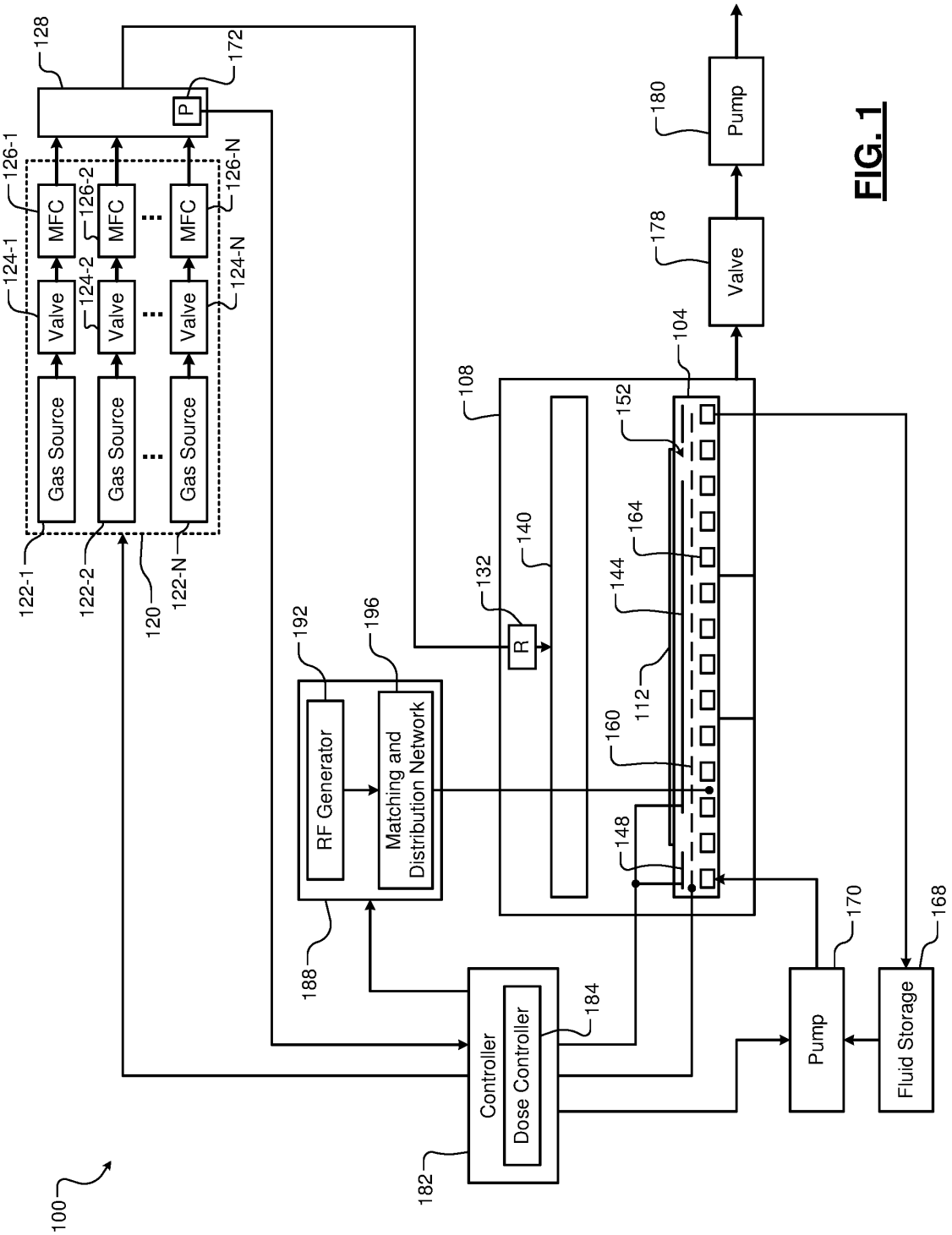

100
182
Controller
Dose Controller
184
188
RF Generator
Matching and Distribution Network
192
196
120
122-1
122-2
122-N
Gas Source
Valve
MFC
124-1
124-2
124-N
126-1
126-2
126-N
128
P
172
R
132
140
108
104
112
144
148
152
160
164
Pump
180
Valve
178
Pump
170
Fluid Storage
168

