FIG. 1

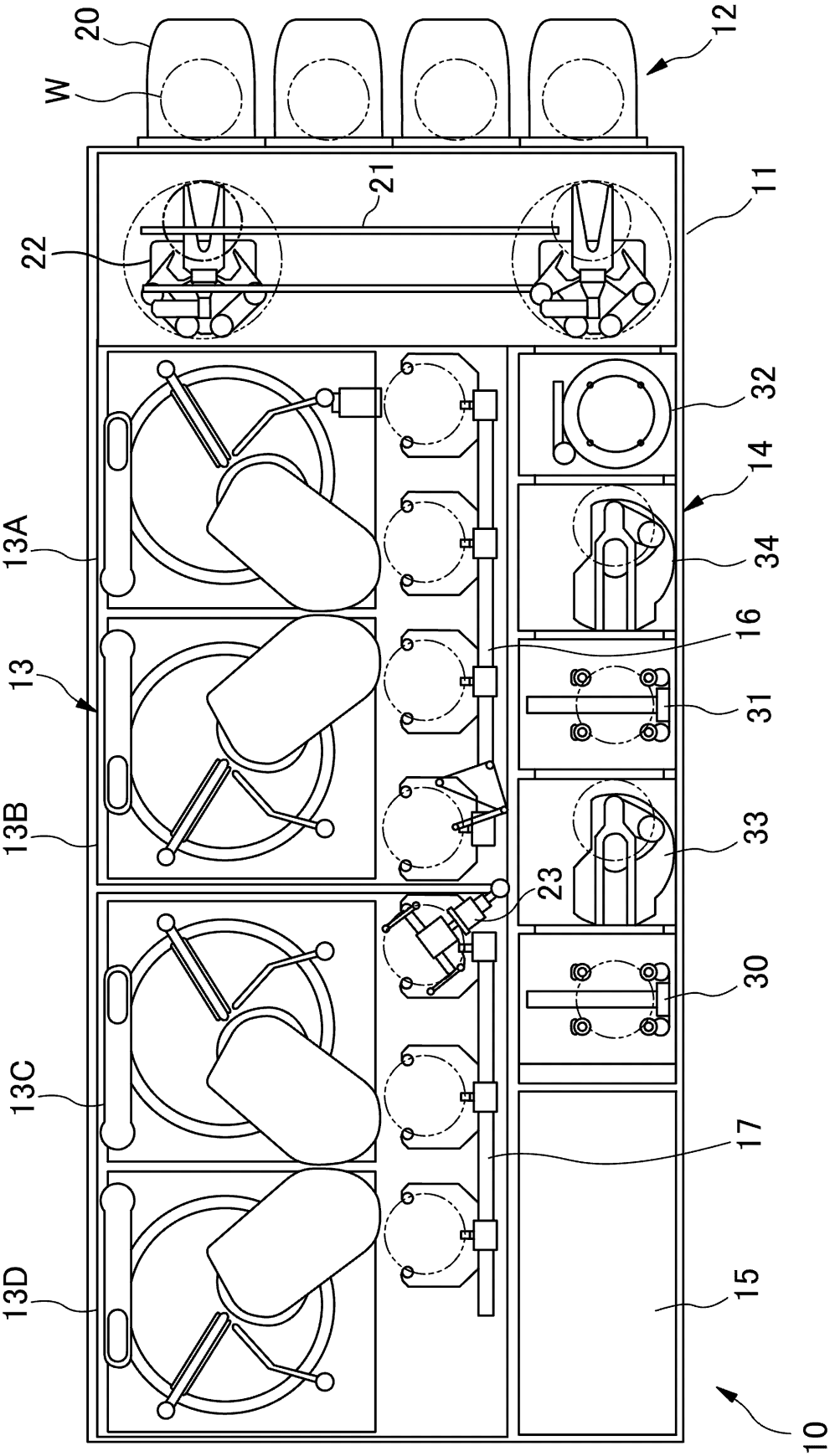


FIG. 2

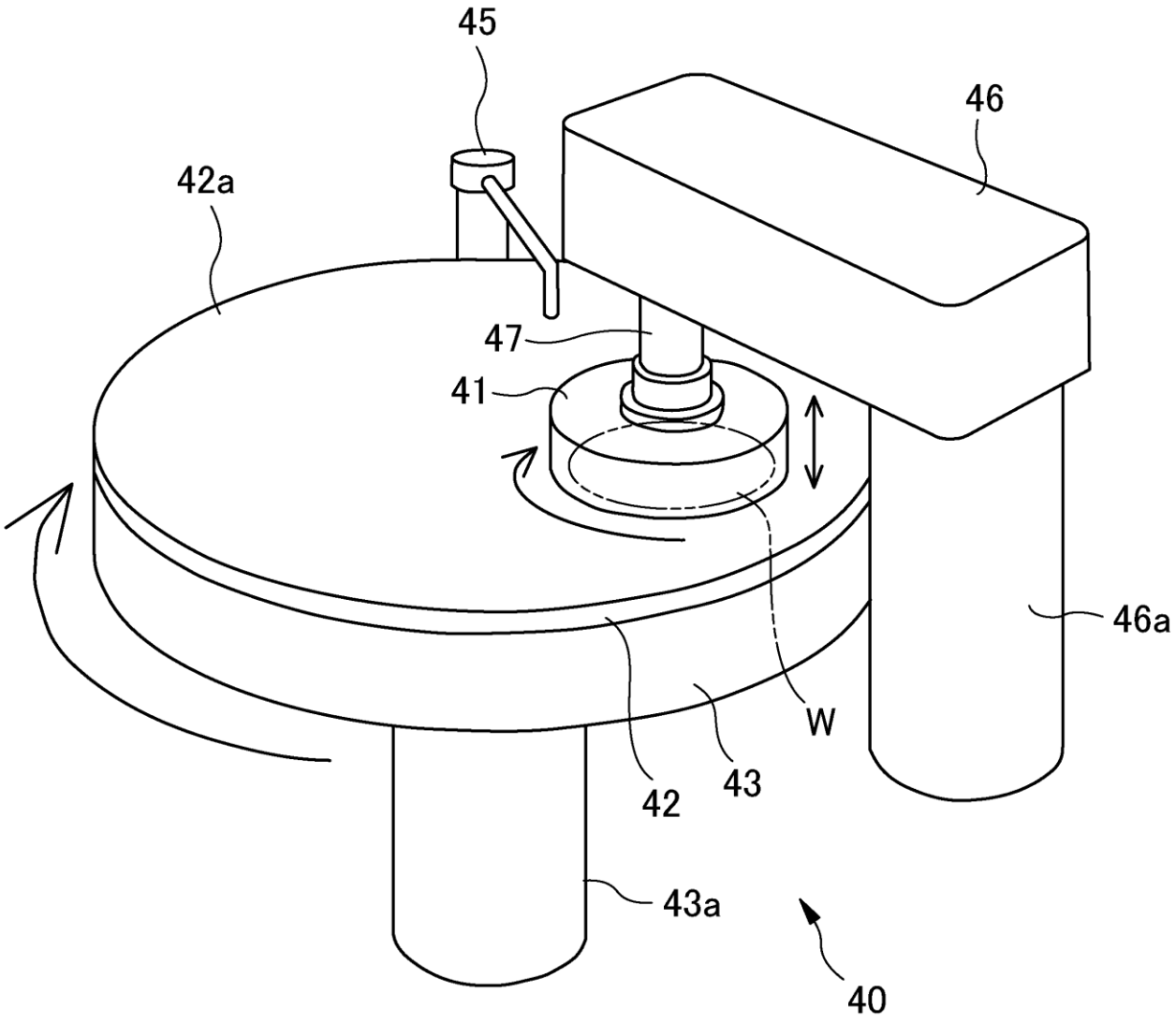


FIG. 3

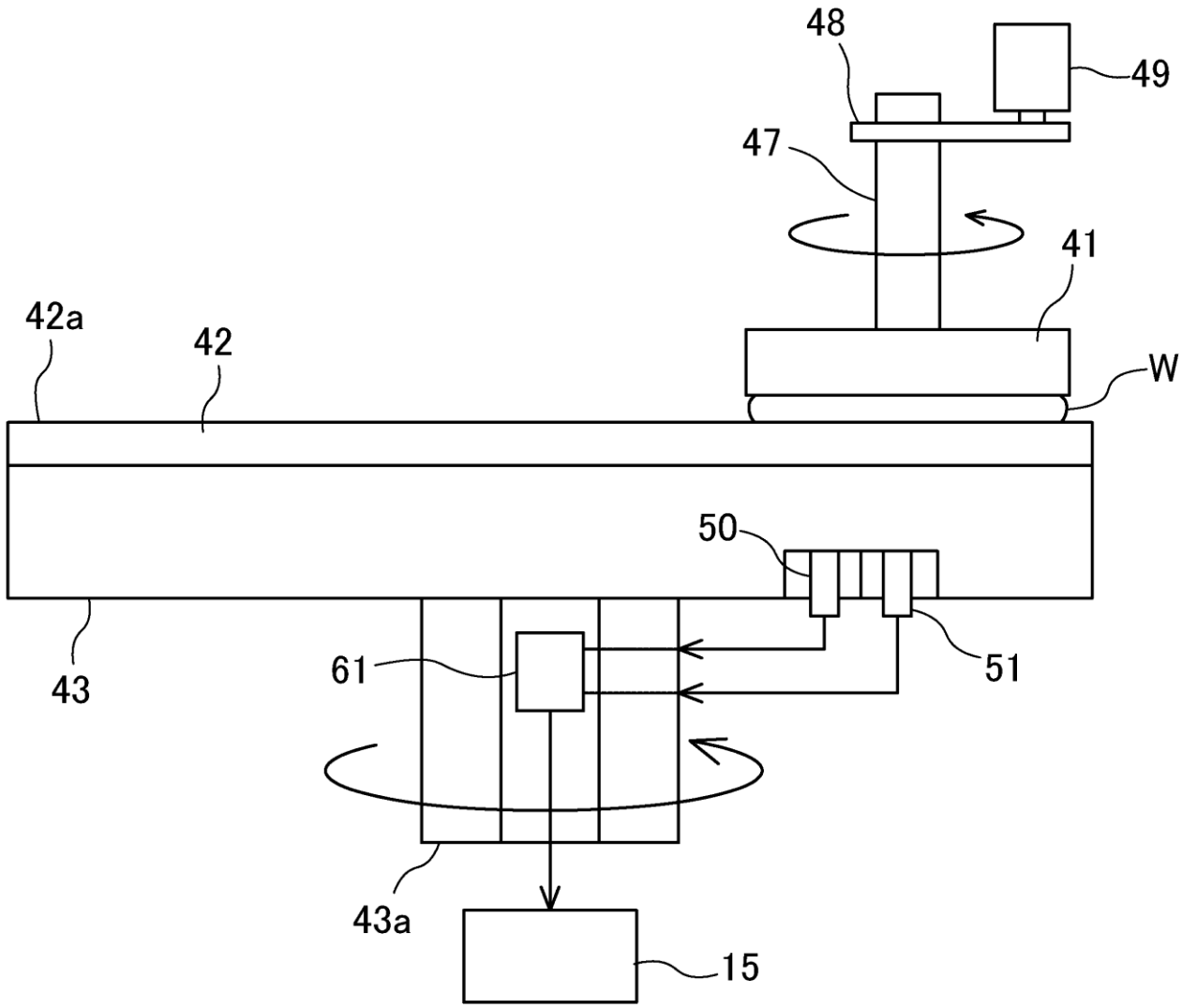


FIG. 4

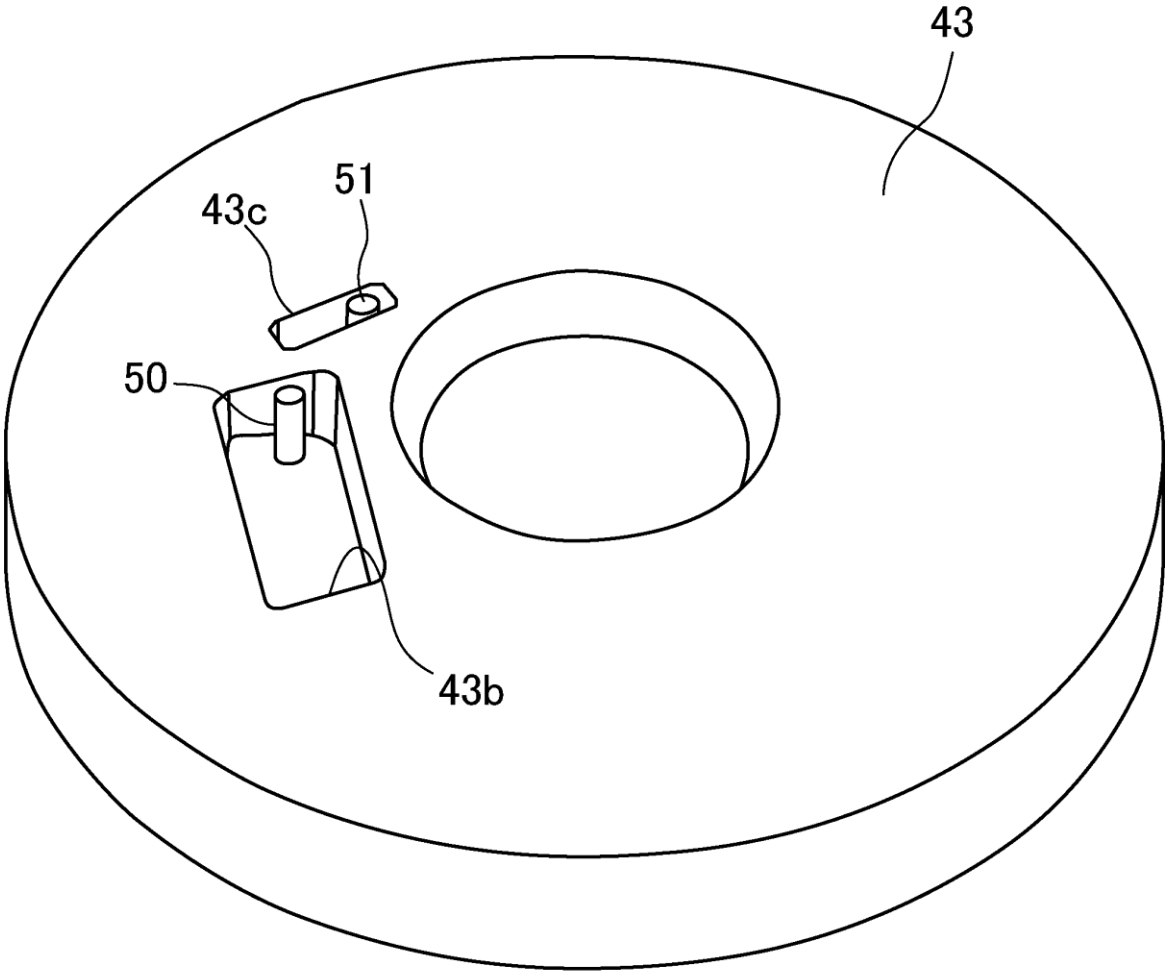


