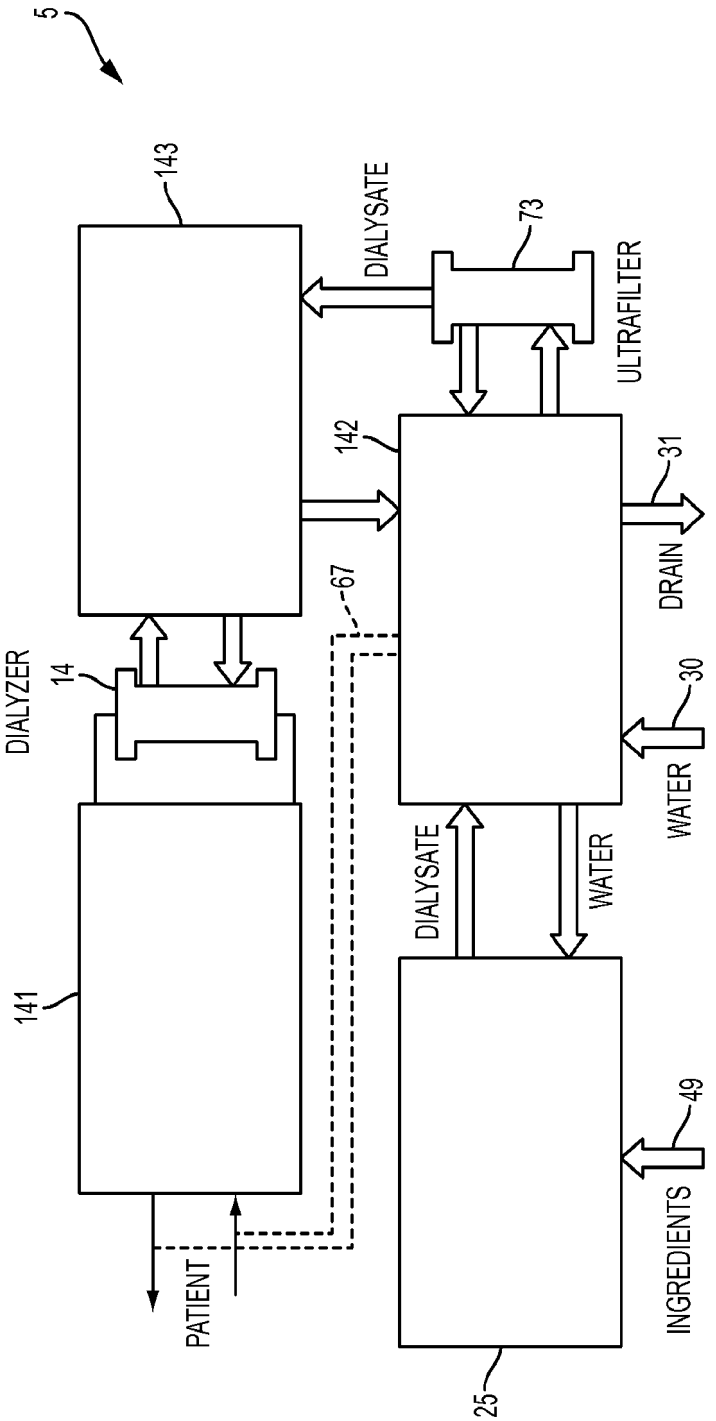

5
143
DIALYSATE
73
ULTRAFILTER
142
31
DRAIN
67
DIALYZER
14
30
WATER
DIALYSATE
WATER
141
49
INGREDIENTS
PATIENT
25

FIG. 1

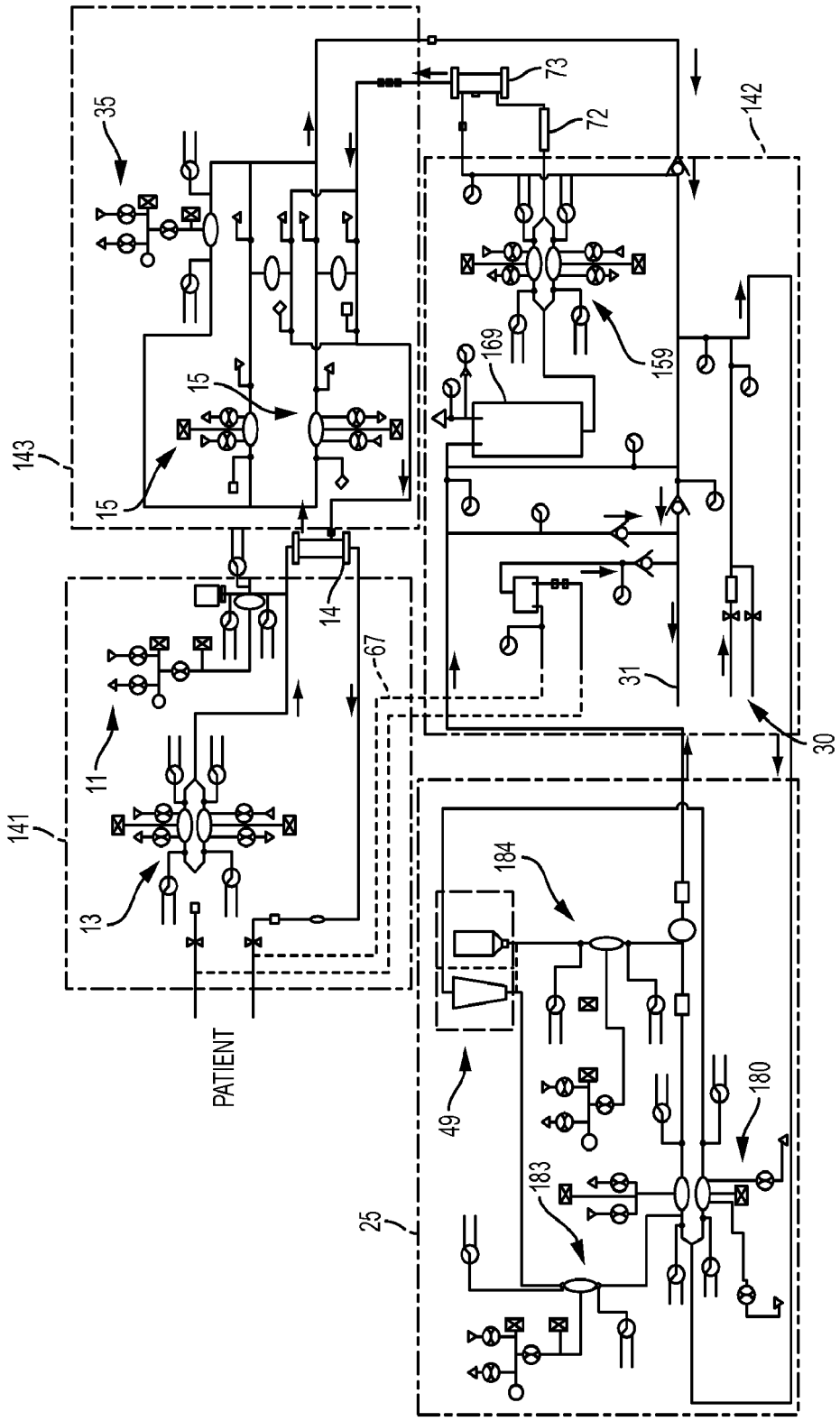

35
73
72
142
169
159
15
143
15
14
67
31
30
11
141
13
PATIENT
184
49
180
183
25

FIG. 2

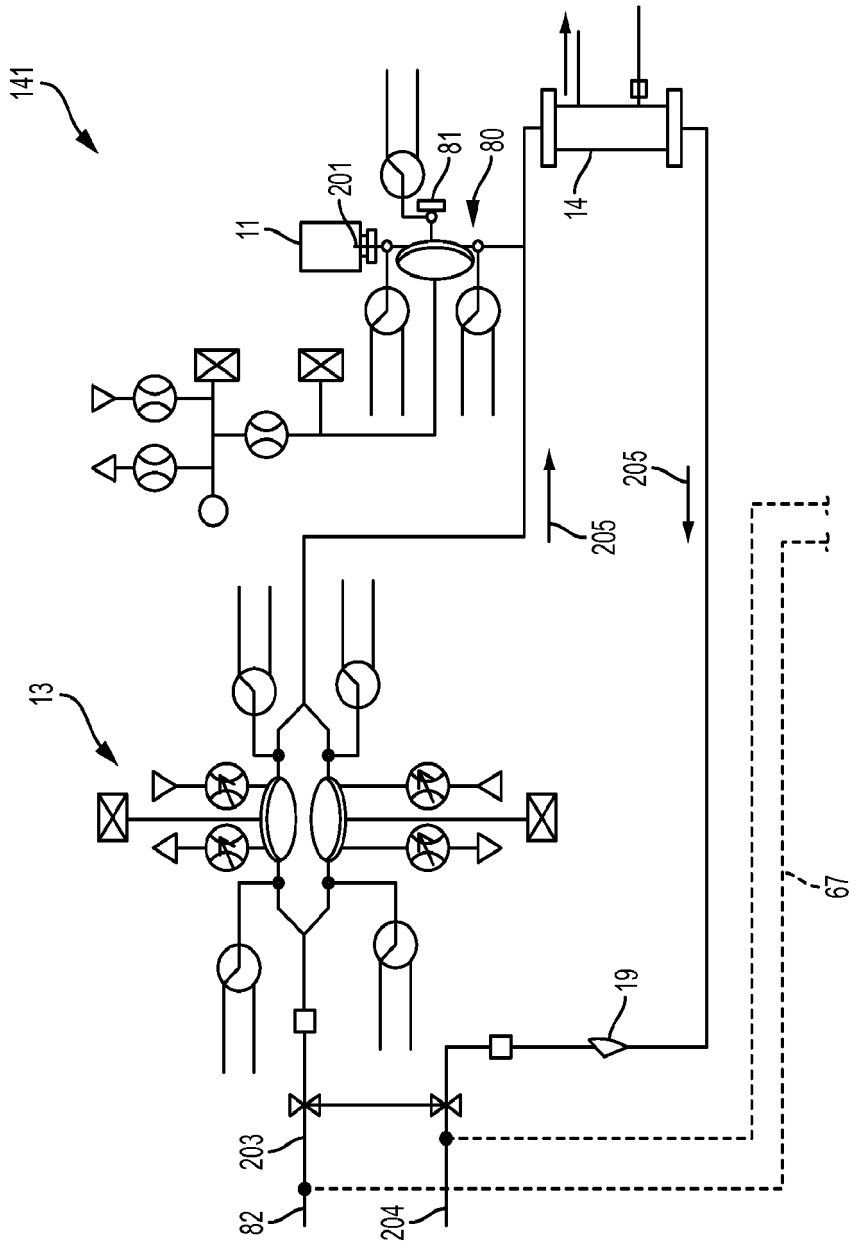


FIG. 3

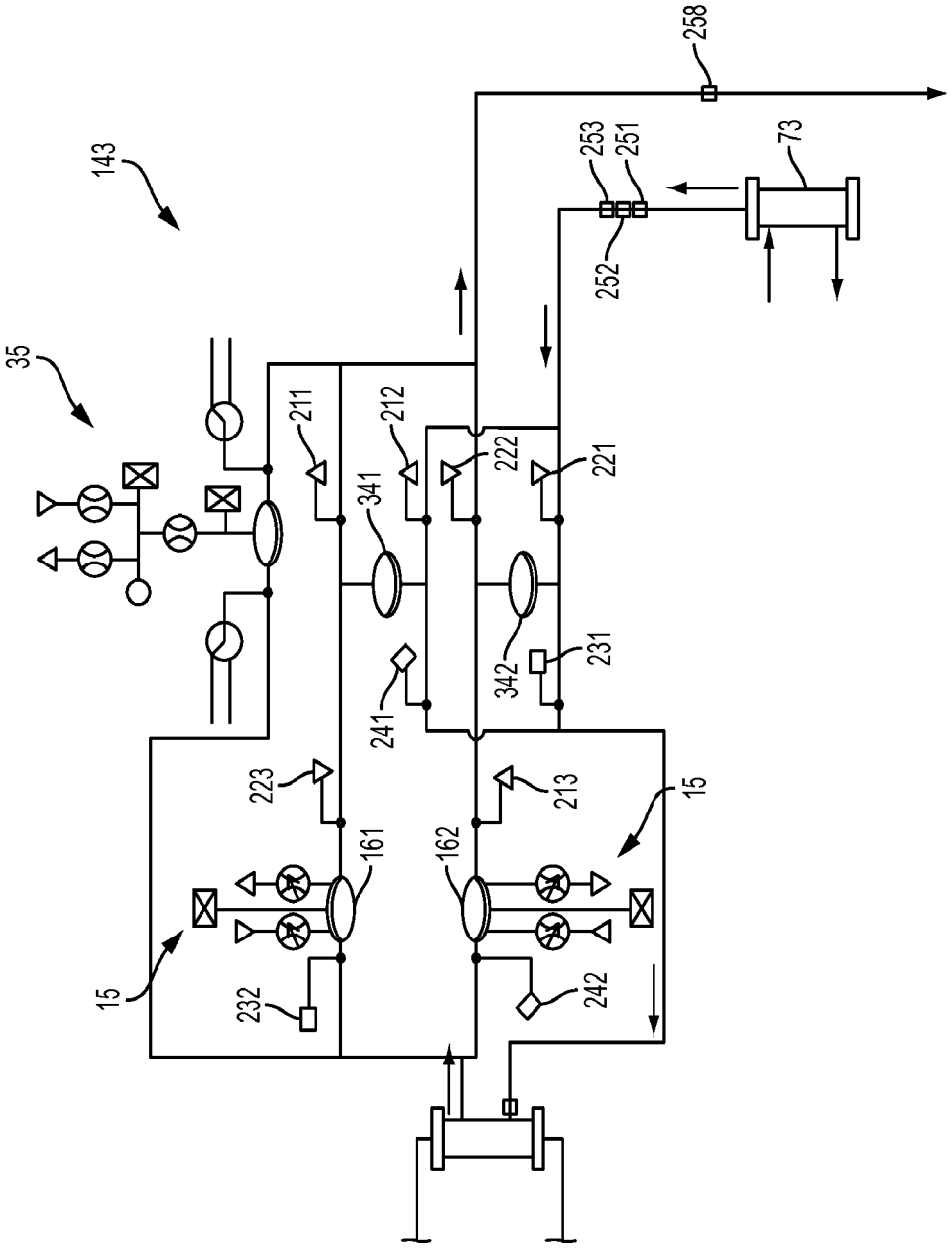

258
253
251
73
143
252
35
211
212
222
221
341
231
342
241
223
213
15
161
162
15
232
242

