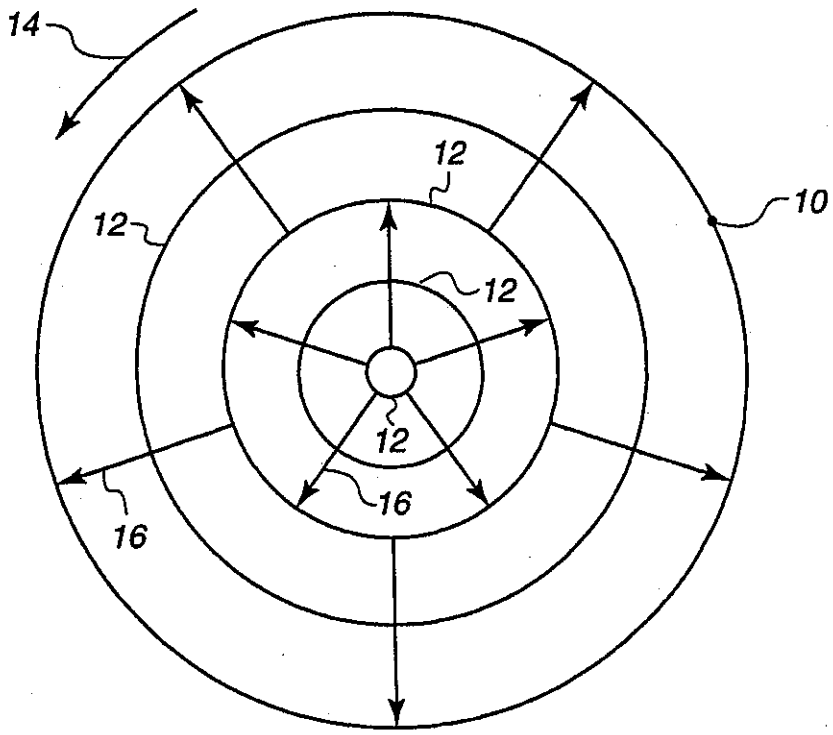


Fig. 1A
(Prior Art)

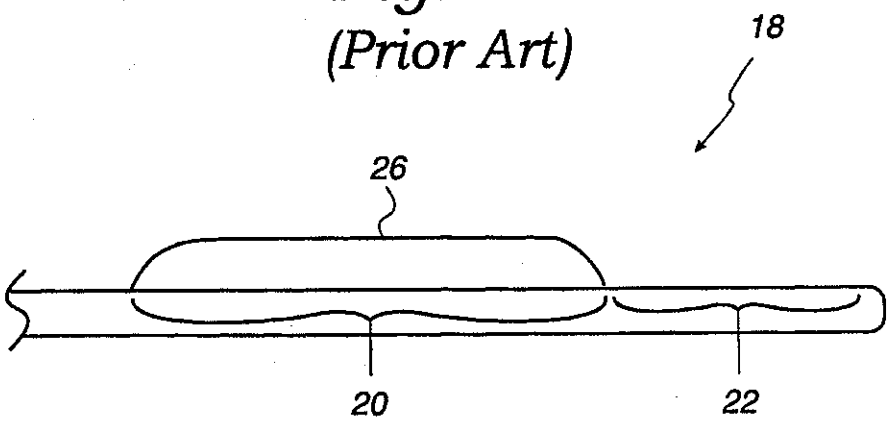


Fig. 1B
(Prior Art)

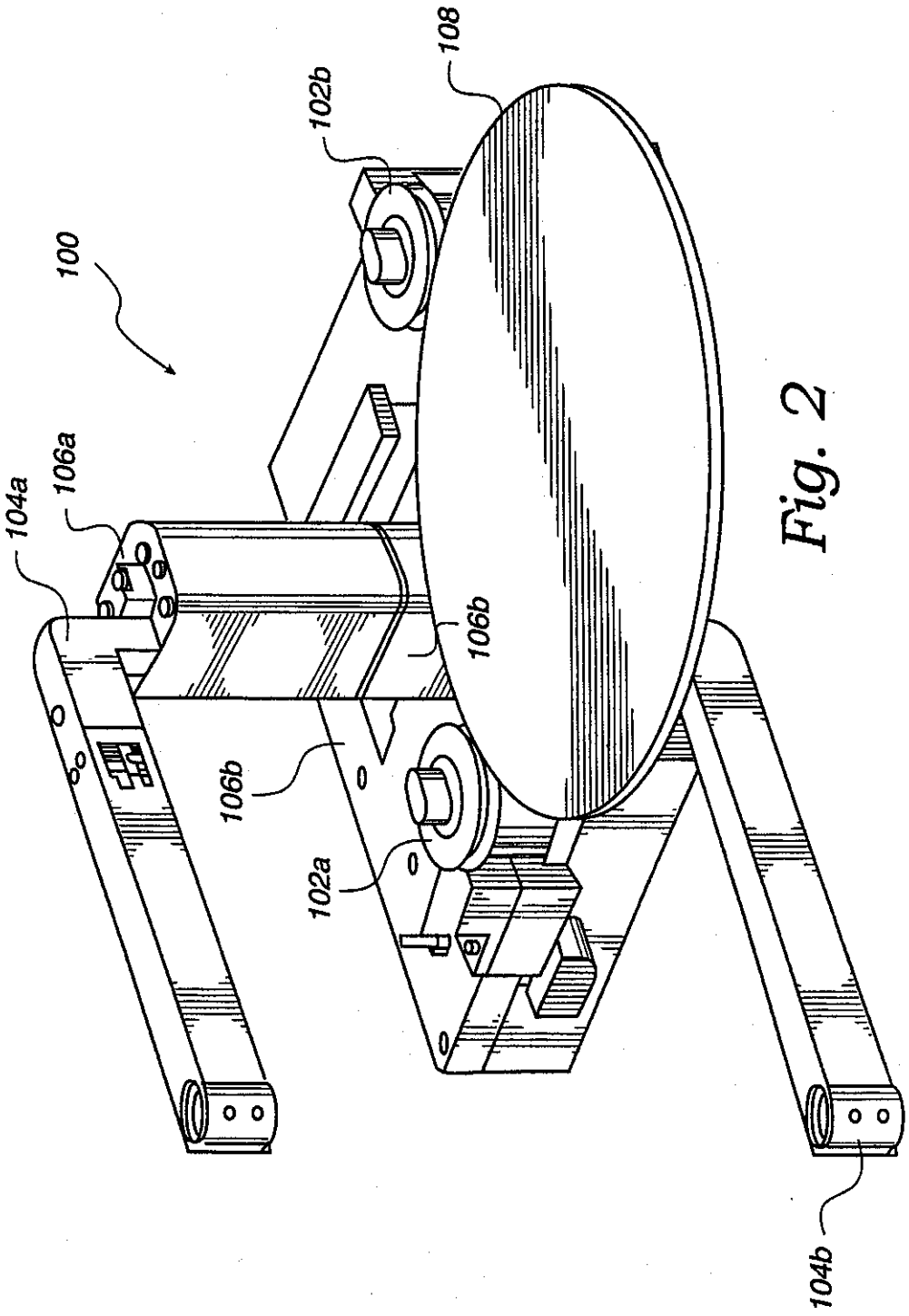
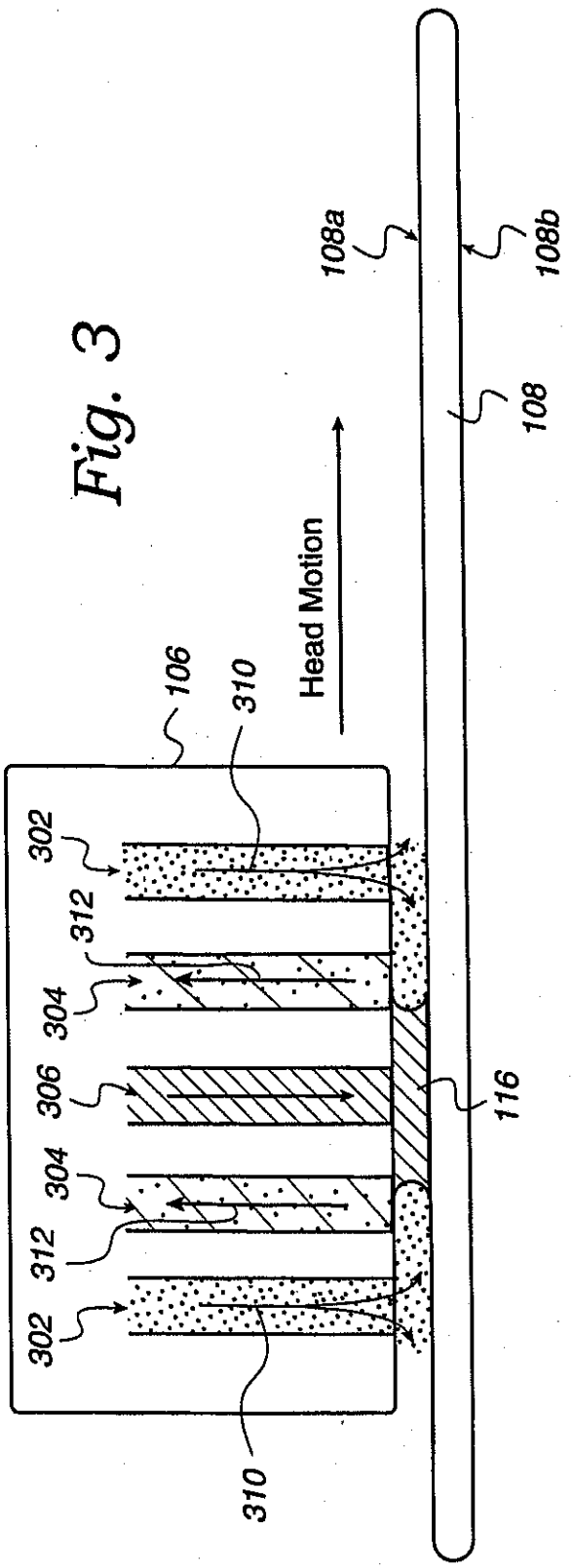