FIG. 1

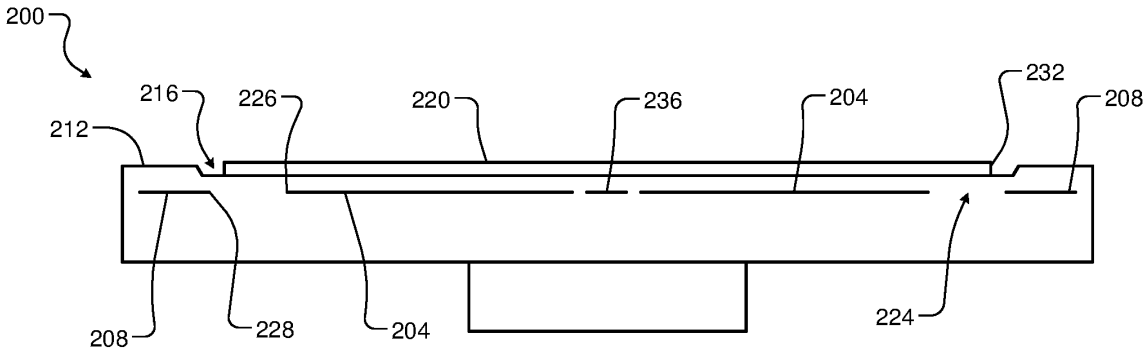

200
216
226
220
236
204
232
208
212
208
228
204
224

FIG. 2A

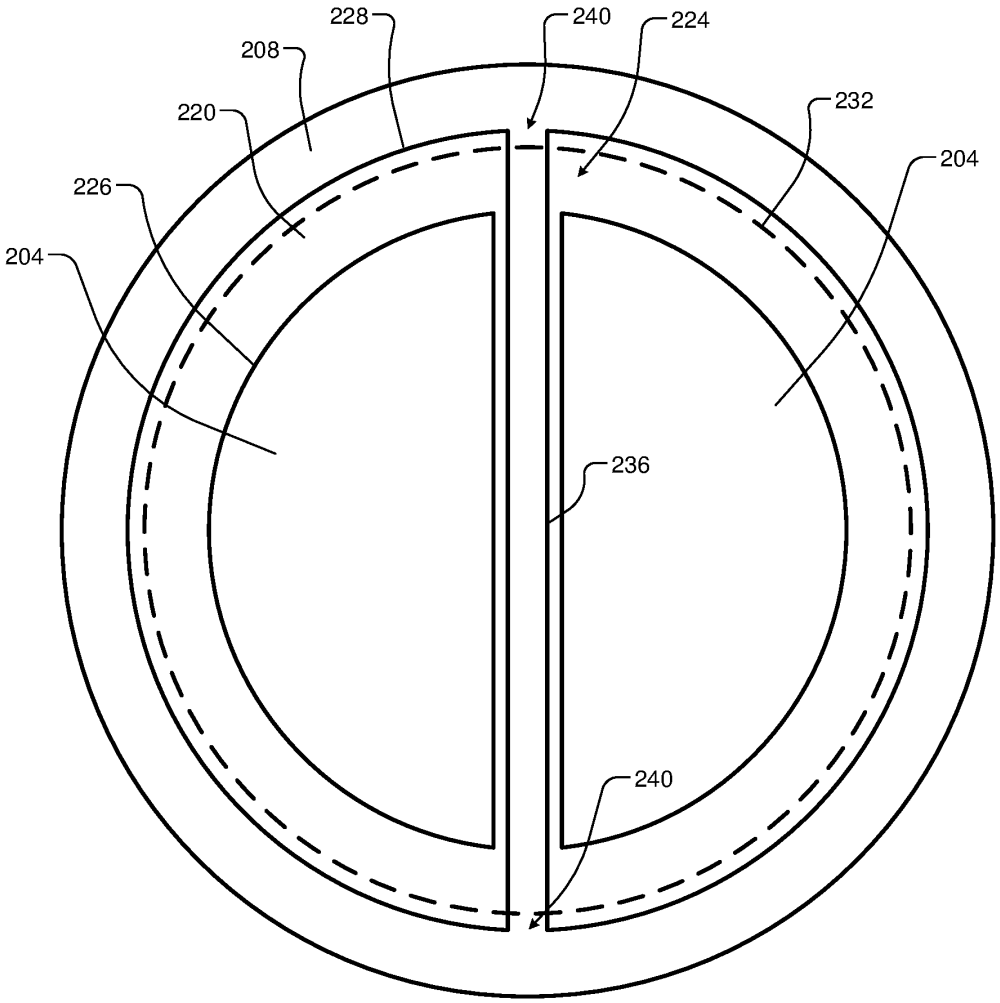

228
240
224
208
220
232
226
204
204
236
240

FIG. 2B

