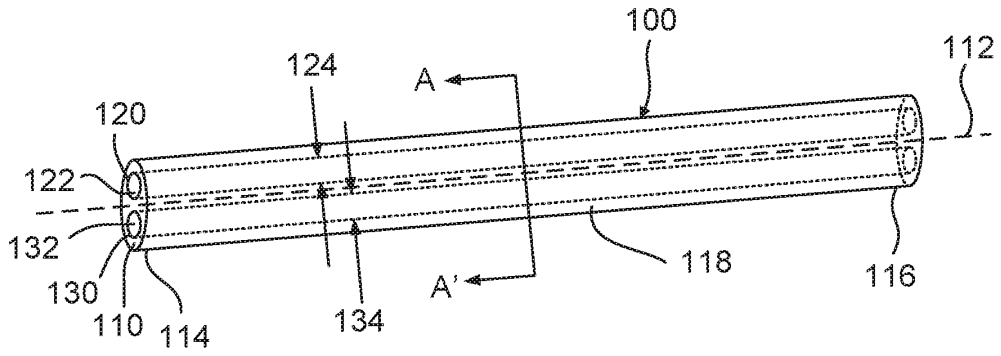
100
112
124
A
120
122
132
130
110
114
134
A'
118
116

FIG. 1A

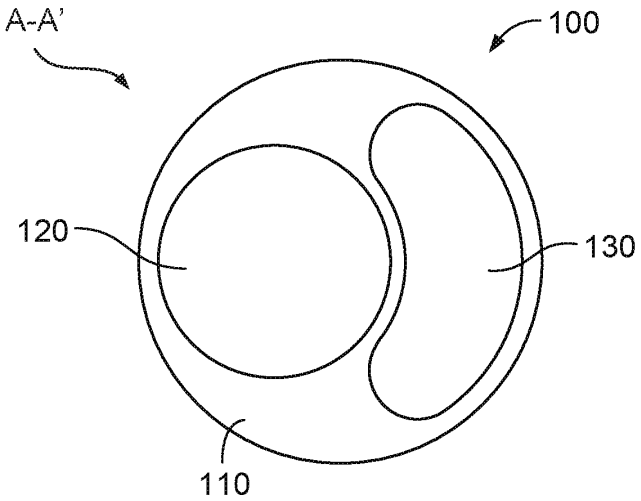
A-A'
100
120
130
110

FIG. 1B

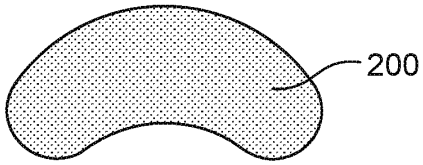

FIG. 2A

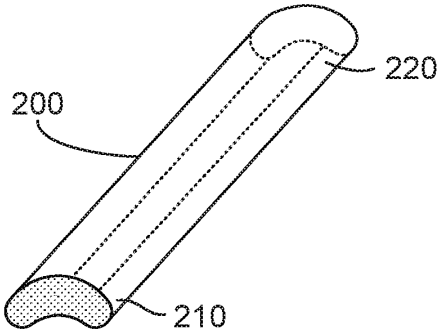

FIG. 2B

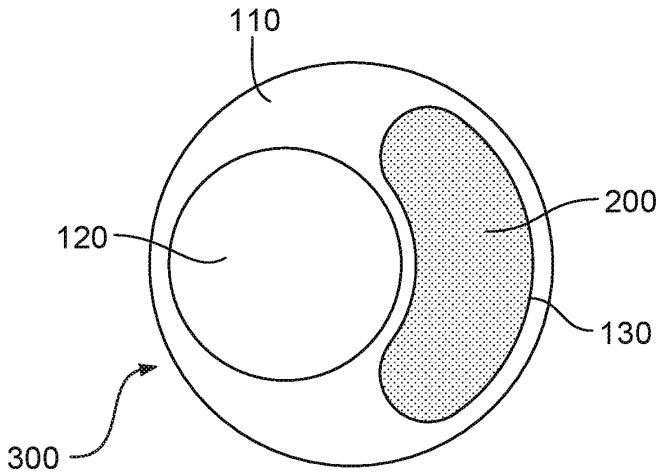

FIG. 3

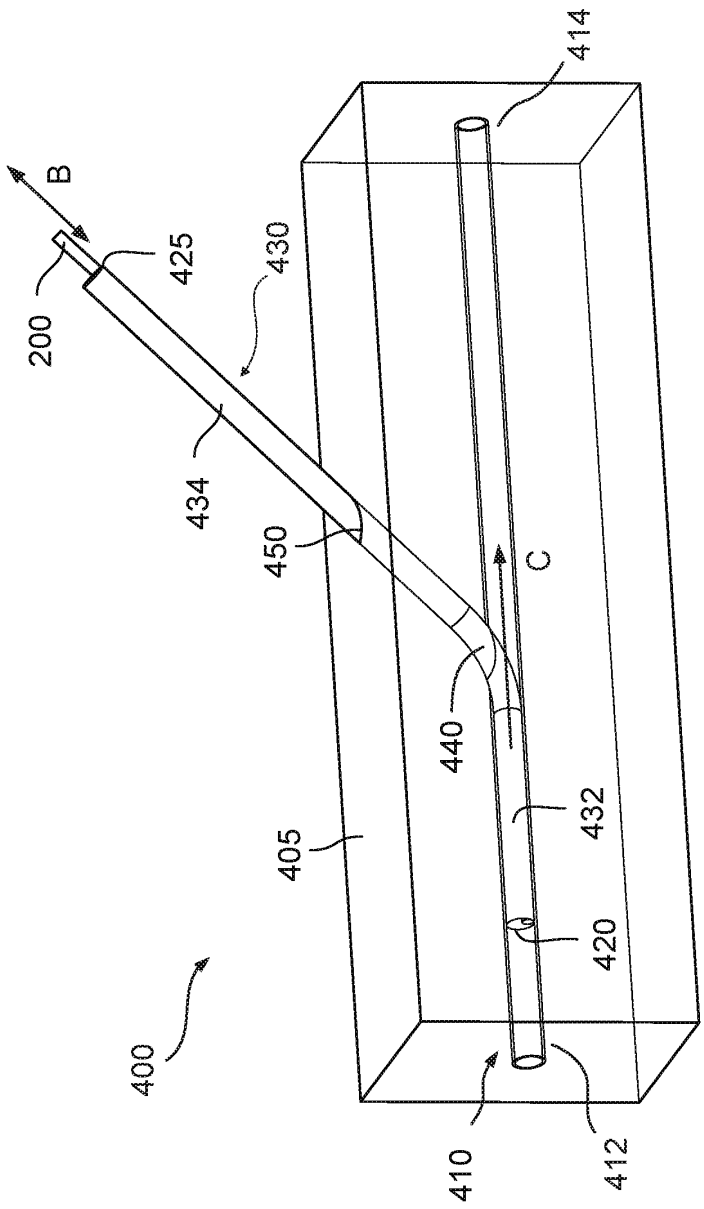

FIG. 4

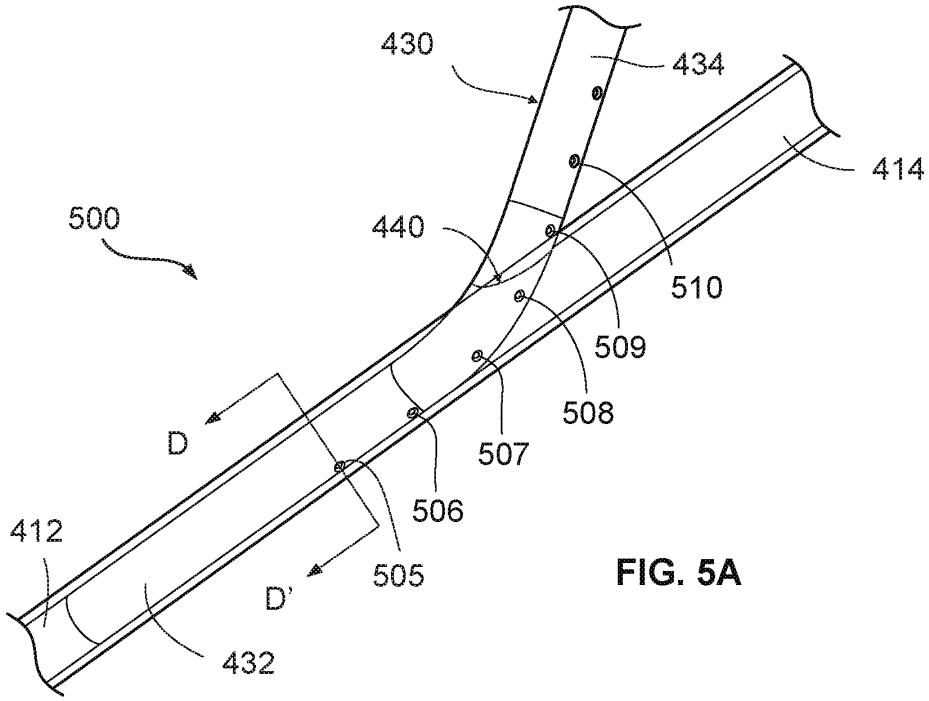
430
434
414
500
440
510
