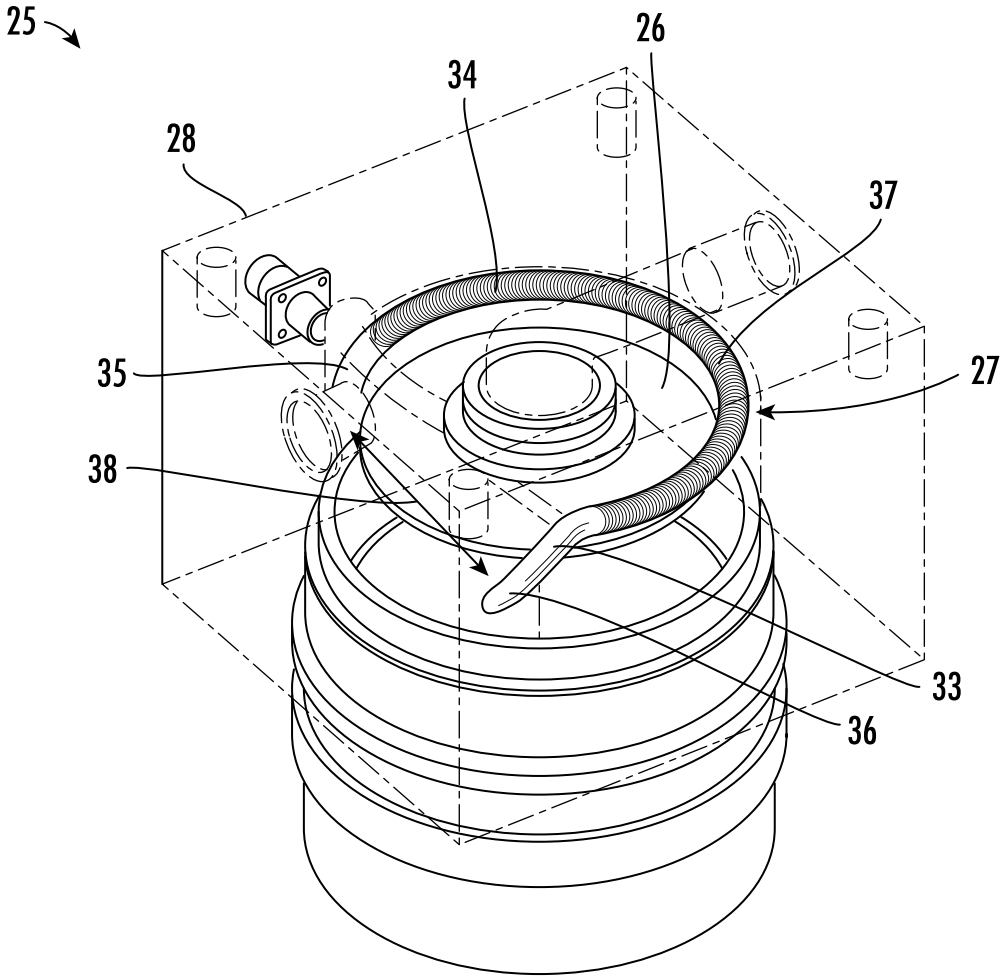

FIG. 1

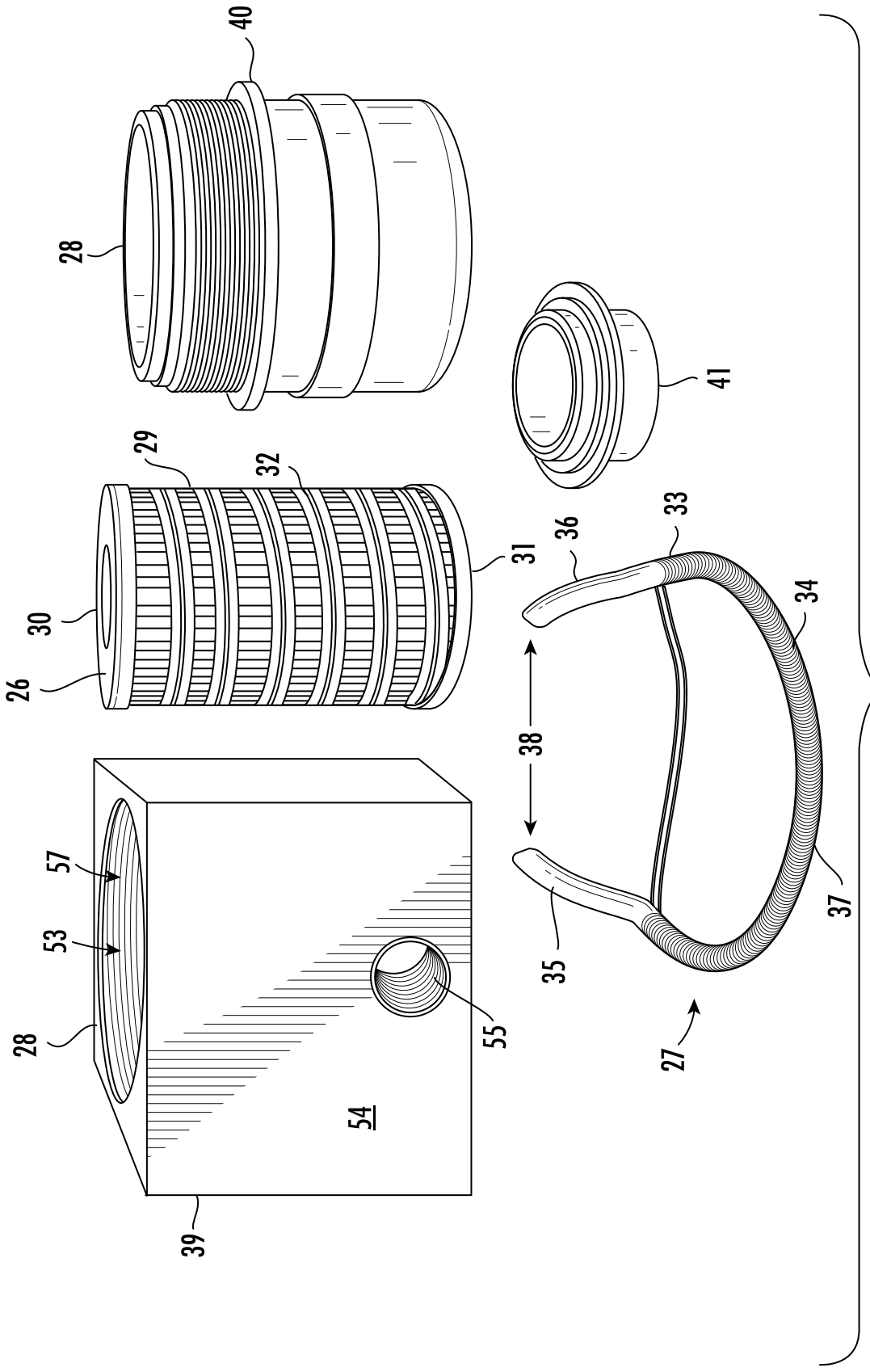

