FIG. 1

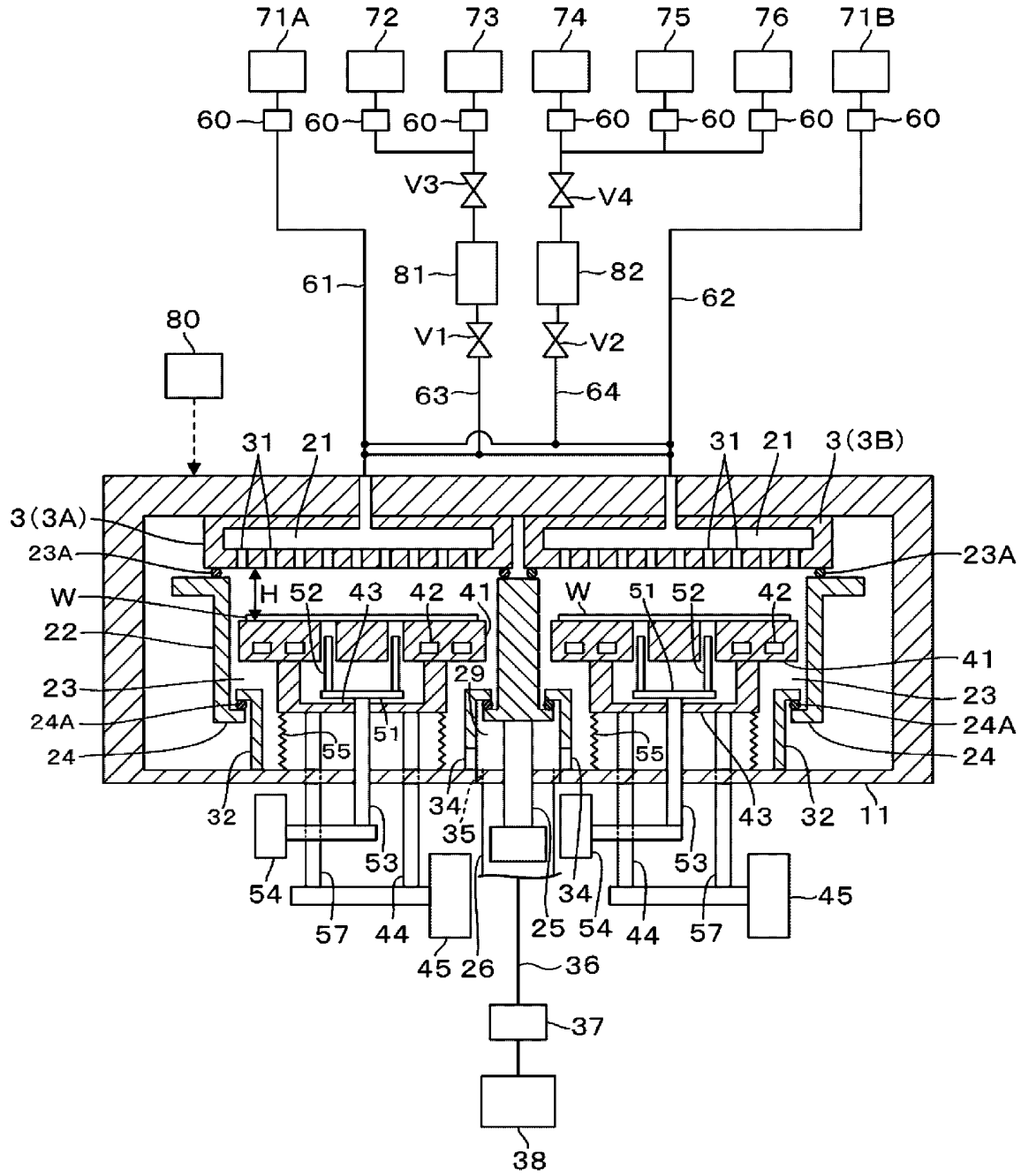

71A
72
73
74
75
76
71B
60
V3
V4
61
81
82
62
80
V1
V2
63
64
31
21
3(3A)
3(3B)
23A
W
H
52
43
42
41
51
22
29
23
24A
24
55
32
34
35
53
54
57
44
45
26
25
36
37
38
11