Fig. 2

Fig. 3


108a
108b
108
Head Motion
106
310
302
312
304
306
304
312
302
310
116

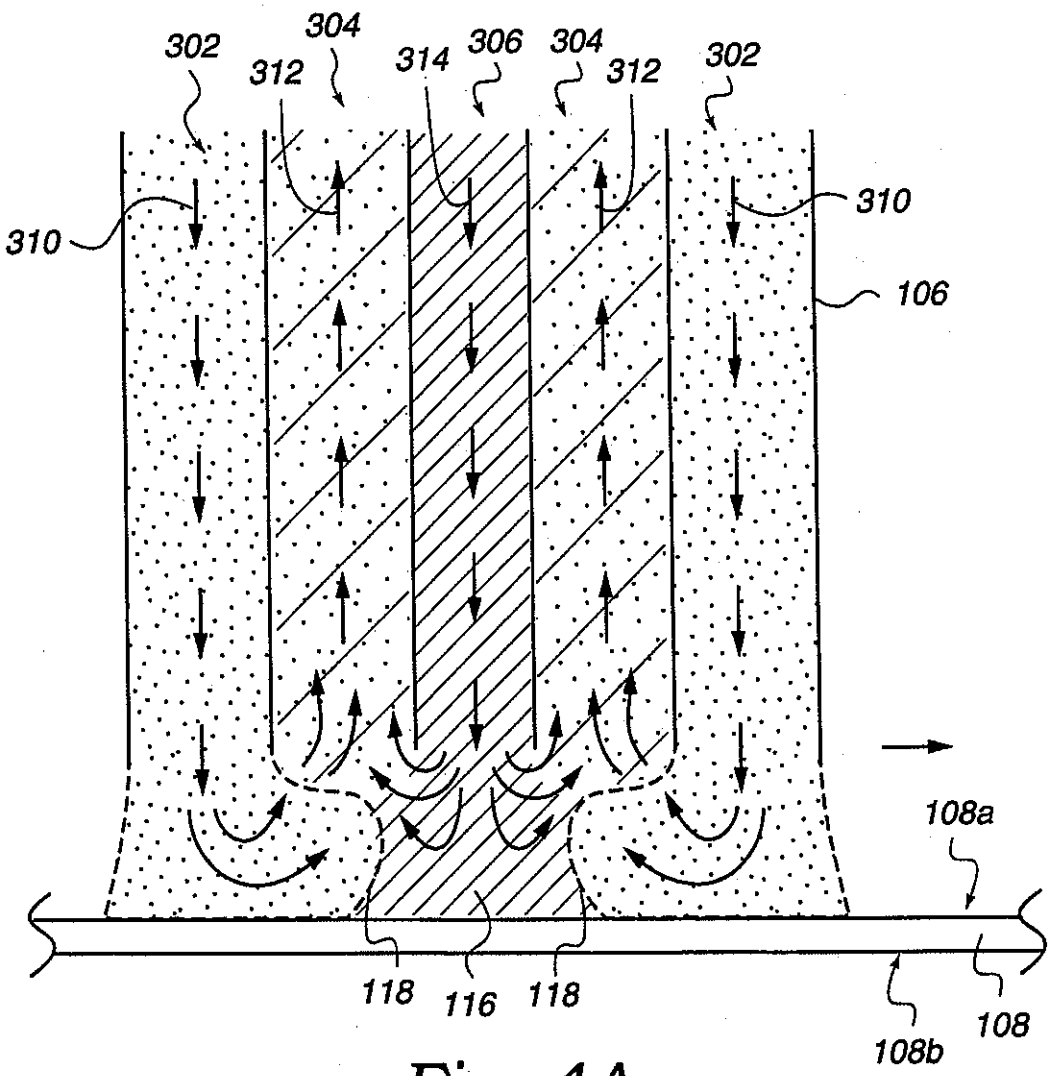

302
304
312
314
306
304
312
302
310
310
106
108a
118
116
118
108b
108

Fig. 4A

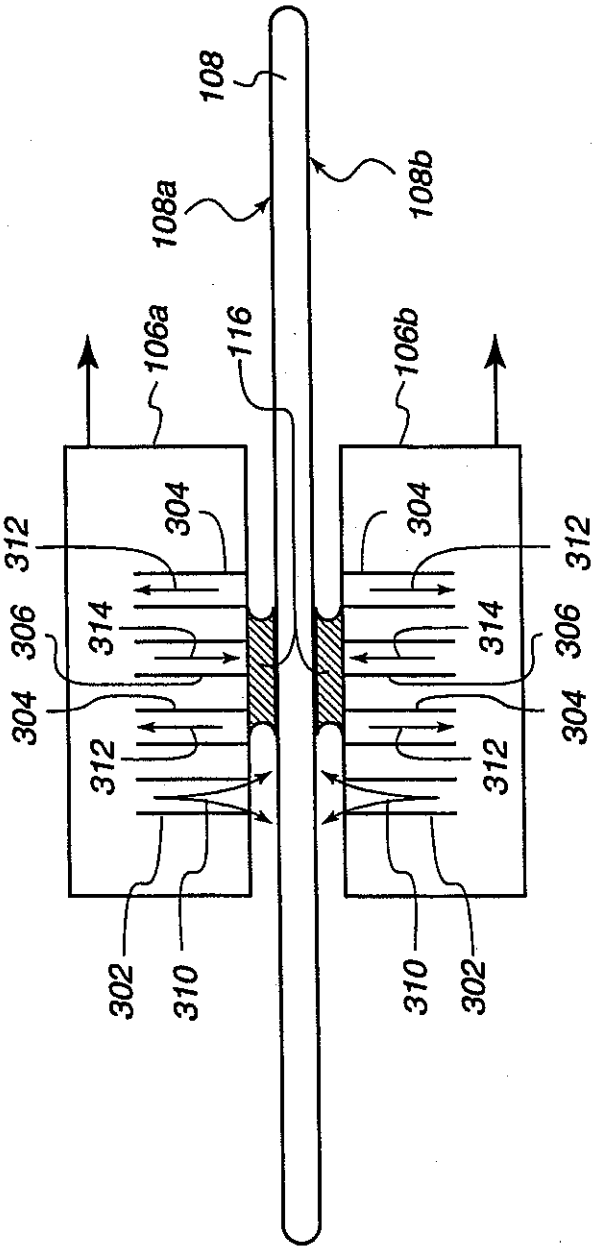

108
108a
108b
106a
116
106b
312
304
306
314
304
312
302
310
310
302

Fig. 4B

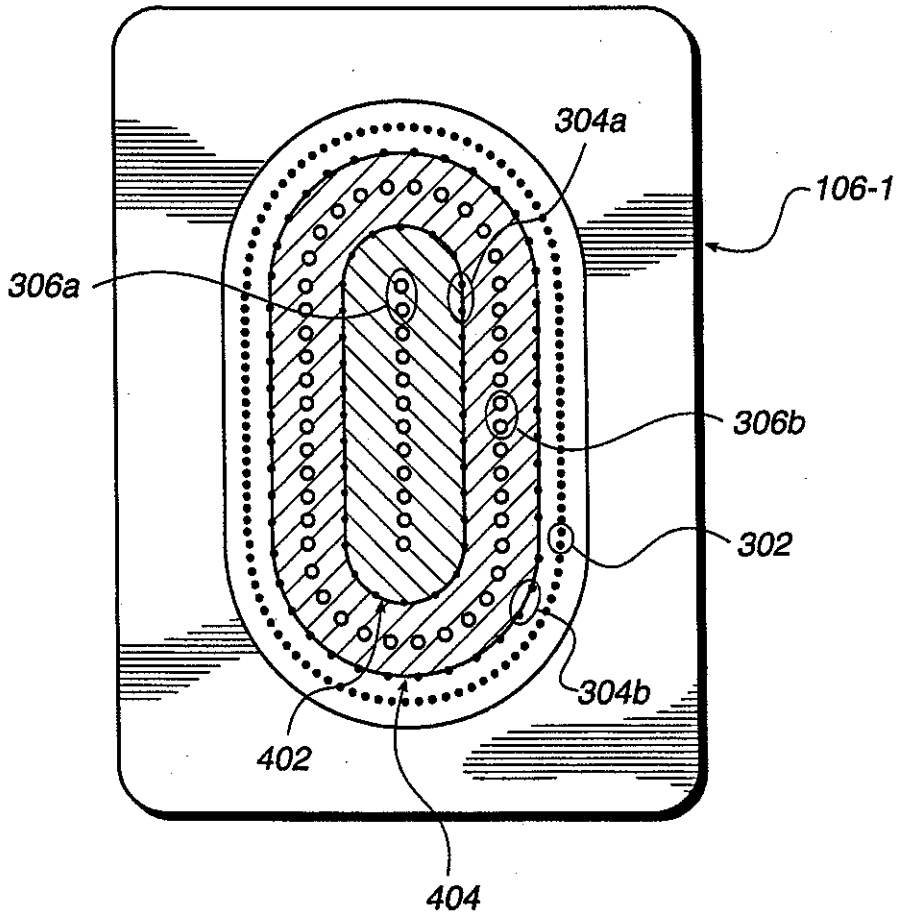


Fig. 5A

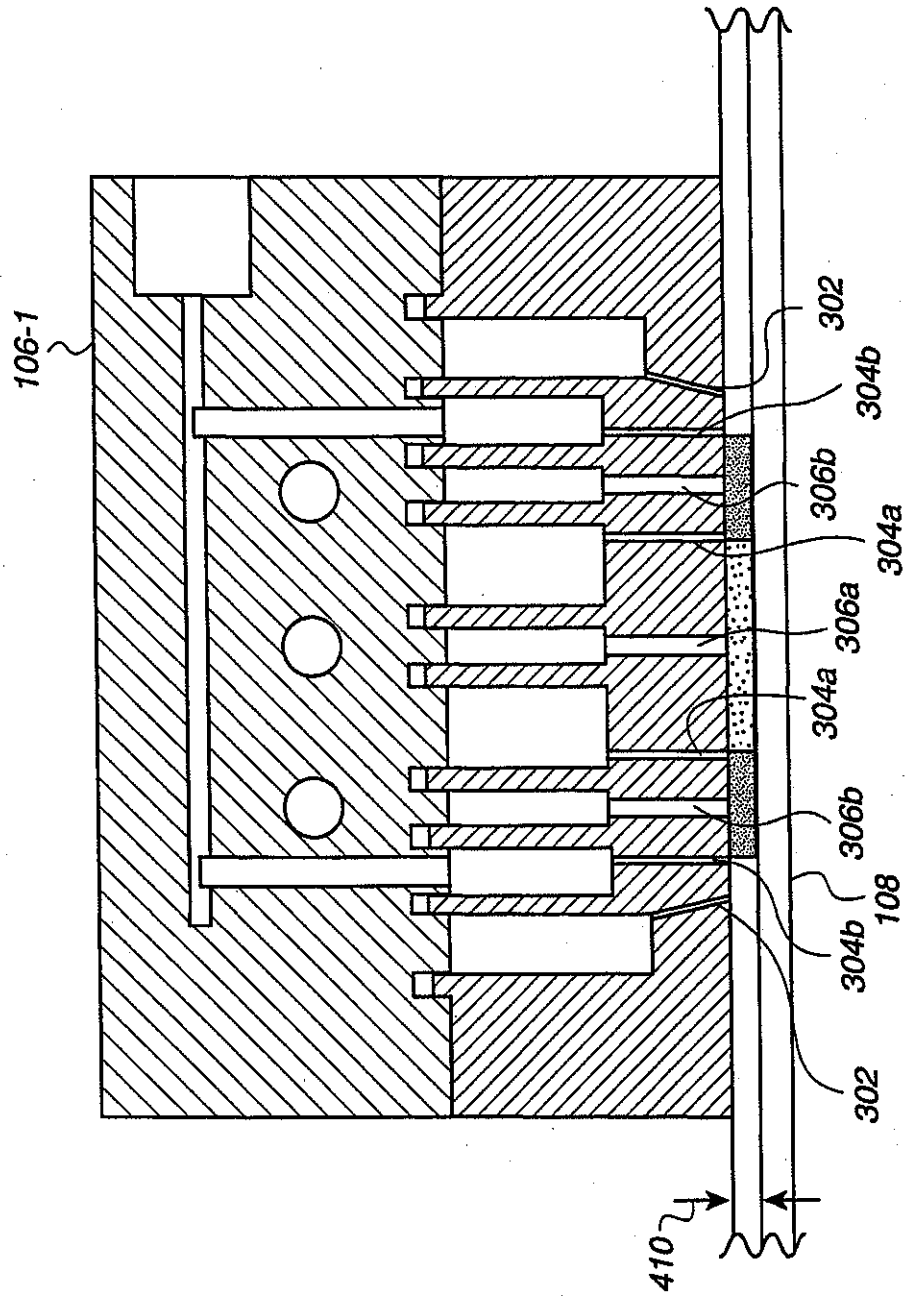


Fig. 5B

