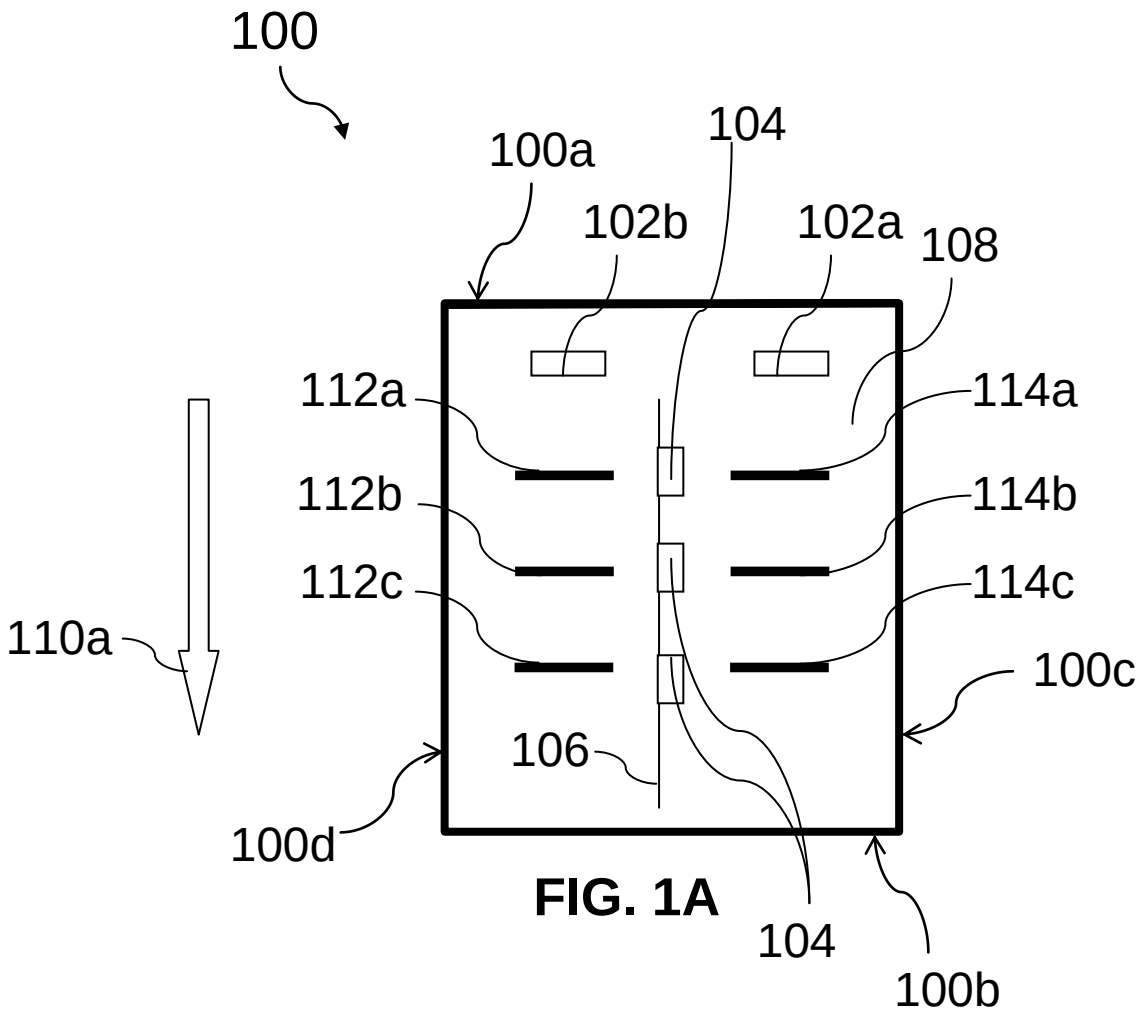

100
100a
104
102b
102a
108
112a
114a
112b
114b
112c
114c
110a
100c
106
100d
104
100b