FIG. 2

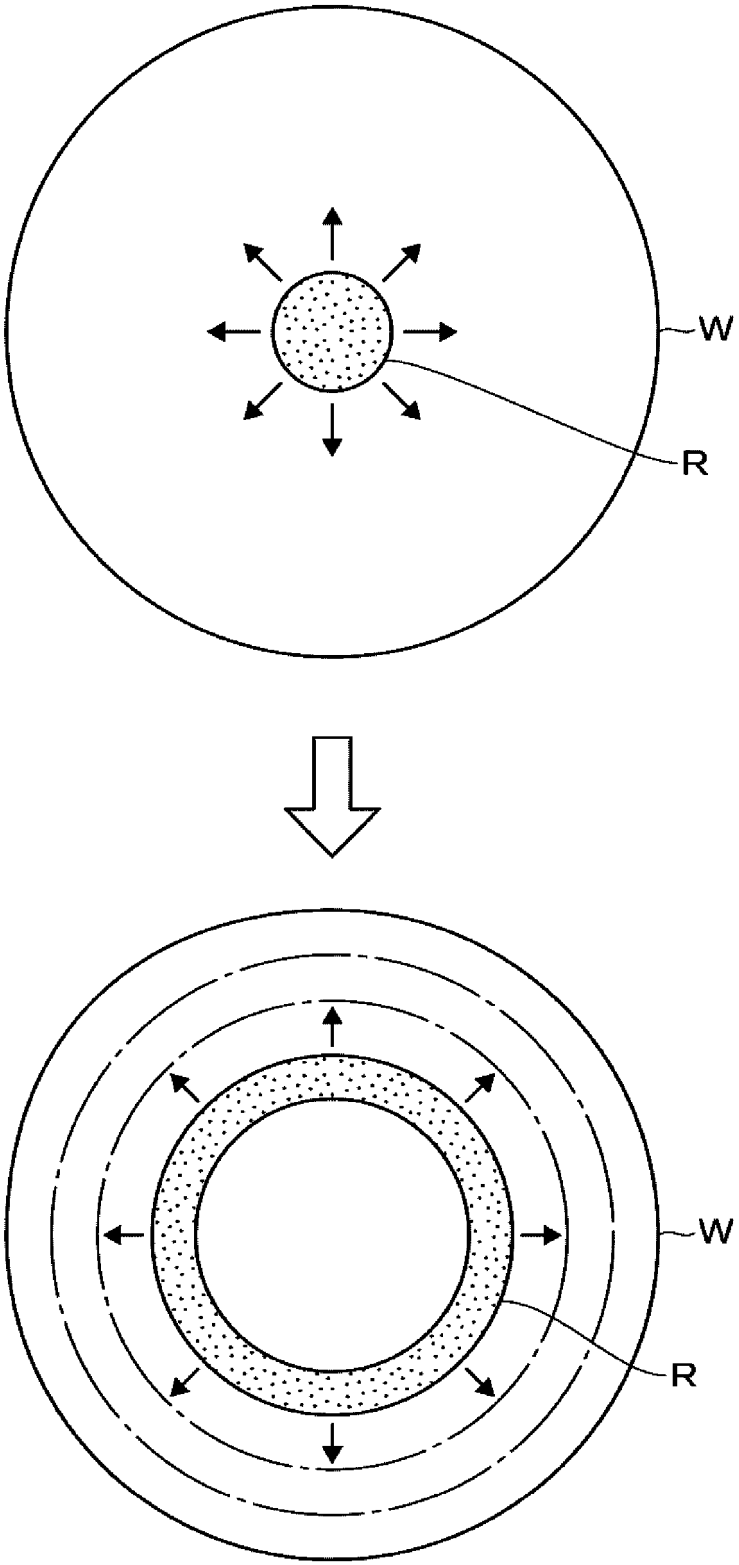


FIG. 3

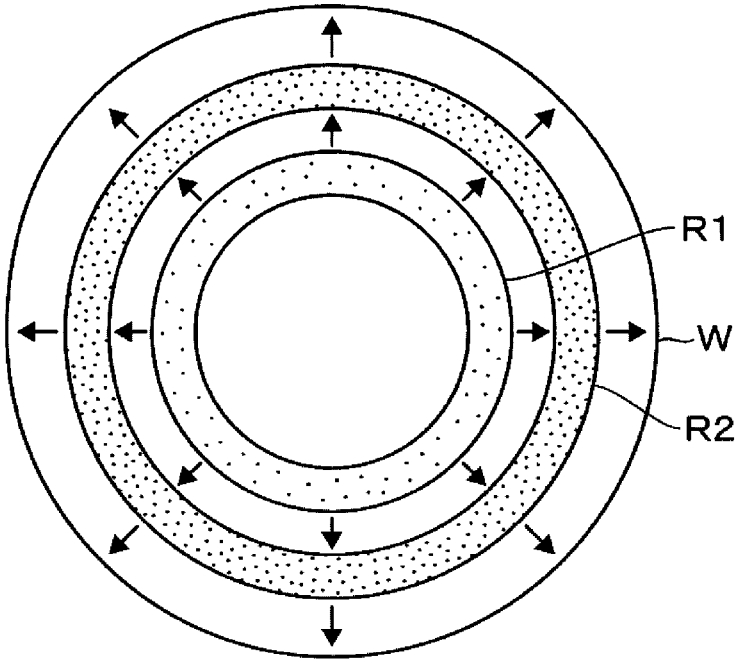


FIG. 4

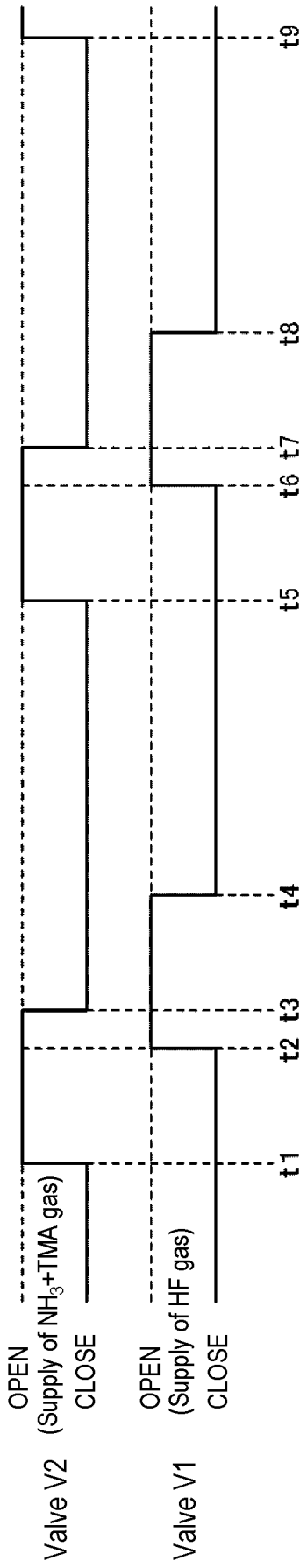

t1
t2
t3
t4
t5
t6
t7
t8
t9
Valve V2
OPEN
(Supply of NH_3+TMA gas)
CLOSE
Valve V1
OPEN
(Supply of HF gas)
CLOSE