FIG. 5

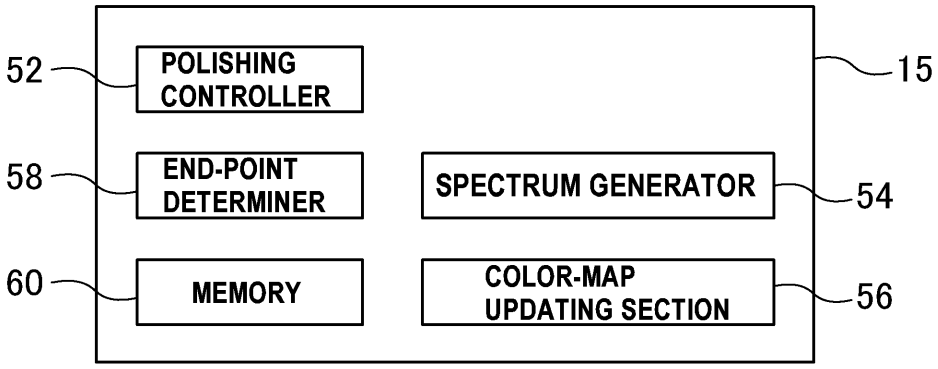

52
POLISHING CONTROLLER
15
58
END-POINT DETERMINER
SPECTRUM GENERATOR
54
60
MEMORY
COLOR-MAP UPDATING SECTION
56

FIG. 6

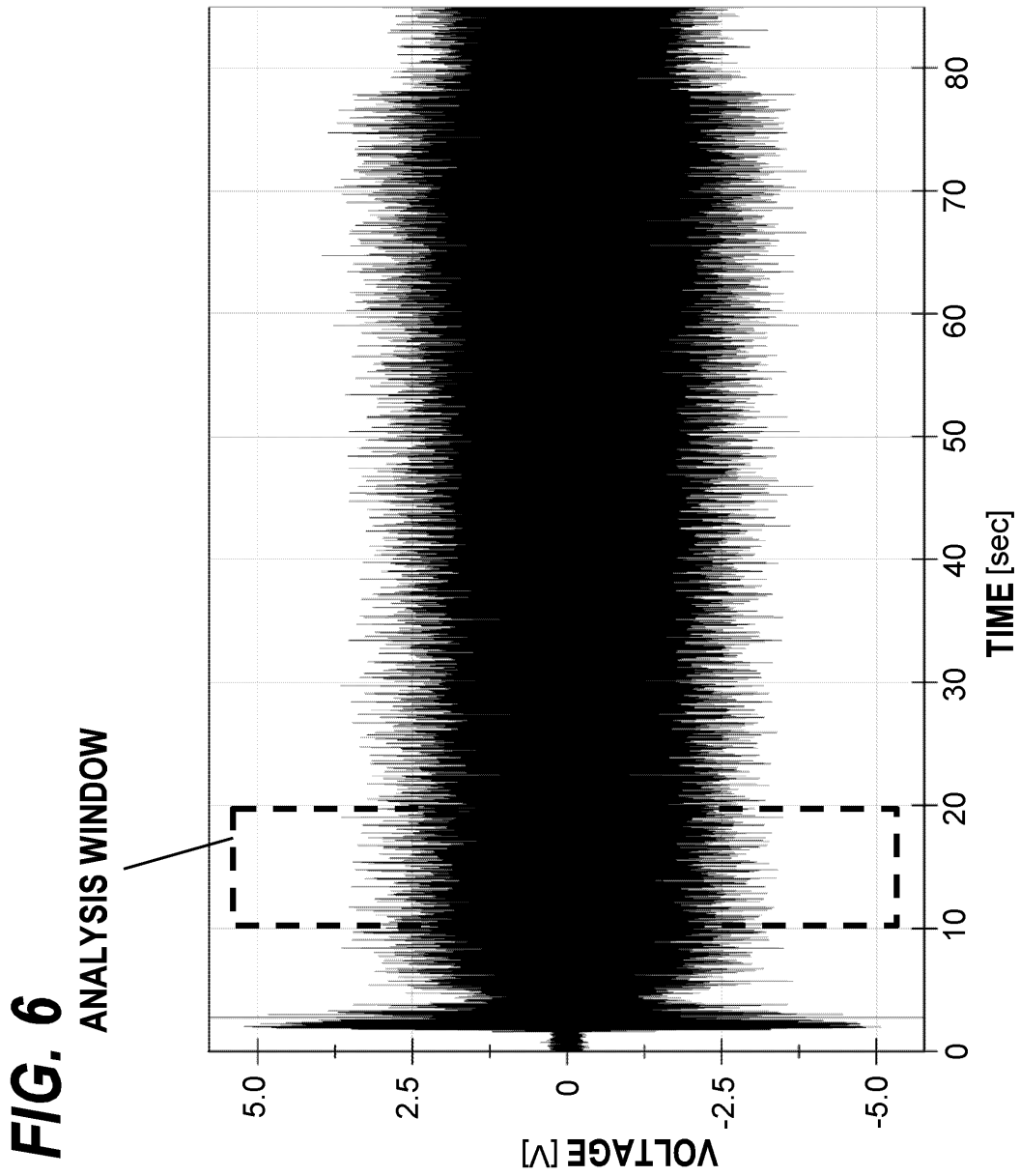