FIG. 1A

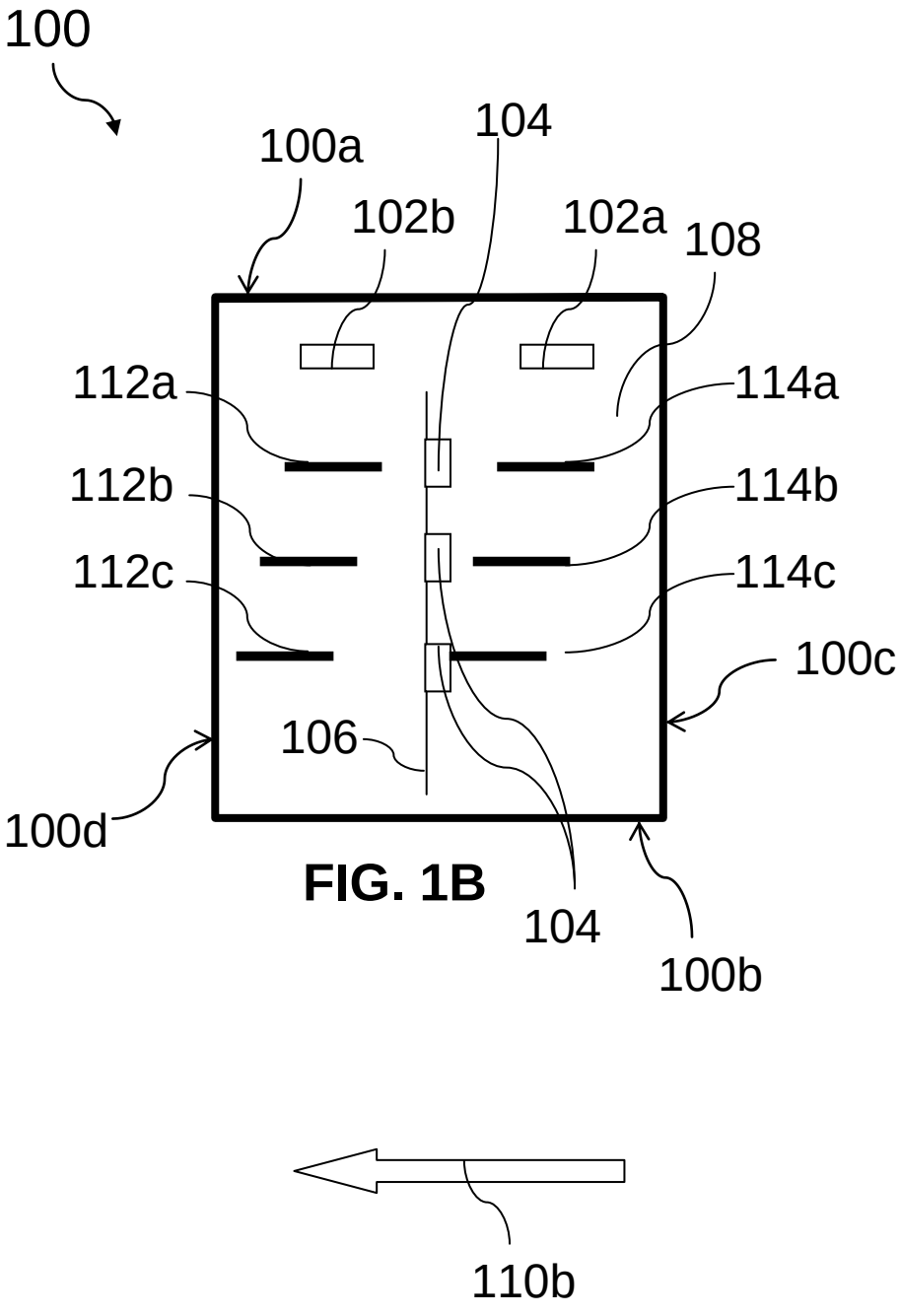

100
100a
104
102b
102a
108
112a
114a
112b
114b
112c
114c
100c
106
100d
104
100b
110b