FIG. 2

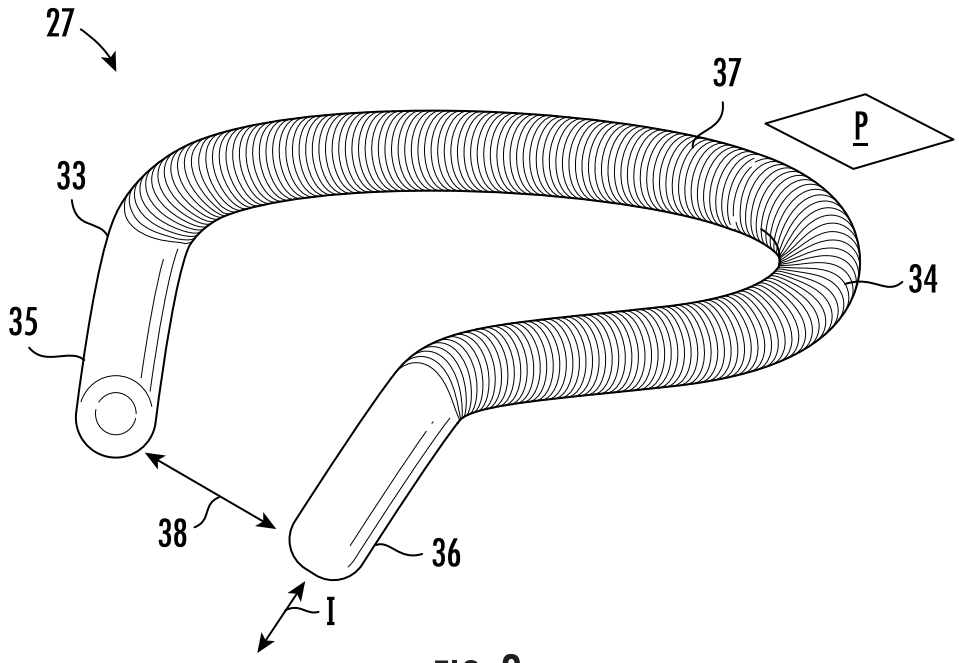

FIG. 3

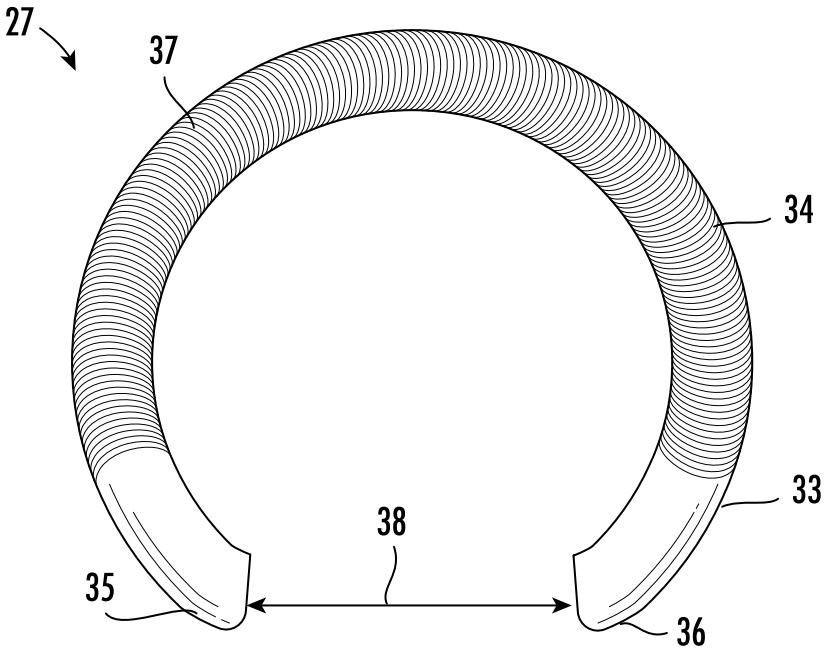