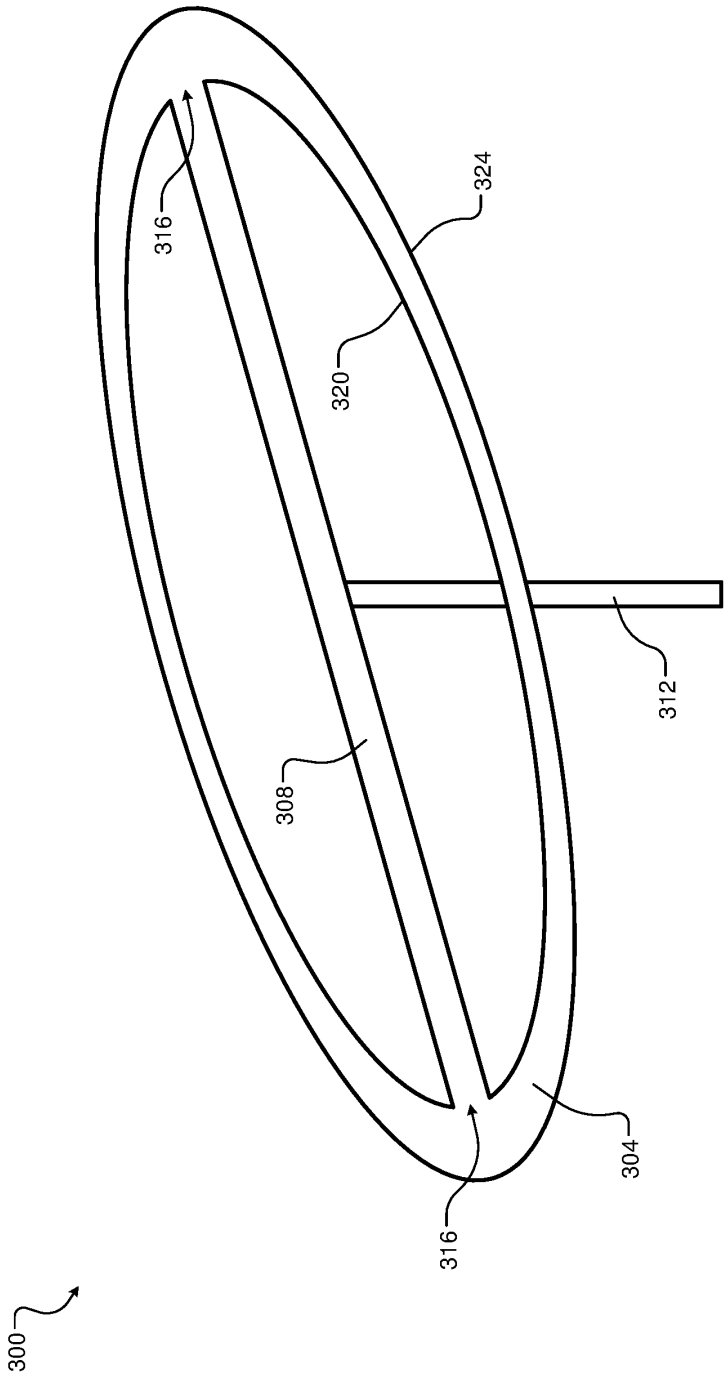


FIG. 3

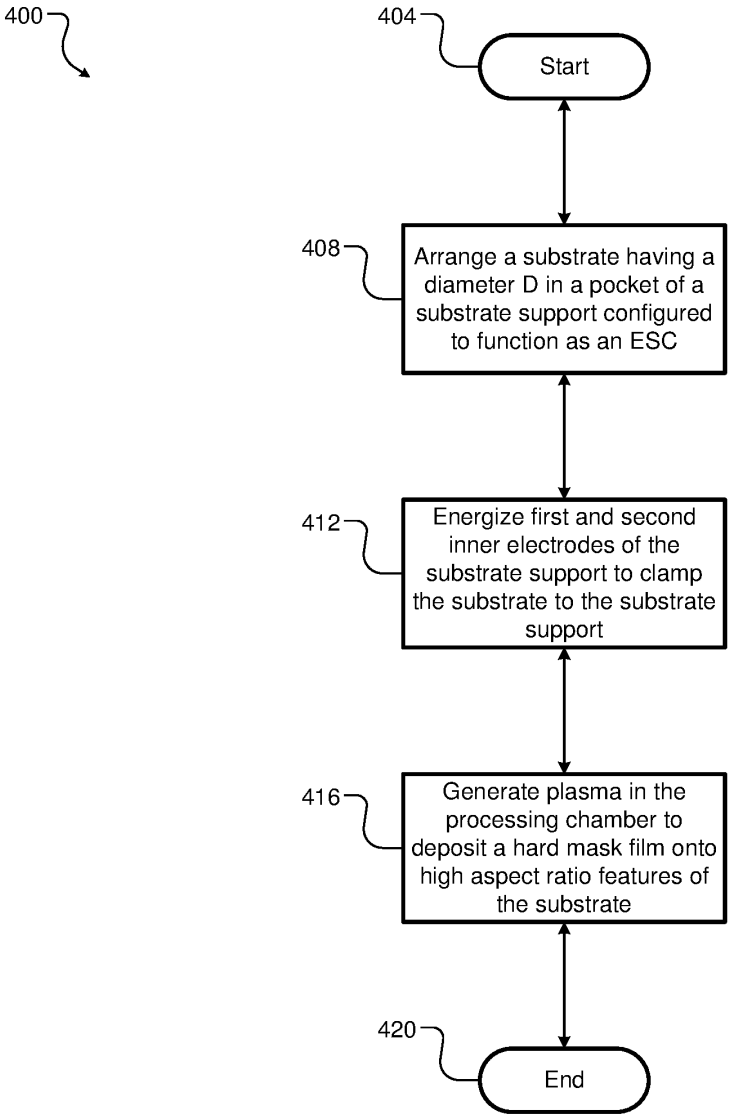

400
404
Start
408
Arrange a substrate having a diameter D in a pocket of a substrate support configured to function as an ESC
412
Energize first and second inner electrodes of the substrate support to clamp the substrate to the substrate support
416
Generate plasma in the processing chamber to deposit a hard mask film onto high aspect ratio features of the substrate
420
End