ANALYSIS WINDOW
VOLTAGE [V]
5.0
2.5
0
-2.5
-5.0
TIME [sec]
0
10
20
30
40
50
60
70
80

FIG. 7

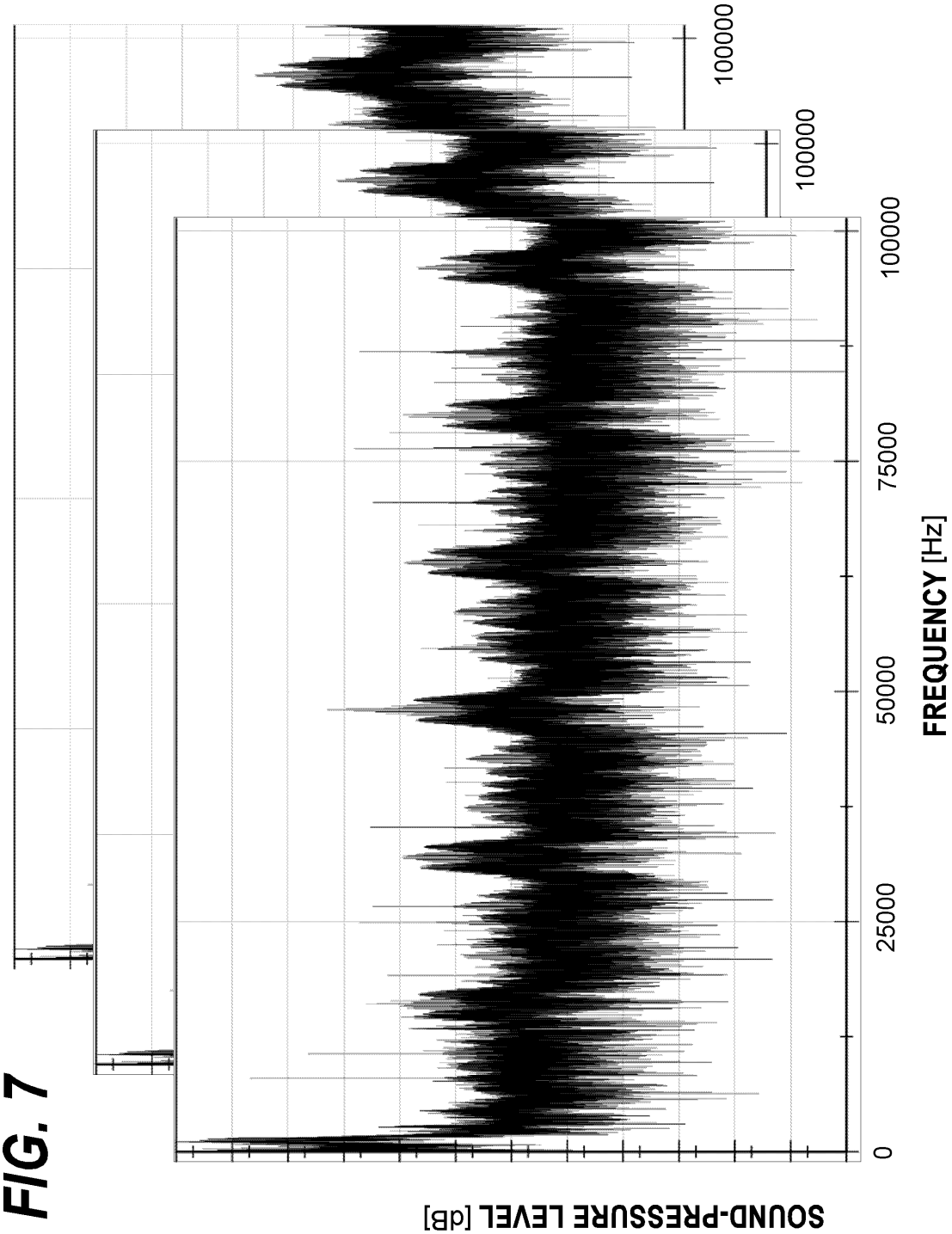

SOUND-PRESSURE LEVEL [dB]
0
25000
50000
75000