FIG. 1B

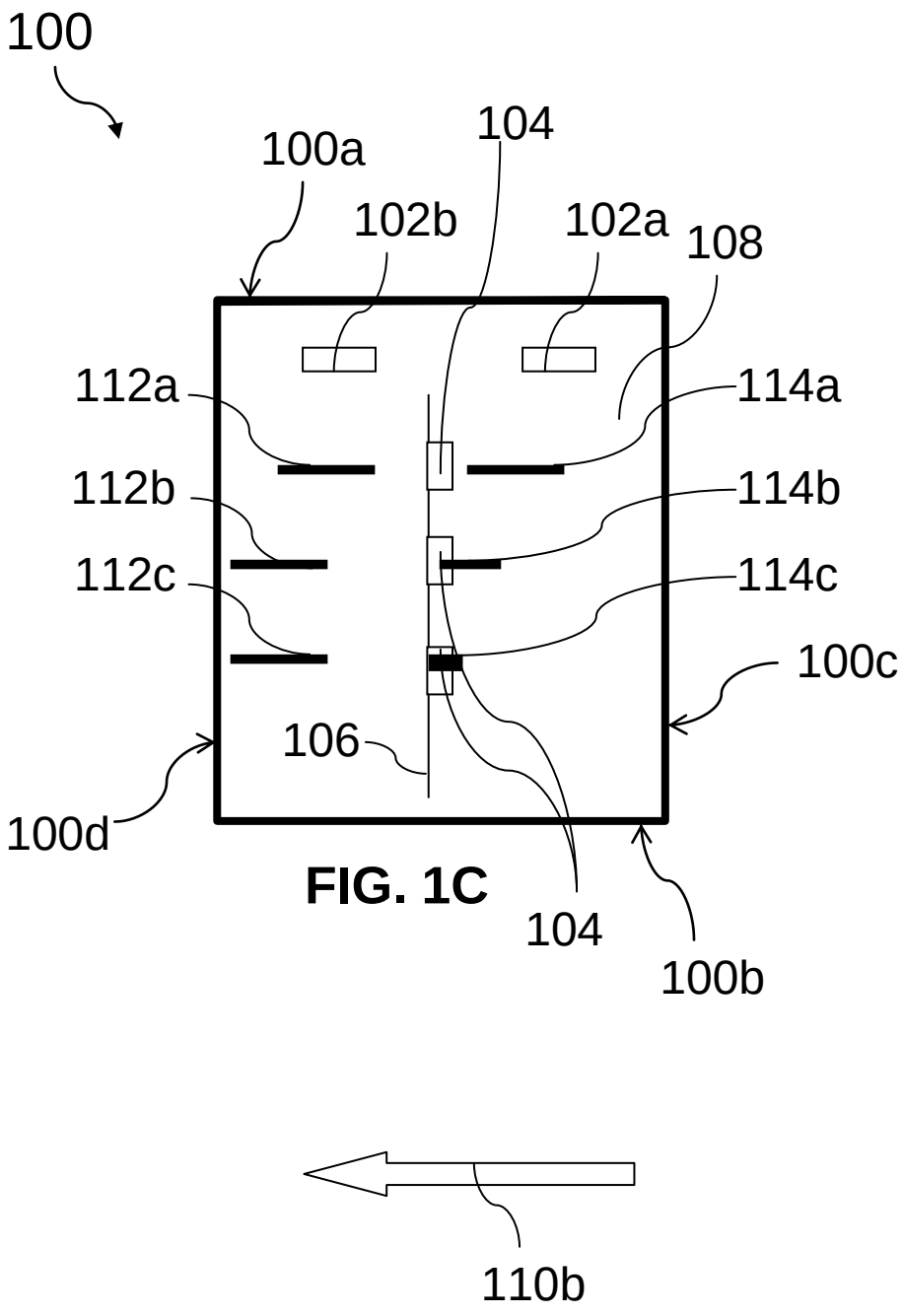

100
100a
104
102b
102a
108
112a
114a
112b
114b
112c
114c
100c
106
100d
104
100b
110b

FIG. 1C

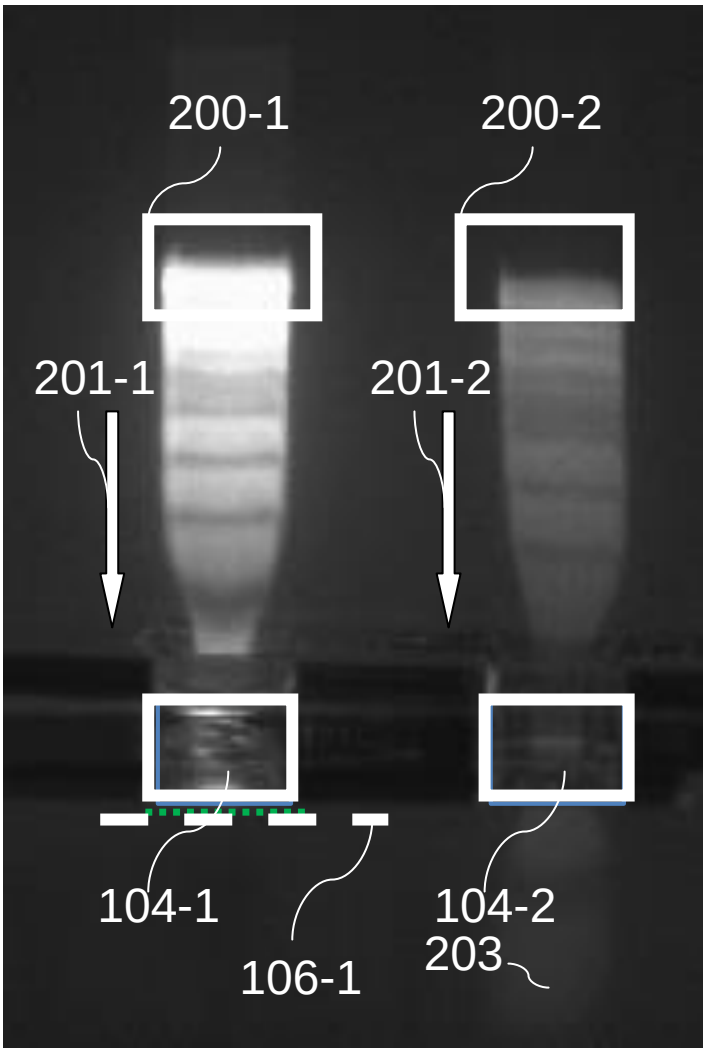

200-1
200-2
201-1
201-2
104-1
106-1
104-2
203
Extraction chamber
Extraction membrane

