FIG. 1

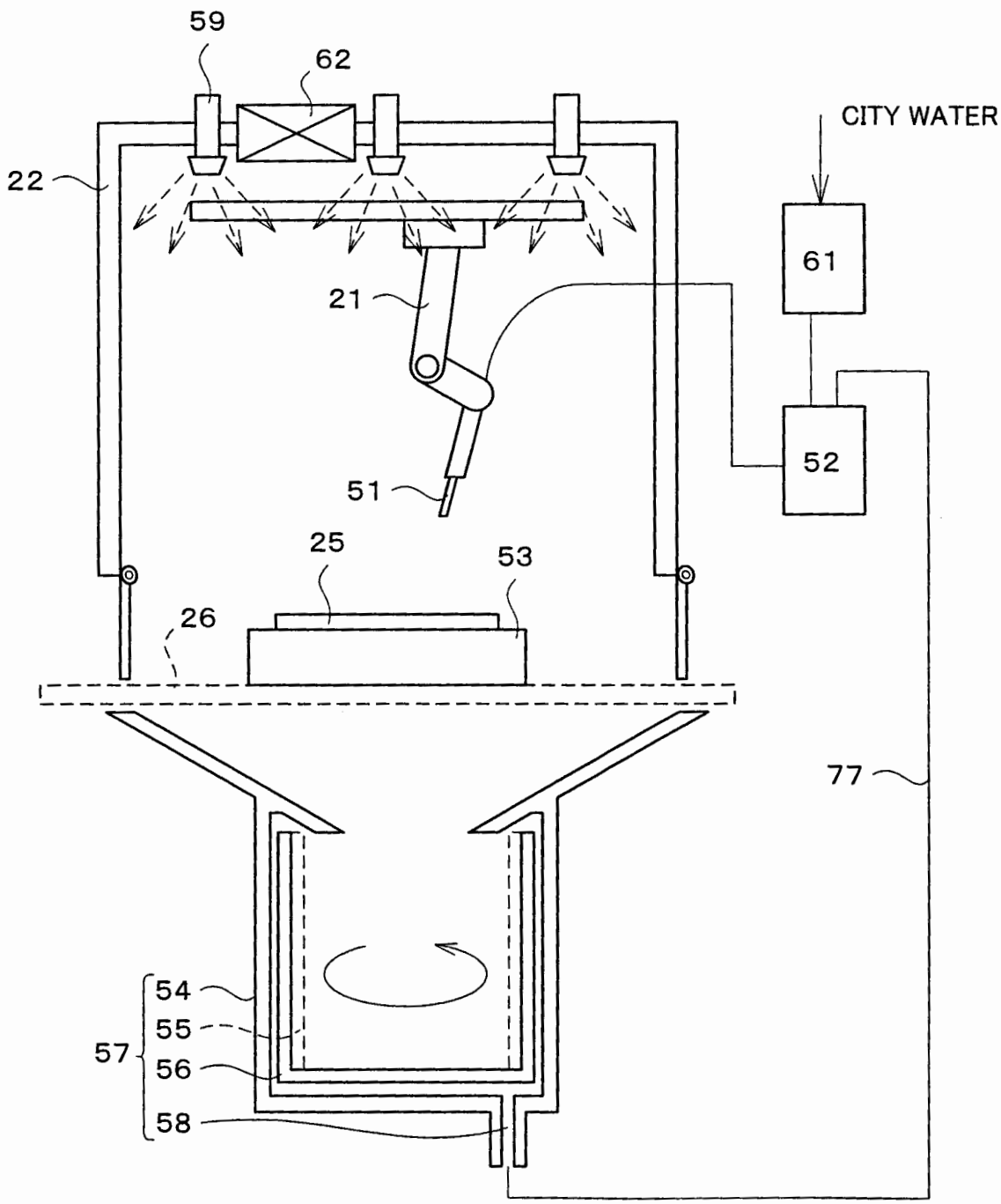


FIG. 2

