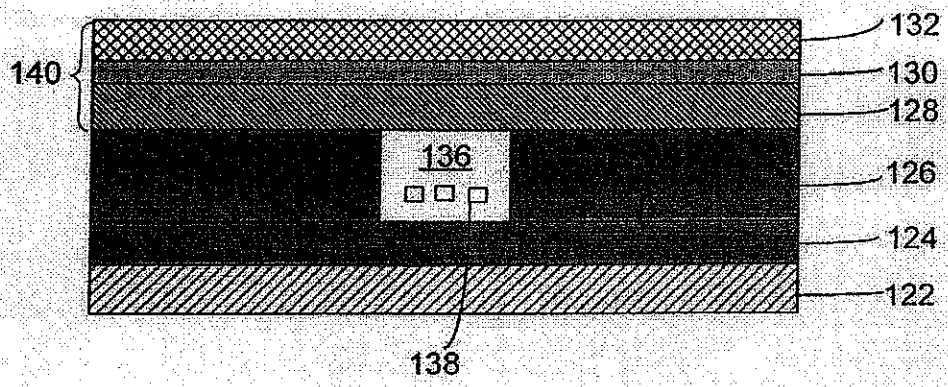


Fig. 1A

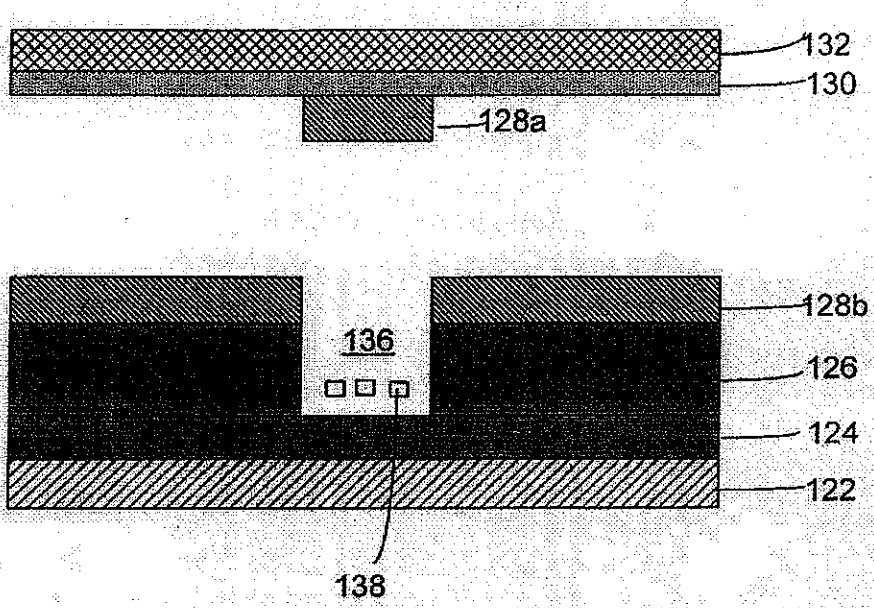


Fig. 1B

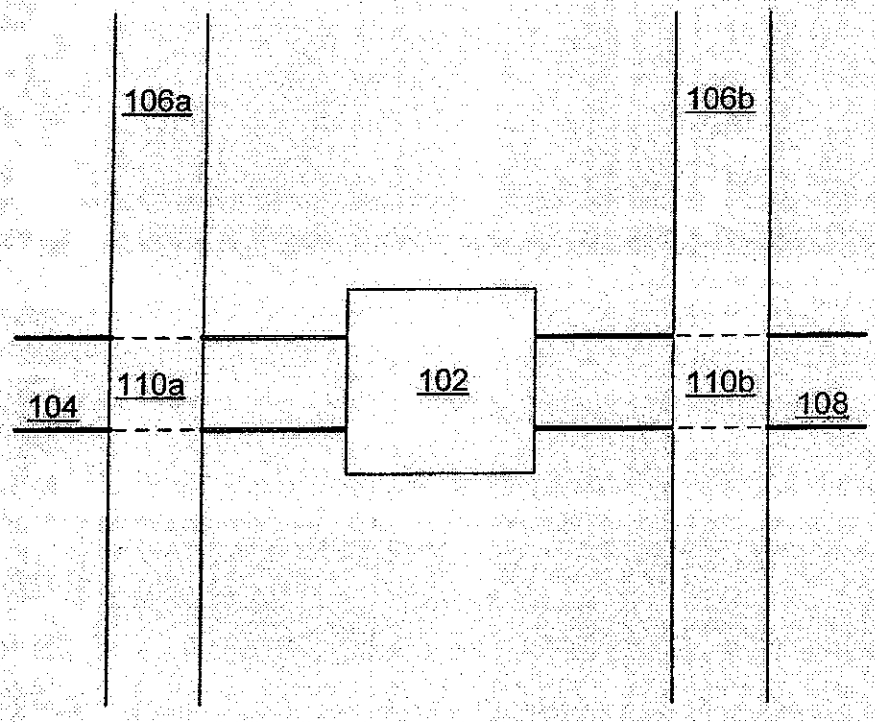


Fig. 2

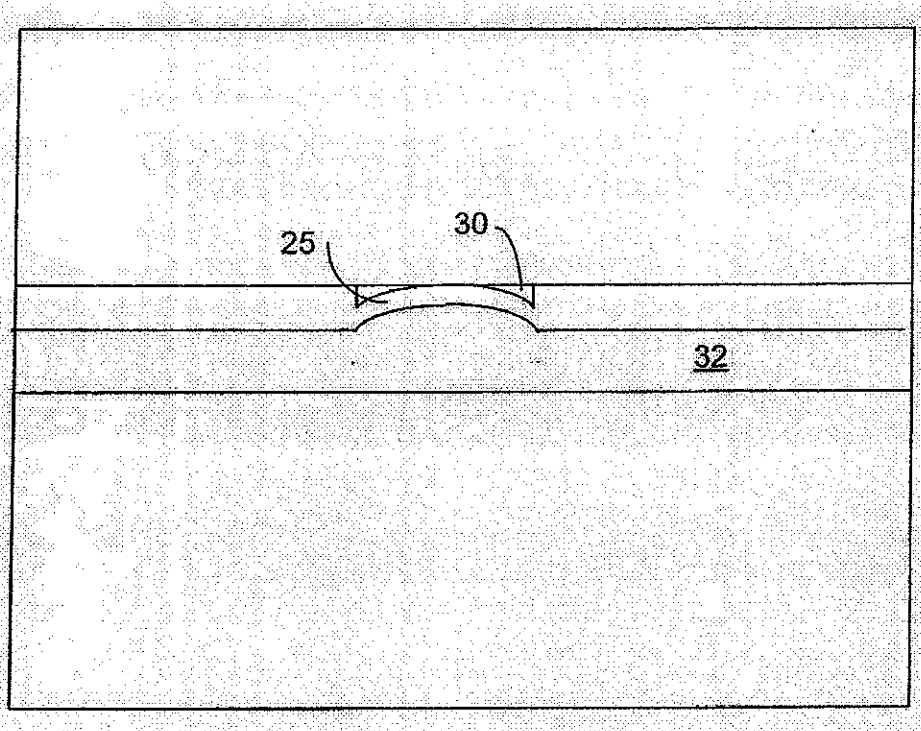


Fig. 3

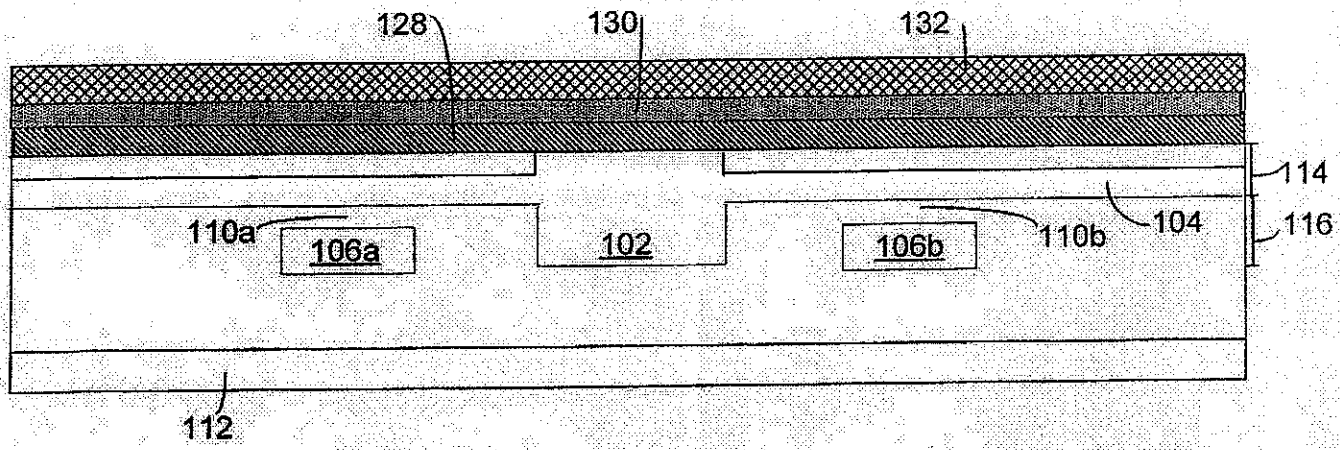


Fig. 4

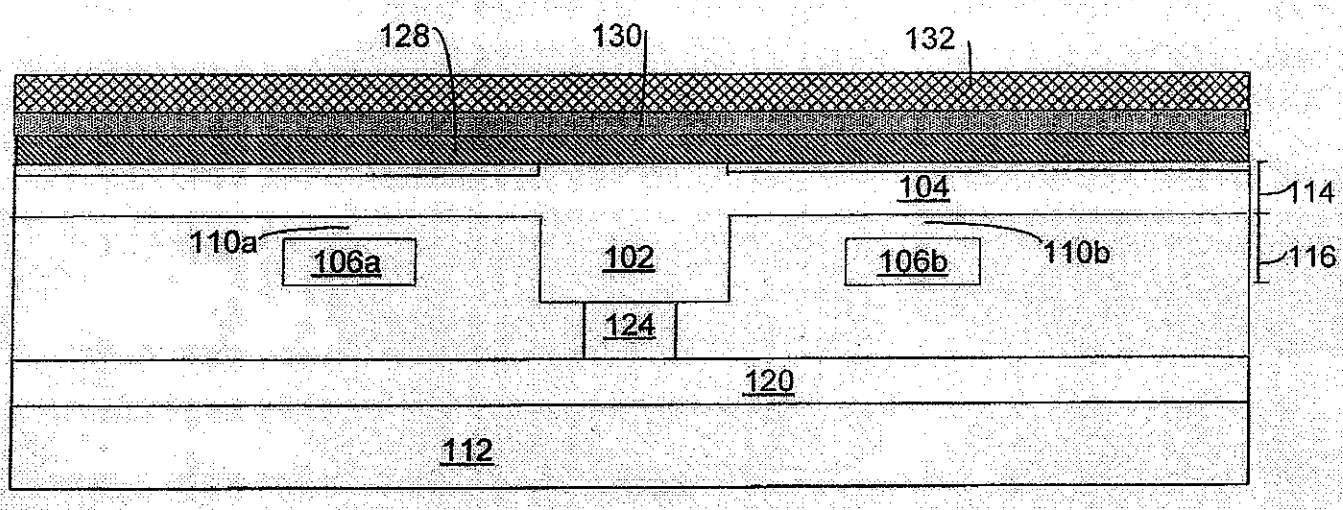