FIG. 2

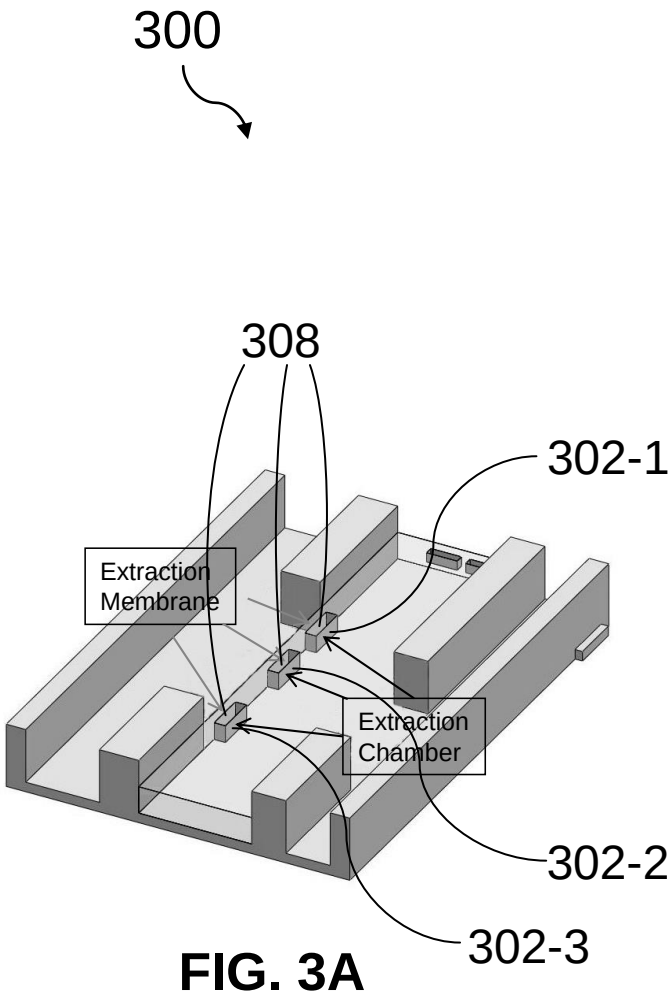

300
308
302-1
Extraction Membrane
Extraction Chamber
302-2
302-3

FIG. 3A

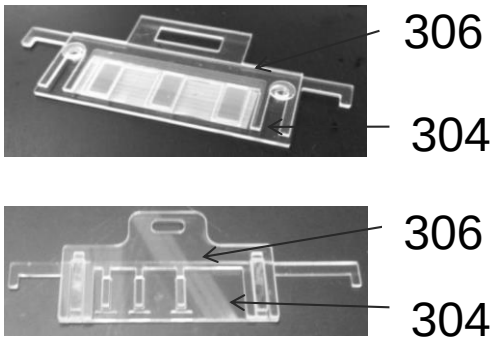

306
304
306
304

FIG. 3B

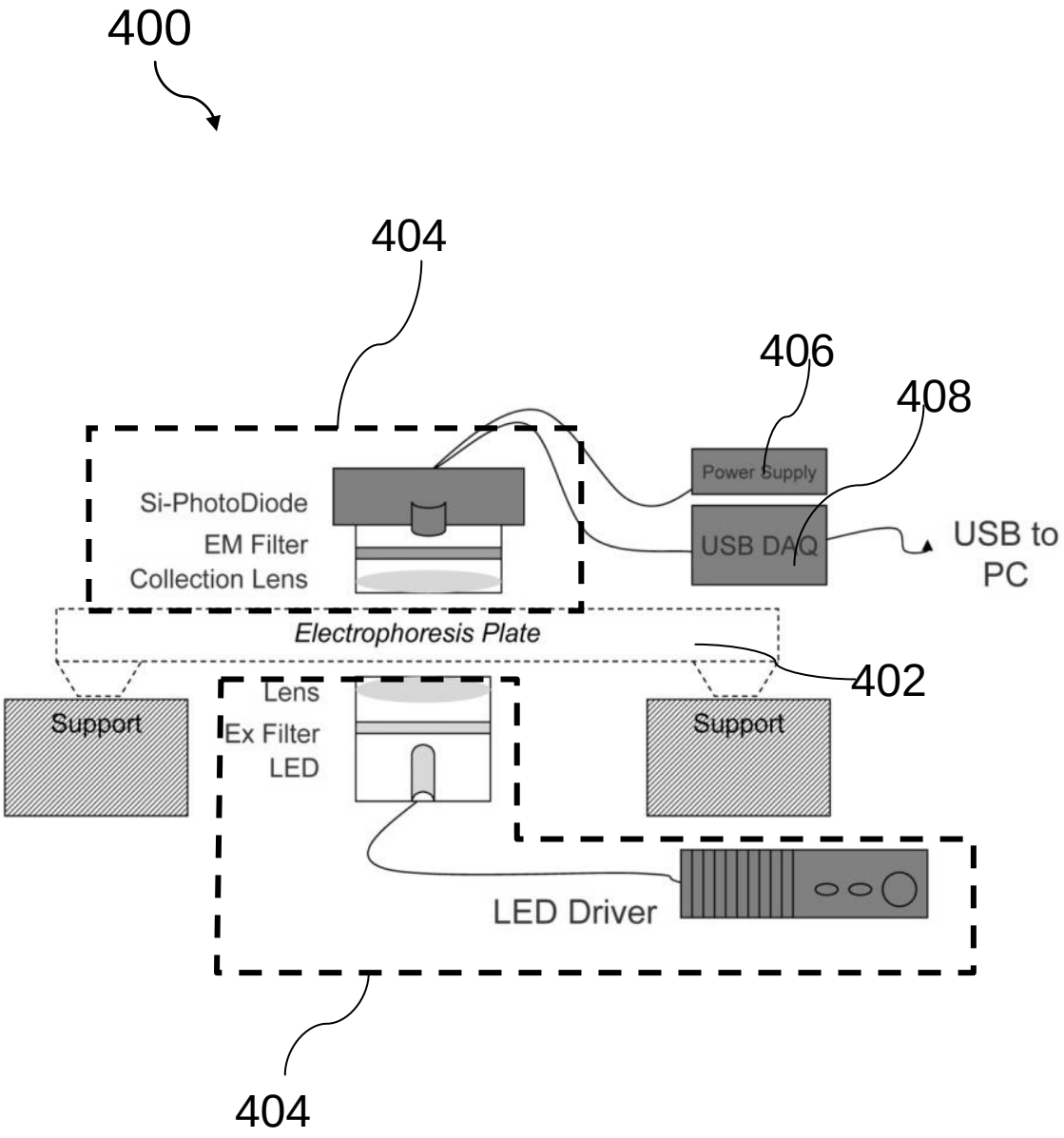

400
404
406
408
Power Supply
Si-PhotoDiode
EM Filter
Collection Lens
USB DAQ
USB to PC
Electrophoresis Plate
402
Lens
Ex Filter
LED
Support
Support
LED Driver
404