509
508
507
506
D
505
D'
412
432

FIG. 5A

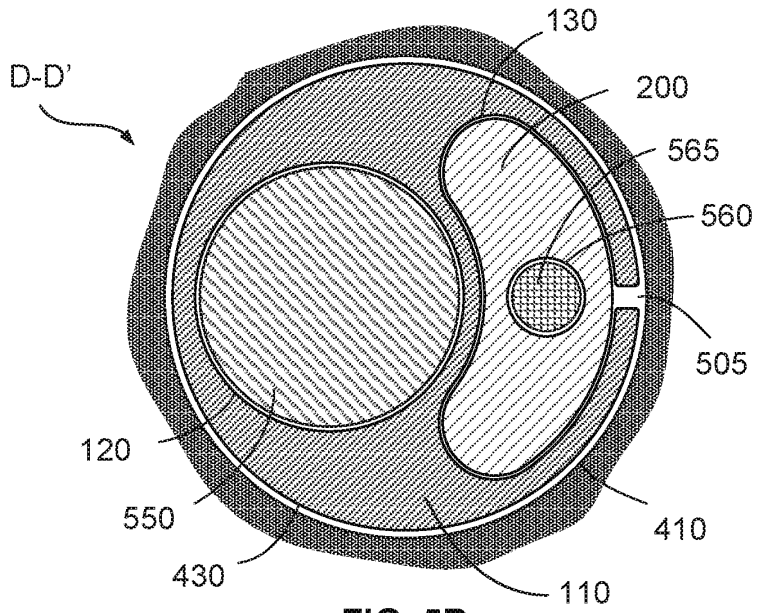
D-D'
130
200
565
560
505
120
550
430
410
110

FIG. 5B

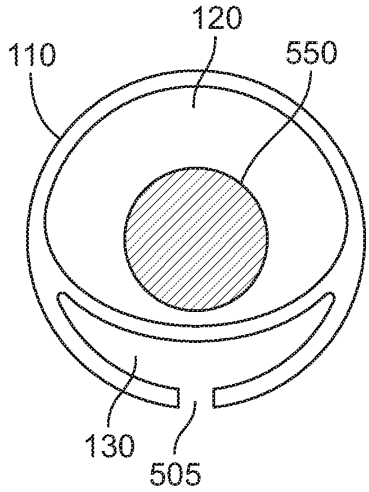

FIG. 5C

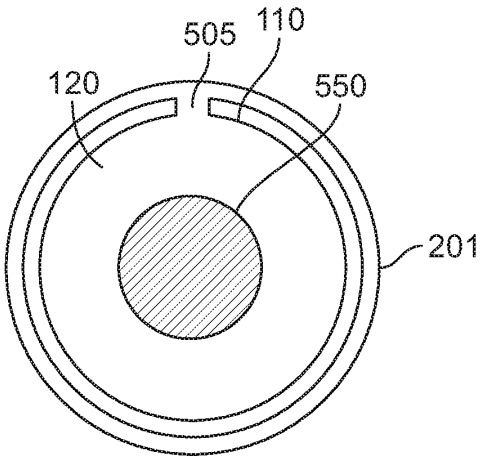

FIG. 5D

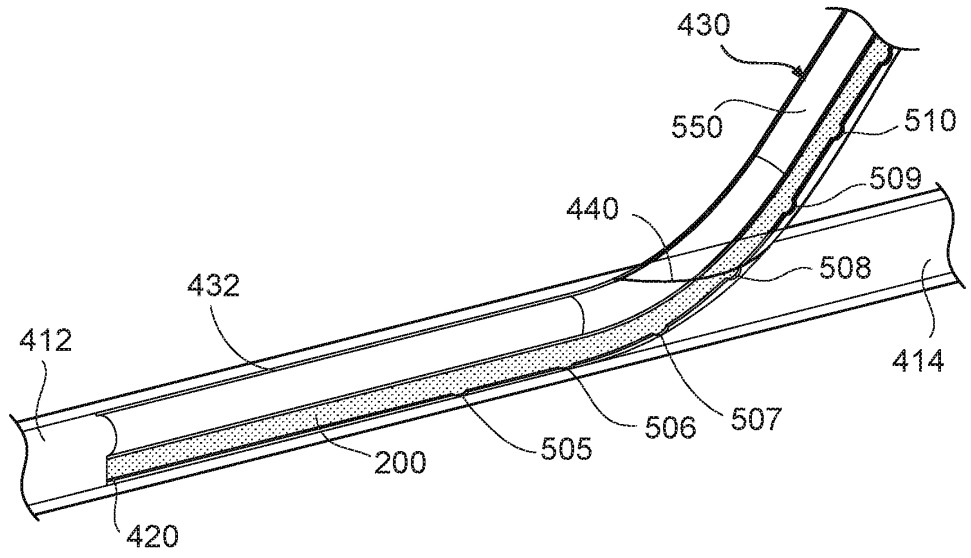
430
550
510
509
440
508
432
412
414
506
507
200
505
420

FIG. 6

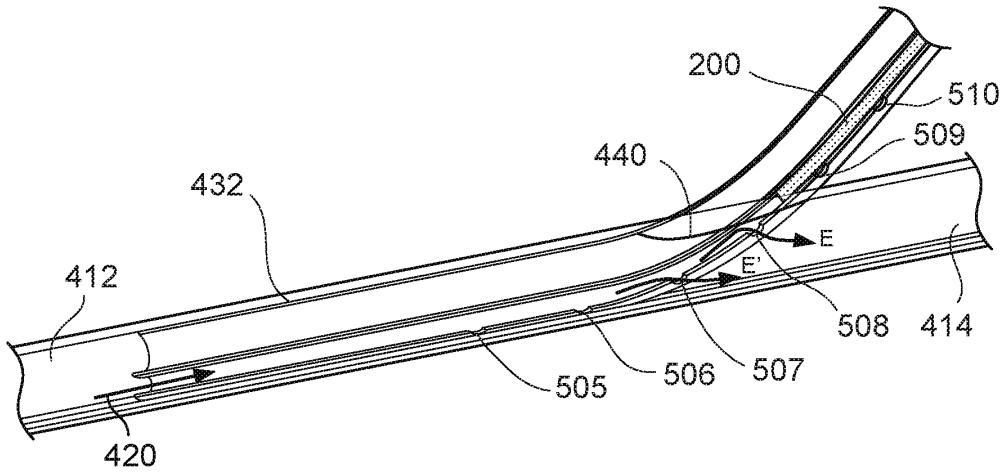
200
510
509
440
432
E
E'
412
508
414
505
506
507
420