FIG. 4

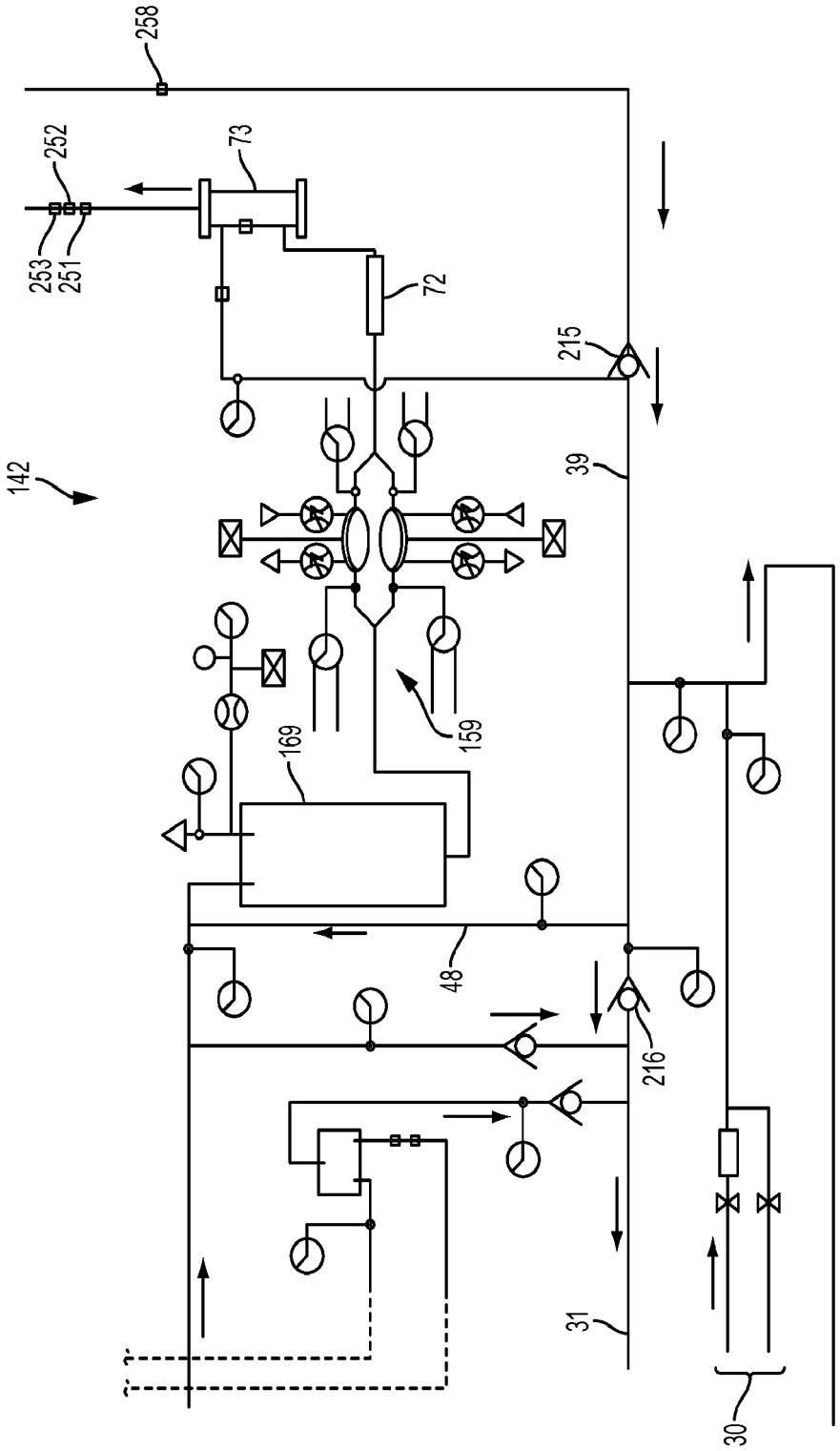


FIG. 5

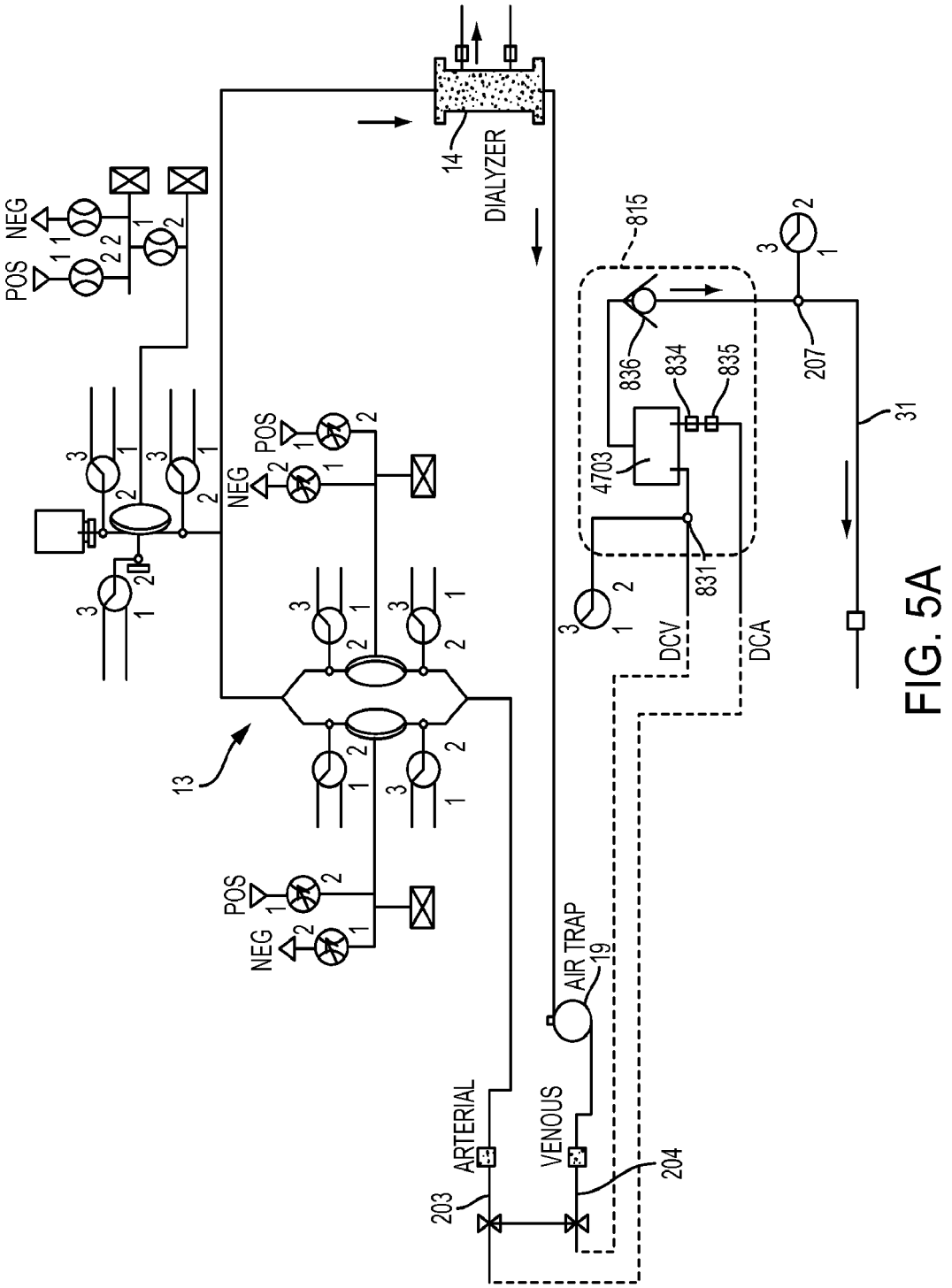

DIALYZER
14
815
POS
NEG
836
834
835
207
31
4703
831
DCV
DCA
13
AIR TRAP
19
ARTERIAL
VENOUS
203
204

FIG. 5A

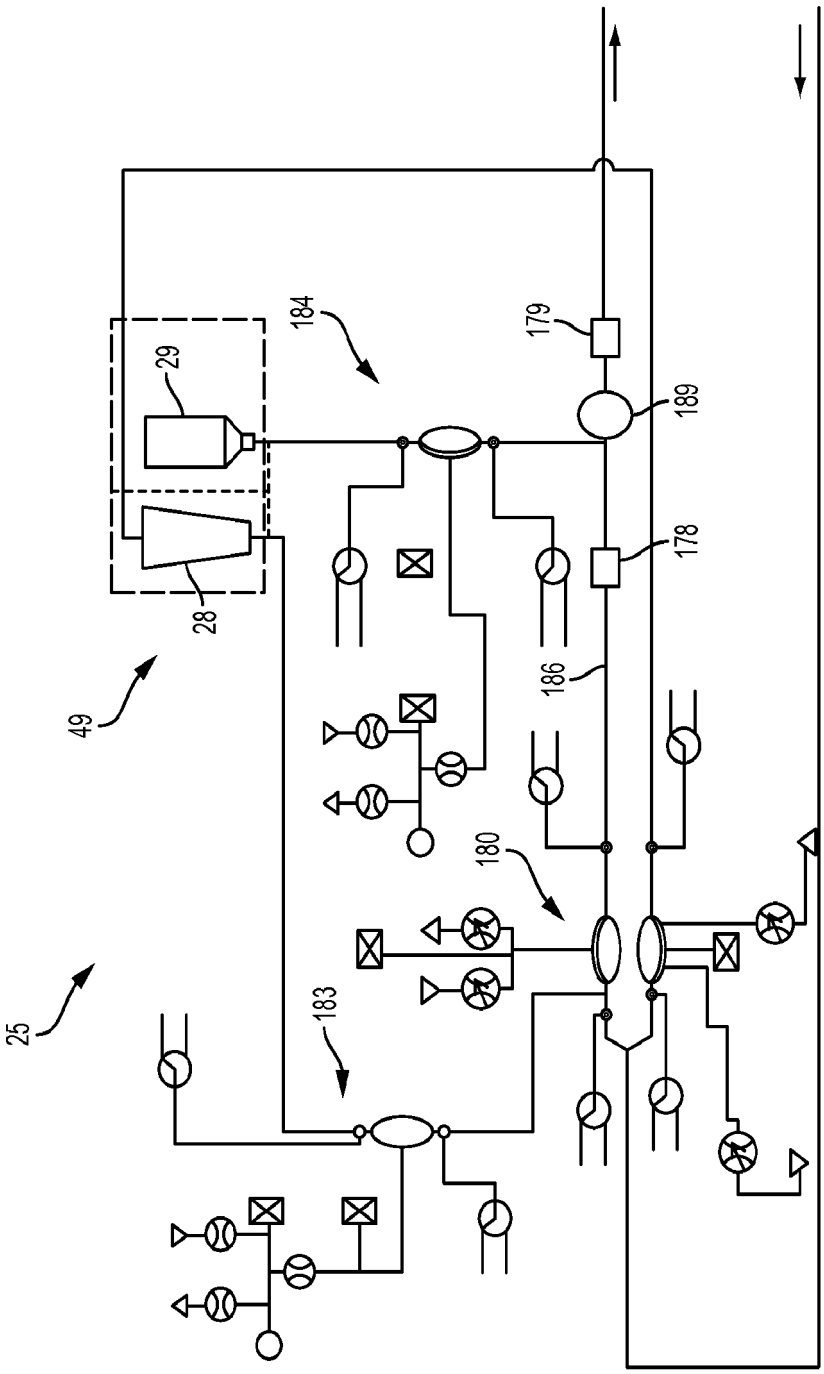


FIG. 6

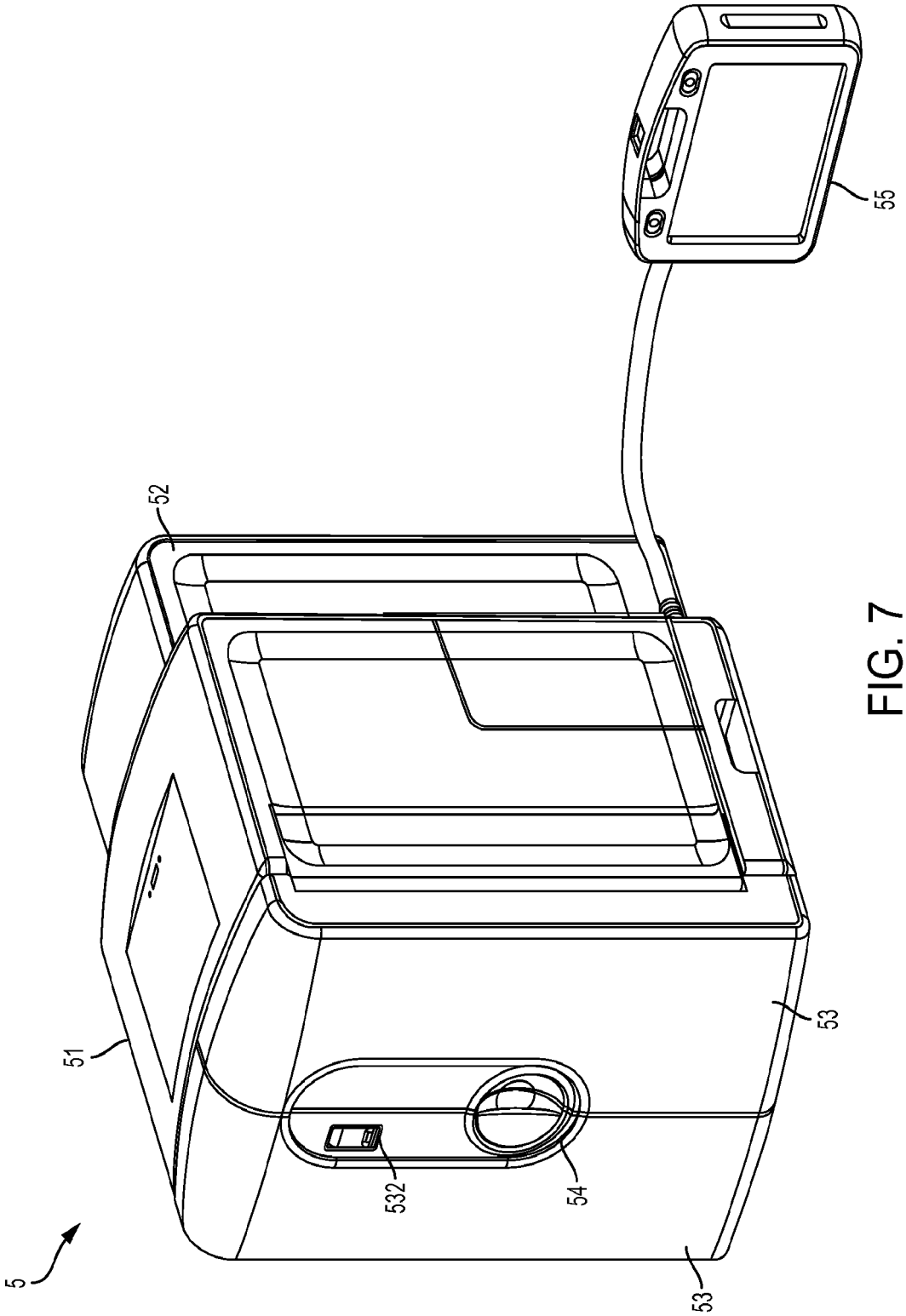


FIG. 7

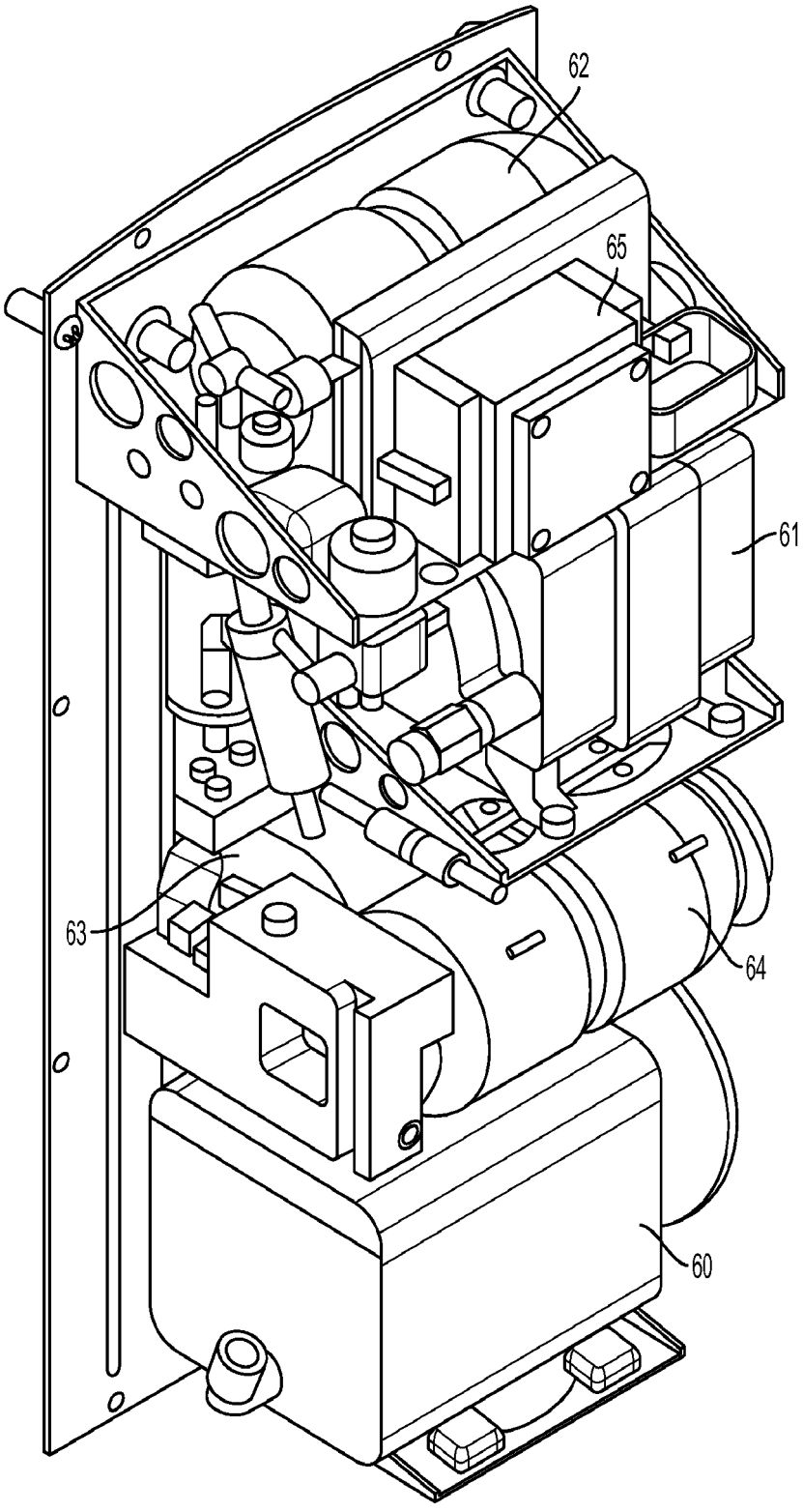


FIG. 7a

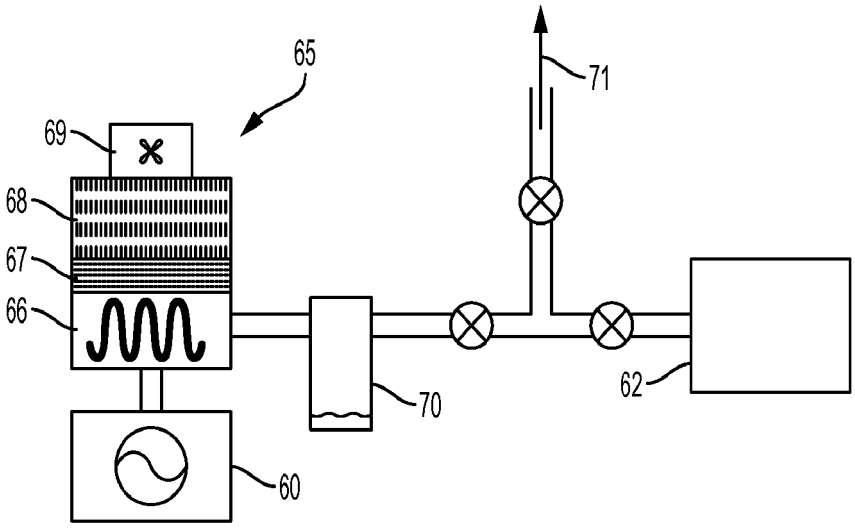


FIG. 7b

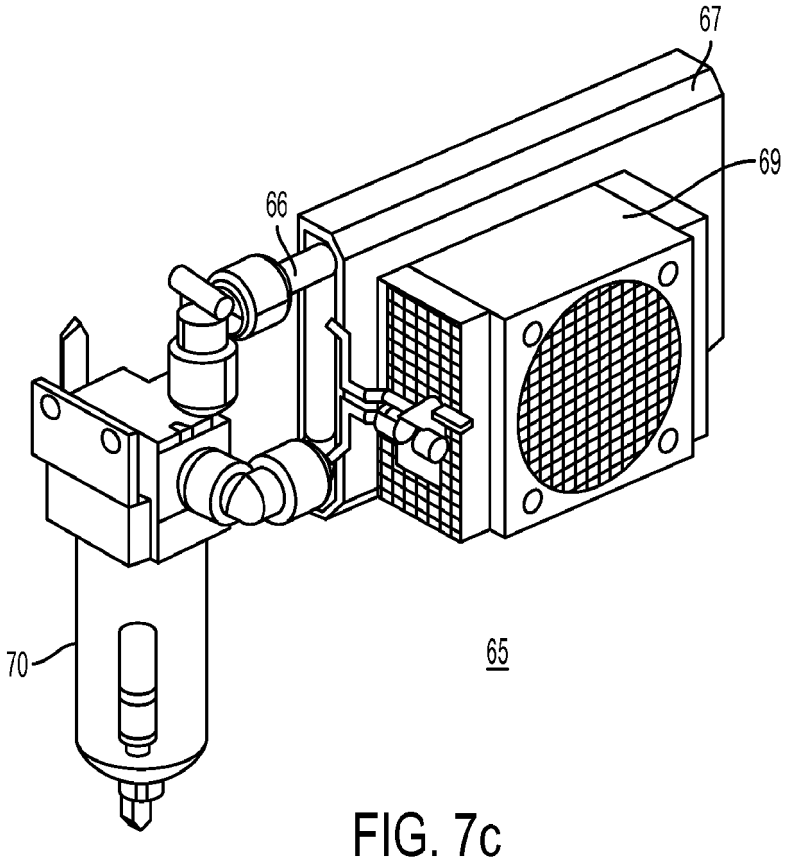


FIG. 7c

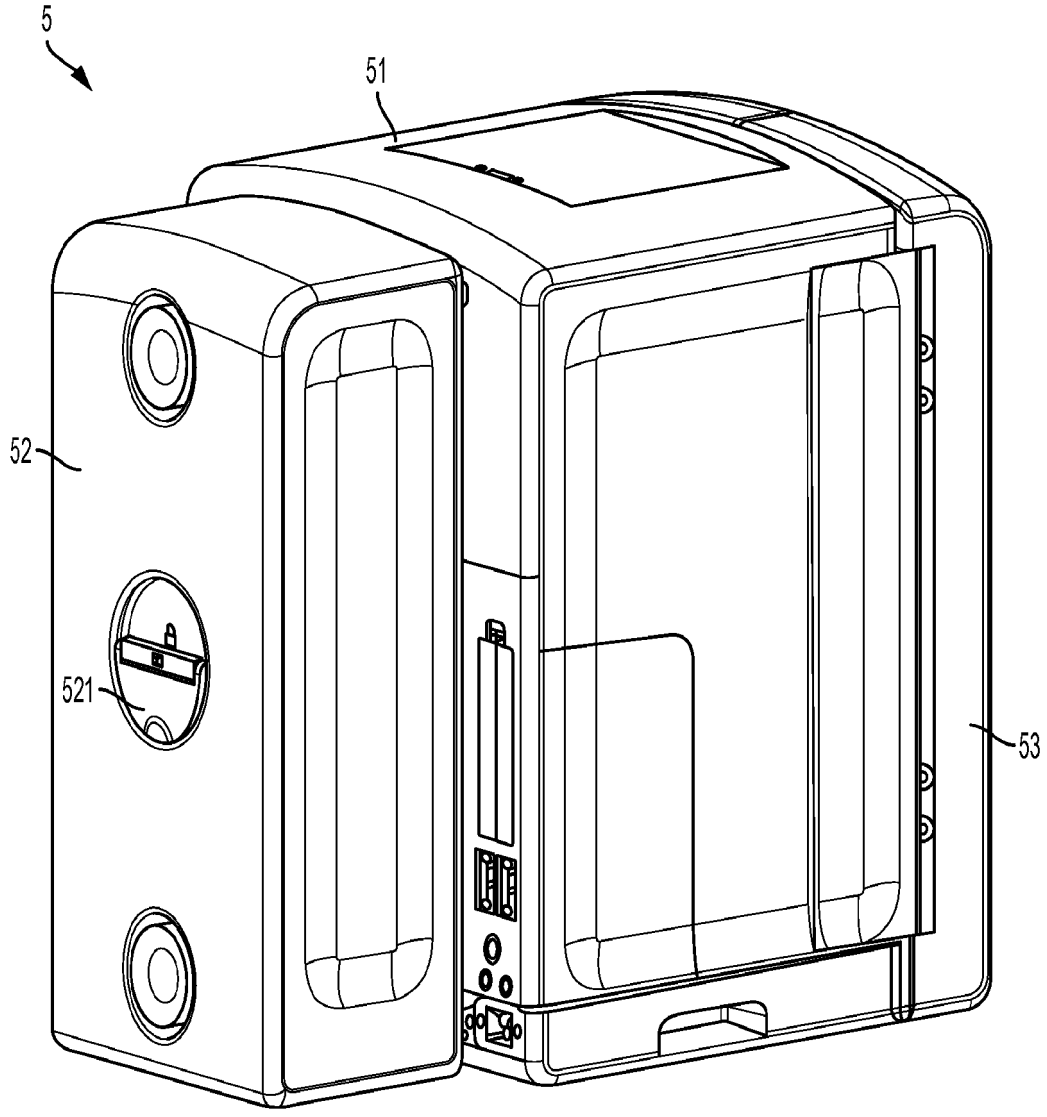


FIG. 8

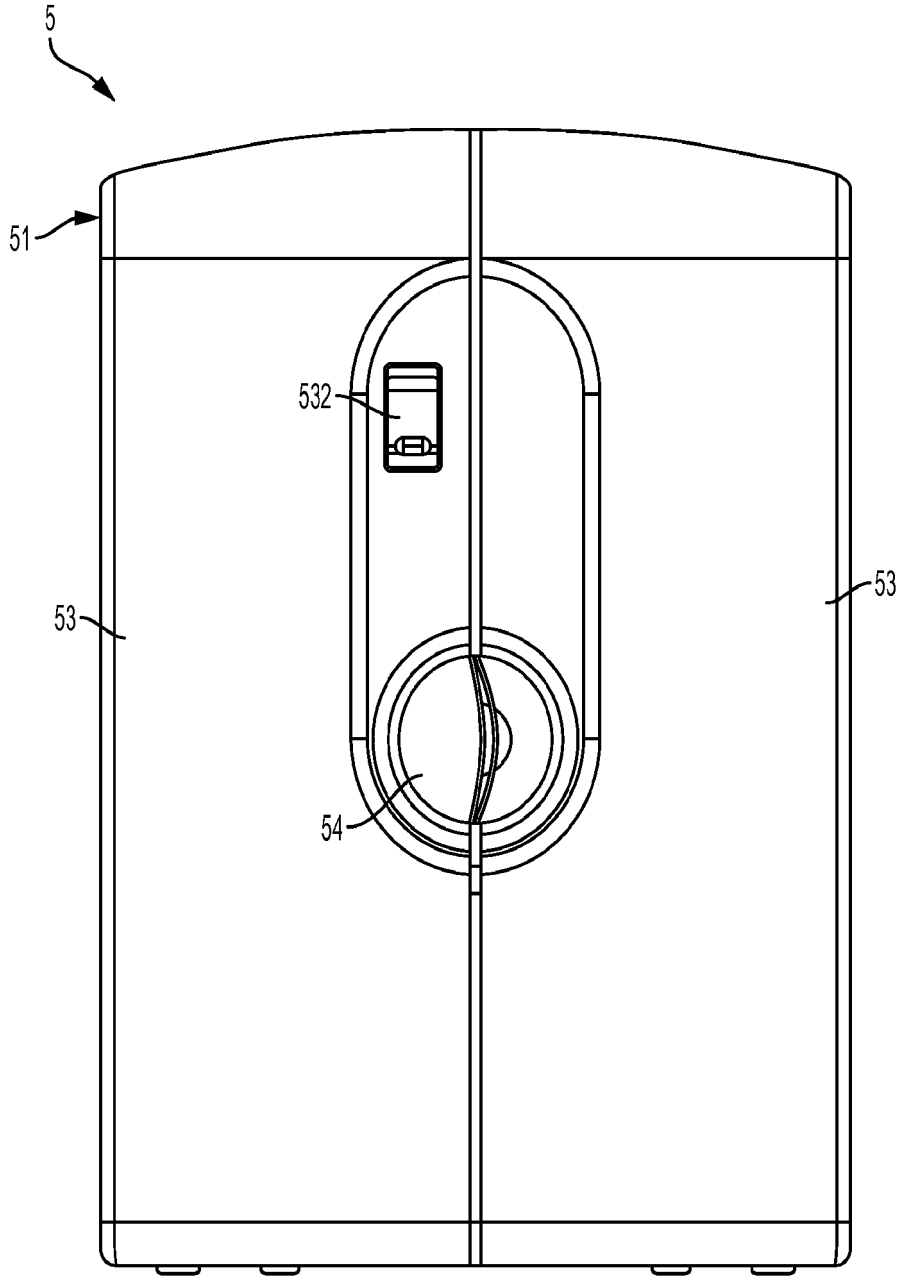


FIG. 9

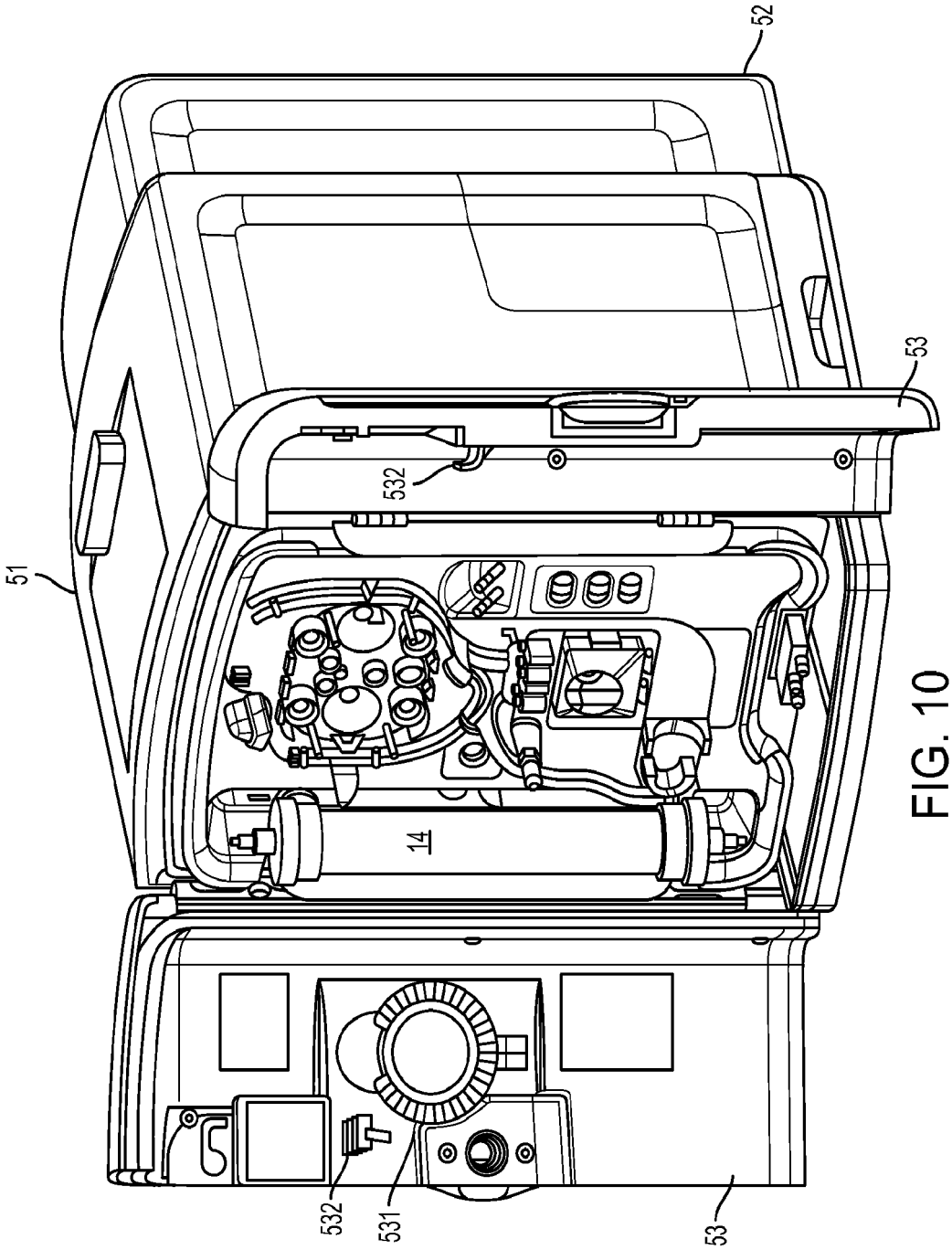


FIG. 10

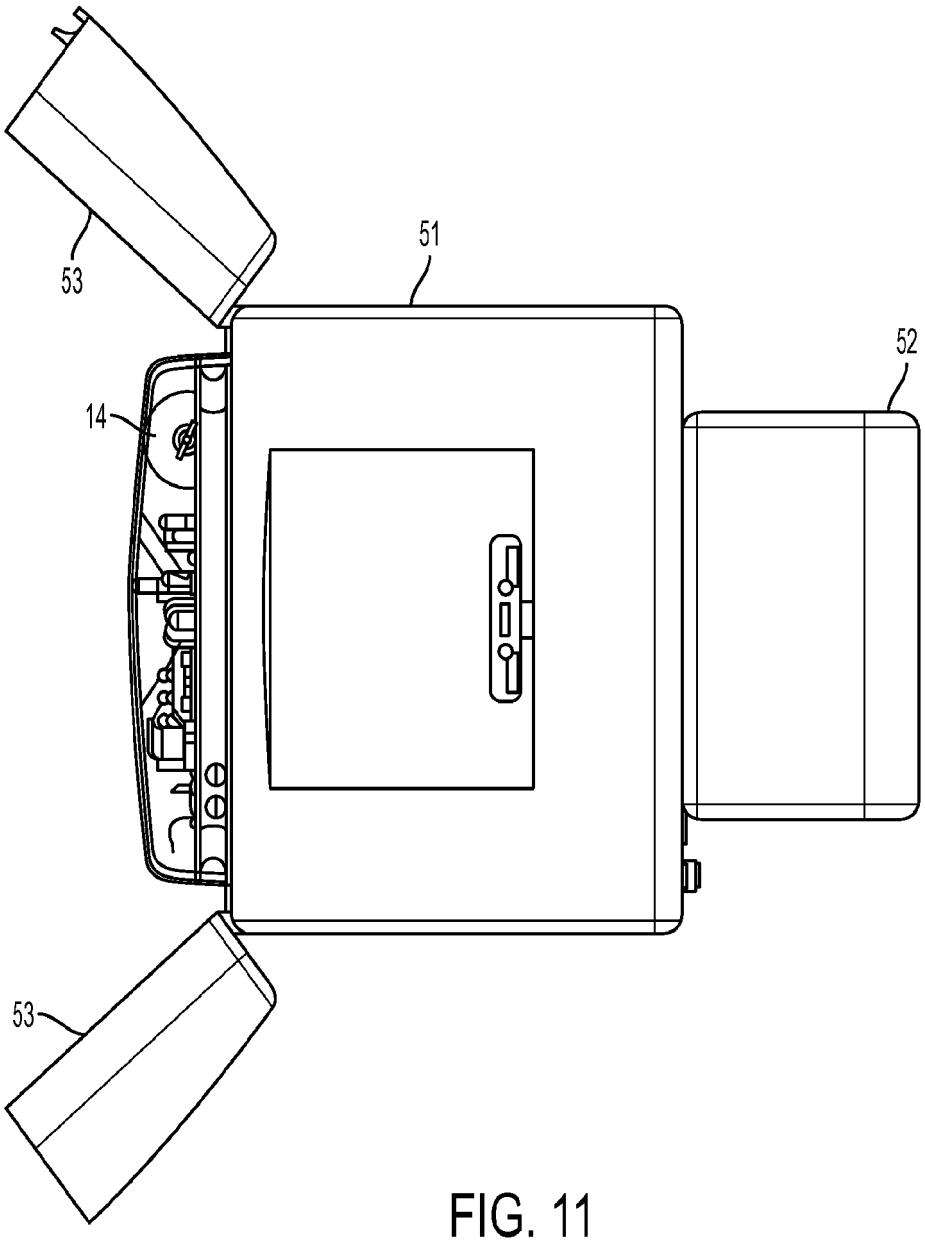


FIG. 11

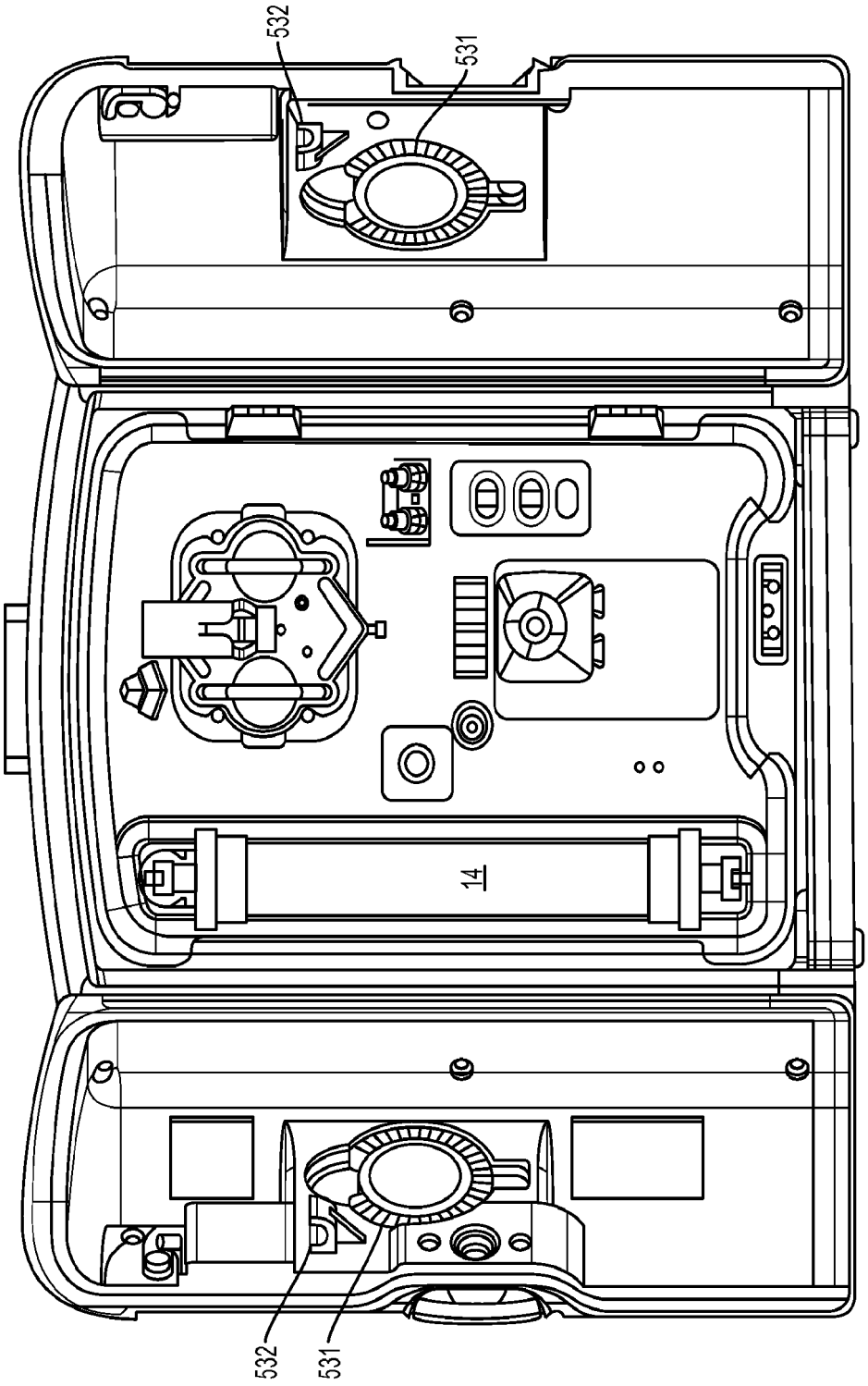


FIG. 12

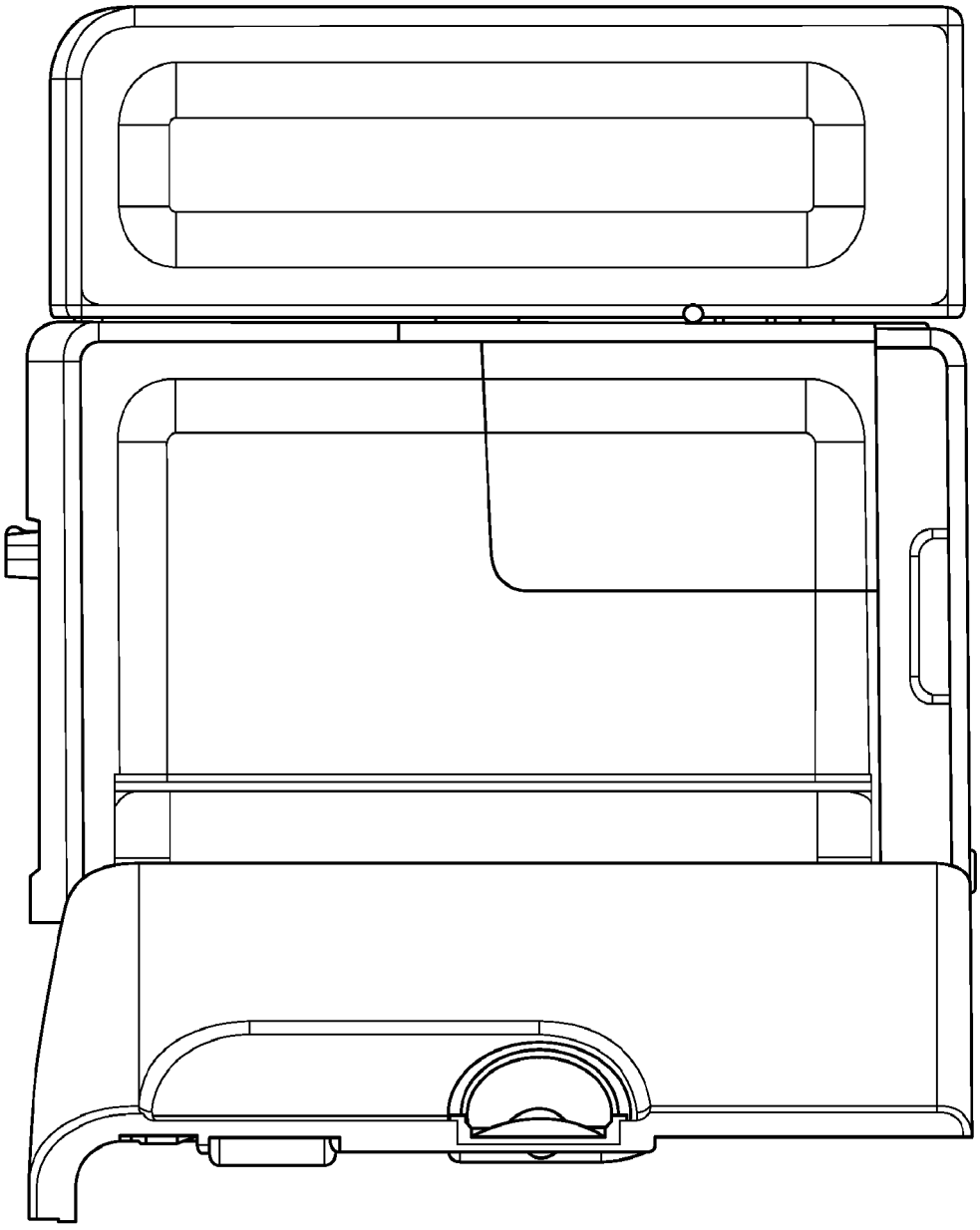


FIG. 13

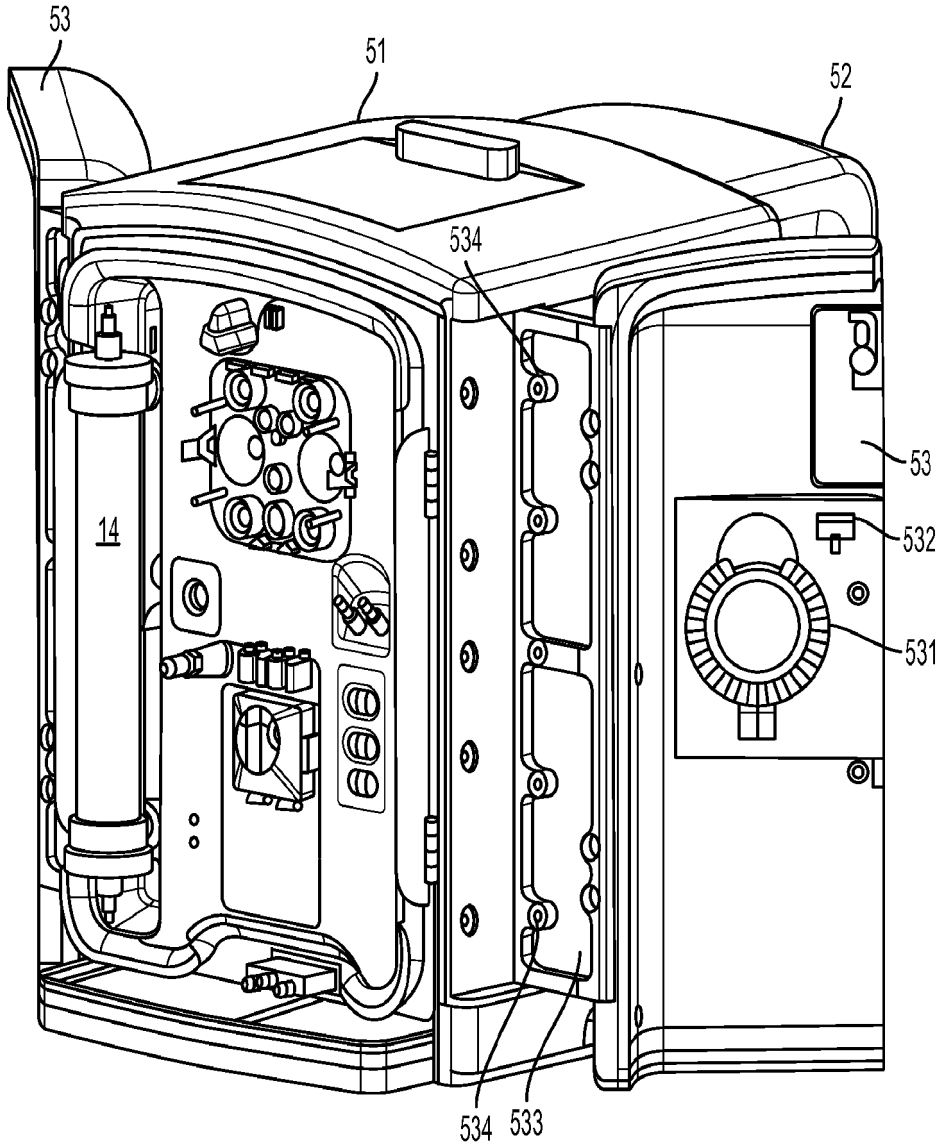


FIG. 14