FIG. 4

500

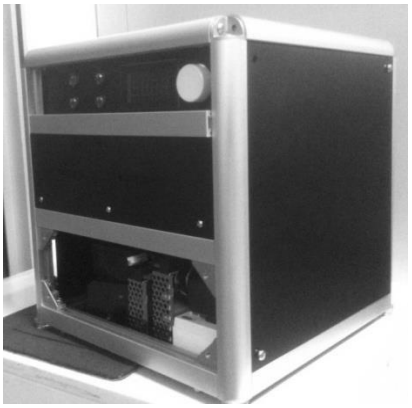


FIG. 5

600

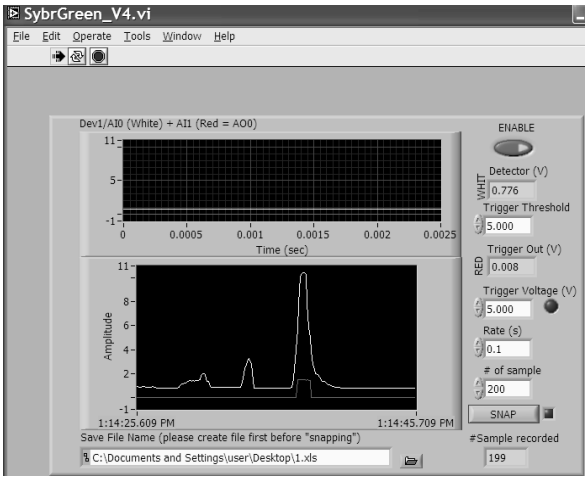


FIG. 6

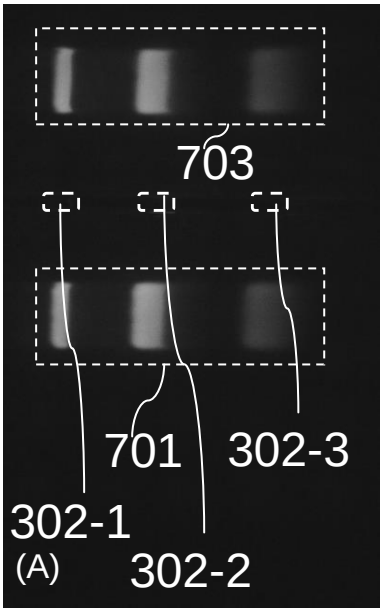


FIG. 7A

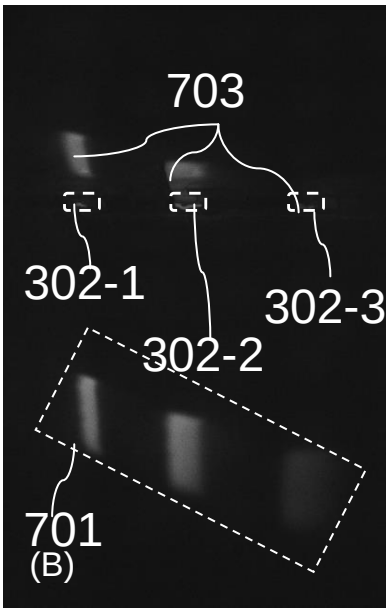


FIG. 7B

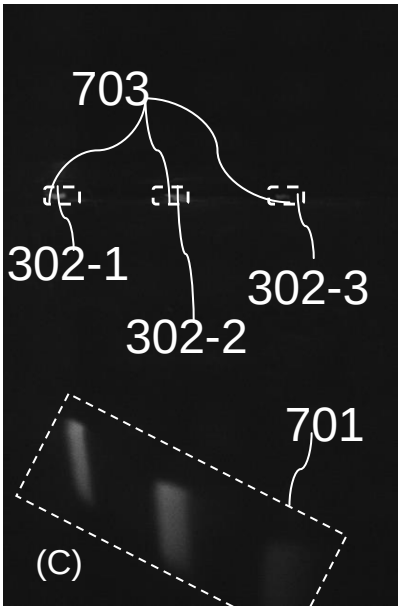


FIG. 7C

