

FIG. 1

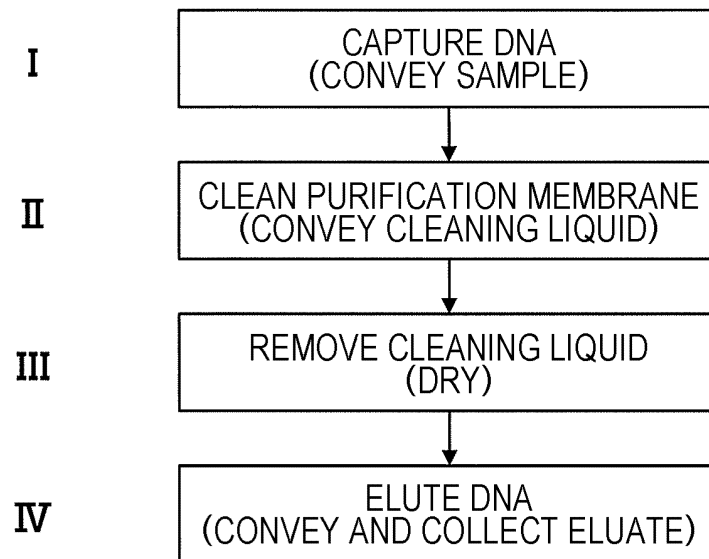


FIG. 2A

SAMPLE SOLUTION	
COMPOSITION	QUANTITY
2800M CONTROL DNA (0.25 ng/ μ L)	16 μ L
*AL BUFFER (LYSIS BUFFER)	320 μ L
*ATL BUFFER (CHAOTROPIC BUFFER)	320 μ L
*PROTEINASE K	16 μ L
*CARRIER RNA (1 μ g/ μ L)	1 μ L
100% ETHANOL *ADDED AFTER DISSOLUTION	160 μ L
TOTAL	833 μL

*ITEMS IN QIAamp DNA TEST KIT

FIG. 2B

#	SOLUTION (SEQUENTIALLY APPLIED TO MEMBRANE)	QUANTITY	EQUIPMENT SETTING	
			LABORATORY SCHEME (SPIN COLUMN AND CENTRIFUGE)	SCHEME PROPOSED BY PRESENT DISCLOSURE (CHIP DEVICE AND PUMP)
1	SAMPLE BUFFER	833 μ L	1000 g $\times$ 1 MIN	4 mL/MIN (*1)
2	*AW1 BUFFER (CLEANING BUFFER: CHAOTROPE+ETHANOL)	500 μ L	1000 g $\times$ 1 MIN	4 mL/MIN (*2)
3	*AW2 BUFFER (CLEANING BUFFER: 70% ETHANOL+ADDITIVES)	700 μ L	1000 g $\times$ 1 MIN	4 mL/MIN (*2)
4	100% ETHANOL (CLEANING BUFFER)	700 μ L	1000 g $\times$ 1 MIN	4 mL/MIN (*2)
5	DRY AIR	-	20000 g $\times$ 3 MIN +10 MIN AT ROOM TEMPERATURE	AIR SUPPLY $\times$ 3 MIN (AIR SUPPLY PRESSURE: 100 kPa)
6	*ATE BUFFER (SOLUTION BUFFER)	20 μ L	20000 g $\times$ 1 MIN	2 mL/MIN (*2)