100000
FREQUENCY [Hz]
100000
100000
100000

FIG. 8

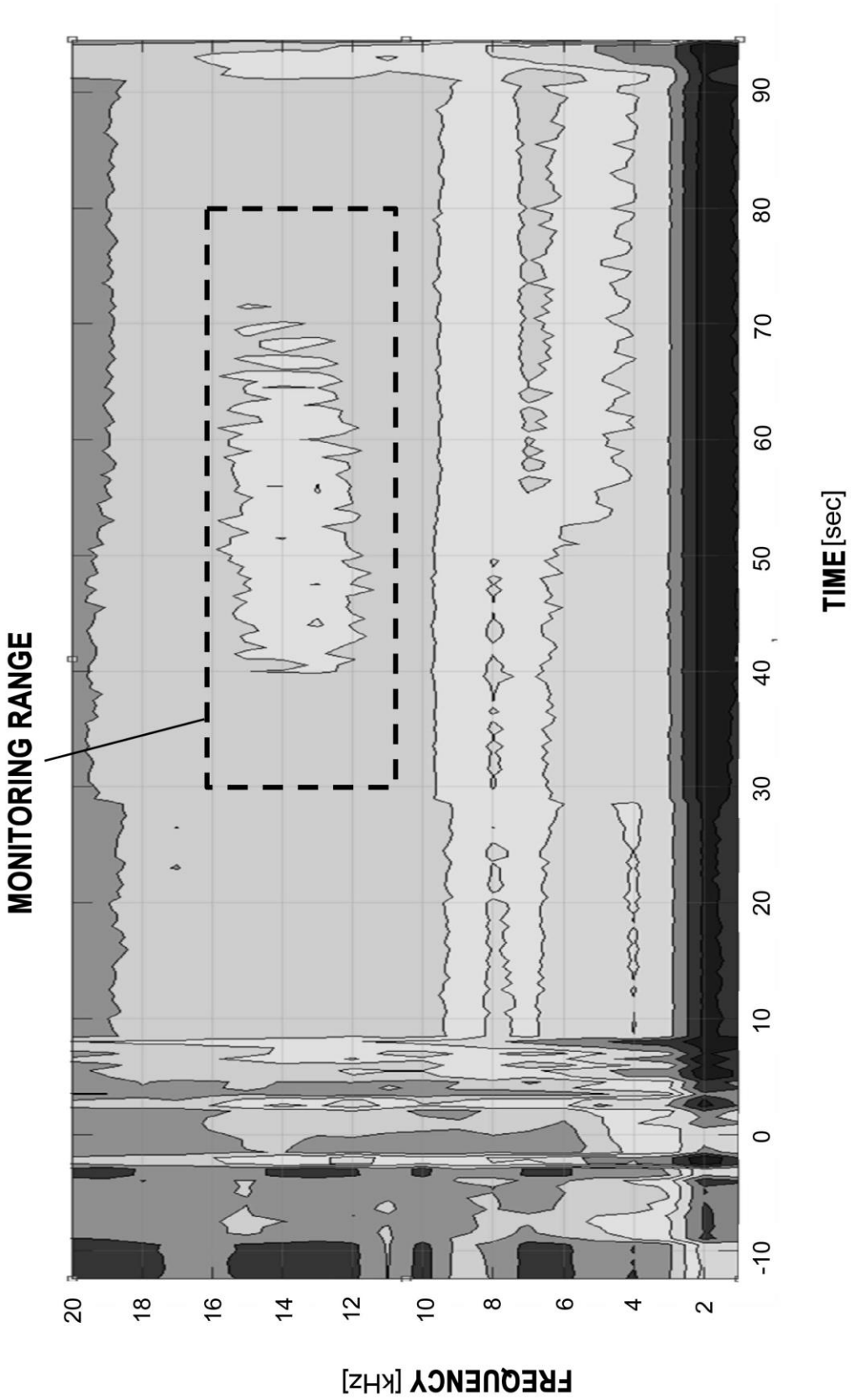

MONITORING RANGE
FREQUENCY [kHz]
20
18
16
14
12
10
8
6
4
2
-10
0
10
20
30
40
50
60
70
80
90
TIME [sec]

