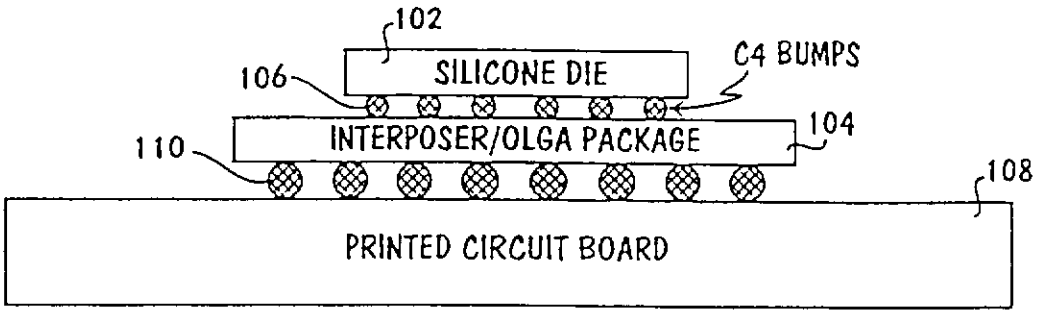

102
SILICONE DIE
C4 BUMPS
106
INTERPOSER/OLGA PACKAGE
104
110
108
PRINTED CIRCUIT BOARD

FIG. 1

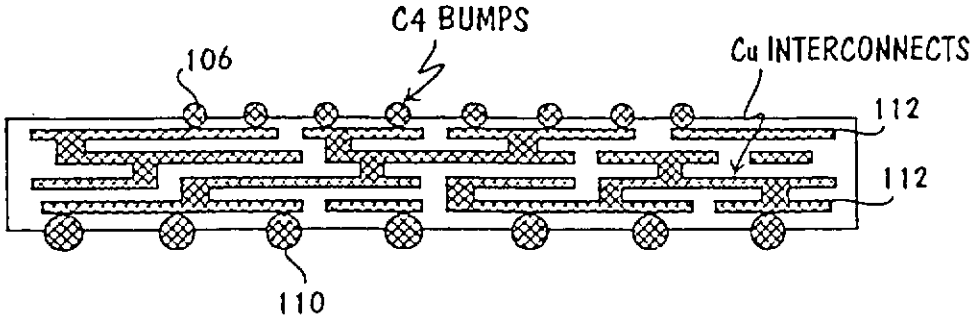

C4 BUMPS
106
Cu INTERCONNECTS
112
112
110

FIG. 2

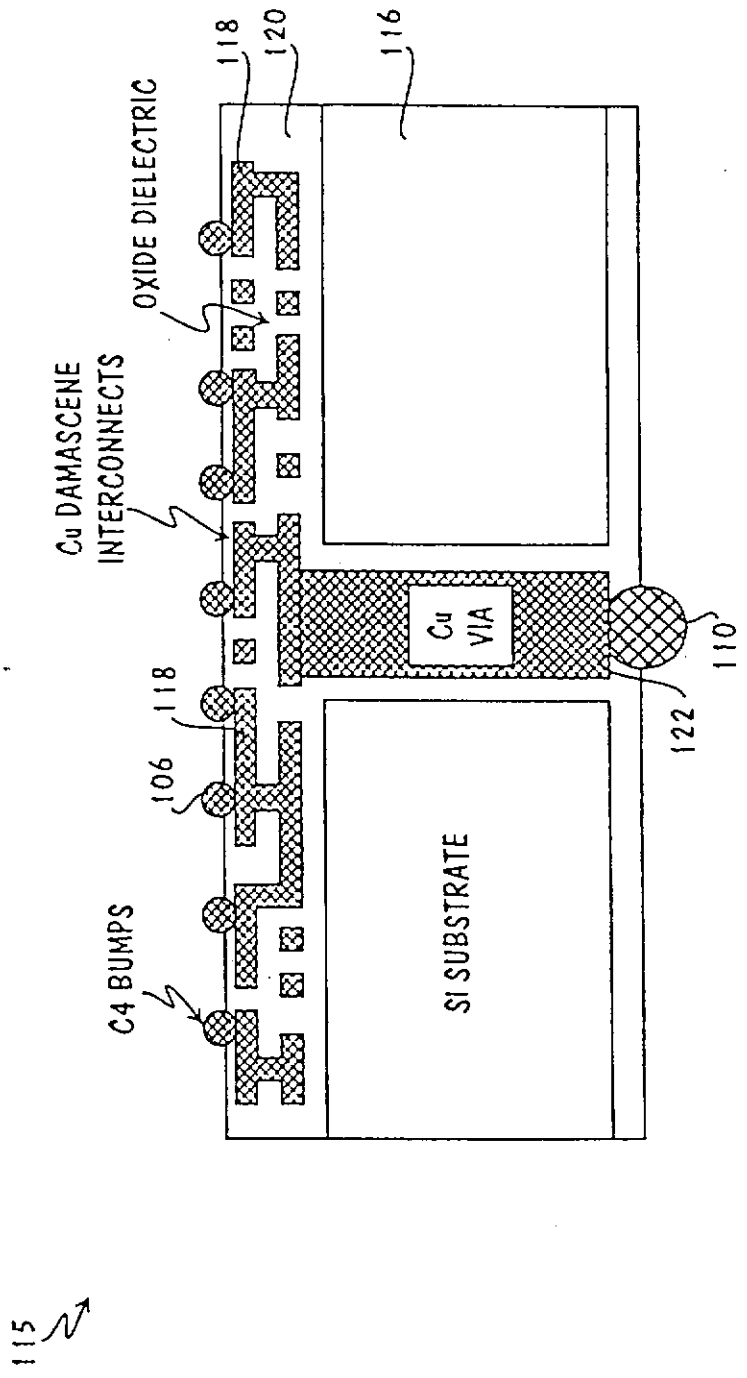

115
C4 BUMPS