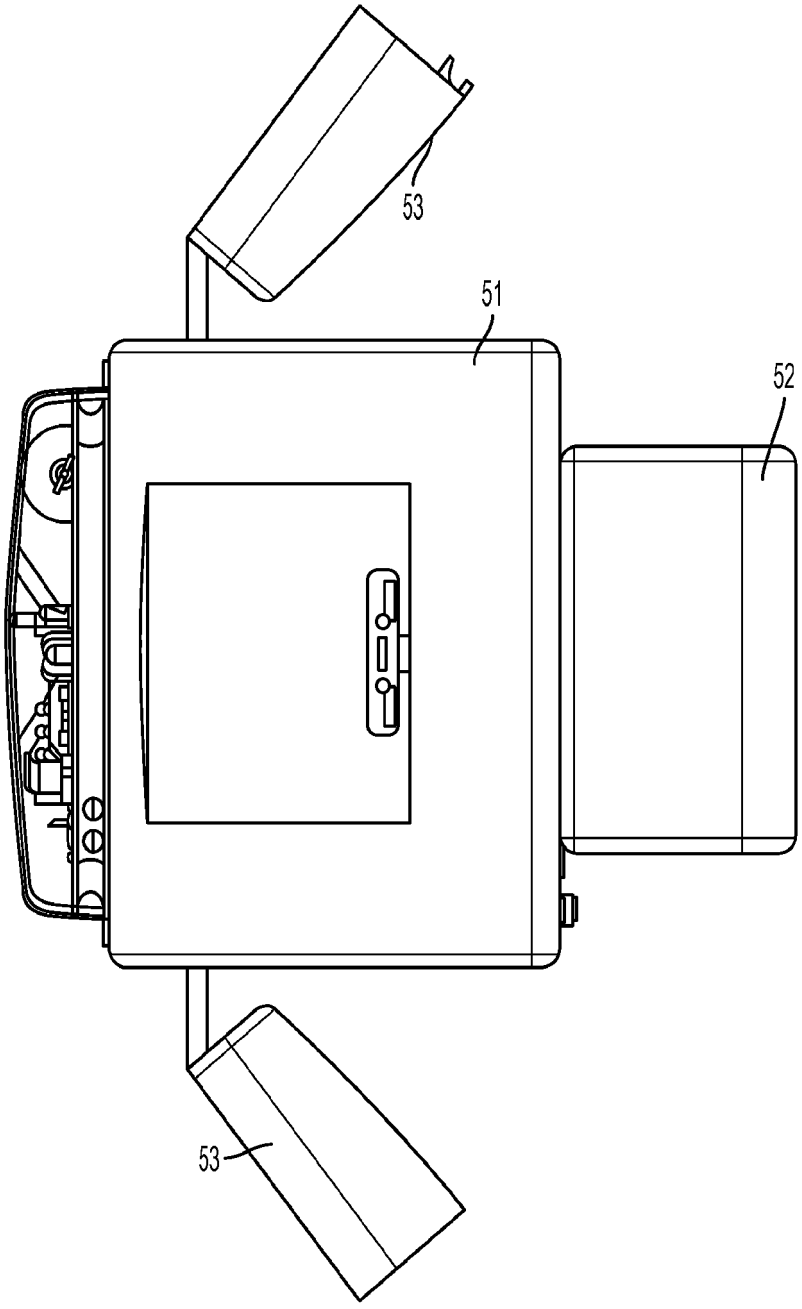


FIG. 15

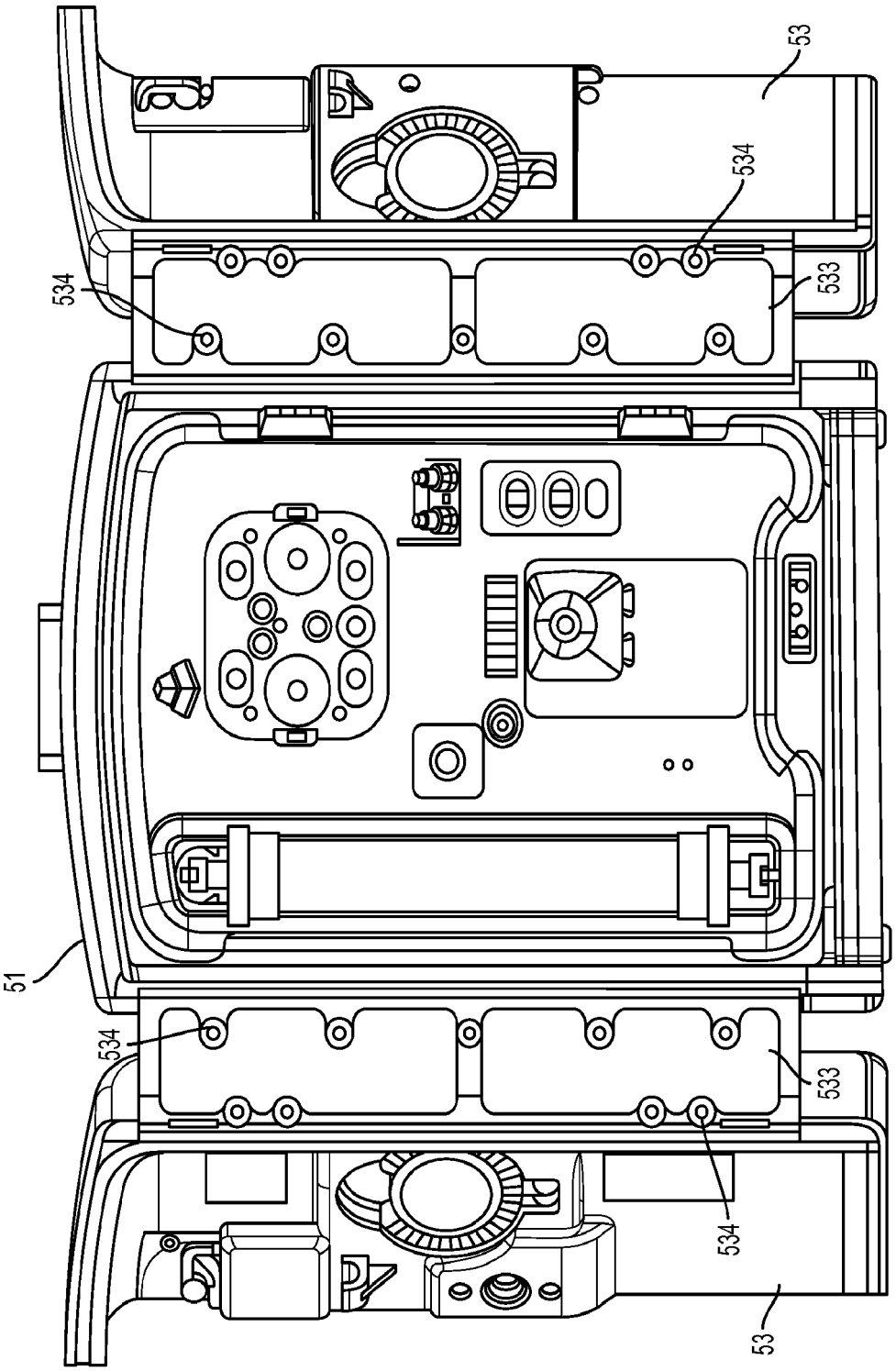


FIG. 16

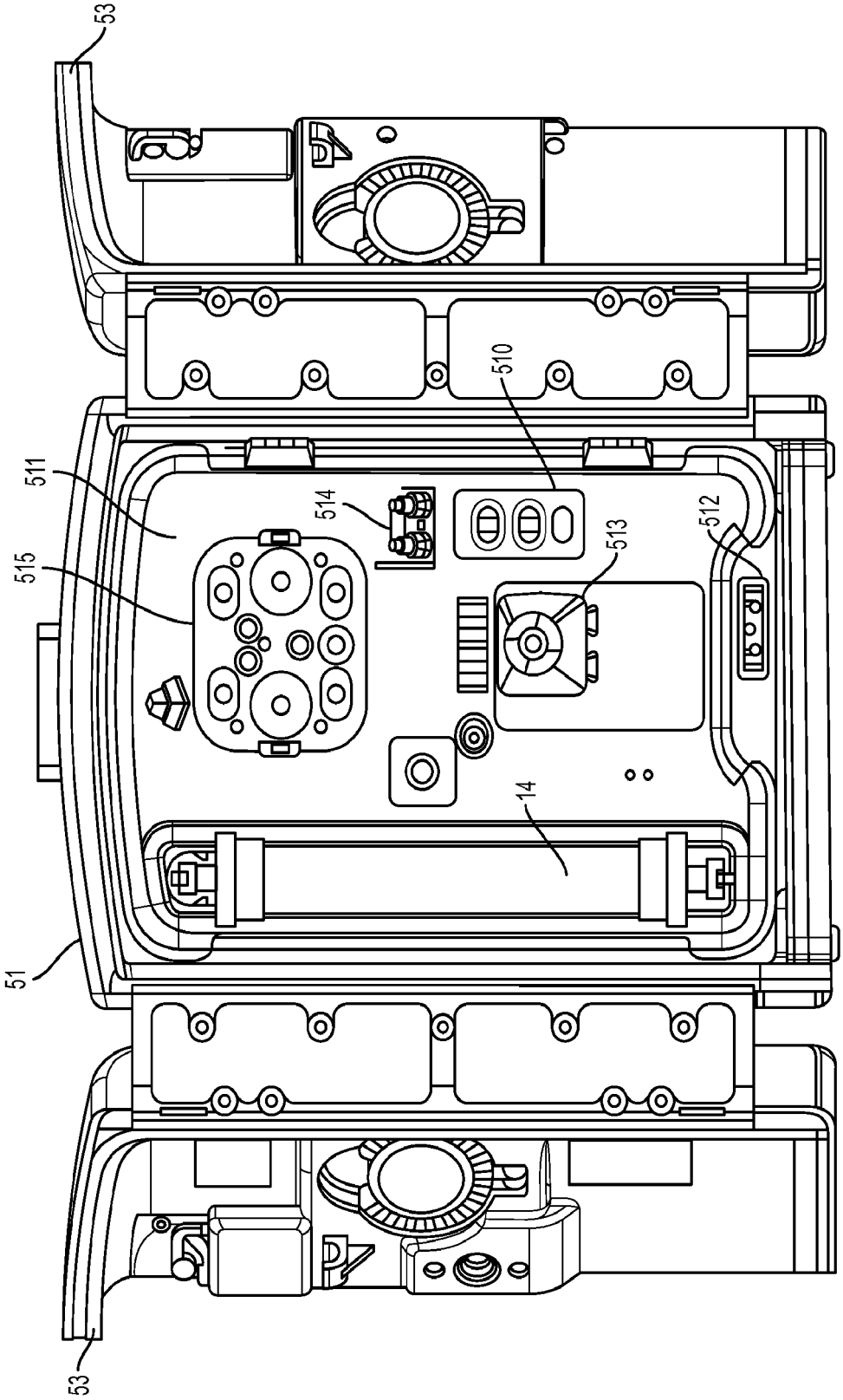


FIG. 17

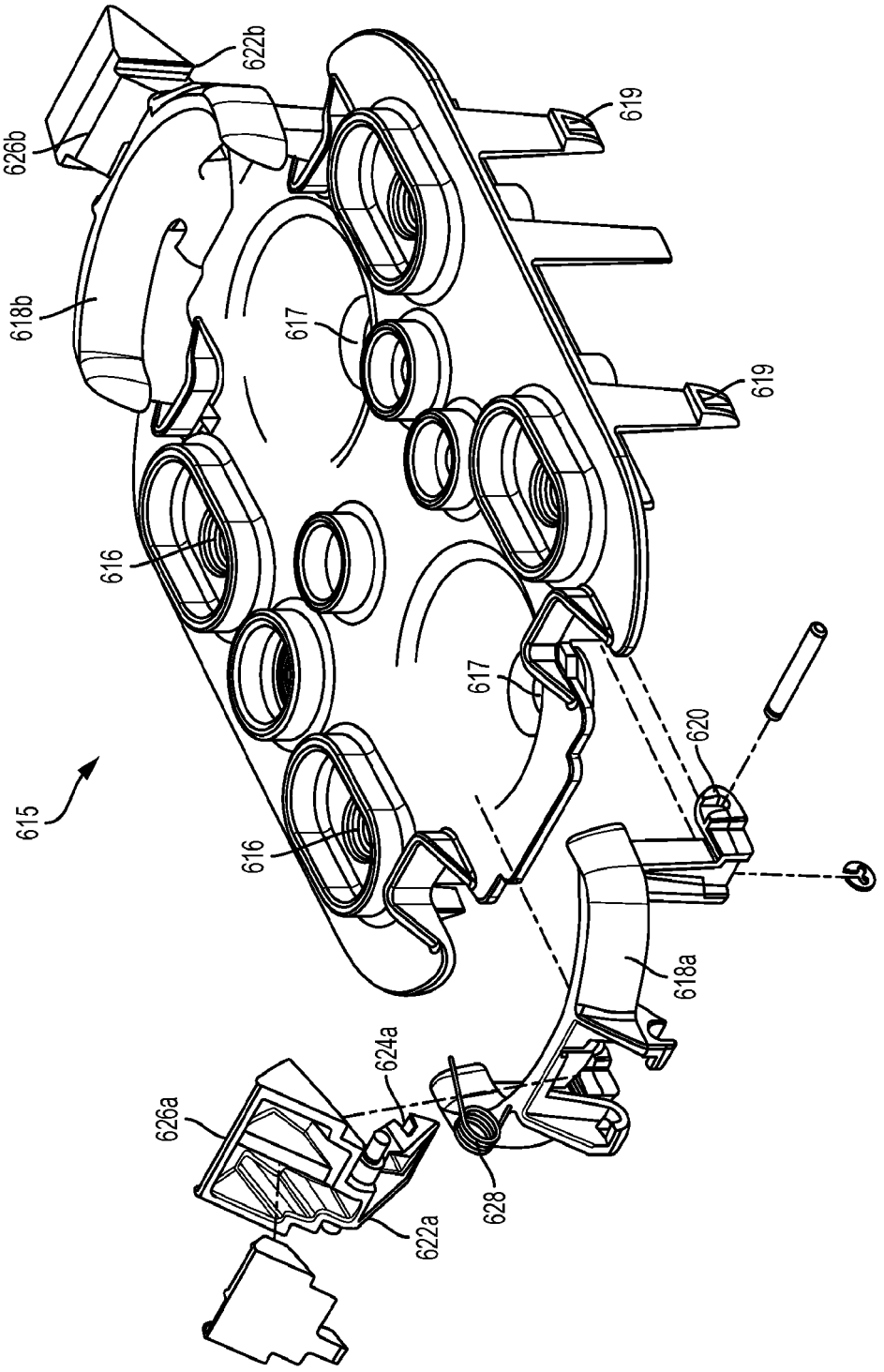

622b
626b
619
618b
617
619
616
617
620
615
616
618a
624a
626a
628
622a

FIG. 17a

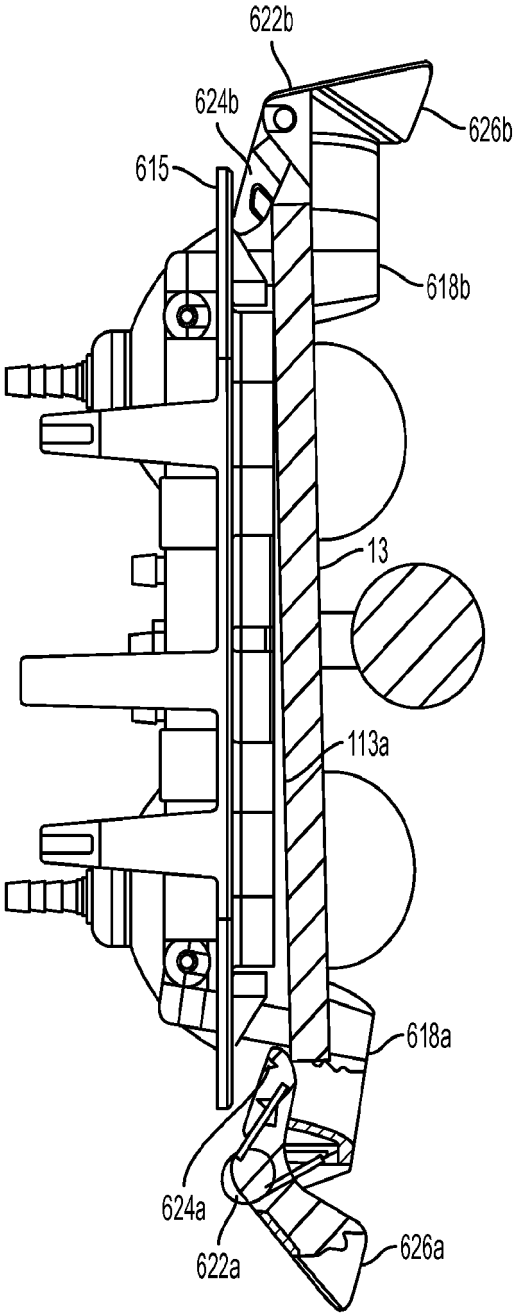


FIG. 17b

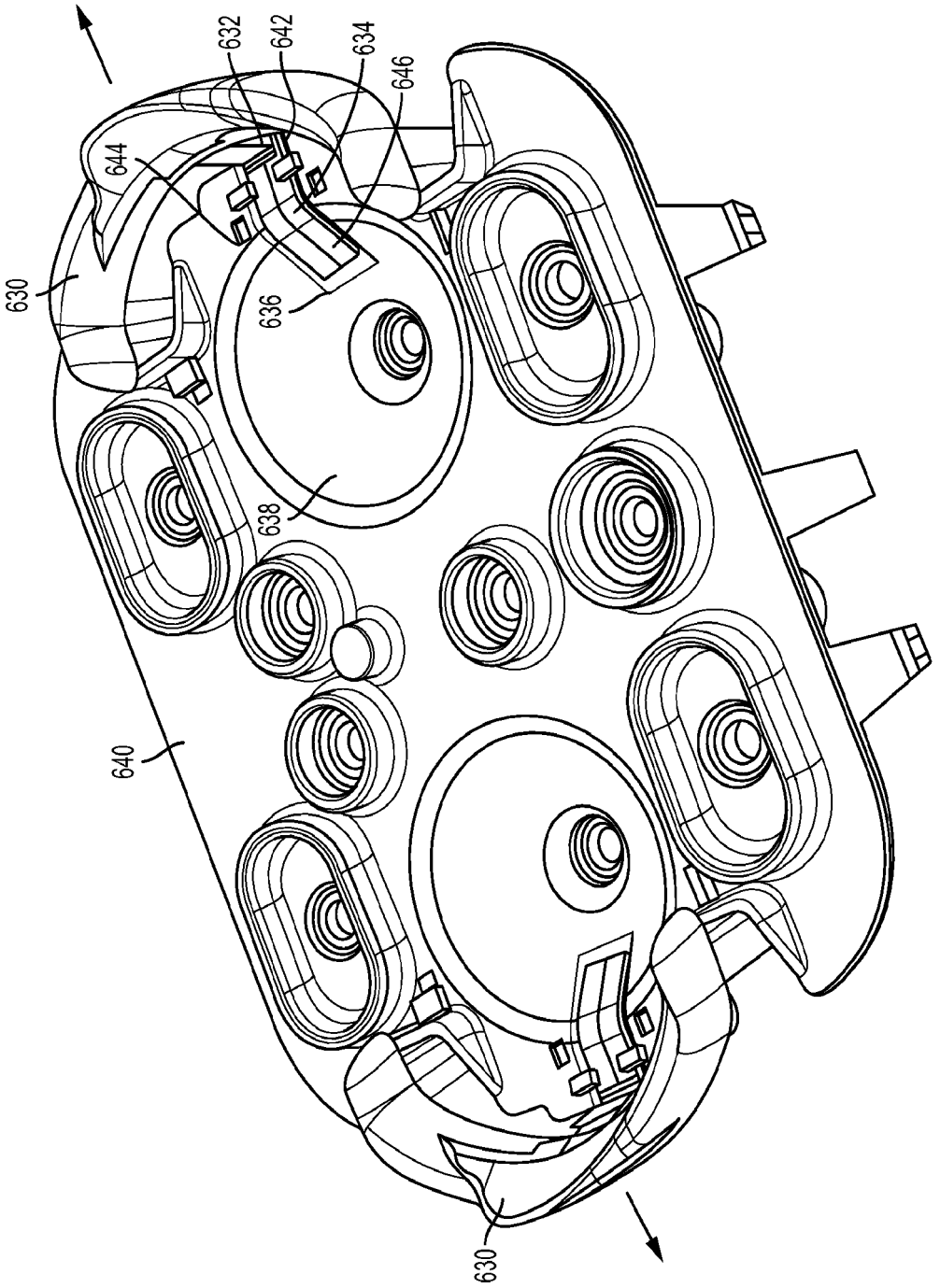


FIG. 17c

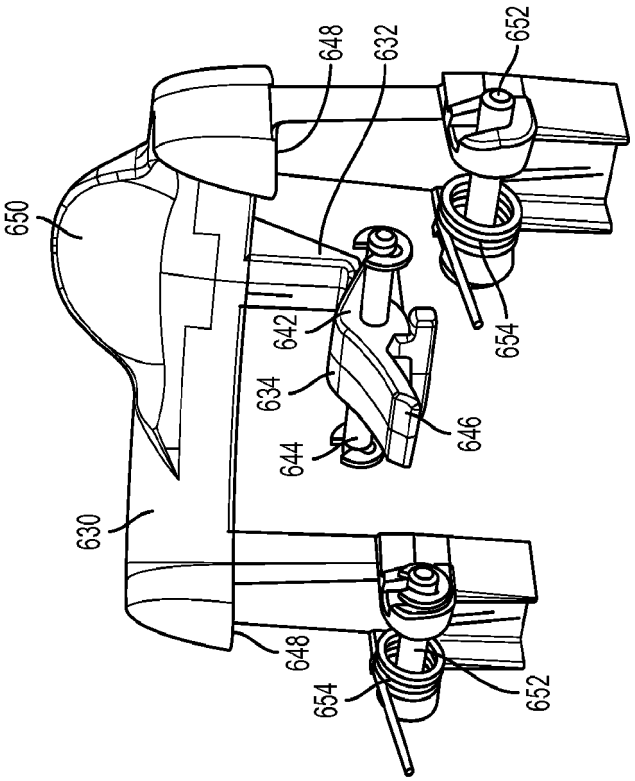


FIG. 17E

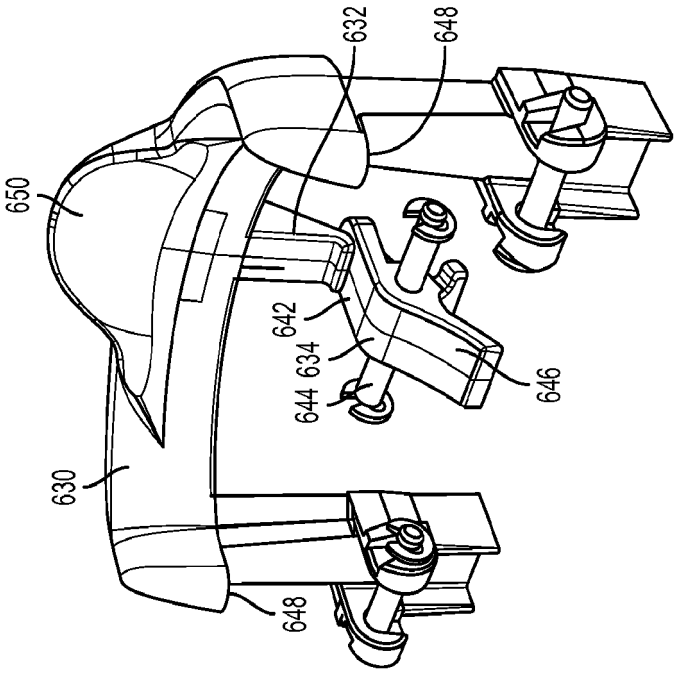


FIG. 17D

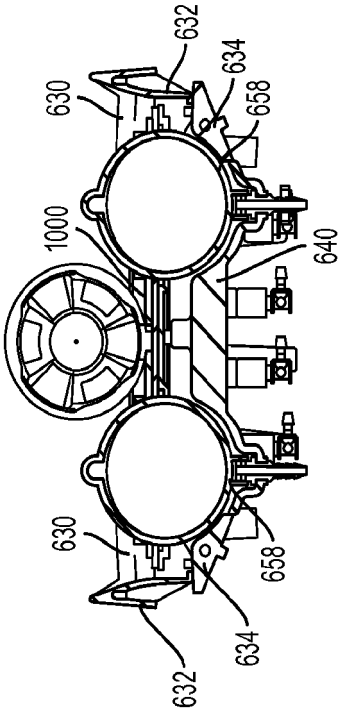


FIG. 17G

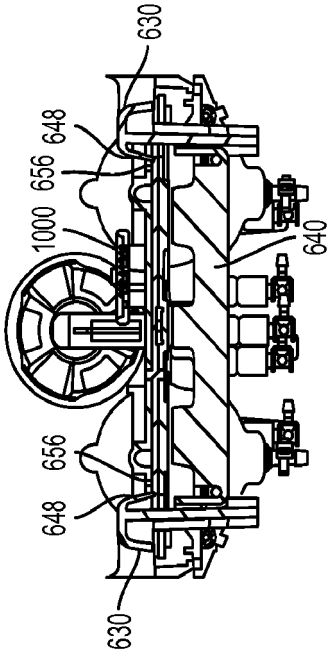


FIG. 17H

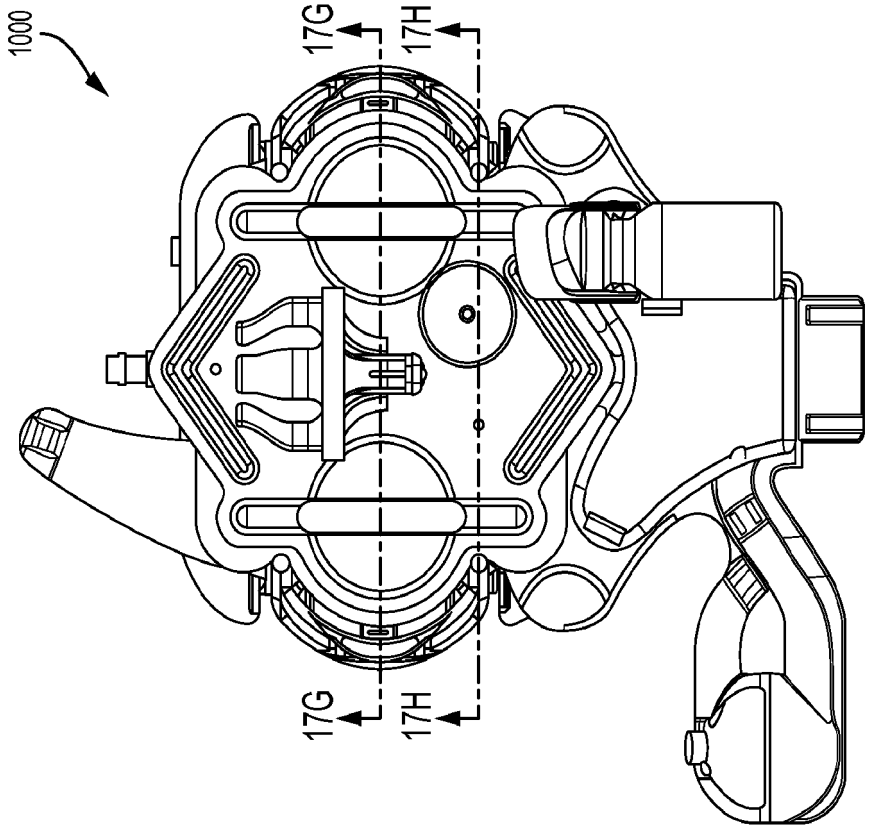


FIG. 17F

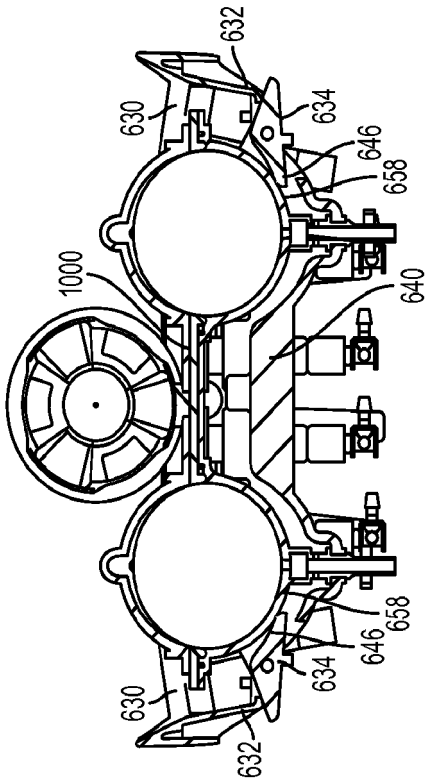


FIG. 17J

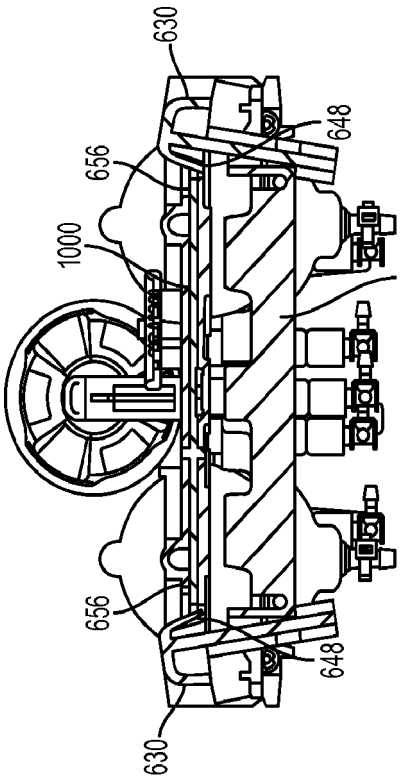


FIG. 17K

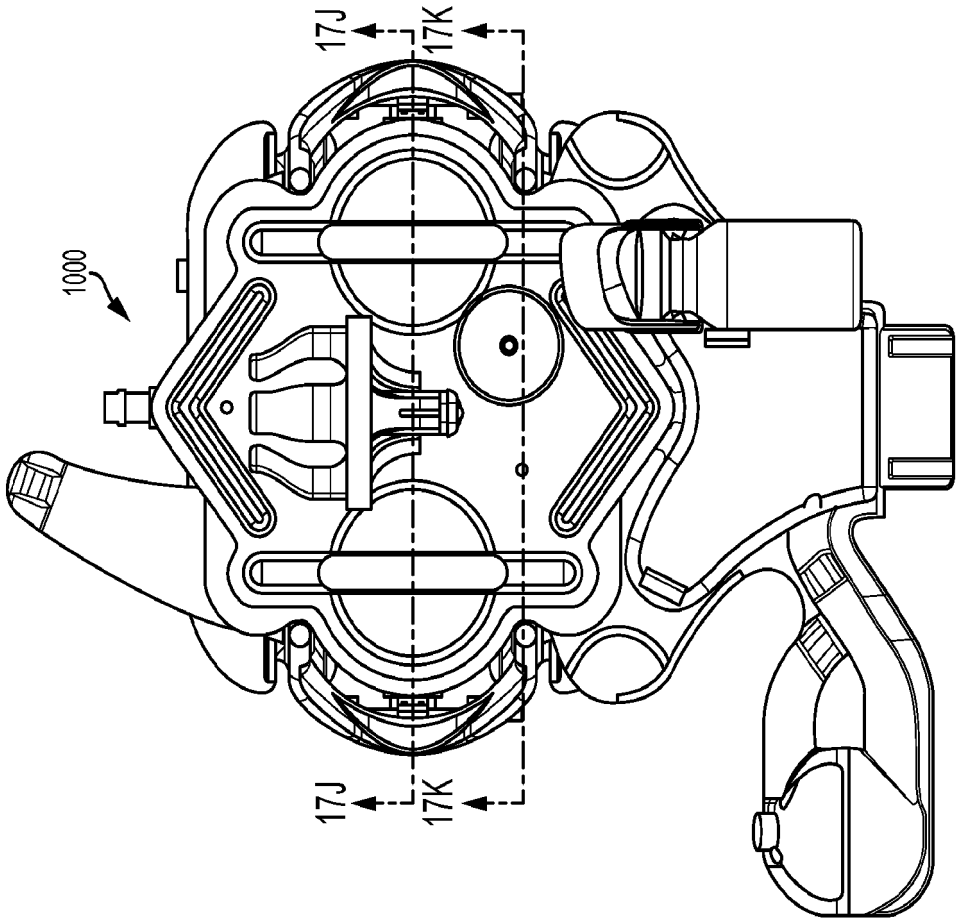


FIG. 17I

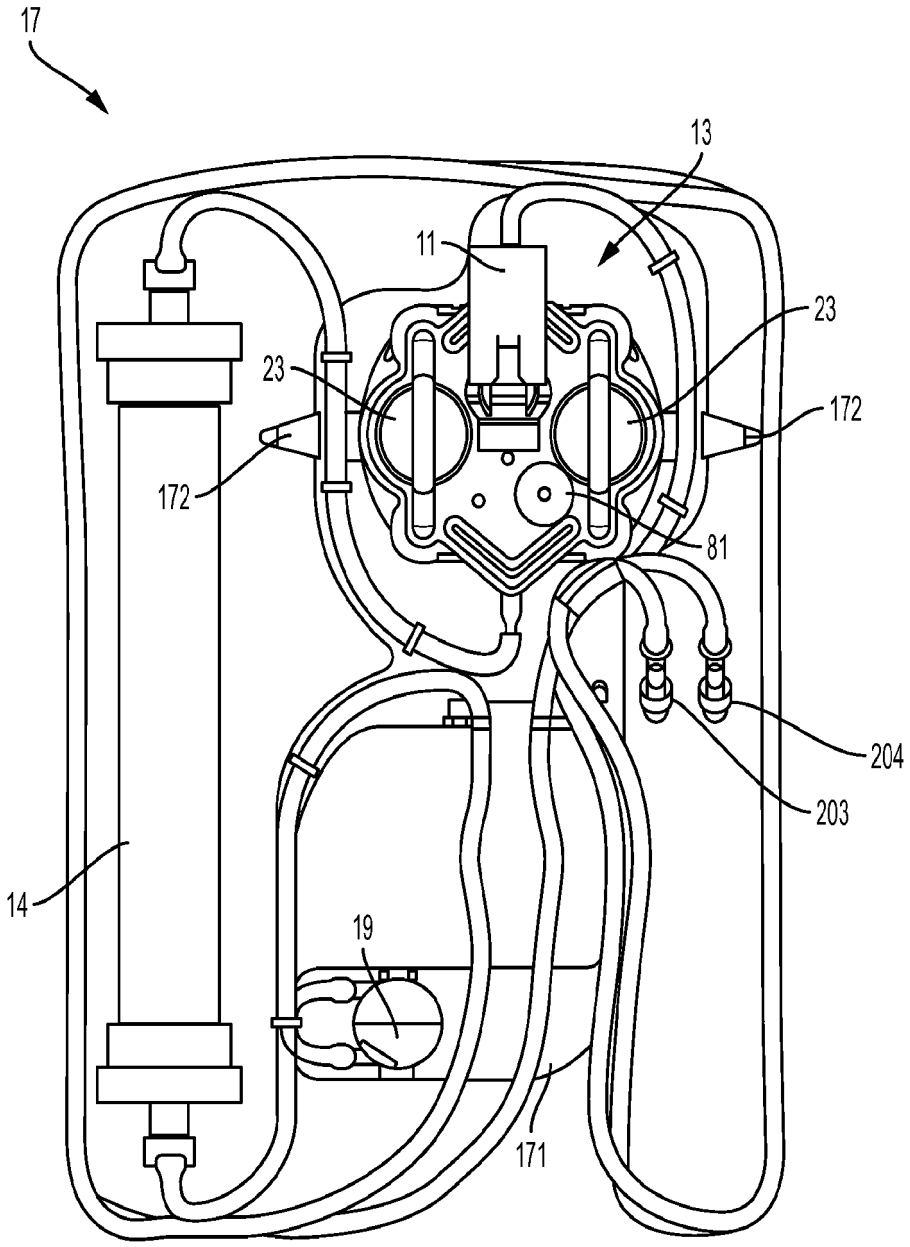


FIG. 18