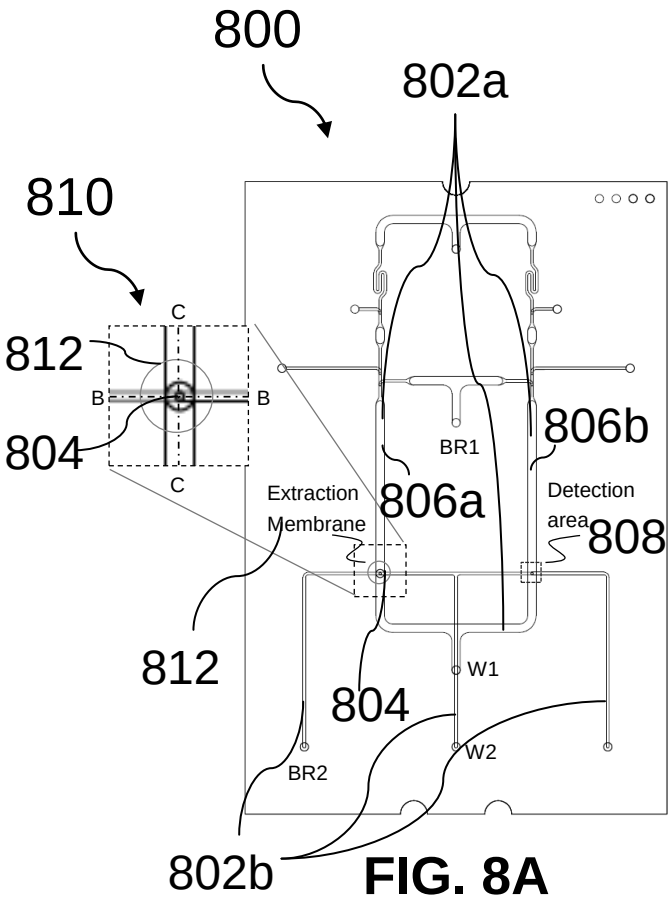


FIG. 8A

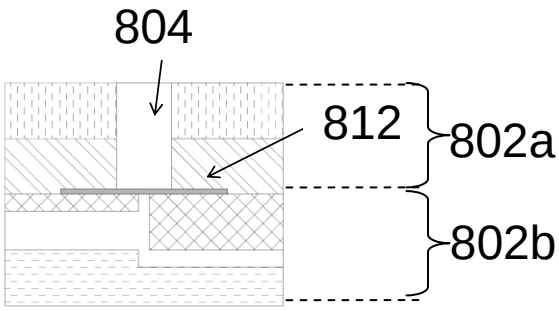


FIG. 8B

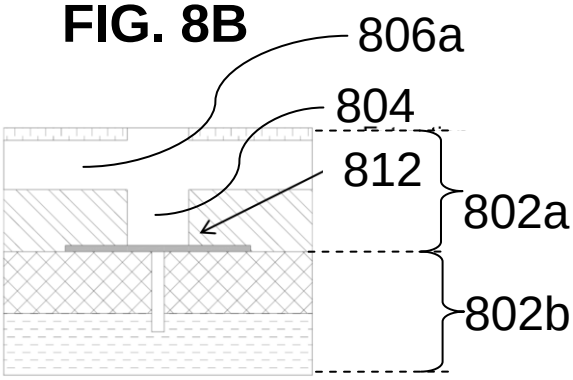


FIG. 8C

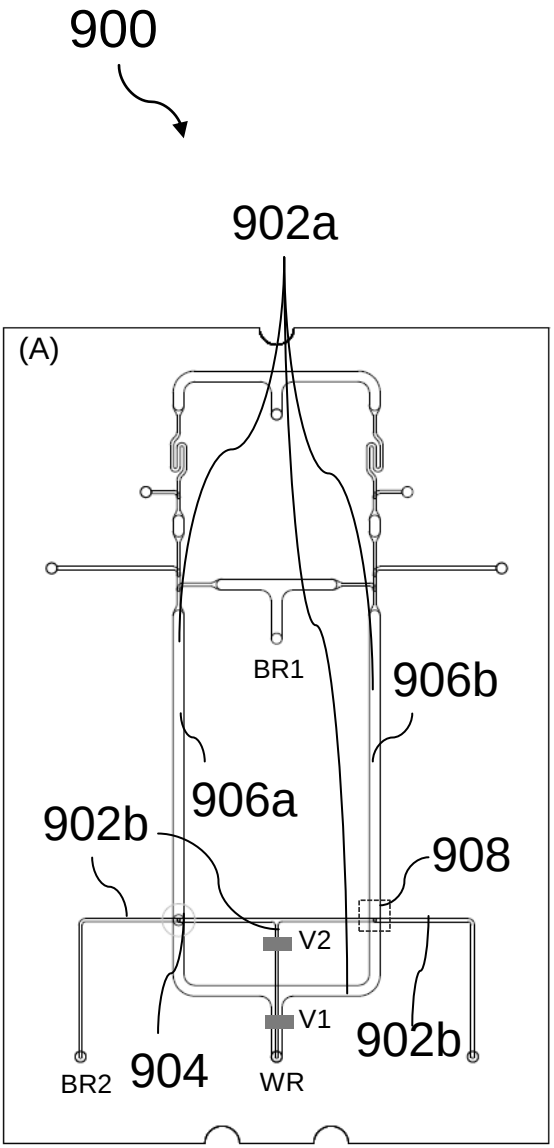

900
902a
(A)
BR1
906b
906a
902b
908
V2
V1
902b
BR2
904
WR

FIG. 9A