FIG. 4

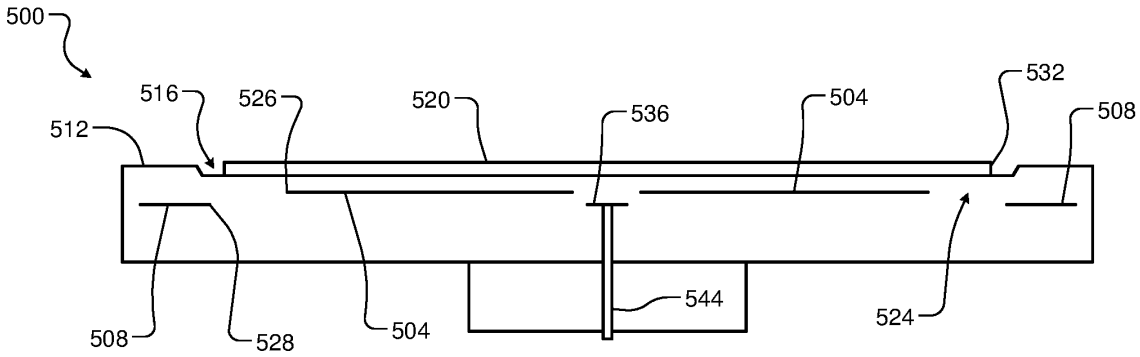

500
516
526
520
536
504
532
508
512
508
528
504
544
524

FIG. 5A

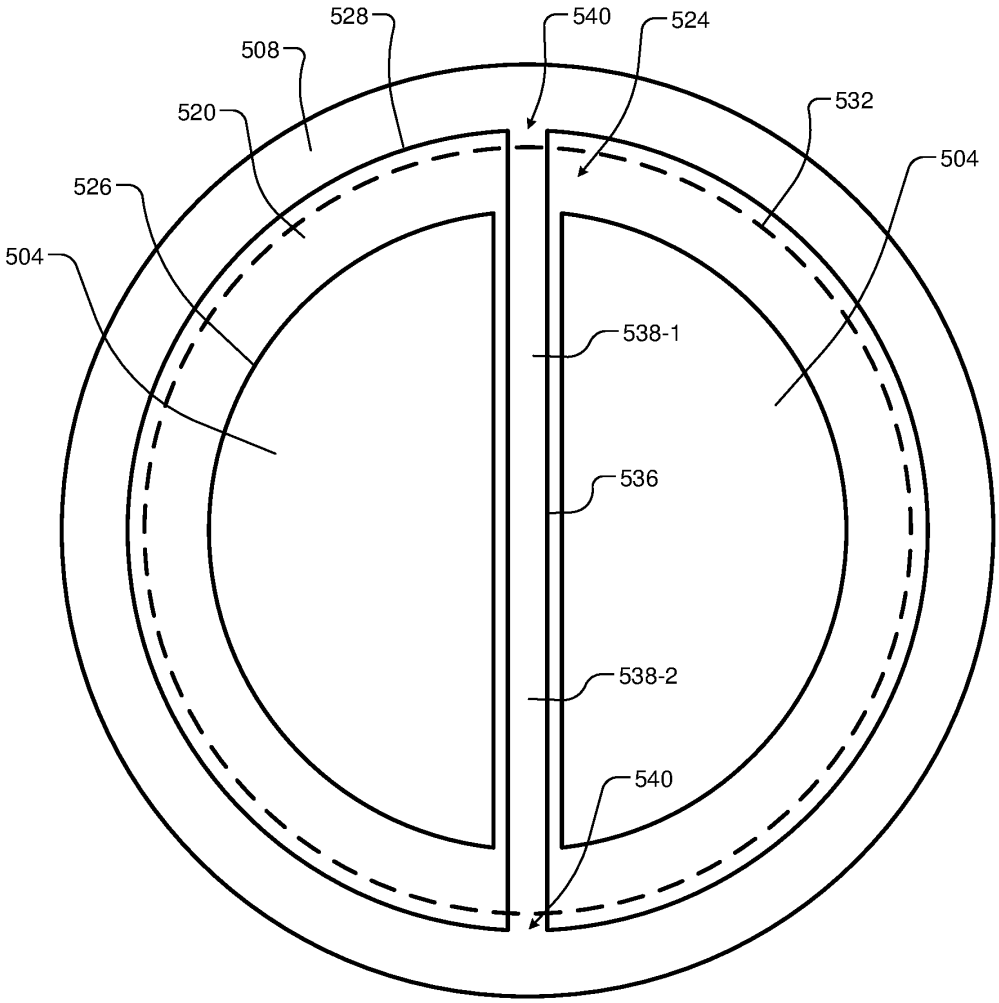

528
540
524
508
520
532
504
526
504
538-1
536
