FIG.1

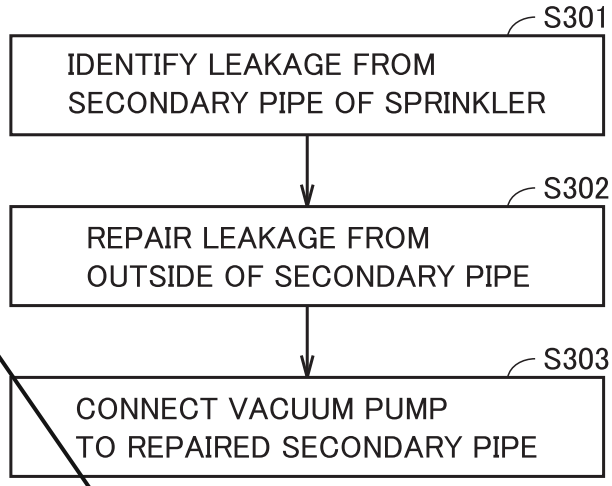

S301
IDENTIFY LEAKAGE FROM SECONDARY PIPE OF SPRINKLER
S302
REPAIR LEAKAGE FROM OUTSIDE OF SECONDARY PIPE
S303
CONNECT VACUUM PUMP TO REPAIRED SECONDARY PIPE

FIG.1

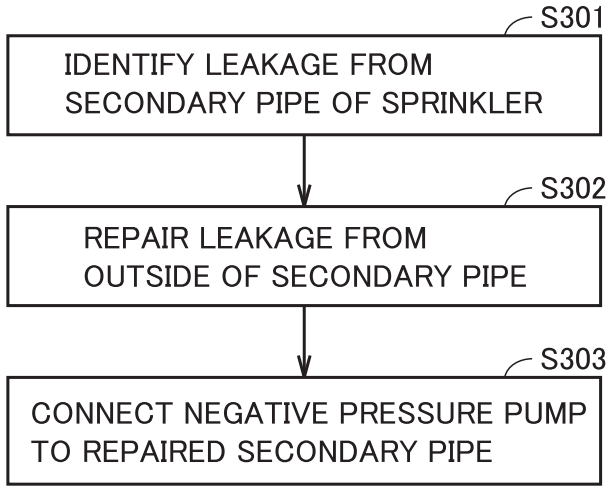

S301
IDENTIFY LEAKAGE FROM SECONDARY PIPE OF SPRINKLER
S302
REPAIR LEAKAGE FROM OUTSIDE OF SECONDARY PIPE
S303
CONNECT NEGATIVE PRESSURE PUMP TO REPAIRED SECONDARY PIPE