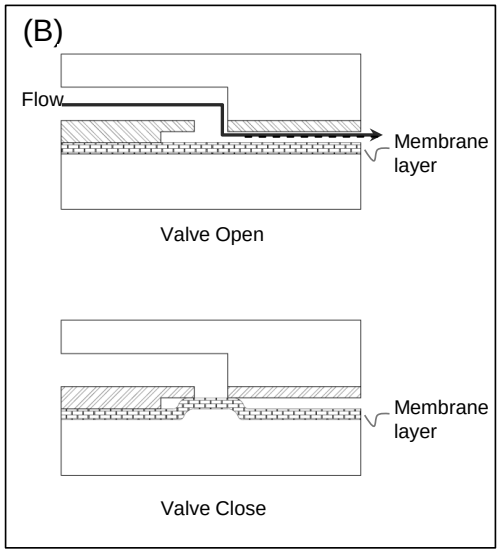

(B)
Flow
Membrane layer
Valve Open
Membrane layer
Valve Close

FIG. 9B

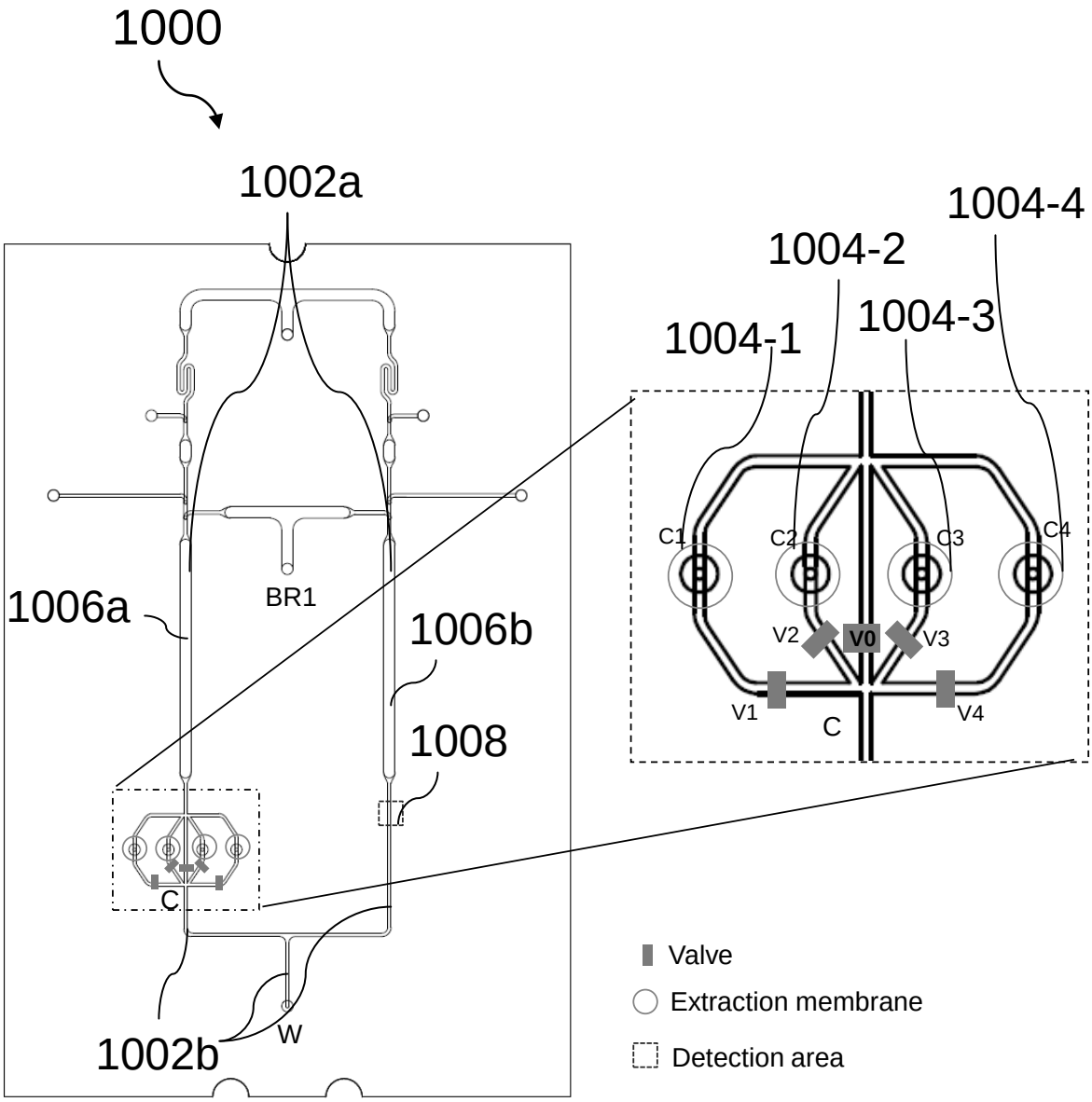

1000
1002a
1004-4
1004-2
1004-3
1004-1
C1
C2
C3
C4
V2
V0
V3
V1
V4
C
1006a
BR1
1006b
1008
C
1002b
W
Valve
Extraction membrane
Detection area