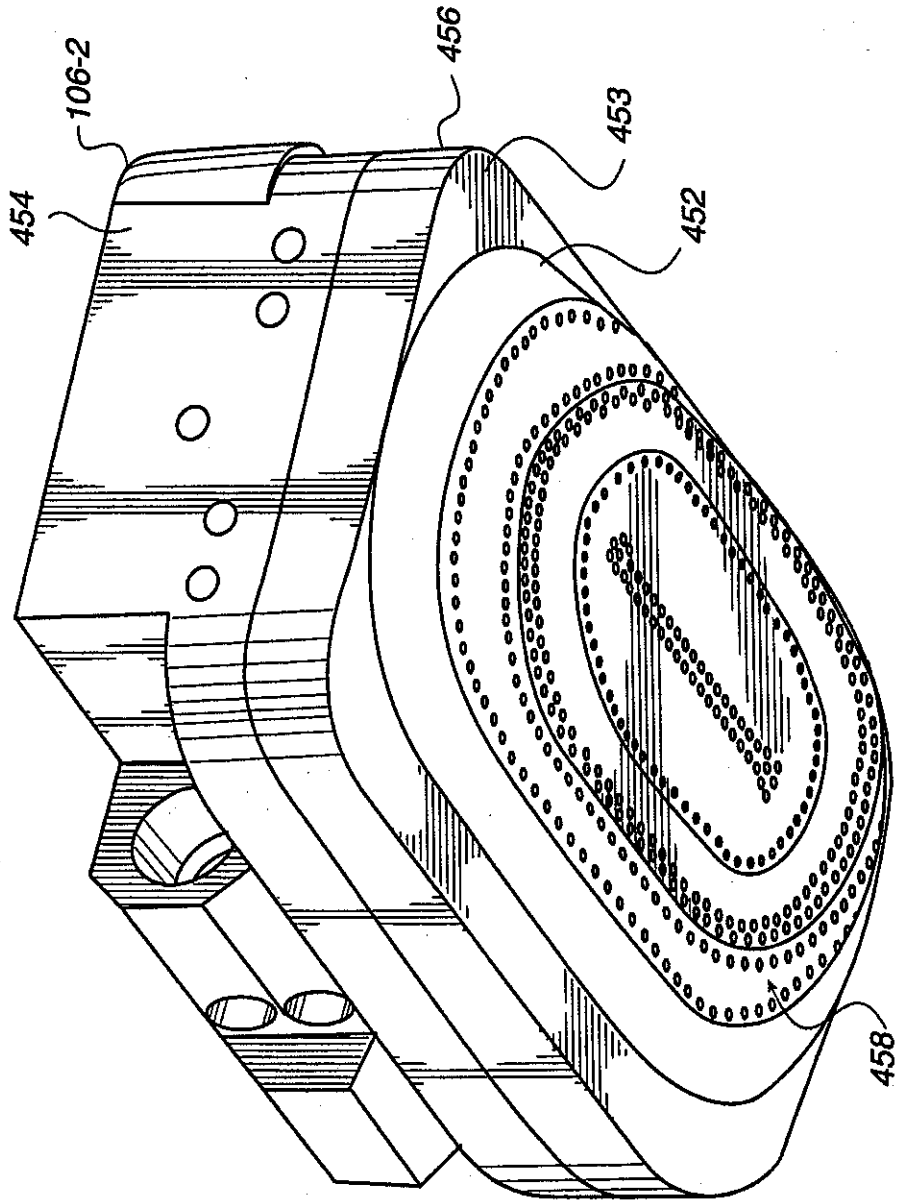


Fig. 6A

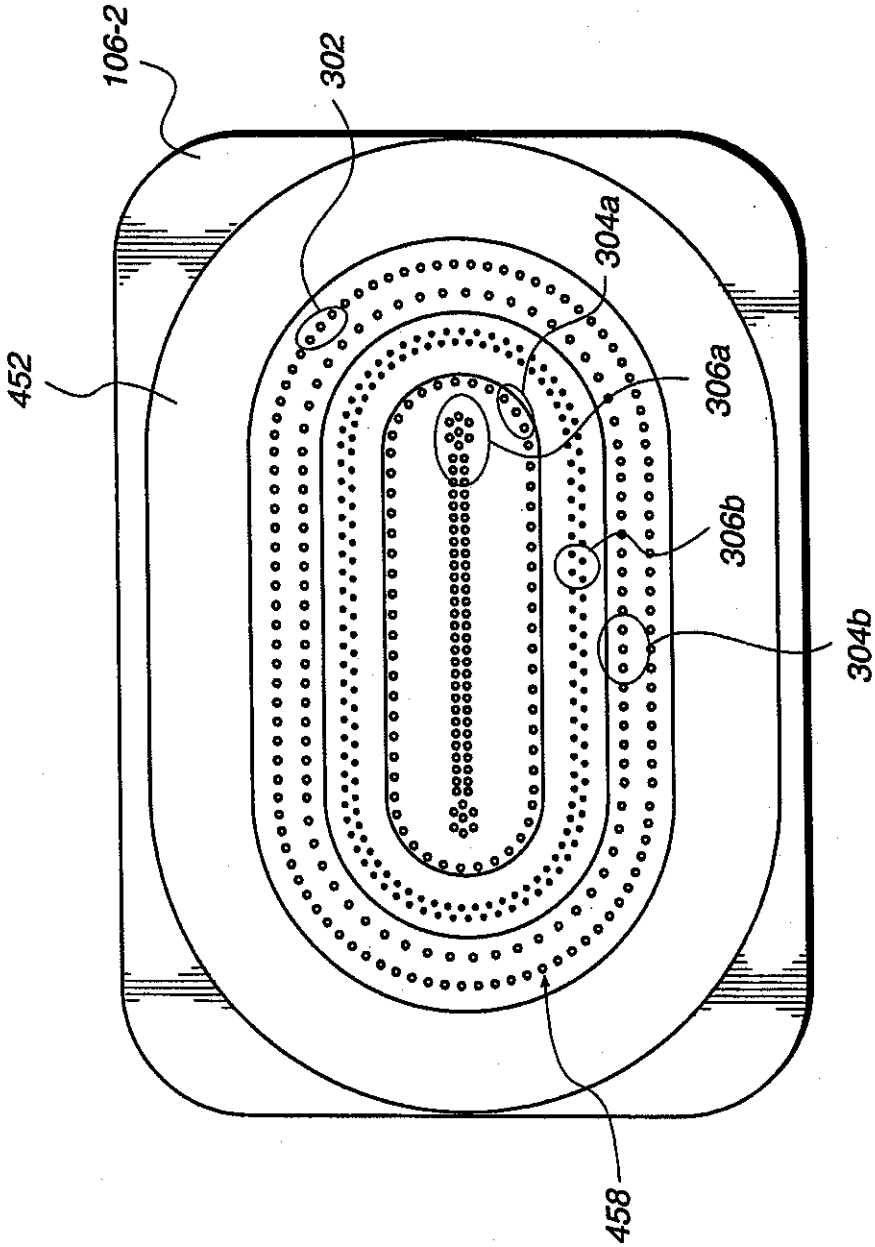


Fig. 6B

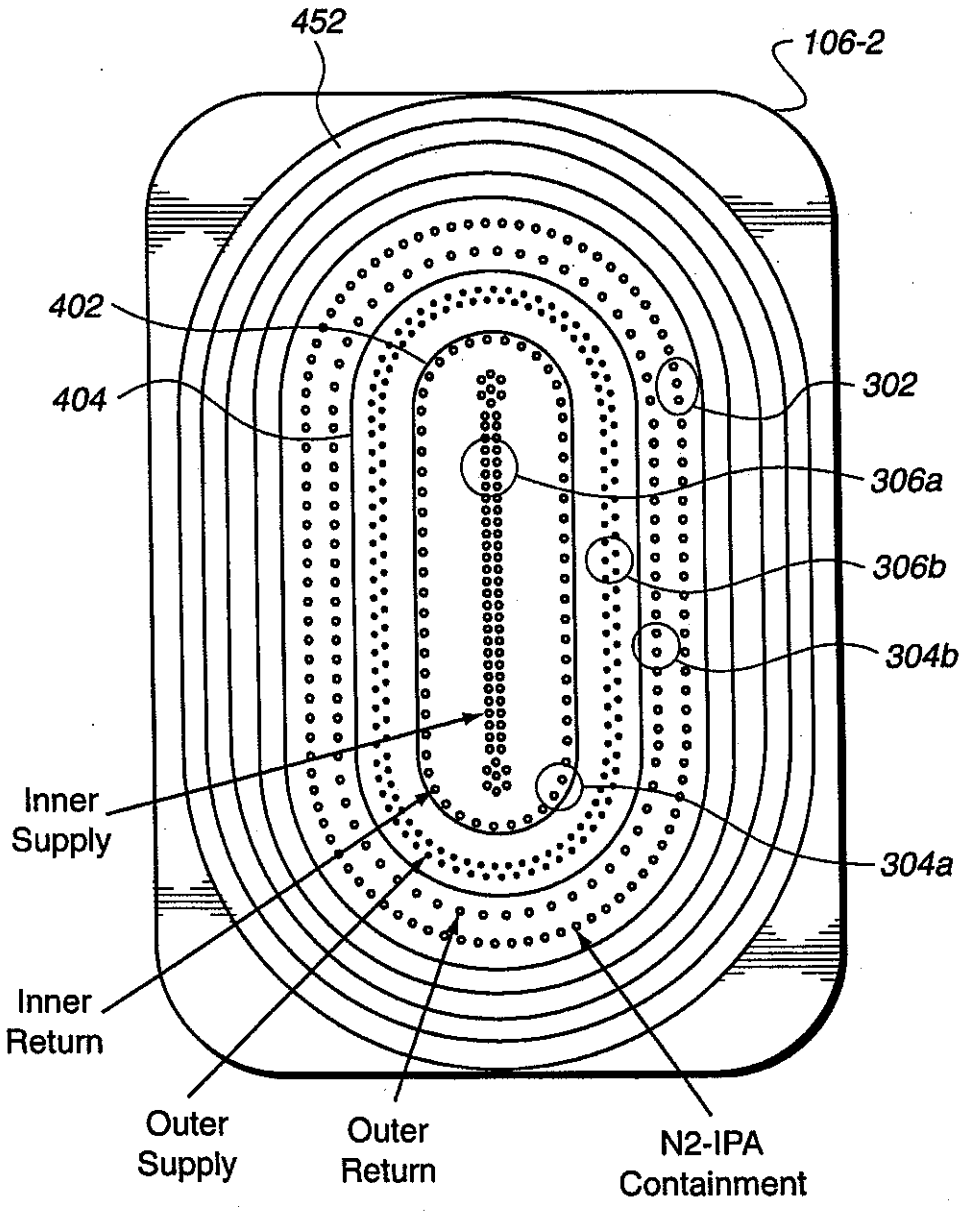

452
106-2
402
404
302
306a
306b
304b
304a
Inner Supply
Inner Return
Outer Supply
Outer Return
N2-IPA Containment

Fig. 6C

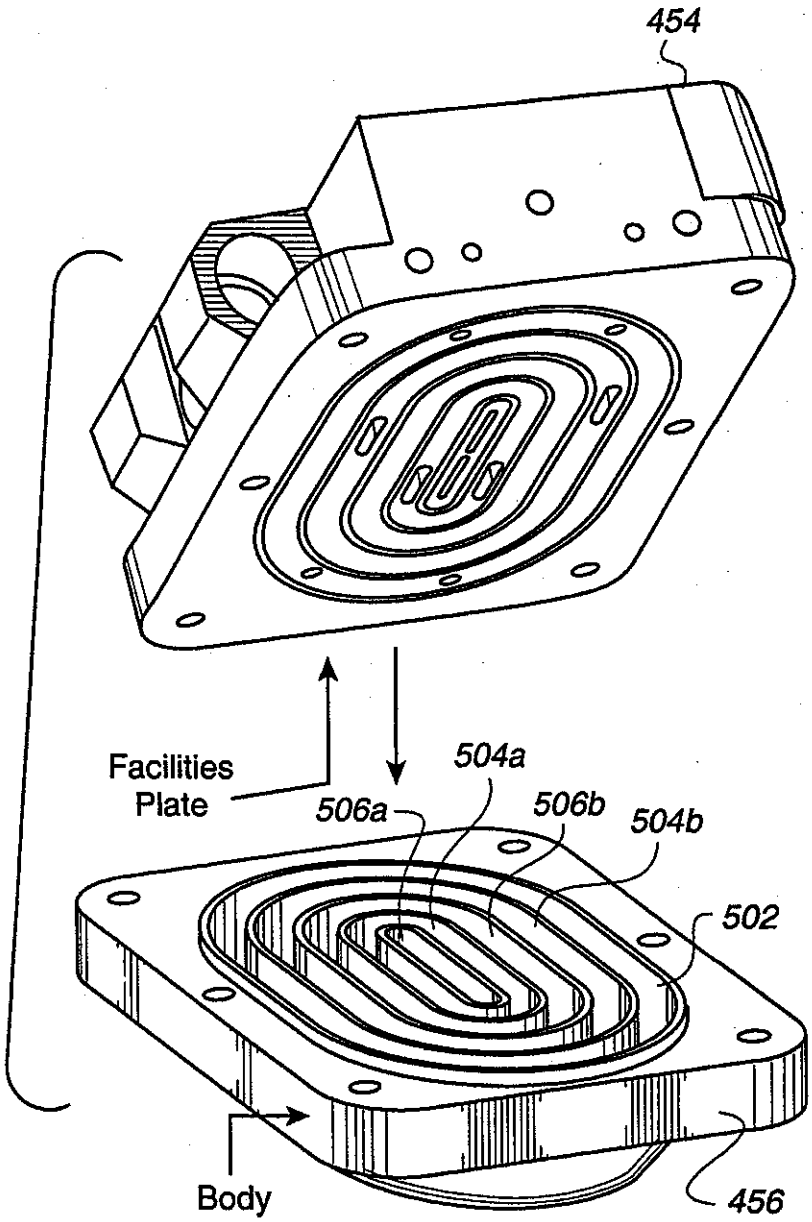


Fig. 6D

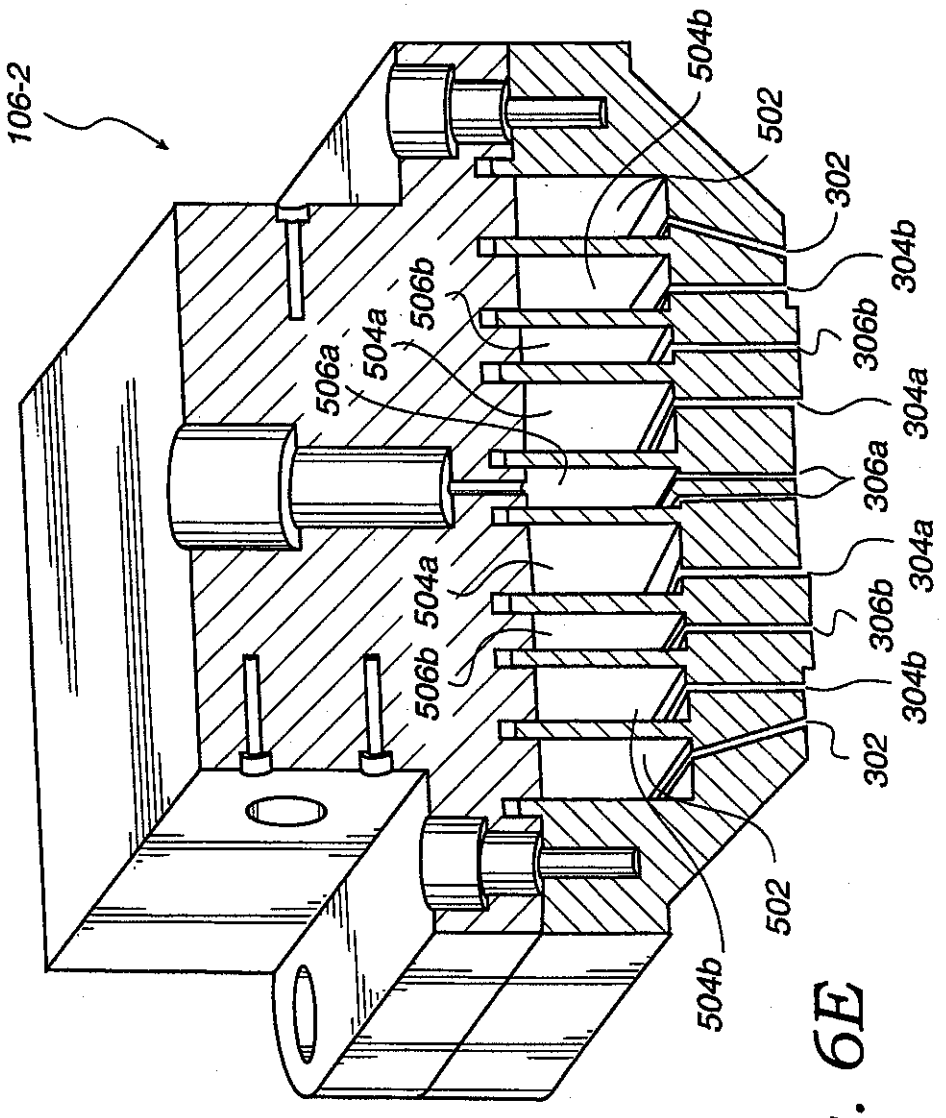

106-2
504b
502
302
304b
306b
304a
306a
304a
306b
304b
302
502
504b
506a
504a
506b
504a
506b