FIG.2

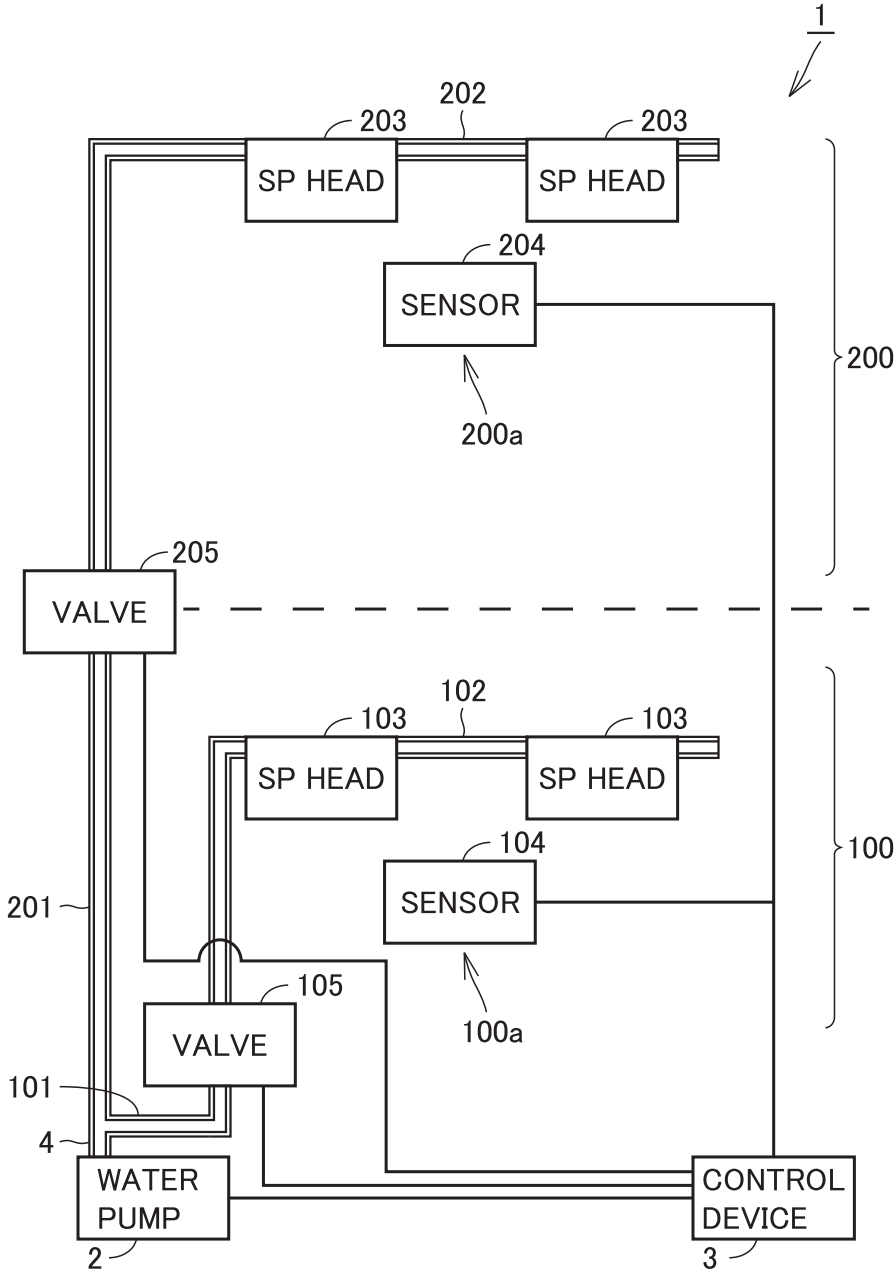

1
202
203
203
SP HEAD
SP HEAD
204
SENSOR
200
200a
205
VALVE
102
103
103
SP HEAD
SP HEAD
104
SENSOR
100
201
105
VALVE
100a
101
4
WATER PUMP
2
CONTROL DEVICE
3