Fig. 5

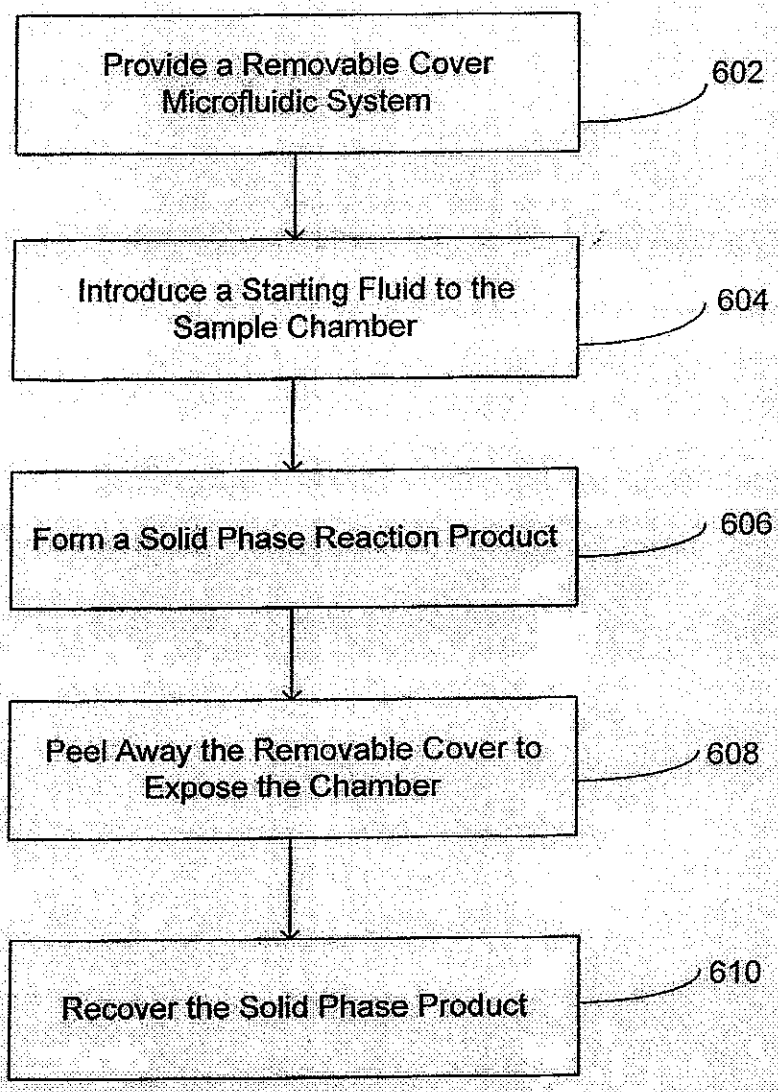

Provide a Removable Cover Microfluidic System
602
Introduce a Starting Fluid to the Sample Chamber
604
Form a Solid Phase Reaction Product
606
Peel Away the Removable Cover to Expose the Chamber
608
Recover the Solid Phase Product
610