Fig. 6E

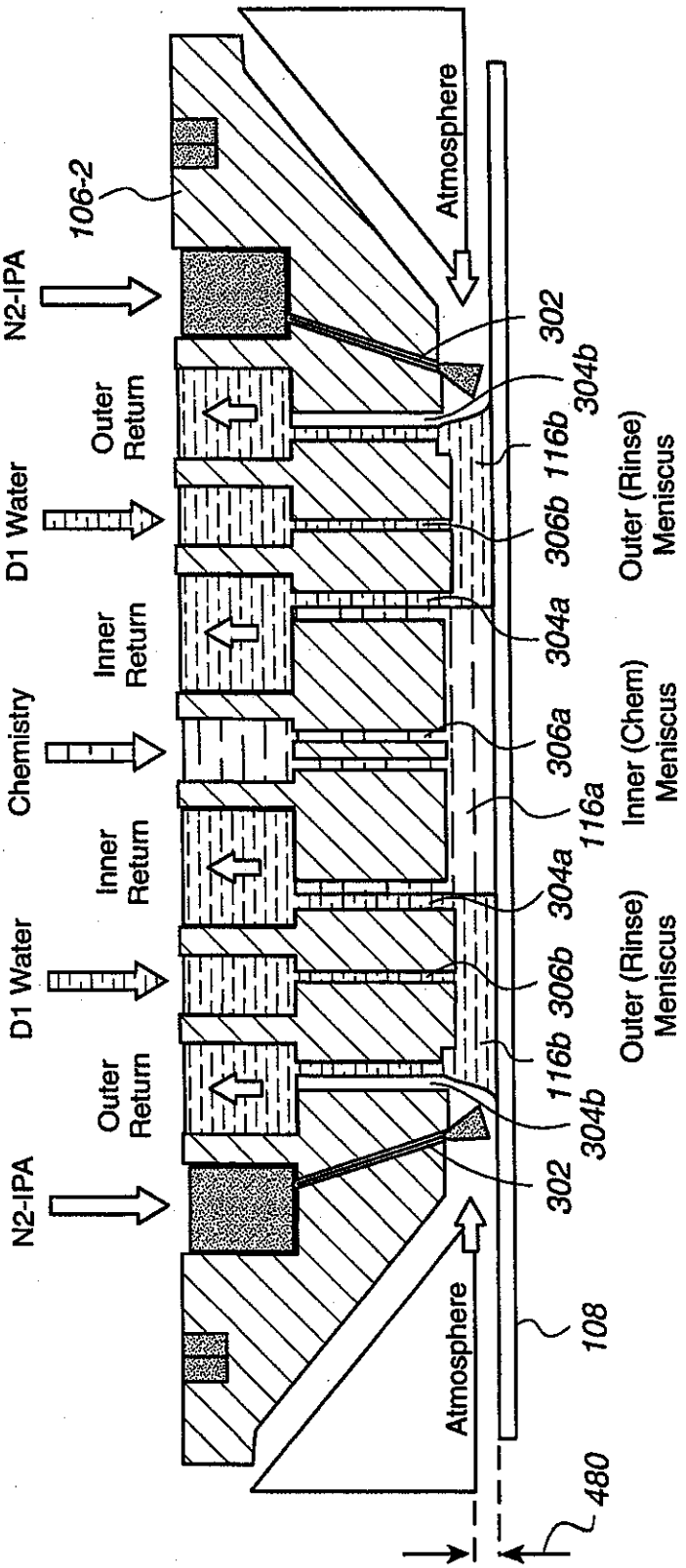

106-2
N2-IPA
Outer Return
D1 Water
Inner Return
Chemistry
Inner Return
D1 Water
Outer Return
N2-IPA
Atmosphere
Atmosphere
302
304b
116b
306b
304a
306a
116a
Outer (Rinse) Meniscus
Inner (Chem) Meniscus
108
480