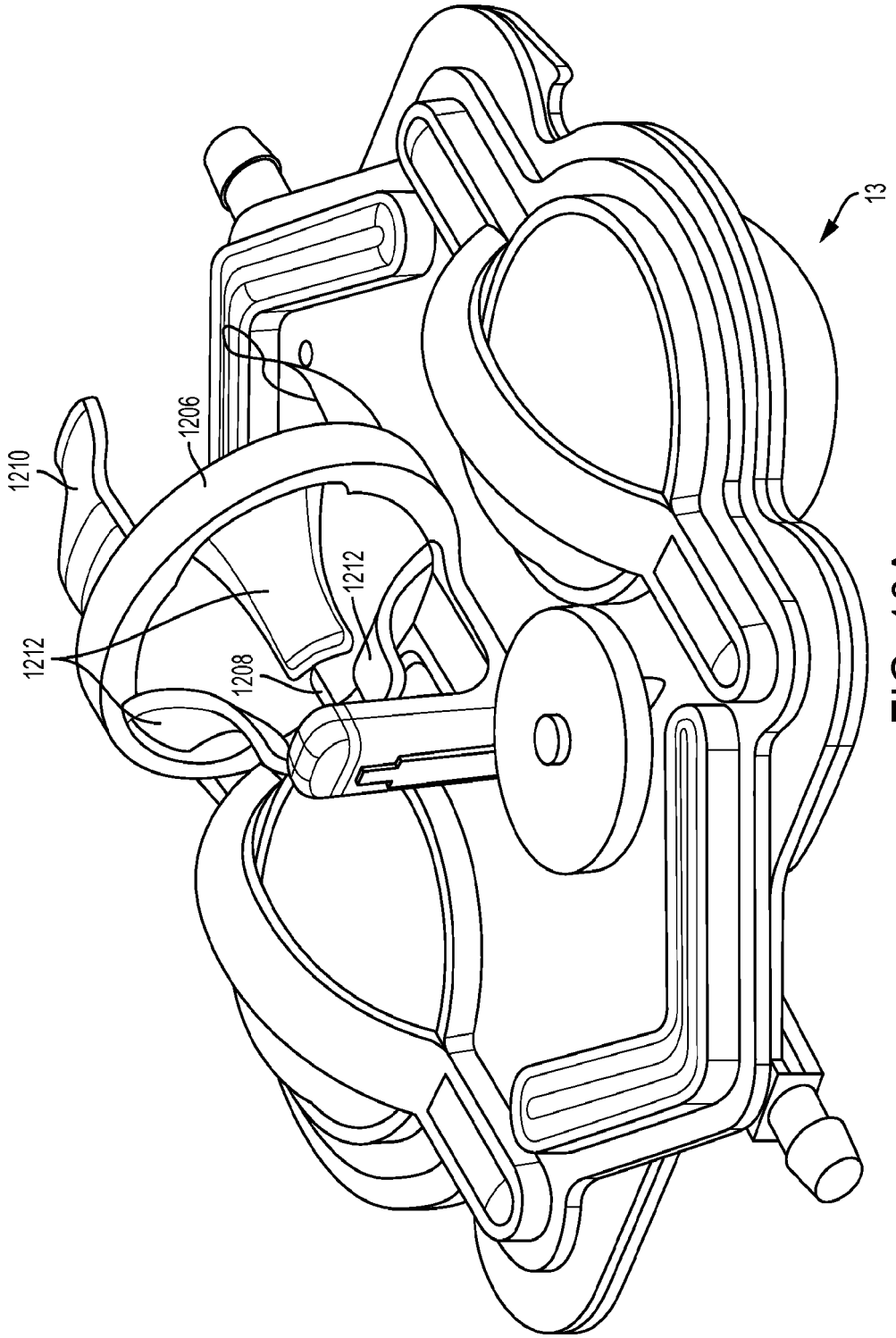


FIG. 18A

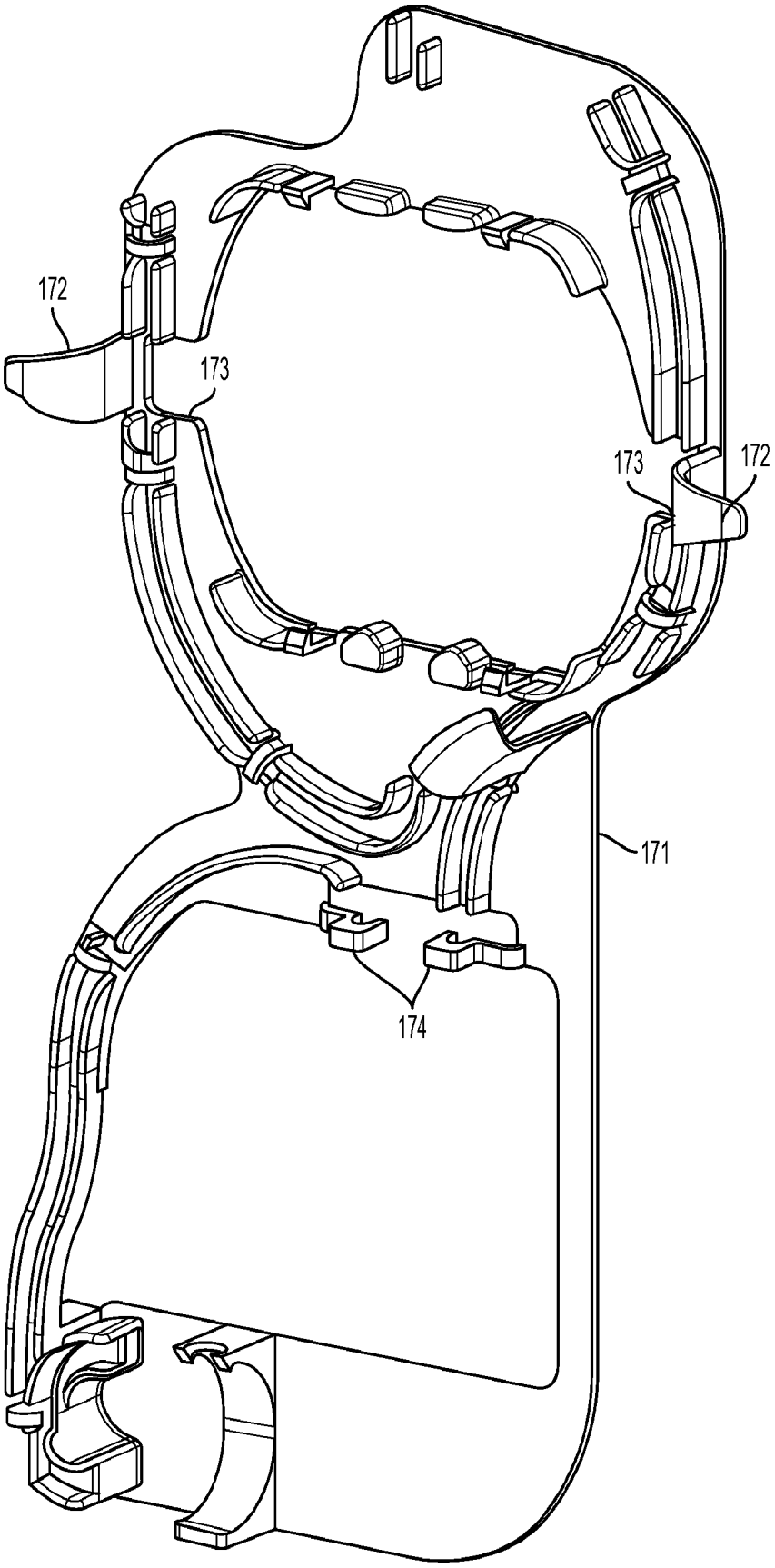


FIG. 19

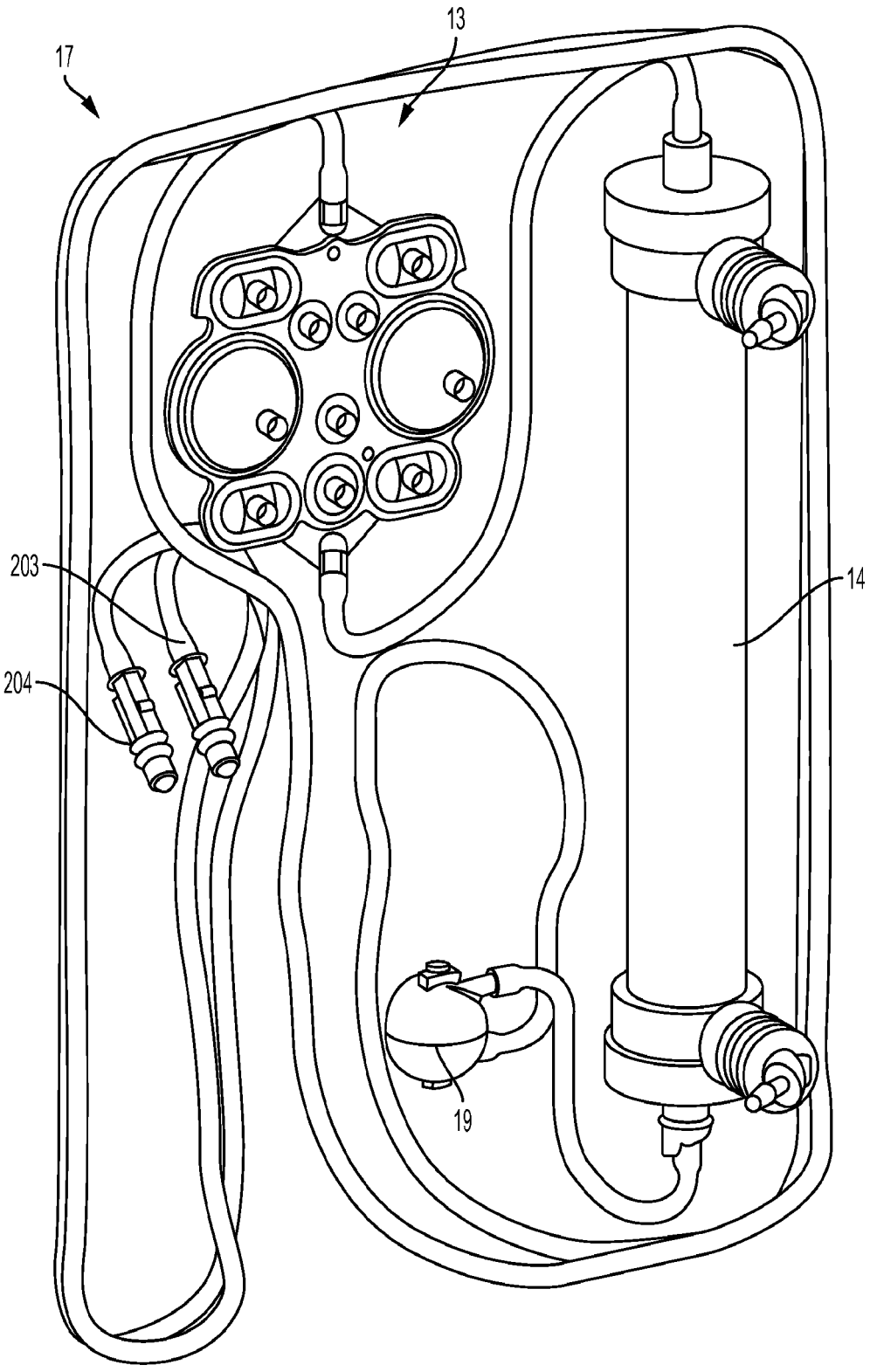


FIG. 20

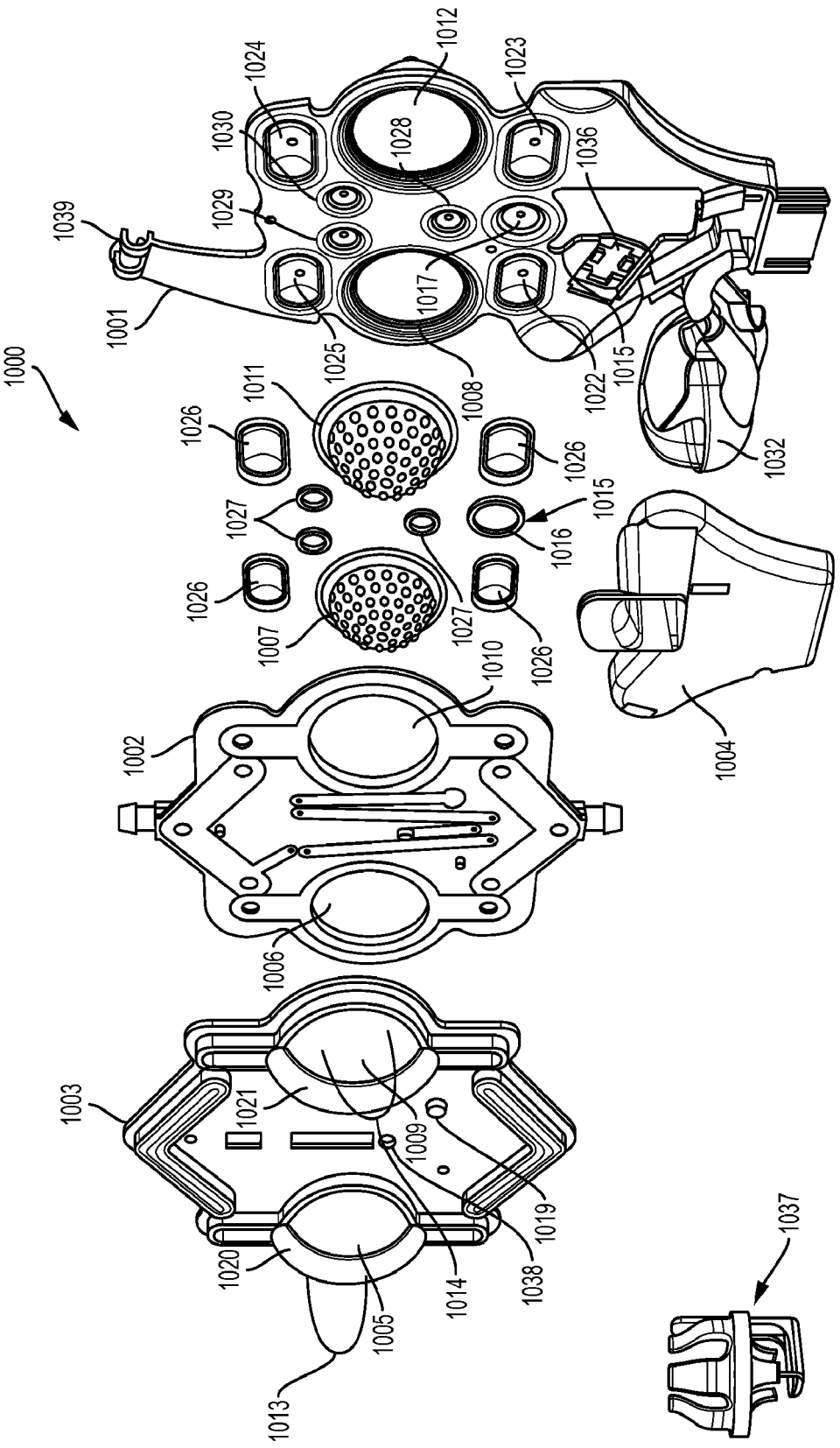

1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1019
1020
1021
1022
1023
1024
1025
1026
1027
1028
1029
1030
1032
1036
1037
1038
1039

FIG. 20A

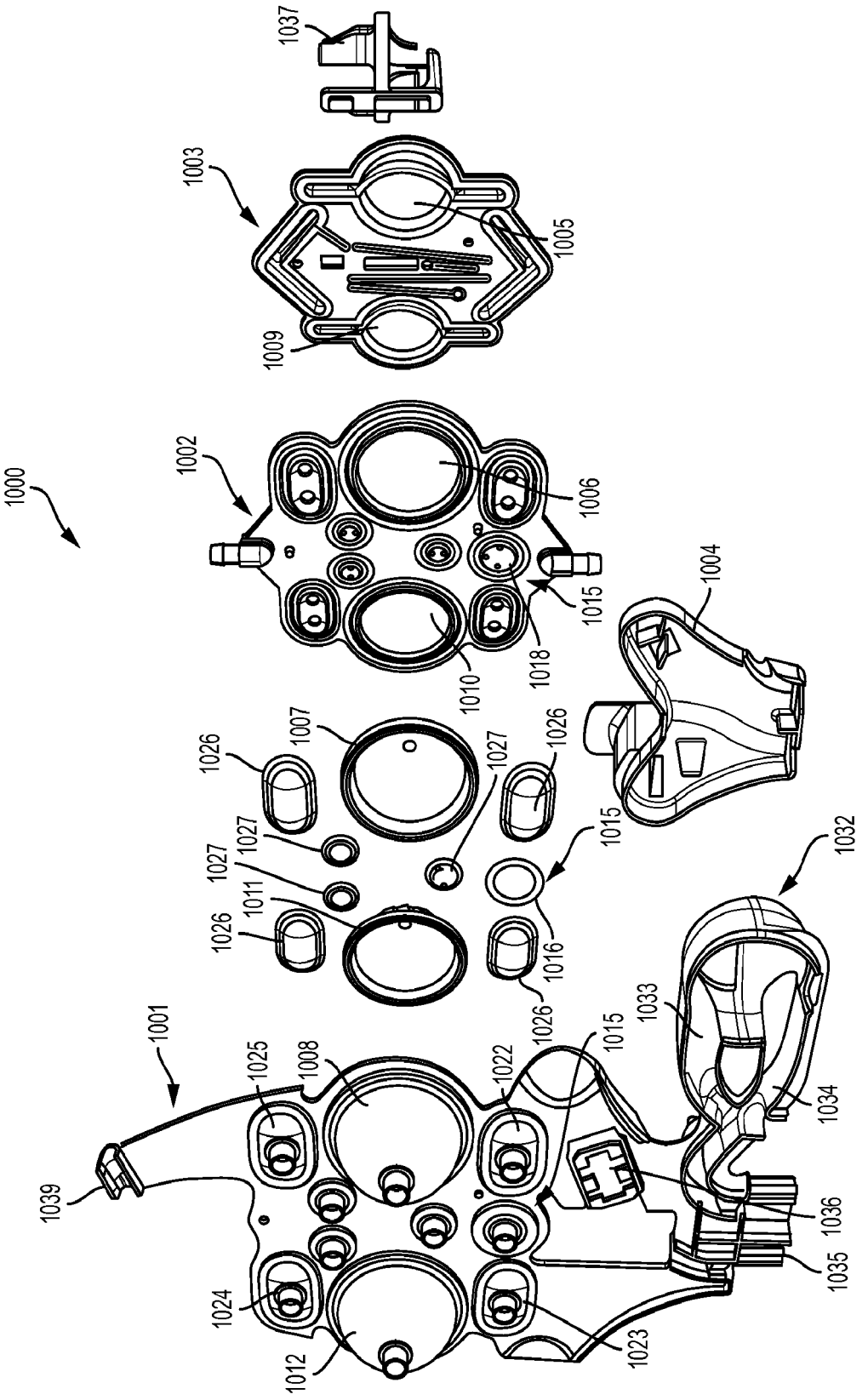

1037
1003
1005
1009
1000
1002
1006
1015
1018
1010
1004
1026
1007
1027
1026
1027
1027
1011
1026
1016
1015
1032
1001
1025
1008
1022
1026
1015
1033
1039
1034
1036
1035
1024
1012
1023

FIG. 20B

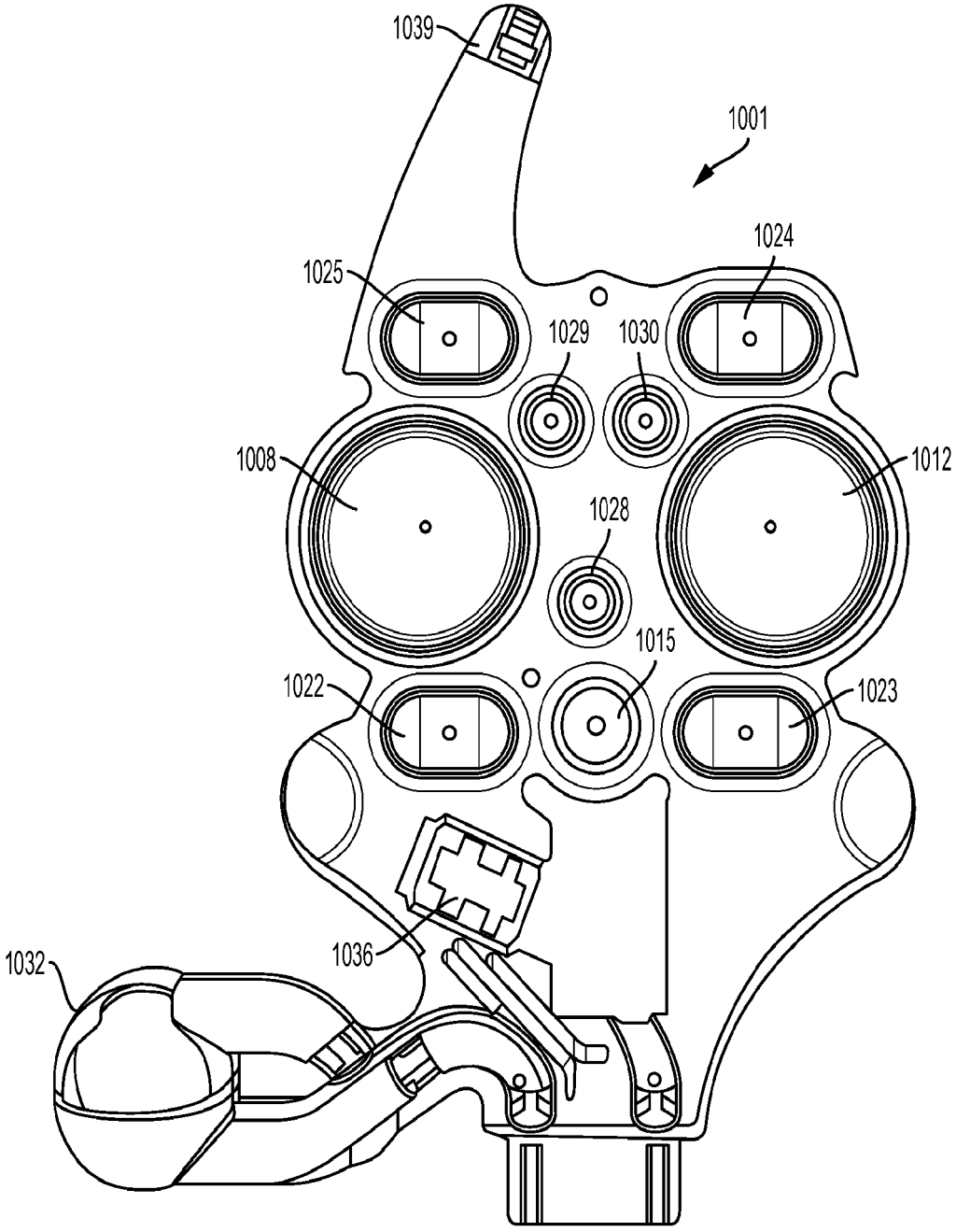

1039
1001
1024
1025
1029
1030
1008
1012
1028
1015
1022
1023
1036
1032

FIG. 20C

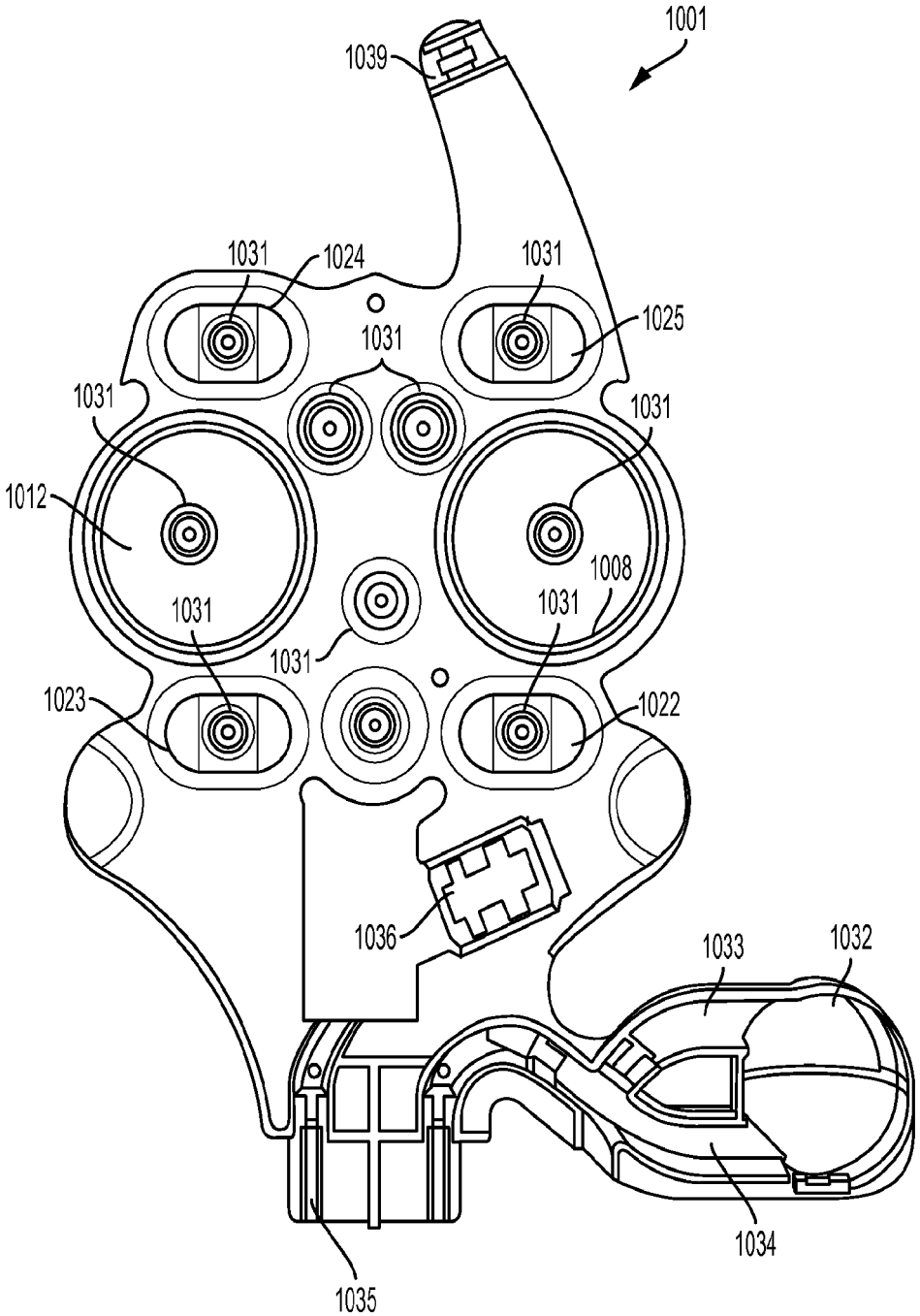

1001
1039
1031
1024
1031
1025
1031
1031
1031
1012
1008
1031
1031
1031
1023
1022
1036
1033
1032
1034
1035

