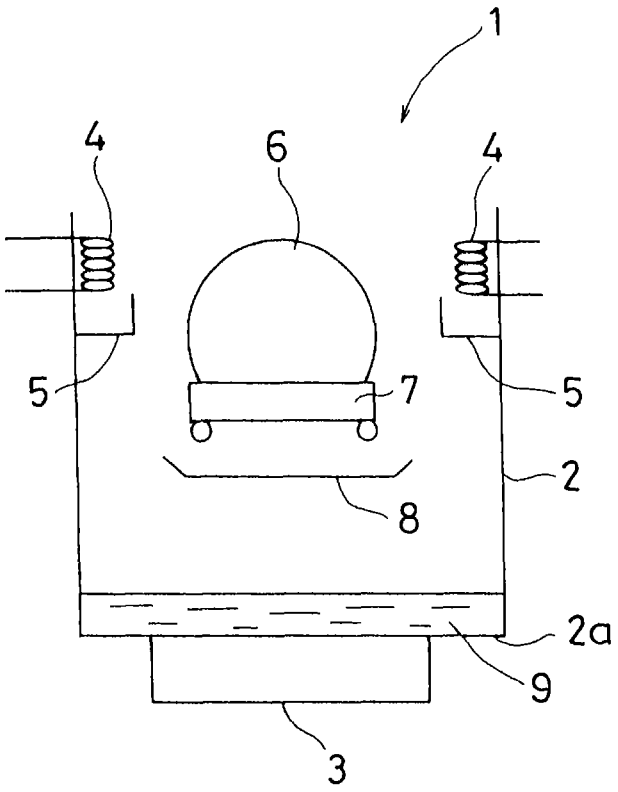


FIG.1

G00002

163163

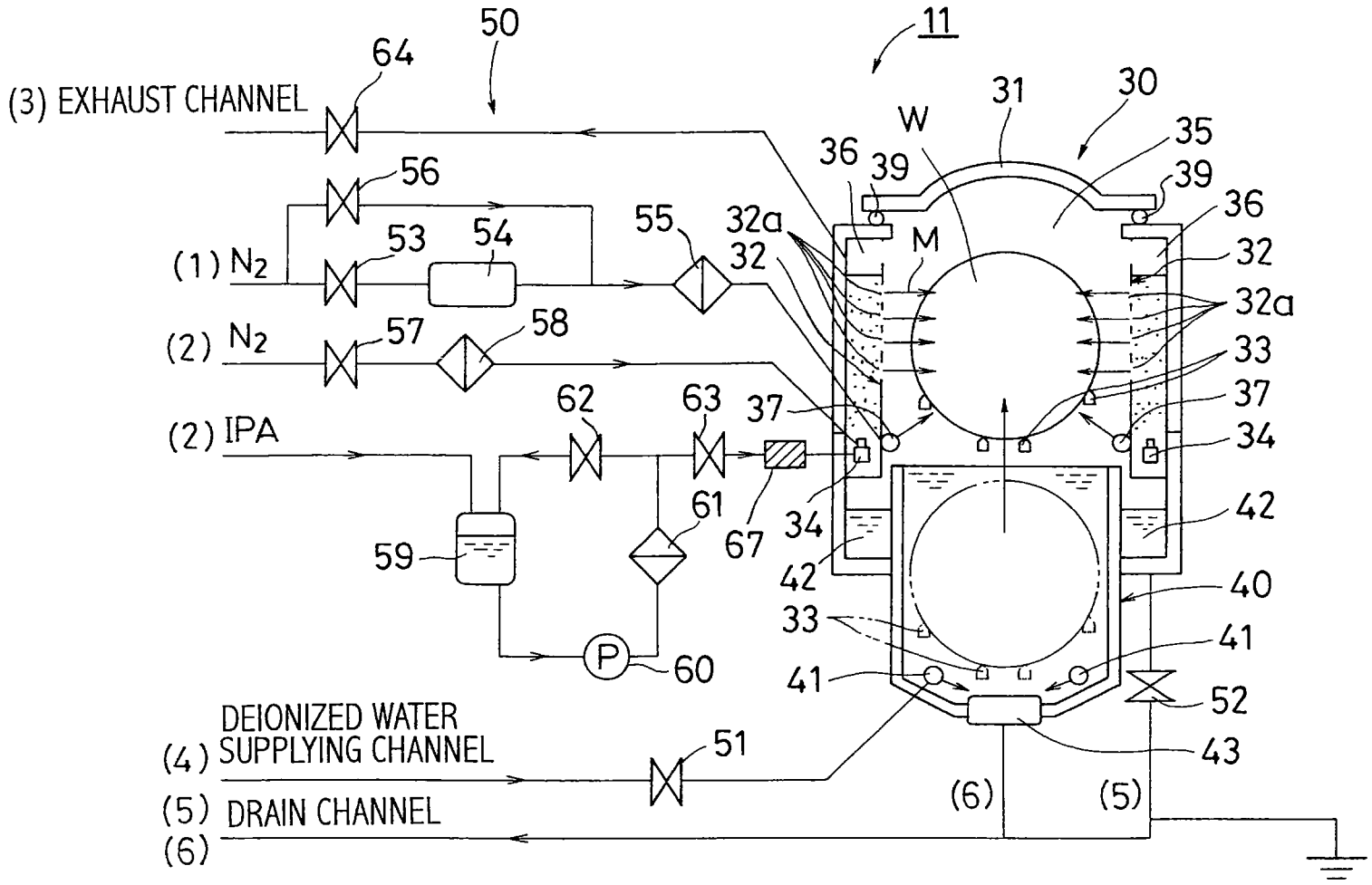

50
11
64
(3) EXHAUST CHANNEL
56
(1) N_2
53
54
55
32a
32
(2) N_2
57
58
(2) IPA
62
63
37
61
59
67
34
42
P
60
W
31
30
35
36
39
M
33
41
40
52
43
DEIONIZED WATER
(4) SUPPLYING CHANNEL
51
(5) DRAIN CHANNEL
(6)
(6)
(5)