Fig. 6

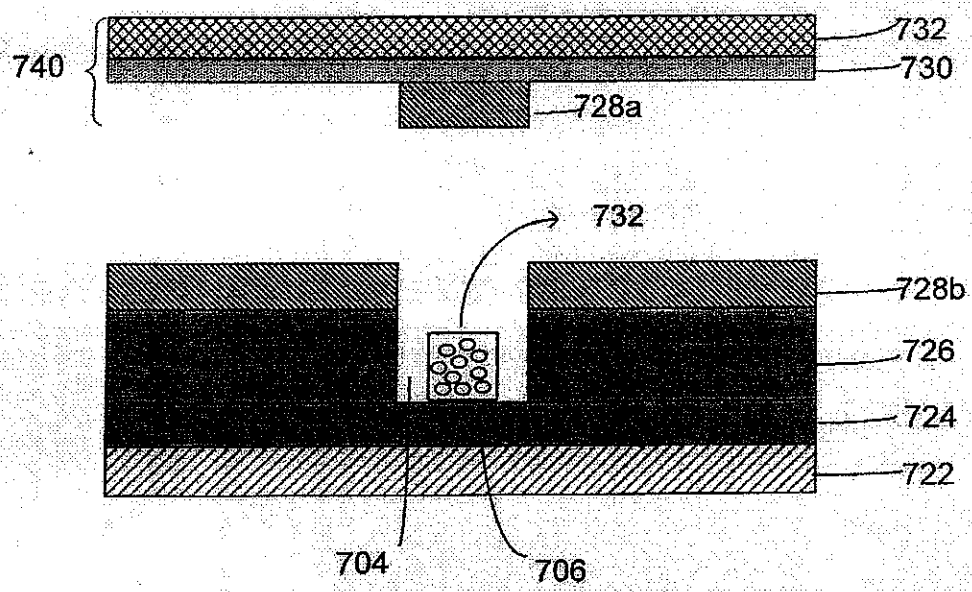


Fig. 7

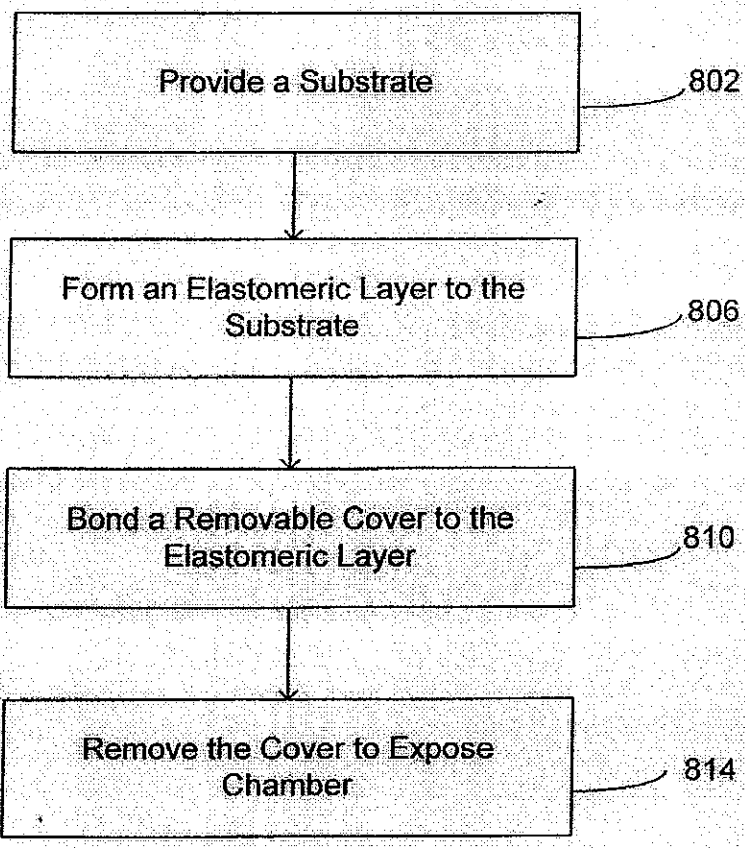

Provide a Substrate
802
Form an Elastomeric Layer to the Substrate
806
Bond a Removable Cover to the Elastomeric Layer
810
Remove the Cover to Expose Chamber
814

Fig. 8

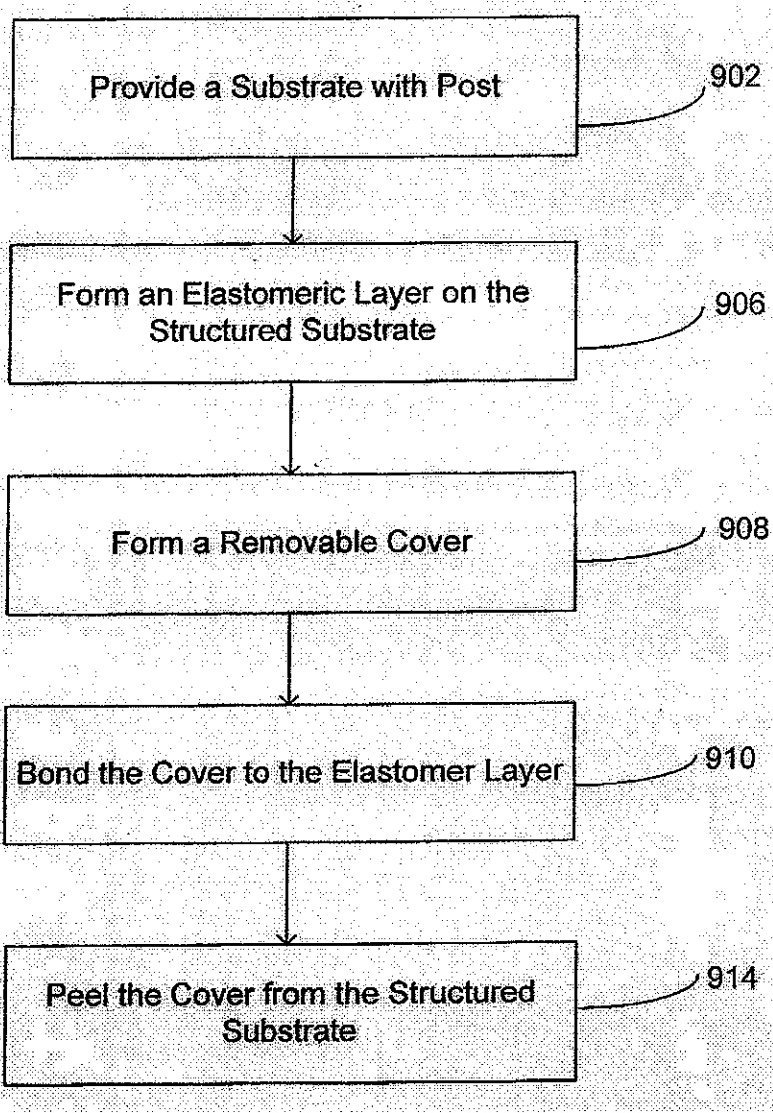

Provide a Substrate with Post
902
Form an Elastomeric Layer on the Structured Substrate
906
Form a Removable Cover
908
Bond the Cover to the Elastomer Layer
910
Peel the Cover from the Structured Substrate
914