Fig. 7

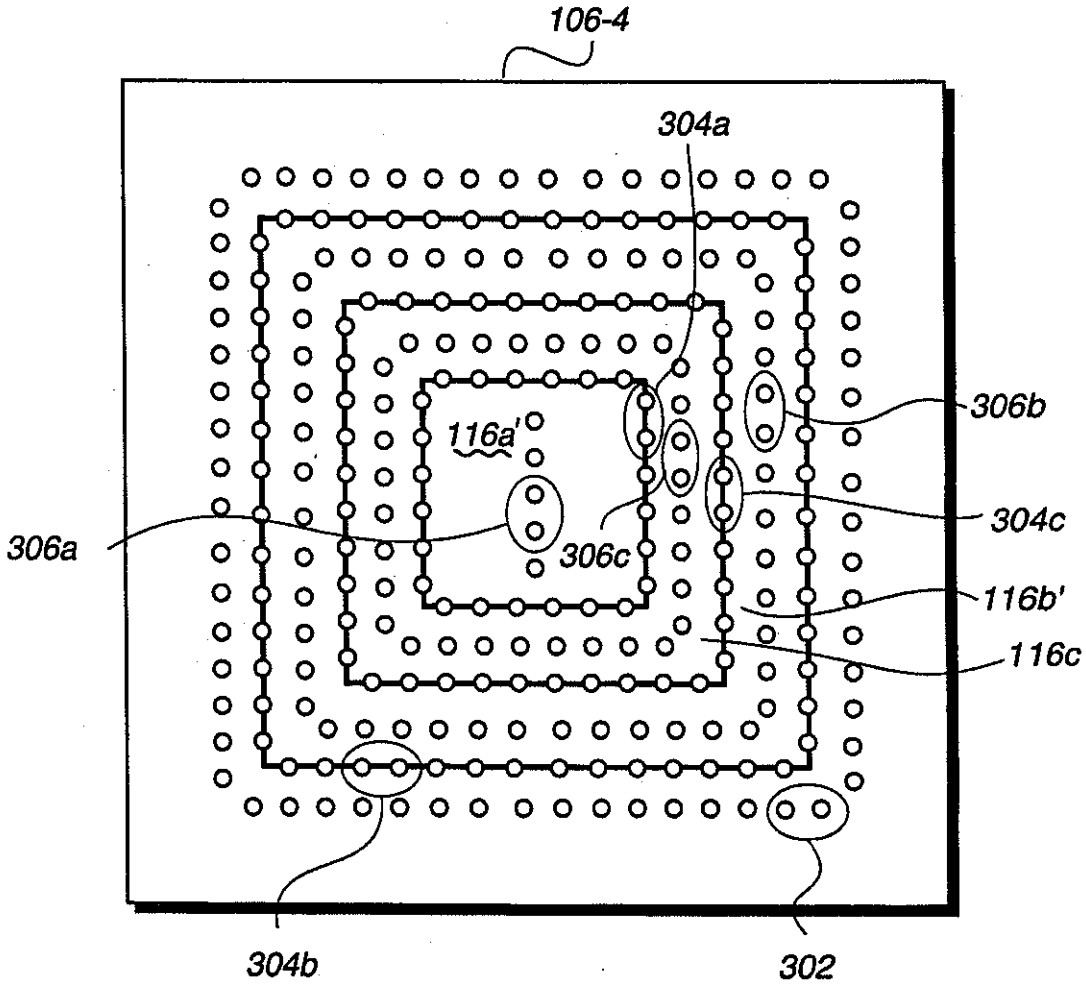


Fig. 8

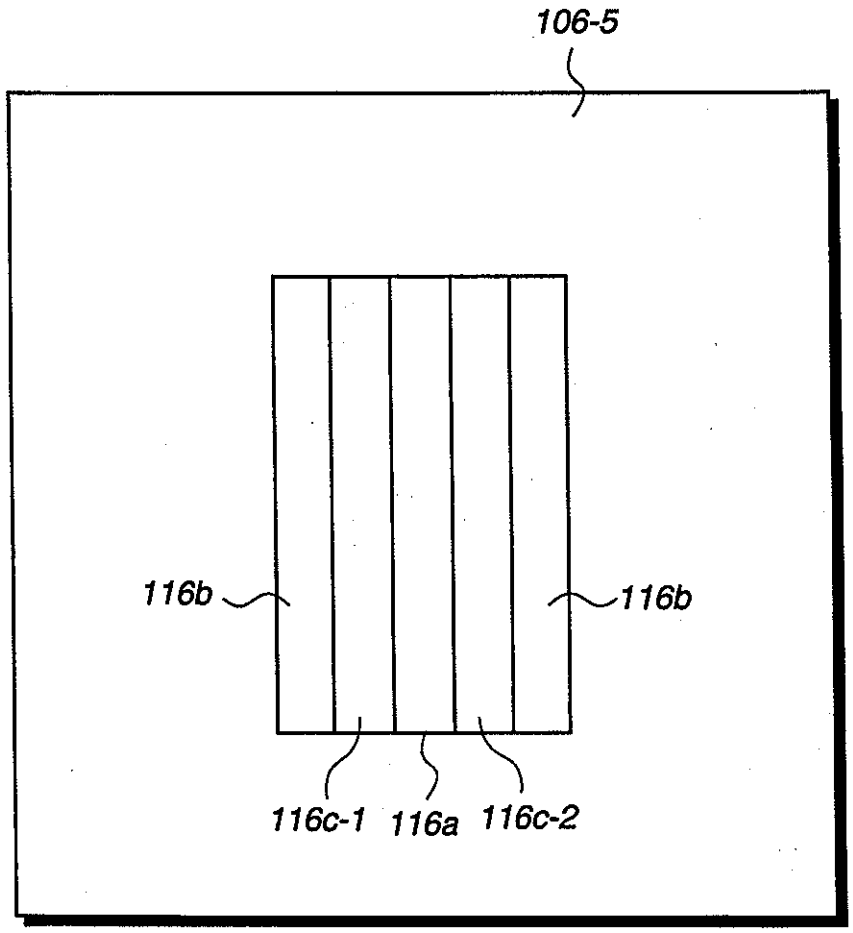


Fig. 9

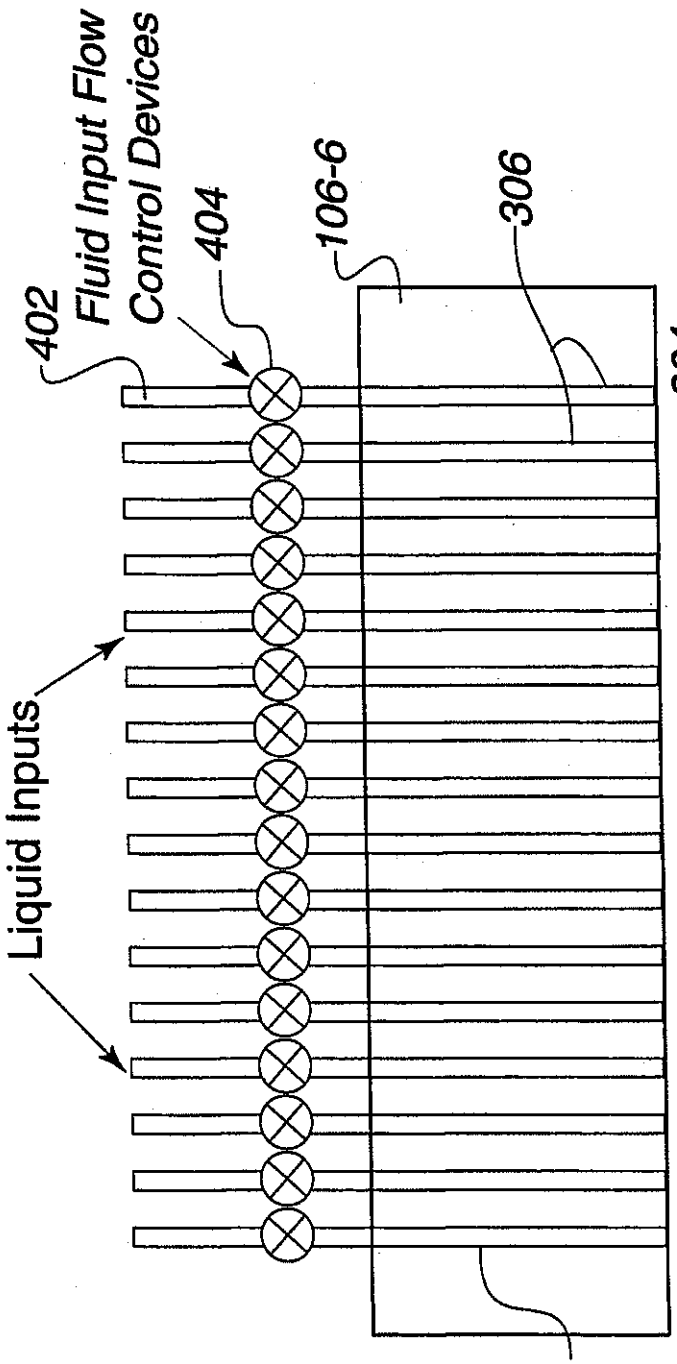


Fig. 10 A

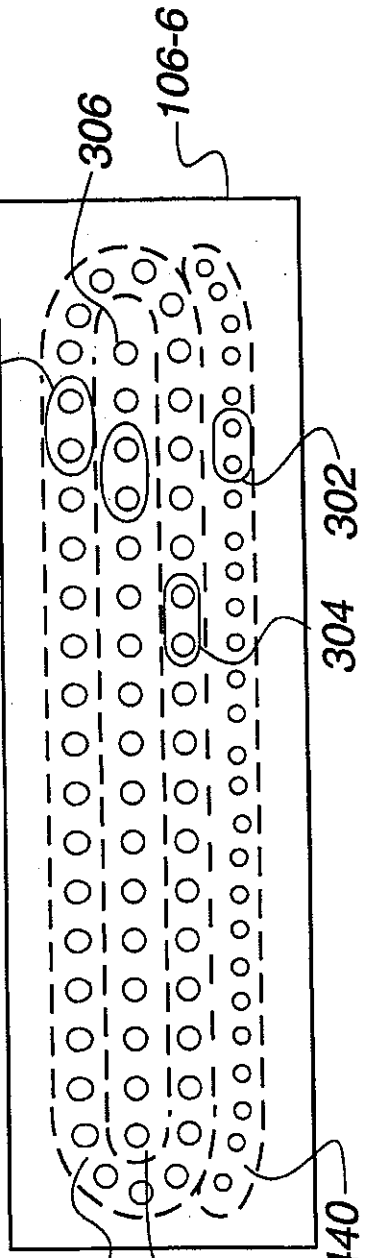


Fig. 10 B

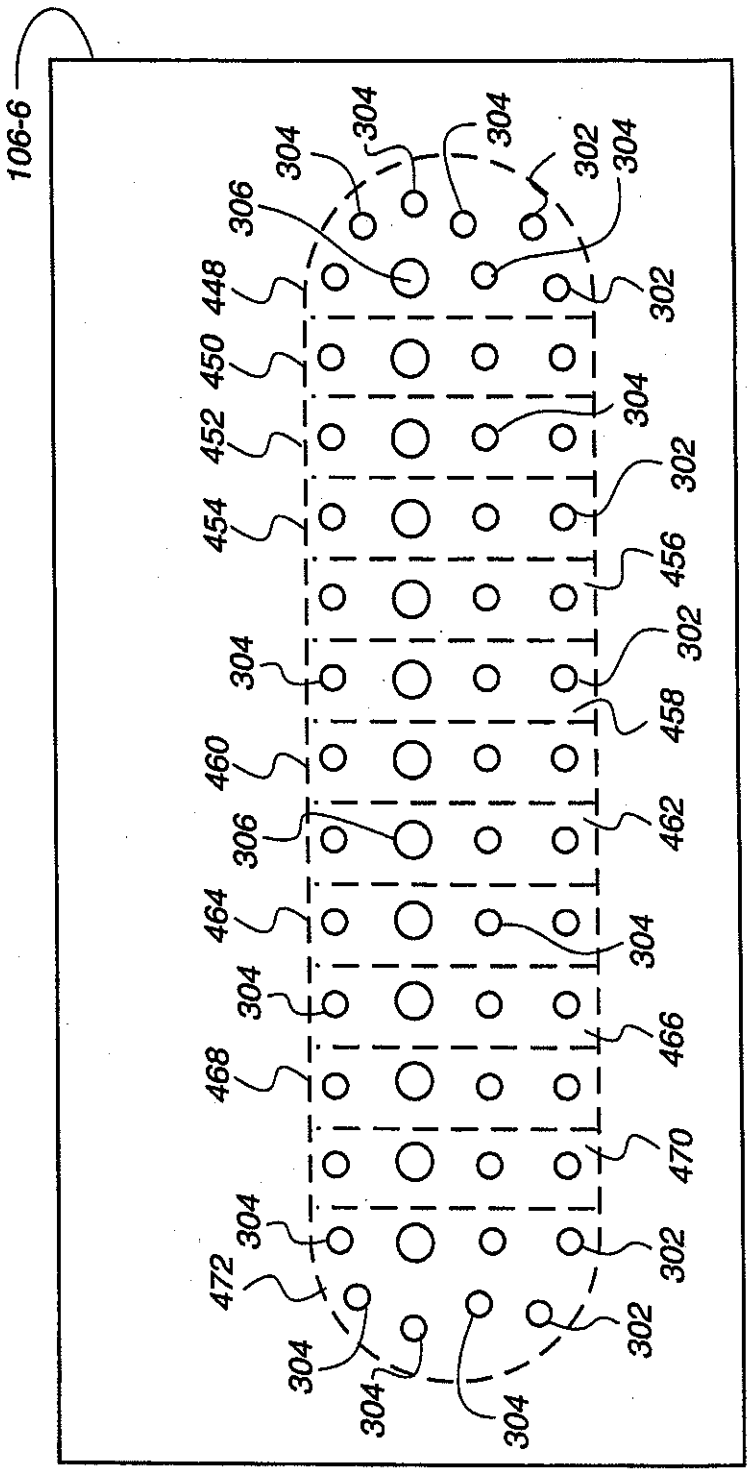

106-6
304
306
448
450
452
454
456
458
460
462
464
466
468
470
472
302

Fig. 10C

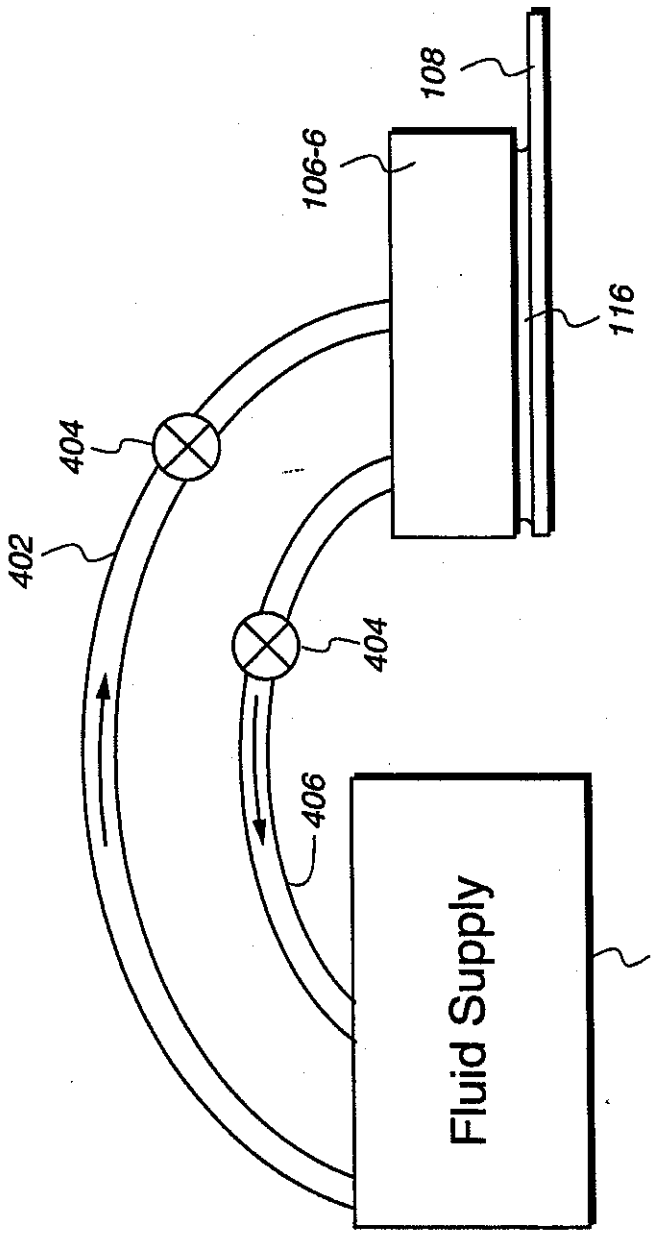