538-2
540

FIG. 5B

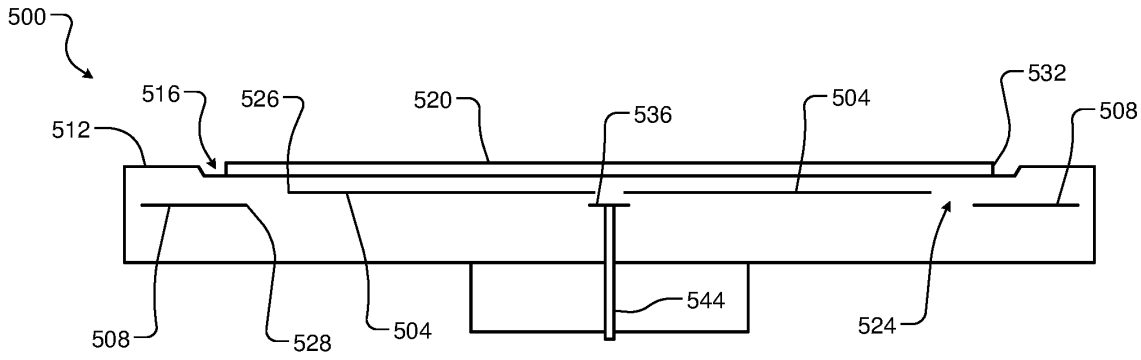

500
516
526
520
536
504
532
508
512
508
528
504
544
524

FIG. 5C

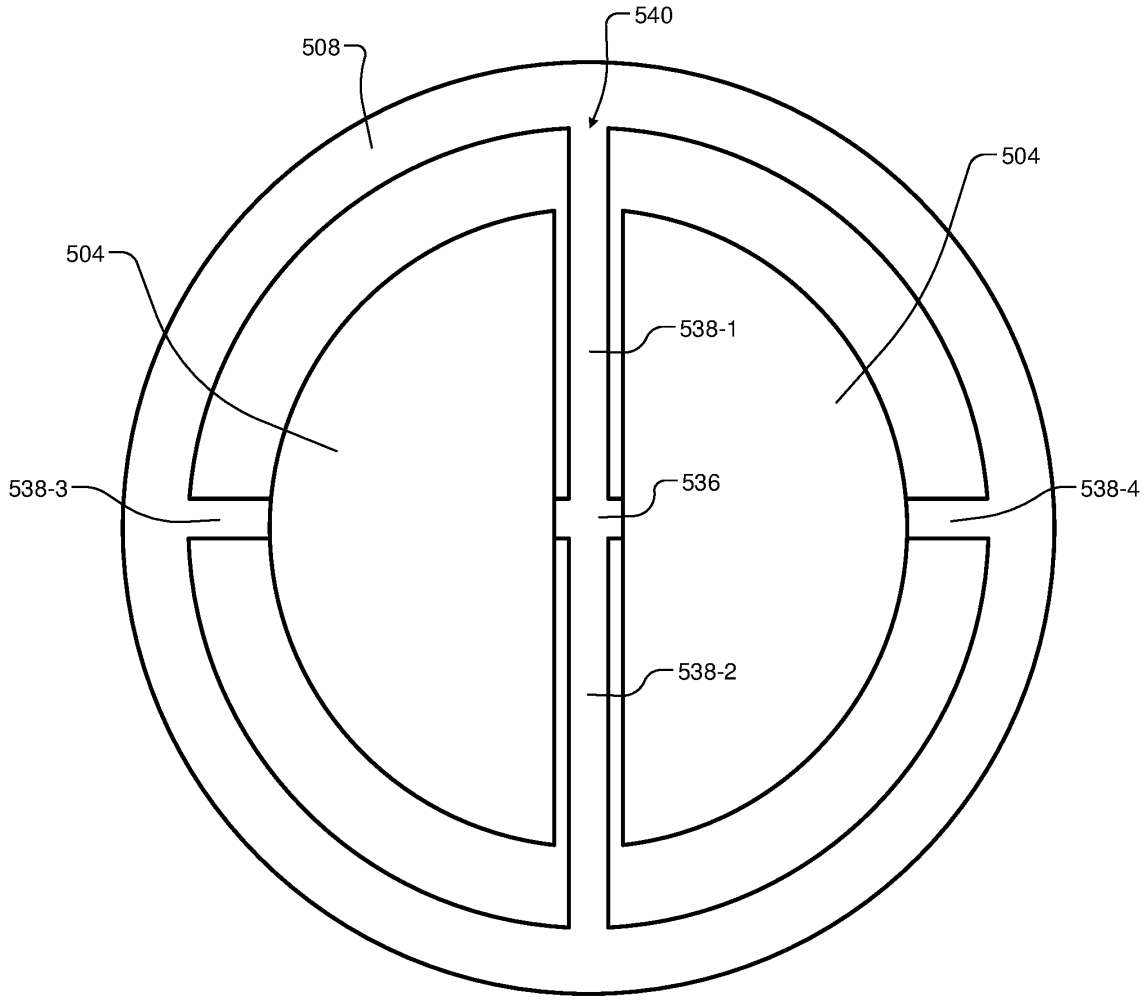

540
508
504
504
538-1
538-3
536