106
118
Cu DAMASCENE INTERCONNECTS
OXIDE DIELECTRIC
118
120
116
Cu VIA
110
122
SI SUBSTRATE

FIG. 3

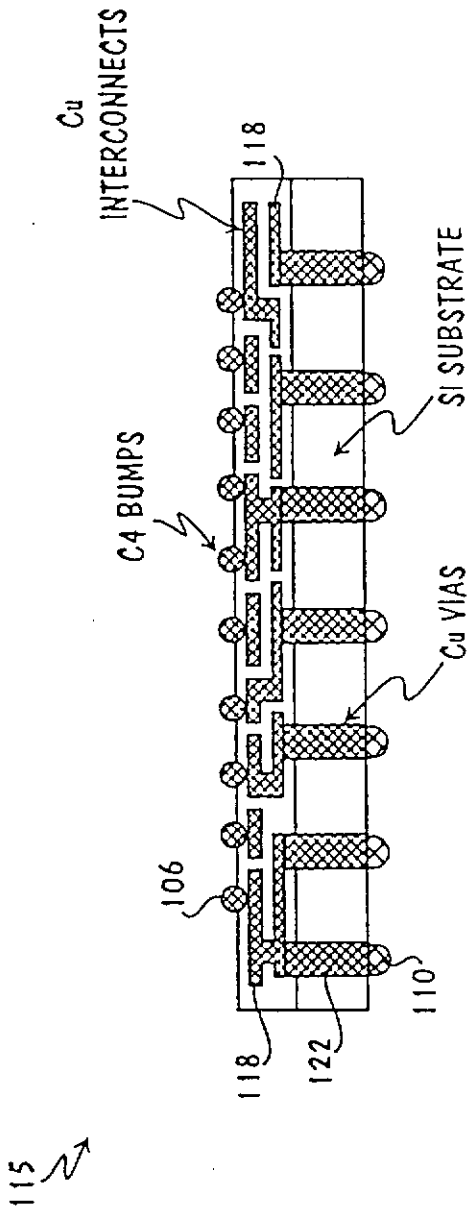

Cu
INTERCONNECTS
118
SI SUBSTRATE
C4 BUMPS
Cu VIAS
106
110
118
122
115

FIG. 4

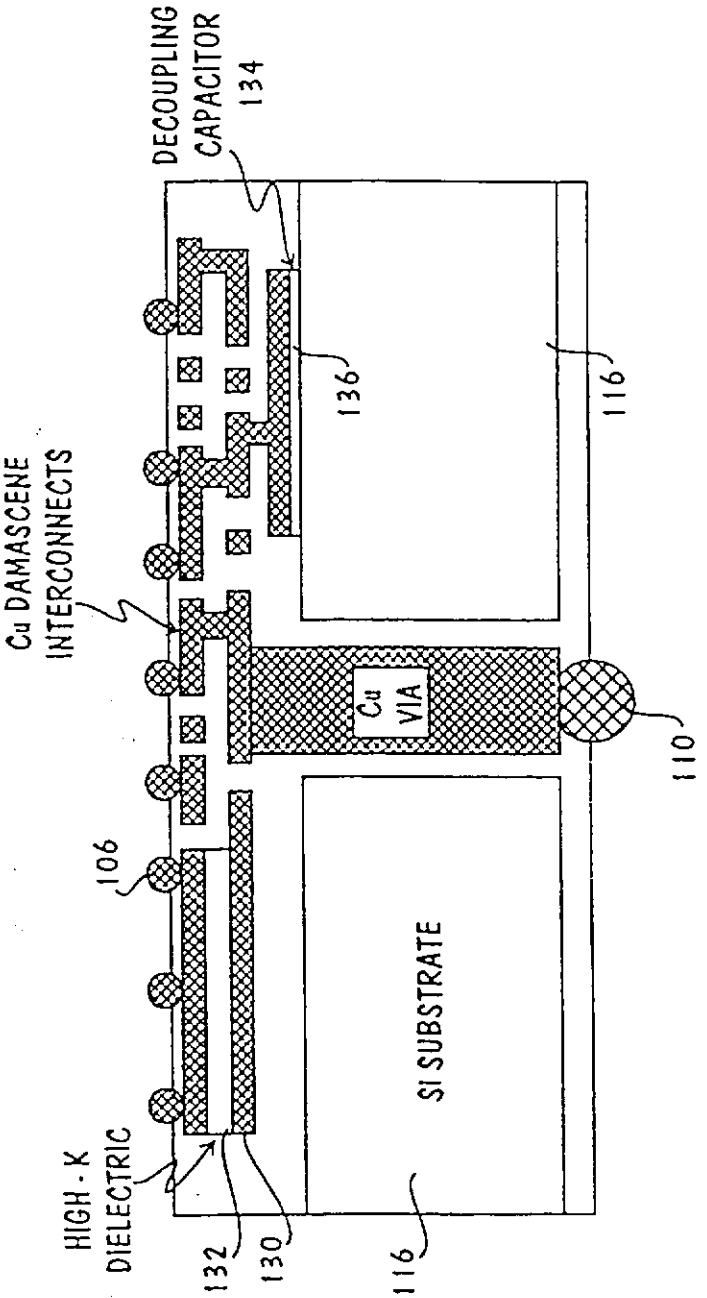

DECOUPLING CAPACITOR 134