Fig. 10D

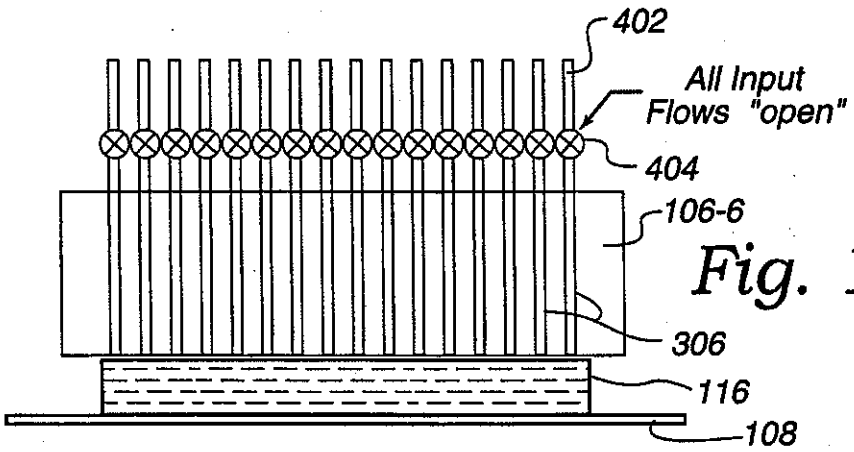


Fig. 11A

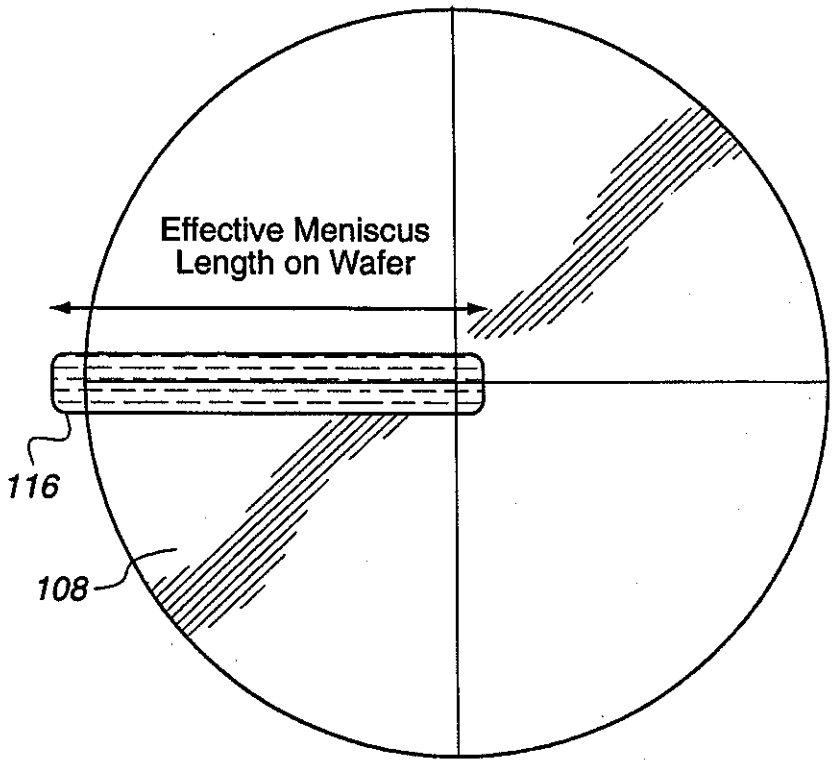


Fig. 11B

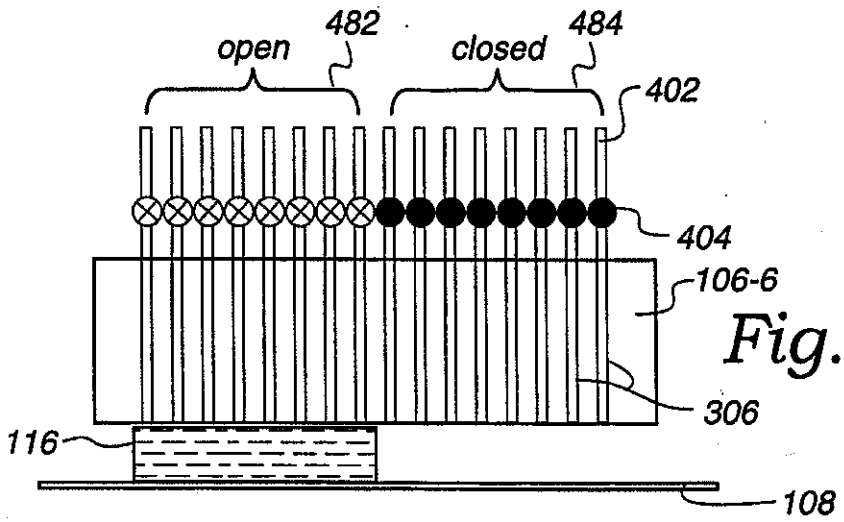


Fig. 11C

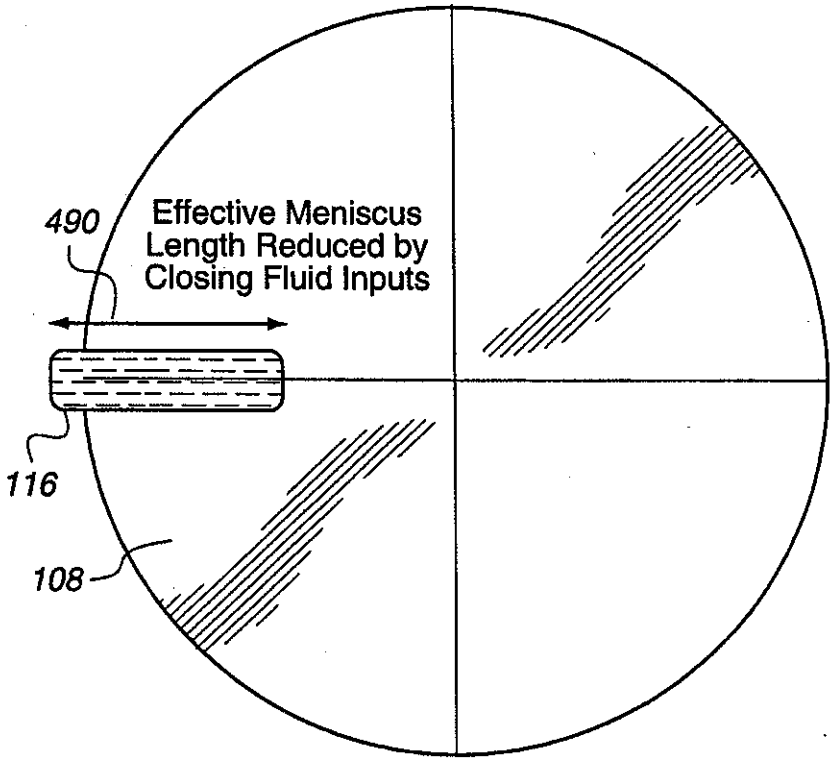


Fig. 11D

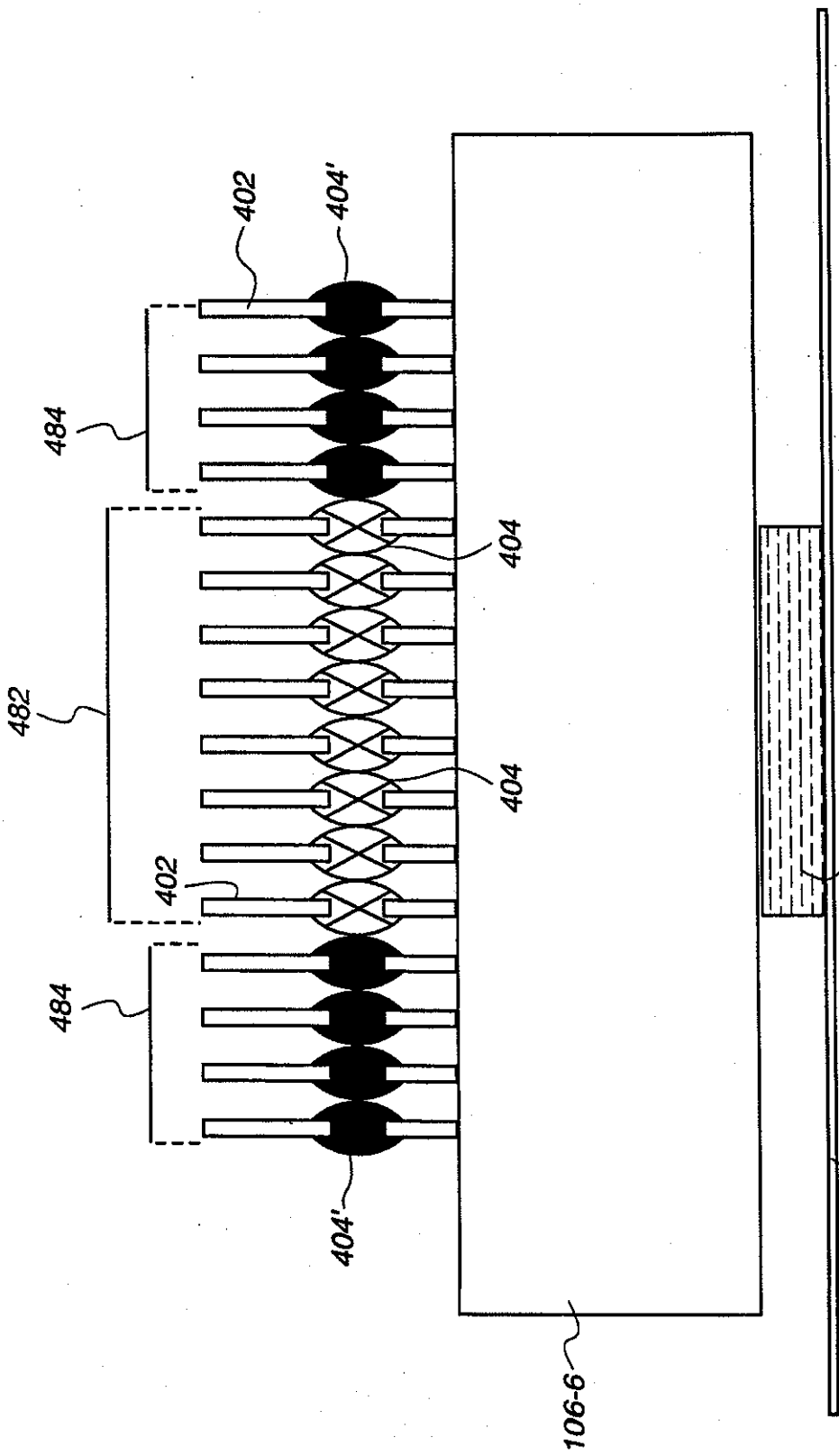


Fig. 11E

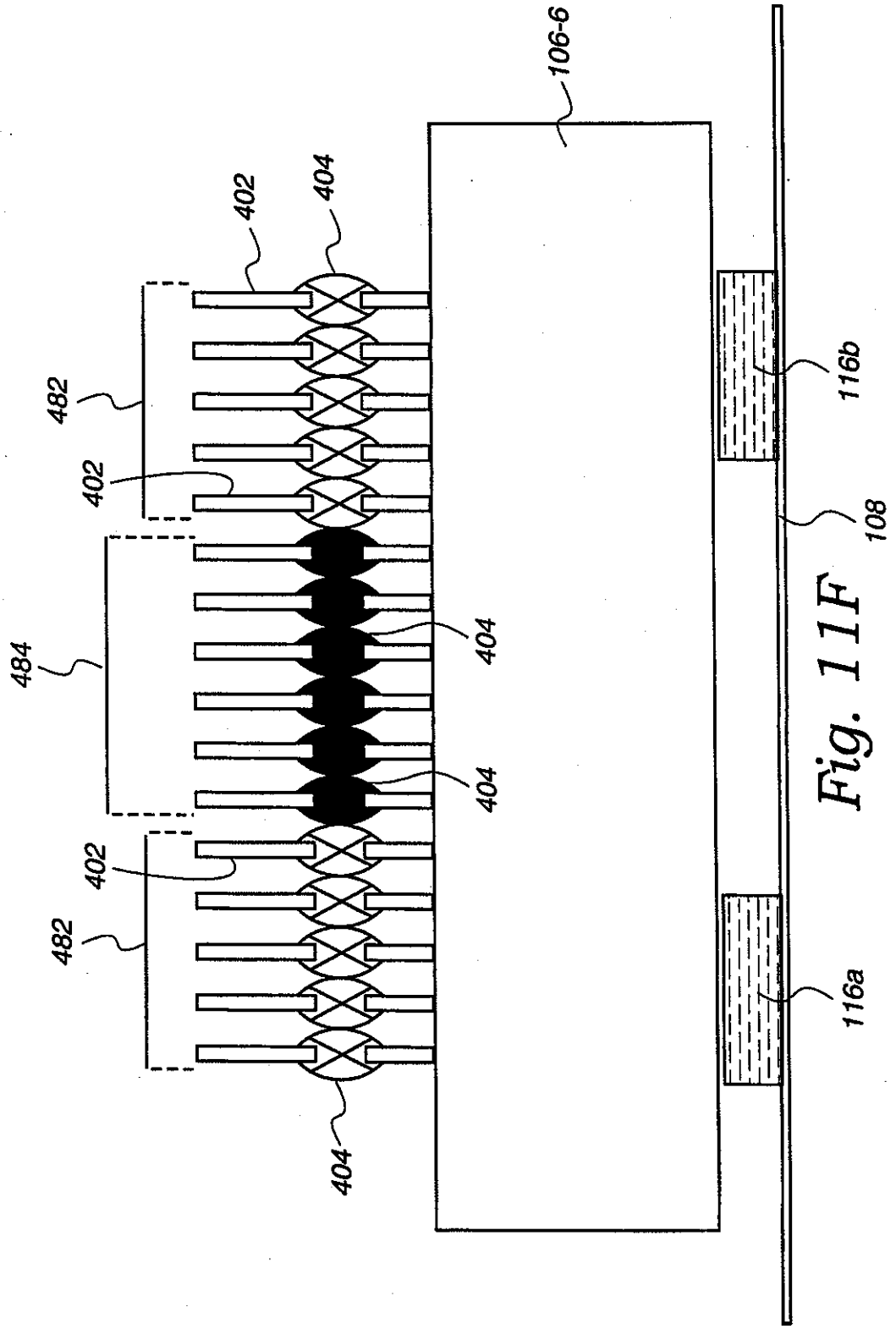


Fig. 11F

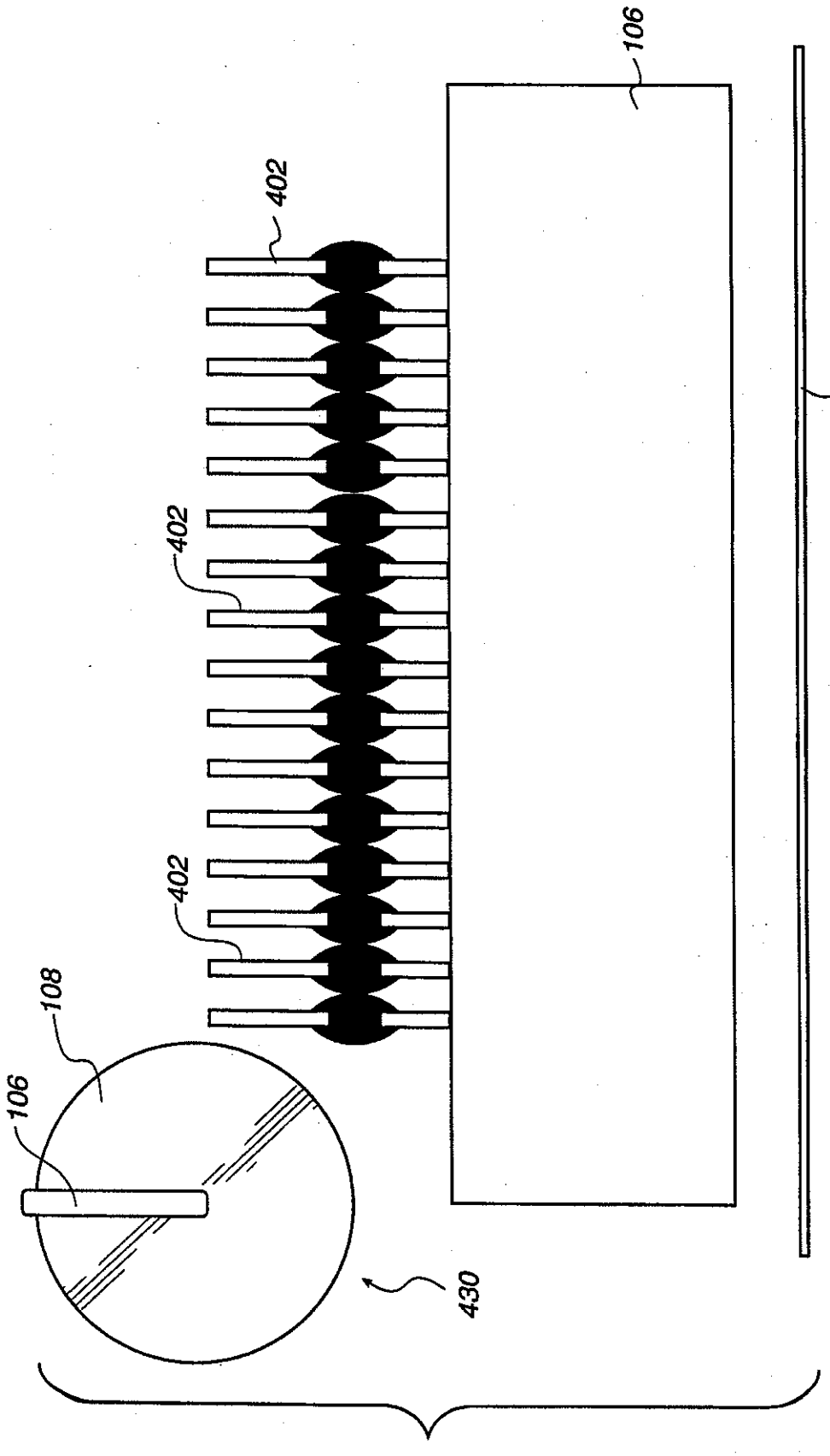