*ITEMS IN QIAamp DNA TEST KIT

(*1) FEED LIQUID WITH PUMP UNTIL AMOUNT OF SOLUTION REMAINING IN MEMBRANE BECOMES SMALL

(*2) DISCHARGE SOLUTION WITH PUMP UNTIL SOLUTION IS COMPLETELY DISCHARGED

FIG. 3A

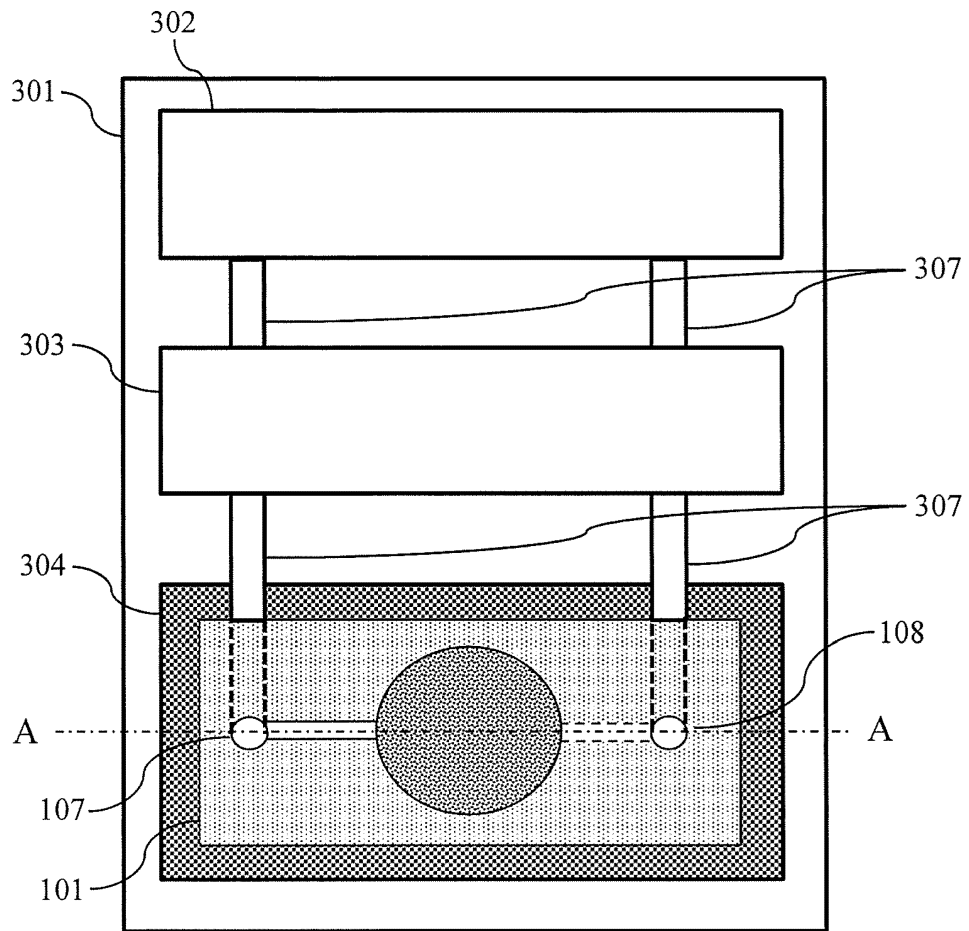


FIG. 3B

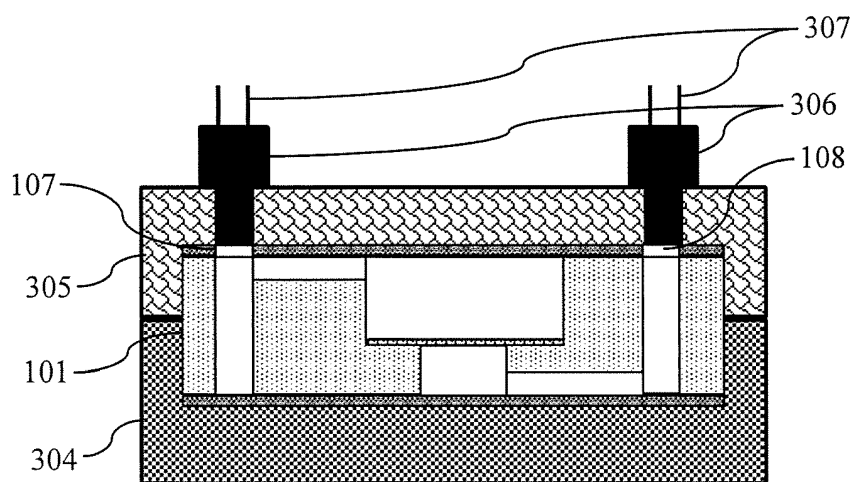


FIG. 4A

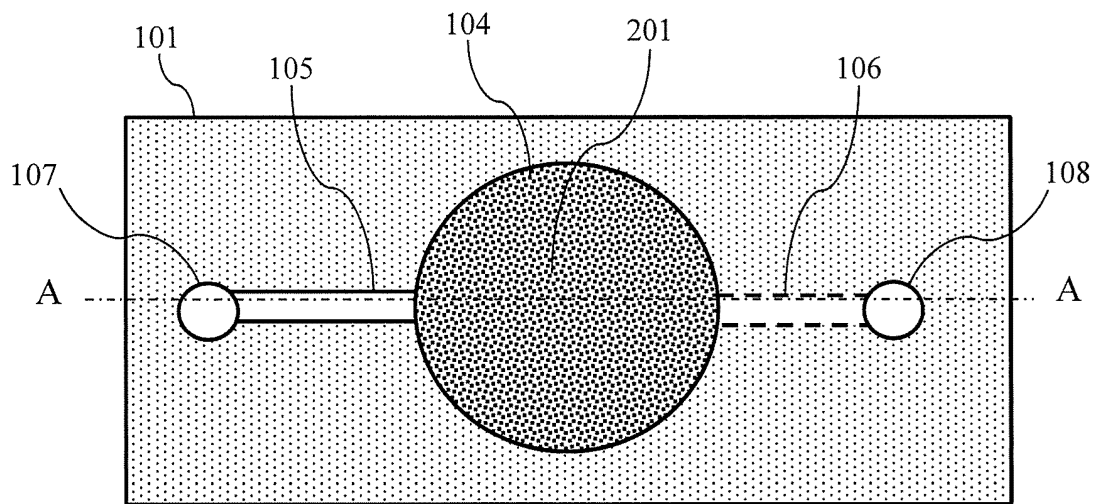


FIG. 4B

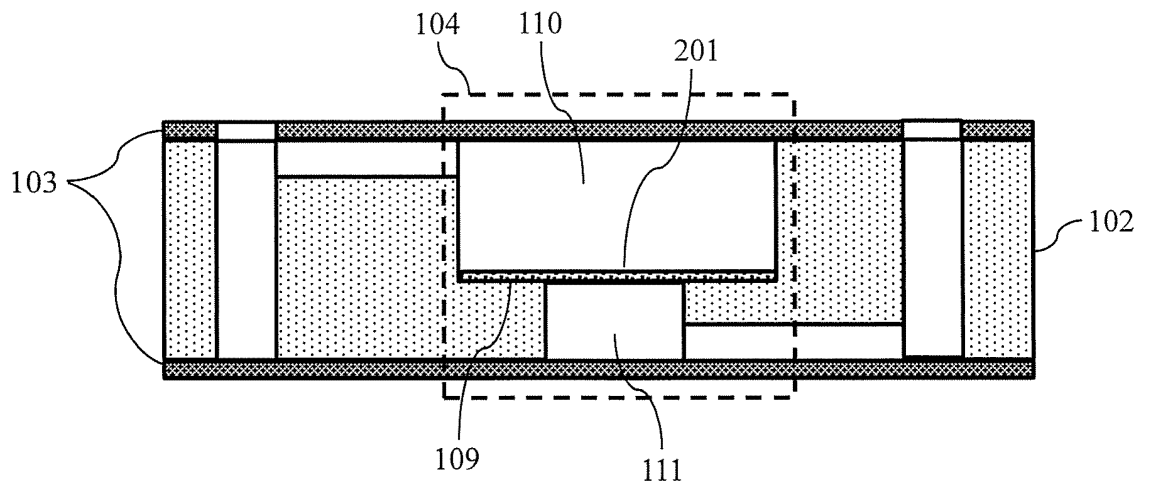


FIG. 5A

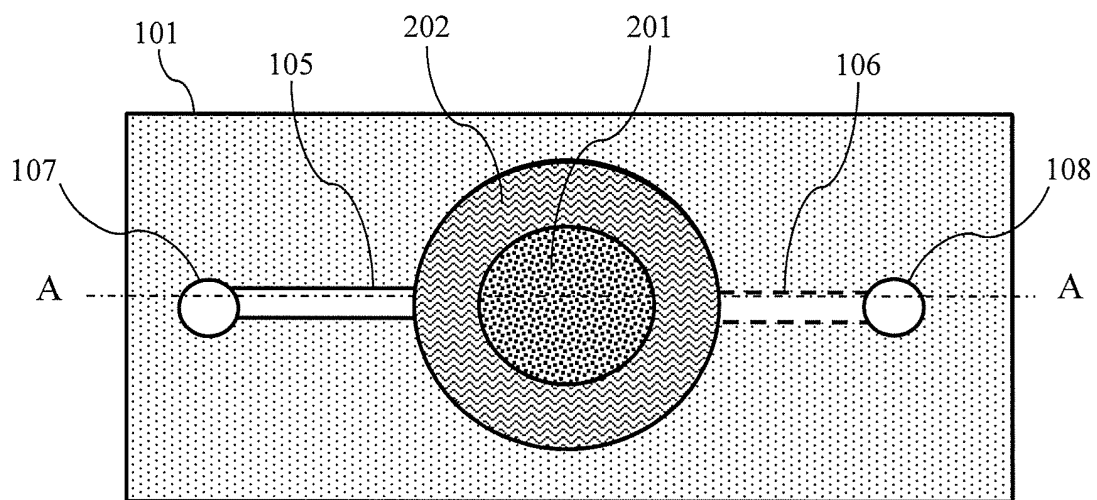


FIG. 5B

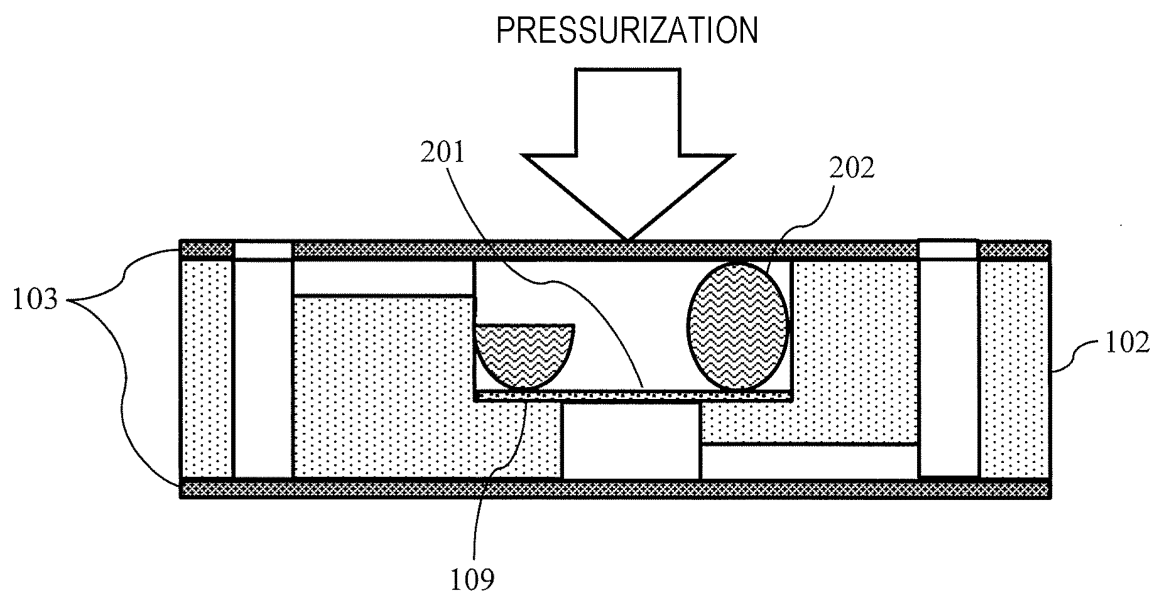


FIG. 6A