136
116
Cu DAMASCENE INTERCONNECTS
Cu VIA
110
106
SI SUBSTRATE
HIGH - K DIELECTRIC
132
130
116

FIG. 5

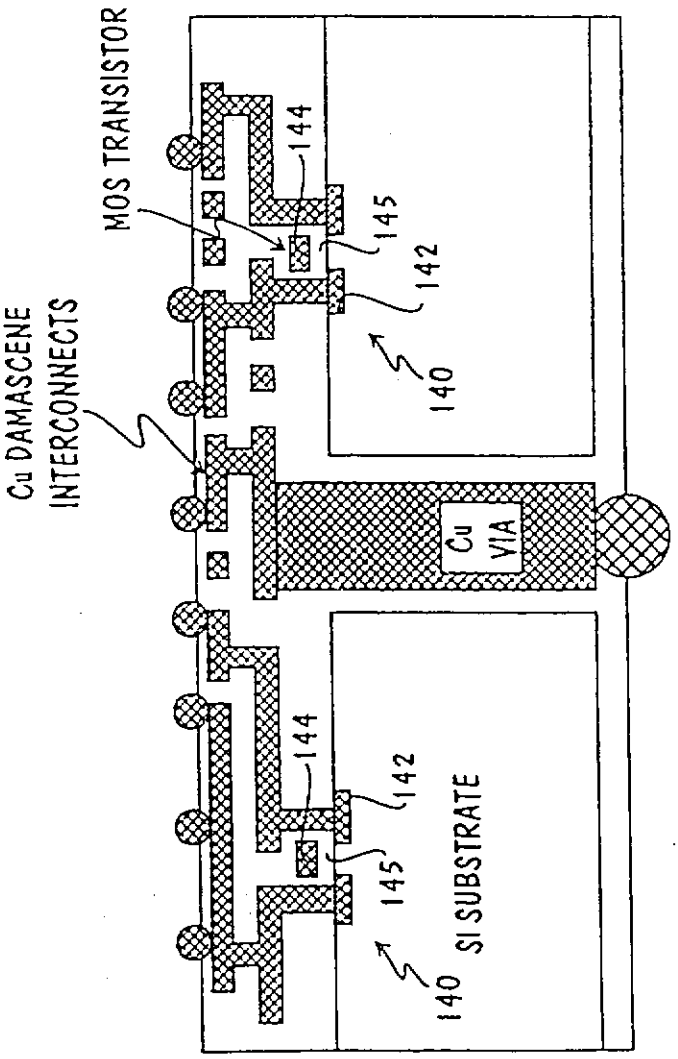

MOS TRANSISTOR
Cu DAMASCENE INTERCONNECTS
144
145
142
140
Cu VIA
144
142
145
140
SI SUBSTRATE

FIG. 6

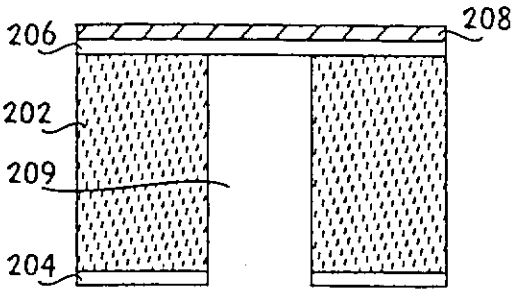