FIG.2

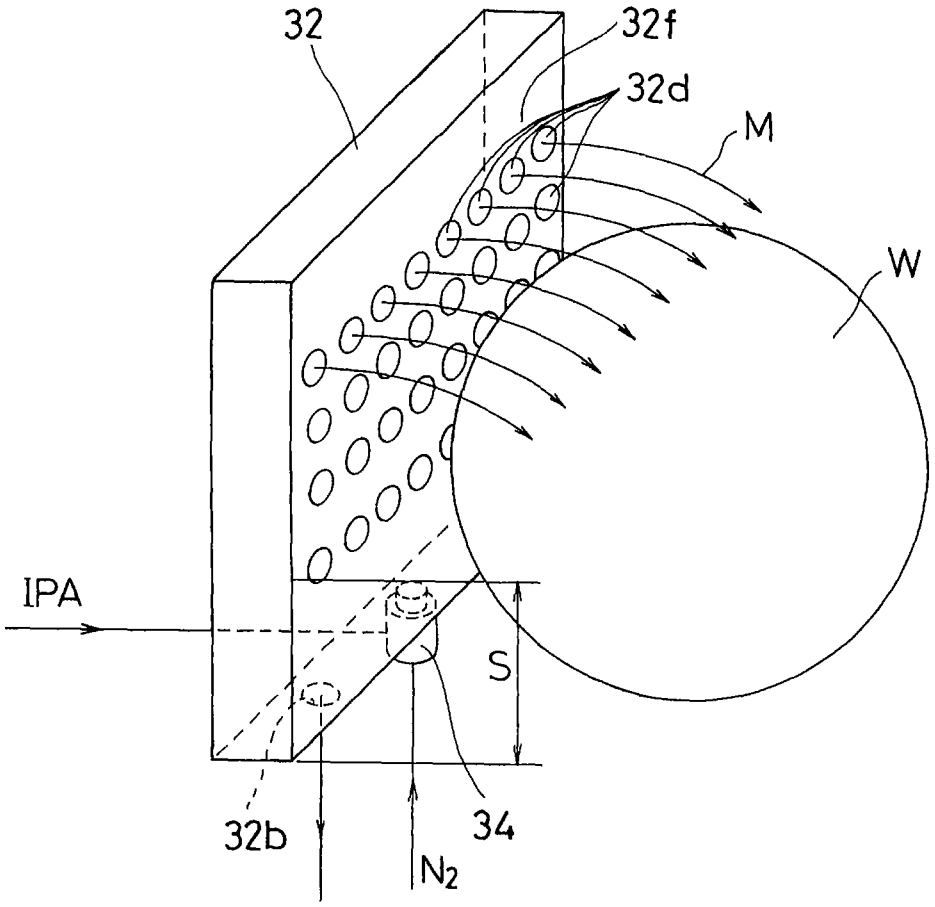


FIG.3

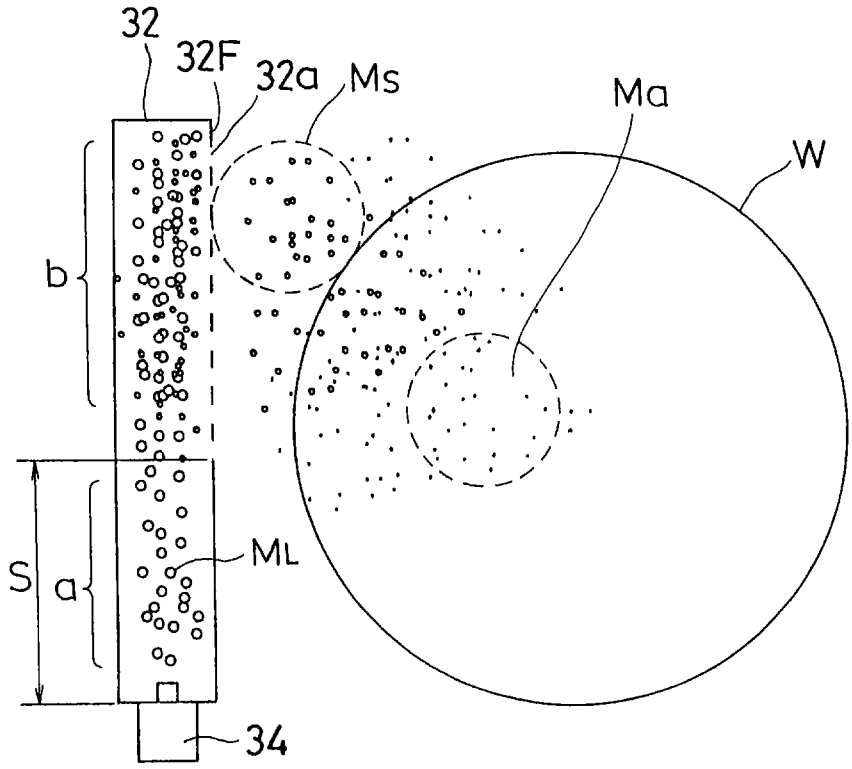


FIG.4

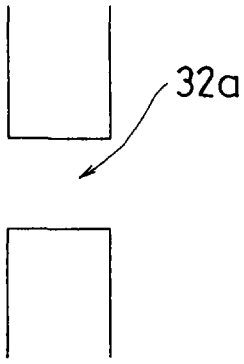


FIG.5(a)

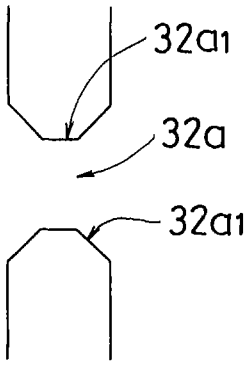


FIG.5(b)