FIG.3

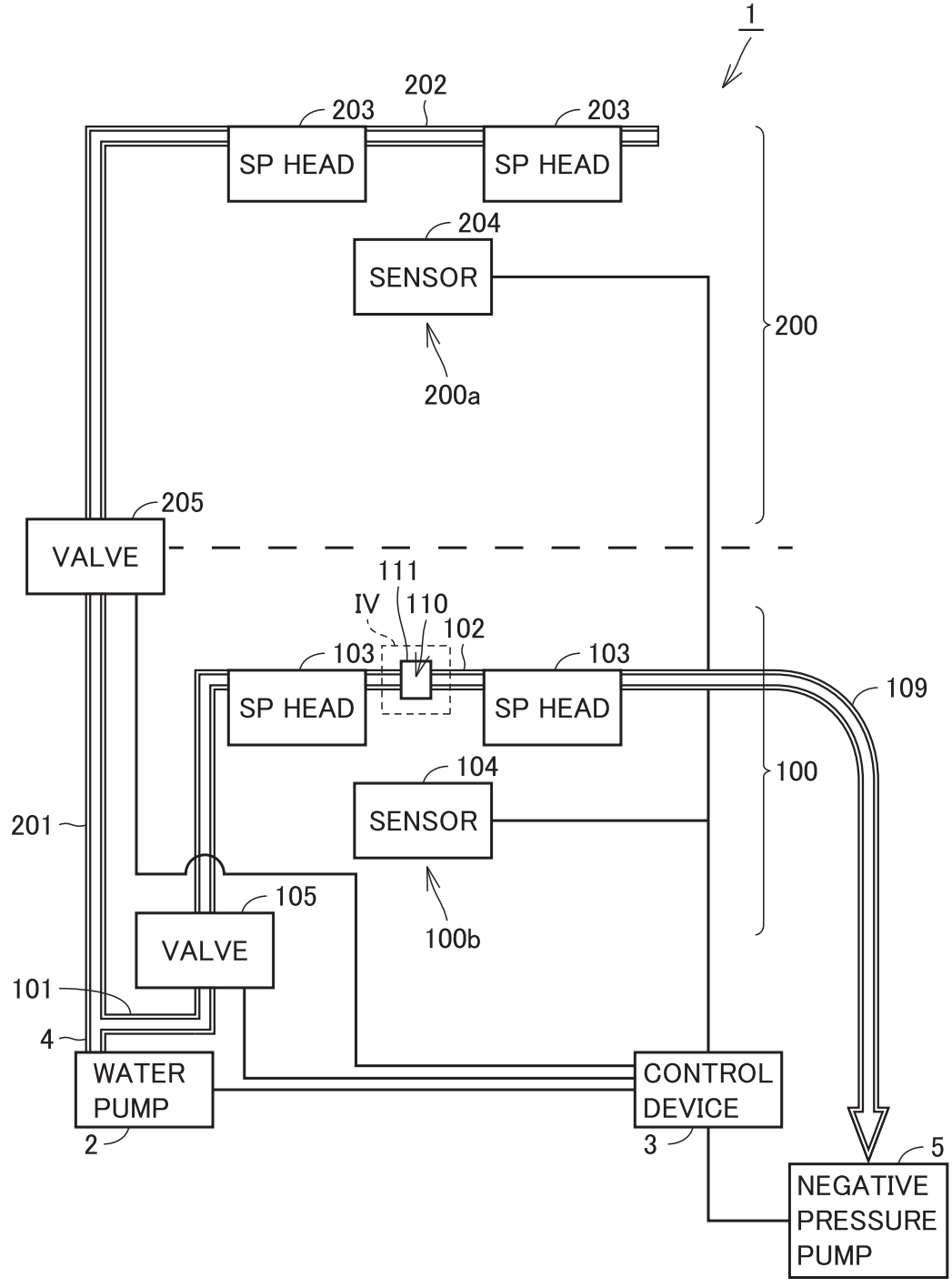

1
202
203
203
SP HEAD
SP HEAD
204
SENSOR
200a
200
205
VALVE
111
IV
110
102
103
103
SP HEAD
SP HEAD
109
104
SENSOR
100
201
100b
105
VALVE
101
4
WATER PUMP
2
CONTROL DEVICE
3
5
NEGATIVE PRESSURE PUMP