FIG. 7

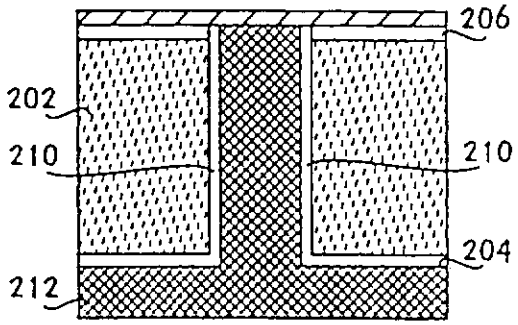


FIG. 8

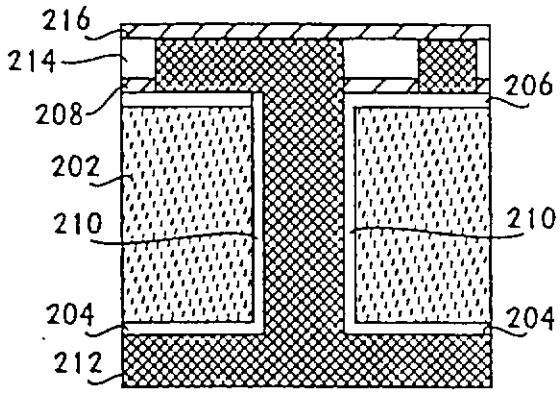


FIG. 9

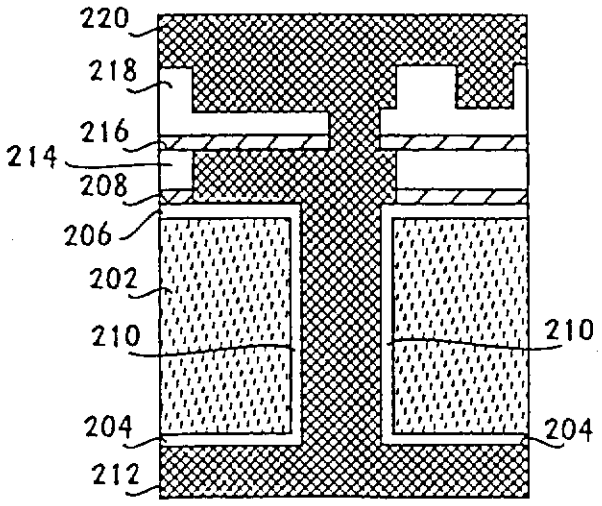


FIG. 10

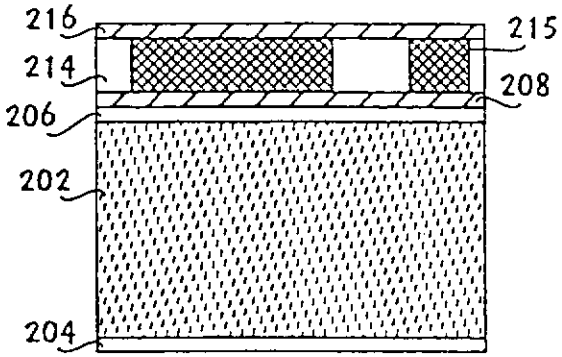


FIG. 11

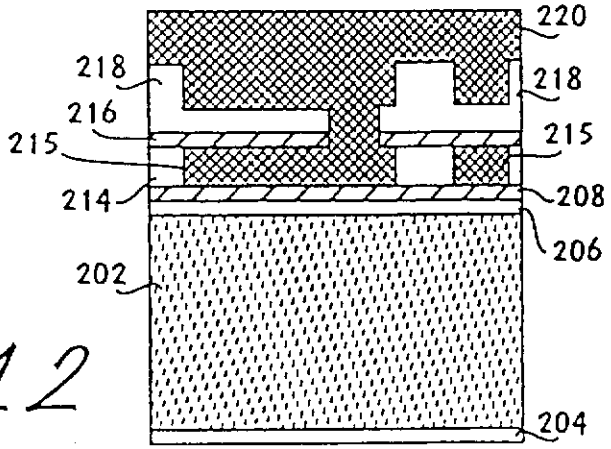


FIG. 12