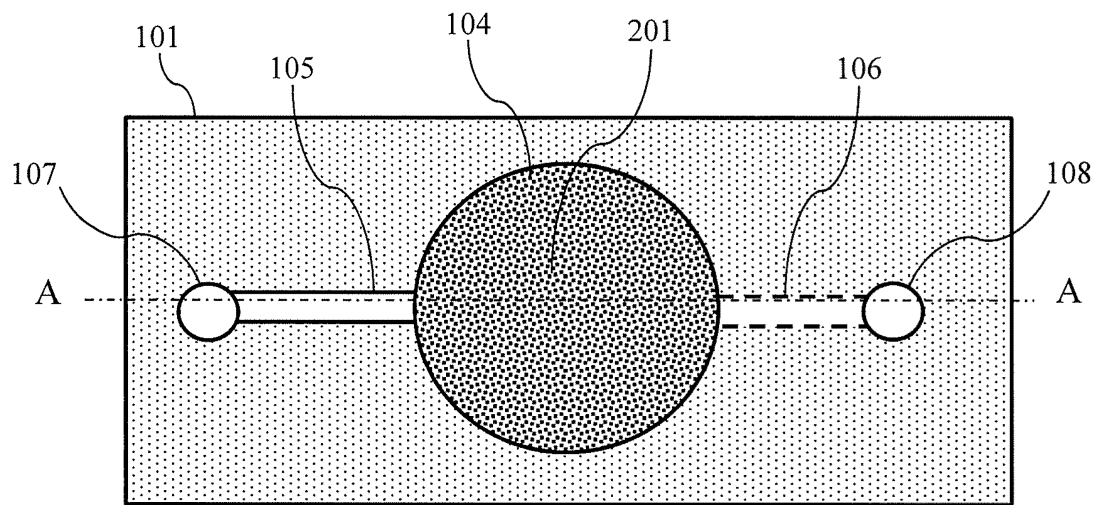


FIG. 6B

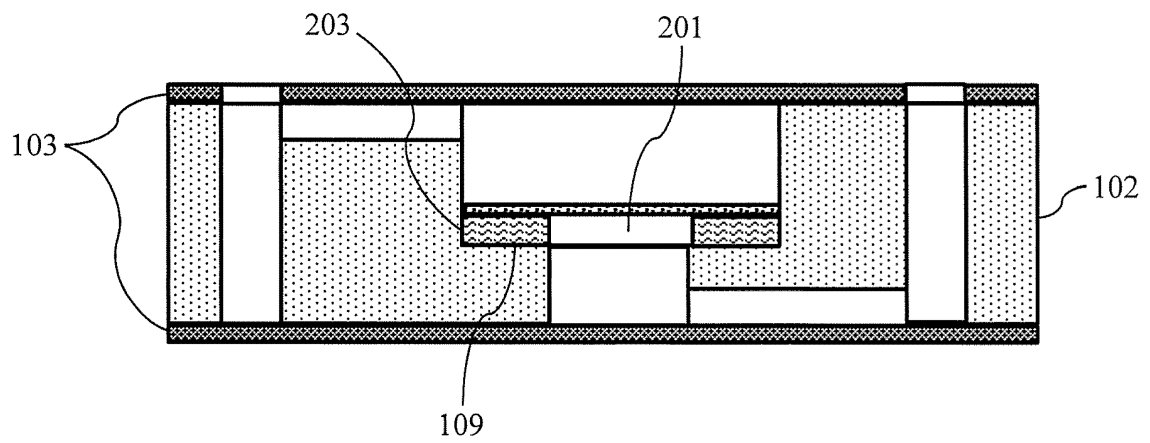


FIG. 7A

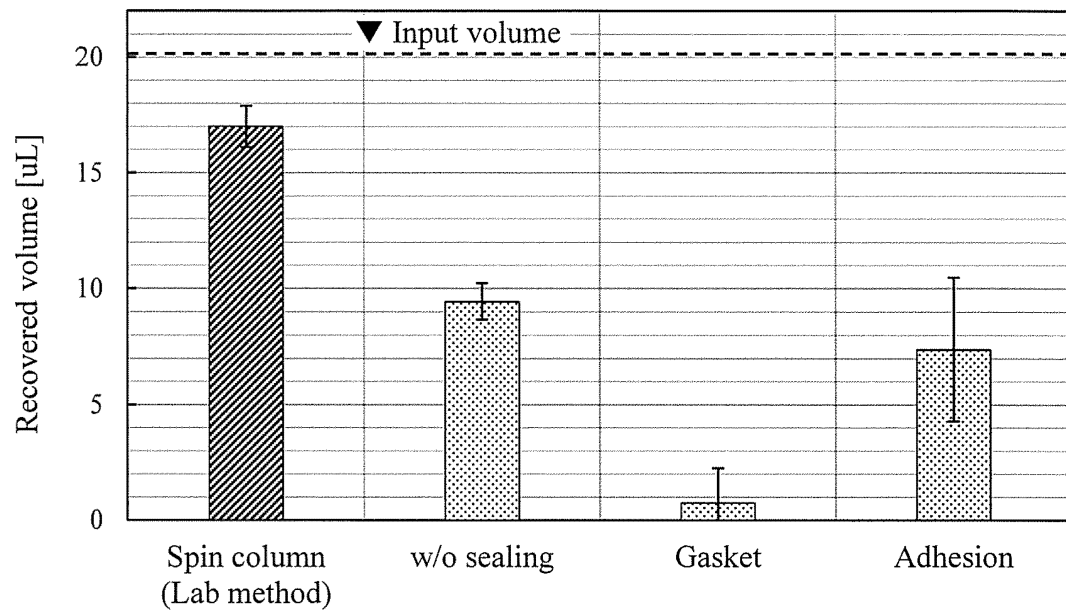


FIG. 7B

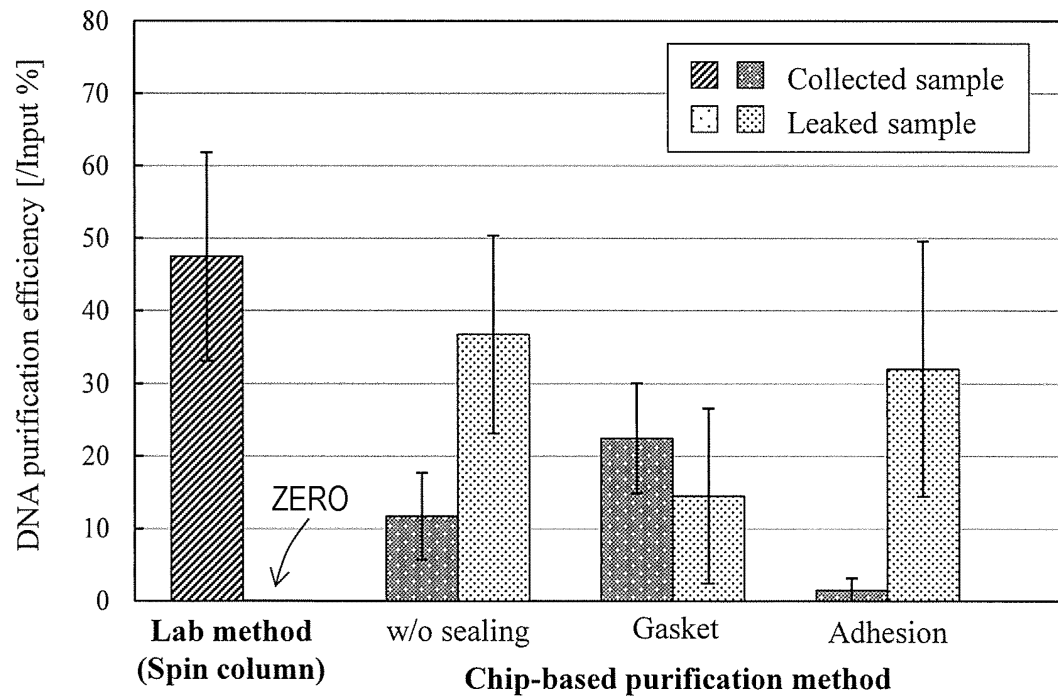


FIG. 8

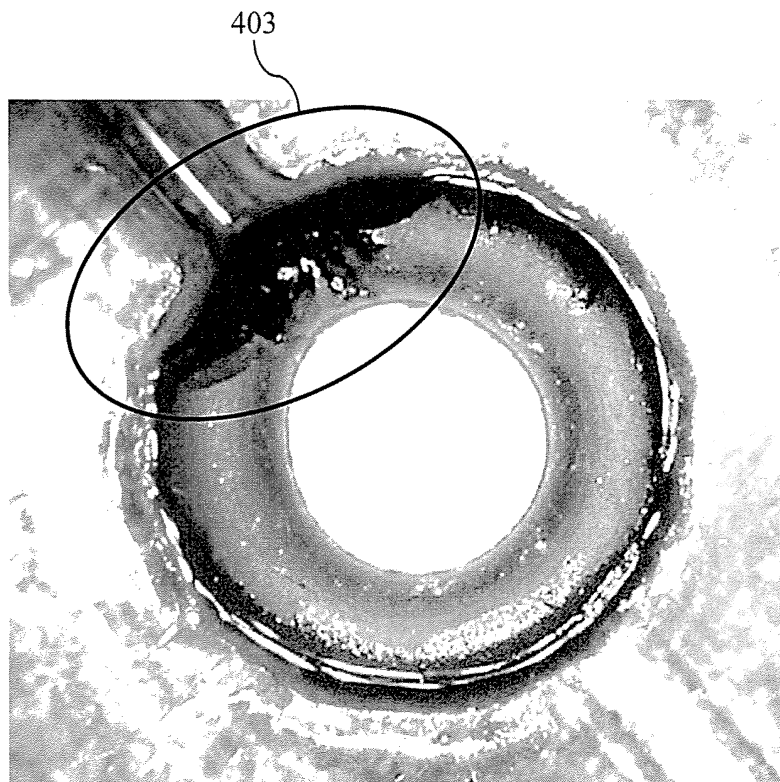


FIG. 9A

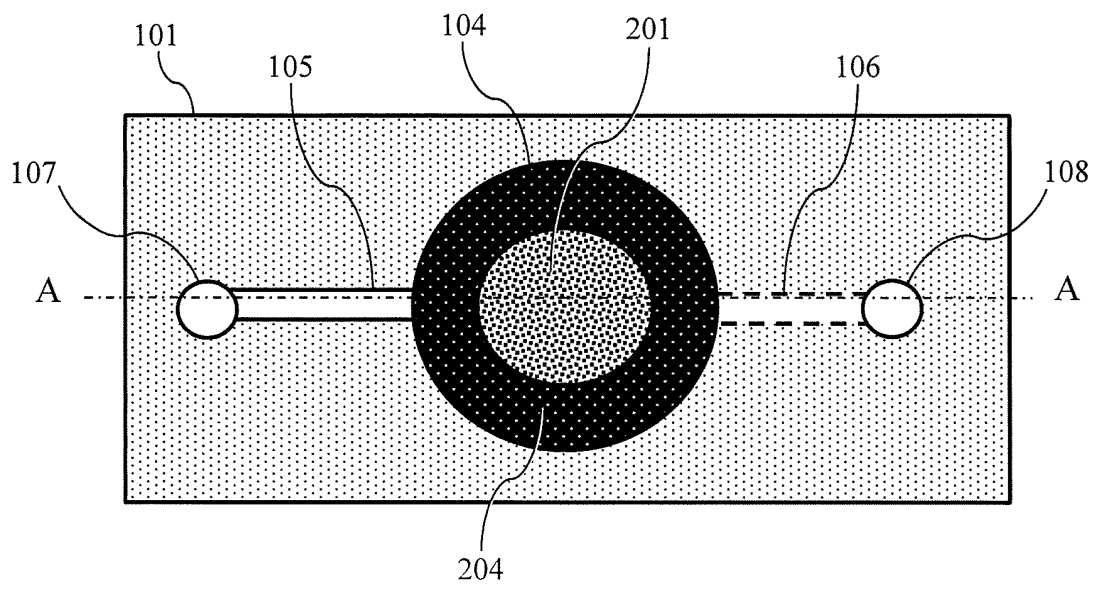


FIG. 9B

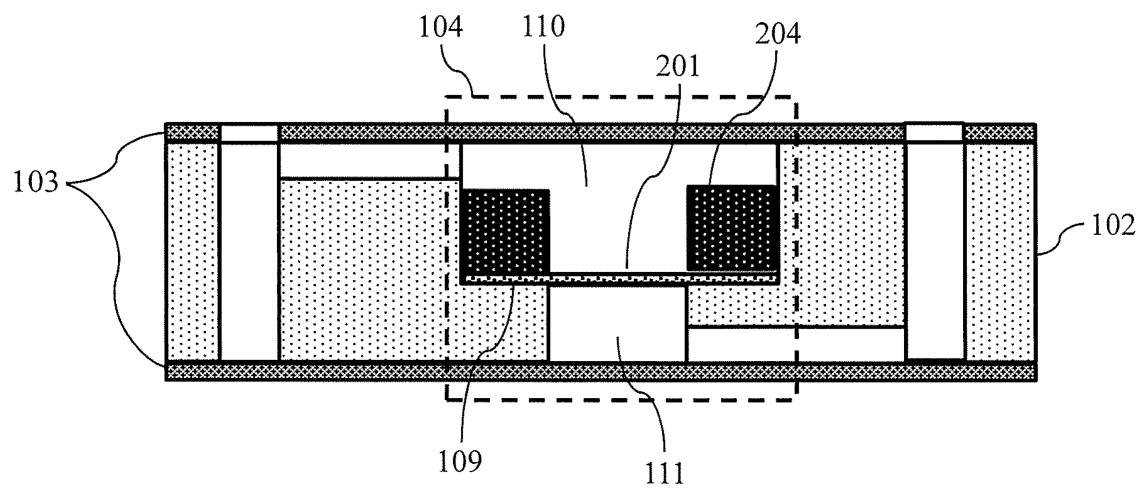


FIG. 10A

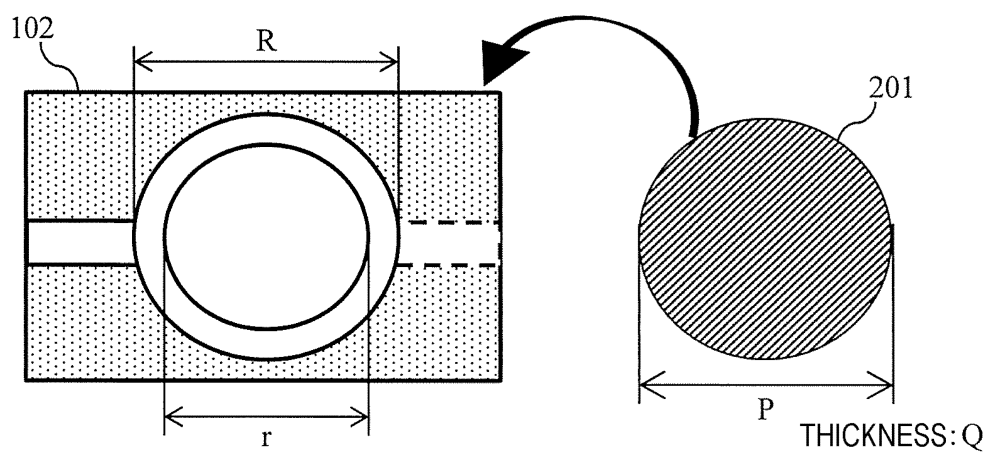


FIG. 10B

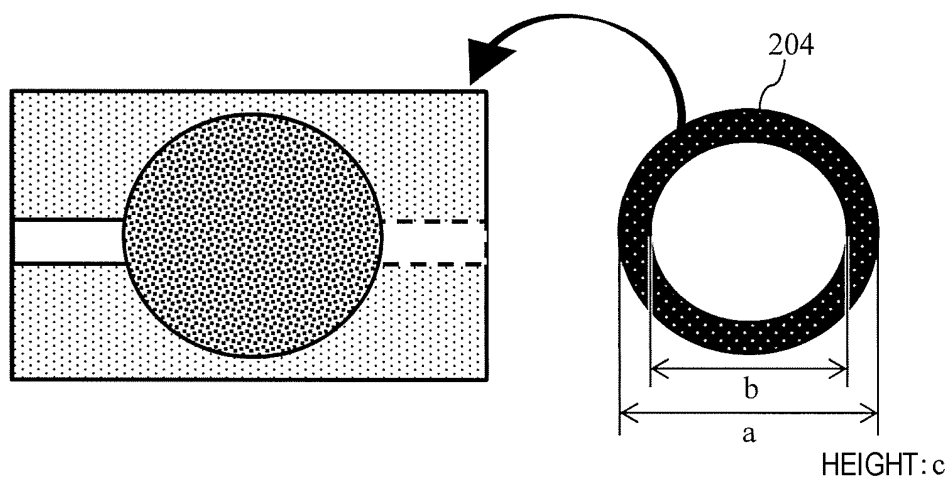


FIG. 10C

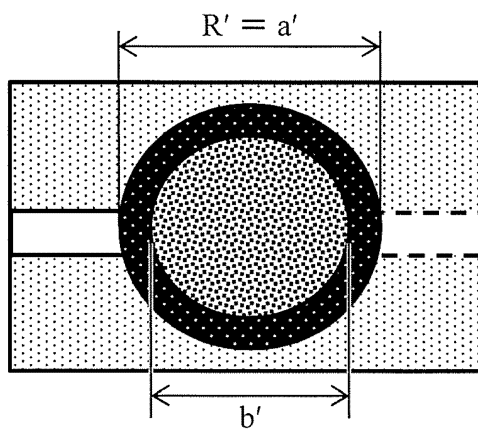


FIG. 11A