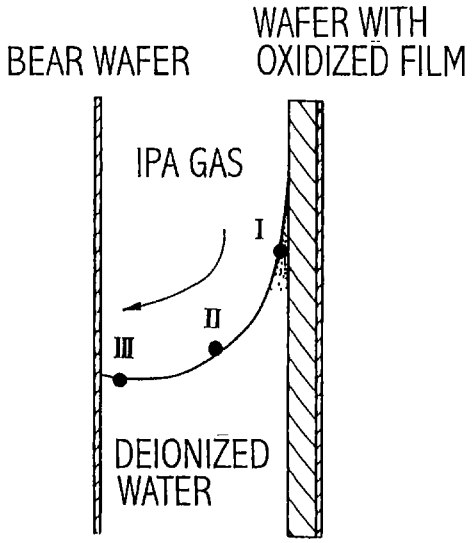

BEAR WAFER
WAFER WITH OXIDIZED FILM
IPA GAS
I
II
III
DEIONIZED WATER

FIG.6

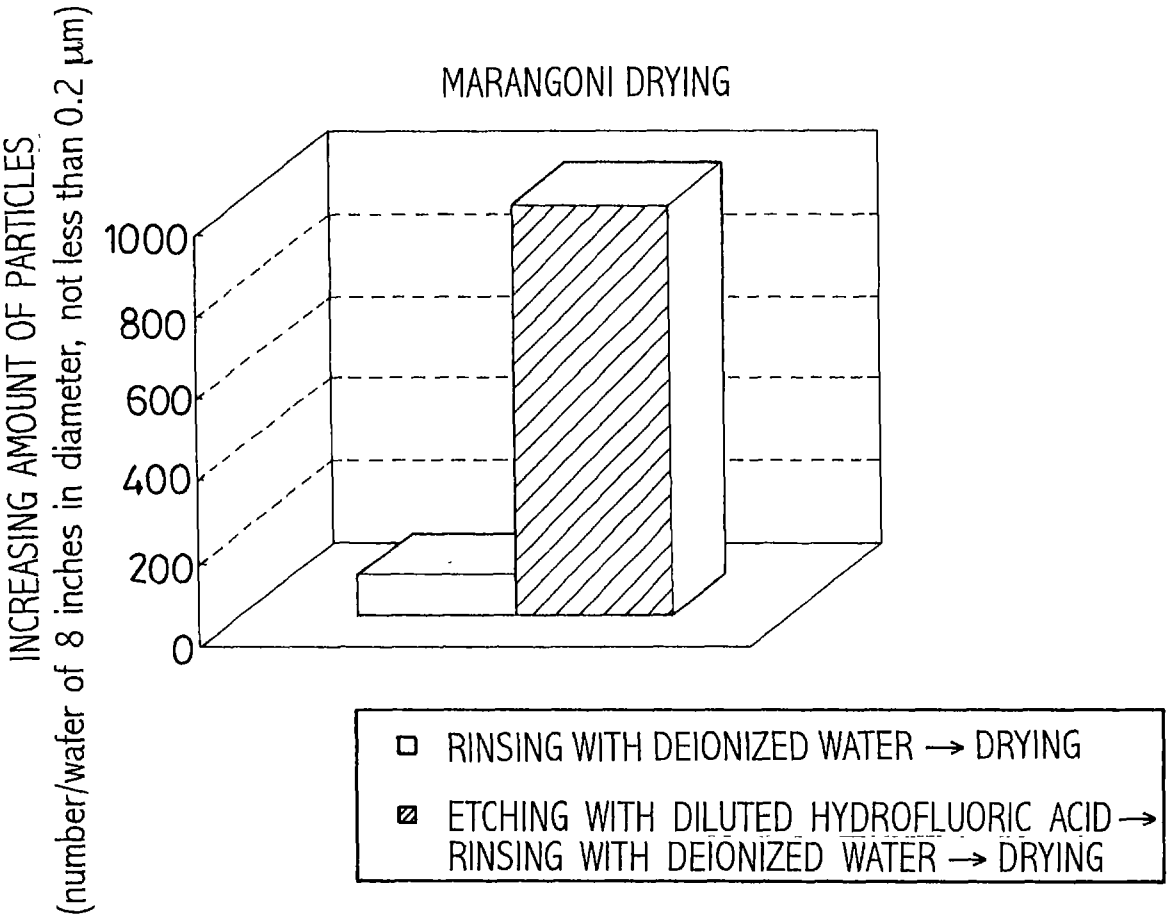

MARANGONI DRYING
INCREASING AMOUNT OF PARTICLES
(number/wafer of 8 inches in diameter, not less than 0.2 μm)
1000
800
600
400
200
0
RINSING WITH DEIONIZED WATER → DRYING
ETCHING WITH DILUTED HYDROFLUORIC ACID → RINSING WITH DEIONIZED WATER → DRYING