FIG. 7

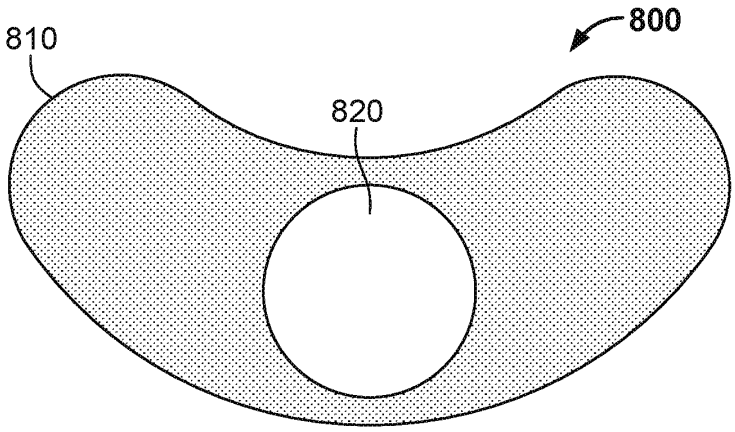

FIG. 8A

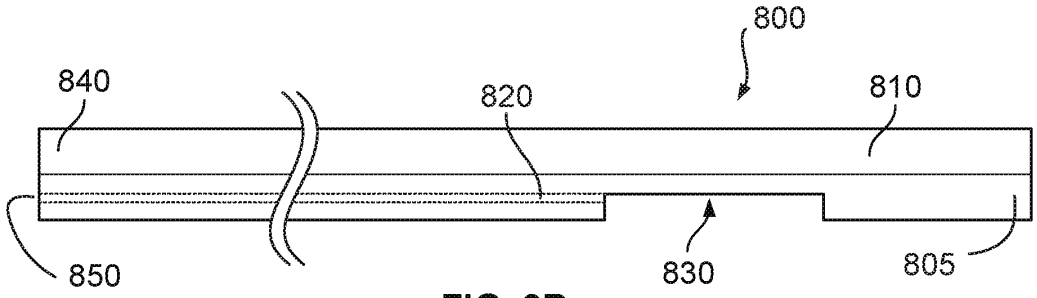

FIG. 8B

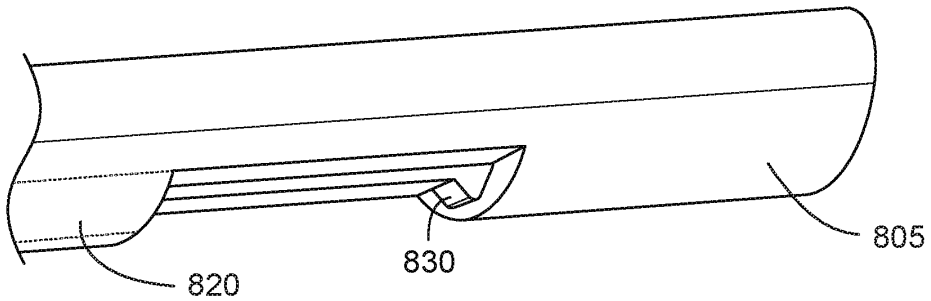

FIG. 8C

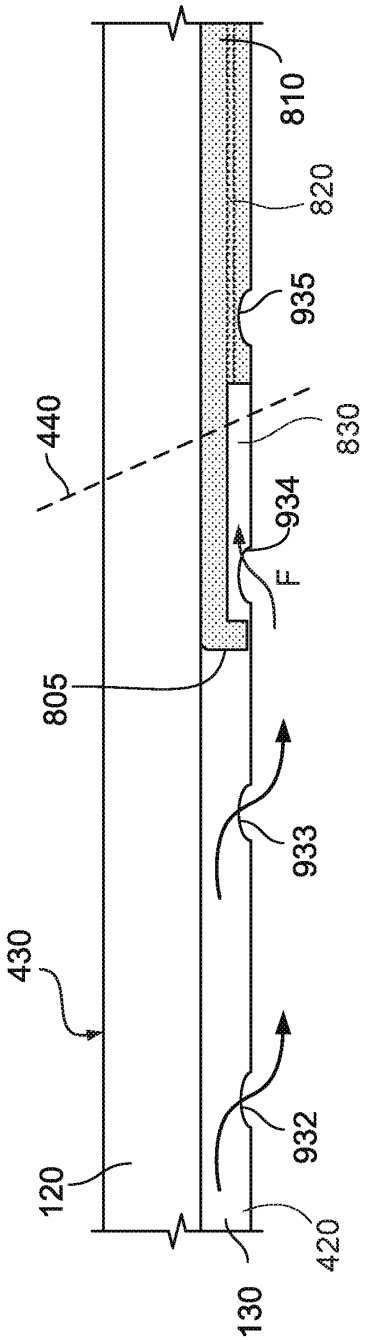
810
820
935
440
830
934
F
805
933
430
932
120
420
130

FIG. 9A

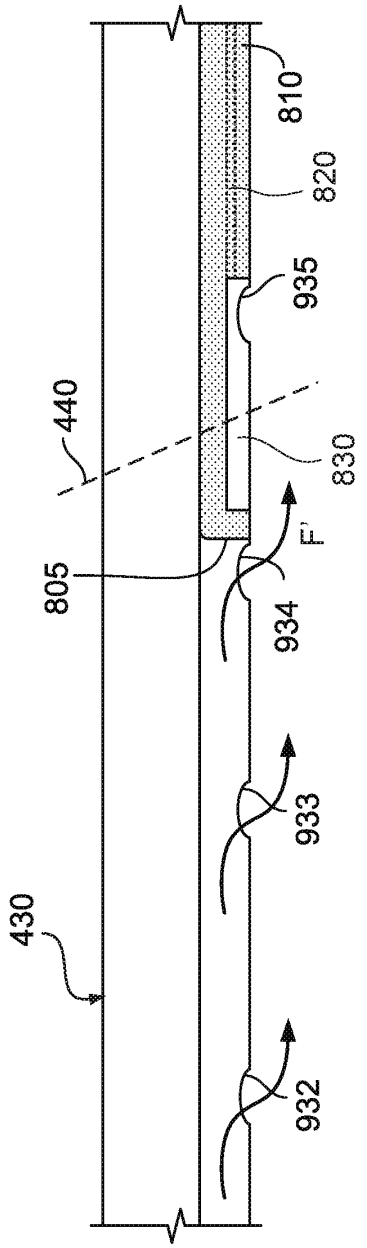
810
820
935
440
830
F'
805
934
933
430
932

FIG. 9B

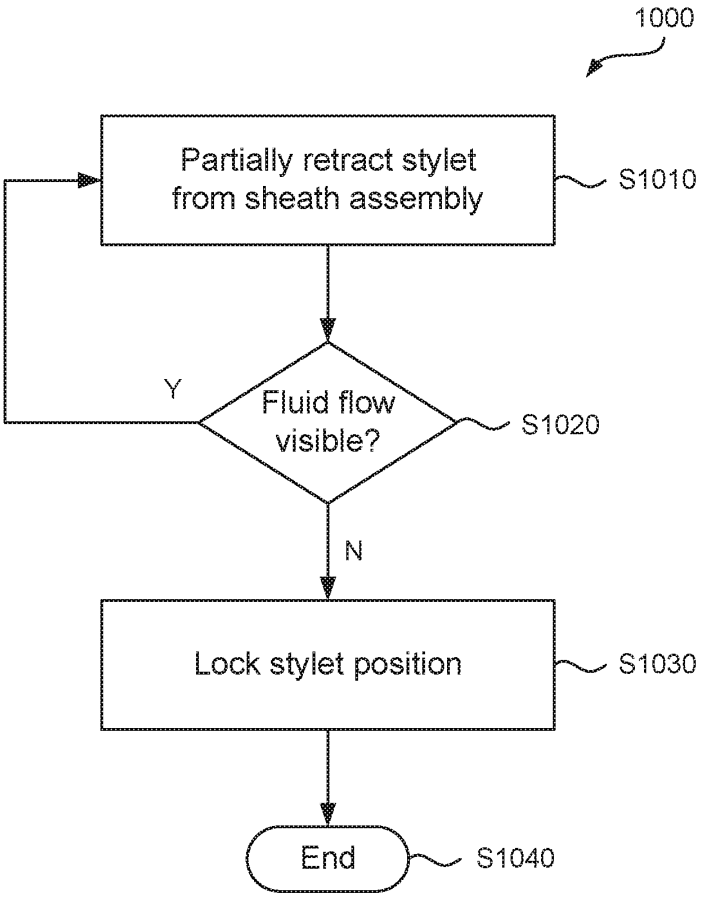
1000
Partially retract stylet from sheath assembly
S1010
Y
Fluid flow visible?
S1020
N
Lock stylet position
S1030
End
S1040