FIG. 4

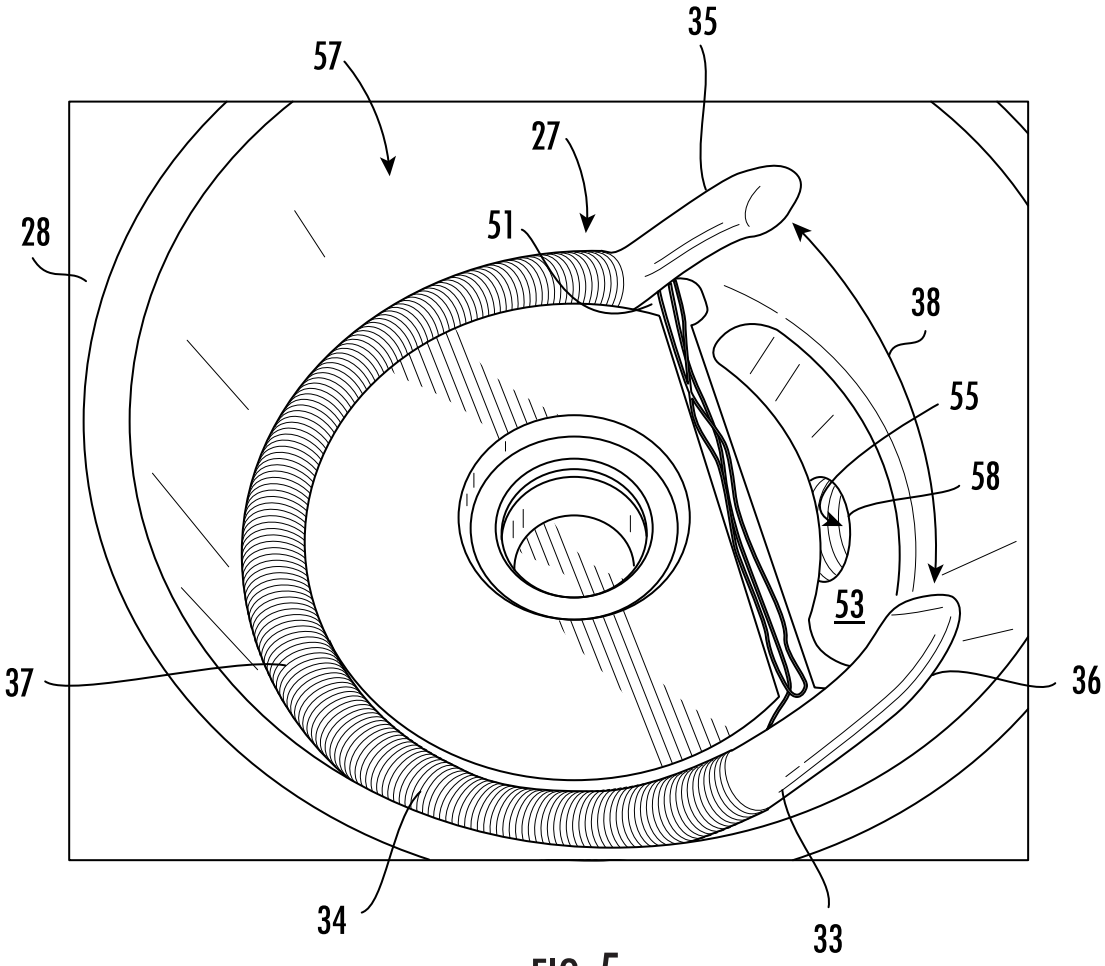

FIG. 5