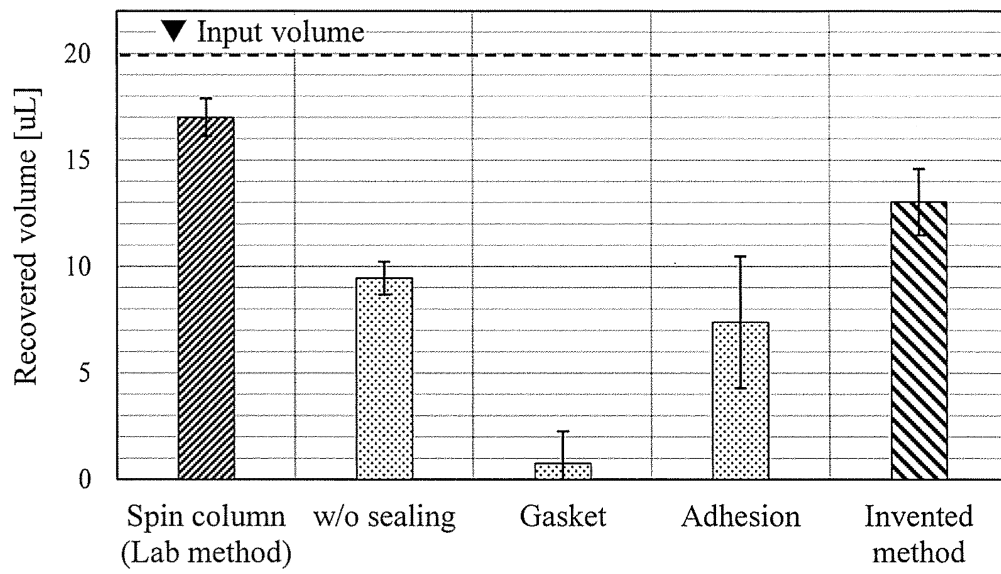


FIG. 11B

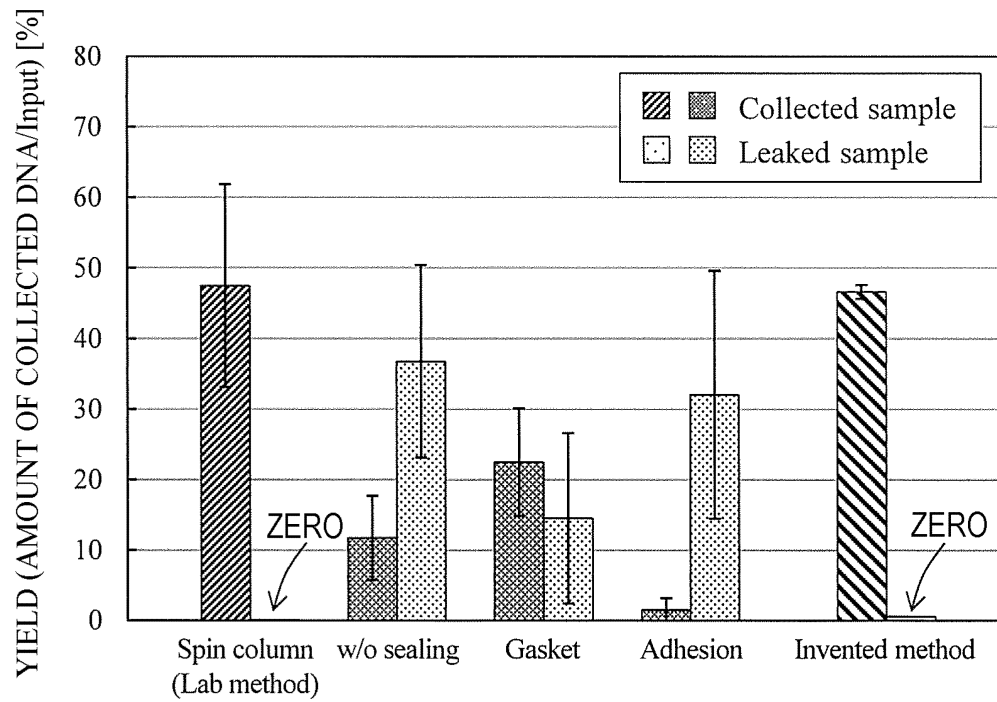


FIG. 12A

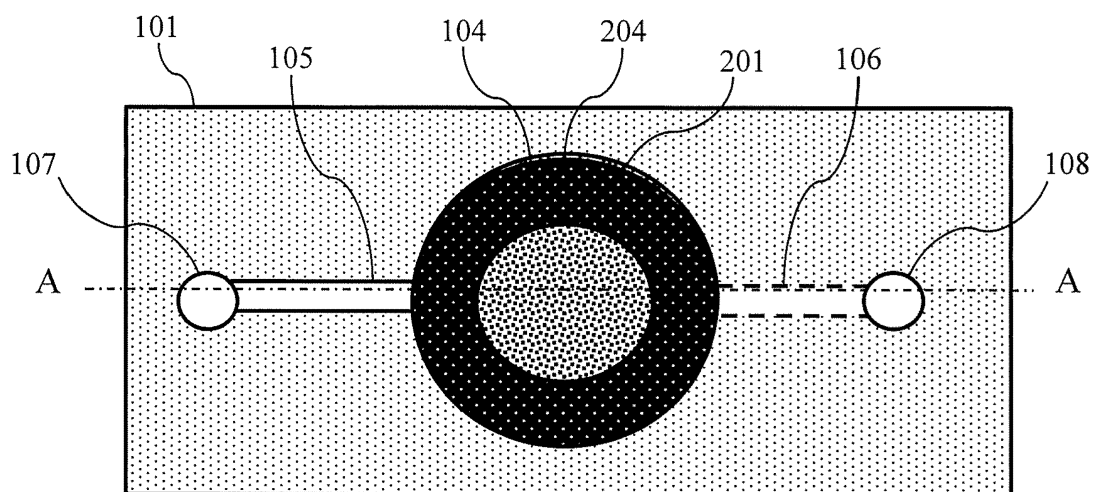


FIG. 12B

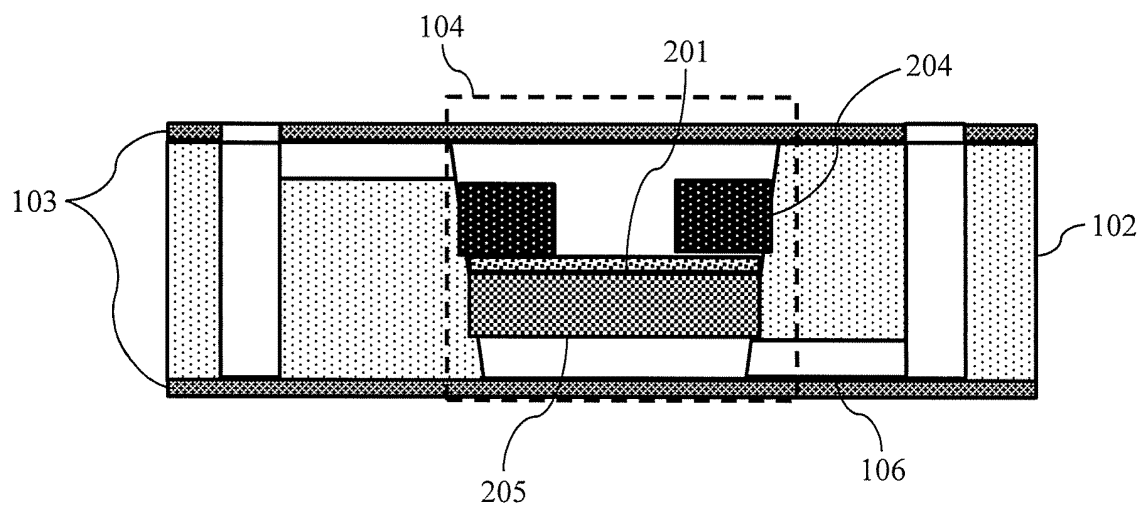


FIG. 13A

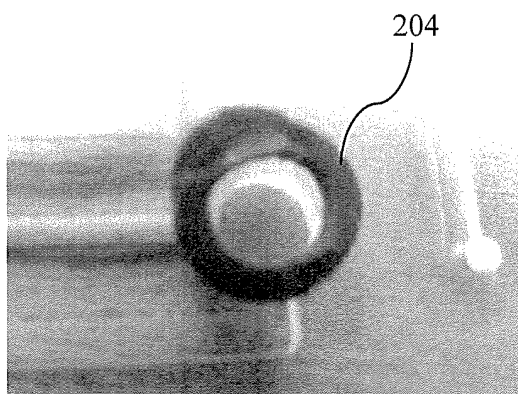


FIG. 13B

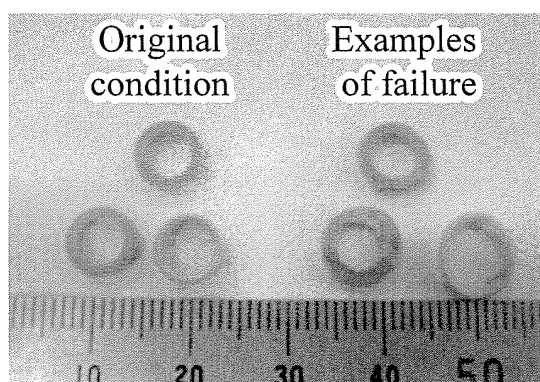


FIG. 13C

	Diameter of Membrane housing R (or S) [mm]	Outer diameter of Plastic fitting ring a (or A) [mm]	Success/failure of membrane fixing
Spin column	6.5	7.0	○
Invented chip device	6.5	6.5	○
		6.6	○
		6.7	○
		6.8	○
		6.9	×
		7	×
		7.1	×