FIG. 5

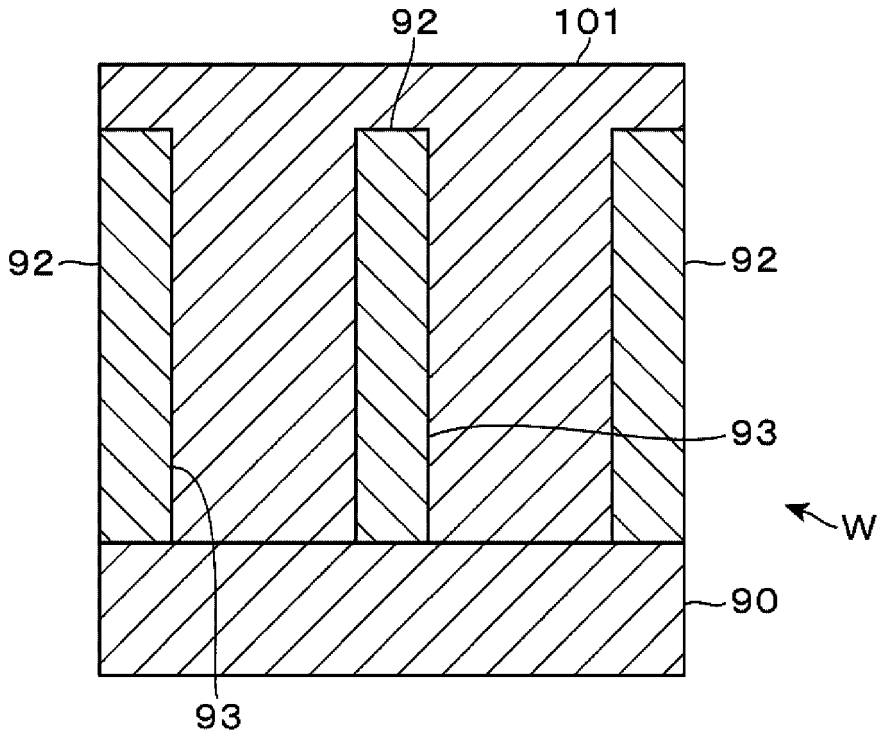


FIG. 6

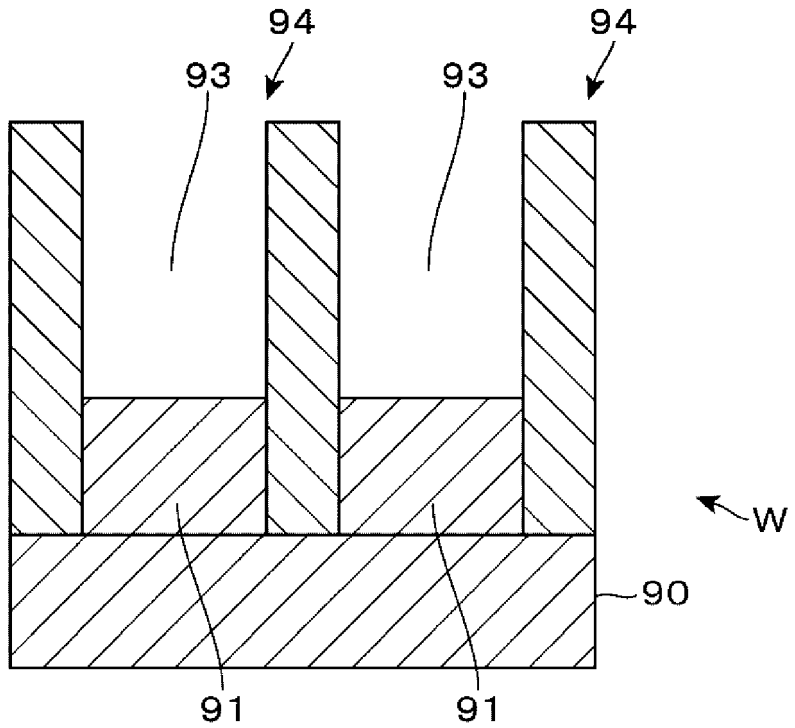
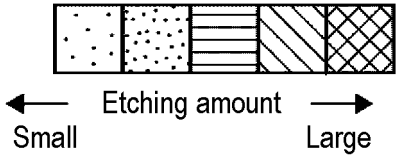
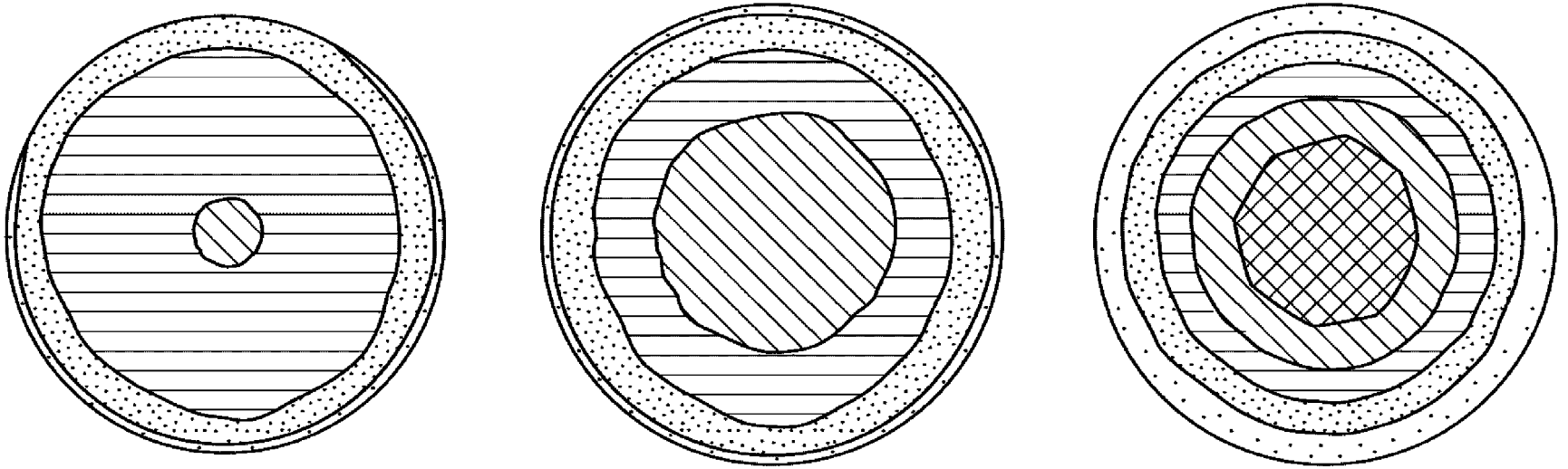