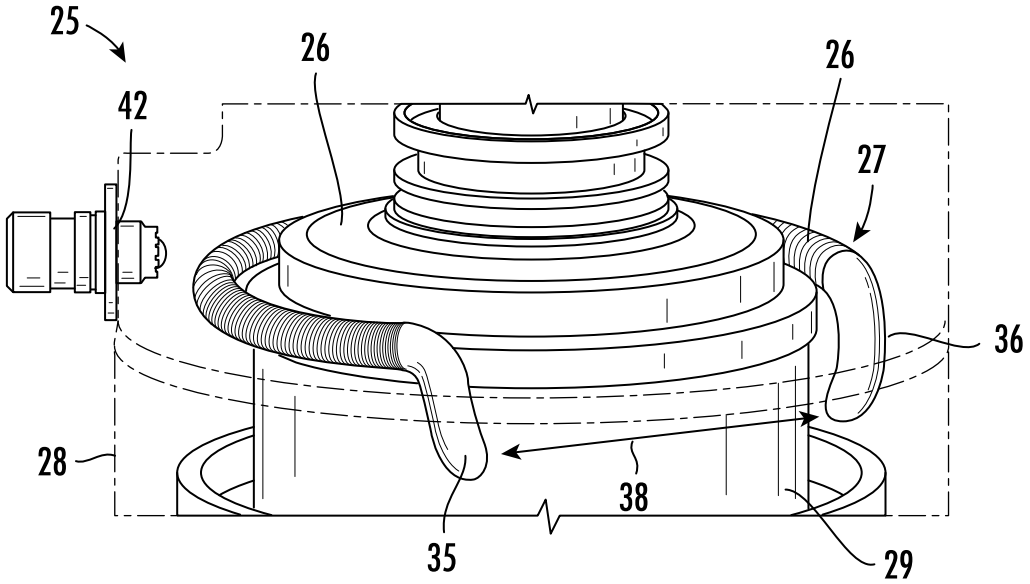

FIG. 6

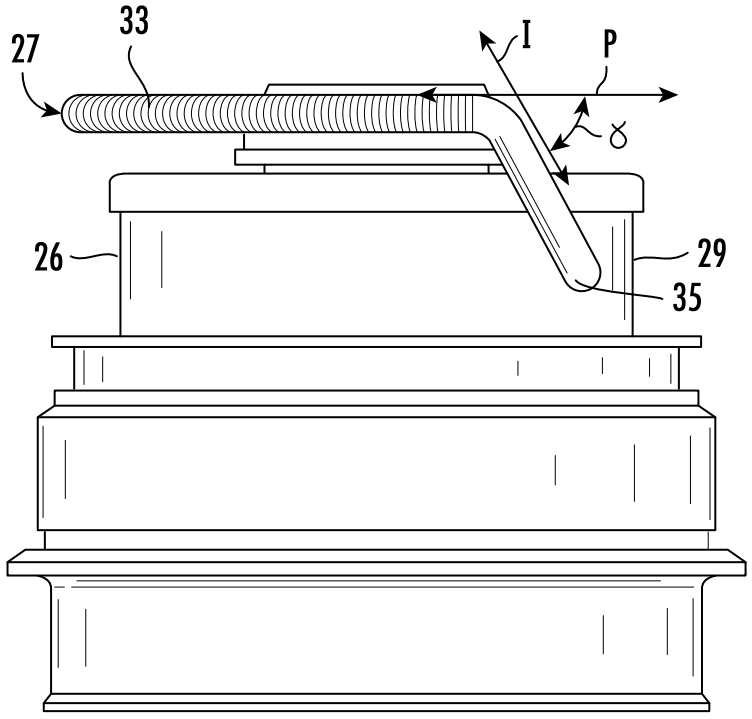

FIG. 7