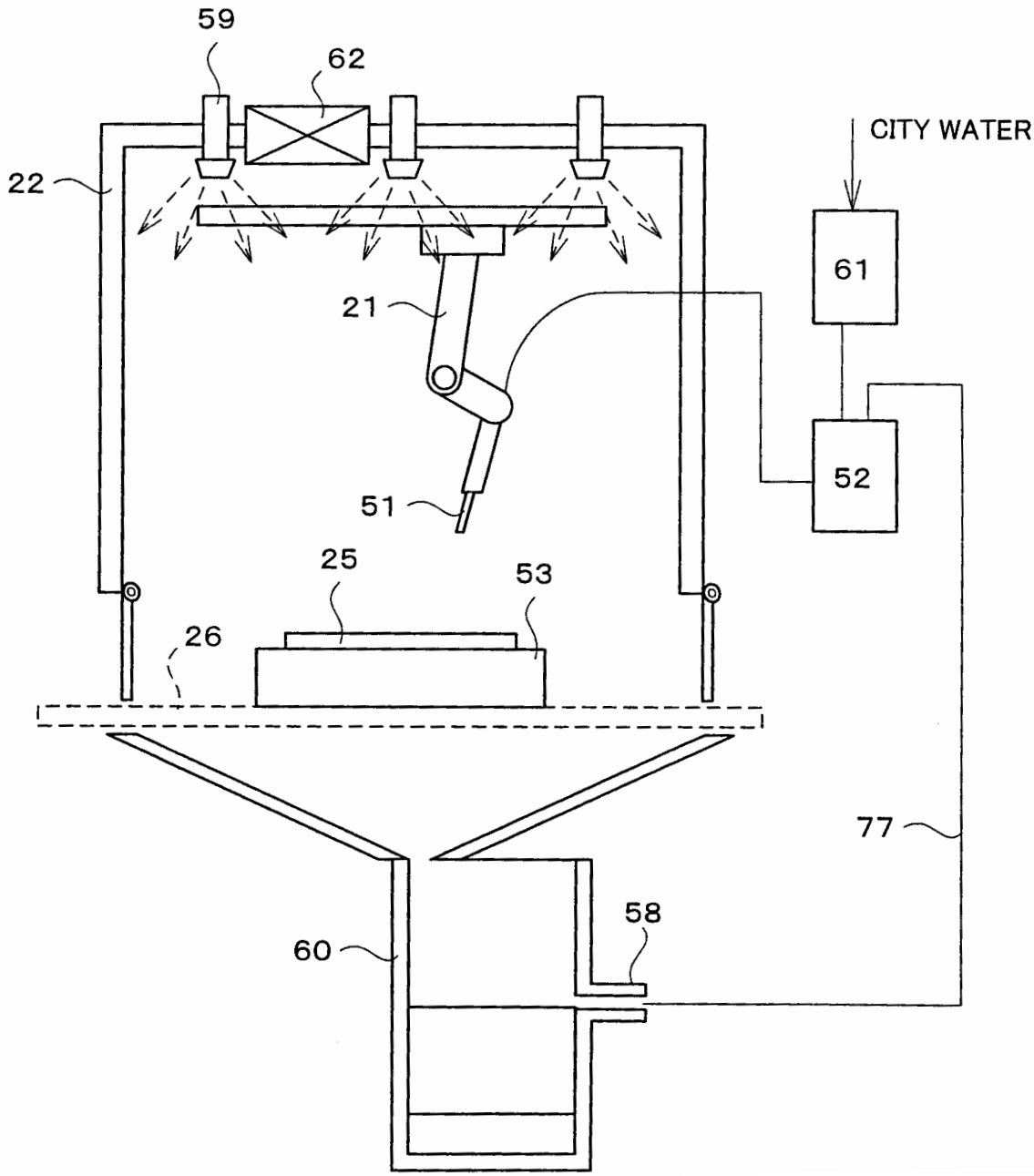


FIG. 3