Fig. 9

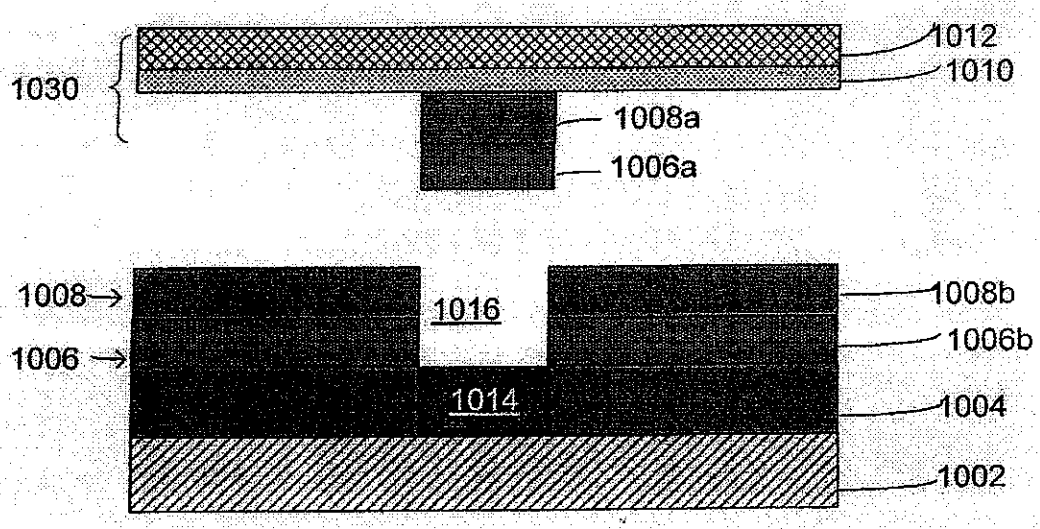

1030
1012
1010
1008a
1006a
1008
1016
1006
1014
1008b
1006b
1004
1002

Fig. 10A

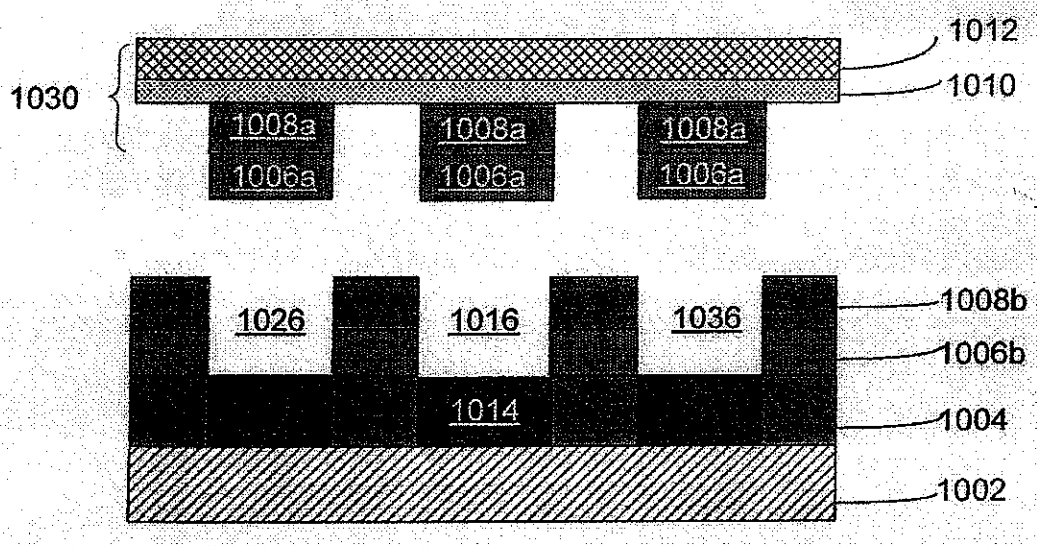

1030
1012
1010
1008a
1006a
1008a
1006a
1008a
1006a
1026
1016
1036
1014
1008b
1006b
1004
1002