FIG. 10

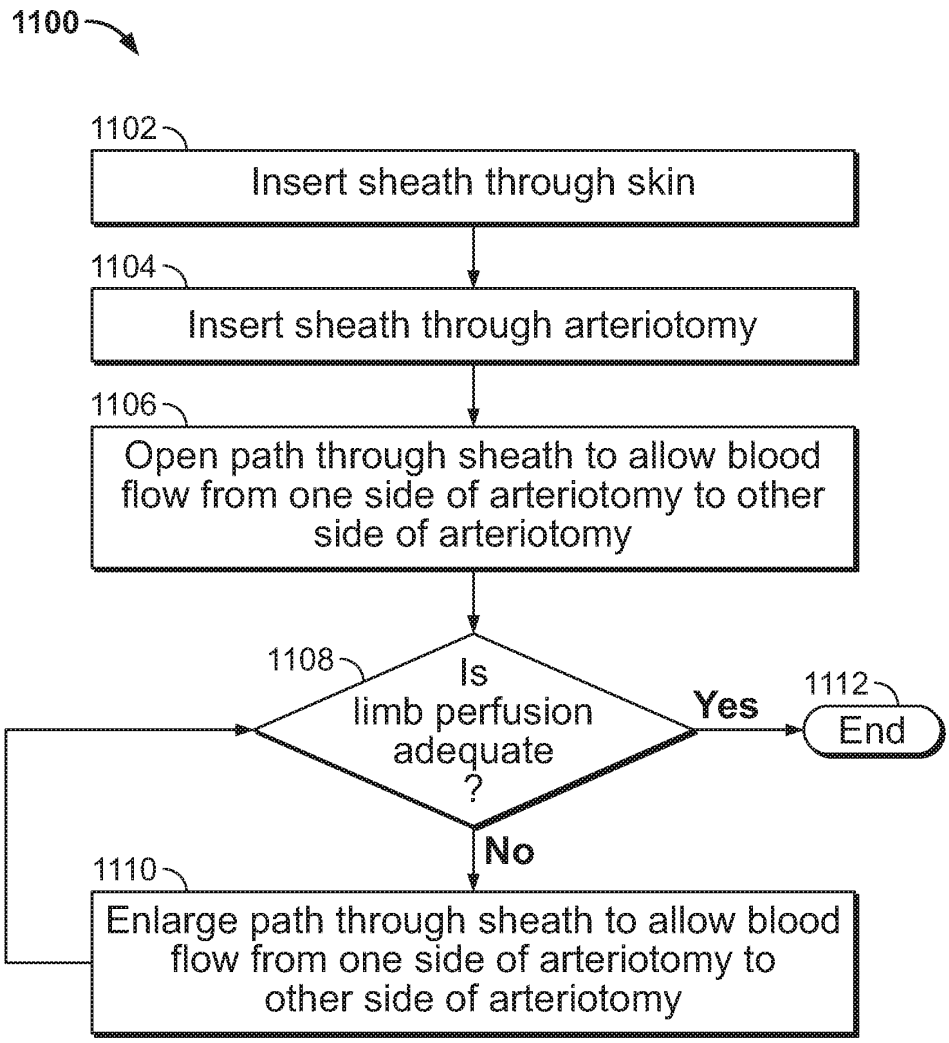
1100
1102
Insert sheath through skin
1104
Insert sheath through arteriotomy
1106
Open path through sheath to allow blood flow from one side of arteriotomy to other side of arteriotomy
1108
Is limb perfusion adequate ?
Yes
1112
End
No
1110
Enlarge path through sheath to allow blood flow from one side of arteriotomy to other side of arteriotomy

FIG. 11

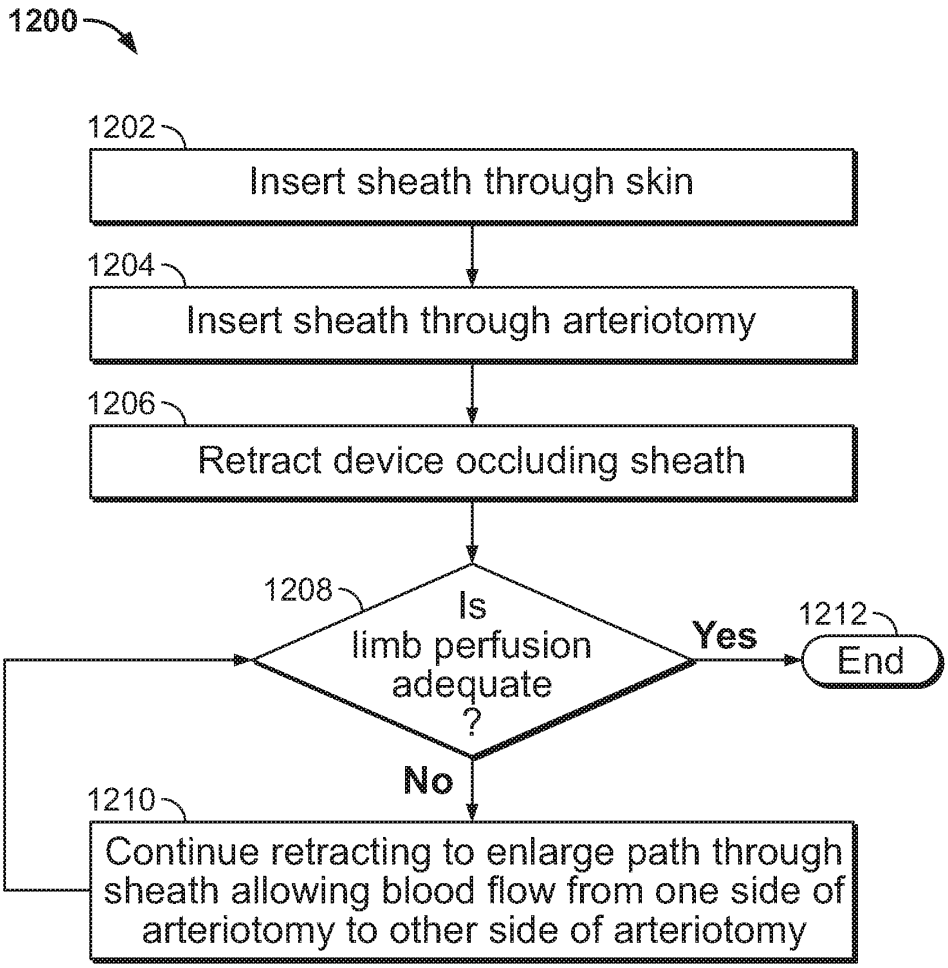
1200
1202
Insert sheath through skin
1204
Insert sheath through arteriotomy
1206
Retract device occluding sheath
1208
Is limb perfusion adequate ?
Yes
1212
End
No
1210
Continue retracting to enlarge path through sheath allowing blood flow from one side of arteriotomy to other side of arteriotomy