FIG. 14A

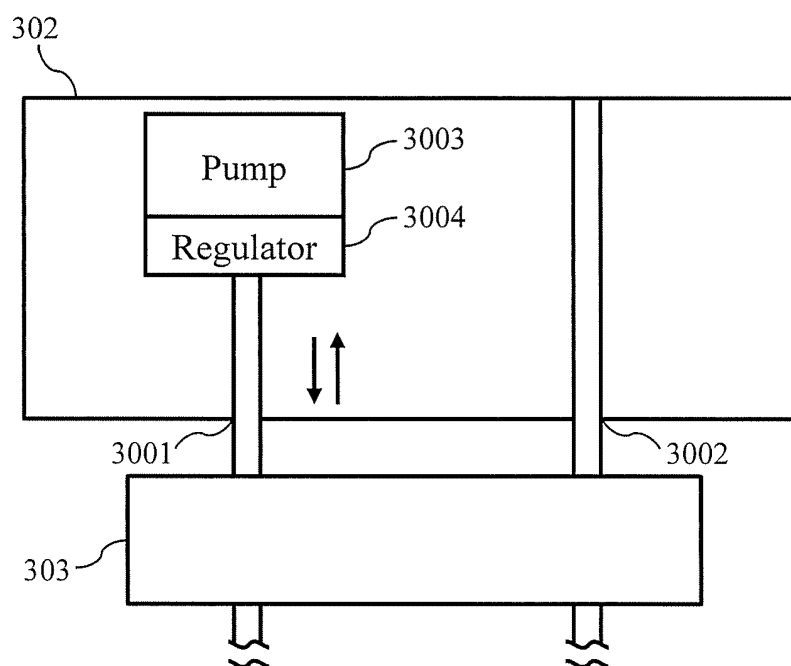


FIG. 14B

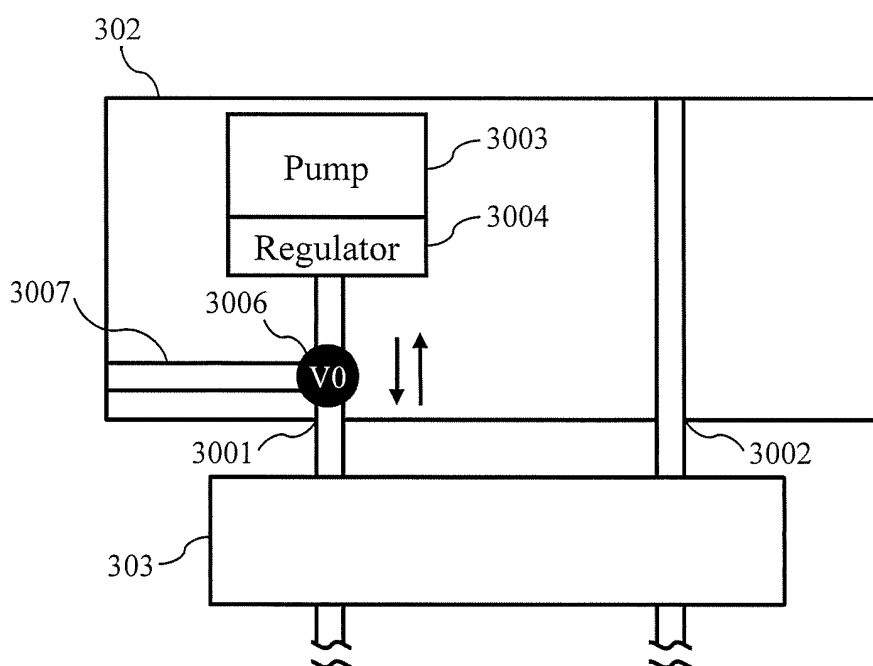


FIG. 15

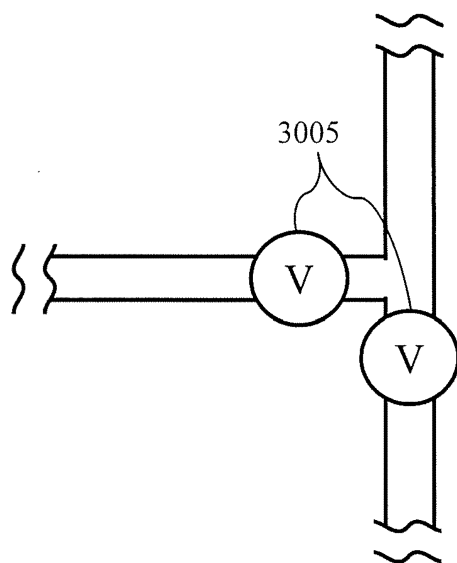


FIG. 16

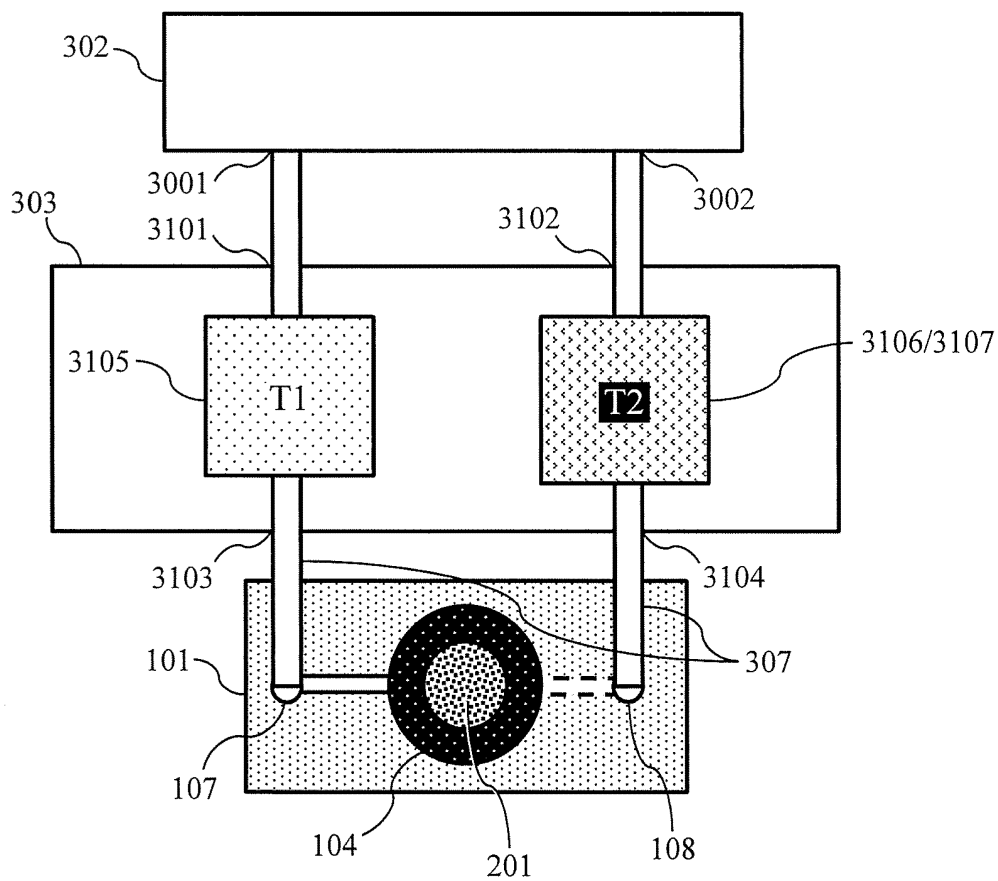


FIG. 17

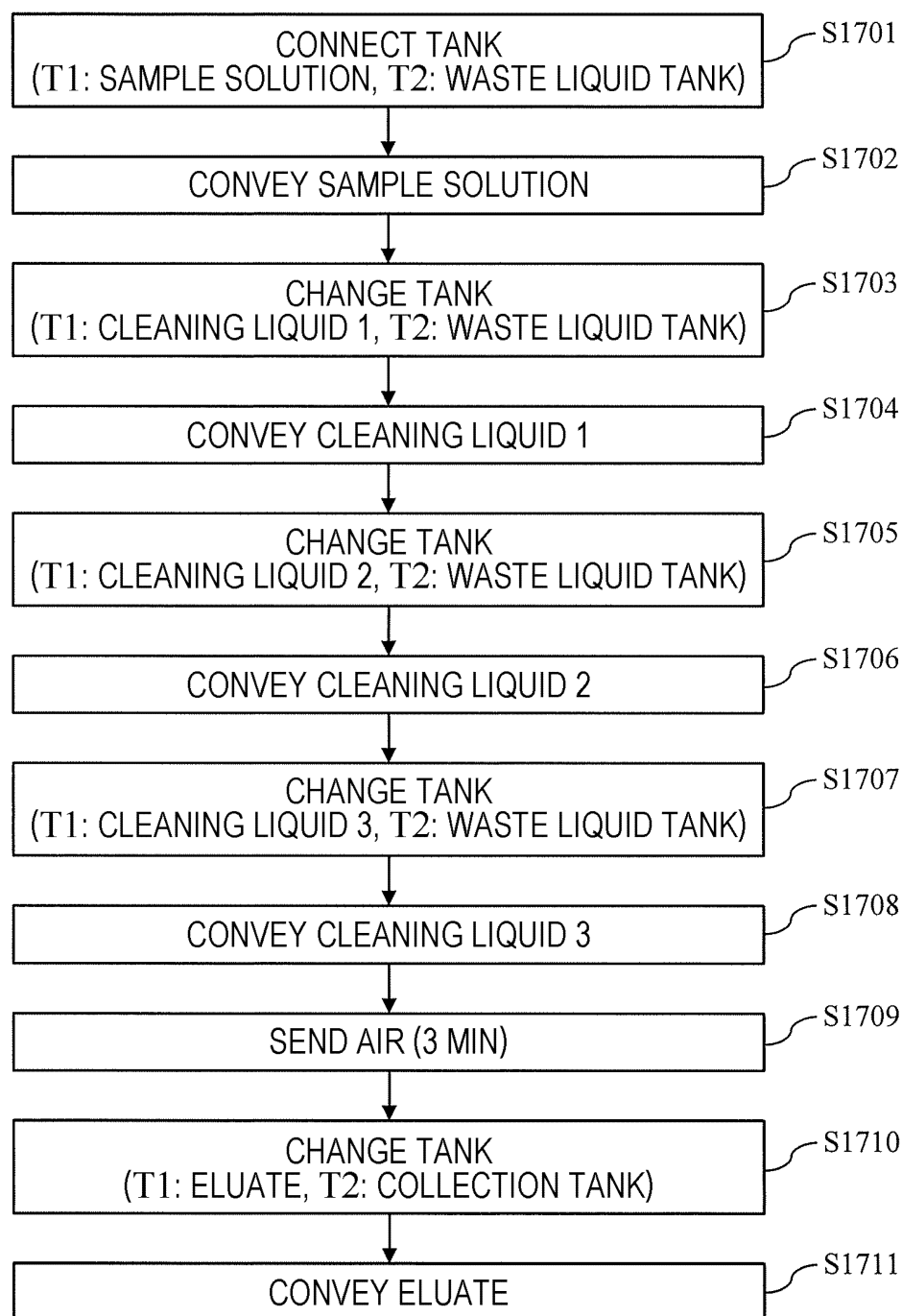


FIG. 18

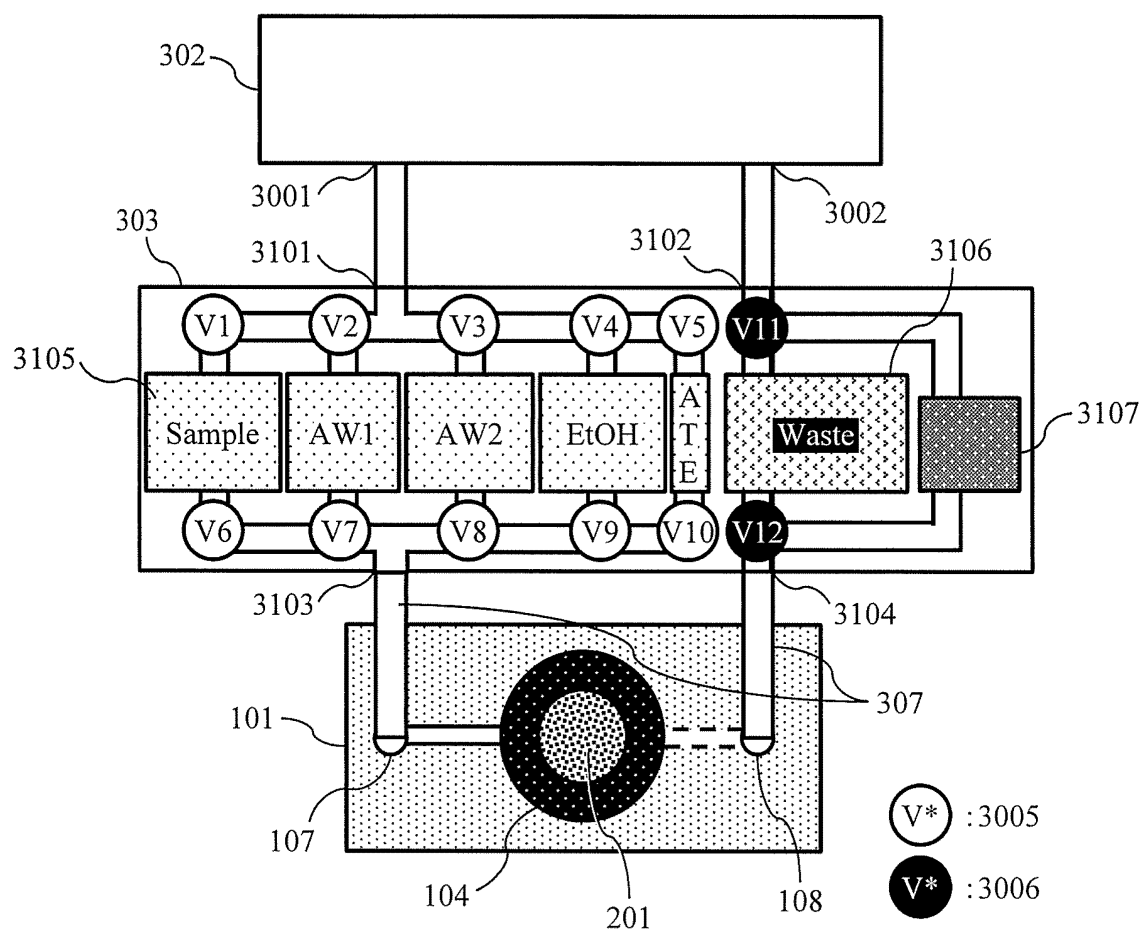
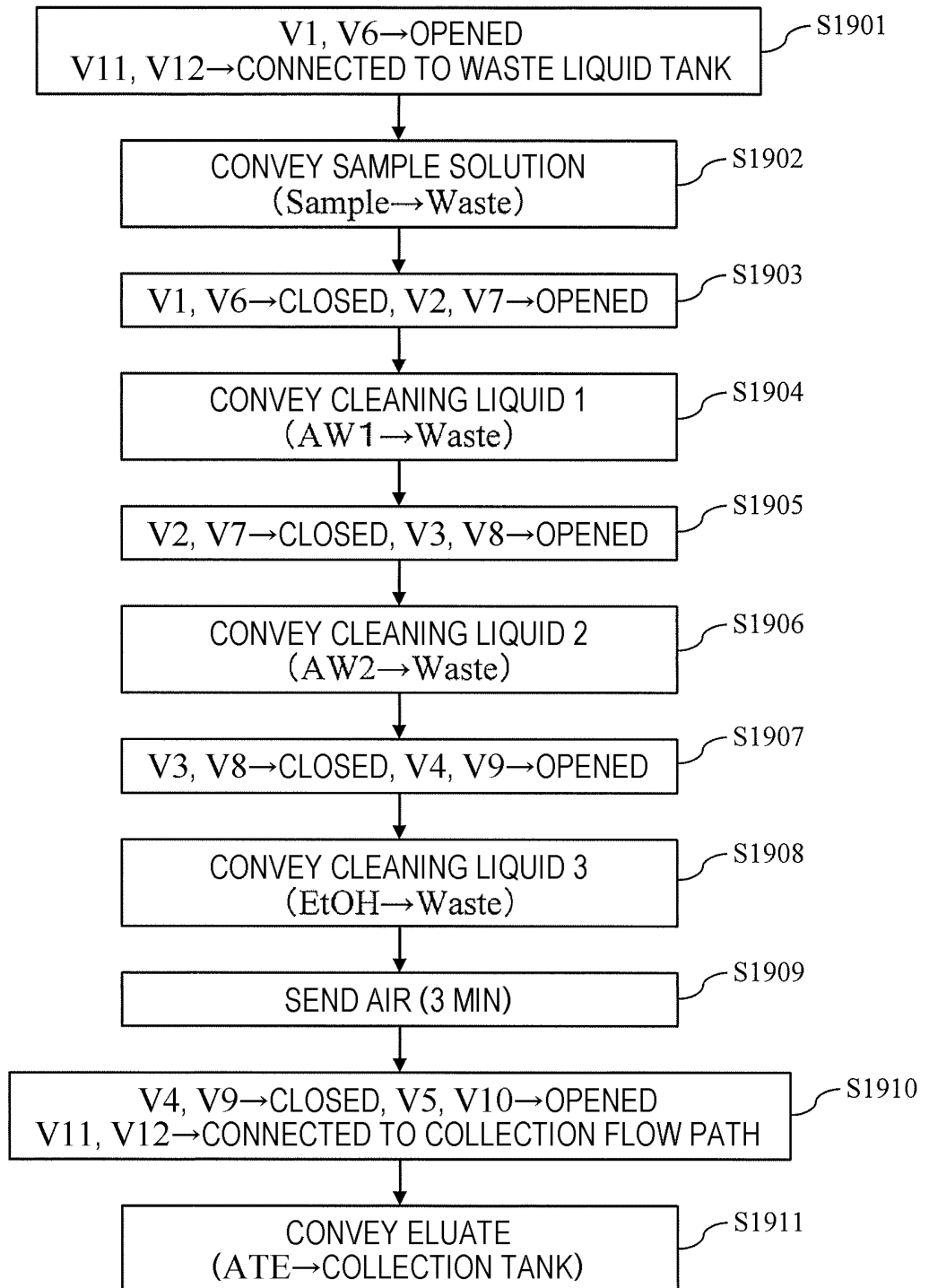