FIG. 20D

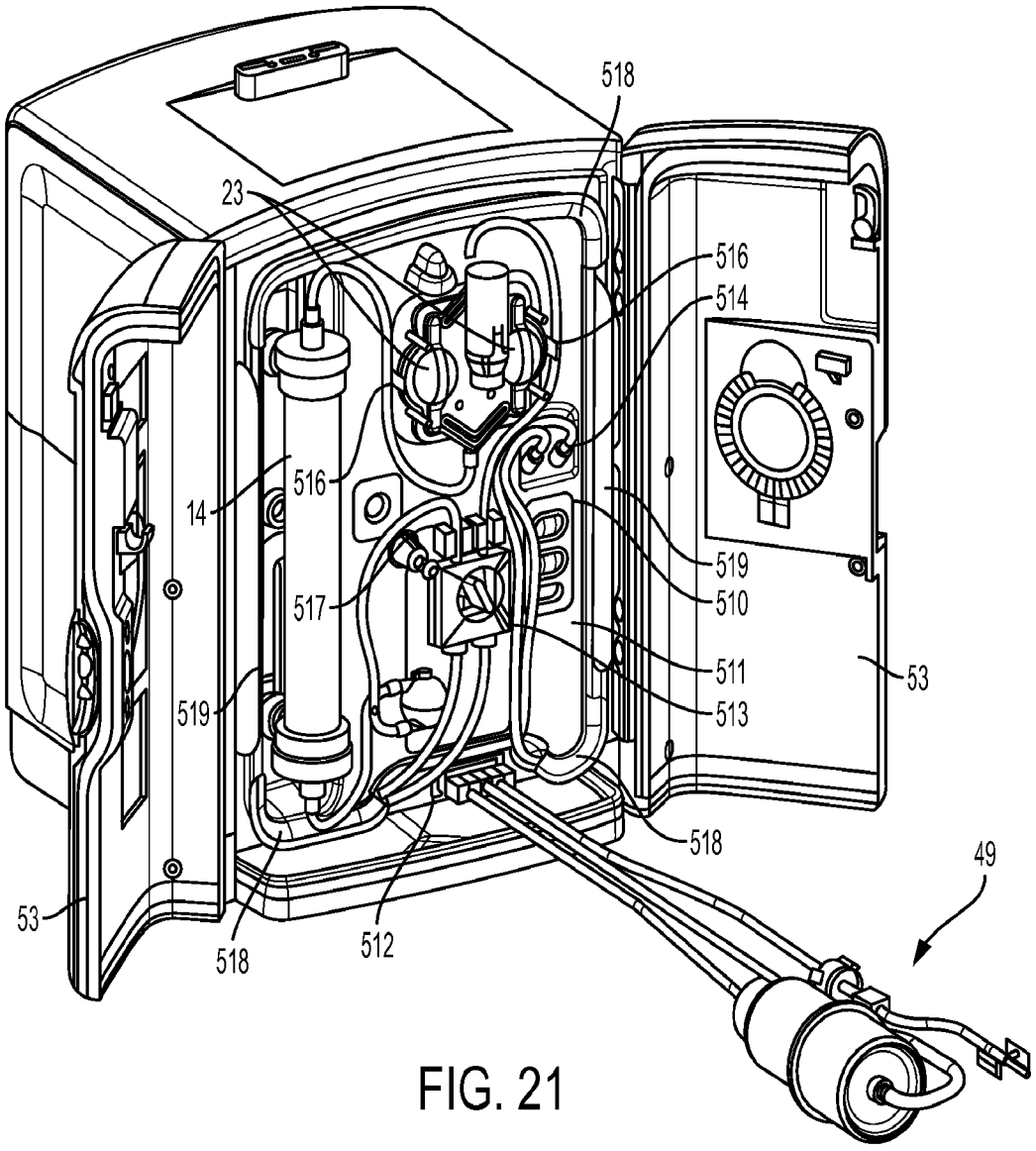


FIG. 21

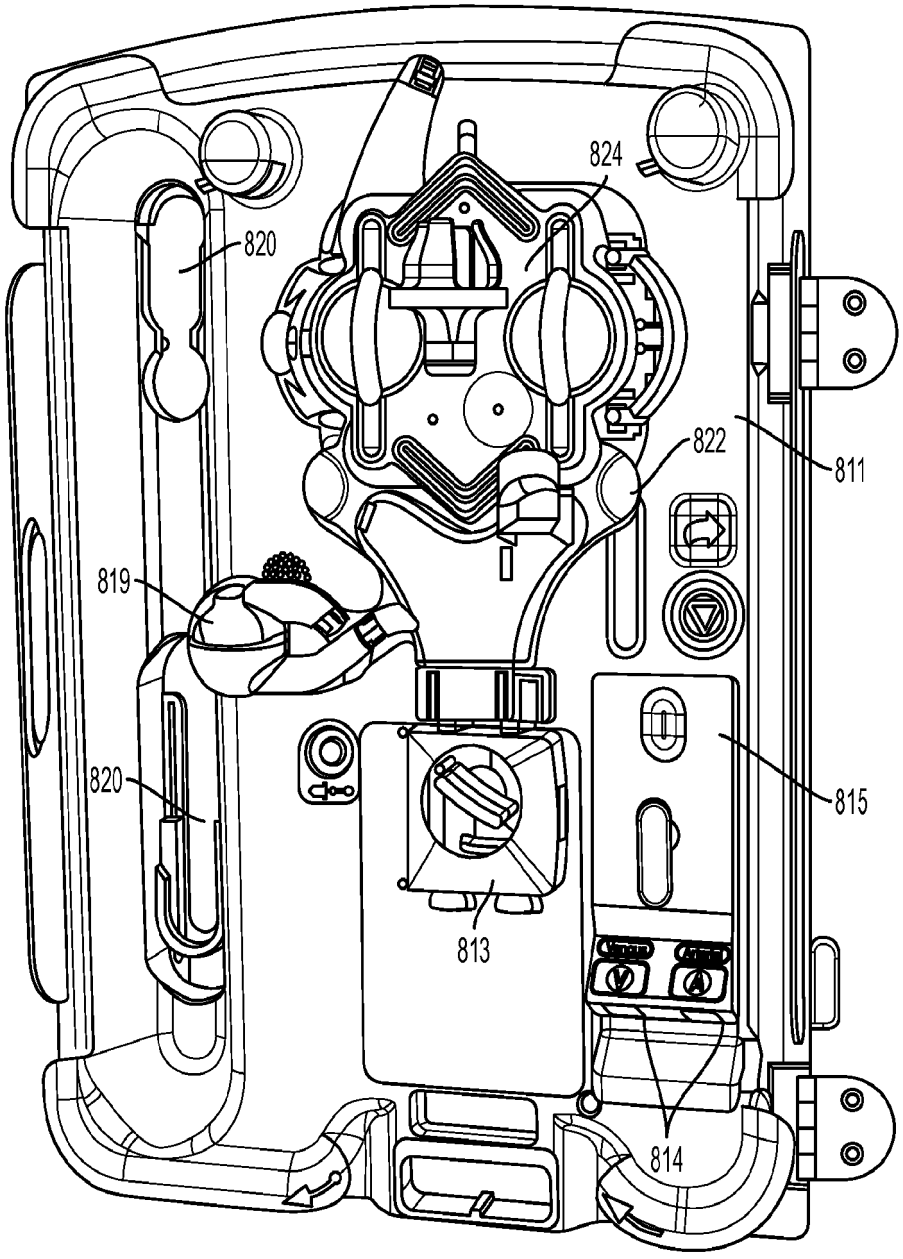


FIG. 21A

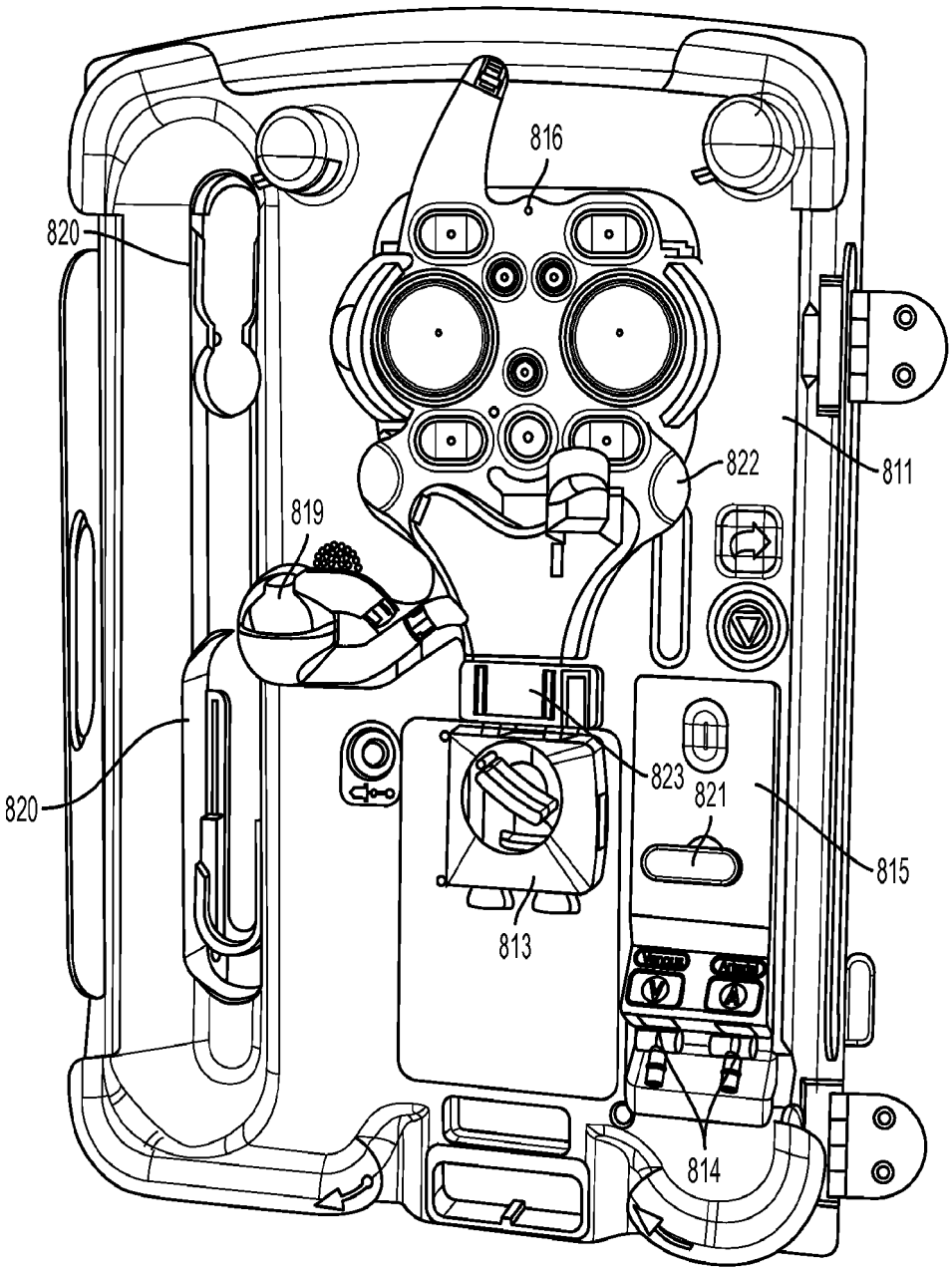


FIG. 21B

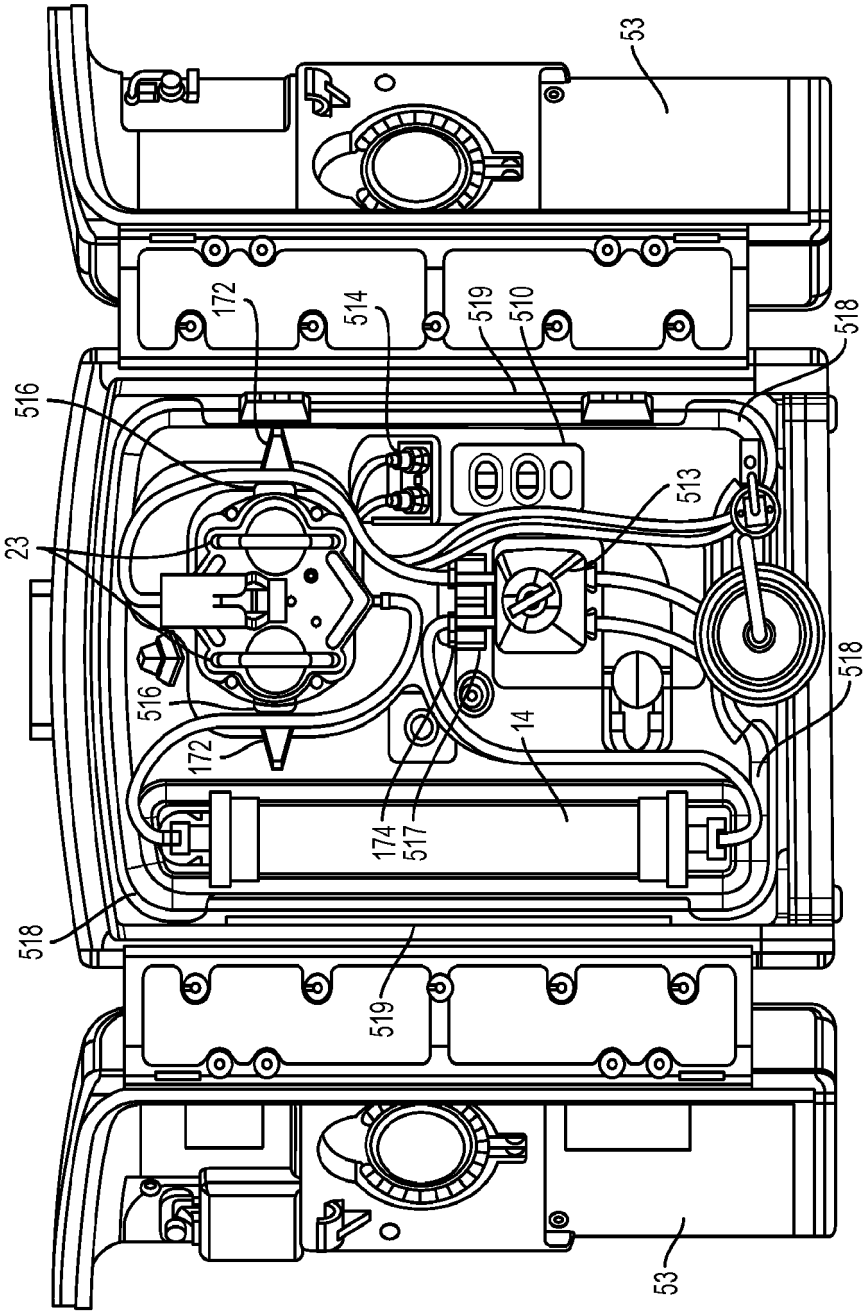

53
172
514
519
510
518
516
513
23
516
518
172
14
174
517
518
519
53

FIG. 22

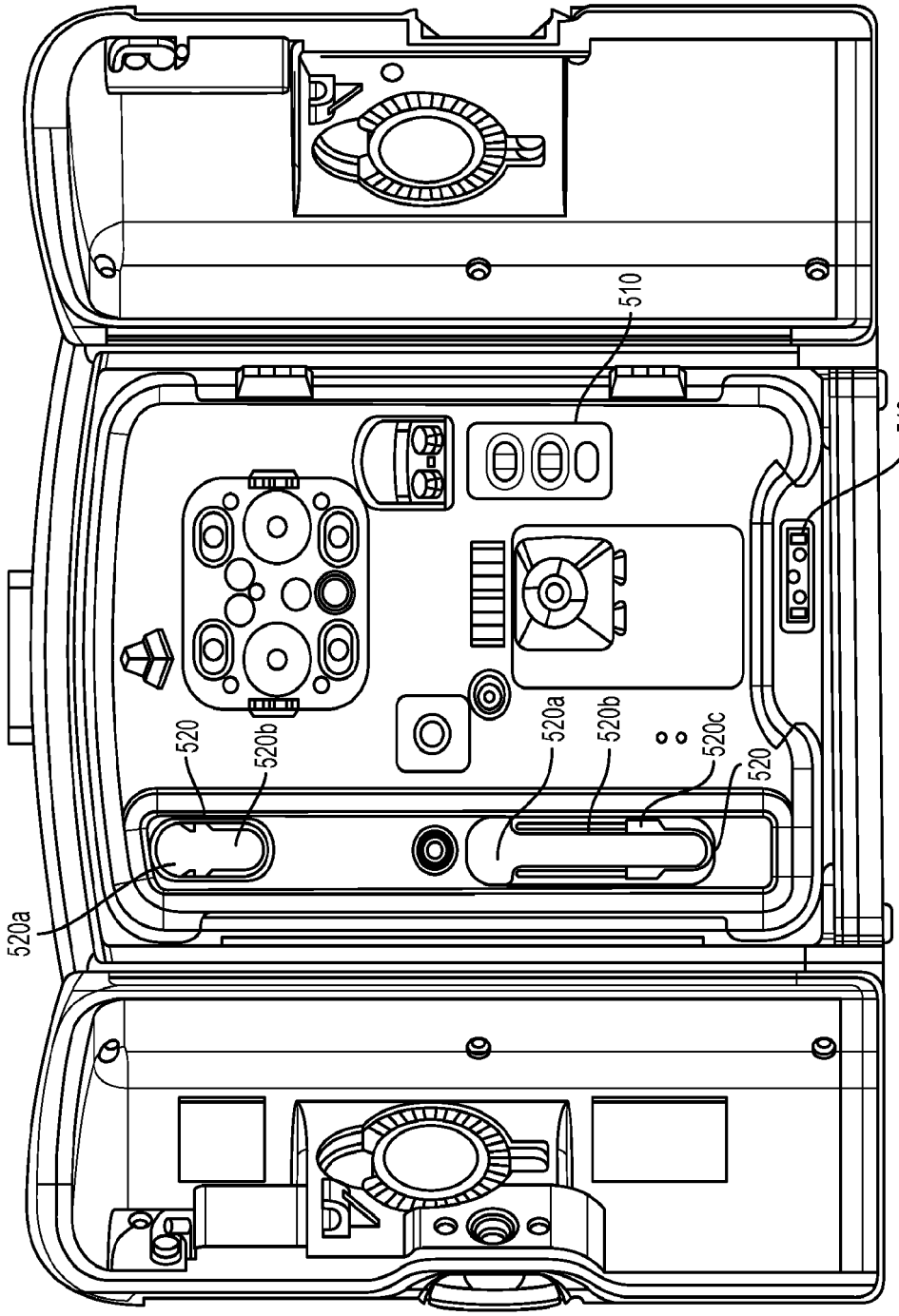


FIG. 23

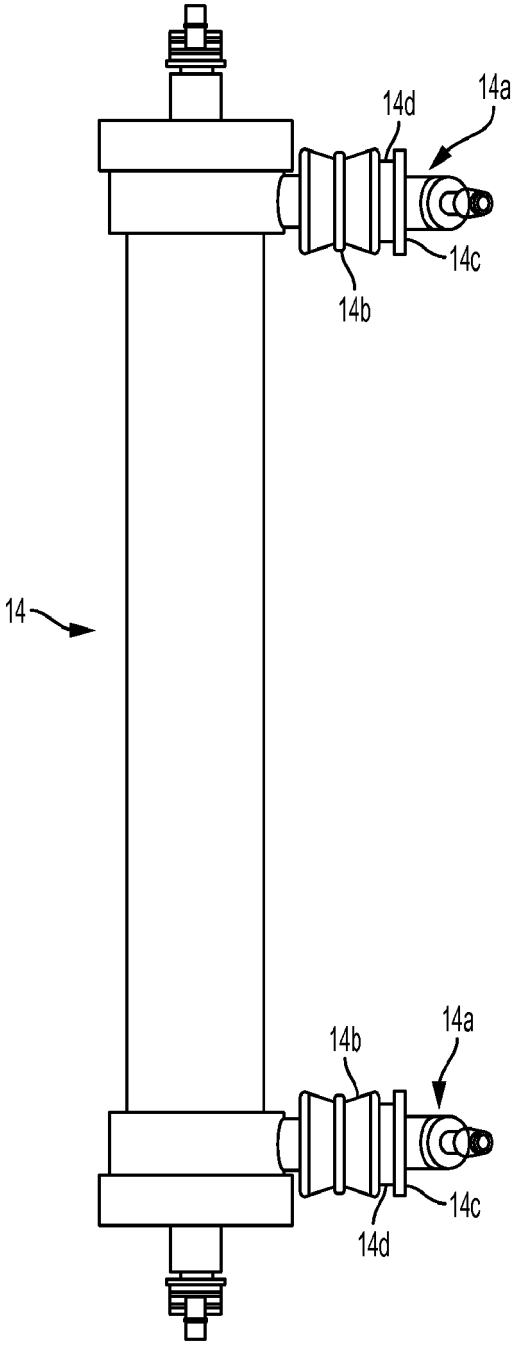


FIG. 24

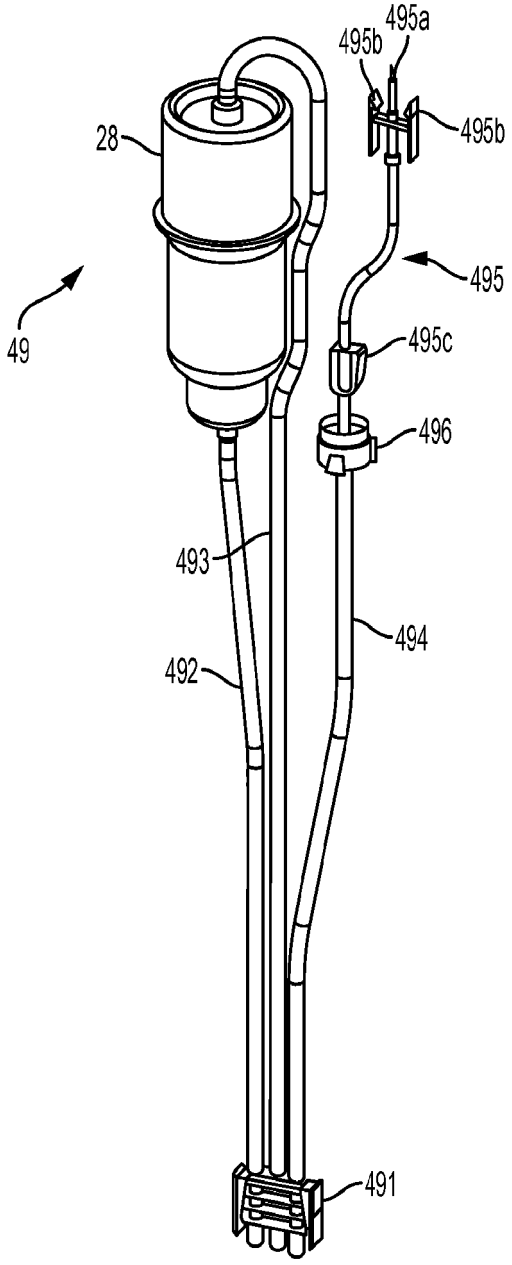


FIG. 25

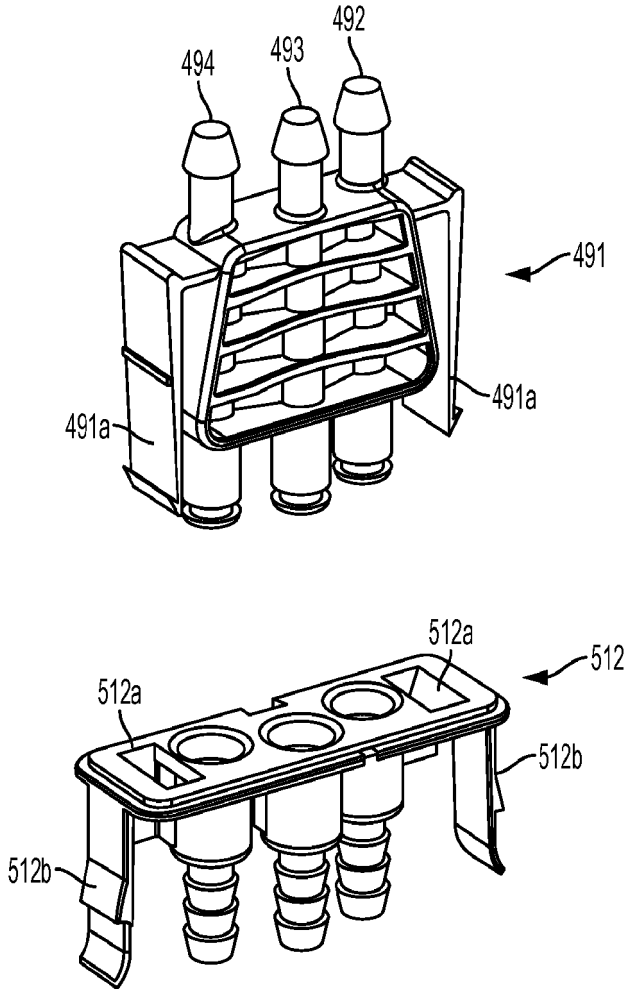


FIG. 26

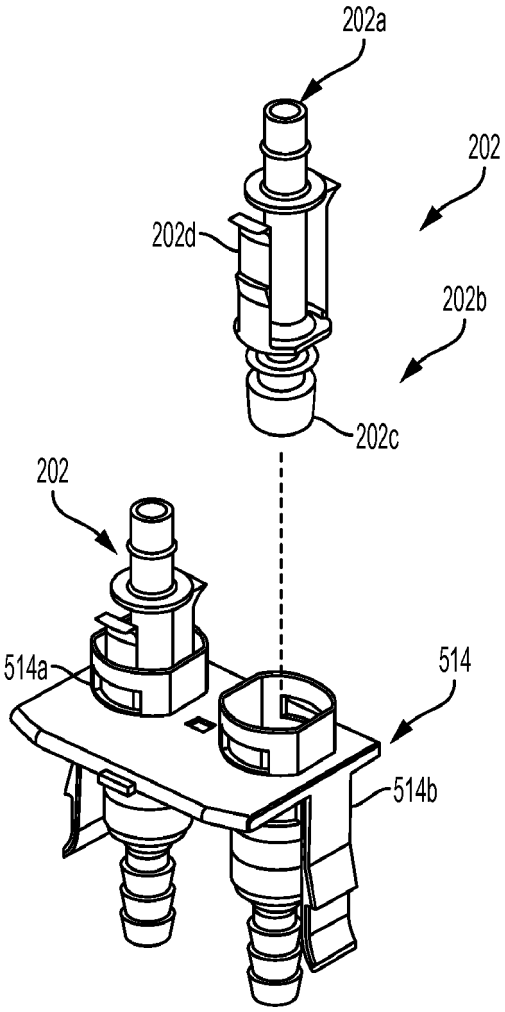


FIG. 27

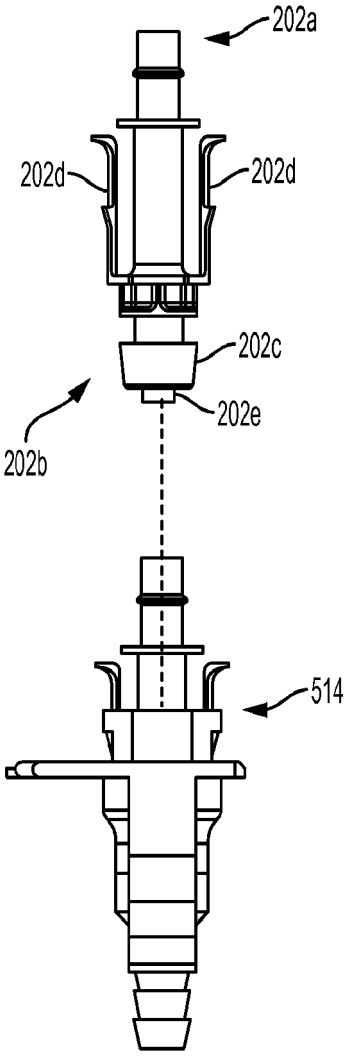


FIG. 28

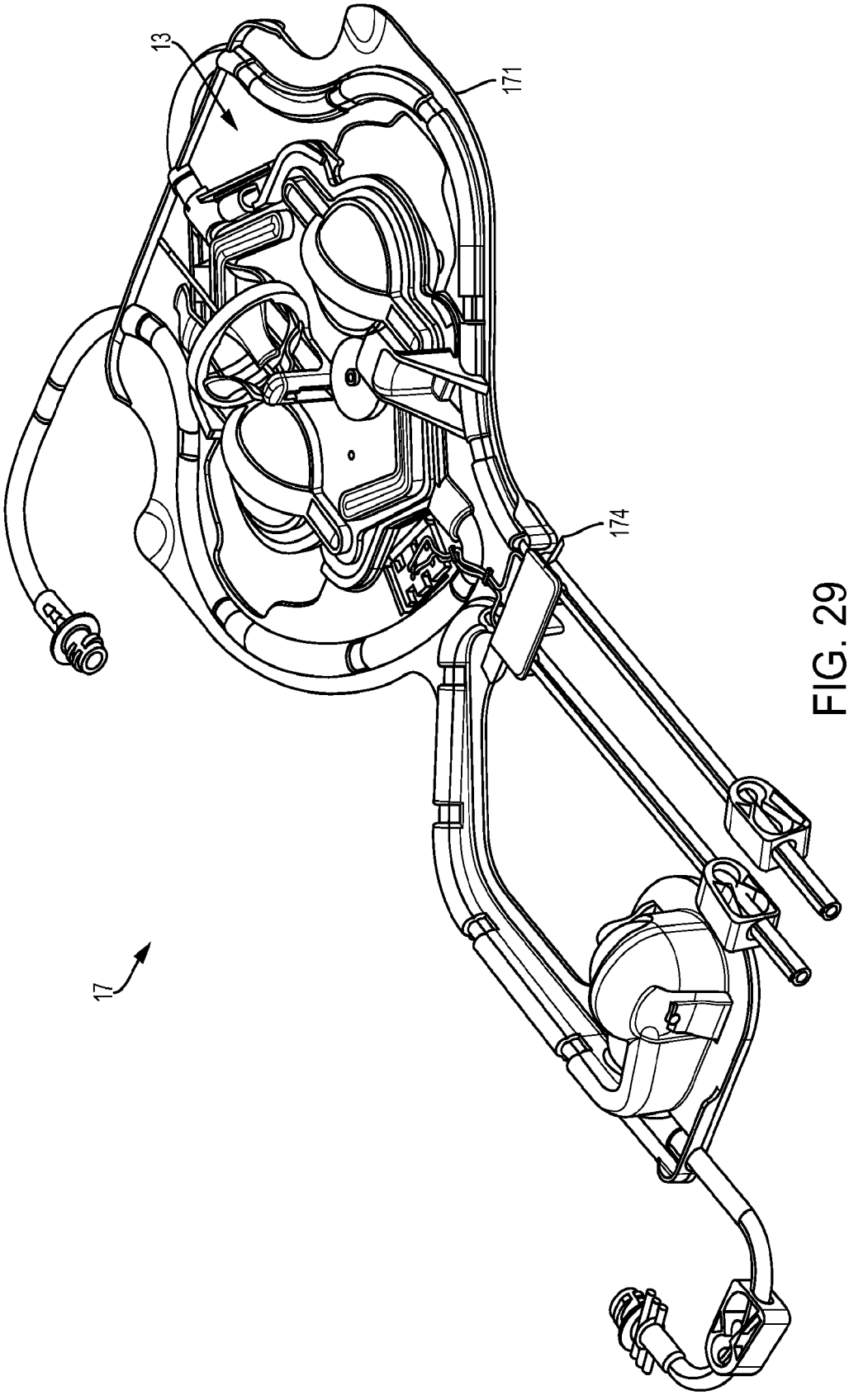


FIG. 29

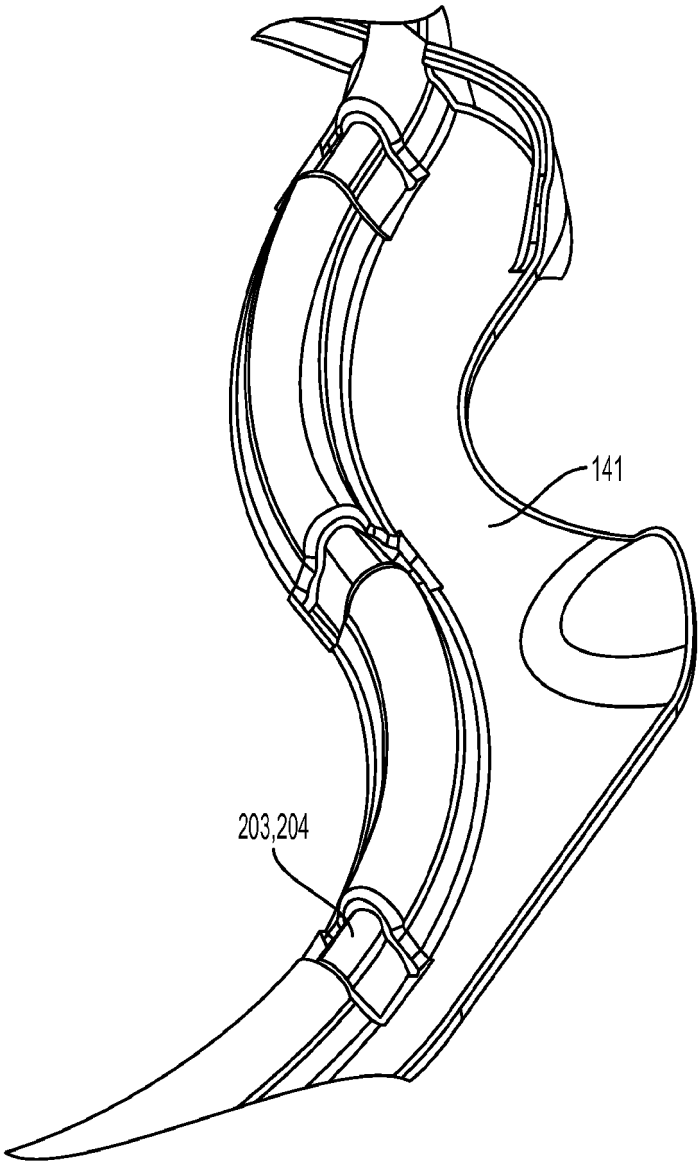


FIG. 30

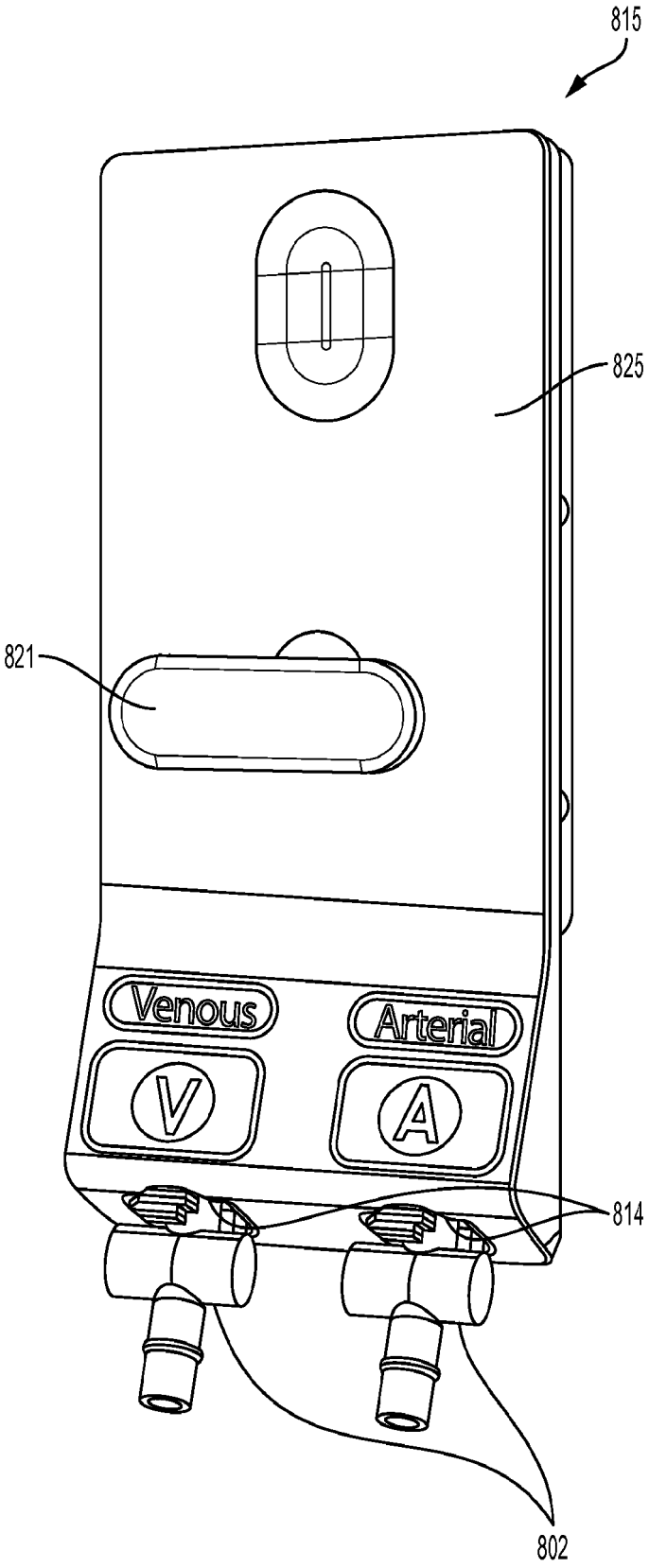


FIG. 31

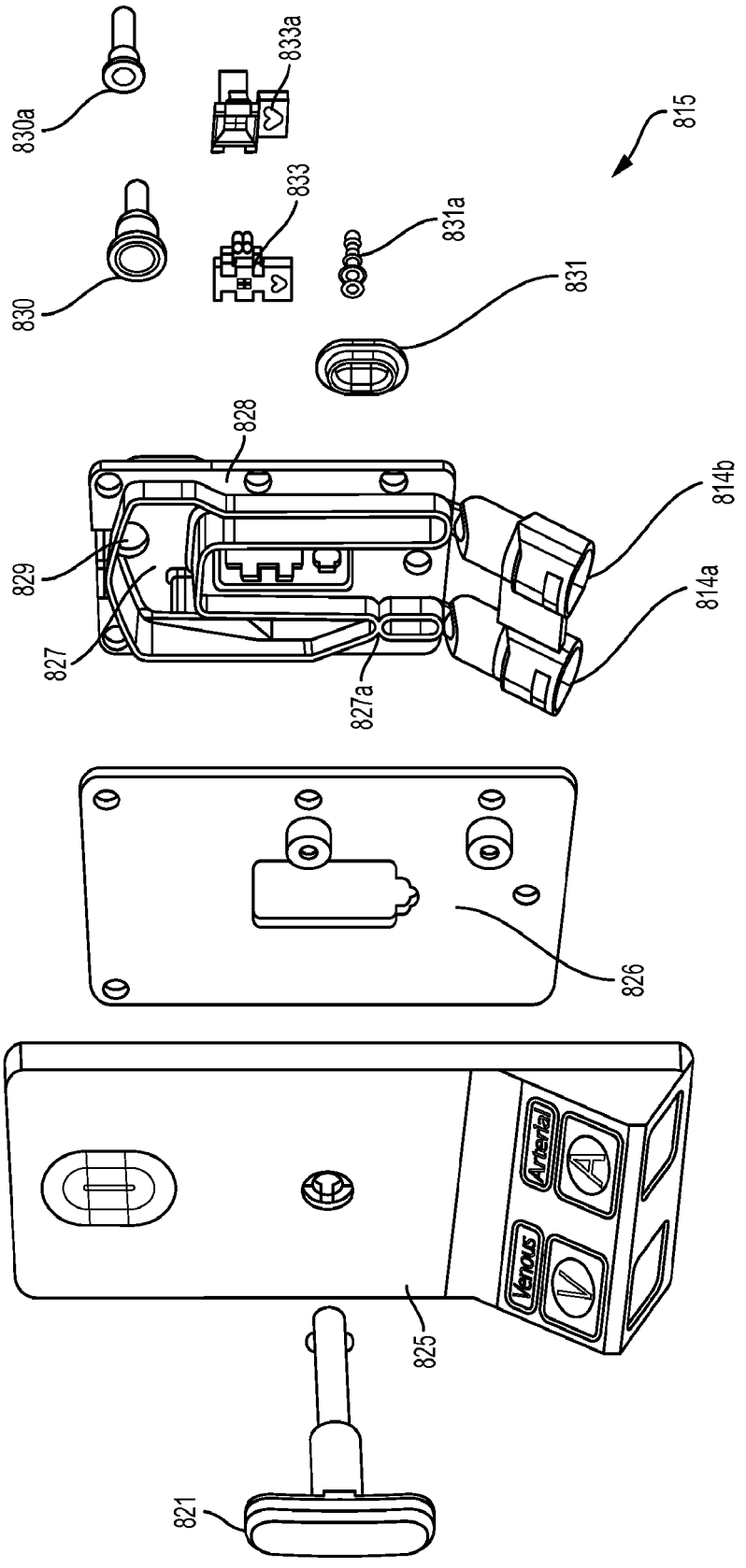

830a
833a
815
833
831a
830
831
828
814b
829
814a
827
827a
826
Arterial
Venous
825
821