FIG. 12

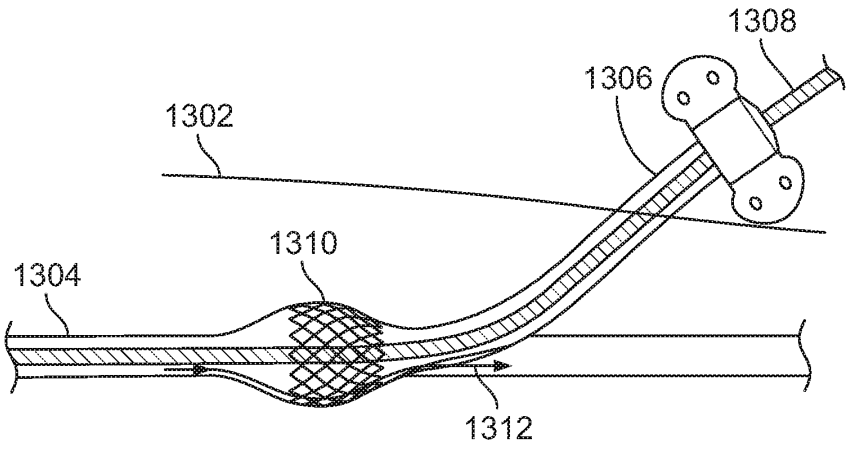

FIG. 13

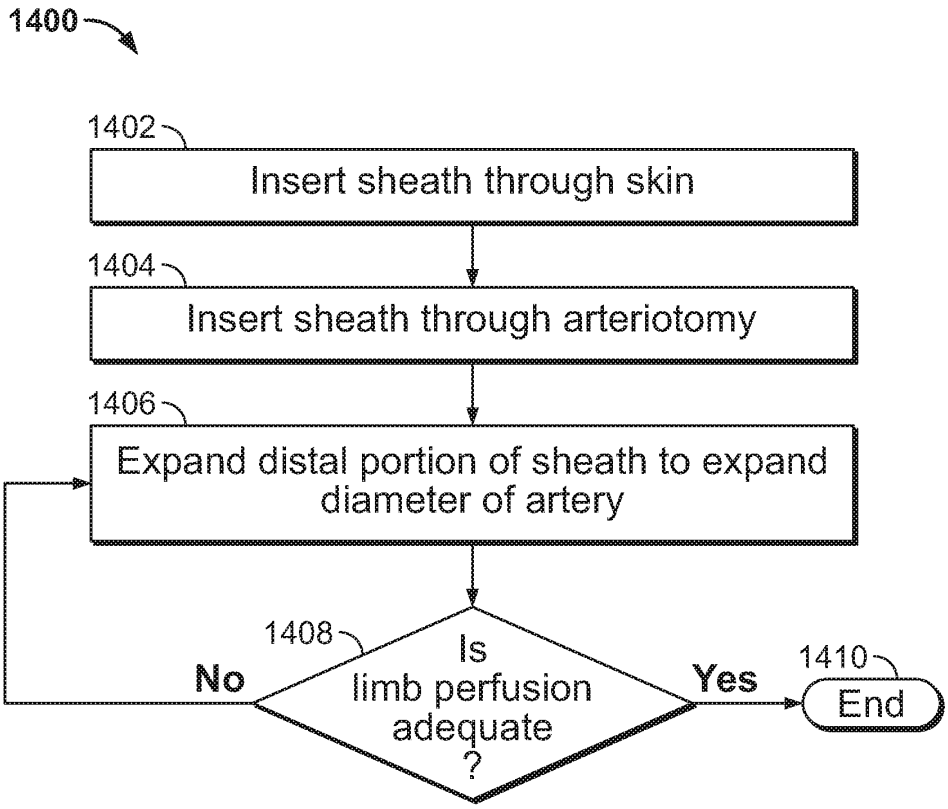
1400
1402
Insert sheath through skin
1404
Insert sheath through arteriotomy
1406
Expand distal portion of sheath to expand diameter of artery
1408
Is limb perfusion adequate ?
No
Yes
1410
End