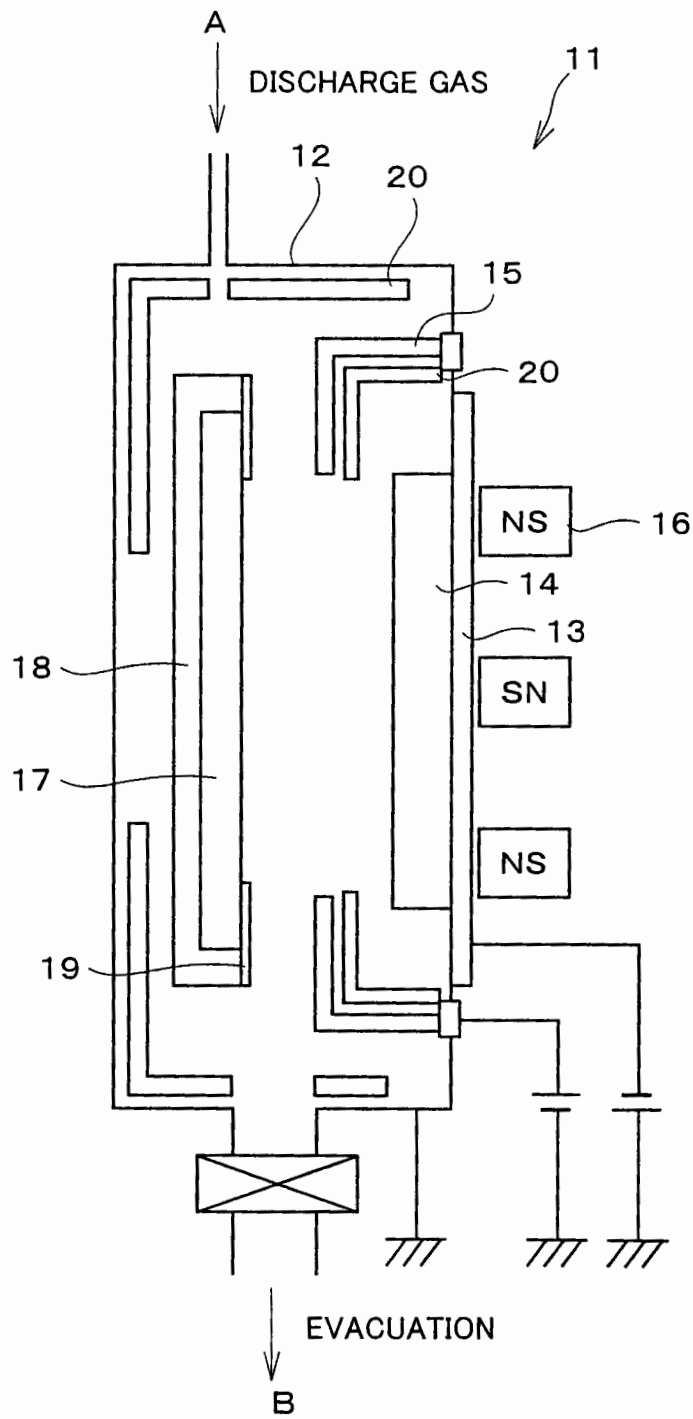
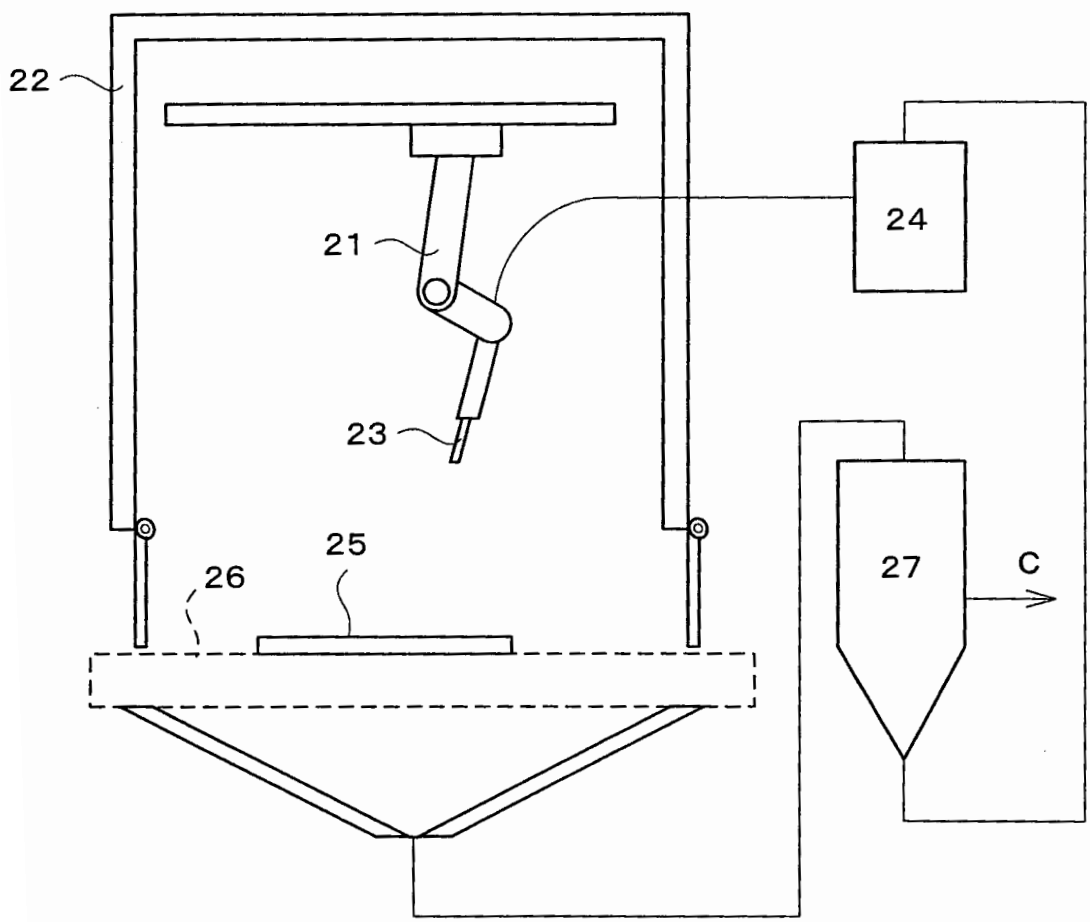