FIG.7

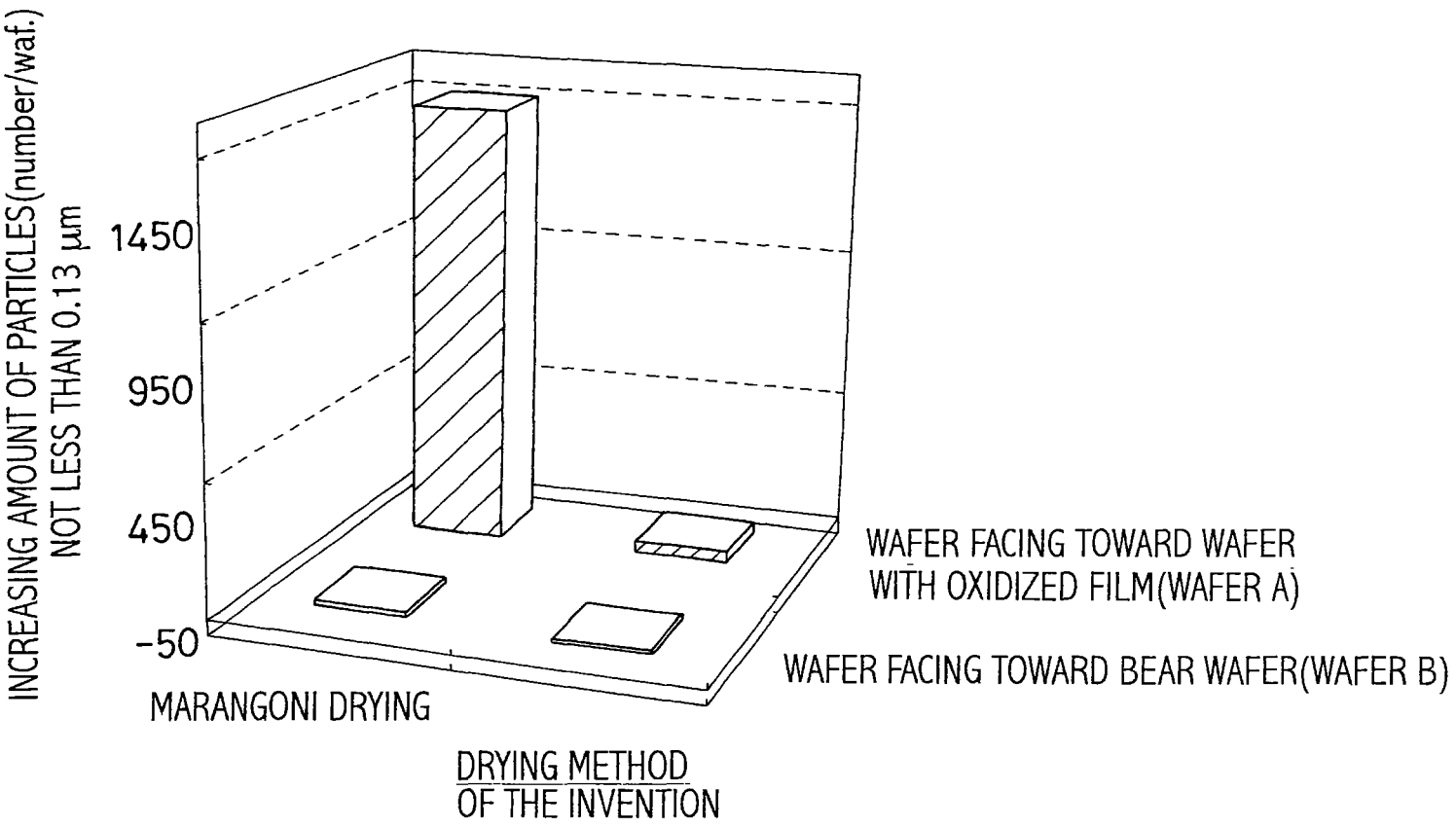

INCREASING AMOUNT OF PARTICLES(number/waf.)
NOT LESS THAN 0.13 μm
1450
950
450
-50
MARANGONI DRYING
DRYING METHOD
OF THE INVENTION
WAFER FACING TOWARD WAFER
WITH OXIDIZED FILM(WAFER A)
WAFER FACING TOWARD BEAR WAFER(WAFER B)

FIG.8

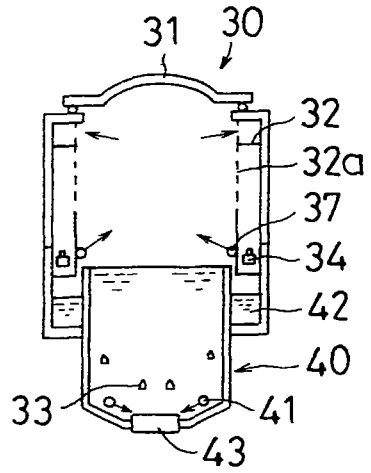


FIG.9(a)

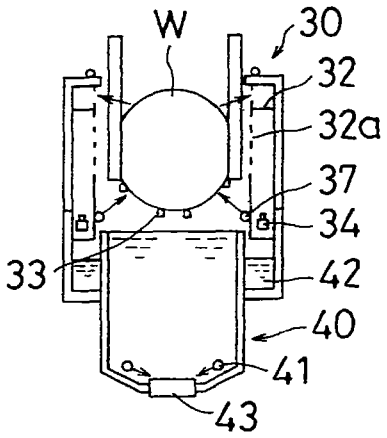


FIG.9(b)

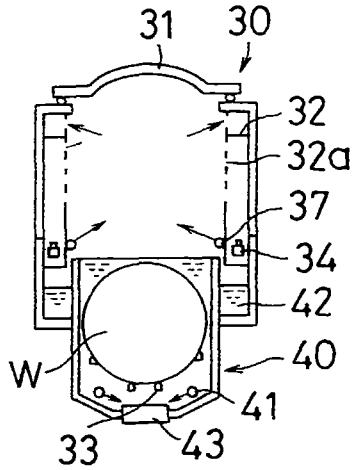


FIG.9(c)

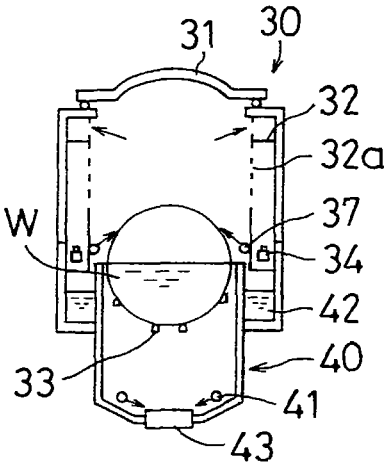


FIG.9(d)

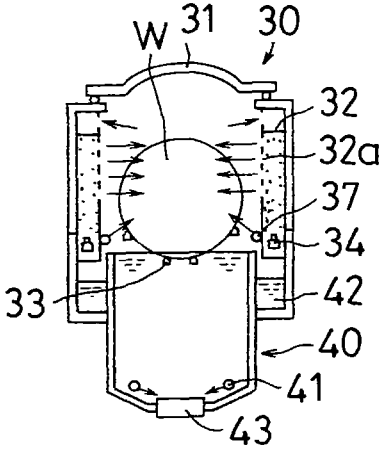


FIG.9(e)

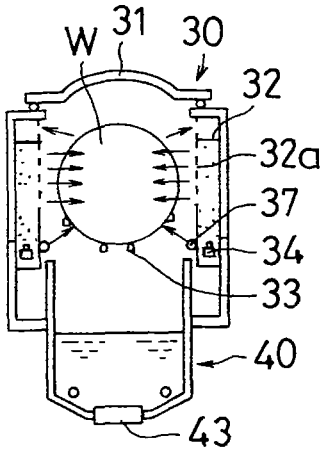


FIG.9(f)

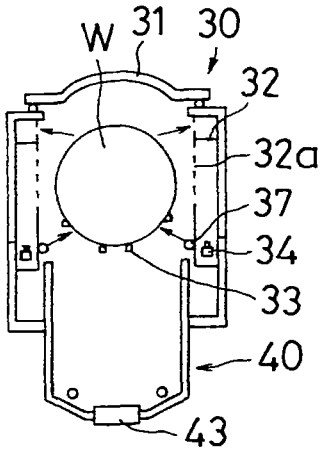


FIG.9(g)