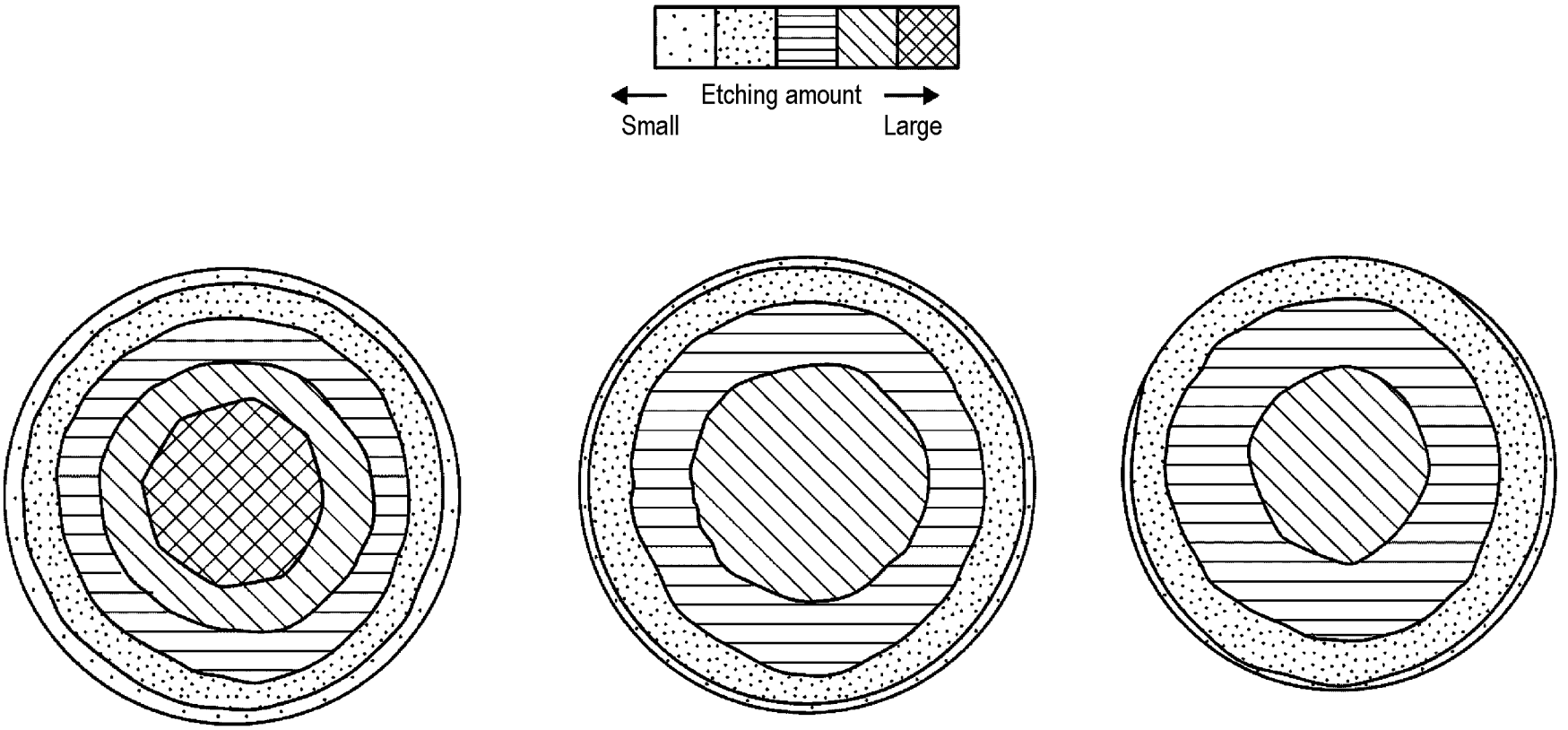
FIG. 7





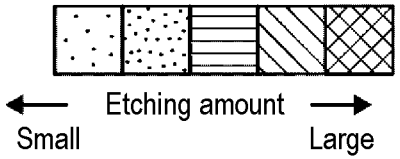
Evaluation Test	1-1	1-2	1-3	1-4	1-5
	NH_3+TMA 0.3 Sec	NH_3+TMA 0.3 Sec	NH_3+TMA 0.3 Sec	NH_3+TMA 0.4 Sec	NH_3+TMA 0.5 Sec
	HF 0.5 Sec	HF 0.4 Sec	HF 0.3 Sec	HF 0.3 Sec	HF 0.3 Sec
In-plane uniformity Index value	10.4%	12.5%	18.4%	21.3%	23.3%

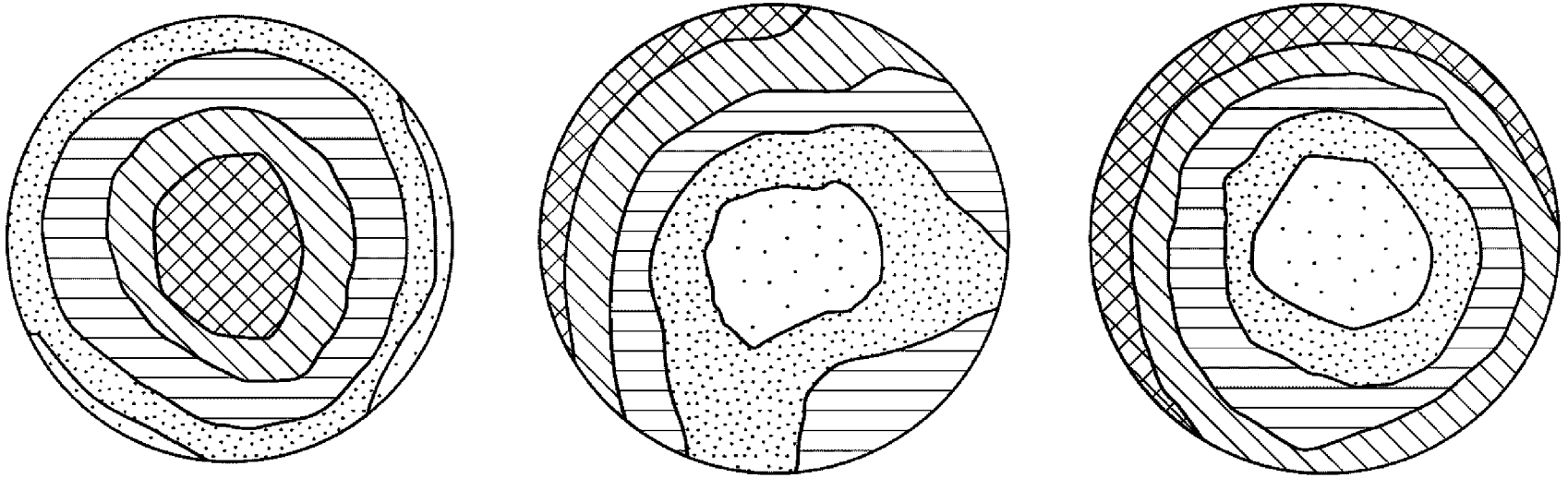
FIG. 8



Evaluation Test	2-1	2-2	2-3	2-4	2-5
	NH_3+TMA 0.3 Sec / HF 0.5 Sec	NH_3+TMA 0.3 Sec / HF 0.4 Sec	NH_3+TMA 0.3 Sec / HF 0.4 Sec	NH_3+TMA 0.4 Sec / HF 0.3 Sec	NH_3+TMA 0.5 Sec / HF 0.3 Sec
In-plane uniformity Index value	23.6%	20.8%	18.1%	13.8%	10.5%

FIG. 9





Evaluation Test	3-1	3-2	3-3
	NH_3+TMA 0.5 Sec	NH_3+TMA 0.5 Sec	NH_3+TMA 0.5 Sec
	HF 0.5 Sec	HF 0.5 Sec	HF 0.5 Sec
In-plane uniformity Index value	4.6%	2.2%	7.4%