538-4
538-2

FIG. 5D

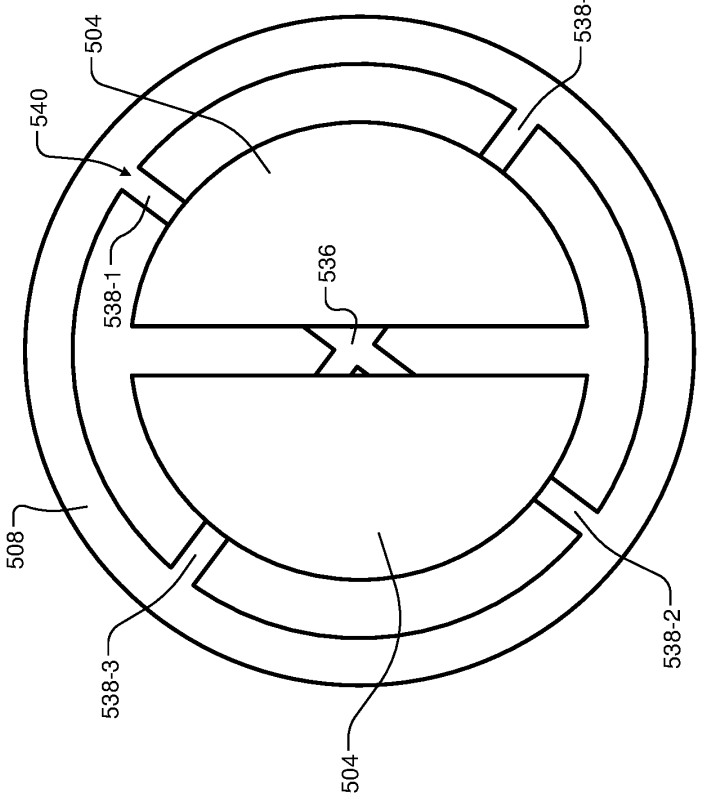

504
538-4
540
538-1
536
508
538-3
538-2
504

FIG. 5E

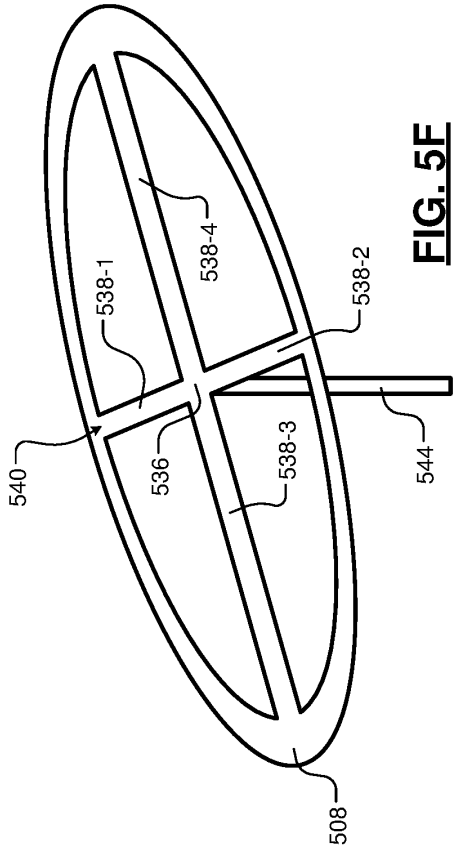

538-1
538-4
538-2
540
536
538-3
544
508