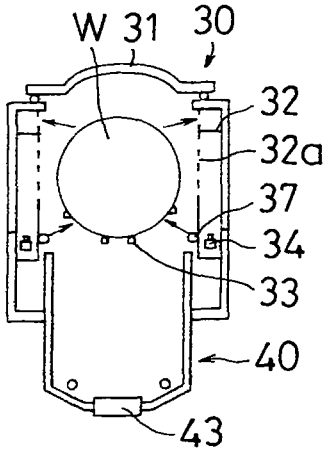


FIG.9(h)

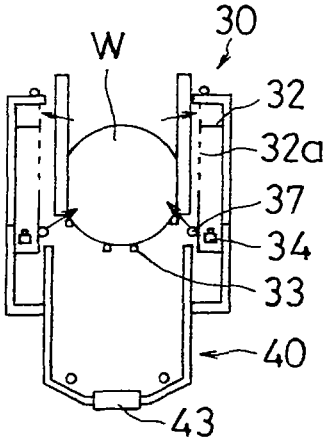


FIG.9(i)

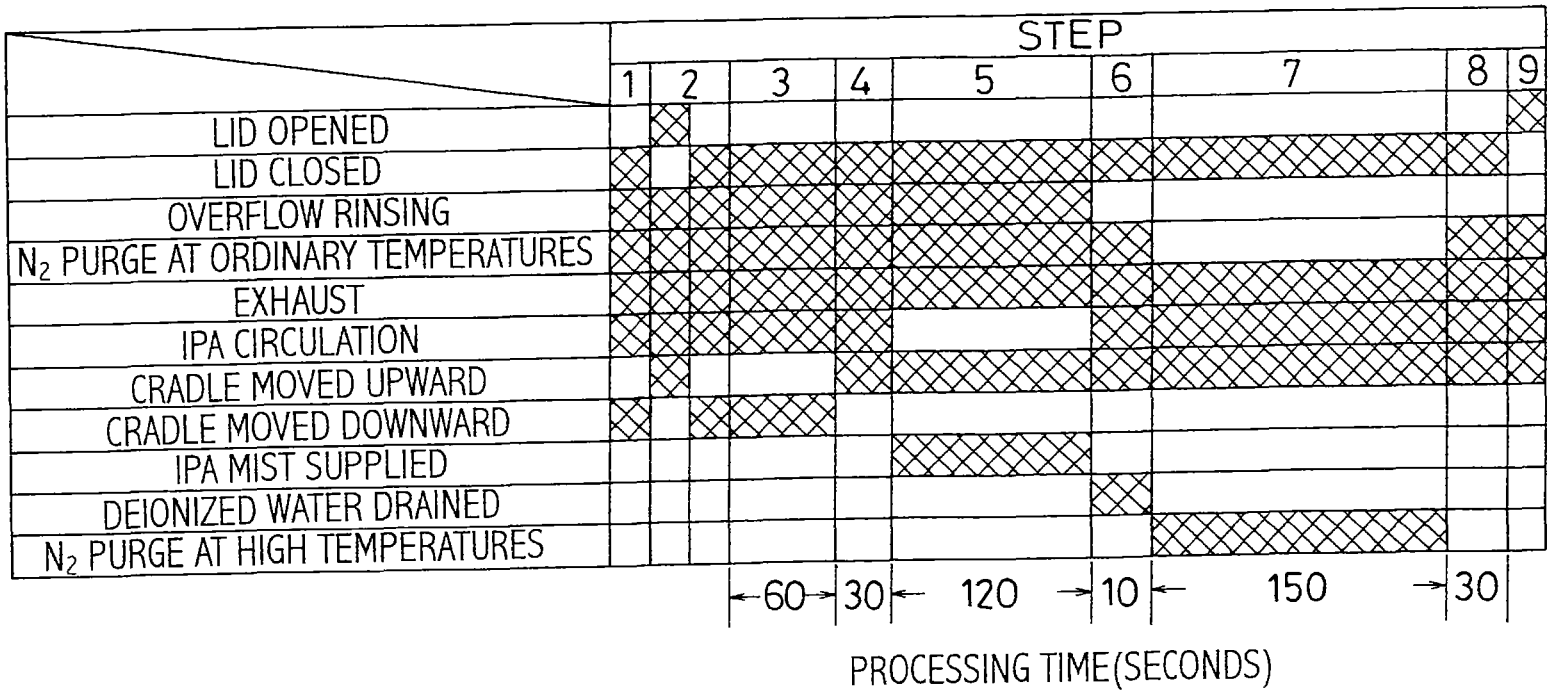

STEP
1
2
3
4
5
6
7
8
9
LID OPENED
LID CLOSED
OVERFLOW RINSING
N_2 PURGE AT ORDINARY TEMPERATURES
EXHAUST
IPA CIRCULATION
CRADLE MOVED UPWARD
CRADLE MOVED DOWNWARD
IPA MIST SUPPLIED
DEIONIZED WATER DRAINED
N_2 PURGE AT HIGH TEMPERATURES
60
30
120
10
150
30
PROCESSING TIME(SECONDS)