FIG. 9

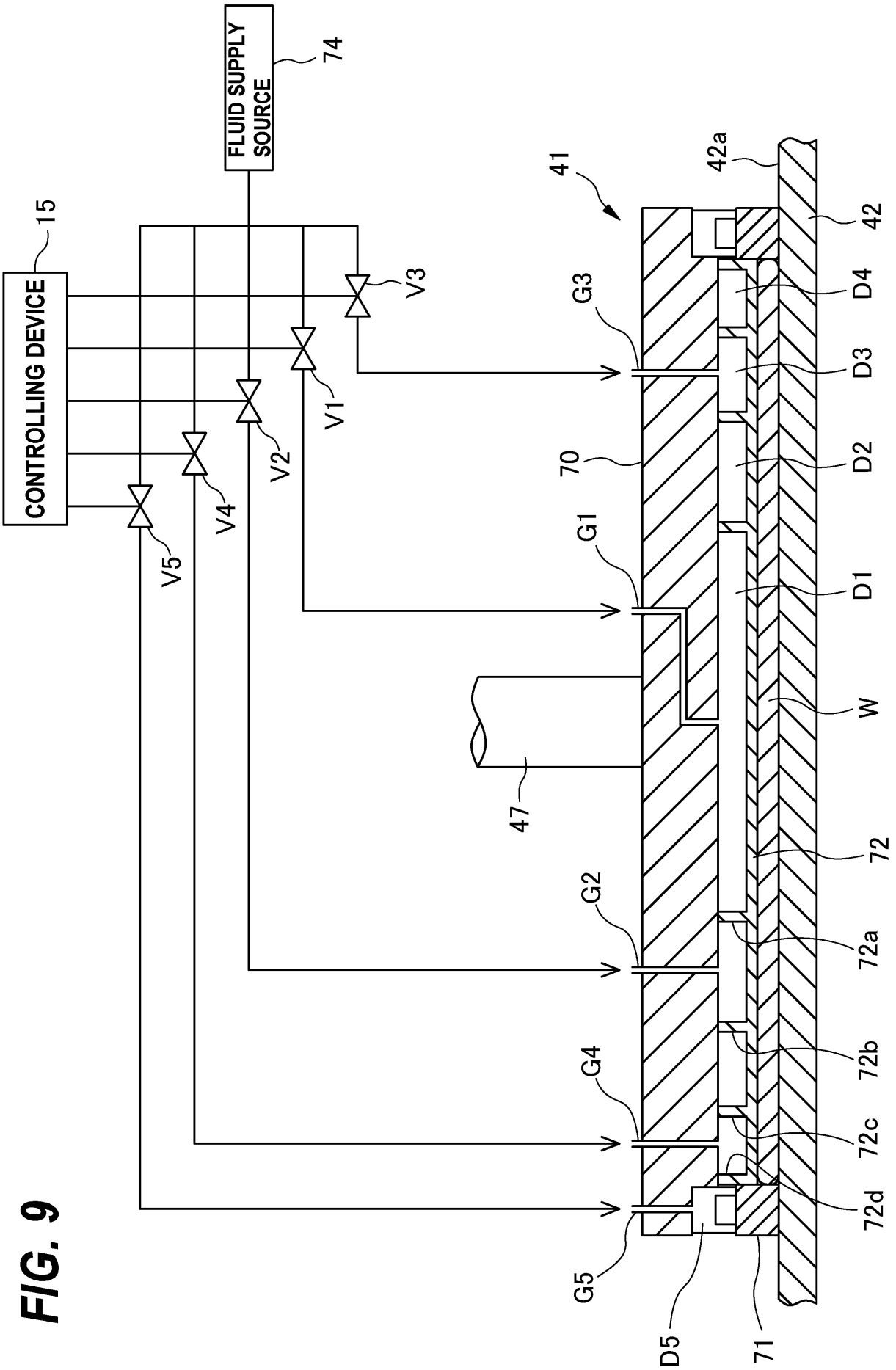

FLUID SUPPLY SOURCE
74
CONTROLLING DEVICE
15
V1
V2
V3
V4
V5
41
42a
42
G1
G2
G3
G4
G5
D1
D2
D3
D4
D5
70
71
72
72a
72b
72c
72d
W
47

FIG. 10

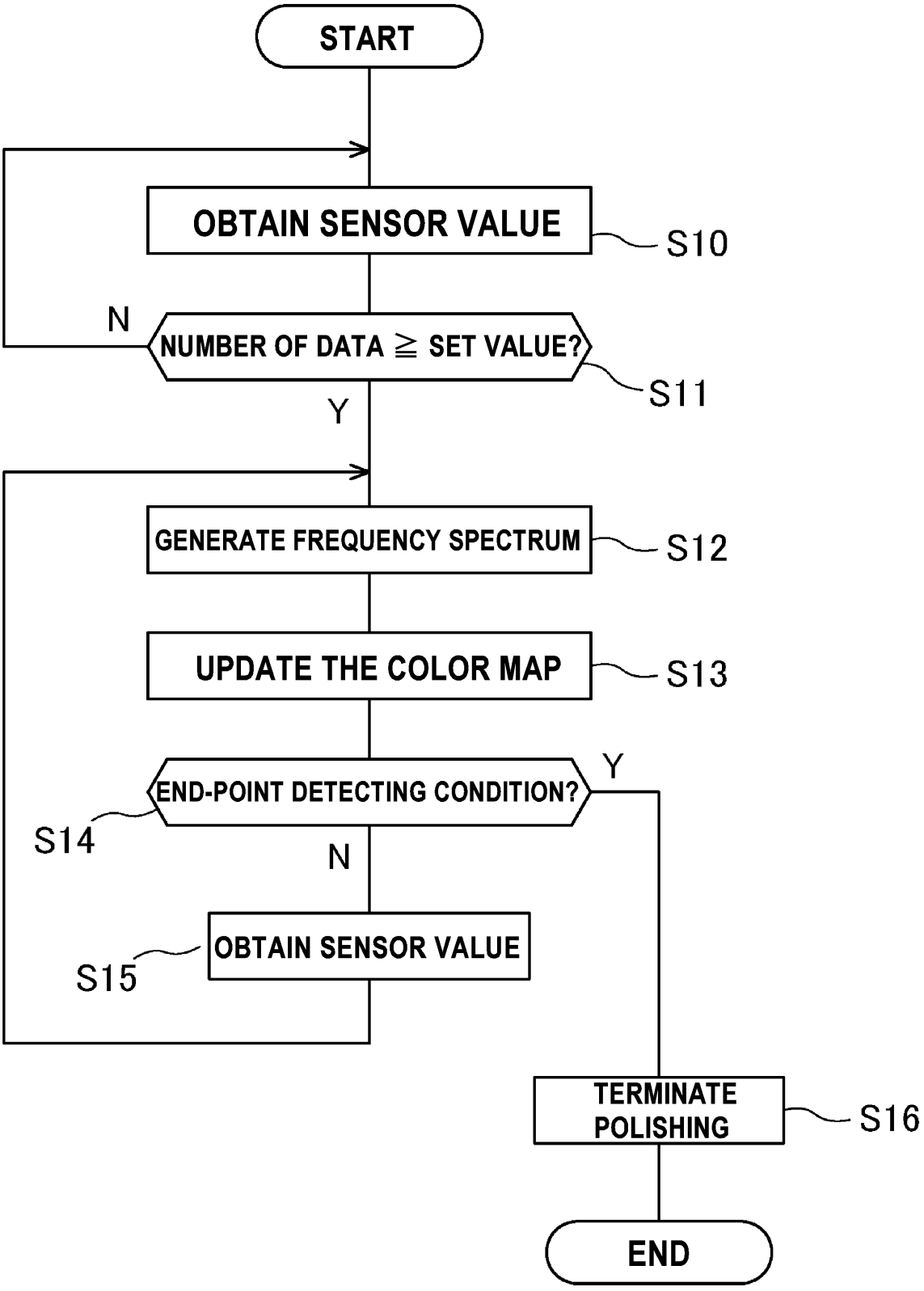

START
OBTAIN SENSOR VALUE
S10
N
NUMBER OF DATA ≧ SET VALUE?
S11
Y
GENERATE FREQUENCY SPECTRUM
S12
UPDATE THE COLOR MAP
S13
END-POINT DETECTING CONDITION?
Y
S14
N
OBTAIN SENSOR VALUE
S15
TERMINATE POLISHING
S16
END