Fig. 10B

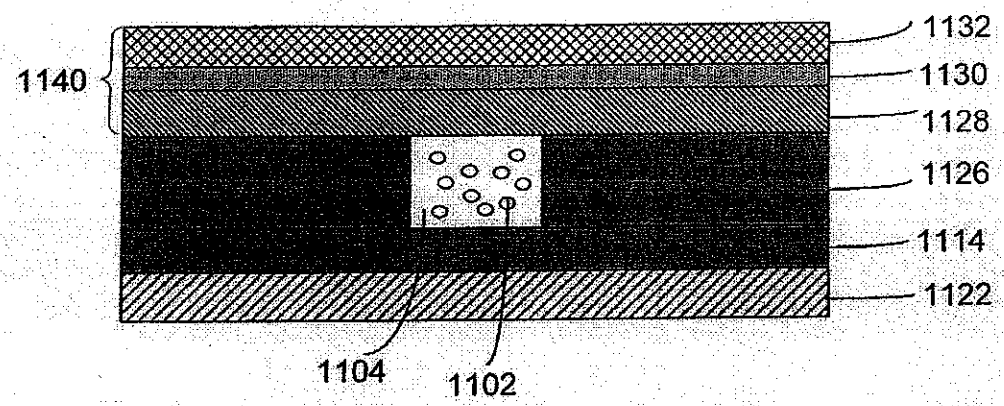


Fig. 11A

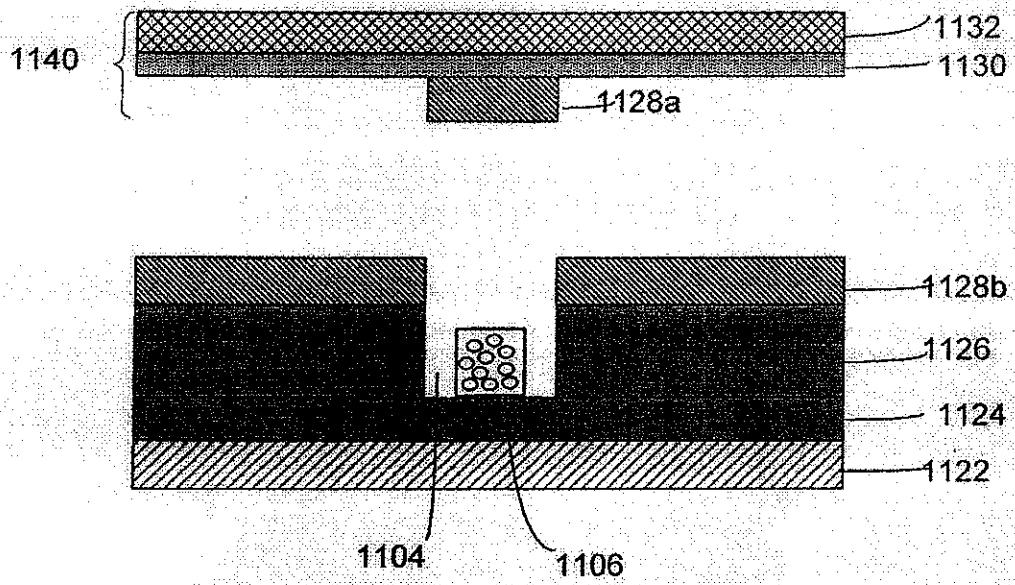


Fig. 11B

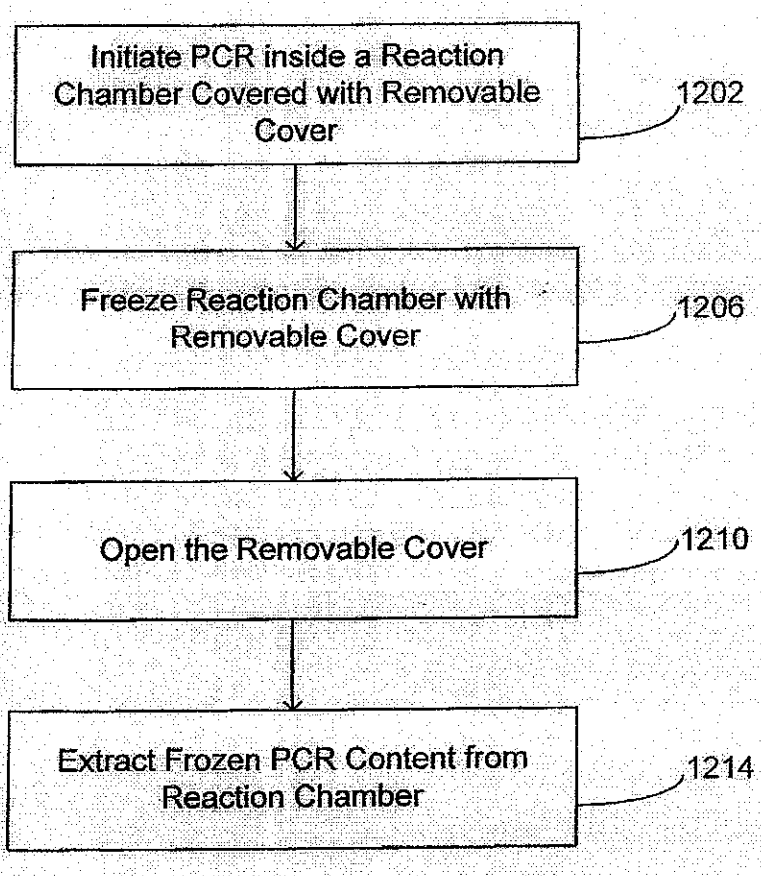

Initiate PCR inside a Reaction Chamber Covered with Removable Cover
1202
Freeze Reaction Chamber with Removable Cover
1206
Open the Removable Cover
1210
Extract Frozen PCR Content from Reaction Chamber
1214