FIG.4

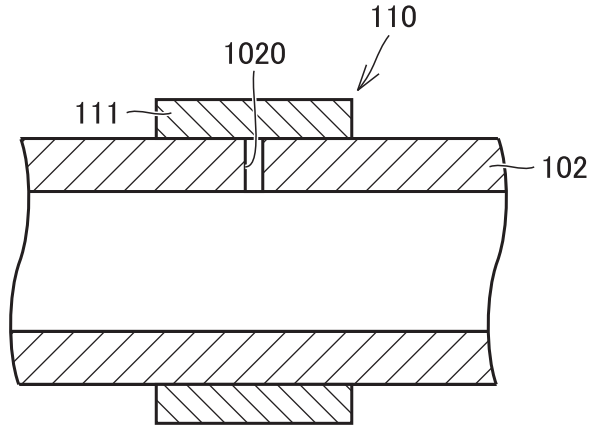
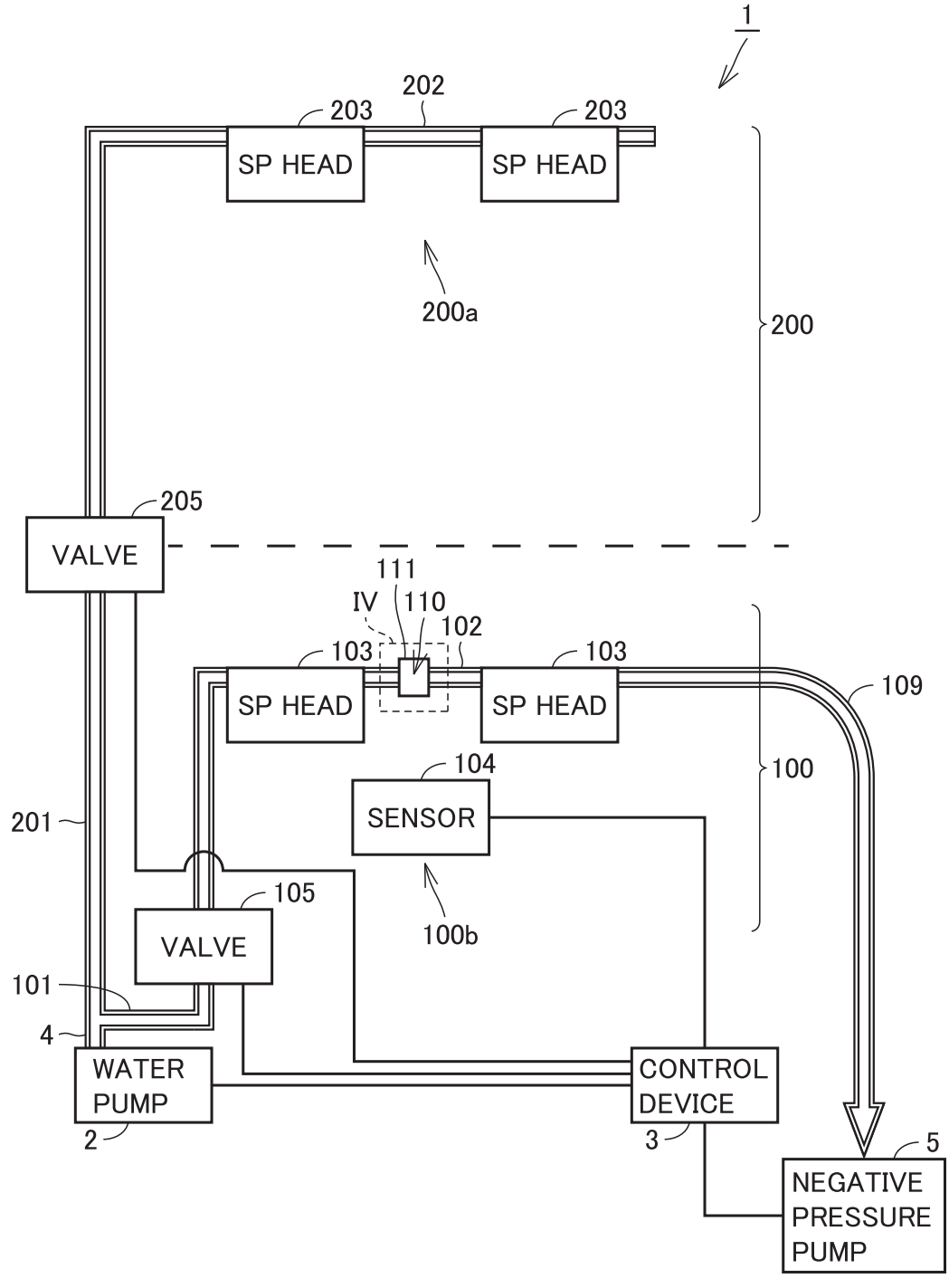


FIG.5


1
202
203
203
SP HEAD
SP HEAD
200a
200
205
VALVE
111
IV
110
102
103
103
SP HEAD
SP HEAD
109
104
SENSOR
100
201
105
VALVE
100b
101
4
WATER PUMP
2
CONTROL DEVICE
3
5
NEGATIVE PRESSURE PUMP