FIG. 10

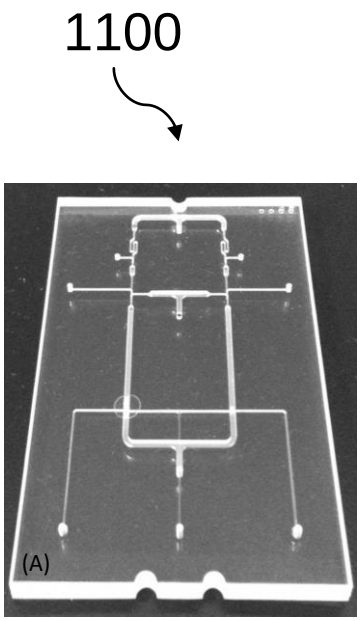


FIG. 11A



FIG. 11B



FIG. 11C



FIG. 11D

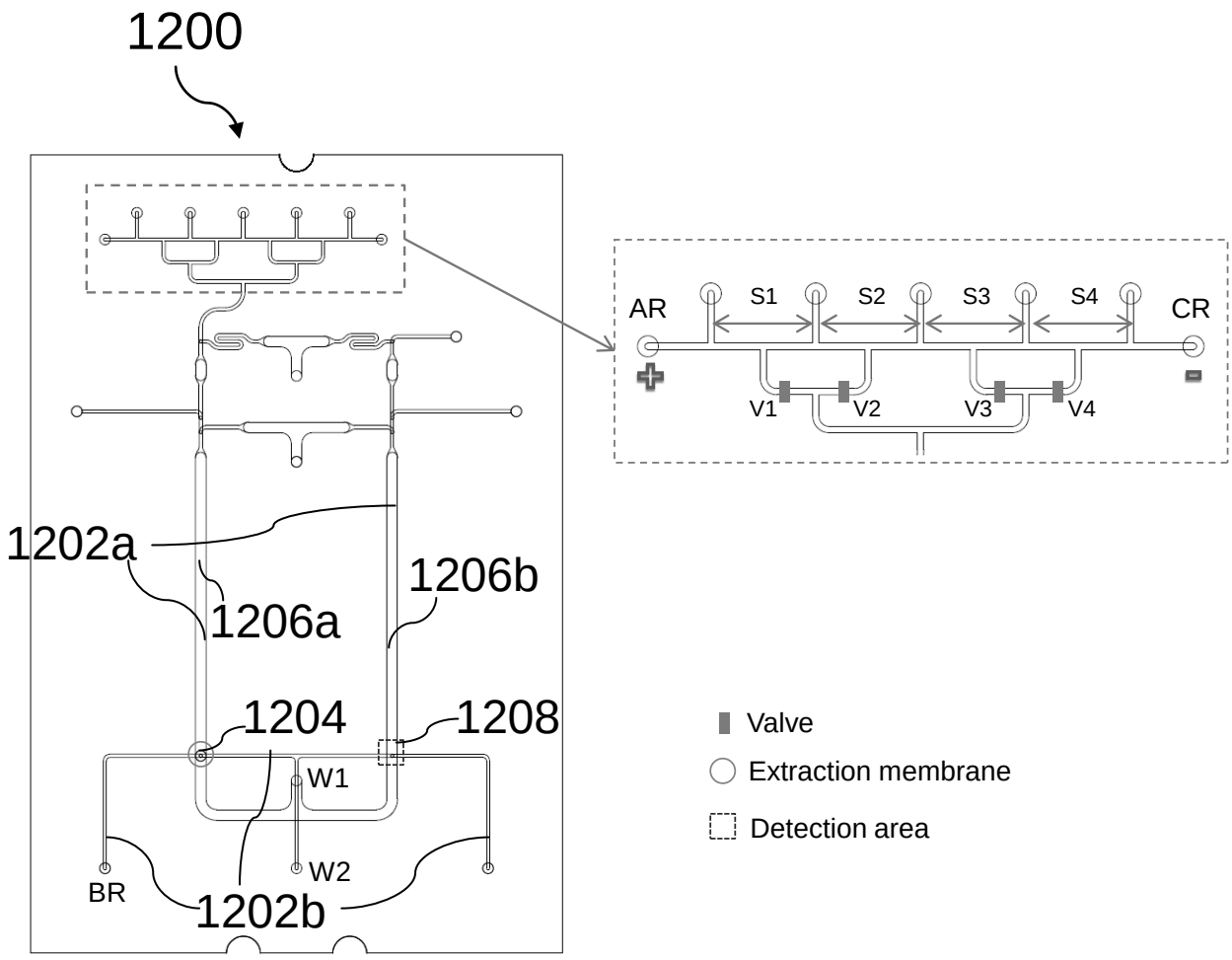

1200
AR
S1
S2
S3
S4
CR
V1
V2
V3
V4
1202a
1206a
1206b
1204
1208
W1
W2
BR
1202b
Valve
Extraction membrane
Detection area

FIG. 12