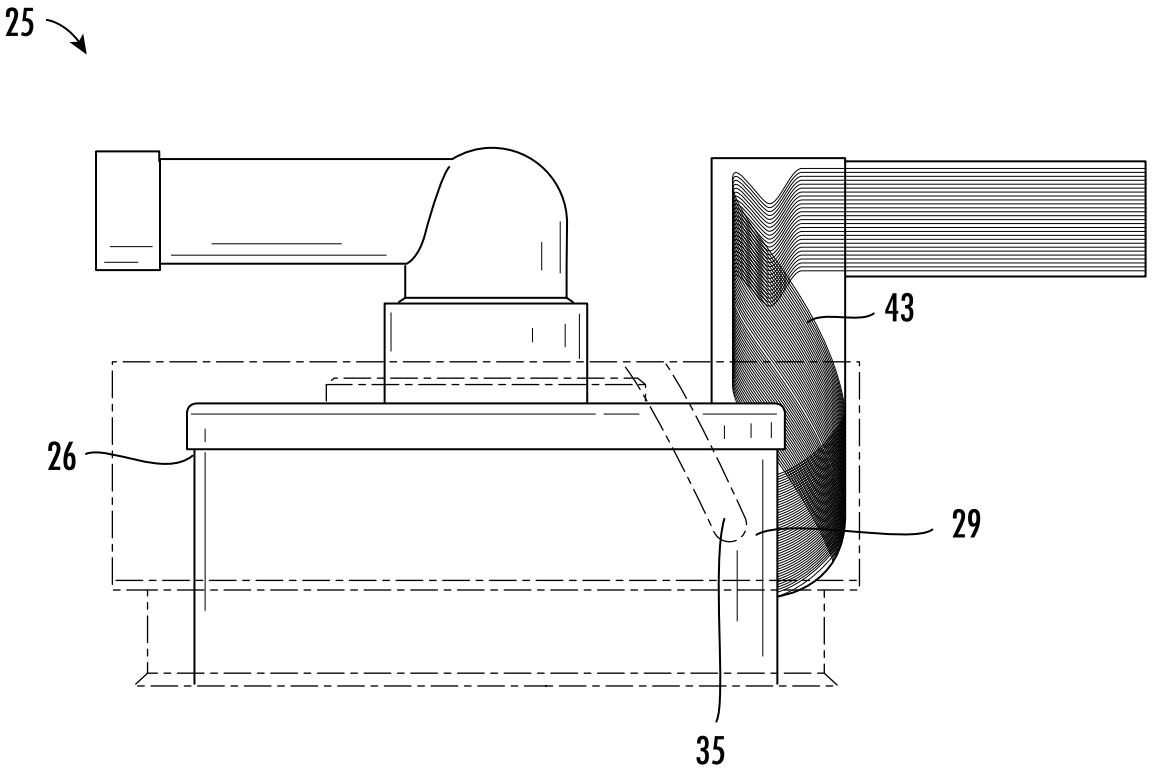

FIG. 8

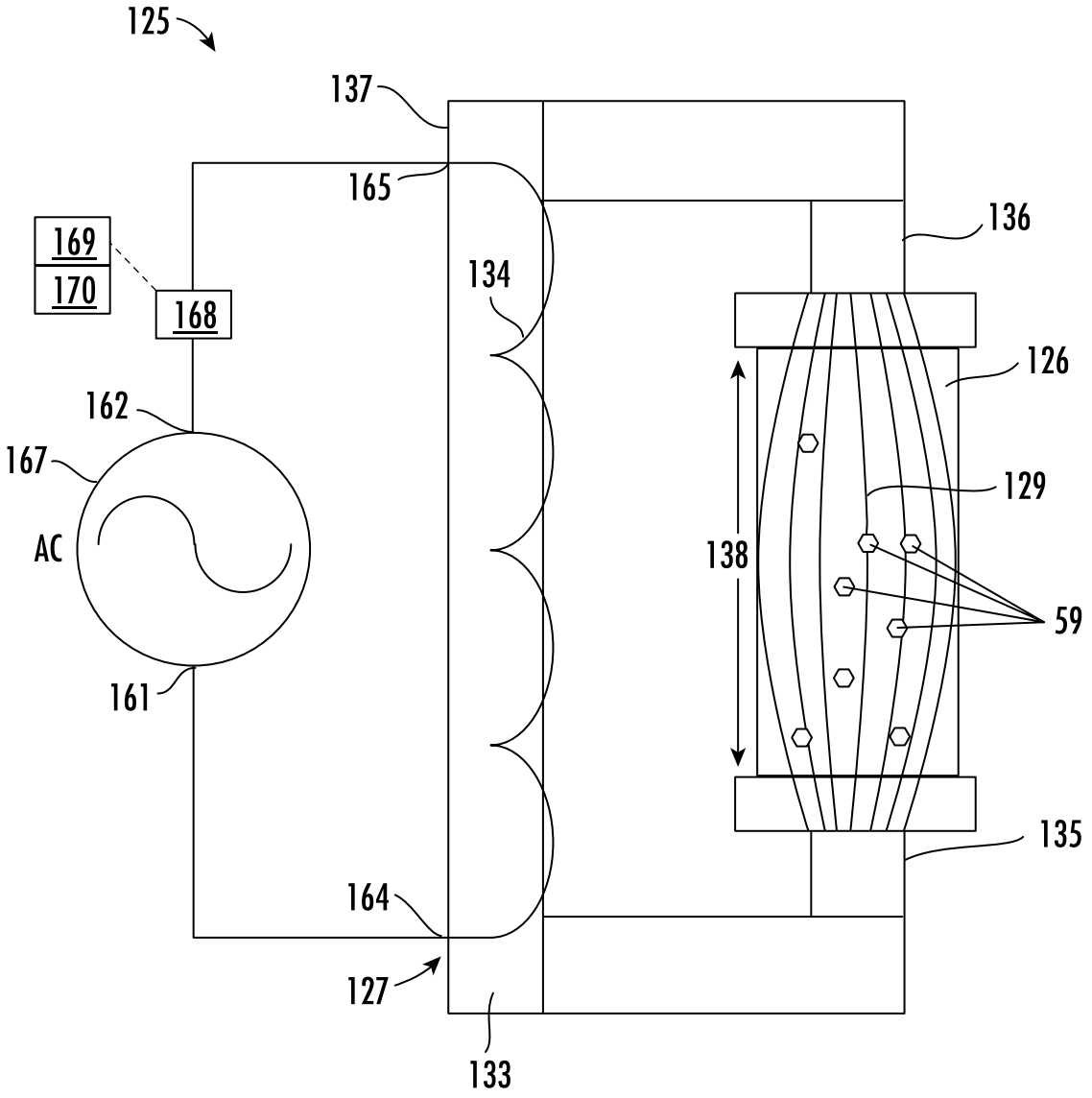
125
137
165
136
169
170
168
134
126
162
167
AC
129
138
59
161
135
164
127
133