FIG. 19



302

303

3107

107

101

3105

105

104

106

3108

108

V1

Sample

V4

V2

Wash buffer

V5

V3

Elution buffer

V6

204

201

V7

V8

3106

Waste

3109

V*: 3005

FIG. 21A

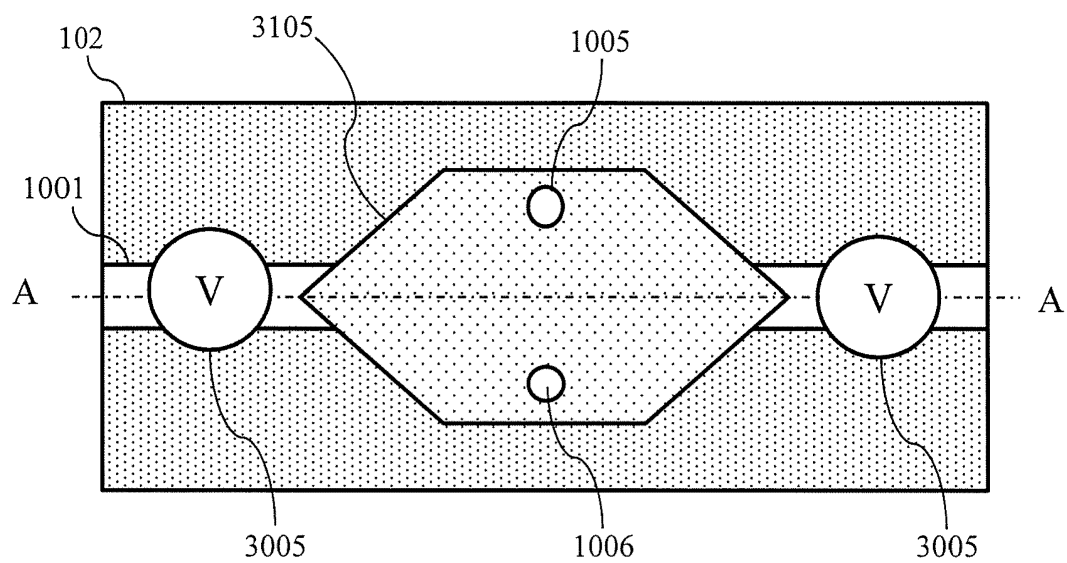


FIG. 21B

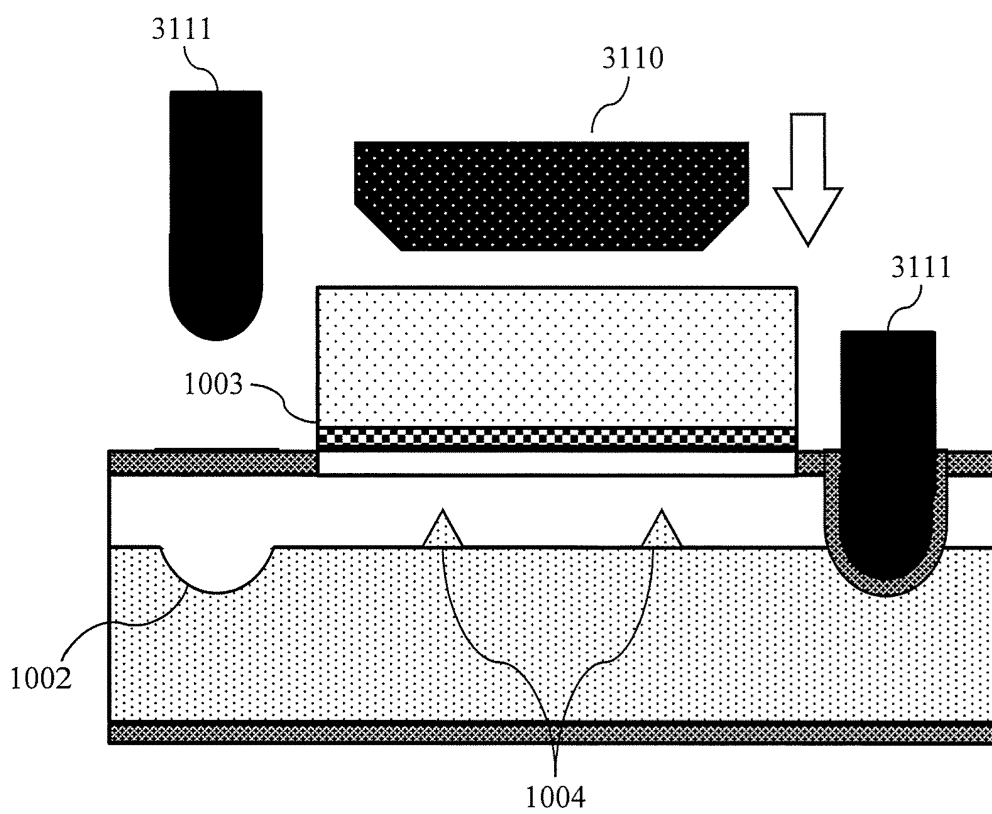


FIG. 22

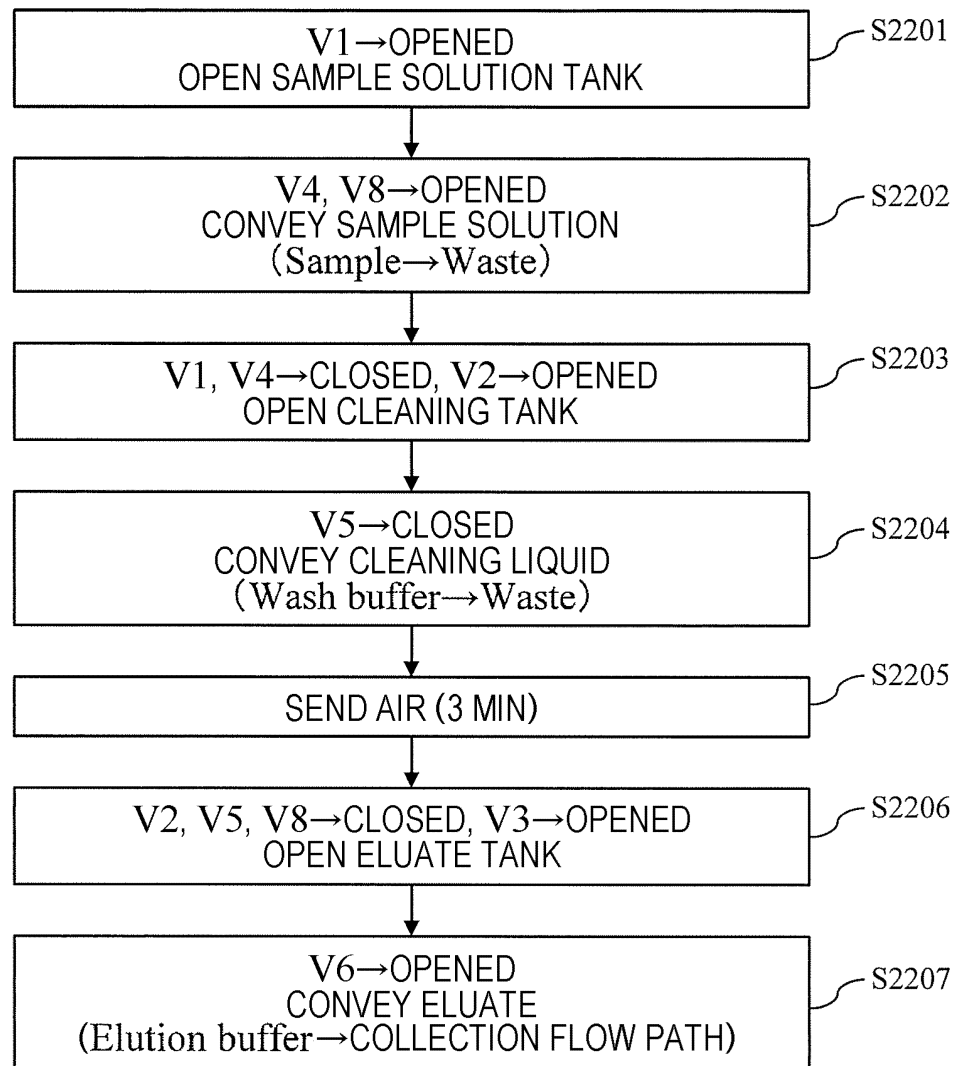


FIG. 23

