TYPE
S11
ACQUIRE DIMENSIONAL INFORMATION
S12
DETERMINE SETTING
S13
ACQUIRE SETTING INFORMATION
S14
MOVE MEASUREMENT MODULES TO PREDETERMINED POSITIONS IN X DIRECTION
S15
MOVE WORKPIECE DRIVING UNIT TO PREDETERMINED POSITION IN X DIRECTION
S16
MOVE ENCODER UNIT TO PREDETERMINED POSITION IN X DIRECTION
S17
END S1

FIG. 12

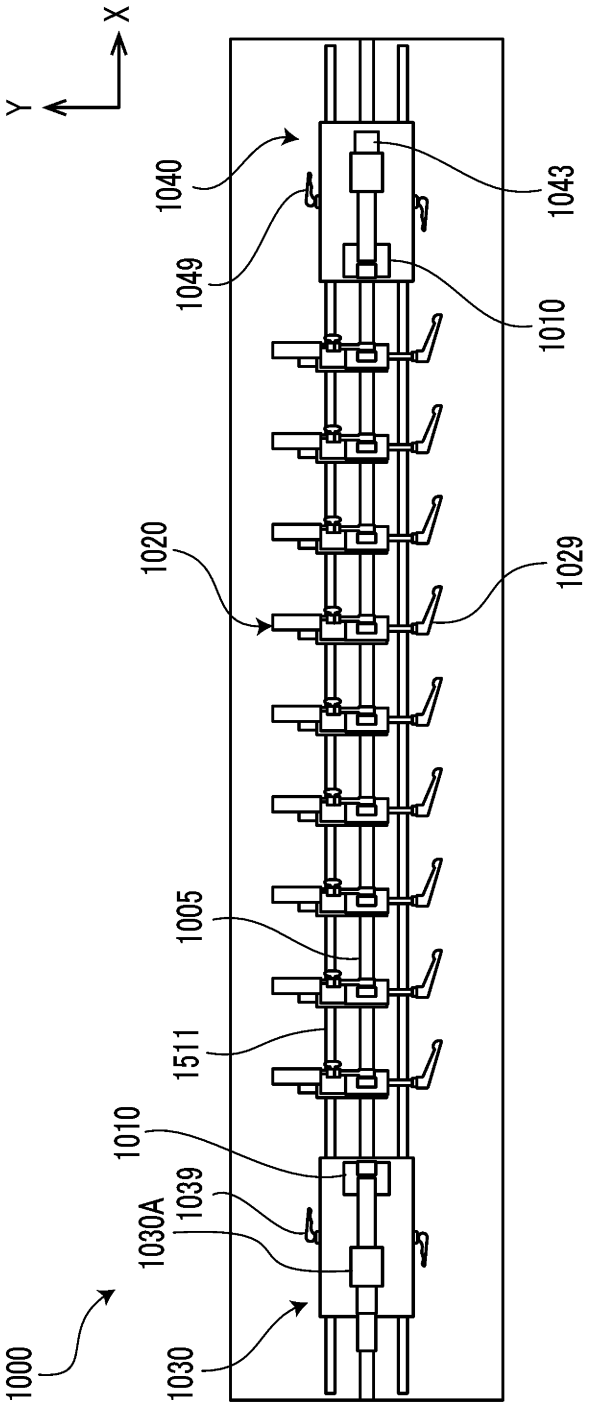

X
Y
1040
1043
1049
1010
1020
1029
1005
1511
1010
1039
1030A
1000
1030

FIG. 13

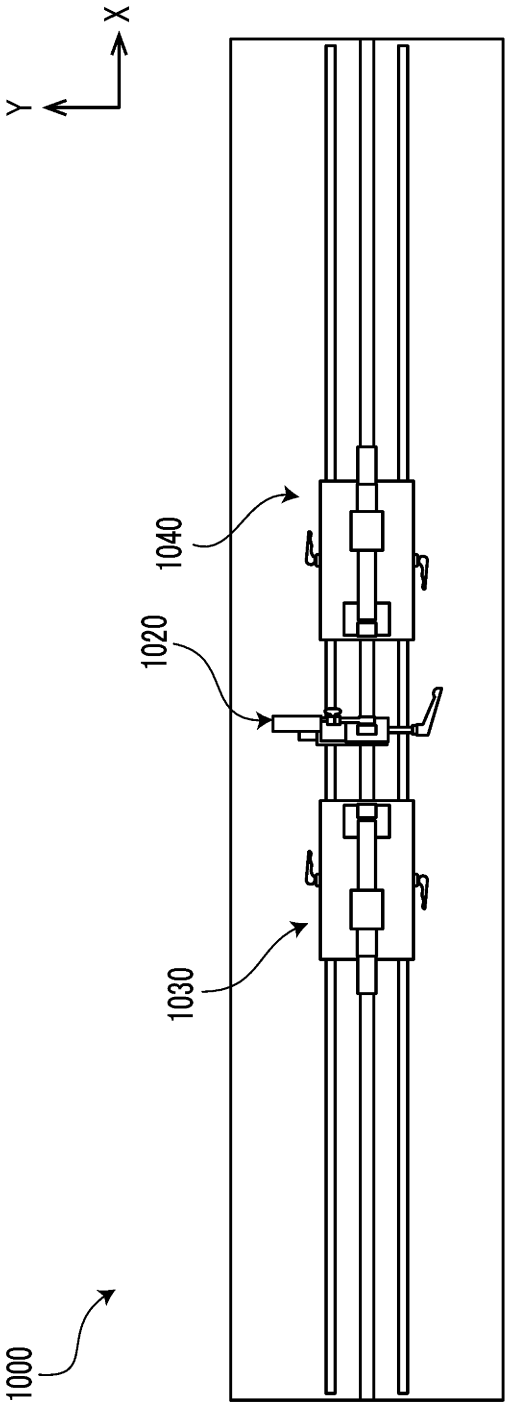


FIG. 14