A
DISCHARGE GAS
11
12
20
15
20
NS
16
14
13
18
SN
17
NS
19
EVACUATION
B

FIG. 4



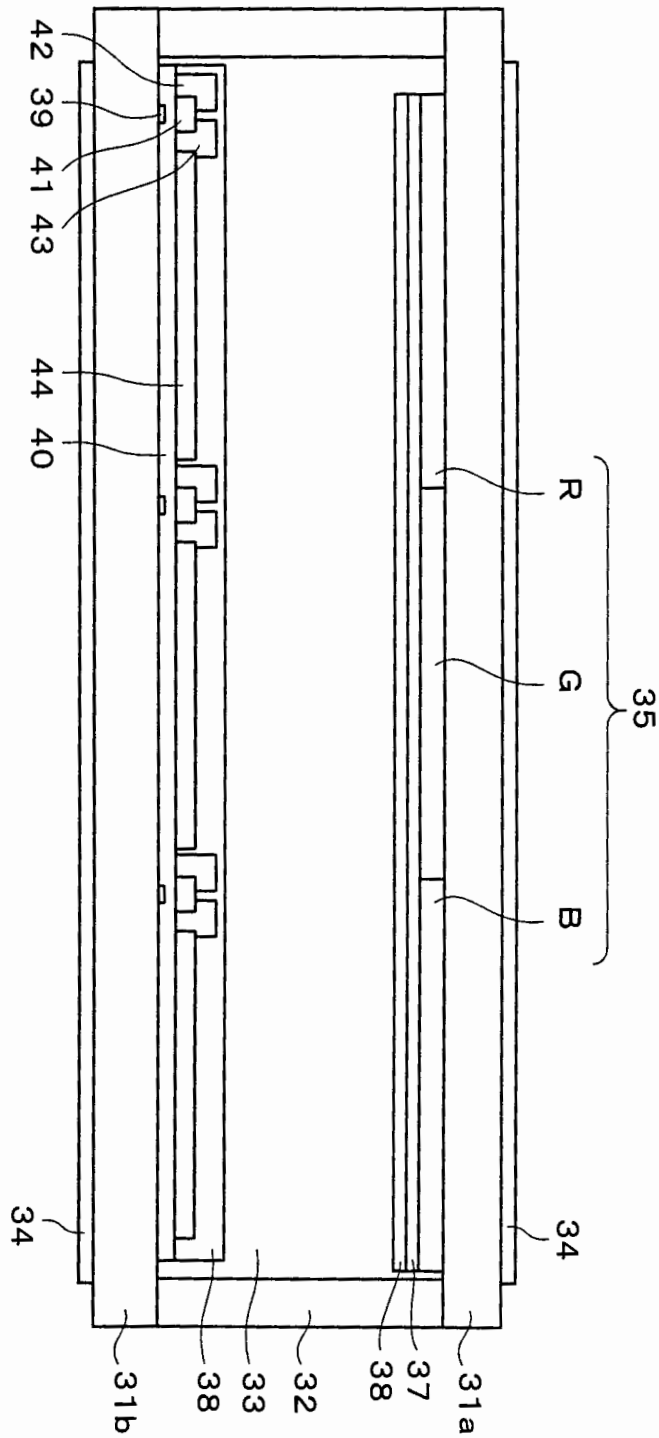


FIG. 5

FIG. 6

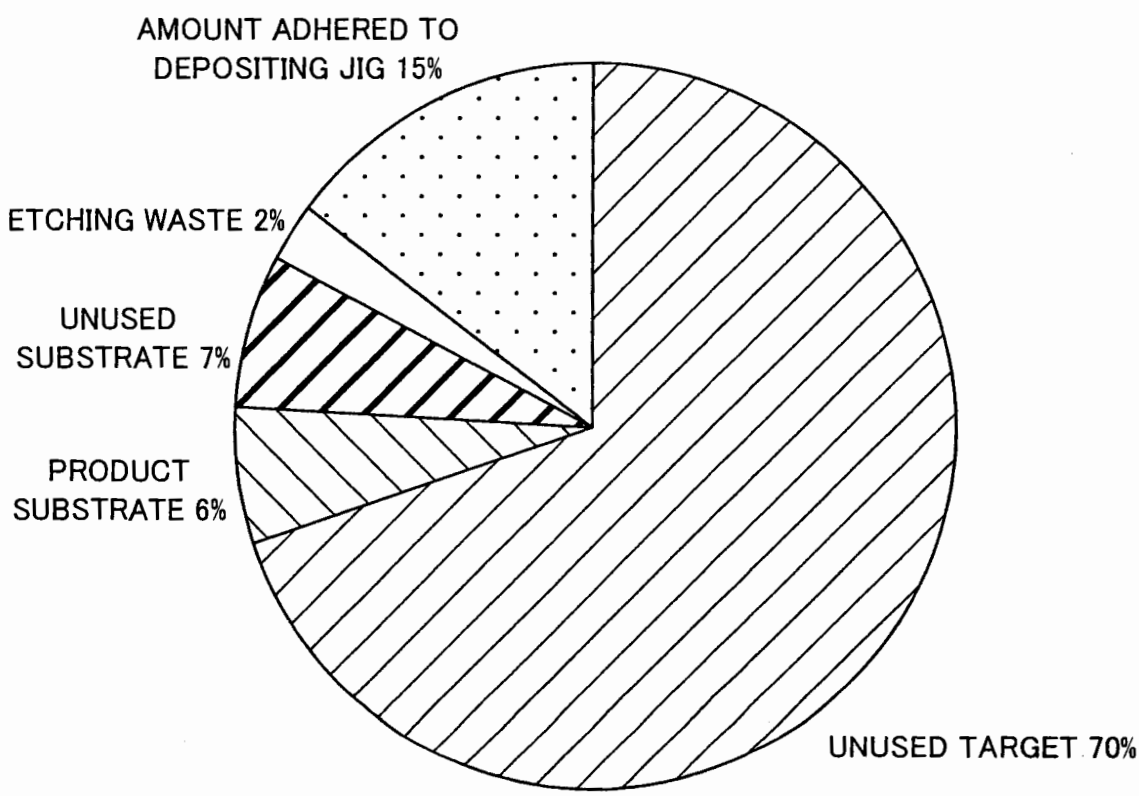

AMOUNT ADHERED TO DEPOSITING JIG 15%
ETCHING WASTE 2%
UNUSED SUBSTRATE 7%
PRODUCT SUBSTRATE 6%
UNUSED TARGET 70%

FIG. 7

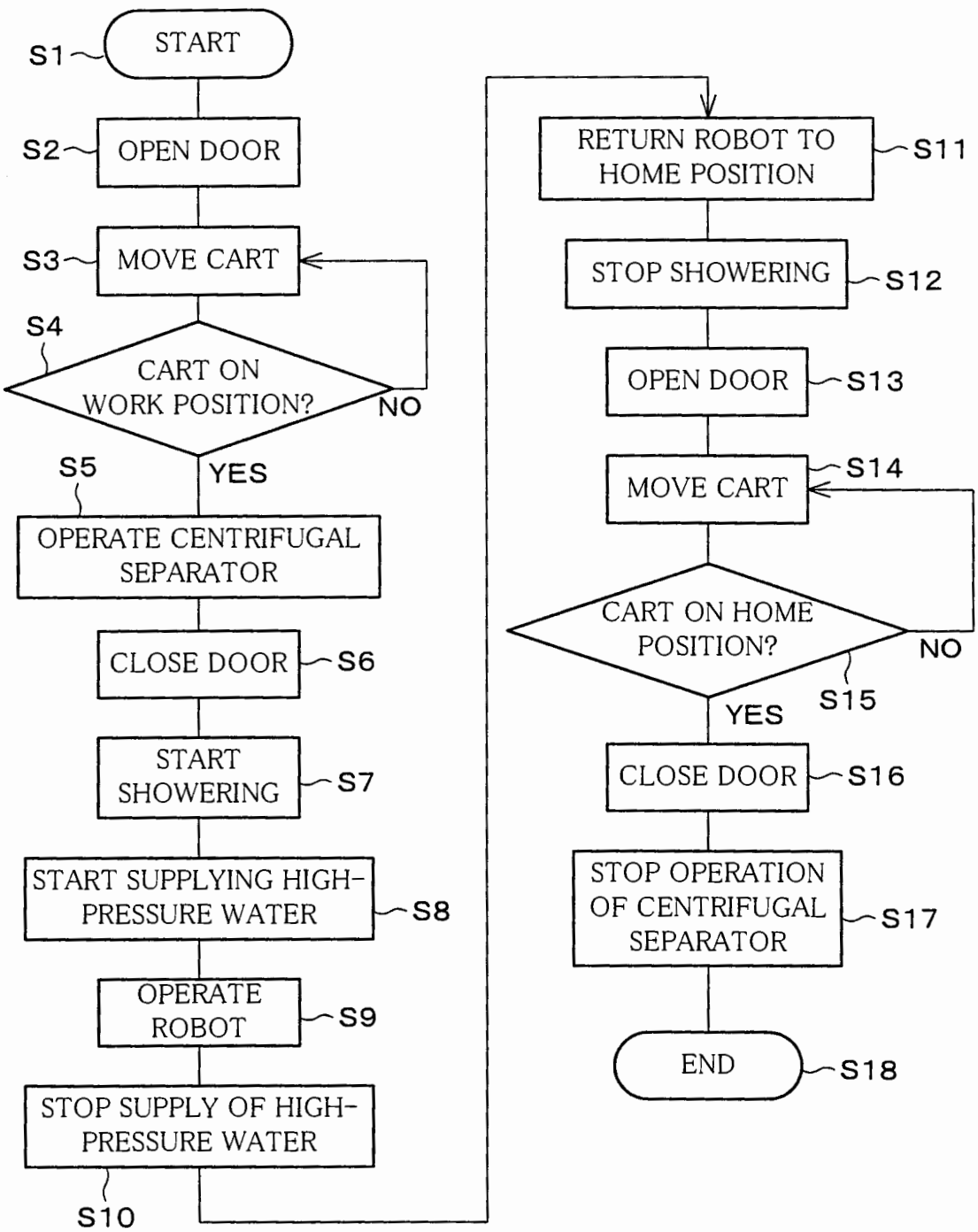

START
S1
OPEN DOOR
S2
MOVE CART
S3
S4
CART ON WORK POSITION?
NO
YES
S5
OPERATE CENTRIFUGAL SEPARATOR
CLOSE DOOR
S6
START SHOWERING
S7
START SUPPLYING HIGH-PRESSURE WATER
S8
OPERATE ROBOT
S9
STOP SUPPLY OF HIGH-PRESSURE WATER
S10
RETURN ROBOT TO HOME POSITION
S11
STOP SHOWERING
S12
OPEN DOOR
S13
MOVE CART
S14
CART ON HOME POSITION?
NO
S15
YES
CLOSE DOOR
S16
STOP OPERATION OF CENTRIFUGAL SEPARATOR
S17
END
S18