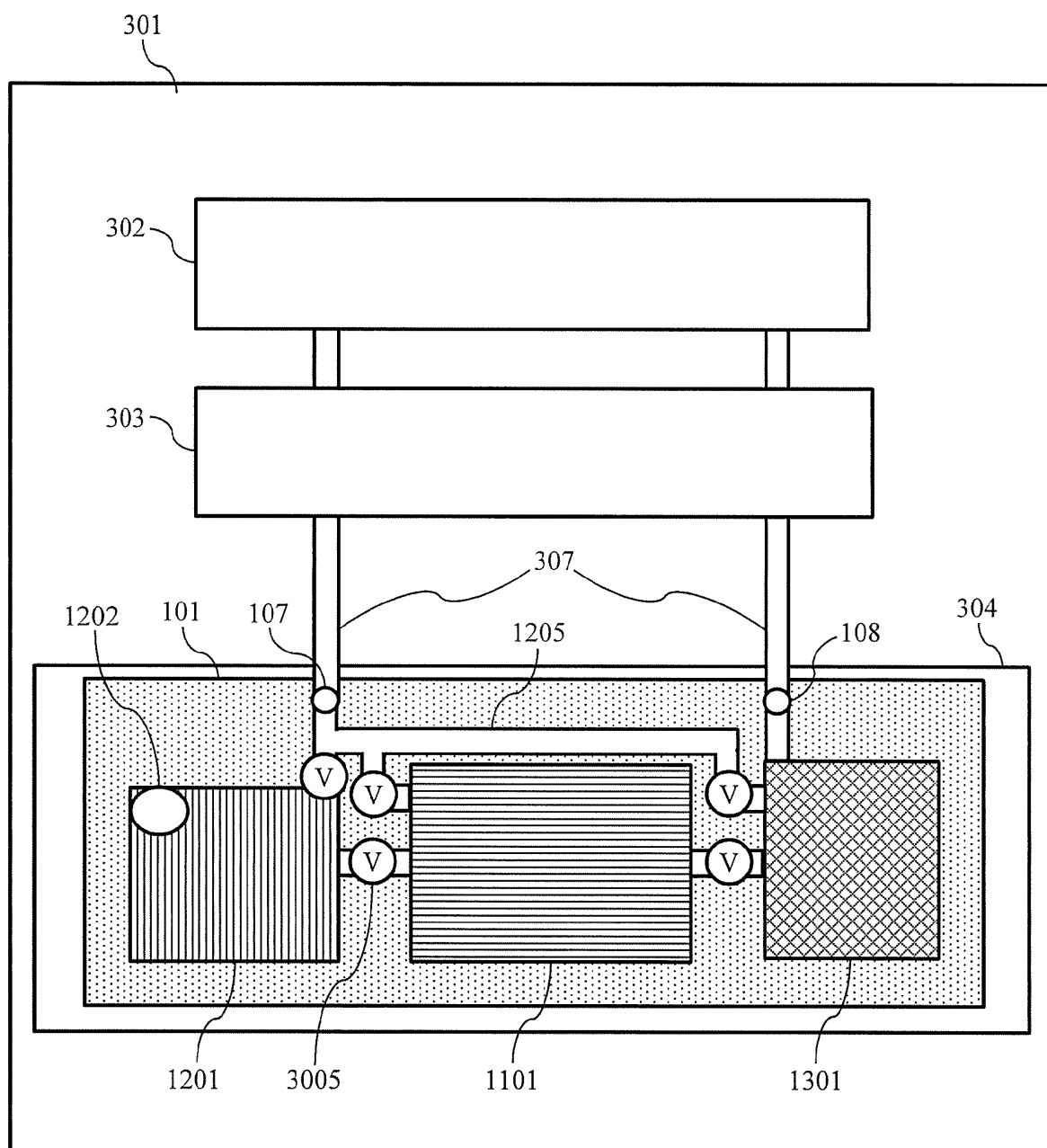


FIG. 24

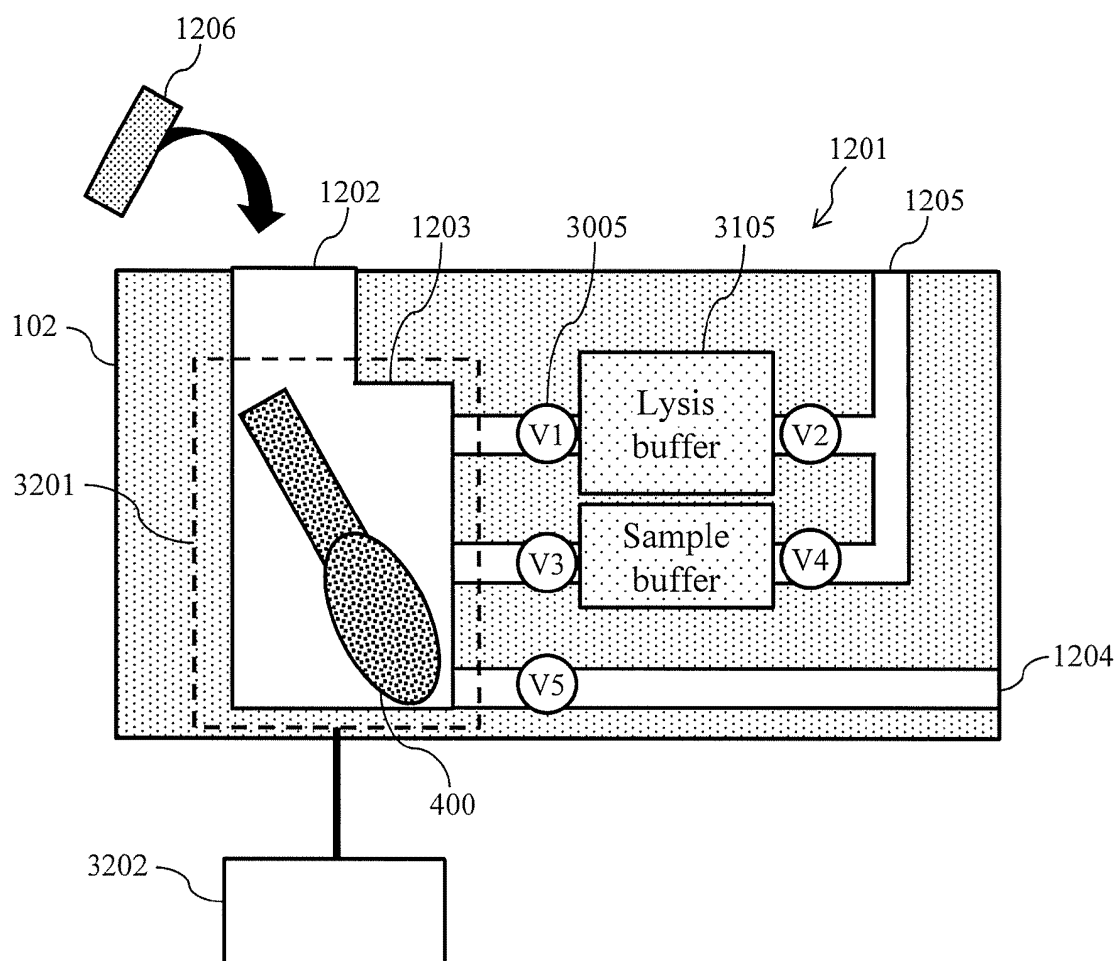


FIG. 25

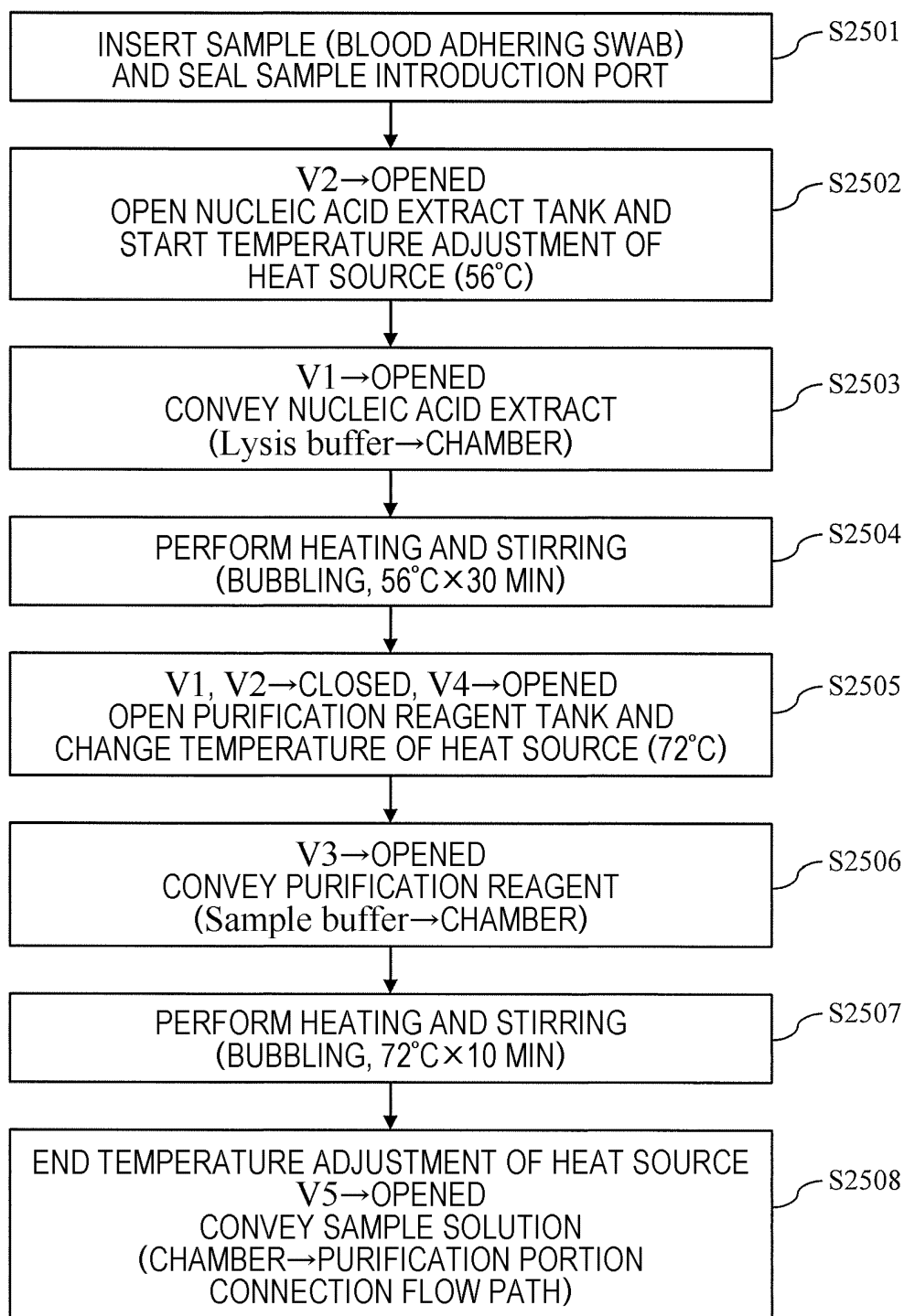


FIG. 26

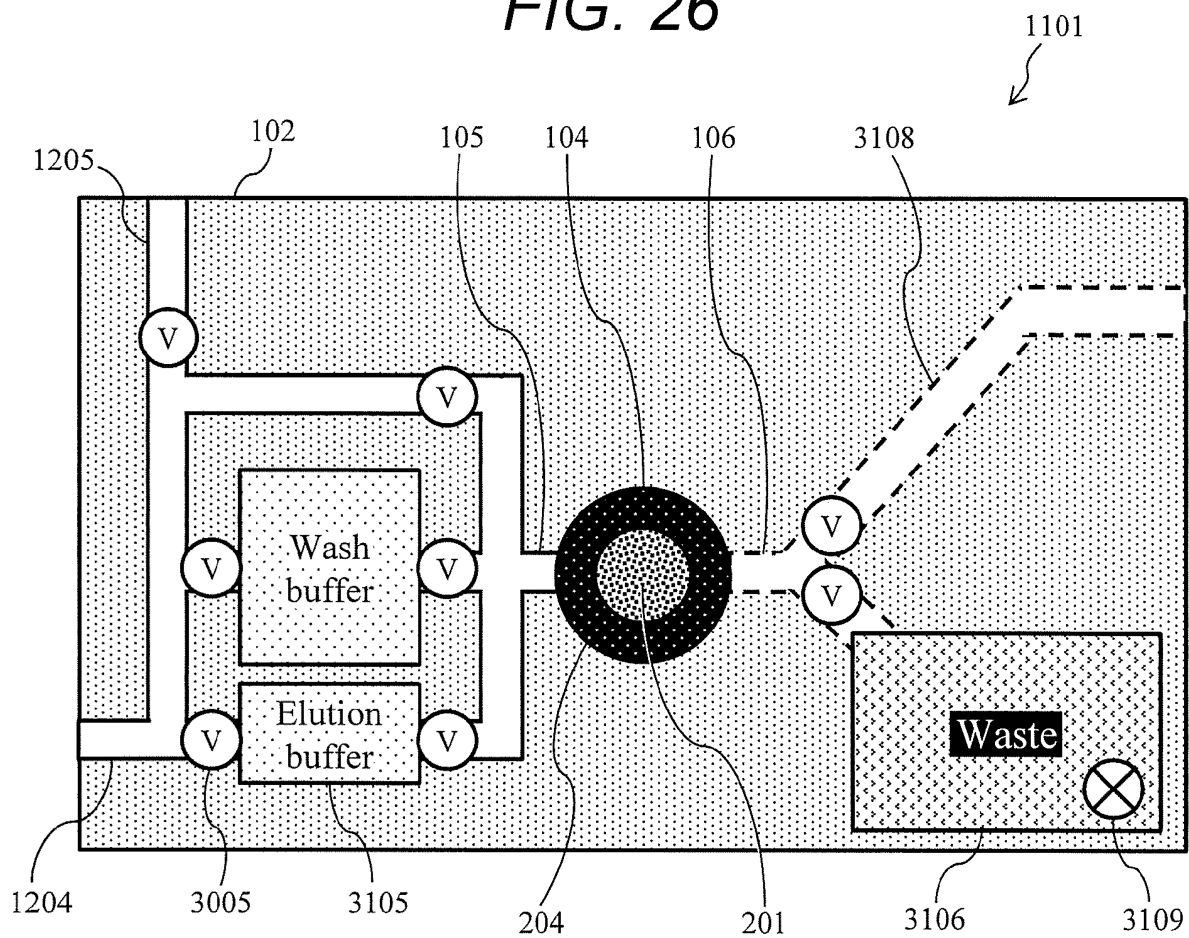


FIG. 27A

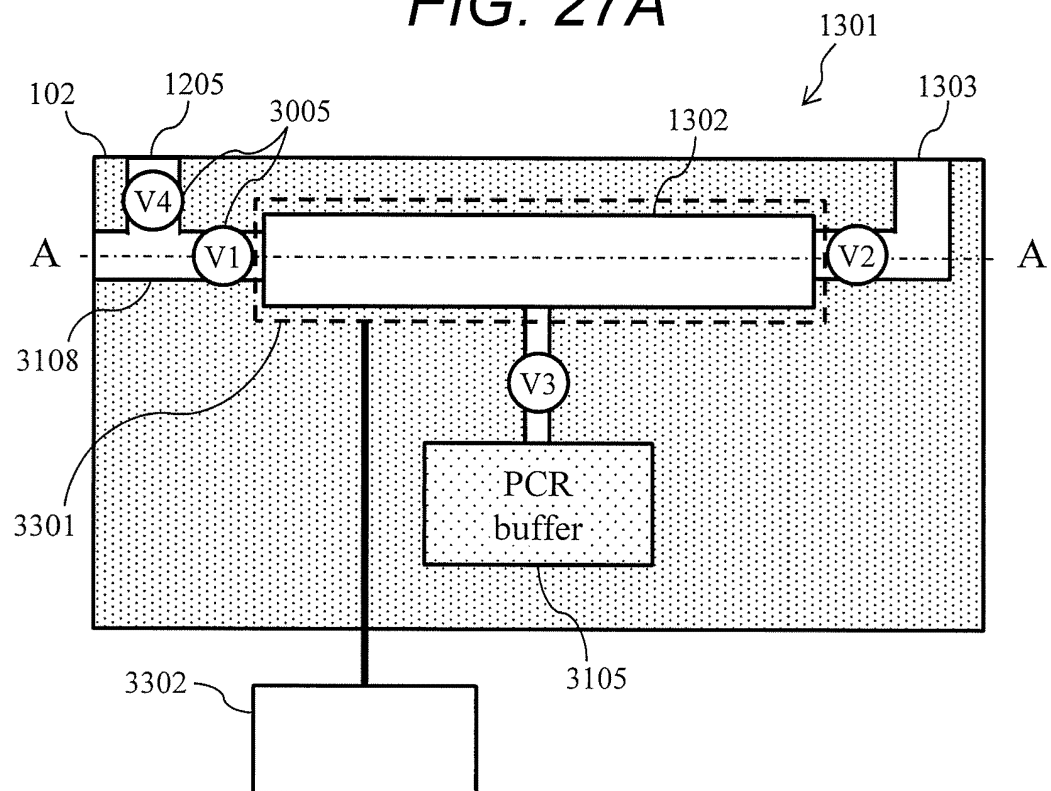


FIG. 27B

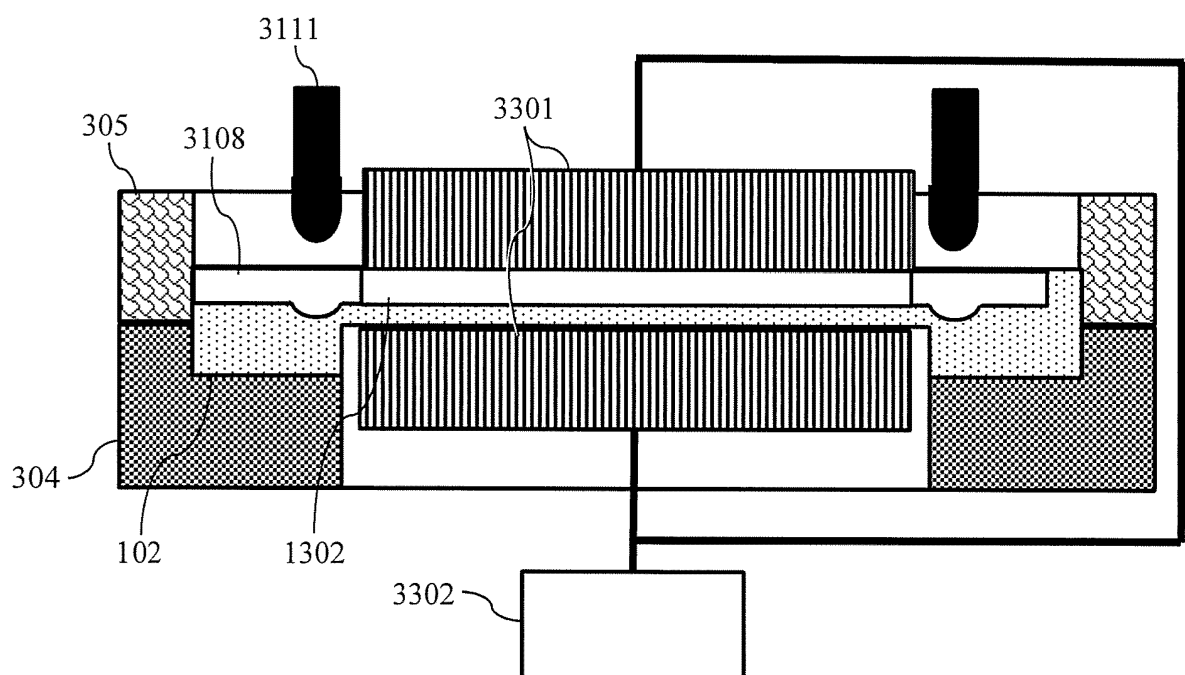


FIG. 28

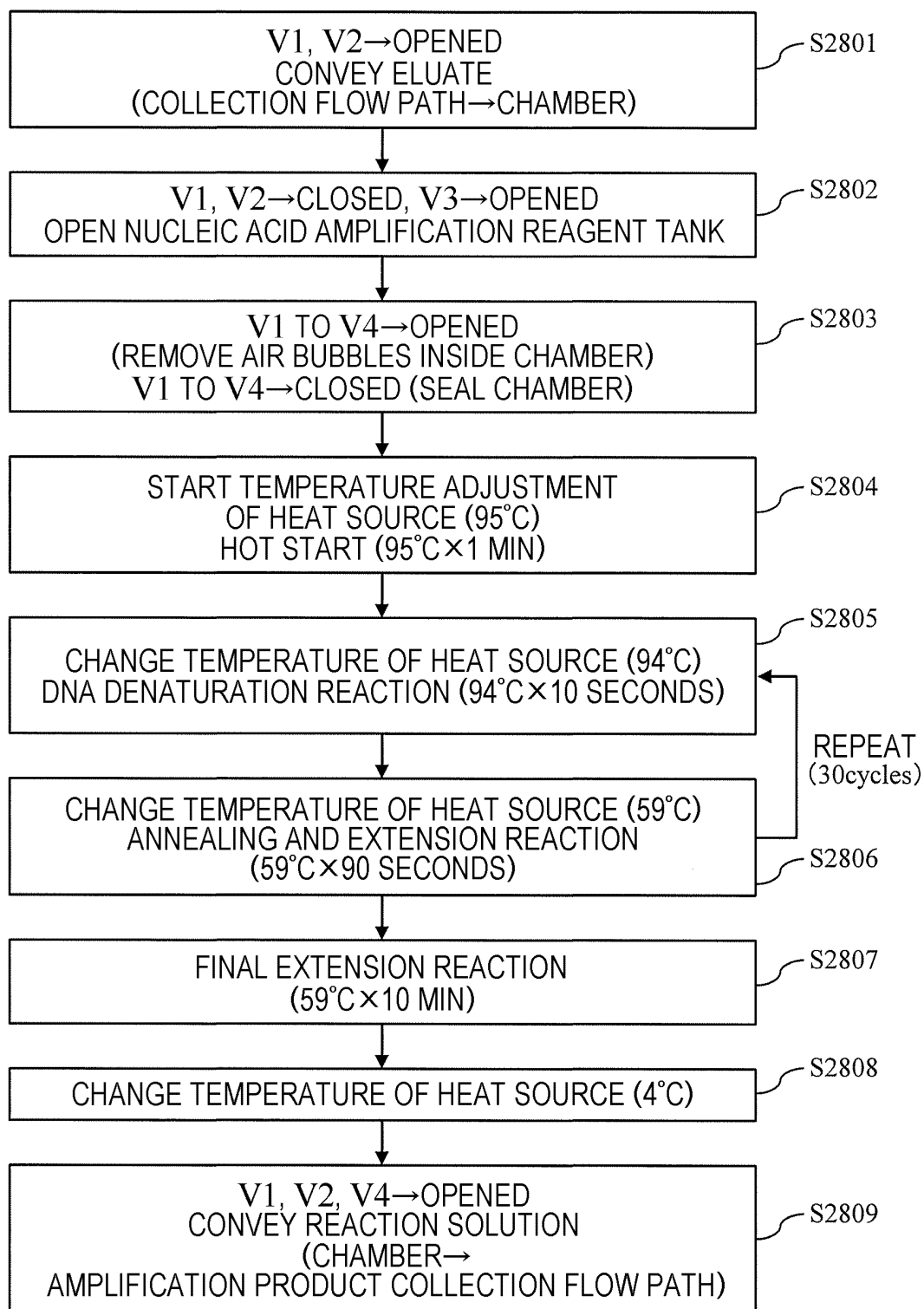