Fig. 11G

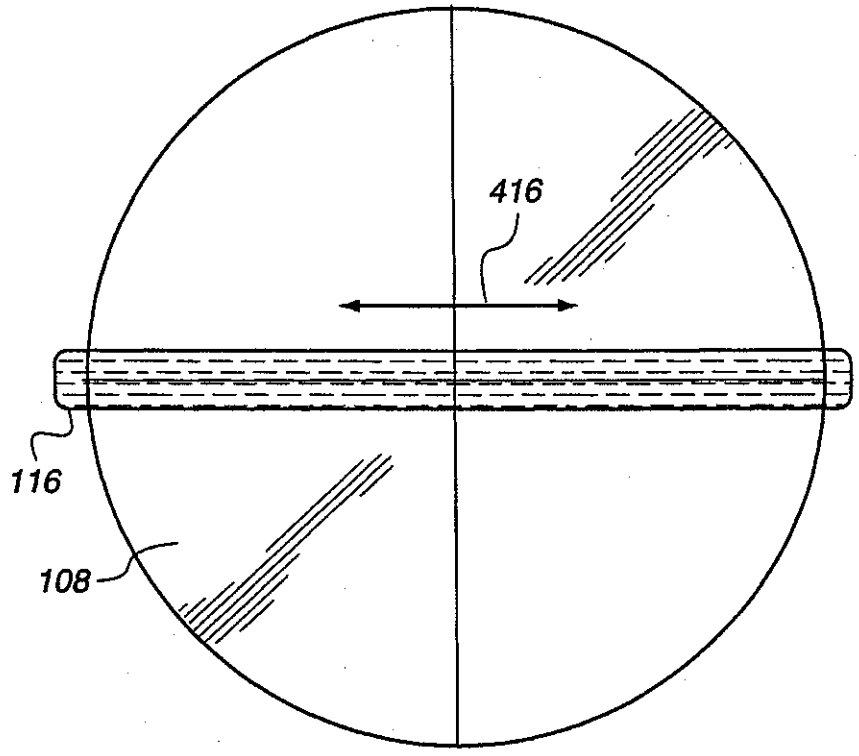


Fig. 11H

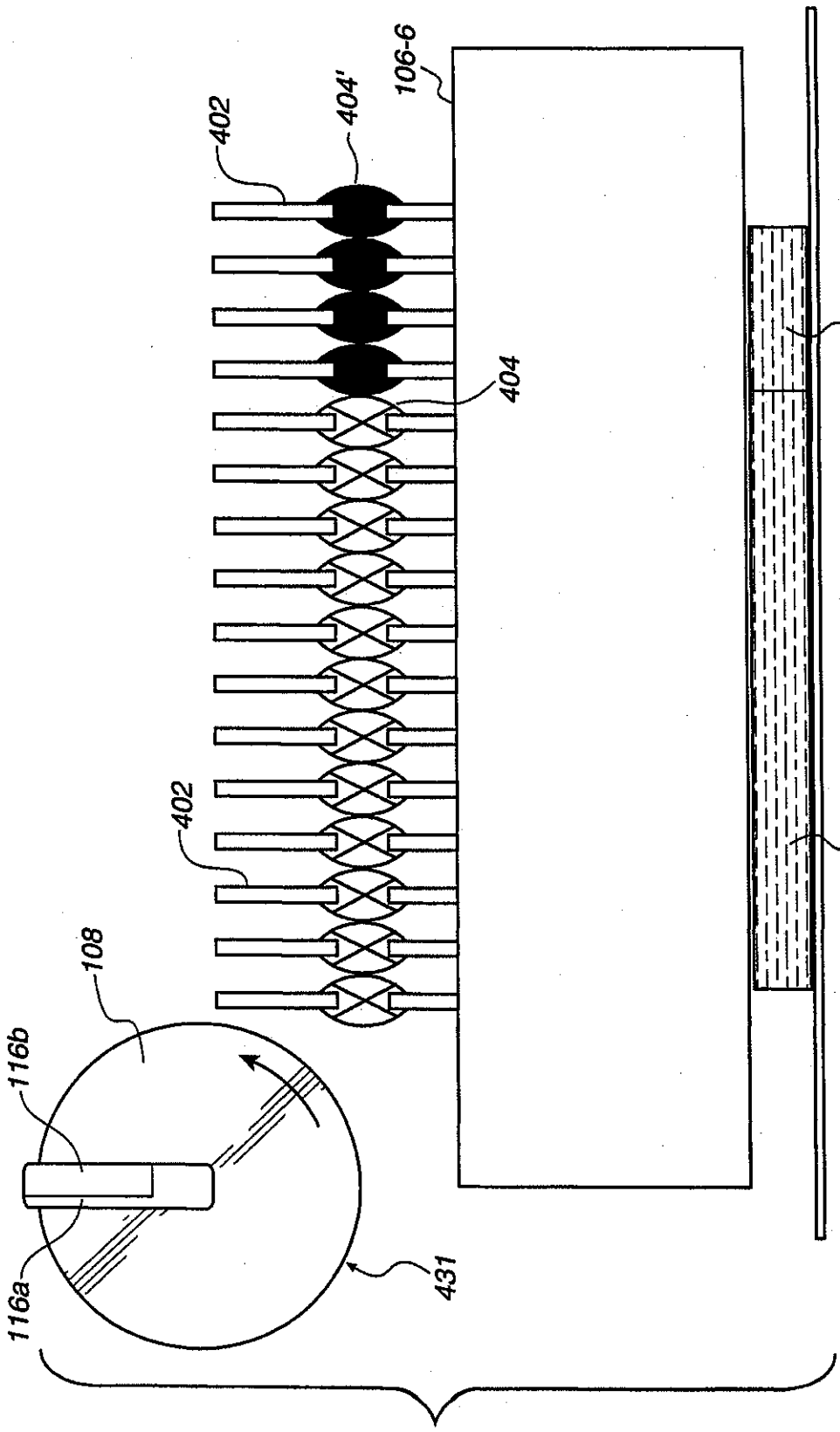


Fig. 12A

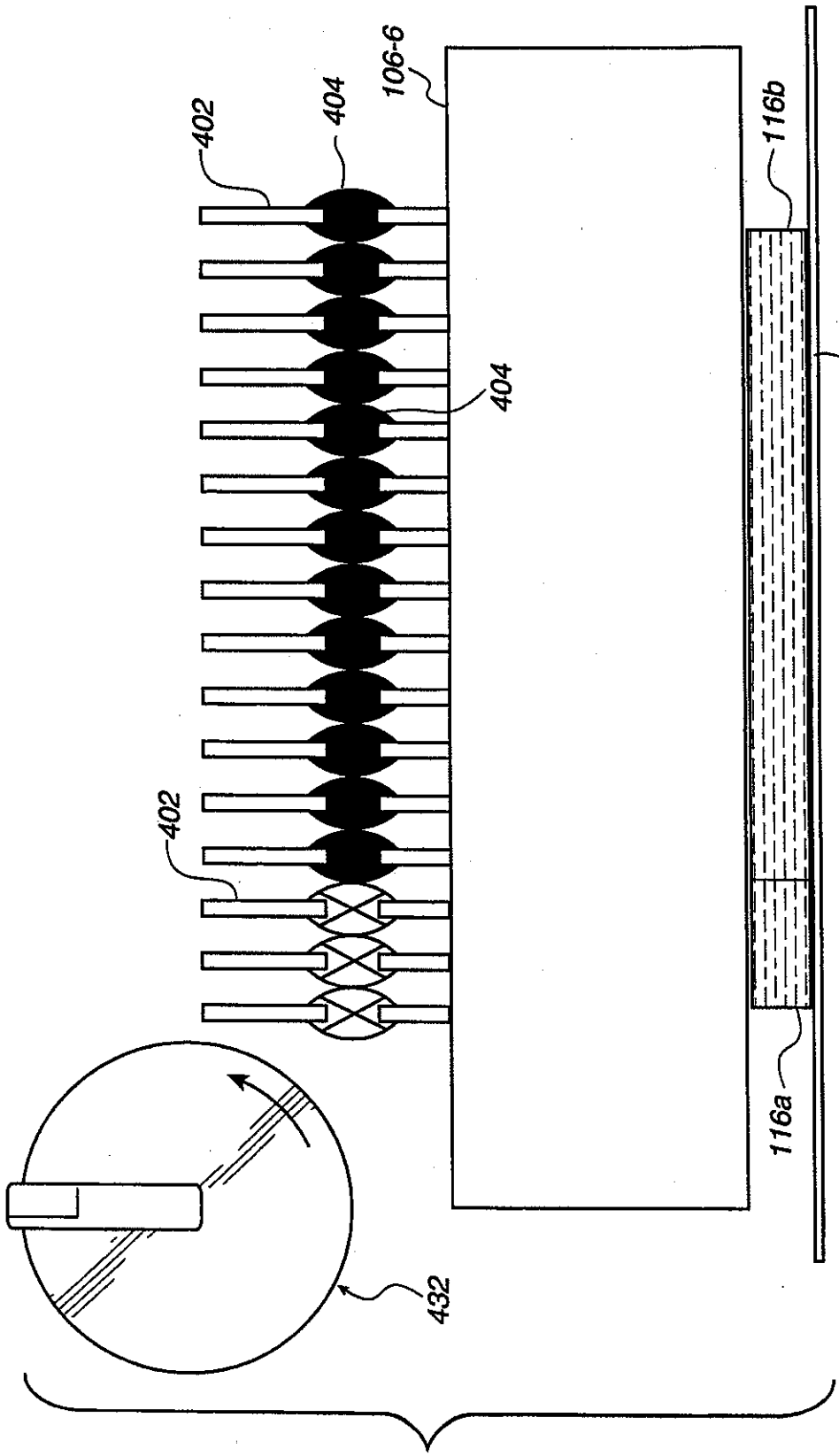


Fig. 12B

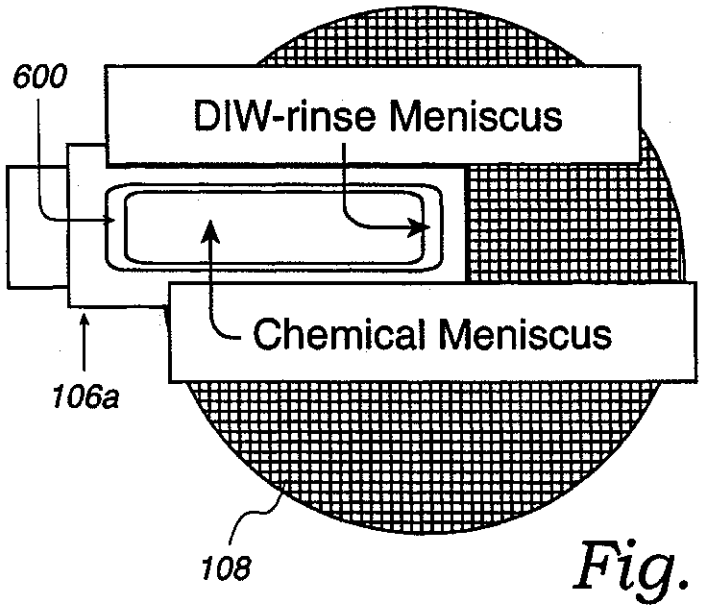


Fig. 13A

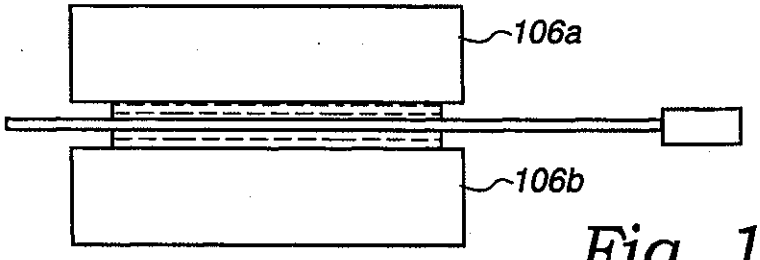
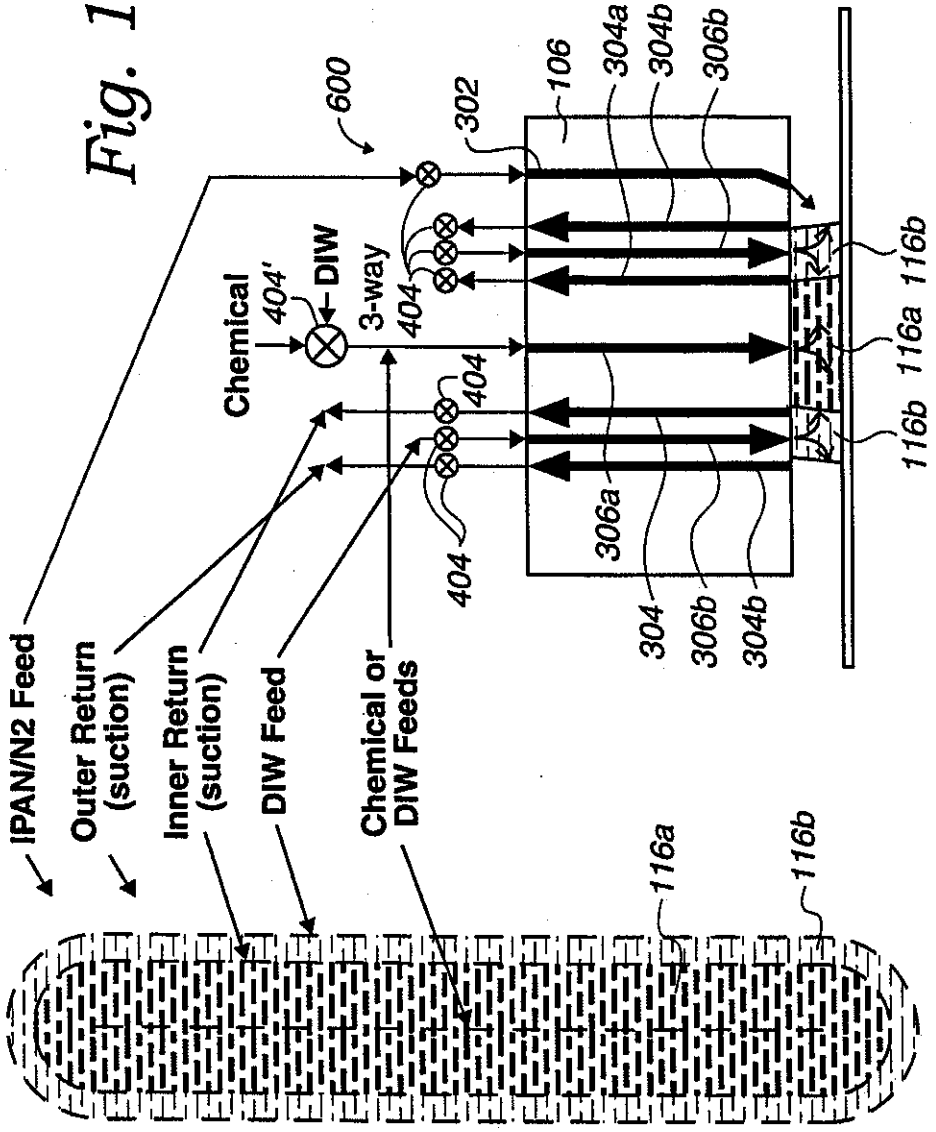


Fig. 13B

Fig. 13C


IPAN/N2 Feed
Outer Return (suction)