FIG. 8

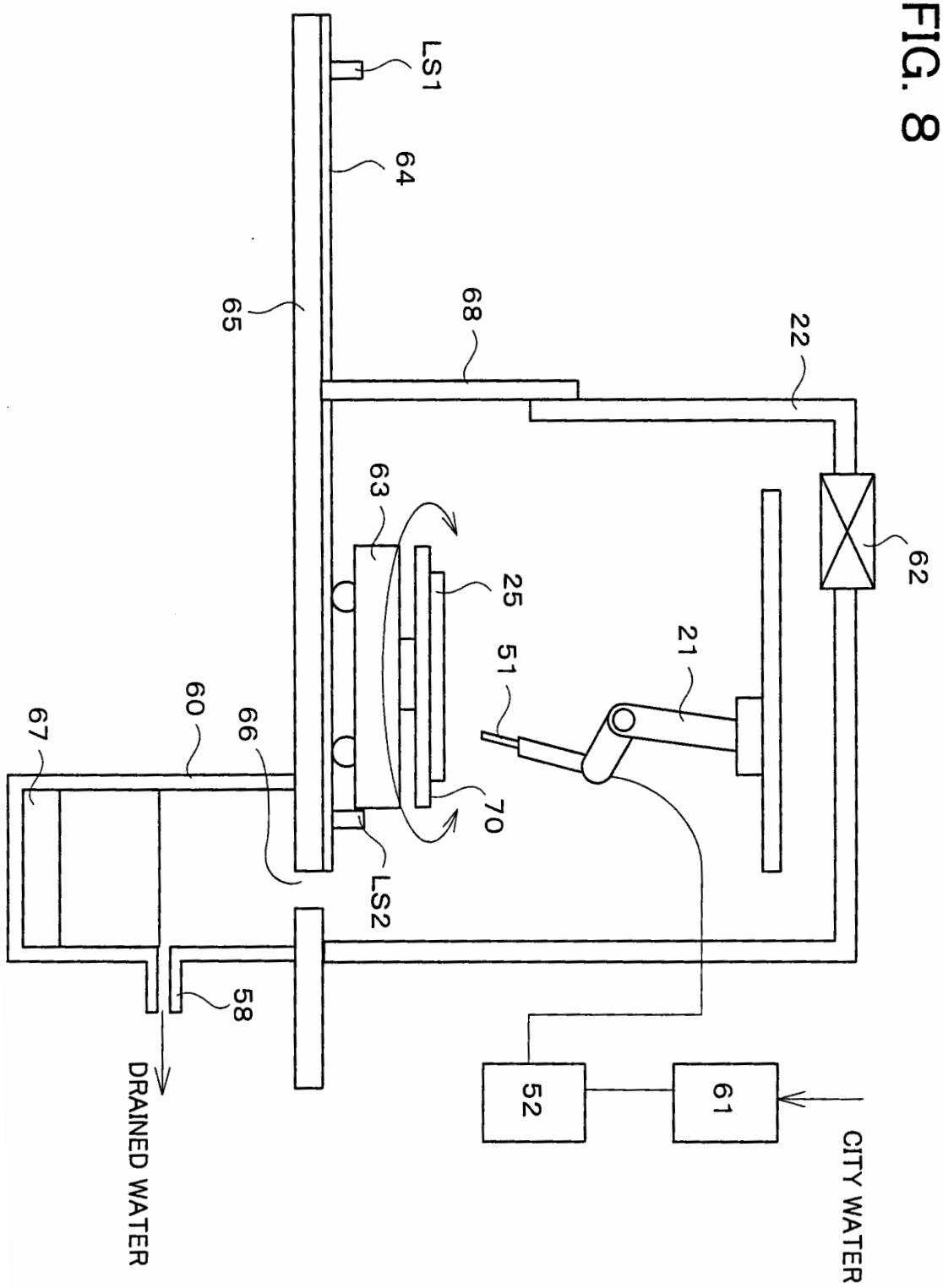

LS1
64
65
68
22
62
63
25
51
21
70
60
66
67
LS2
58
DRAINED WATER
52
61
CITY WATER

FIG. 9

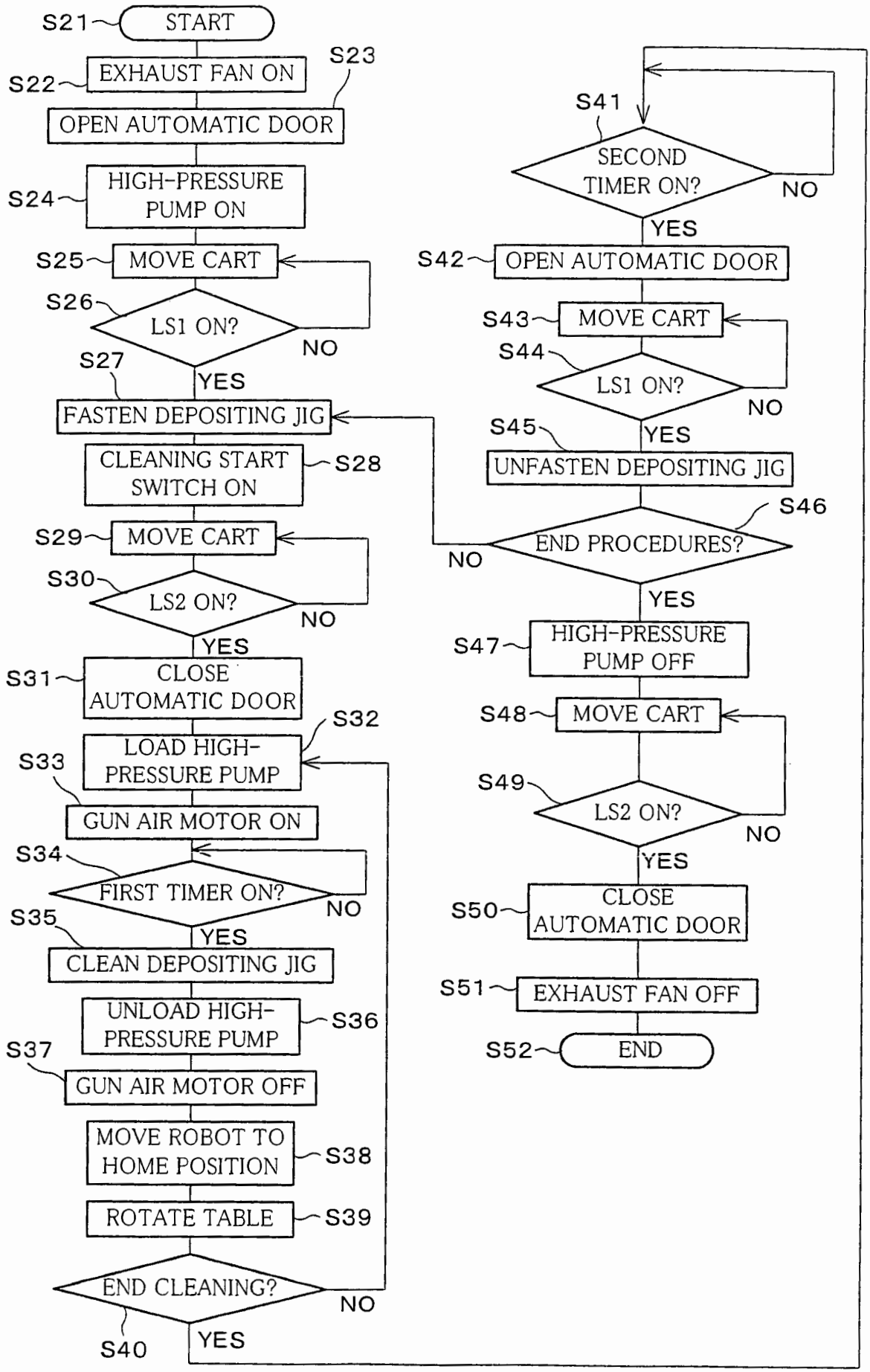

S21
START
S22
EXHAUST FAN ON
S23
OPEN AUTOMATIC DOOR
S24
HIGH-PRESSURE PUMP ON
S25
MOVE CART
S26
LS1 ON?
NO
YES
S27
FASTEN DEPOSITING JIG