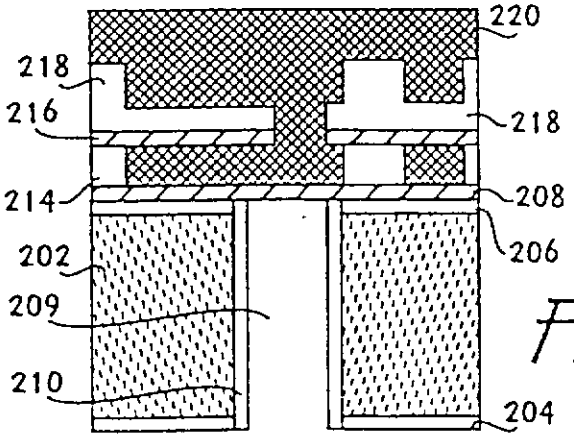


FIG. 13

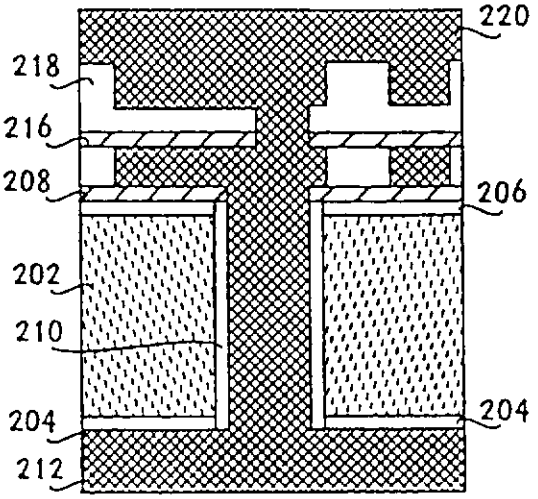


FIG. 14

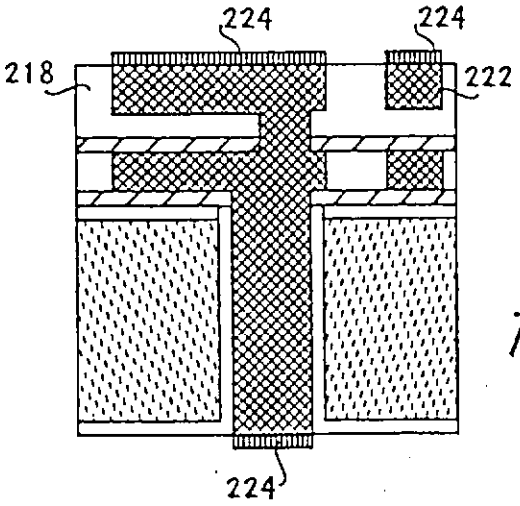


FIG. 15

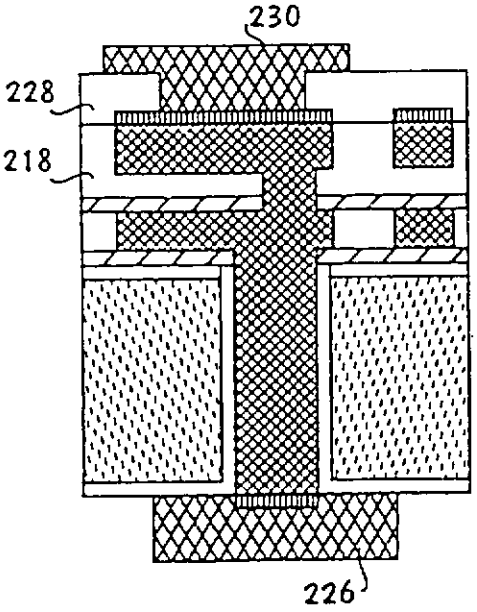


FIG. 16

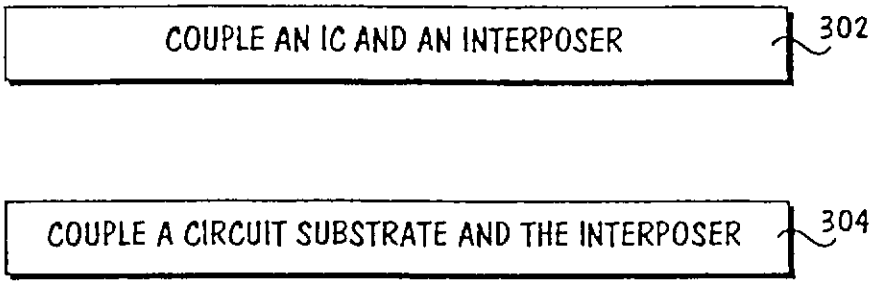

COUPLE AN IC AND AN INTERPOSER
302