FIG. 32

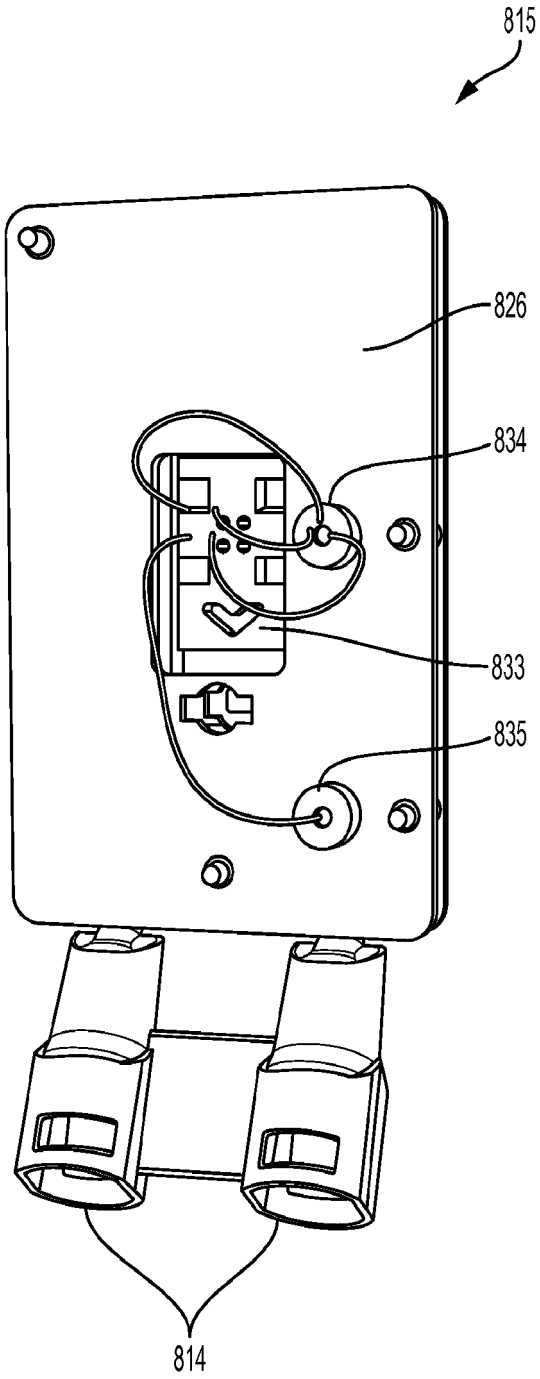


FIG. 33

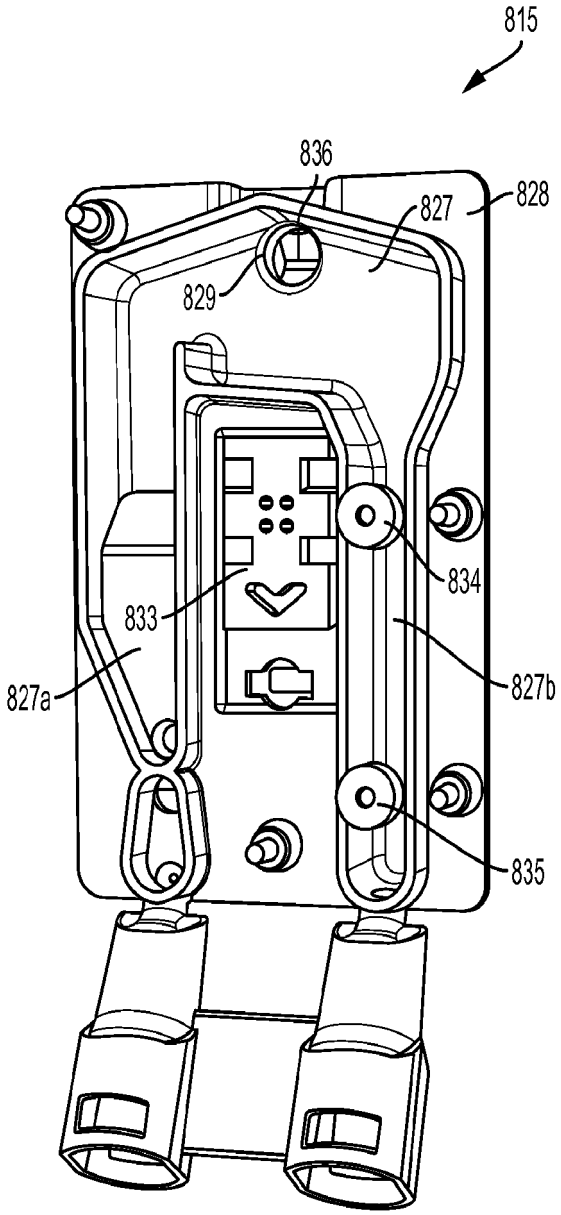


FIG. 34

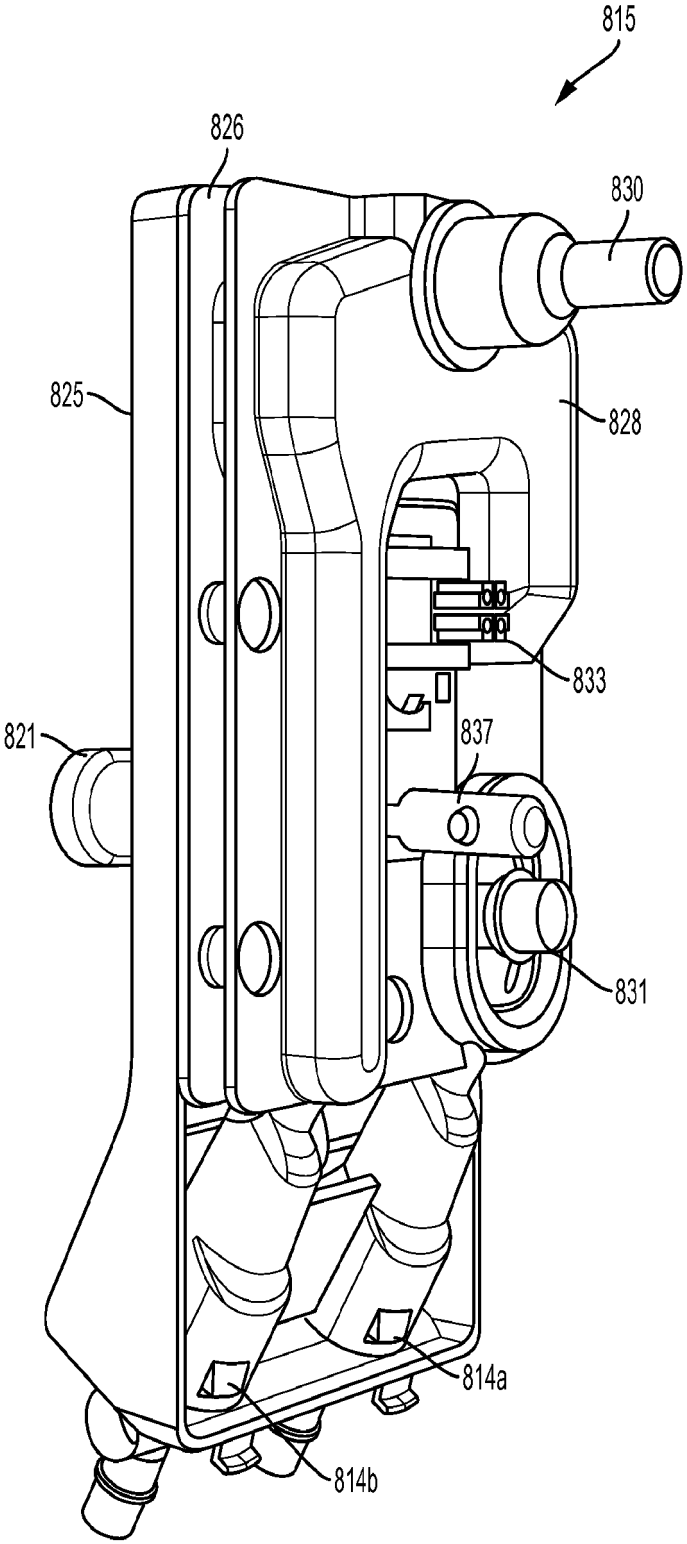


FIG. 35

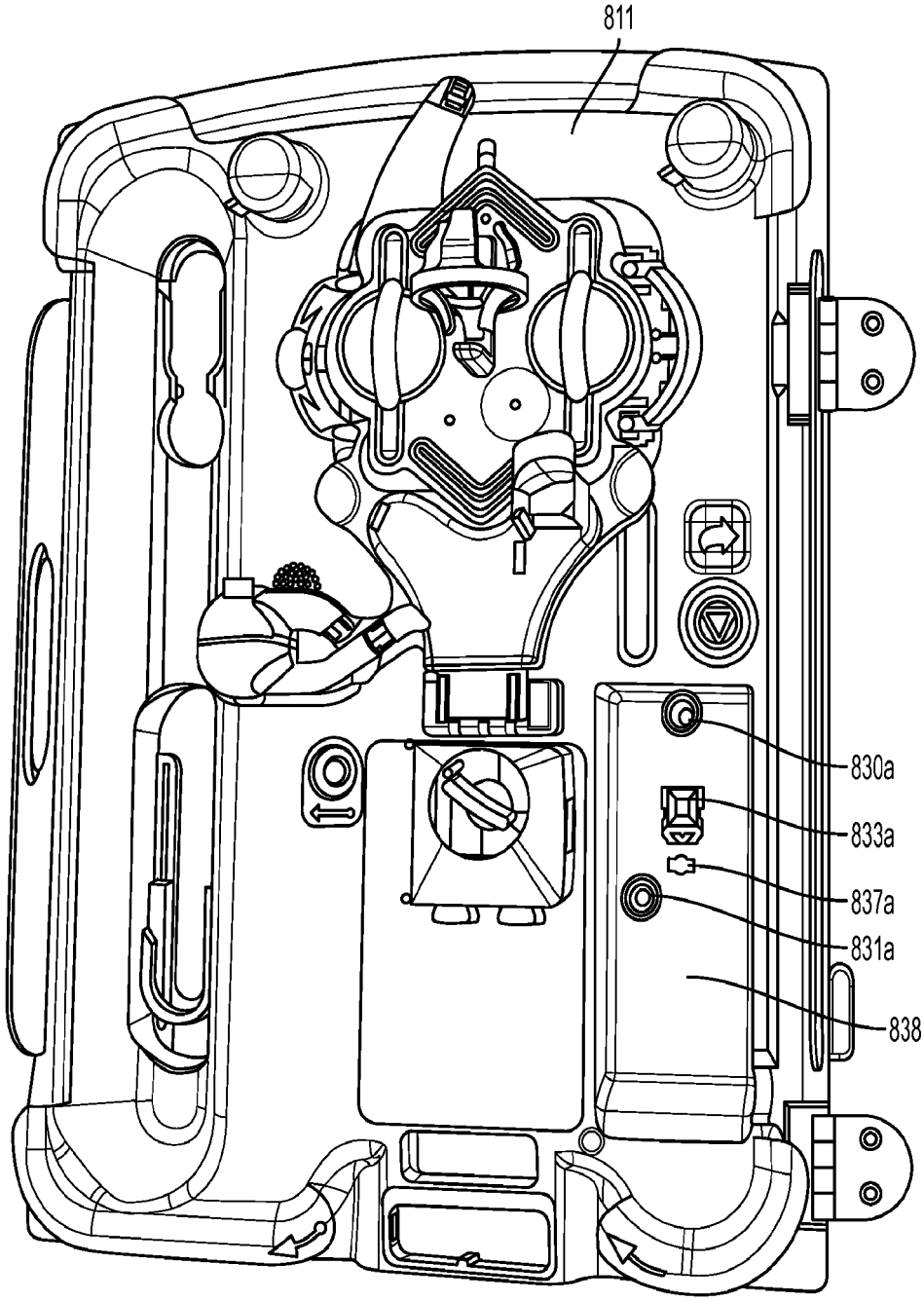


FIG. 36

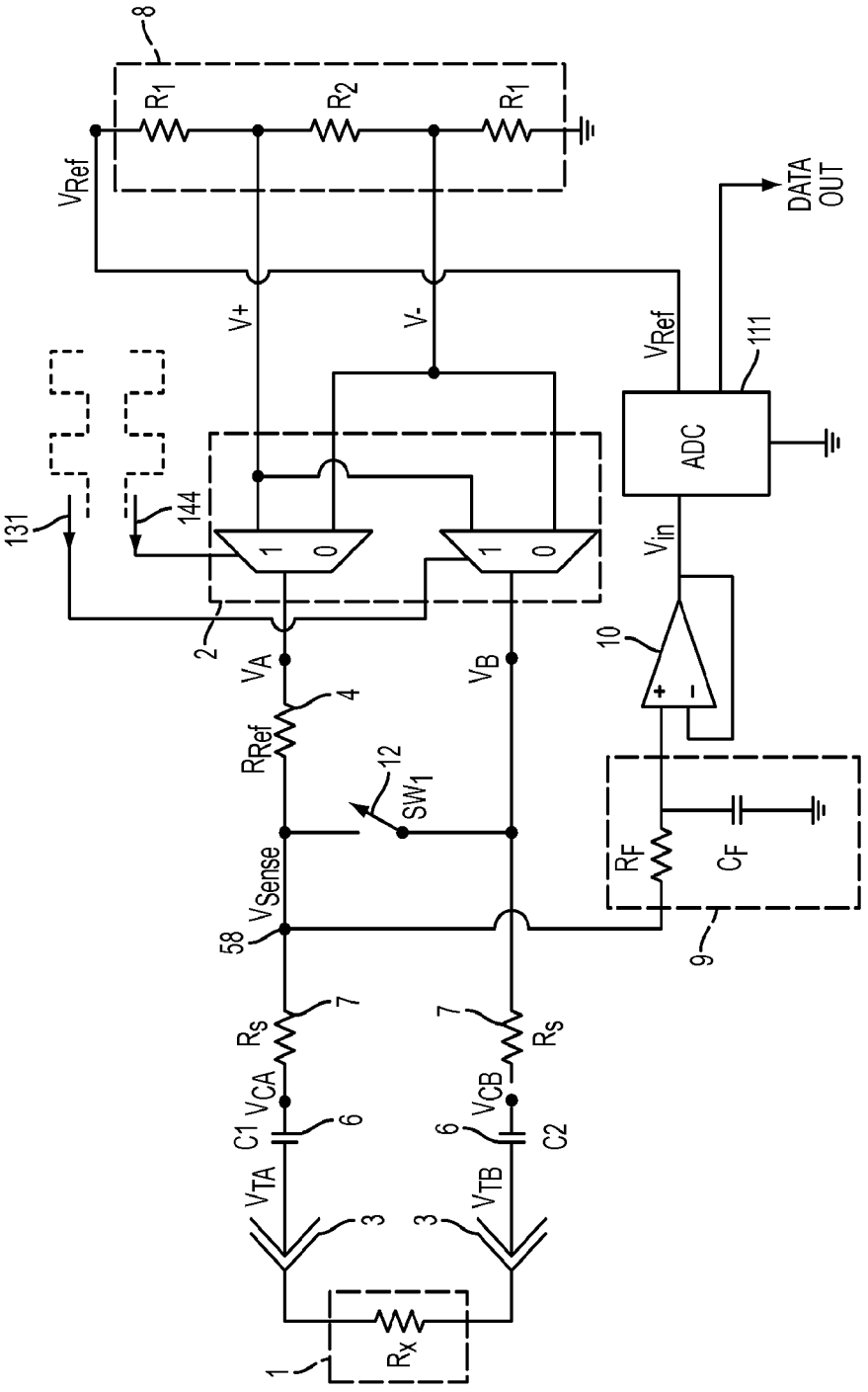

8
R1
R2
R1
VRef
DATA OUT
V+
V-
VRef
111
ADC
131
144
1
0
1
0
Vin
2
VA
VB
10
4
RRef
12
SW1
RF
CF
VSense
58
9
7
Rs
7
Rs
VCA
VCB
C1
6
6
C2
VTA
VTB
3
3
Rx
1

FIG. 37

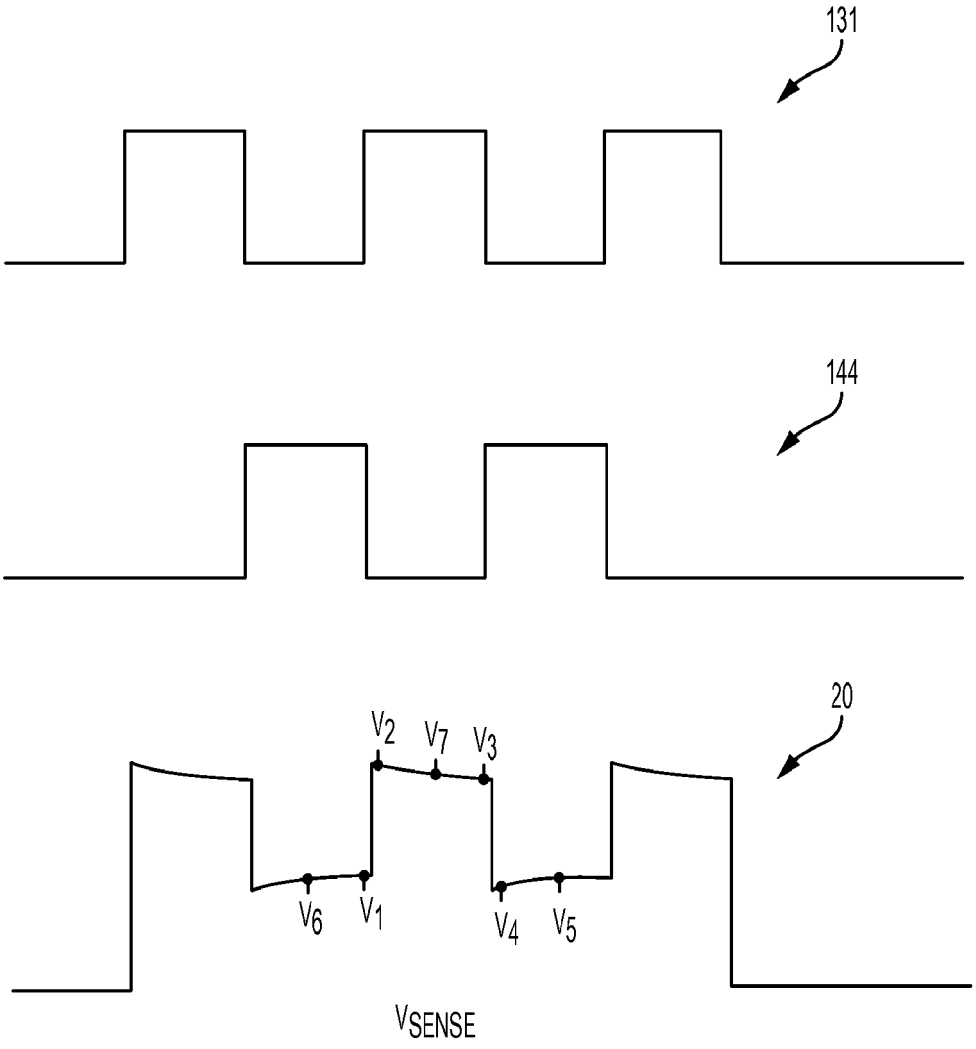


FIG. 38

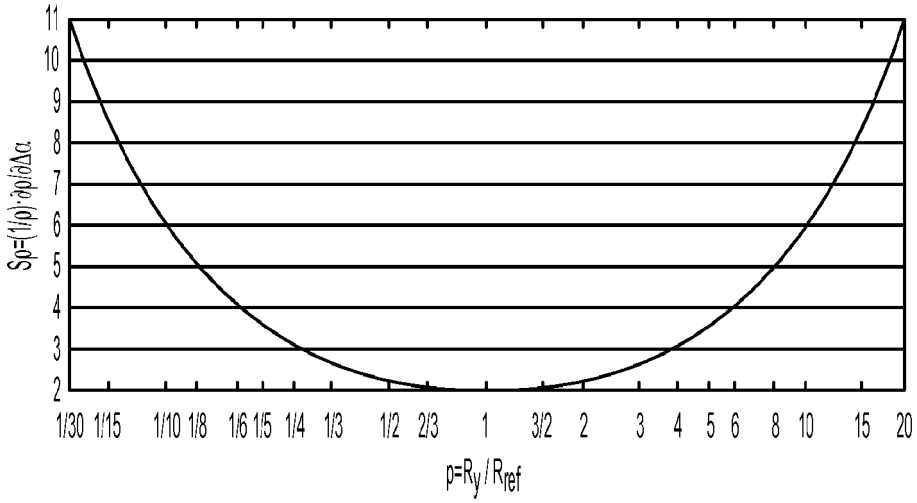

11
10
9
8
7
6
5
4
3
2
Sρ=(1/ρ)·∂ρ/∂Δα
1/30 1/15 1/10 1/8 1/6 1/5 1/4 1/3 1/2 2/3 1 3/2 2 3 4 5 6 8 10 15 20
p=Ry / Rref

FIG. 39

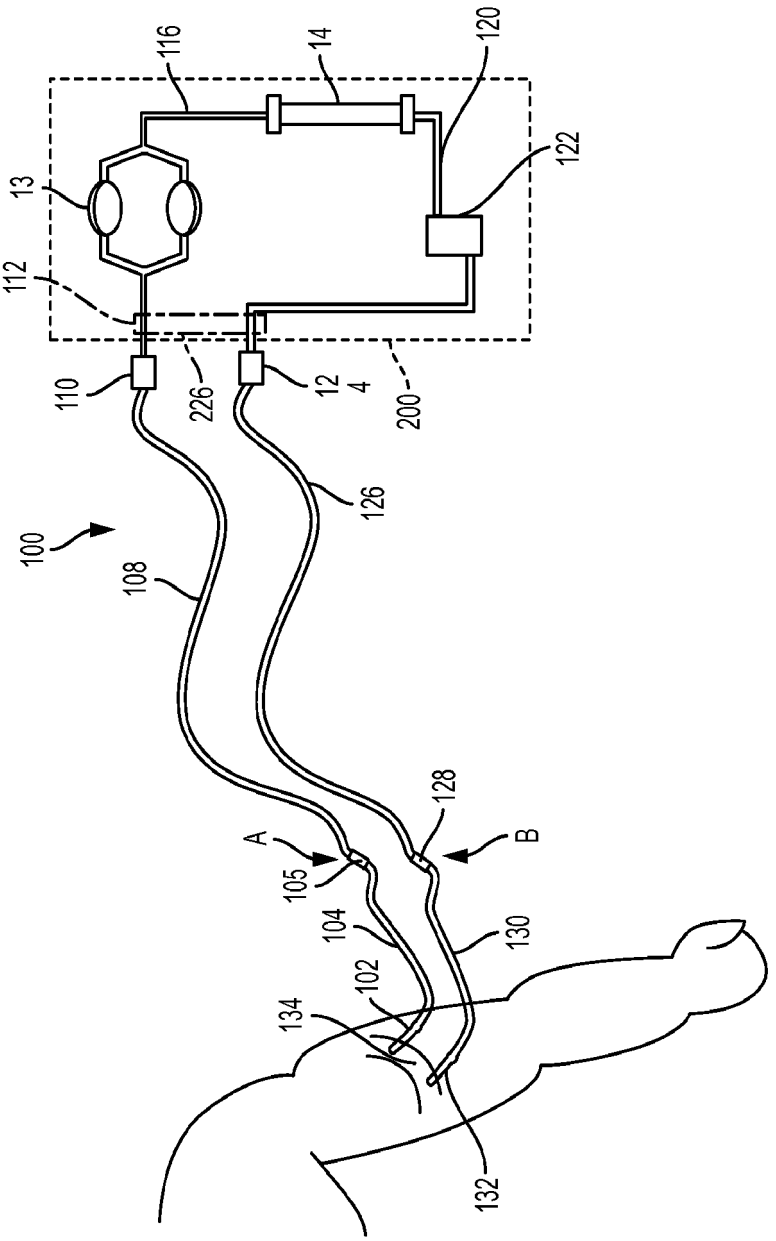

116
14
120
122
13
112
110
226
12
4
200
126
100
108
128
A
B
105
104
130
102
134
132

FIG. 40

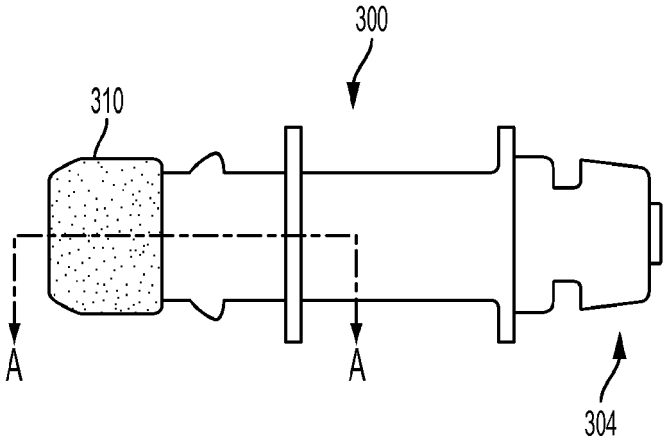


FIG. 41A

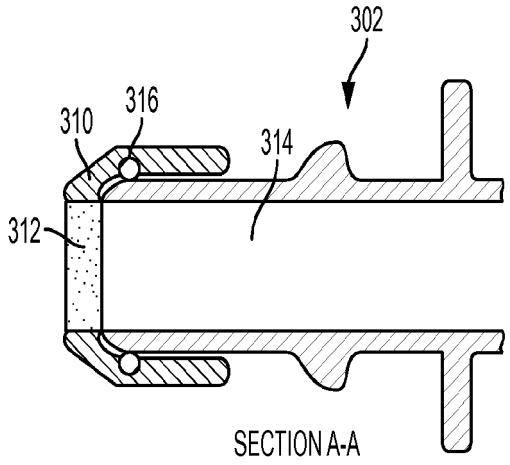


FIG. 41B

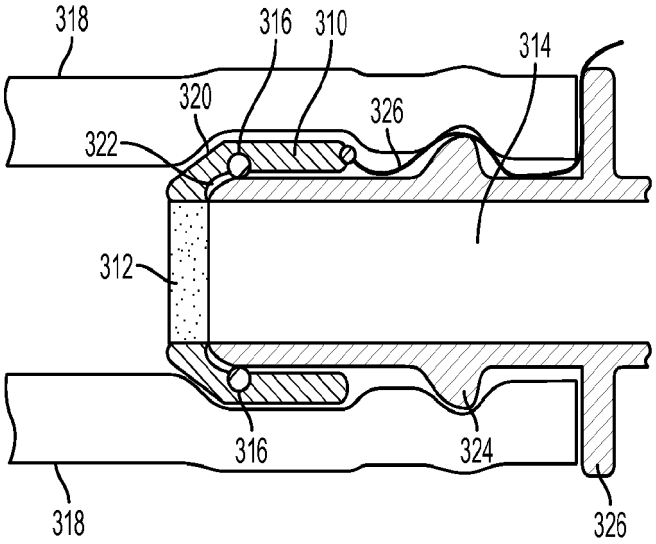


FIG. 42

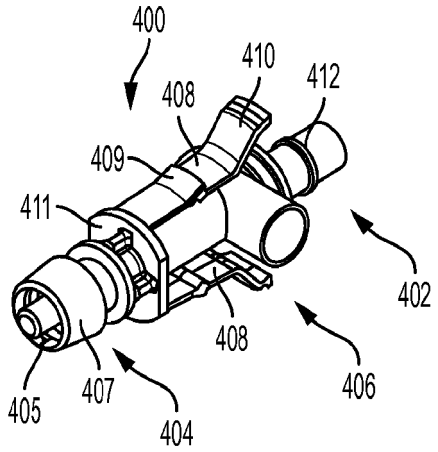


FIG. 43A

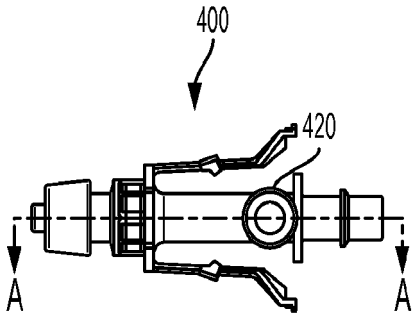
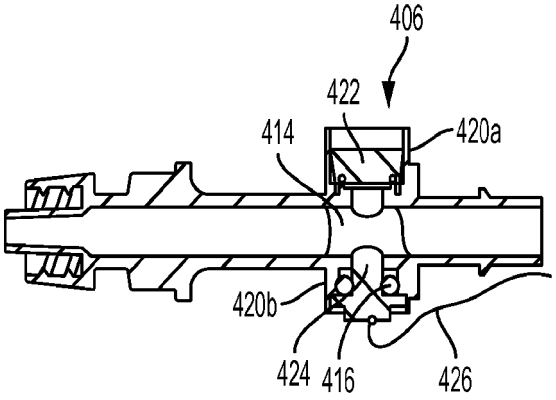