Fig. 12

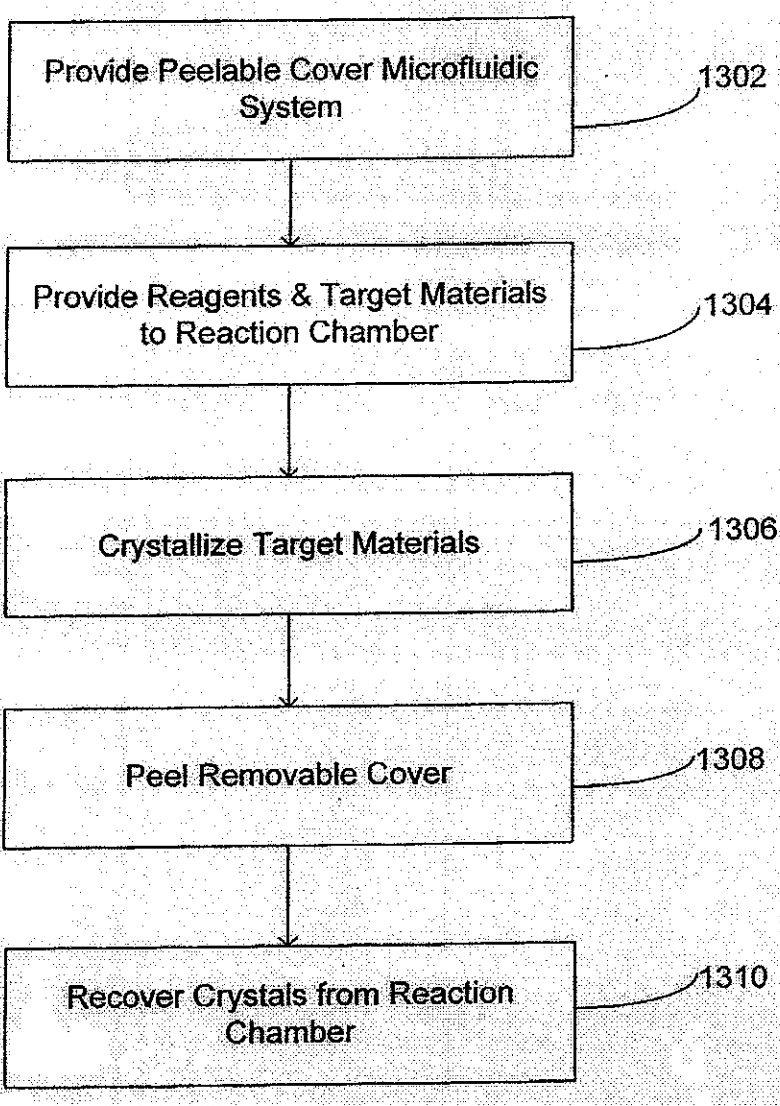

Provide Peelable Cover Microfluidic System
1302
Provide Reagents & Target Materials to Reaction Chamber
1304
Crystallize Target Materials
1306
Peel Removable Cover
1308
Recover Crystals from Reaction Chamber
1310