FIG.10

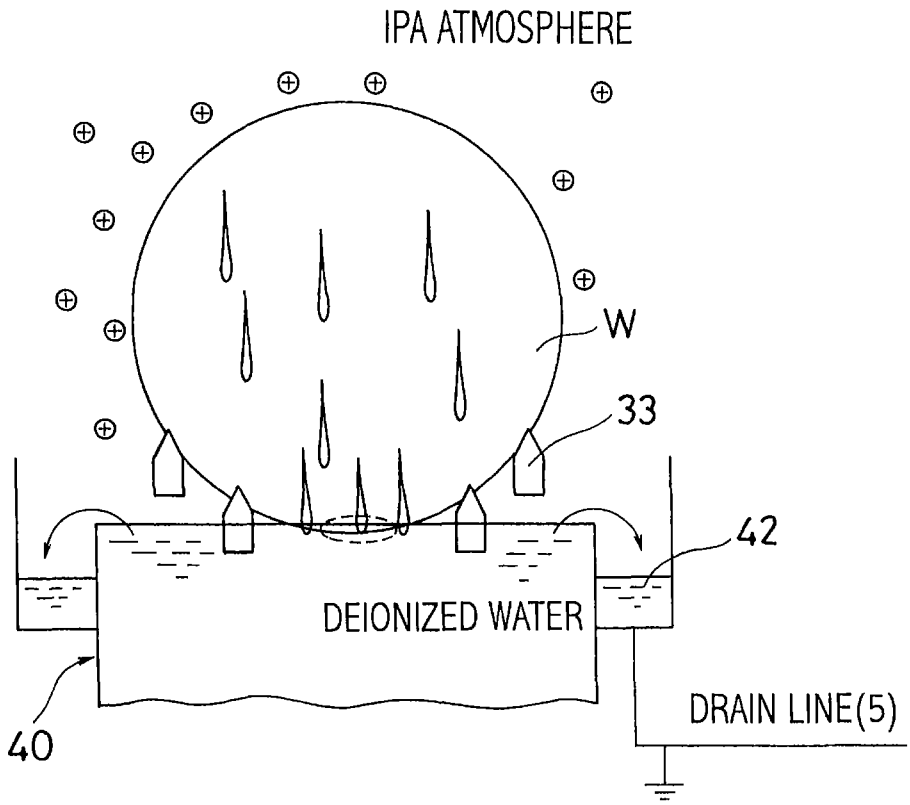
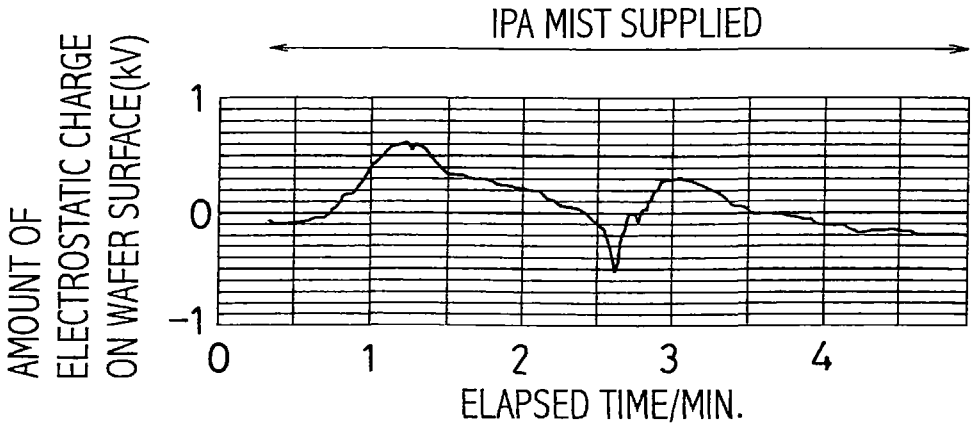


FIG.11



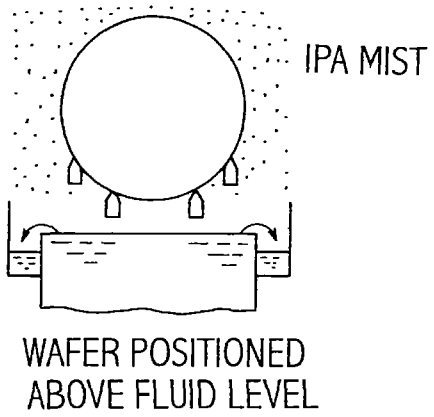
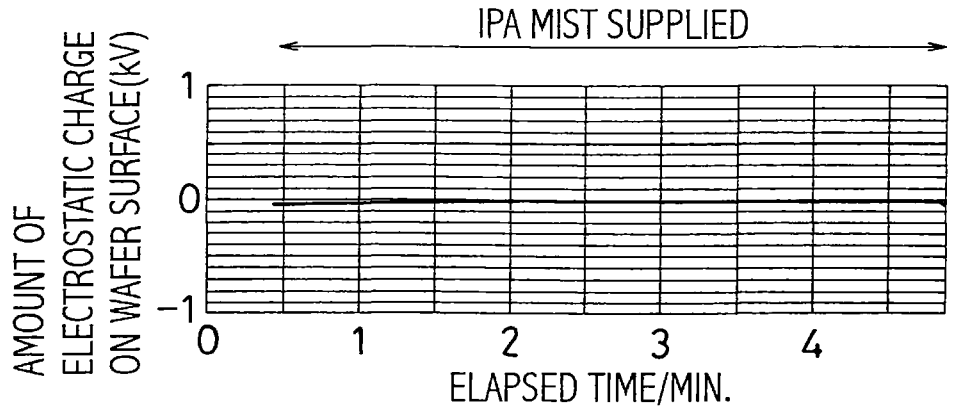


FIG.12(a)



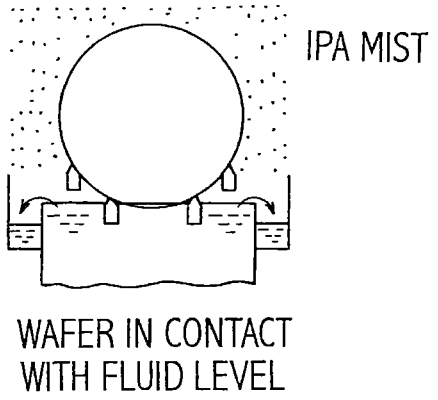


FIG.12(b)