FIG. 5F

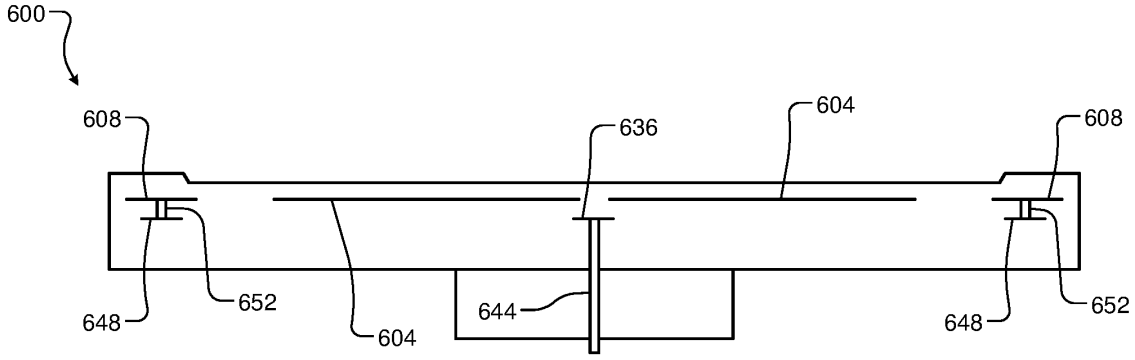

600
608
636
604
608
652
648
644
604
648
652

FIG. 6A

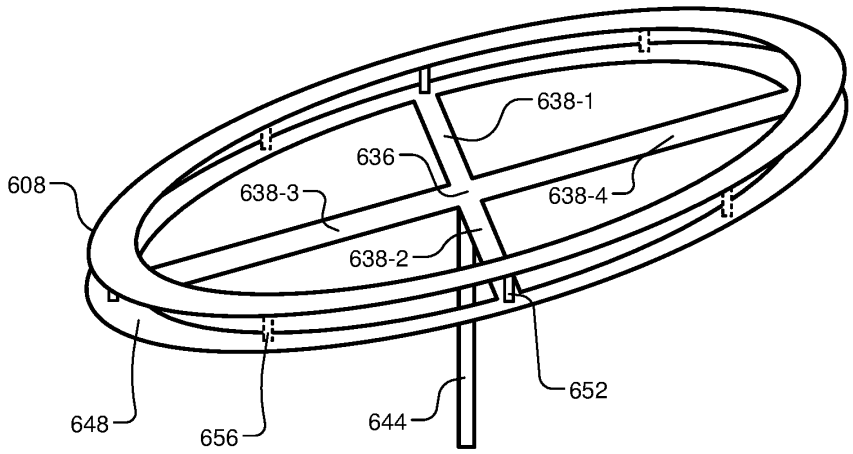

638-1
636
608
638-3
638-4
638-2
652
648
656
644

FIG. 6B