FIG. 43B



Section A-A

FIG. 43C

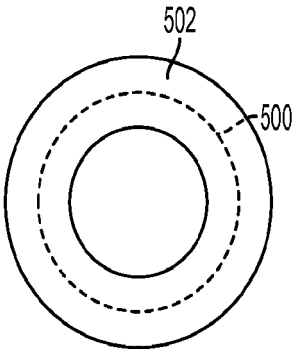


FIG. 44A

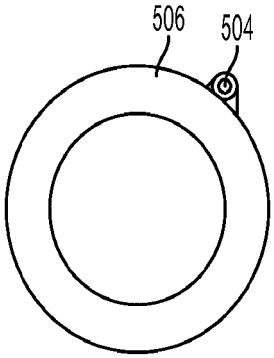


FIG. 44B

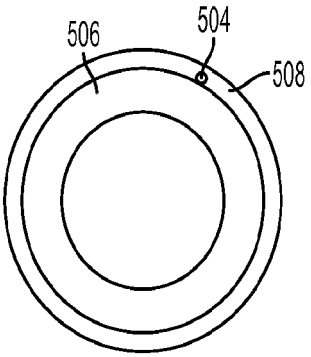


FIG. 44C

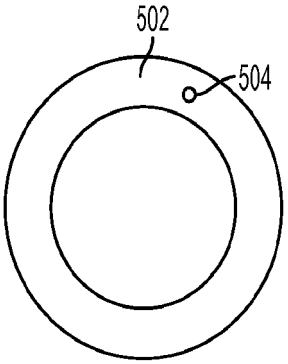


FIG. 44D

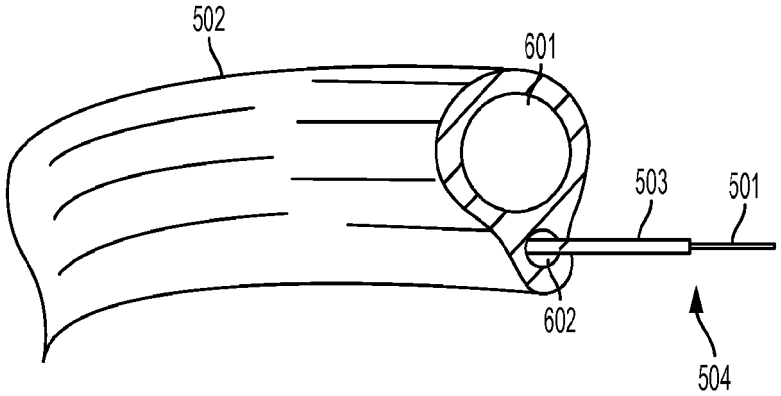


FIG. 45

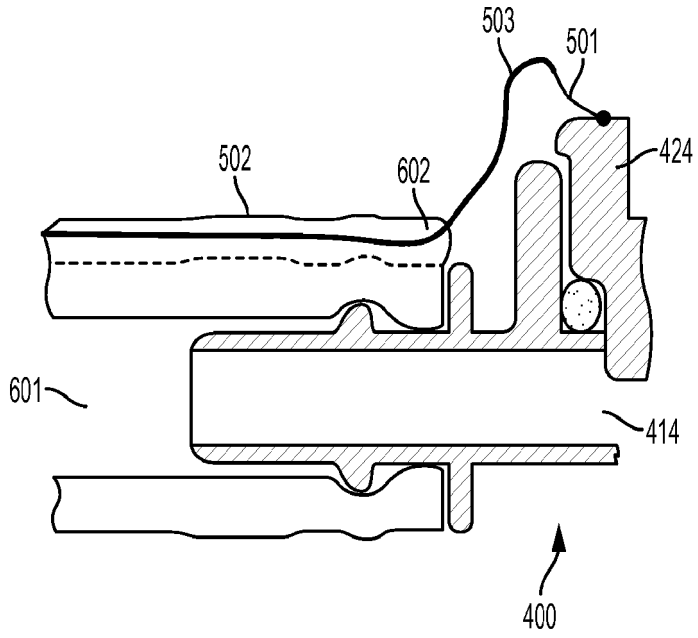


FIG. 46

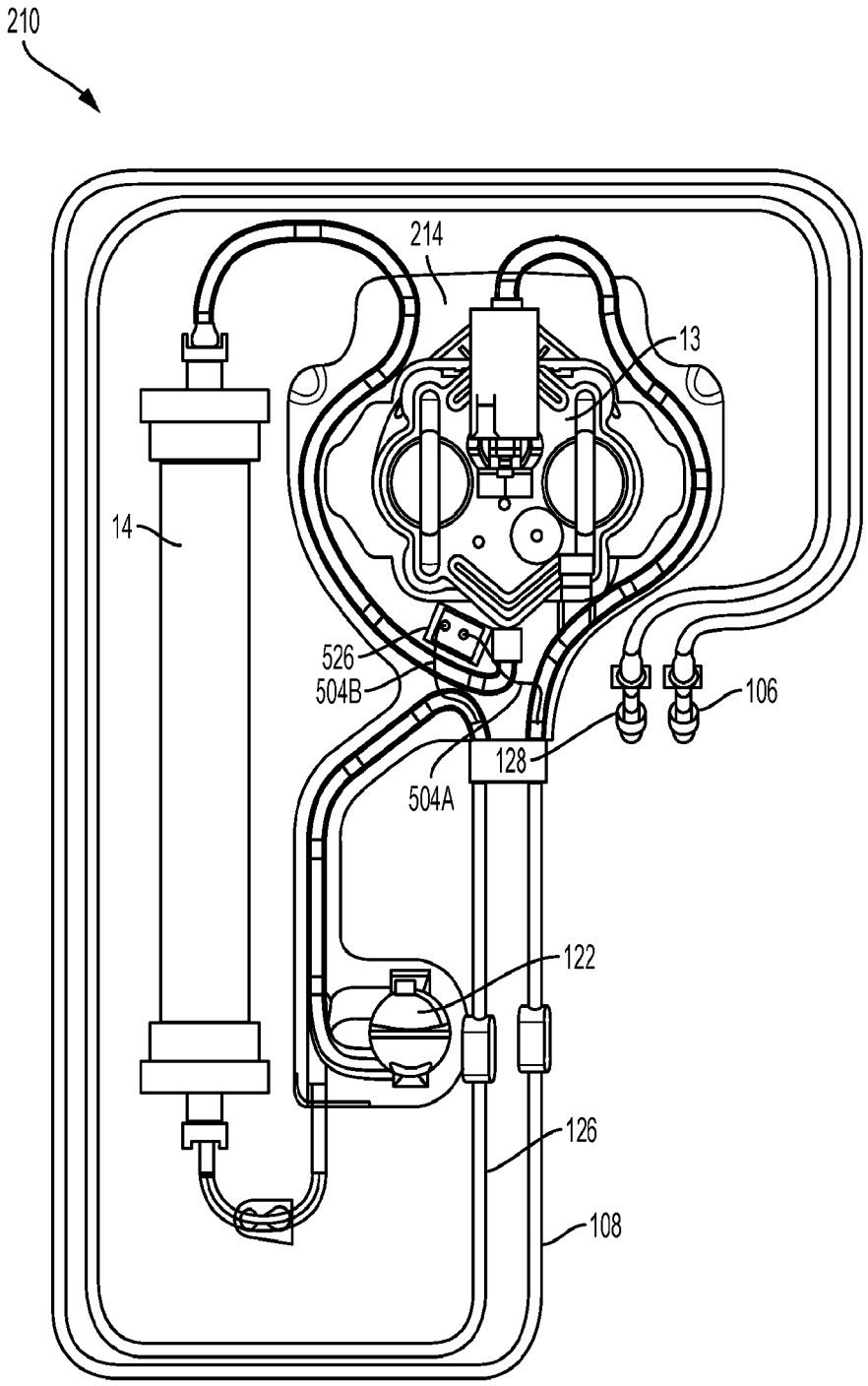


FIG. 47

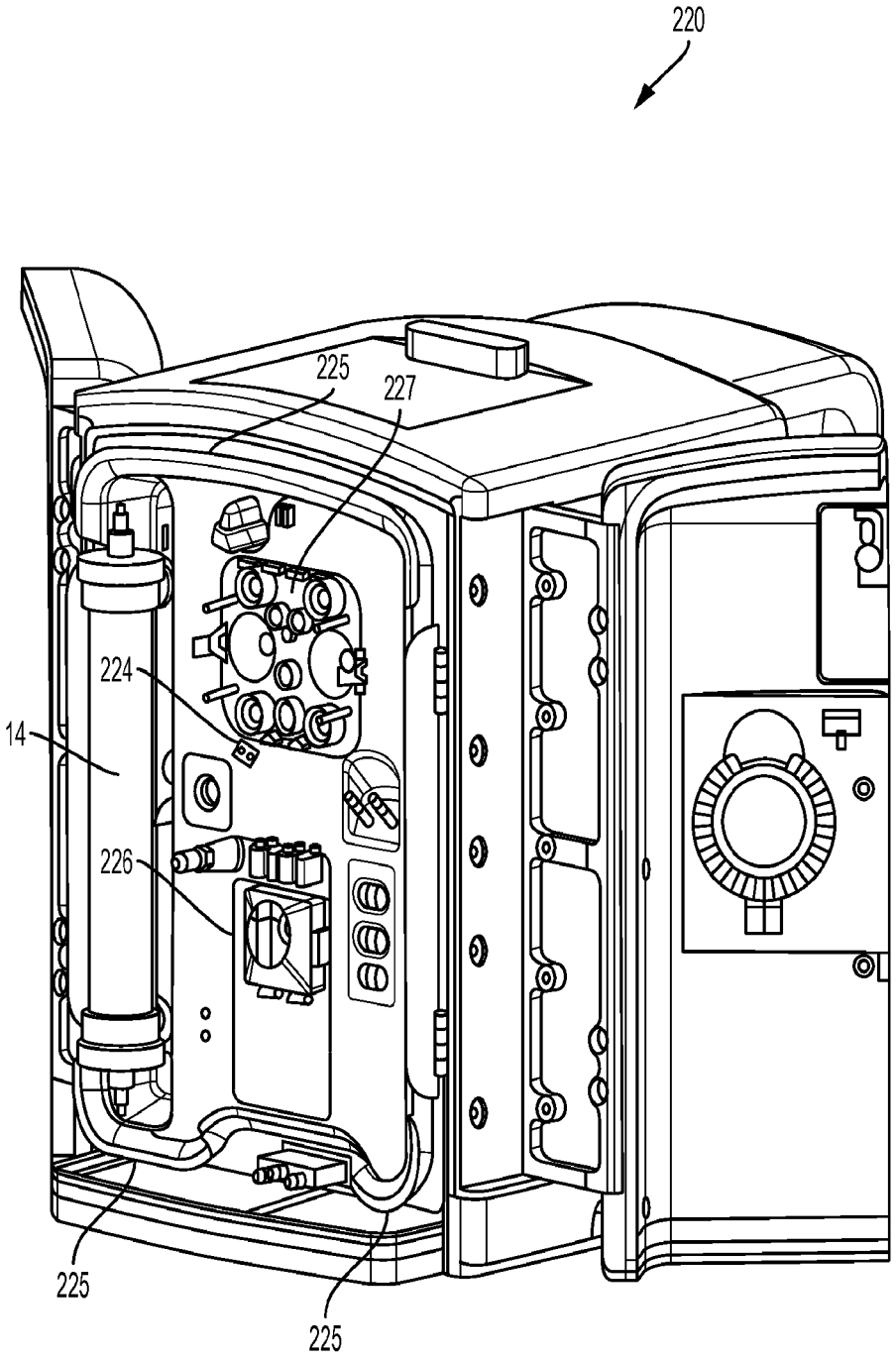


FIG. 48

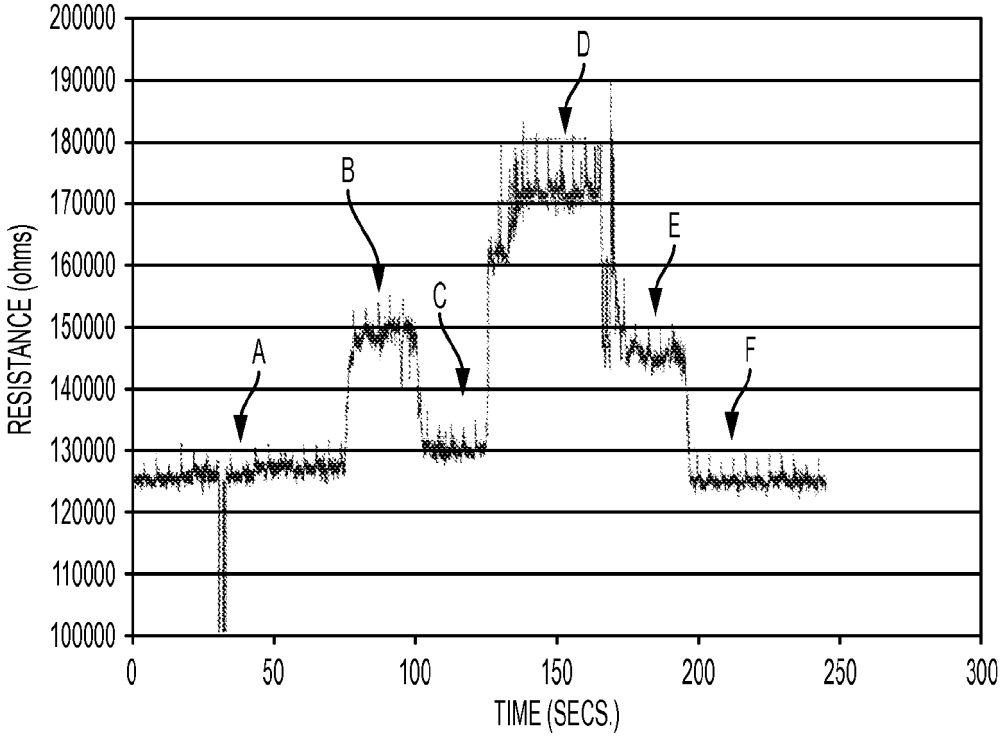

200000
190000
180000
170000
160000
150000
140000
130000
120000
110000
100000
RESISTANCE (ohms)
0
50
100
150
200
250
300
TIME (SECS.)
A
B
C
D
E
F

FIG. 49

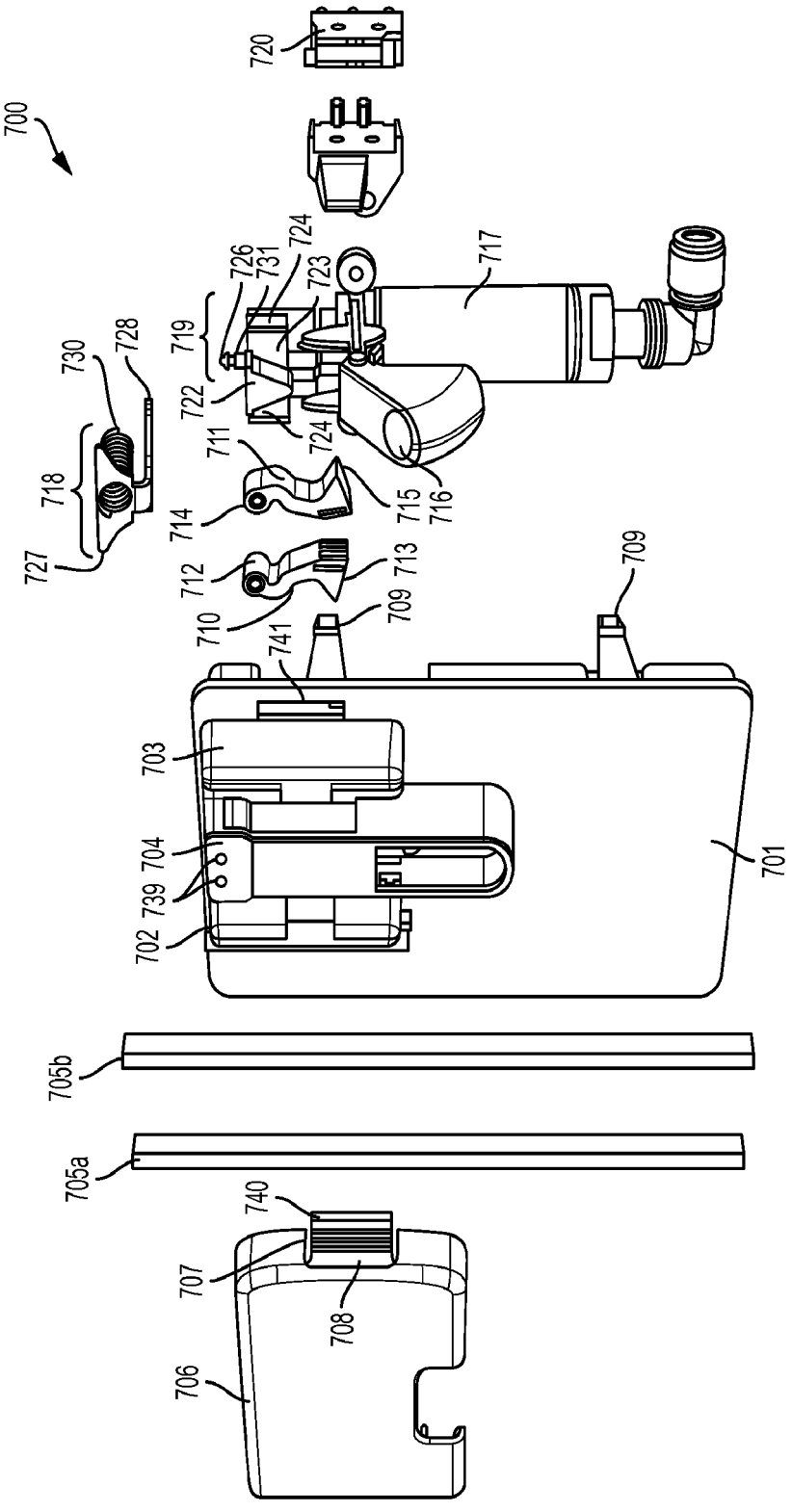

700
720
724
726
731
723
717
719
728
730
722
724
711
718
714
715
716
727
712
713
709
710
709
741
703
704
739
702
701
705b
705a
740
707
708
706

FIG. 50

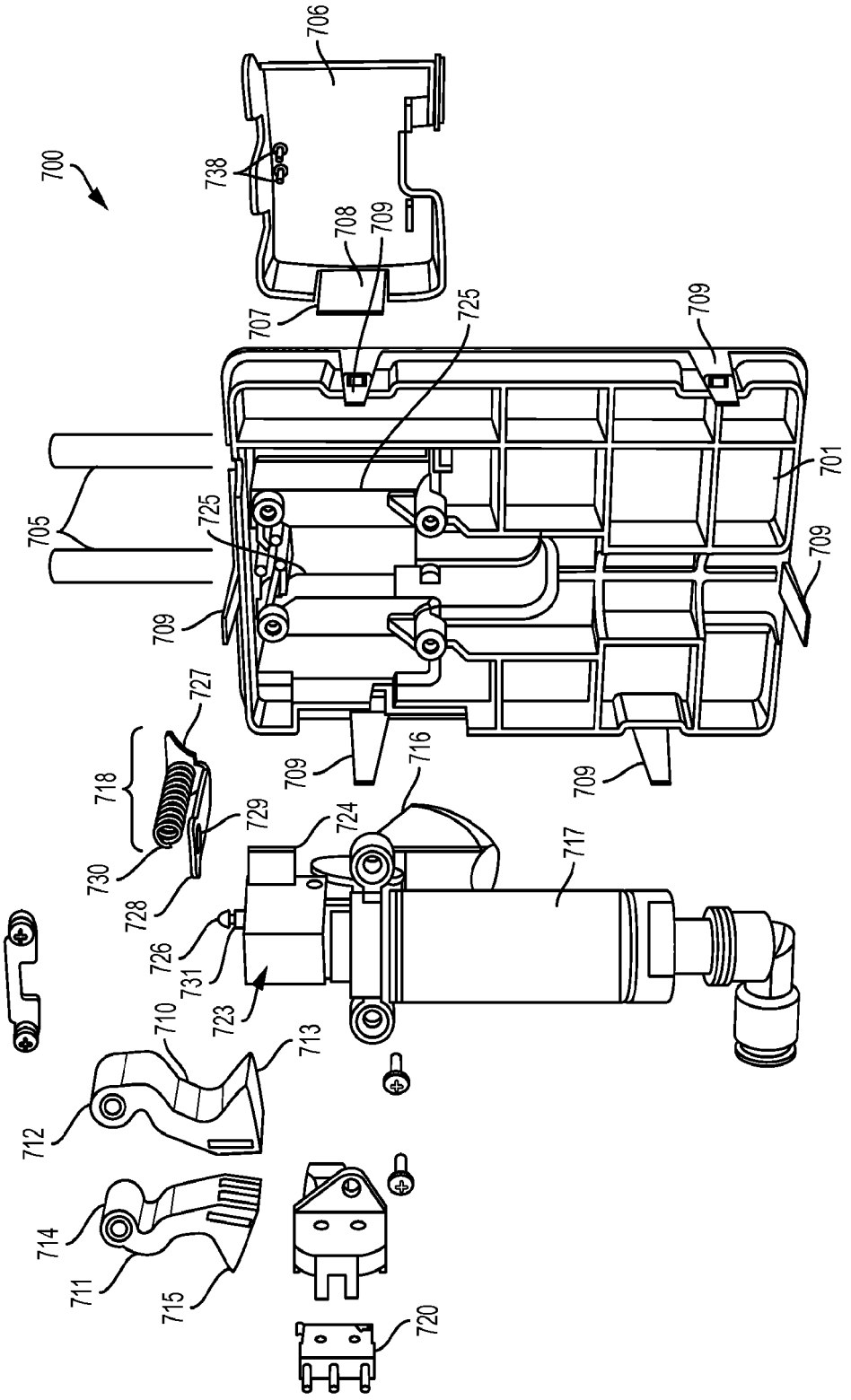

700
706
738
708
709
707
725
709
701
705
725
709
709
727
718
729
724
716
709
709
730
728
726
731
723
717
710
713
712
714
711
715
720

FIG. 51

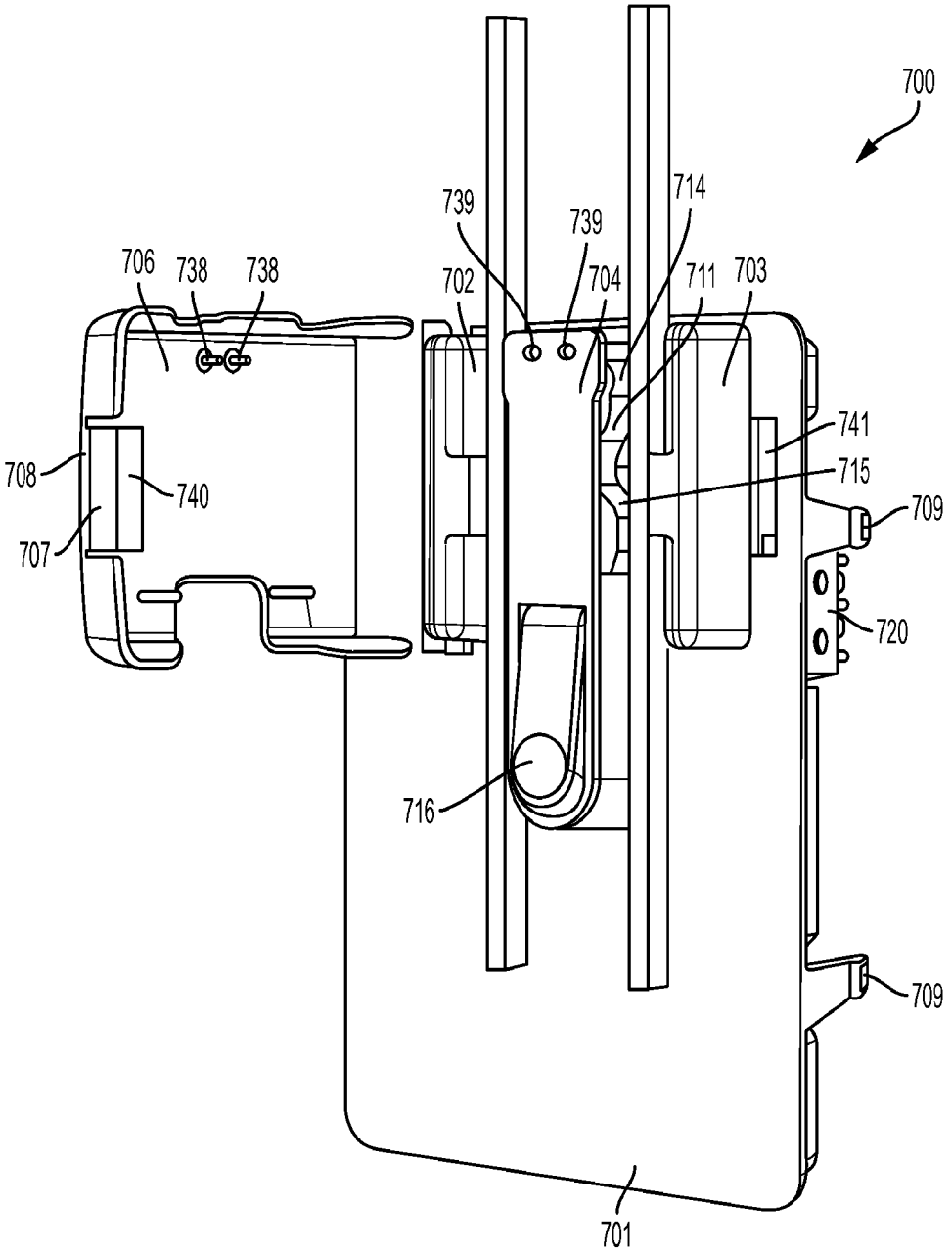

700
739
739
714
706
738
738
702
704
711
703
741
708
740
715
709
707
720
716
709
701