Fig. 13

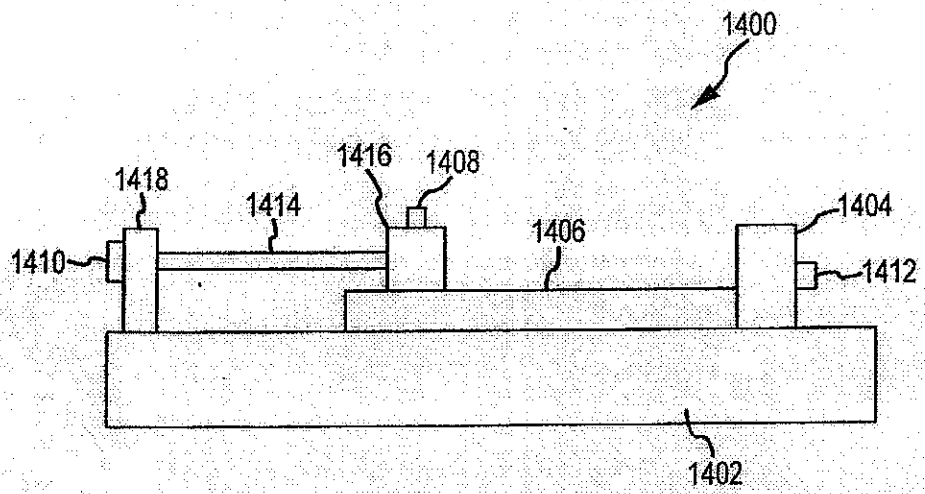


FIG. 14

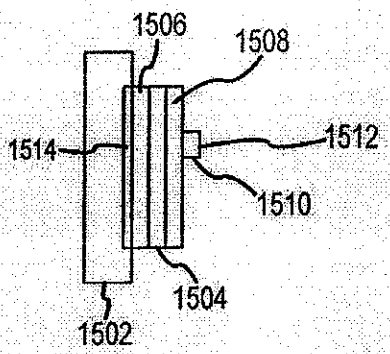


FIG.15

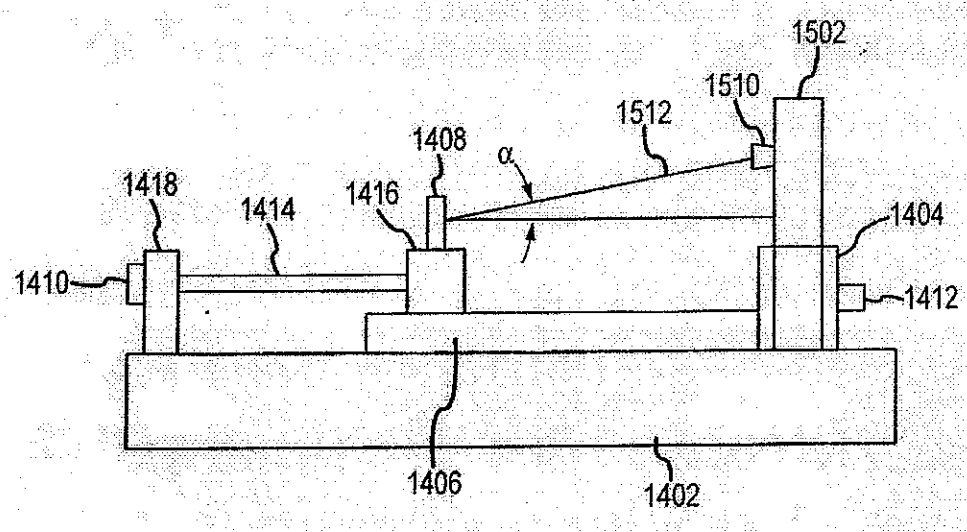


FIG. 16

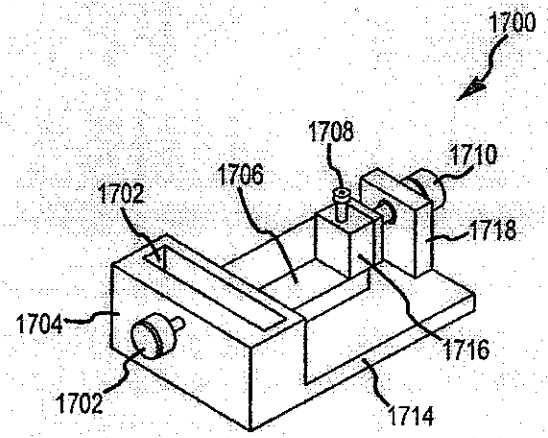

1700
1708
1710
1706
1702
1718
1704
1716
1702
1714

FIG.17

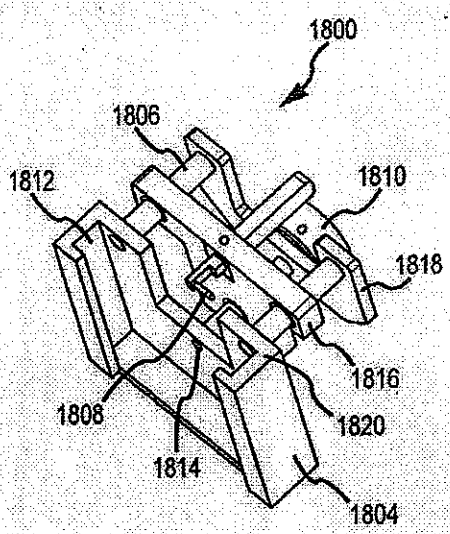

1800
1806
1812
1810
1818
1816
1808
1820
1814
1804

FIG.18

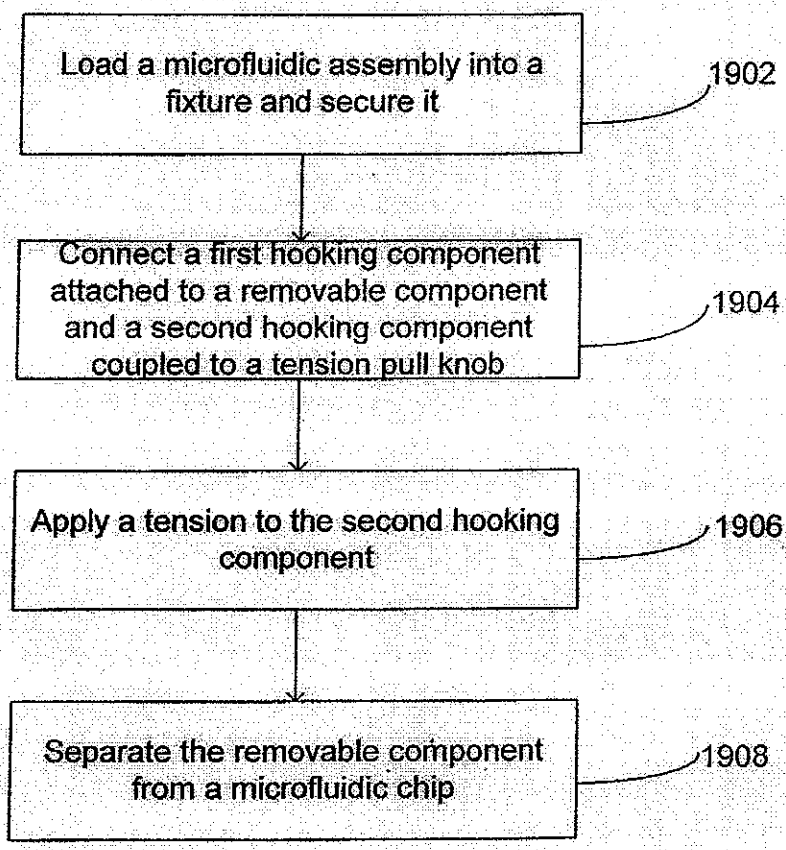

Load a microfluidic assembly into a fixture and secure it
1902