FIG. 29A

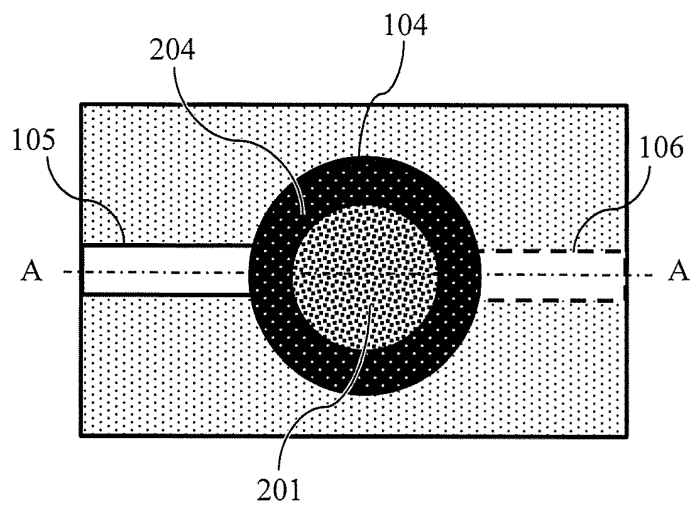


FIG. 29B

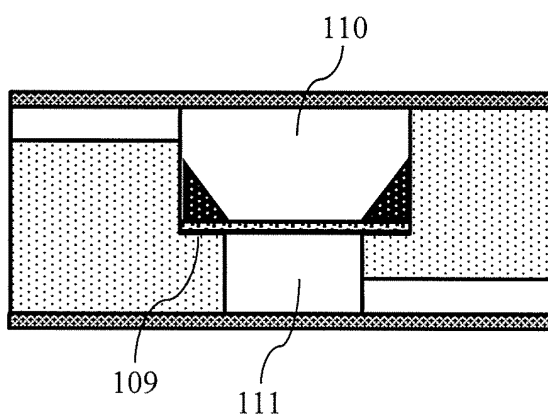


FIG. 29C

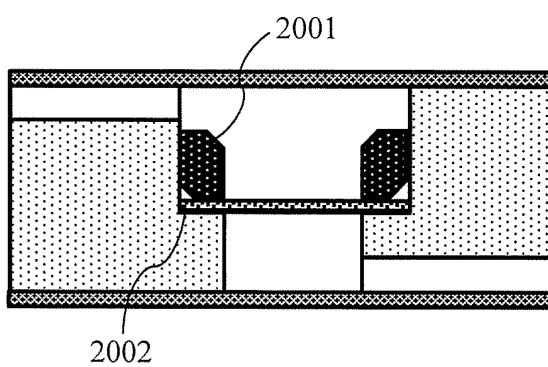


FIG. 29D

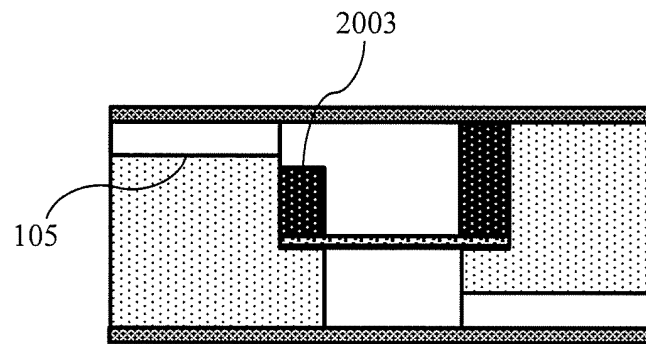


FIG. 29E

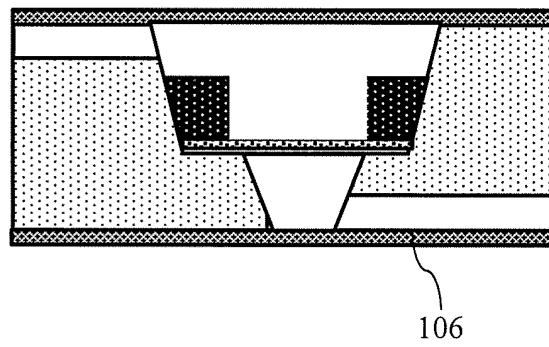


FIG. 30A

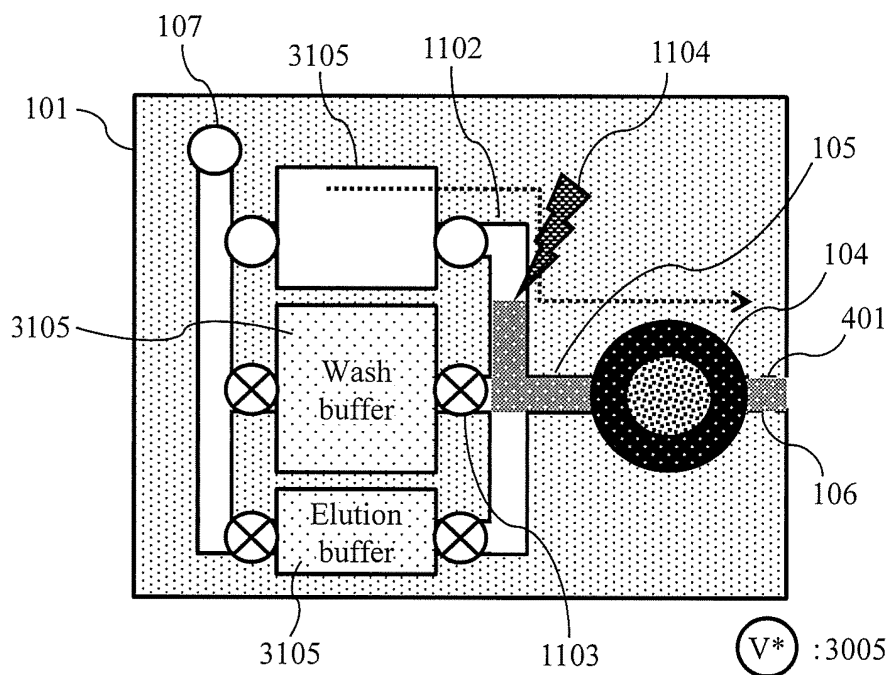


FIG. 30B