FIG. 52

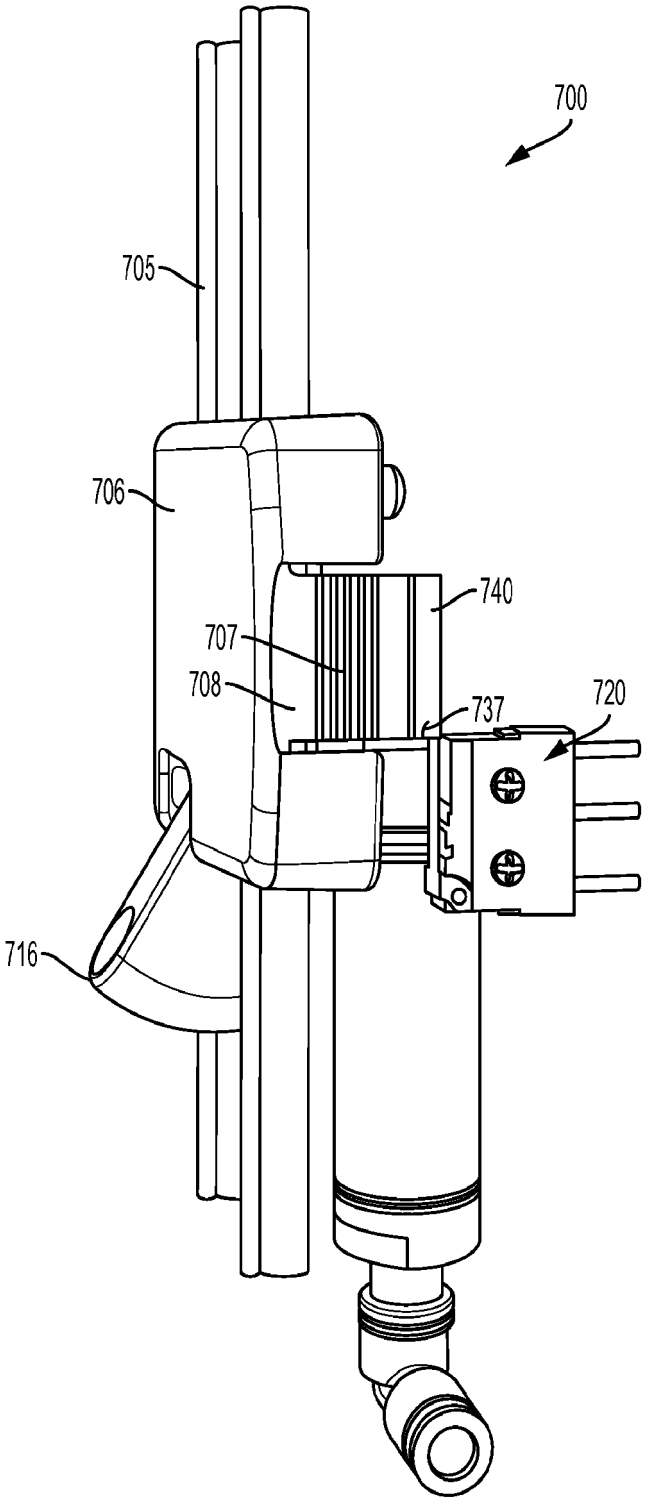


FIG. 53

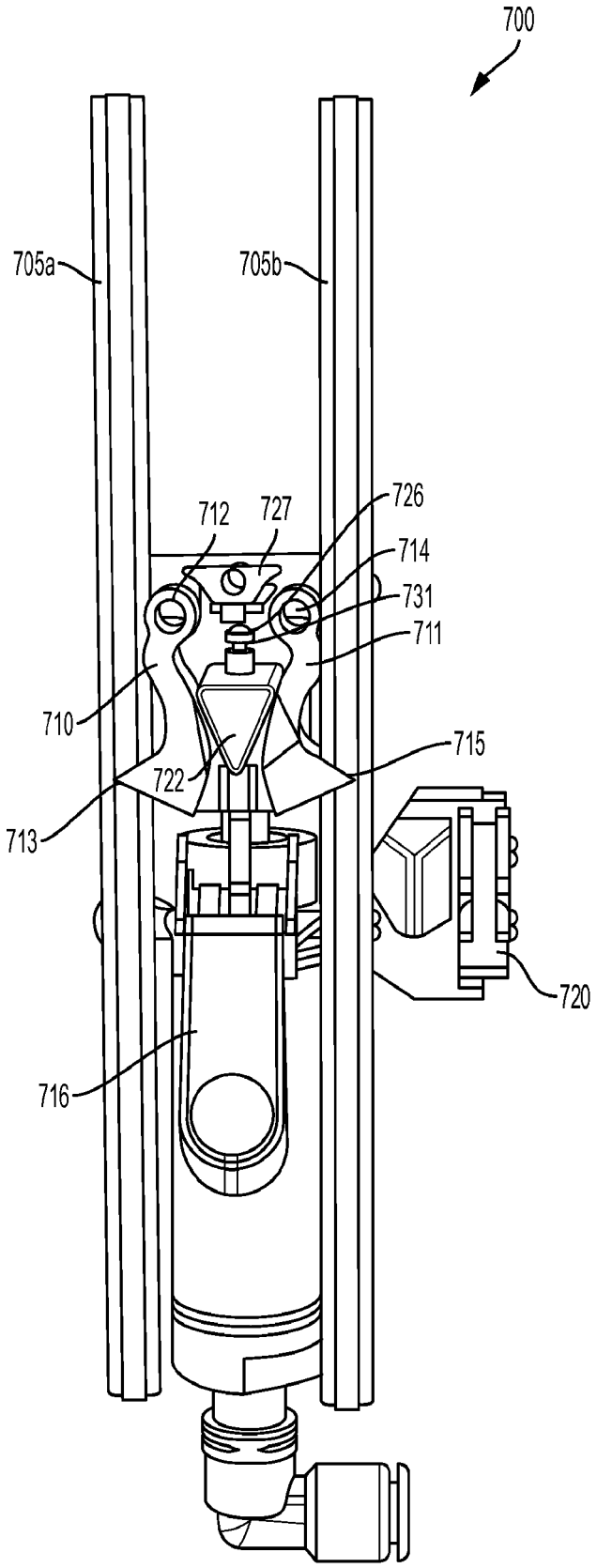


FIG. 54

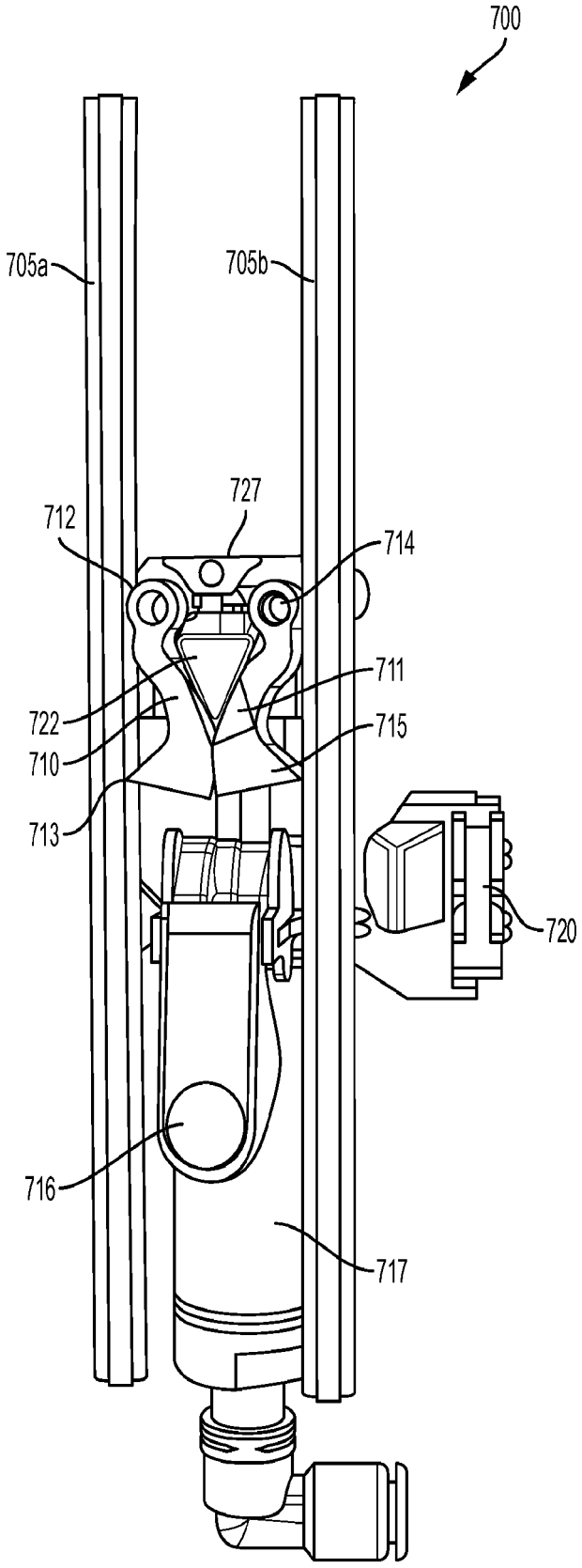


FIG. 55

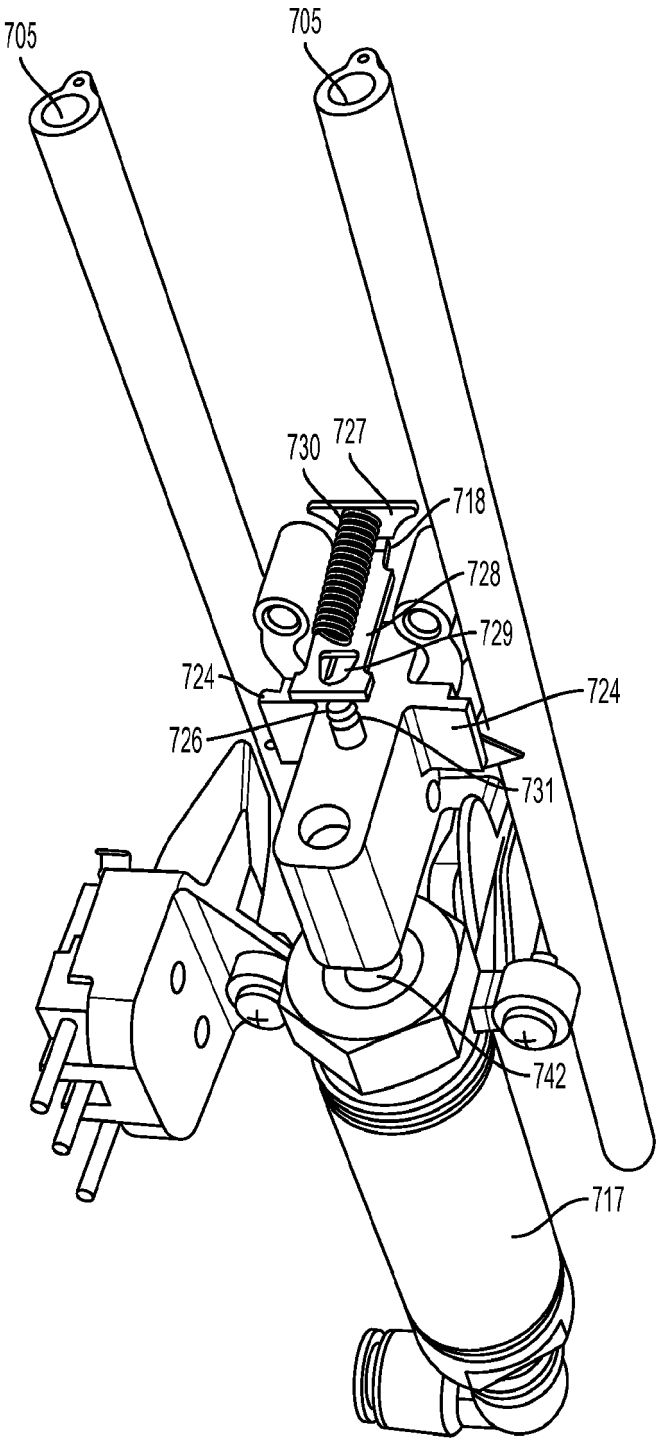


FIG. 56

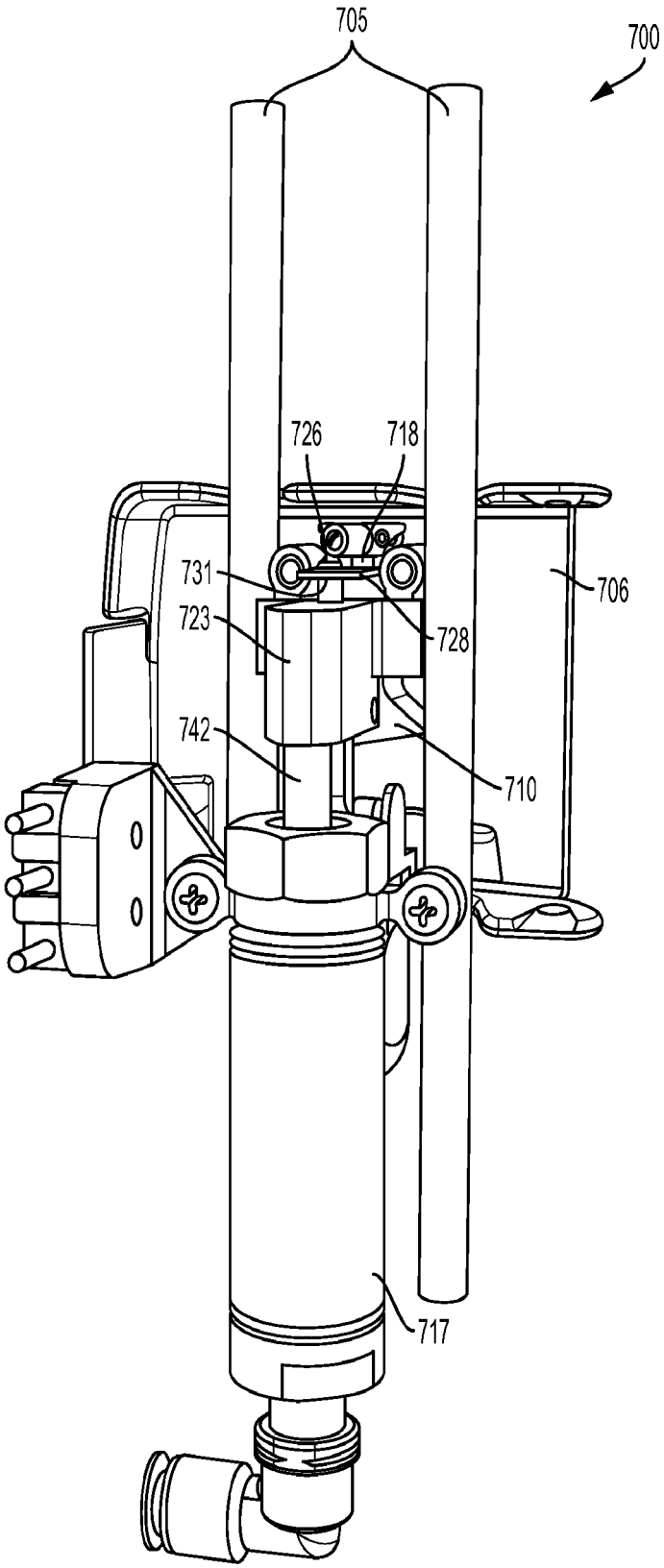


FIG. 57

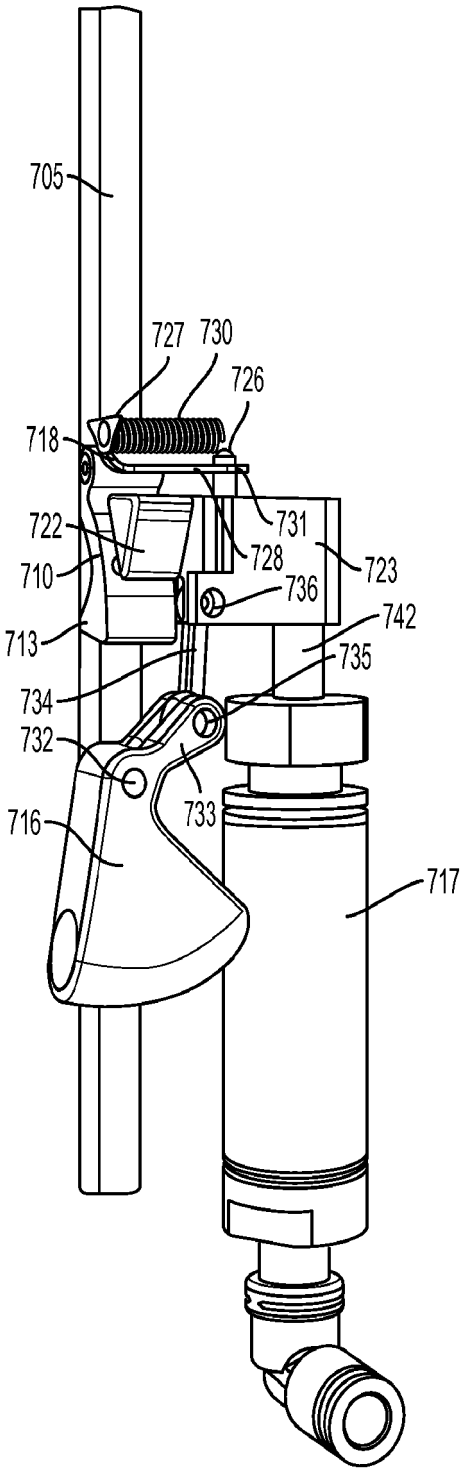

705
727
730
726
718
722
731
728
723
710
736
742
713
735
734
732
733
716
717

FIG. 58

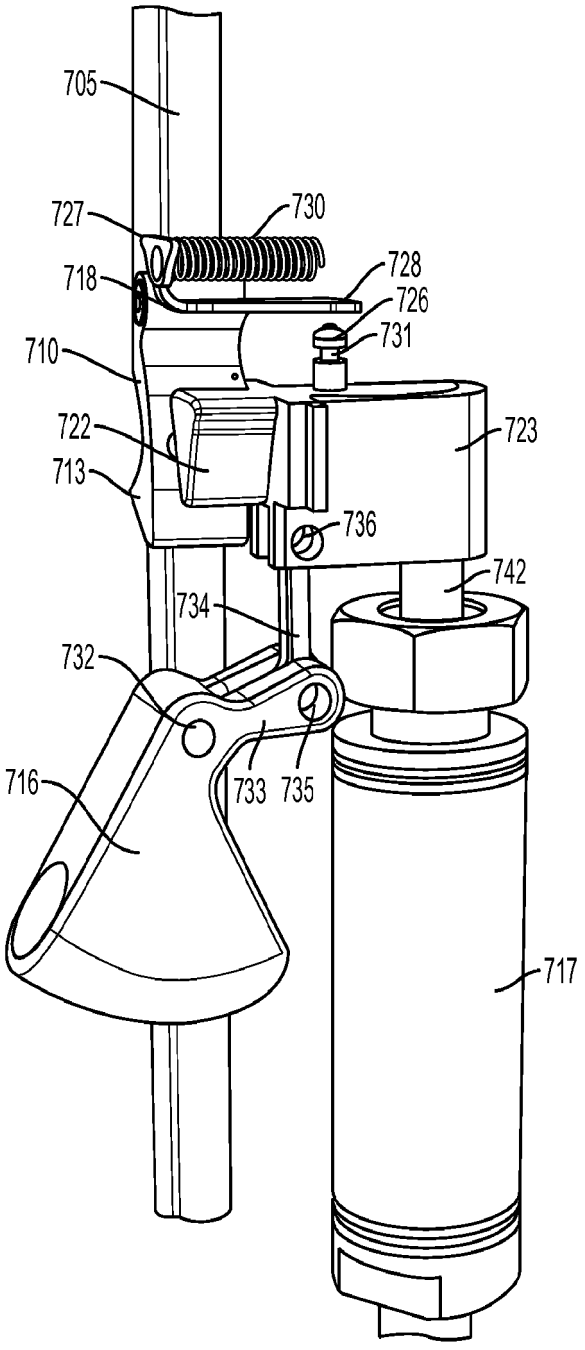

705
727
730
718
728
726
731
710
722
723
713
736
742
734
732
716
733
735
717

FIG. 59

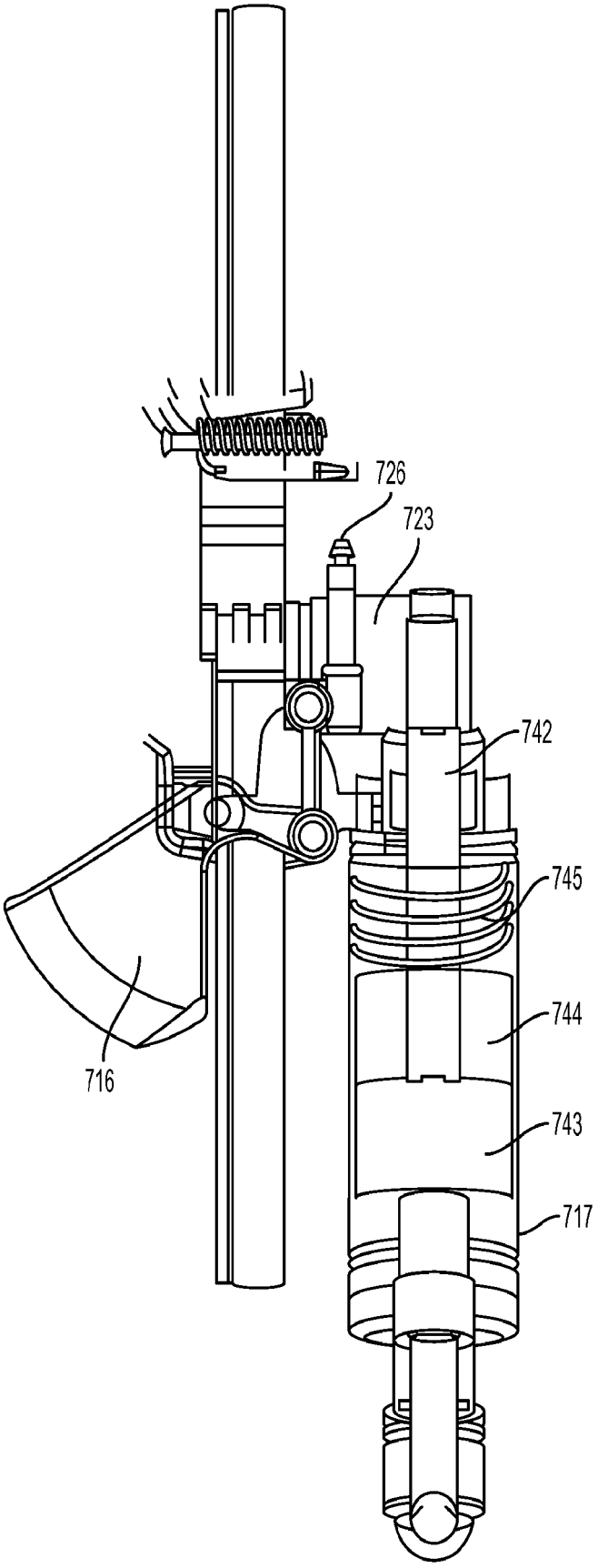


FIG. 60

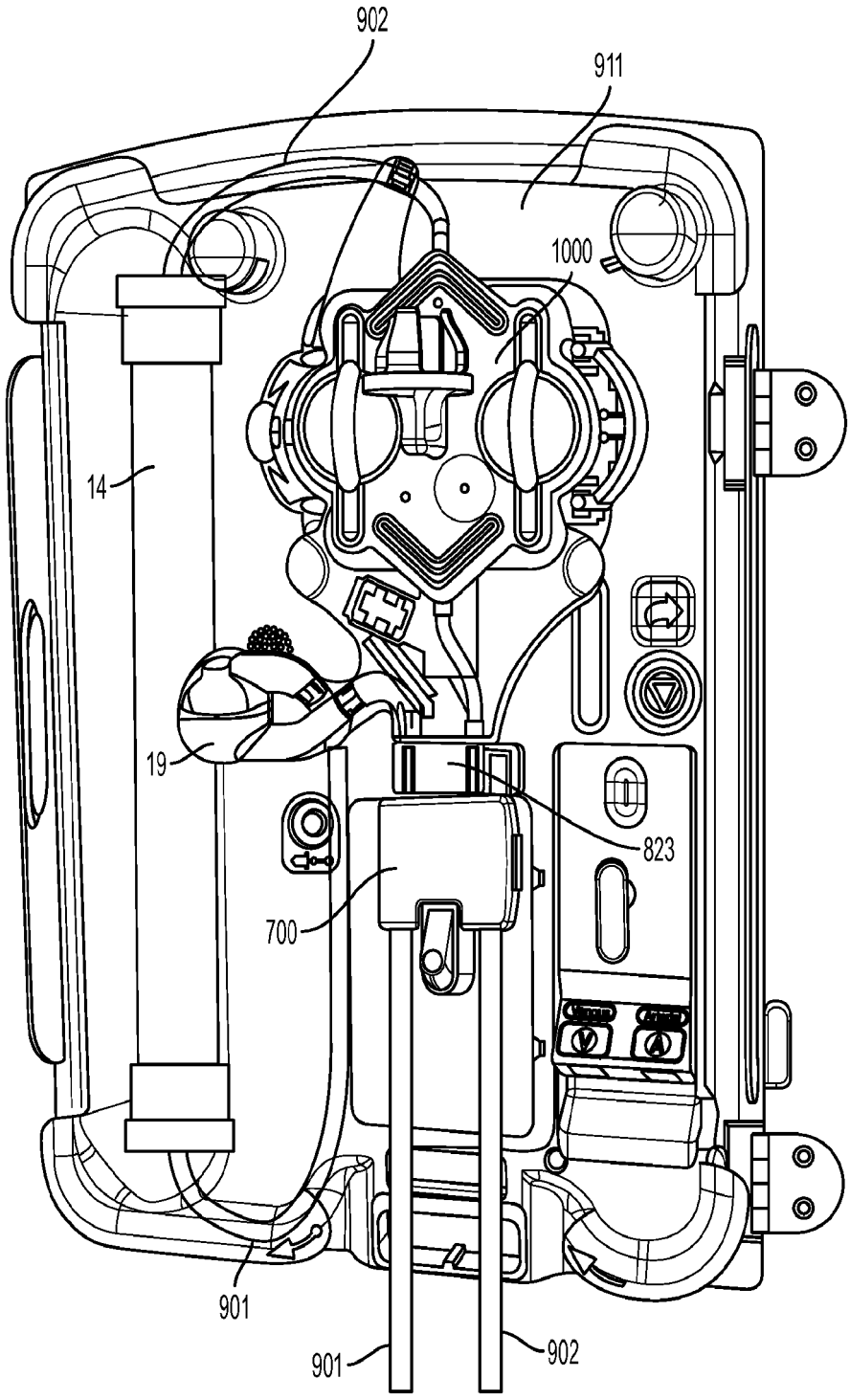


FIG. 61

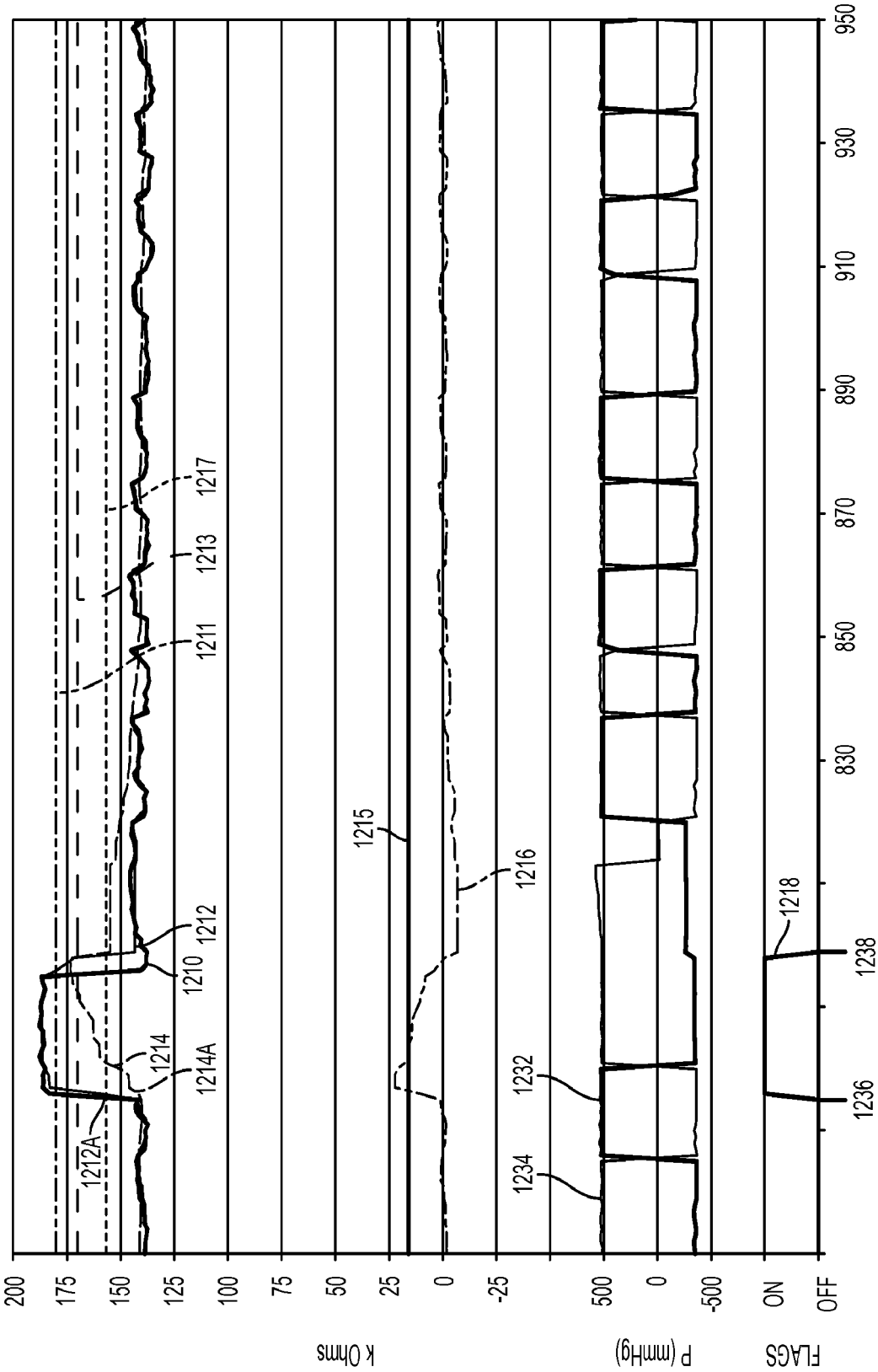

200
175
150
125
100
75
50
25
0
-25
500
0
-500
ON
OFF
k Ohms
P (mmHg)
FLAGS
950
930
910
890
870
850
830
1212A
1214
1214A
1210
1212
1211
1213
1217
1215
1216
1232
1234
1218
1238
1236

FIG. 62

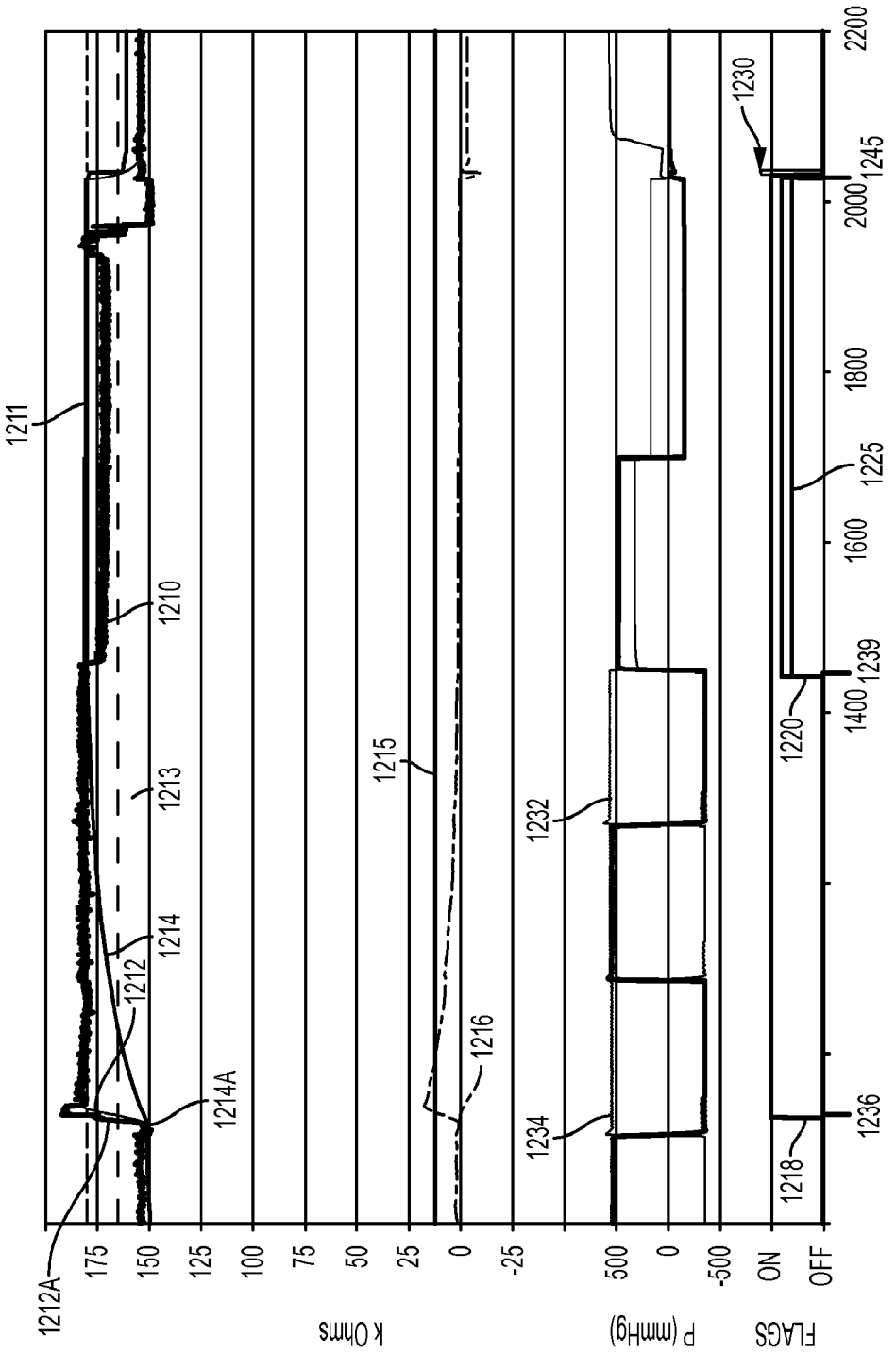

1211
1210
1213
1214
1212
1214A
1212A
1215
1216
1232
1234
1230
1220
1218
1225
1239
1236
1245
175
150
125
100
75
50
25
0
-25
500
0
-500
ON
OFF
k Ohms
P (mmHg)
FLAGS
2200
2000
1800
1600
1400

FIG. 63

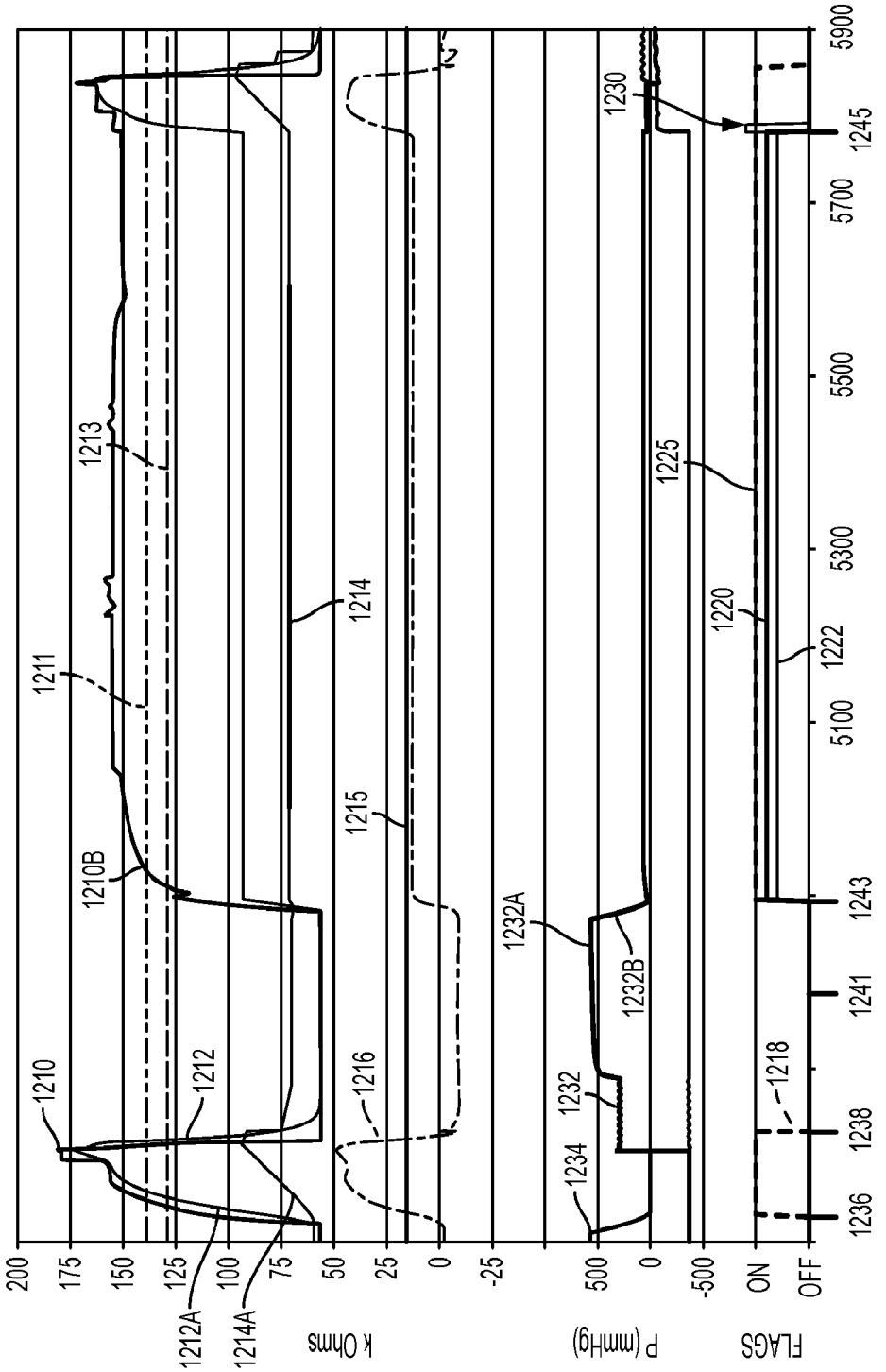

200
175
150
125
100
75
50
25
0
-25
500
0
-500
ON
OFF
k Ohms
P (mmHg)
FLAGS
1210
1211
1212
1212A
1213
1214
1214A
1215
1216
1210B
1230
1225
1220
1222
1232A
1232B
1232
1234
1218
5900
5700
5500
5300
5100
1245
1243
1241
1238
1236

FIG. 64

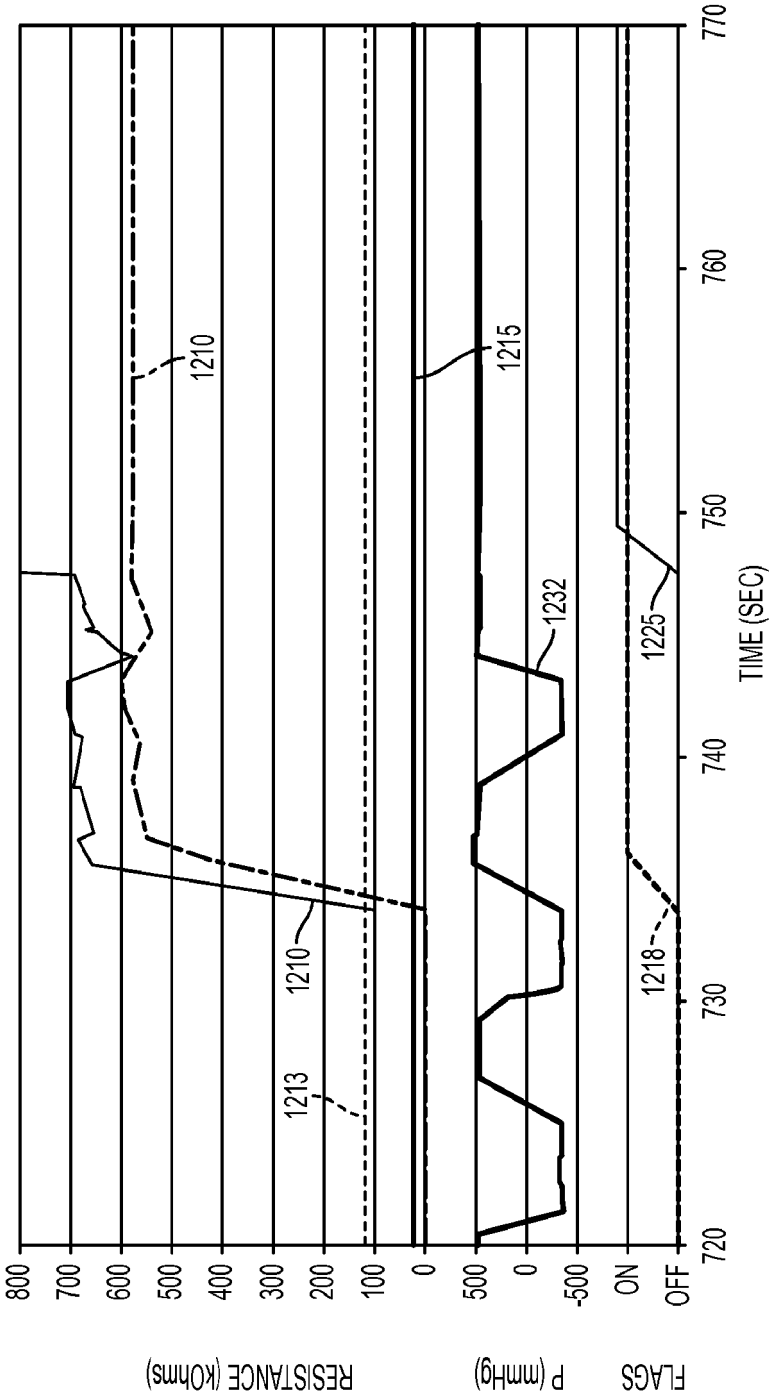

800
700
600
500
400
300
200
100
0
500
0
-500
ON
OFF
720
730
740
750
760
770
TIME (SEC)
RESISTANCE (kOhms)
P (mmHg)
FLAGS
1210
1215
1232
1225
1210
1213
1218

FIG. 65