COUPLE A CIRCUIT SUBSTRATE AND THE INTERPOSER
304

FIG. 17

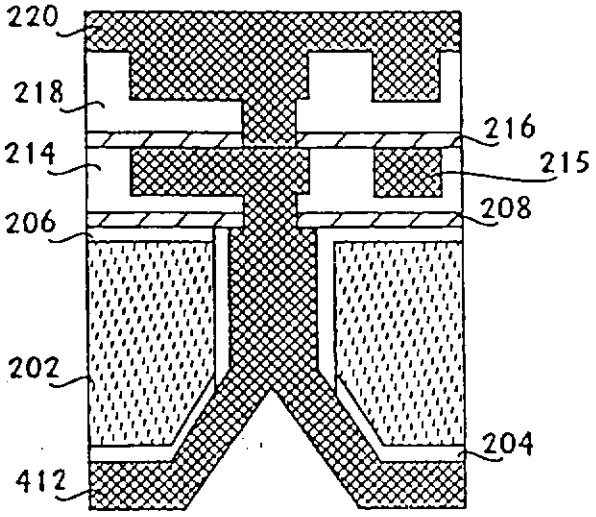

220
218
214
206
202
412
216
215
208
204

FIG. 21

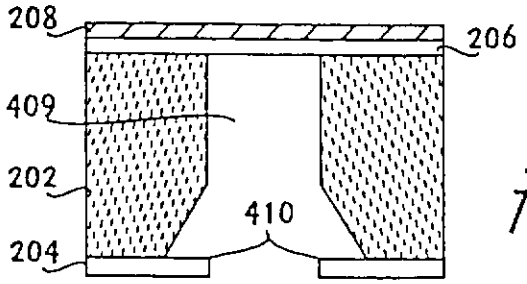


FIG. 18

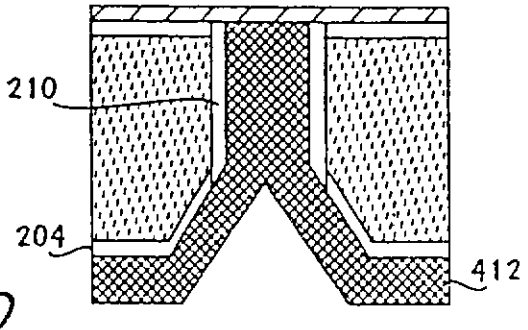


FIG. 19

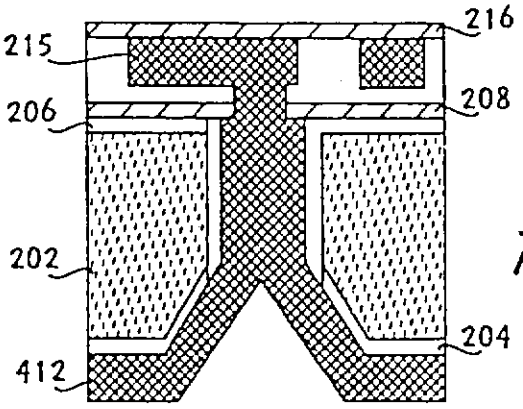


FIG. 20