Connect a first hooking component attached to a removable component and a second hooking component coupled to a tension pull knob
1904
Apply a tension to the second hooking component
1906
Separate the removable component from a microfluidic chip
1908

Fig. 19

Disposable plastic plate, Tension line side

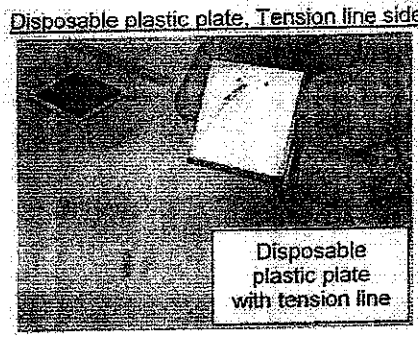


Fig. 20A

Ensure plate adhesion
to IHS is secure

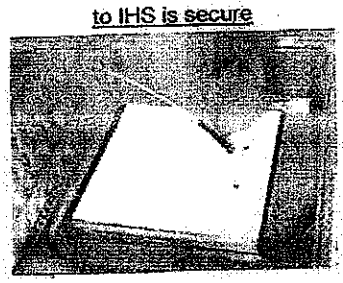


Fig. 20B

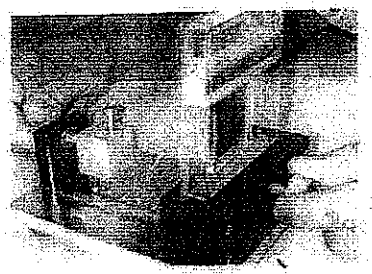


Fig. 20C

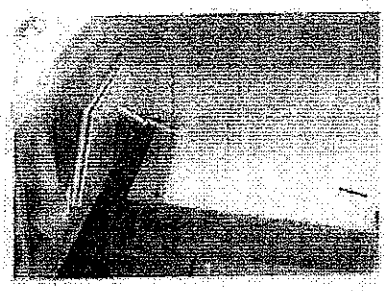


Fig. 20D