FIG. 14

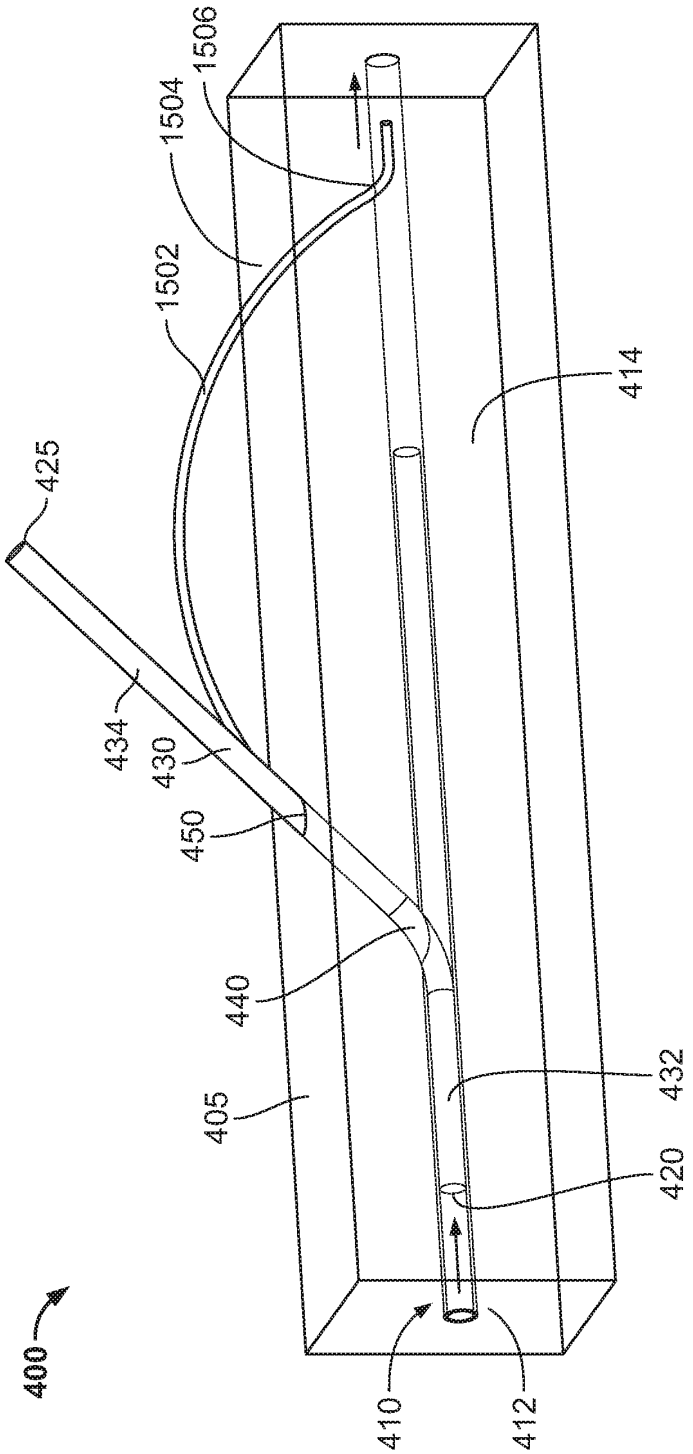

FIG. 15

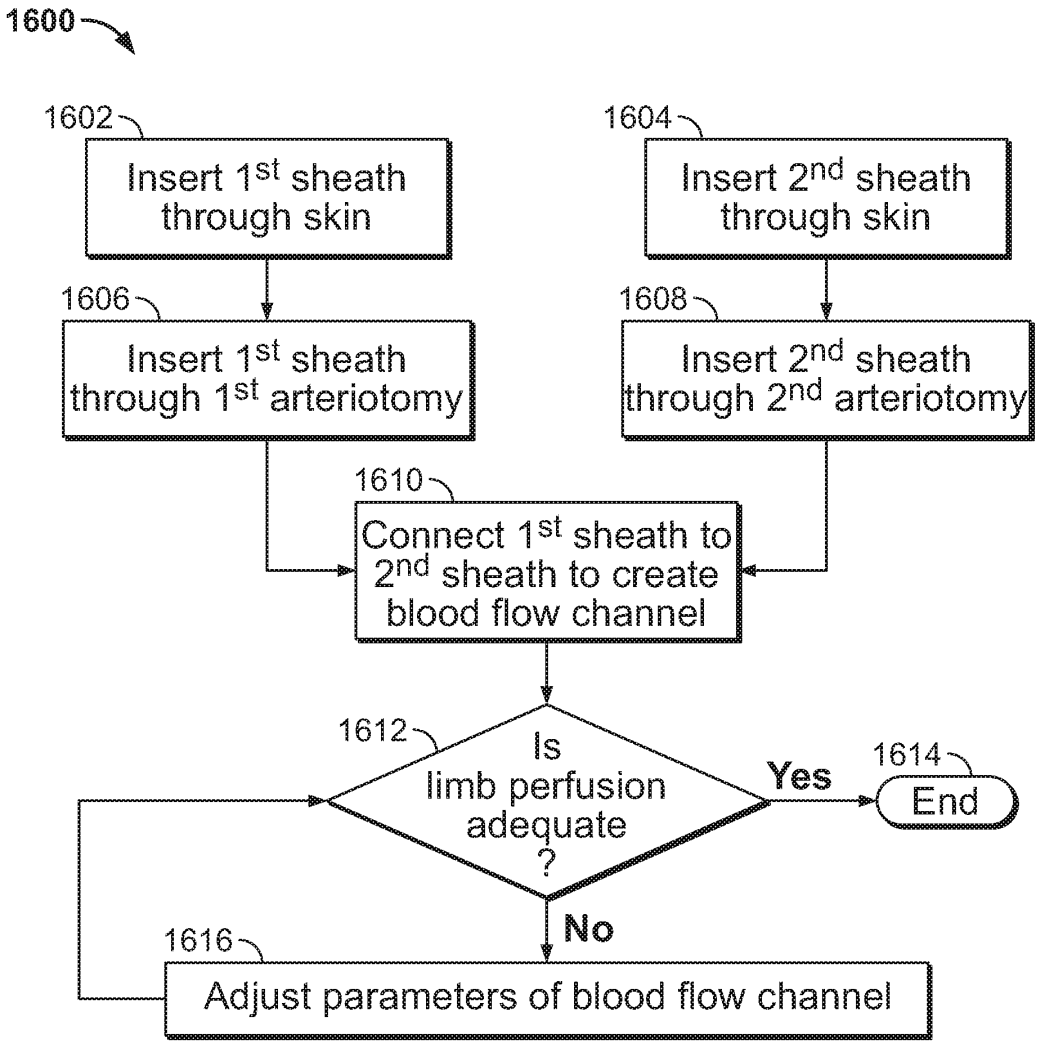
1600
1602
Insert 1st sheath through skin
1604
Insert 2nd sheath through skin
1606
Insert 1st sheath through 1st arteriotomy
1608
Insert 2nd sheath through 2nd arteriotomy
1610
Connect 1st sheath to 2nd sheath to create blood flow channel
1612
Is limb perfusion adequate ?
Yes
1614
End
No
1616
Adjust parameters of blood flow channel

FIG. 16

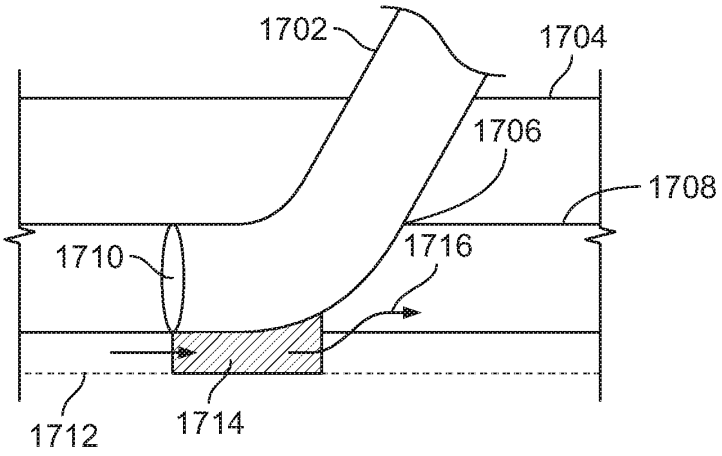

FIG. 17

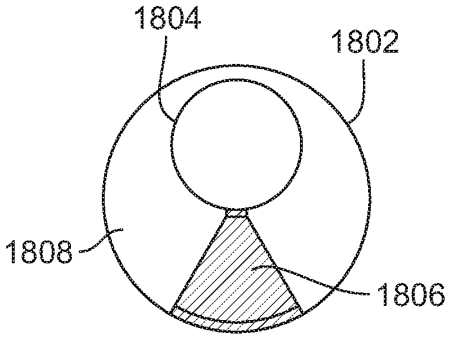

FIG. 18A

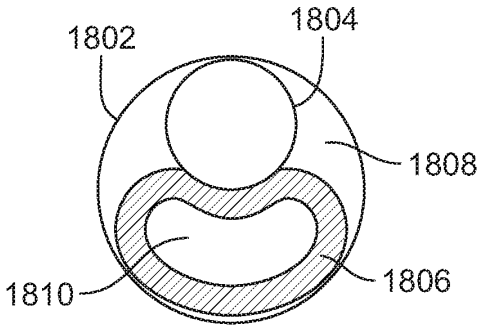

FIG. 18B

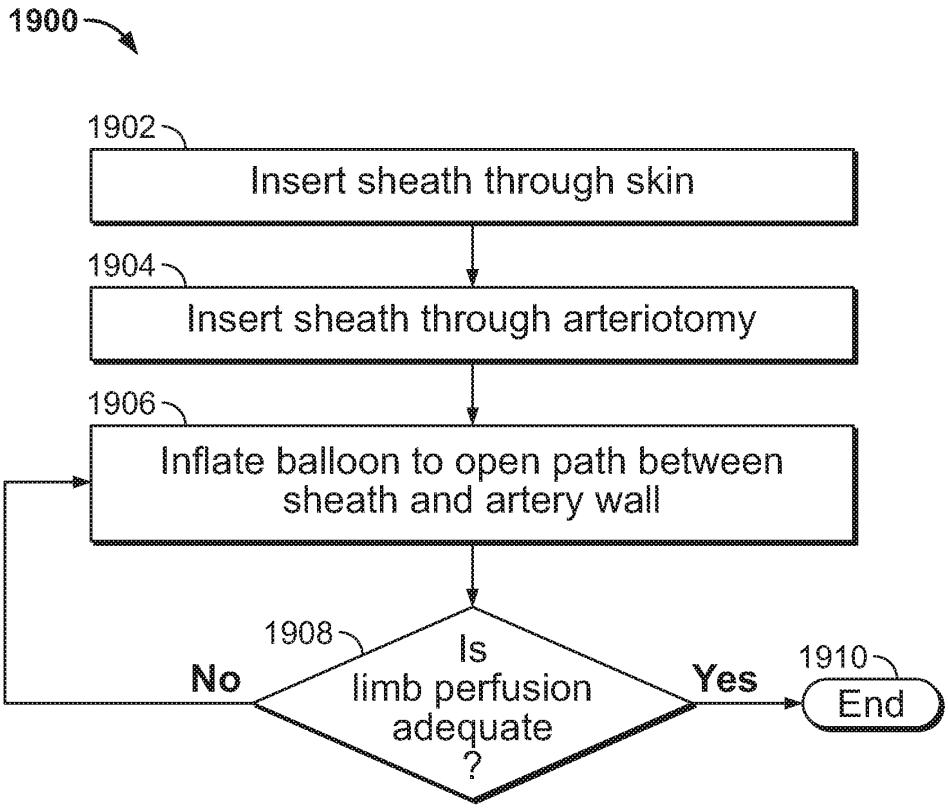
1900
1902
Insert sheath through skin
1904
Insert sheath through arteriotomy
1906
Inflate balloon to open path between sheath and artery wall
1908
Is limb perfusion adequate ?
No
Yes
1910
End