Inner Return (suction)
DIW Feed
Chemical or DIW Feeds
600
302
106
304a
304b
306b
Chemical
404'
DIW
3-way
404
404
404
306a
304
306b
304b
116a
116b
116b 116a 116b
116a
116b

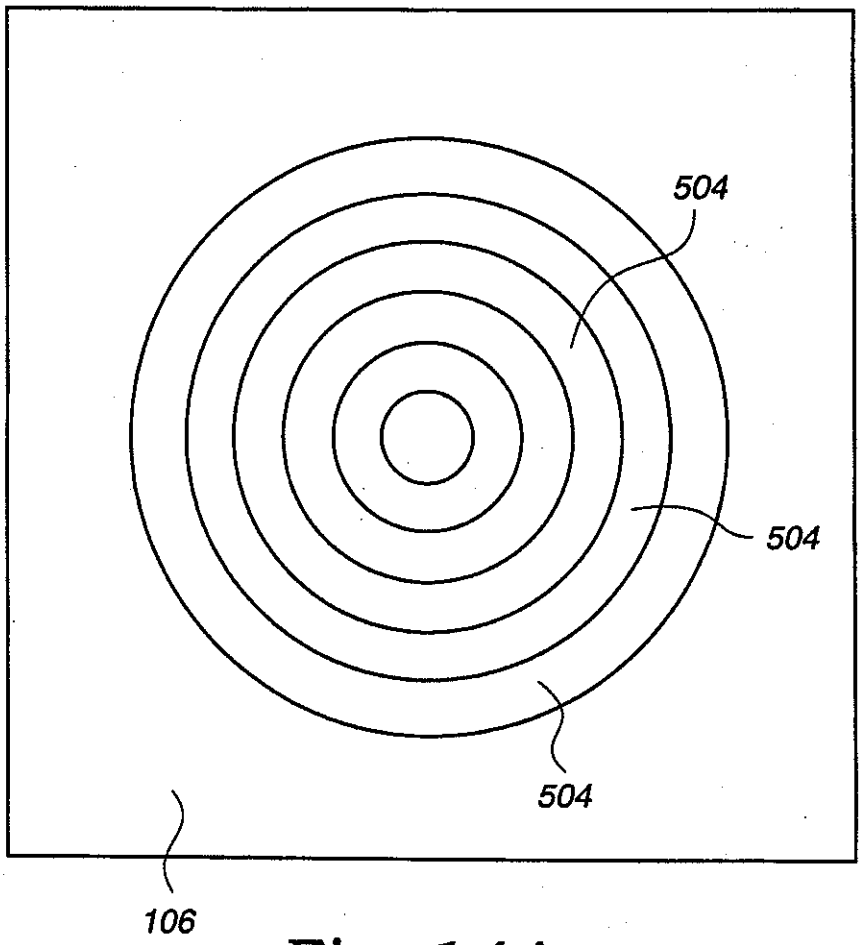


Fig. 14A

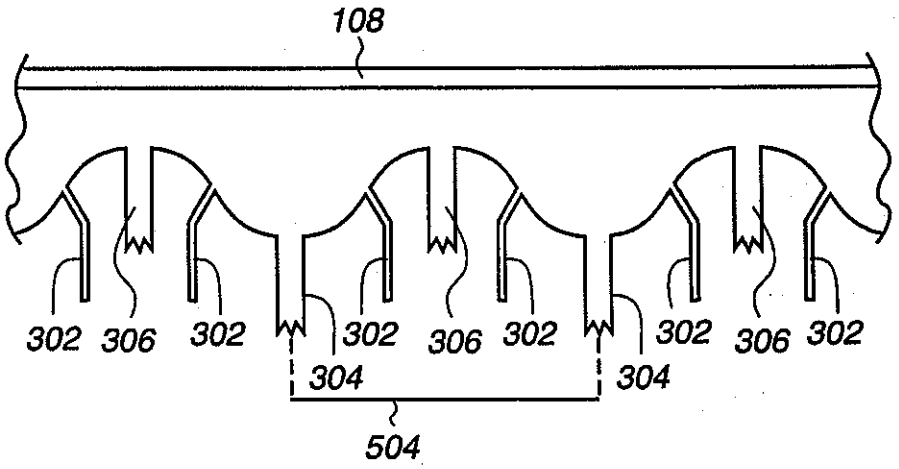


Fig. 14B

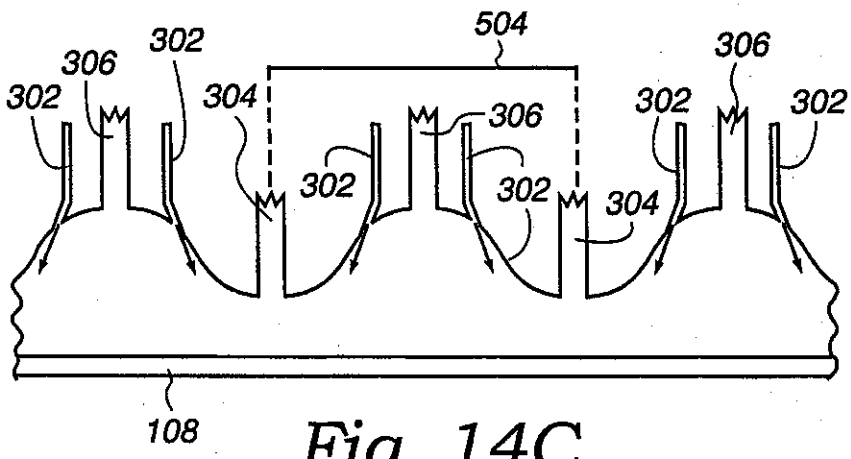


Fig. 14C

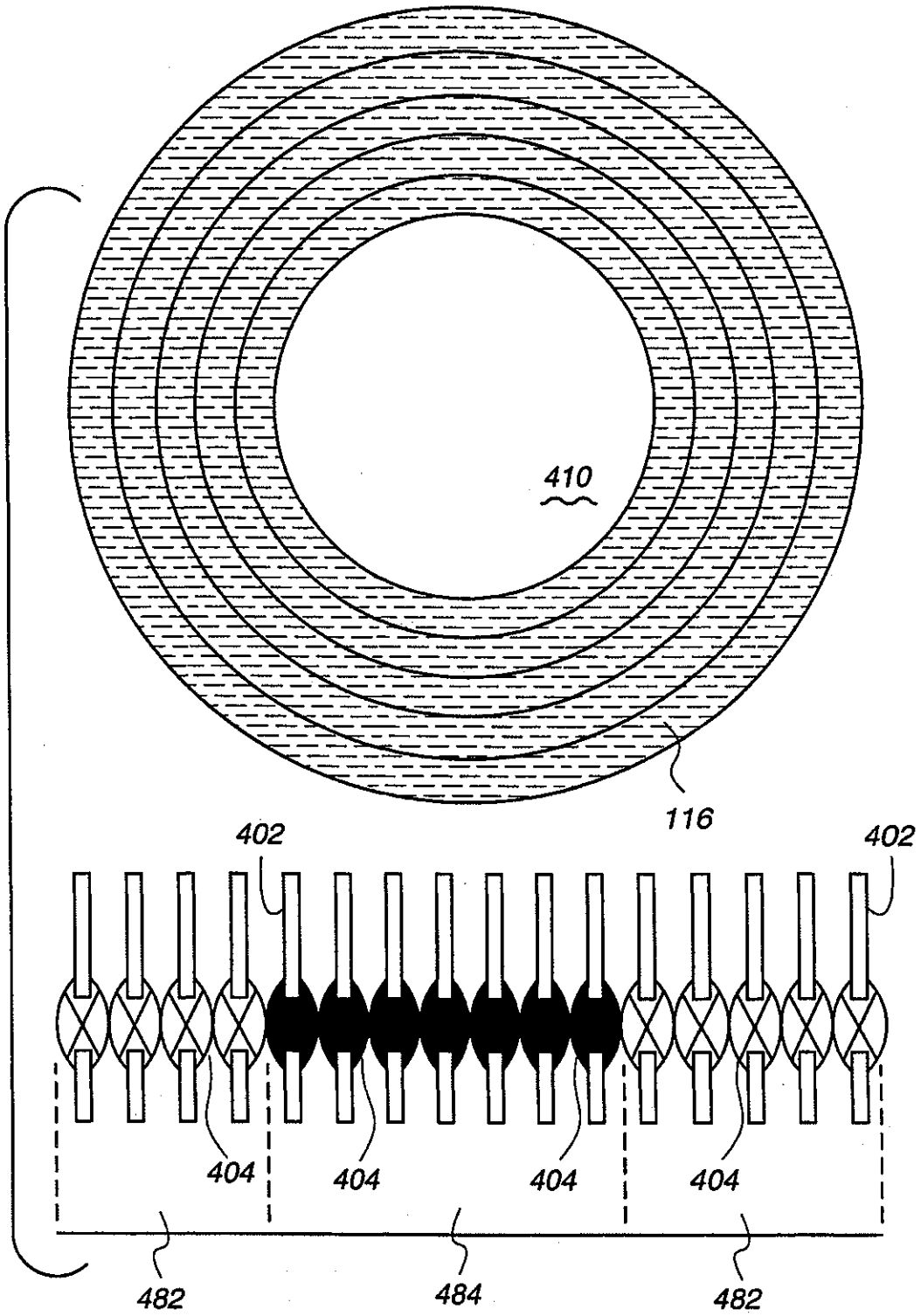


Fig. 15