FIG. 11

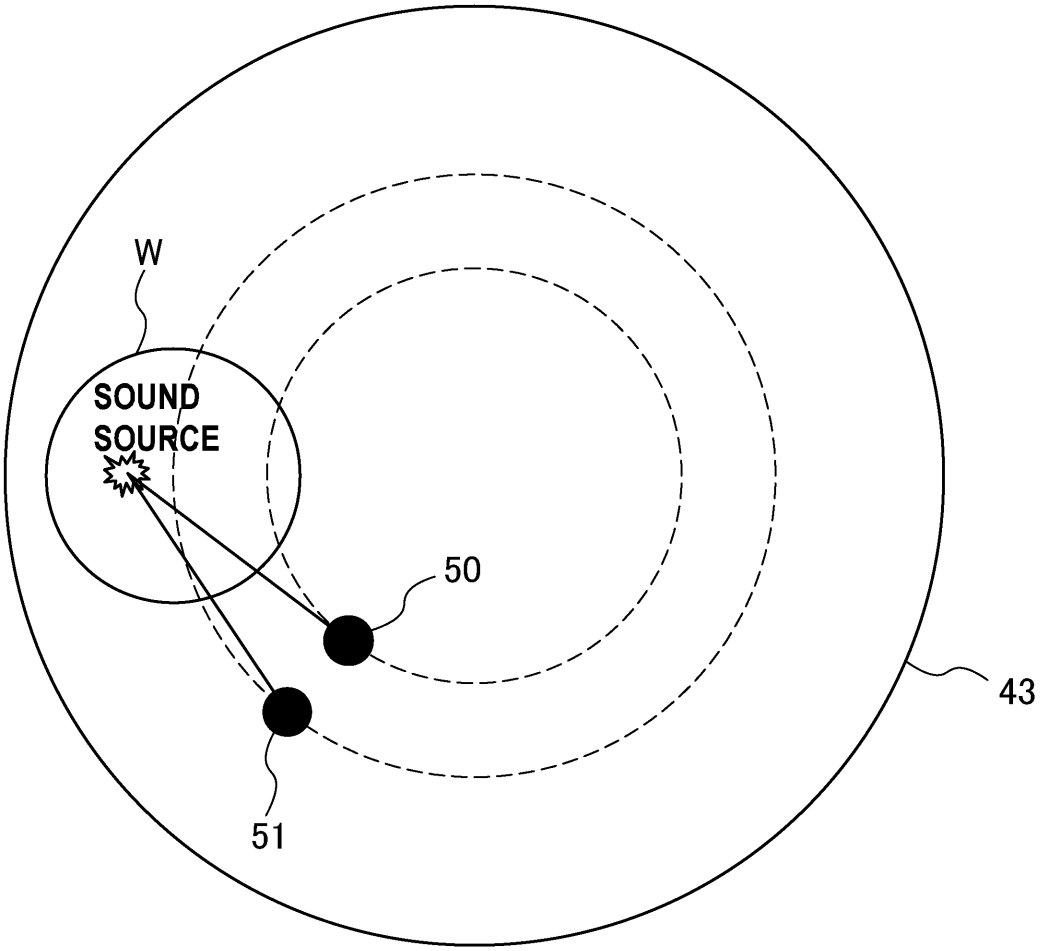


FIG. 12

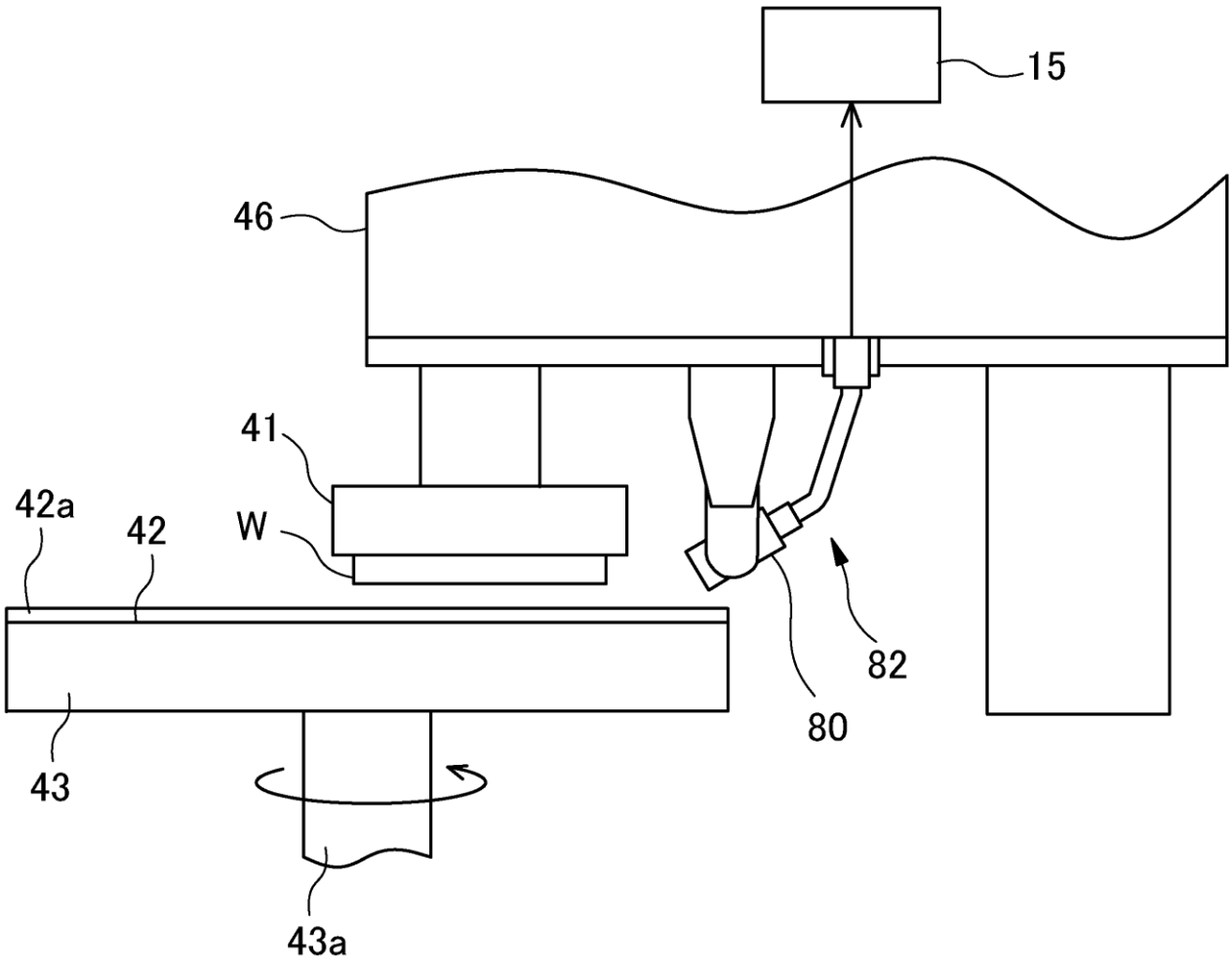


FIG. 13

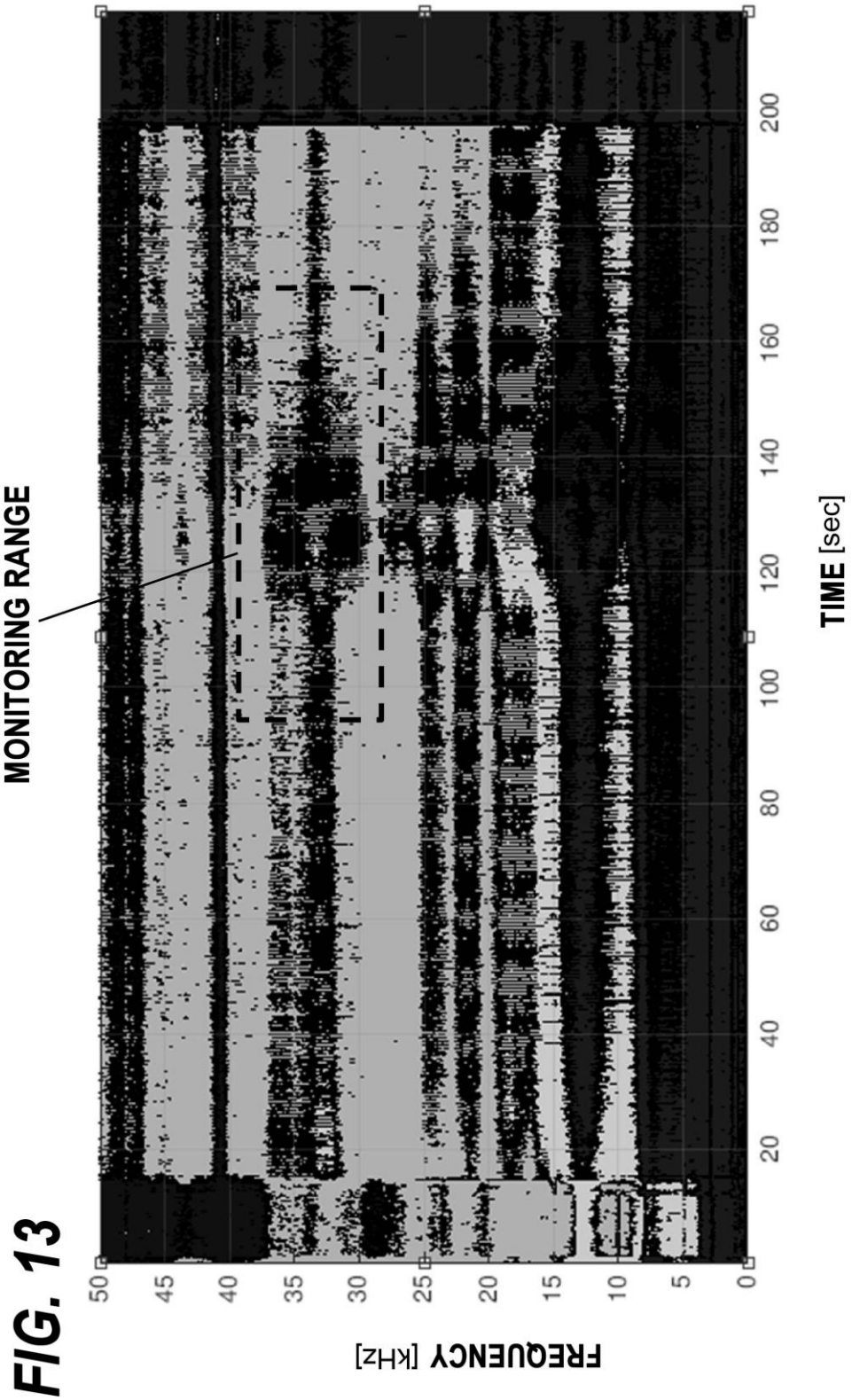

MONITORING RANGE
FREQUENCY [kHz]
50
45
40
35
30
25
20
15
10
5
0
20
40
60
80
100
120
140
160
180
200
TIME [sec]

FIG. 14

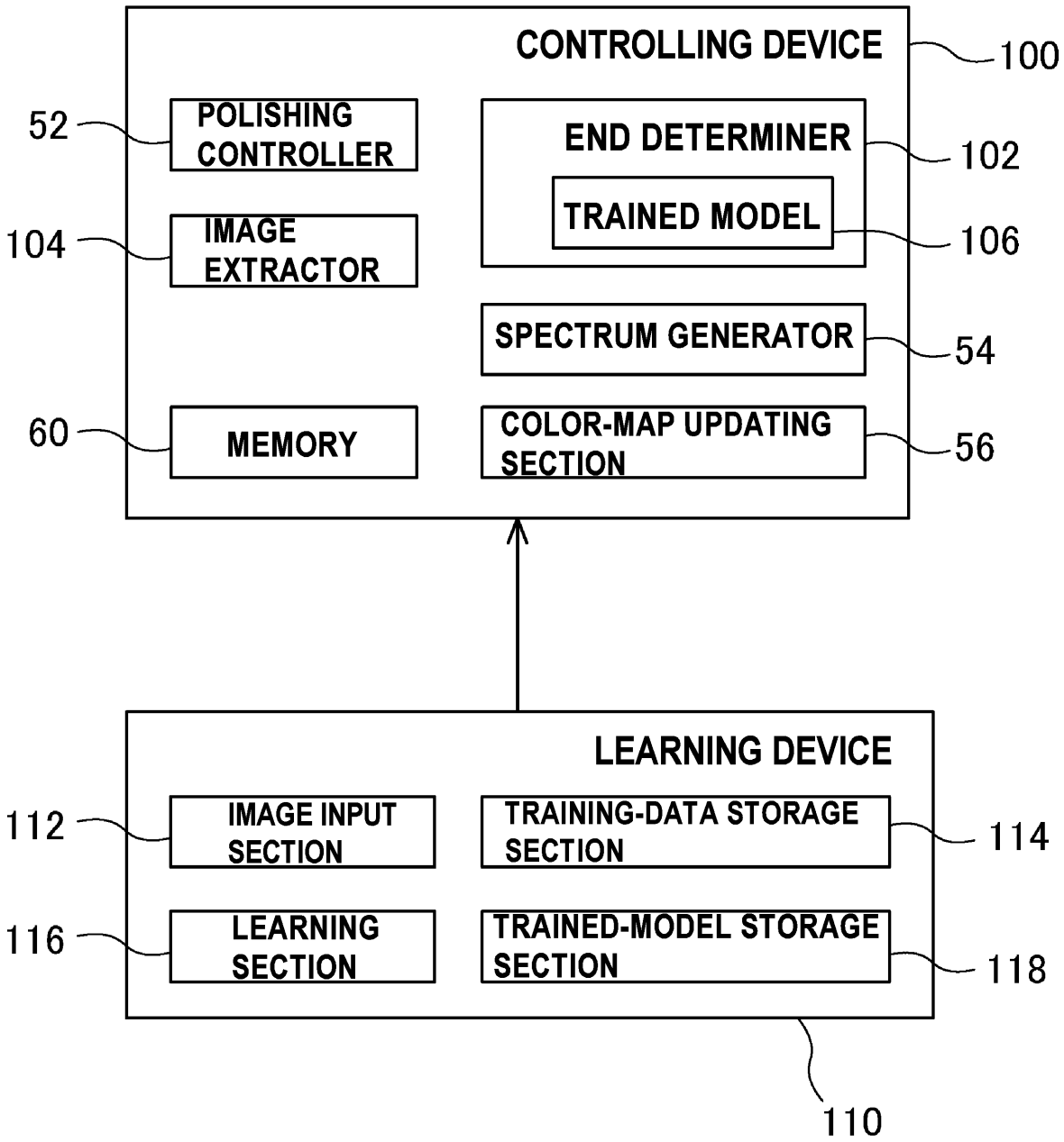

CONTROLLING DEVICE
100
52
POLISHING CONTROLLER
END DETERMINER
102
TRAINED MODEL
106
104
IMAGE EXTRACTOR
SPECTRUM GENERATOR
54
60
MEMORY
COLOR-MAP UPDATING SECTION
56
LEARNING DEVICE
112
IMAGE INPUT SECTION
TRAINING-DATA STORAGE SECTION
114
116
LEARNING SECTION
TRAINED-MODEL STORAGE SECTION
118
110