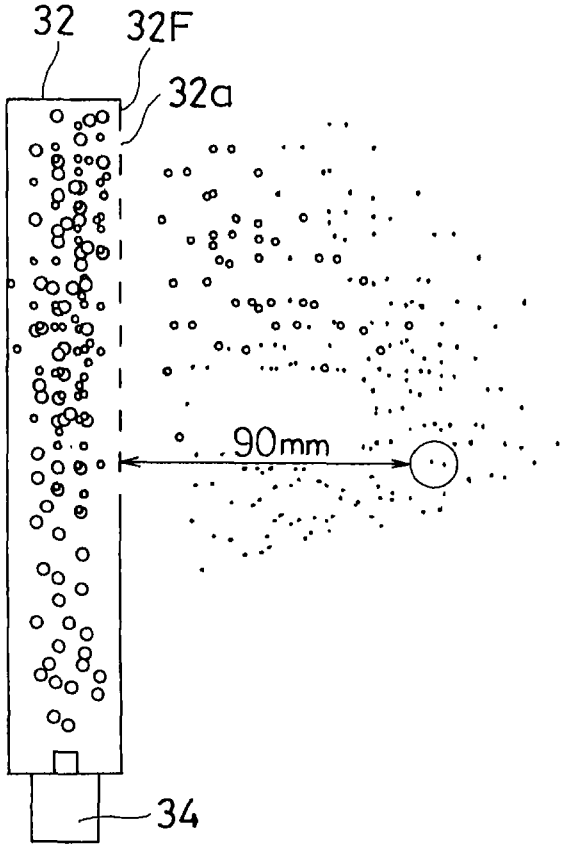


FIG.13

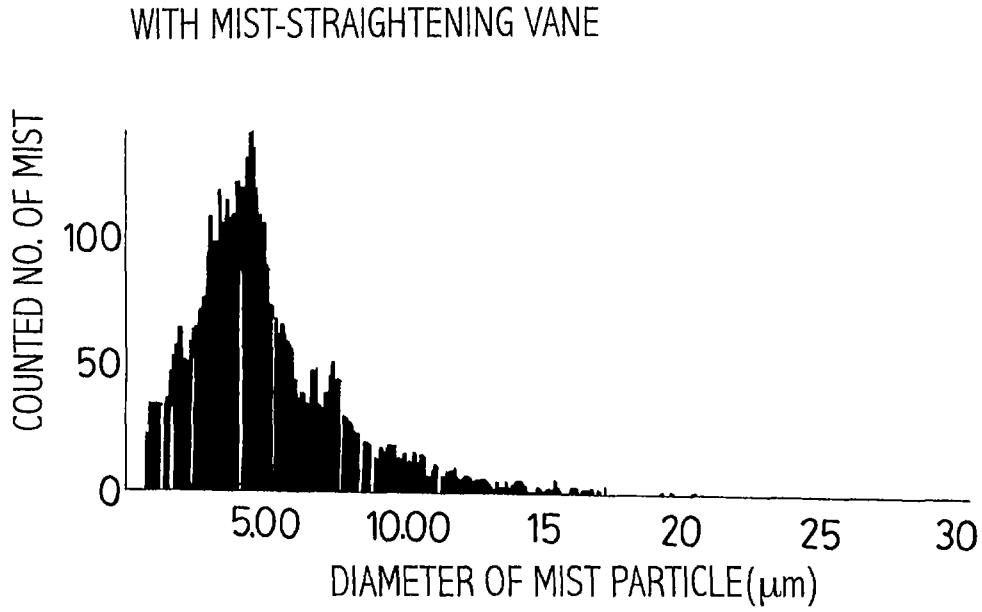


FIG.14(a)

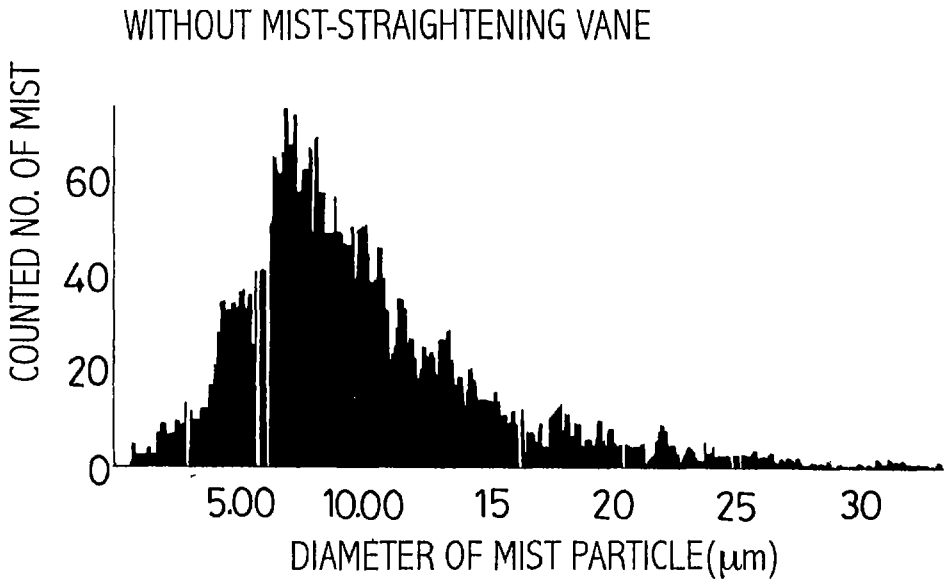


FIG.14(b)