FIG. 19

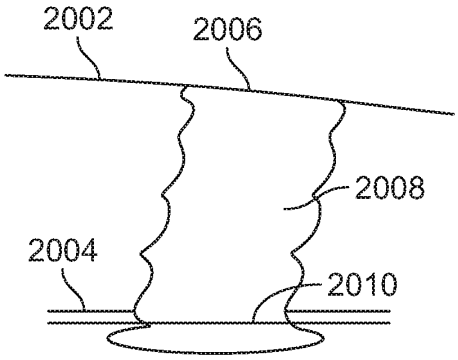

FIG. 20

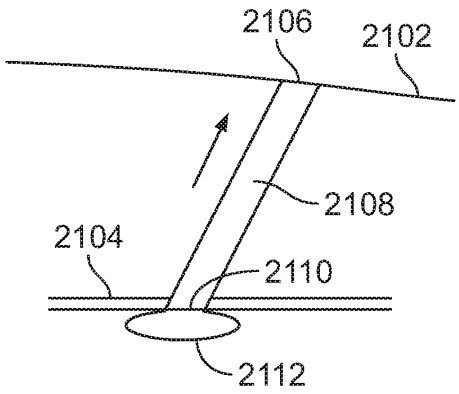

FIG. 21

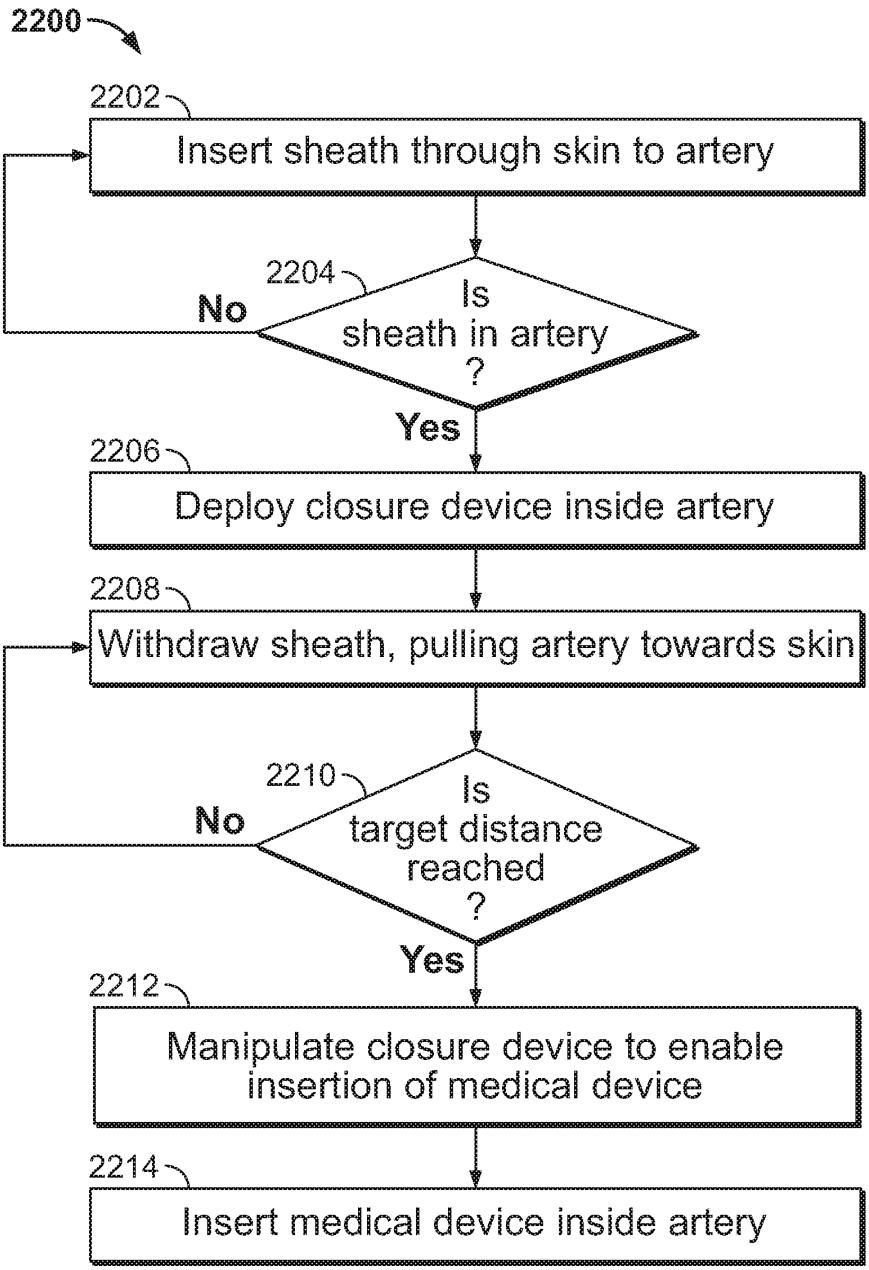
2200
2202
Insert sheath through skin to artery
2204
Is sheath in artery ?
No
Yes
2206
Deploy closure device inside artery
2208
Withdraw sheath, pulling artery towards skin
2210
Is target distance reached ?
No
Yes
2212
Manipulate closure device to enable insertion of medical device
2214
Insert medical device inside artery

FIG. 22

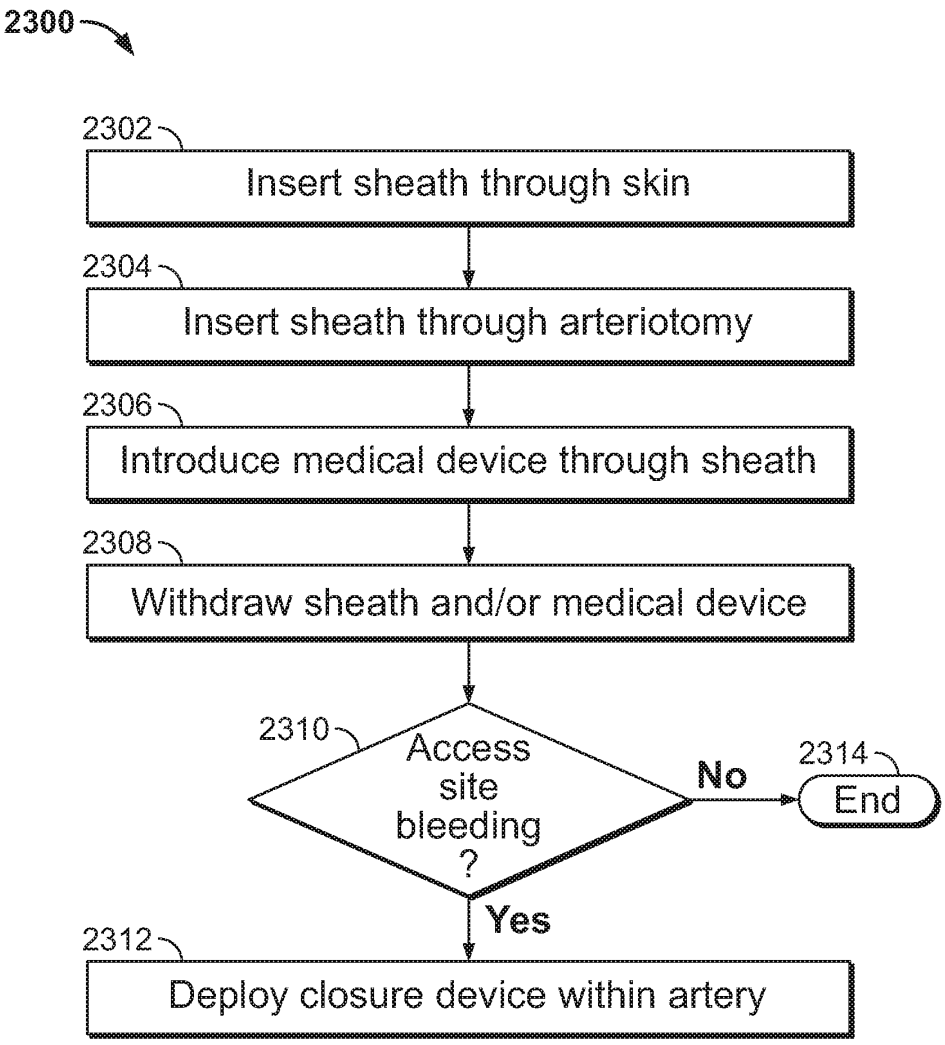
2300
2302
Insert sheath through skin
2304
Insert sheath through arteriotomy
2306
Introduce medical device through sheath
2308
Withdraw sheath and/or medical device
2310
Access site bleeding ?
No
2314
End
Yes
2312
Deploy closure device within artery