CLEANING START SWITCH ON
S28
S29
MOVE CART
S30
LS2 ON?
NO
YES
S31
CLOSE AUTOMATIC DOOR
S32
LOAD HIGH-PRESSURE PUMP
S33
GUN AIR MOTOR ON
S34
FIRST TIMER ON?
NO
YES
S35
CLEAN DEPOSITING JIG
UNLOAD HIGH-PRESSURE PUMP
S36
S37
GUN AIR MOTOR OFF
MOVE ROBOT TO HOME POSITION
S38
ROTATE TABLE
S39
END CLEANING?
NO
YES
S40
S41
SECOND TIMER ON?
NO
YES
S42
OPEN AUTOMATIC DOOR
S43
MOVE CART
S44
LS1 ON?
NO
YES
S45
UNFASTEN DEPOSITING JIG
S46
END PROCEDURES?
NO
YES
S47
HIGH-PRESSURE PUMP OFF
S48
MOVE CART
S49
LS2 ON?
NO
YES
S50
CLOSE AUTOMATIC DOOR
S51
EXHAUST FAN OFF
S52
END

FIG. 10

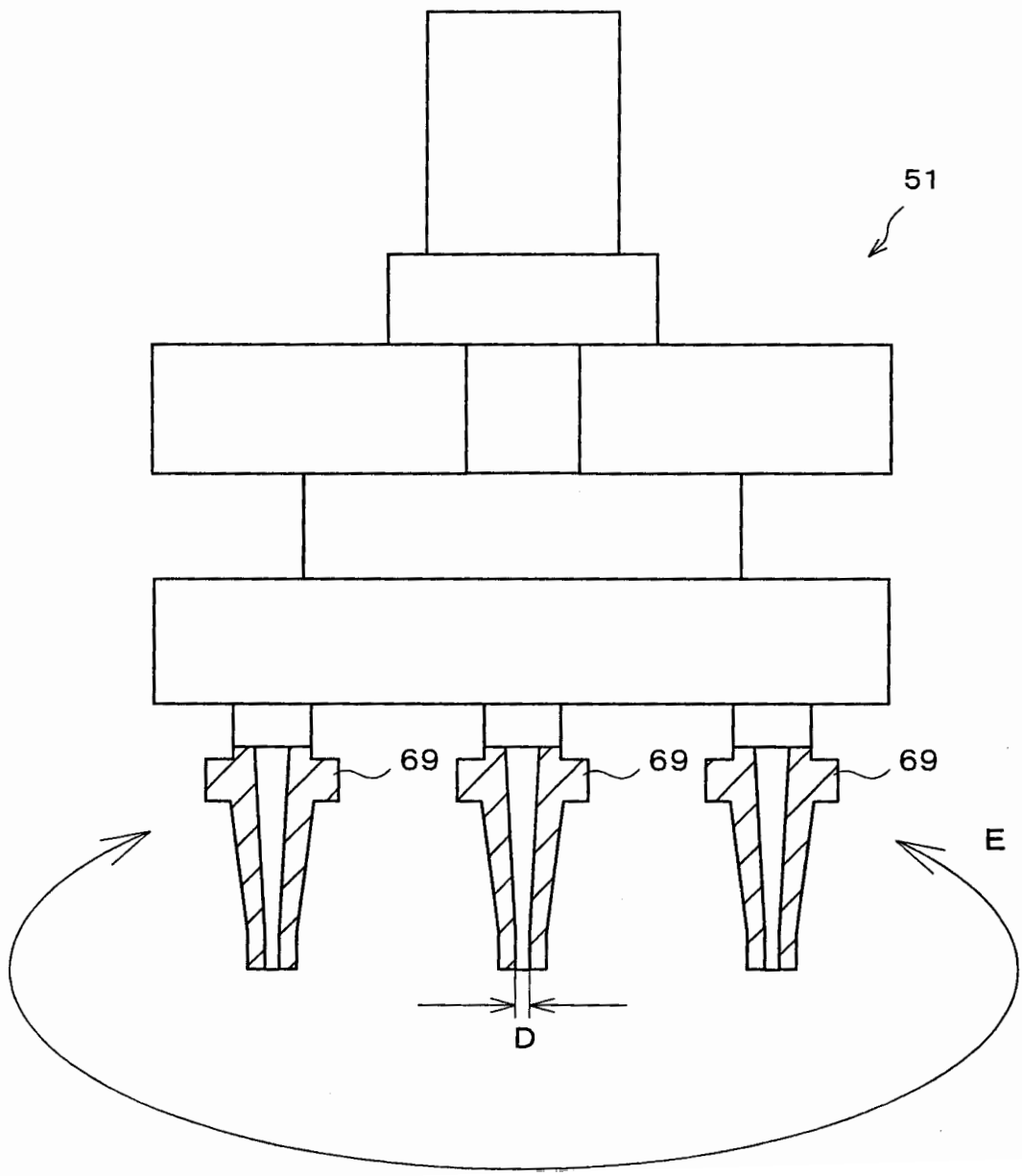


FIG. 11