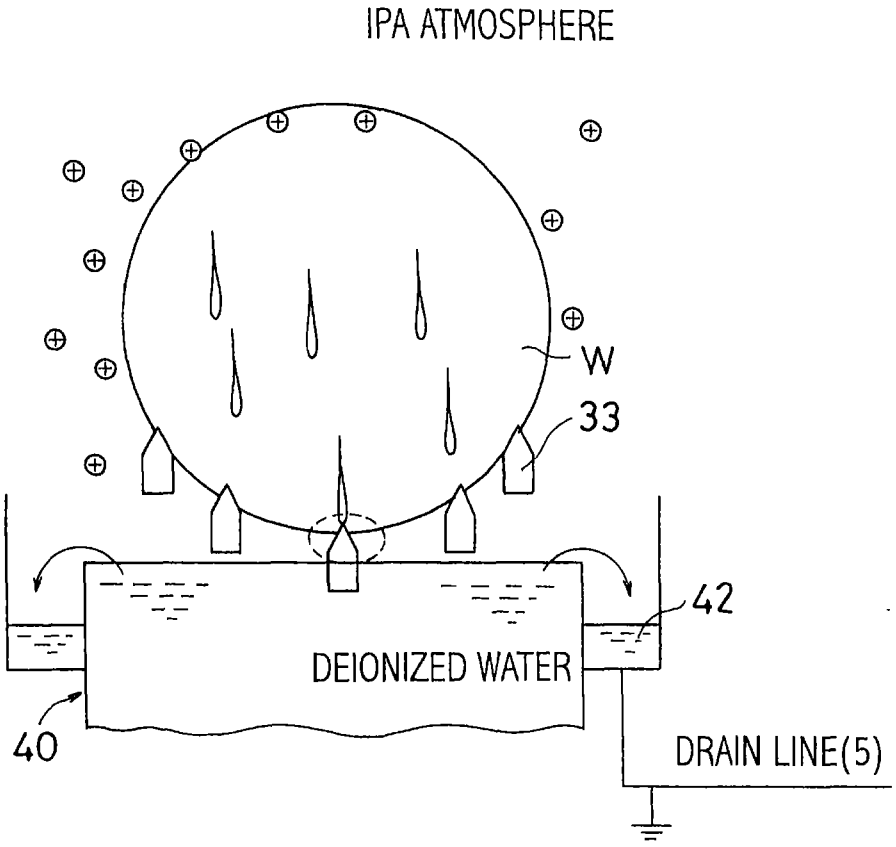


FIG.15

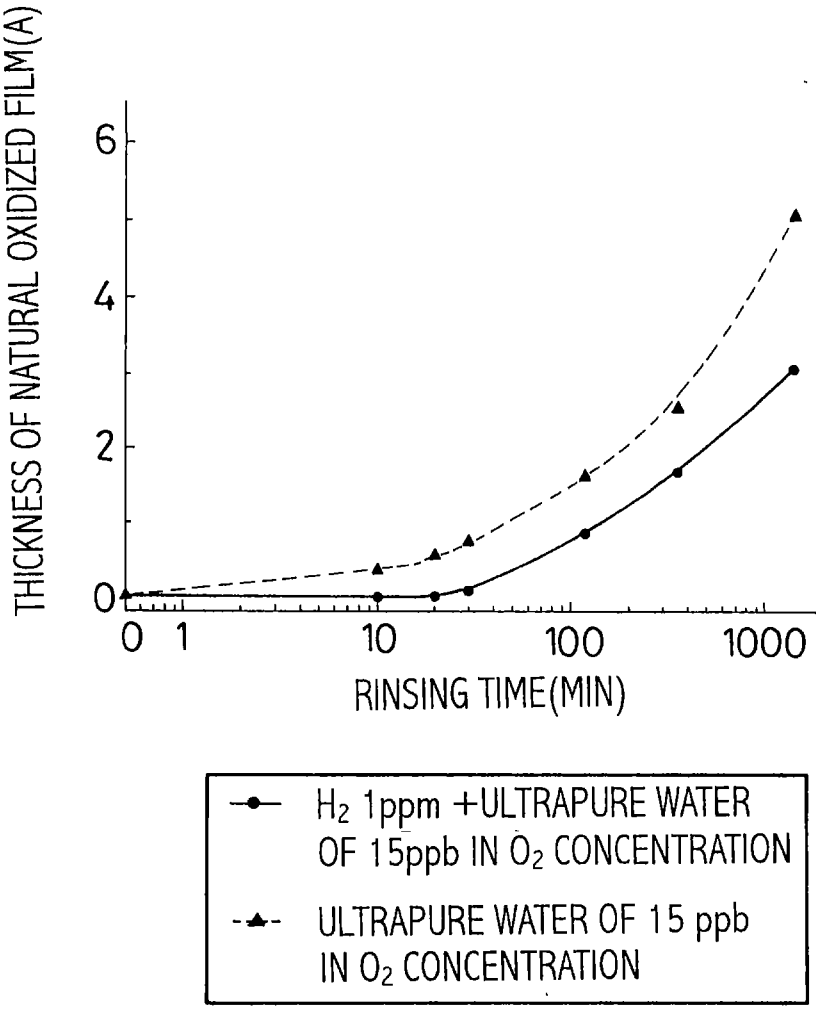

THICKNESS OF NATURAL OXIDIZED FILM(A)
6
4
2
0
0 1
10
100
1000
RINSING TIME(MIN)
H2 1ppm +ULTRAPURE WATER OF 15ppb IN O2 CONCENTRATION
ULTRAPURE WATER OF 15 ppb IN O2 CONCENTRATION

FIG.16

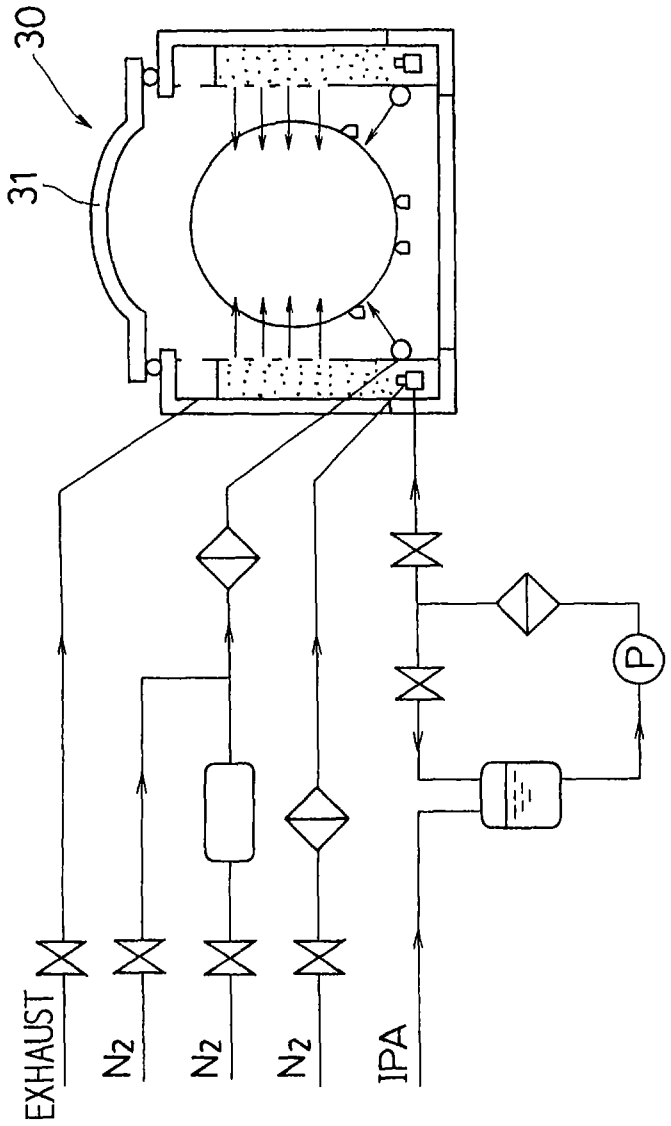


FIG.17