FIG. 15

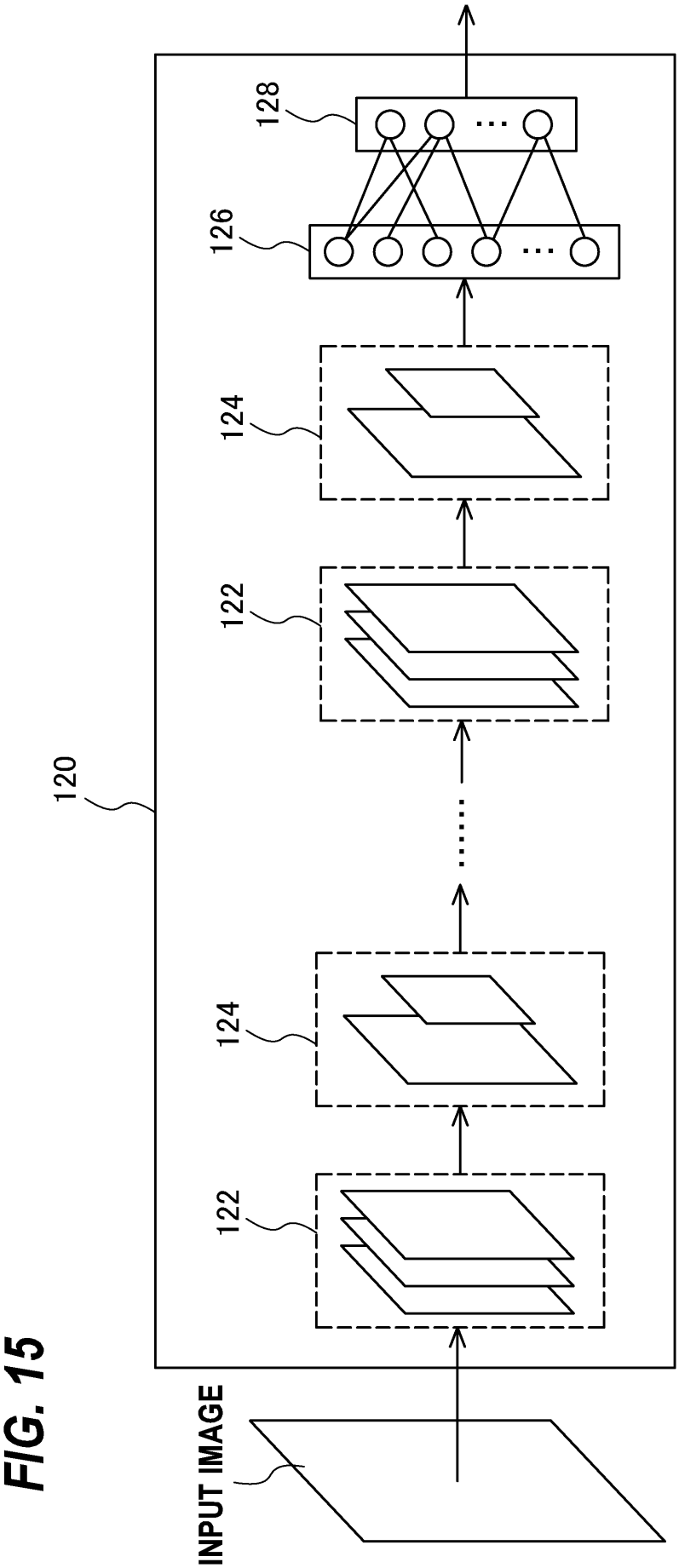
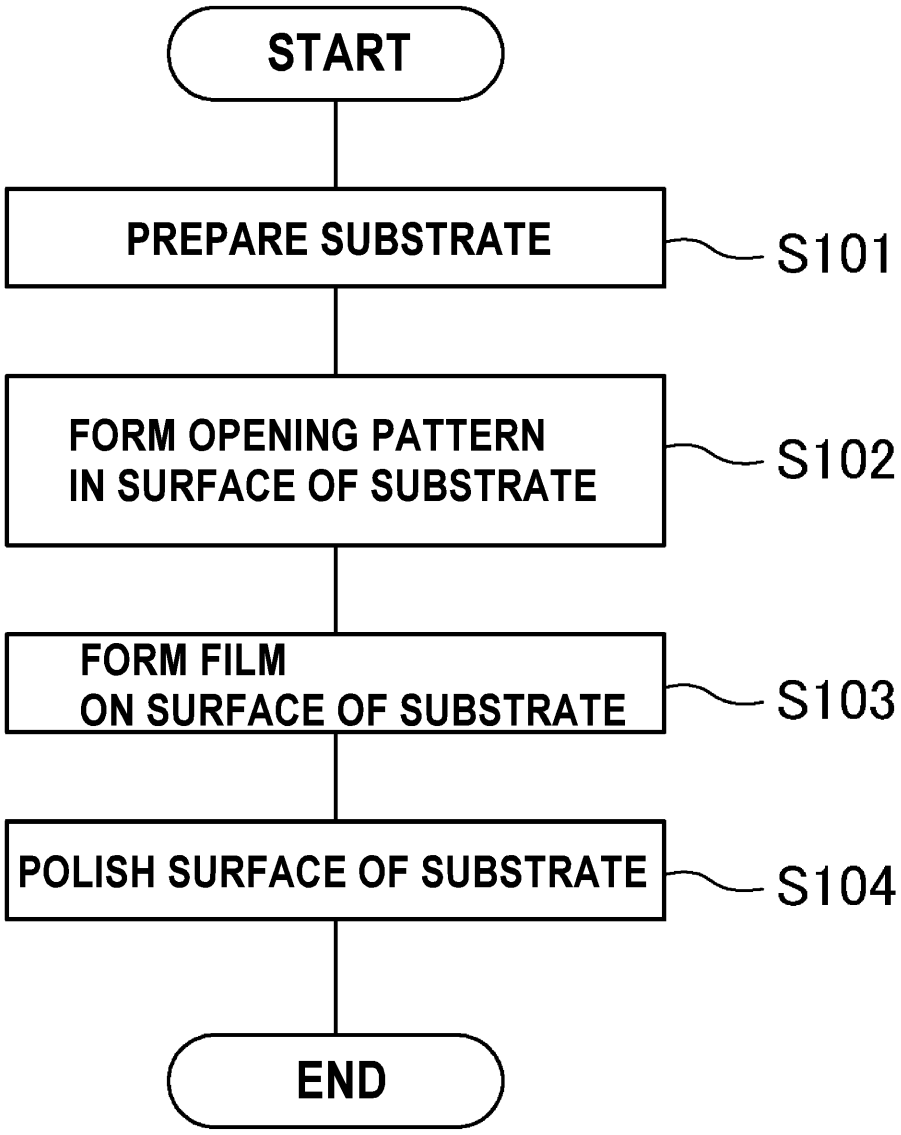


FIG. 16


START
PREPARE SUBSTRATE
S101
FORM OPENING PATTERN
IN SURFACE OF SUBSTRATE
S102
FORM FILM
ON SURFACE OF SUBSTRATE
S103
POLISH SURFACE OF SUBSTRATE
S104
END