FIG. 23

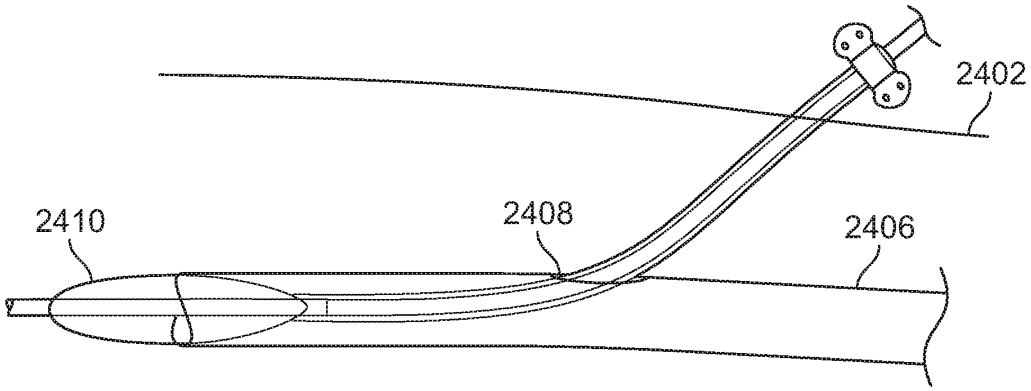

FIG. 24

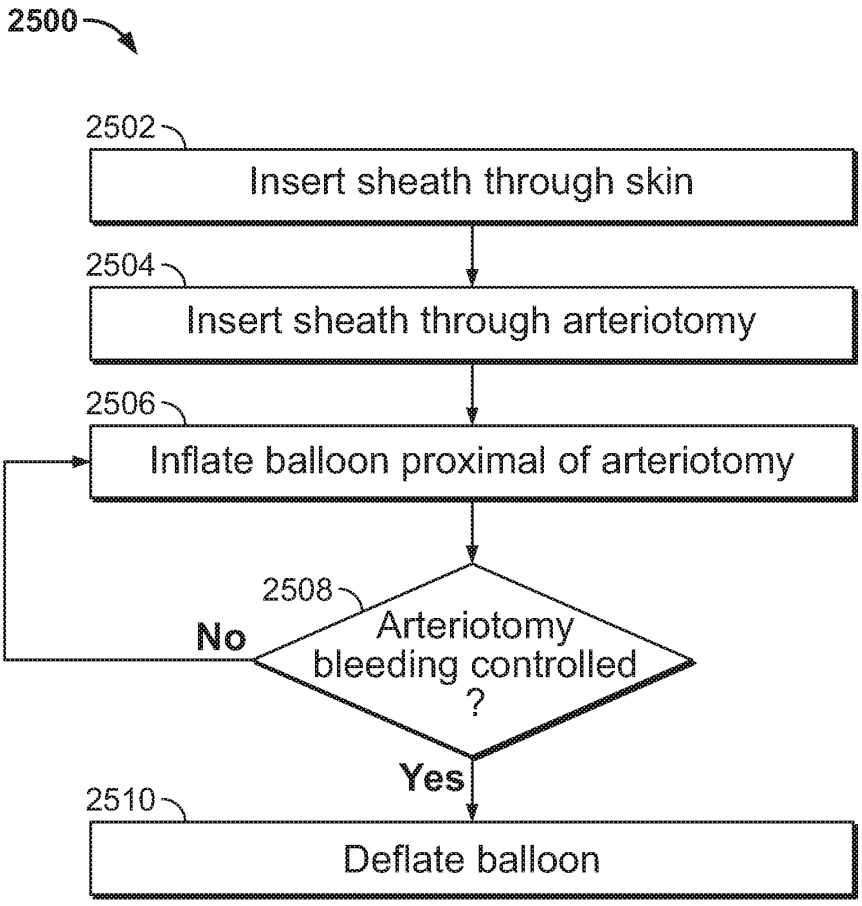
2500
2502
Insert sheath through skin
2504
Insert sheath through arteriotomy
2506
Inflate balloon proximal of arteriotomy
2508
Arteriotomy bleeding controlled ?
No
Yes
2510
Deflate balloon

FIG. 25

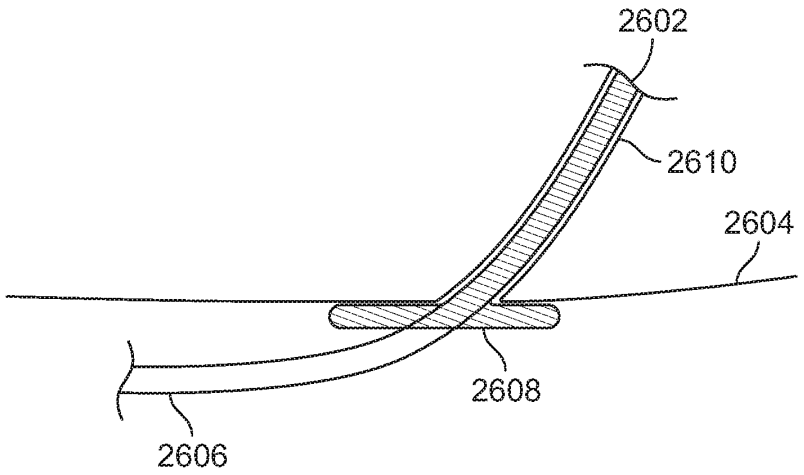

FIG. 26

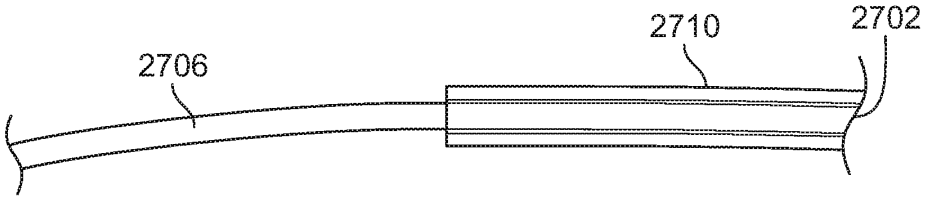

FIG. 27A

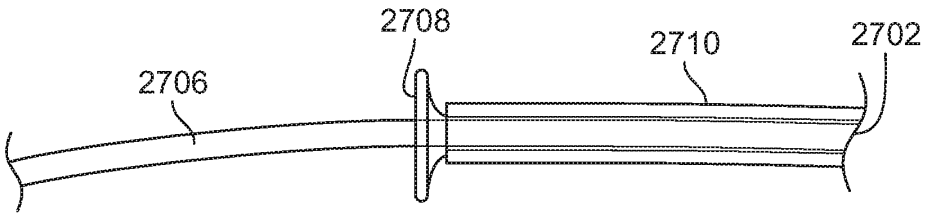

FIG. 27B

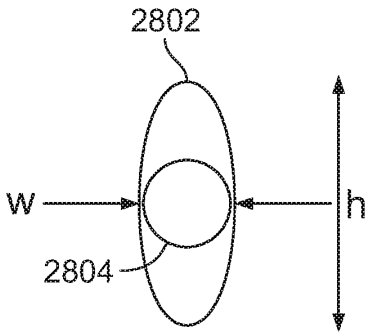

FIG. 28A

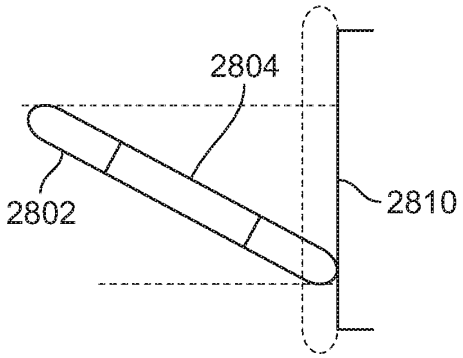

FIG. 28B