FIG. 9

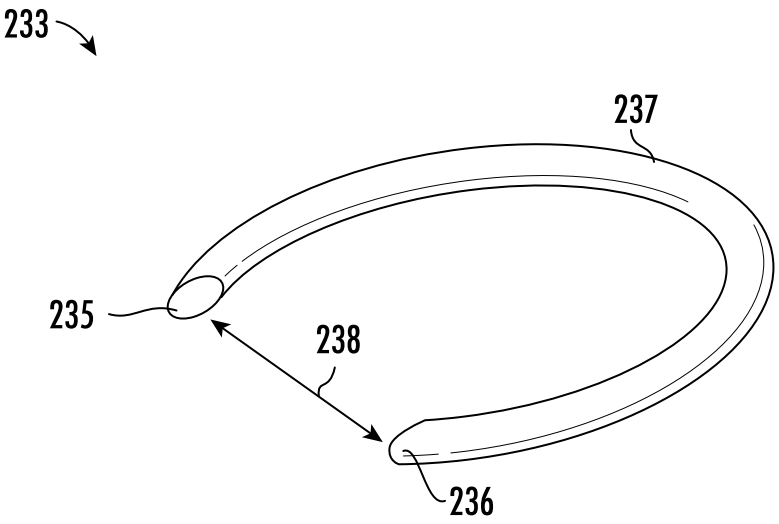

FIG. 10

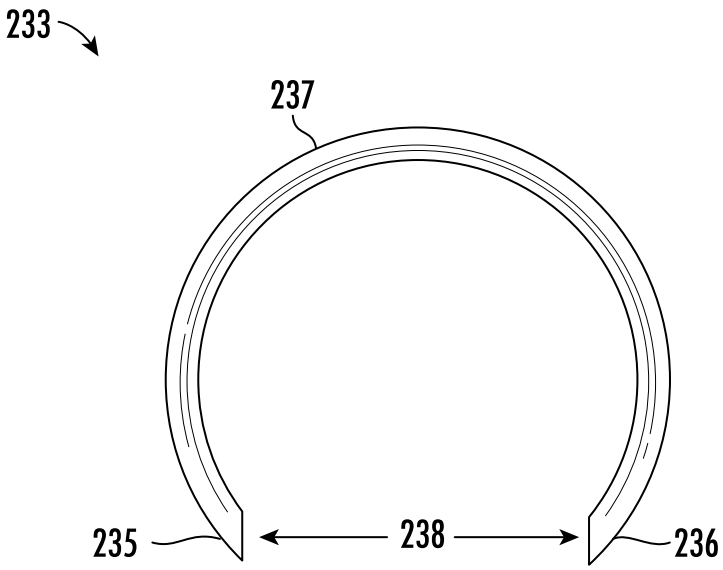

FIG. 11

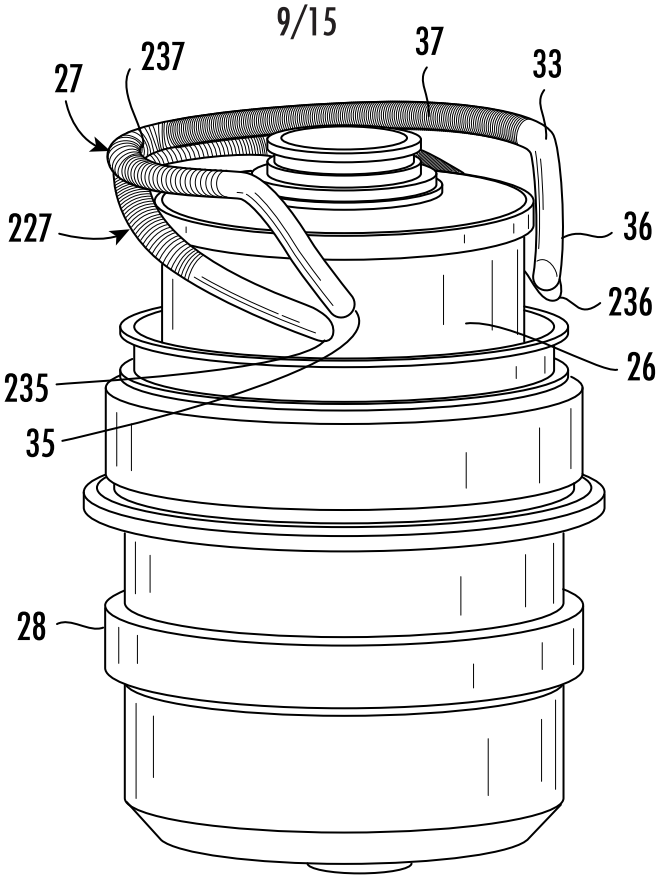

FIG. 12

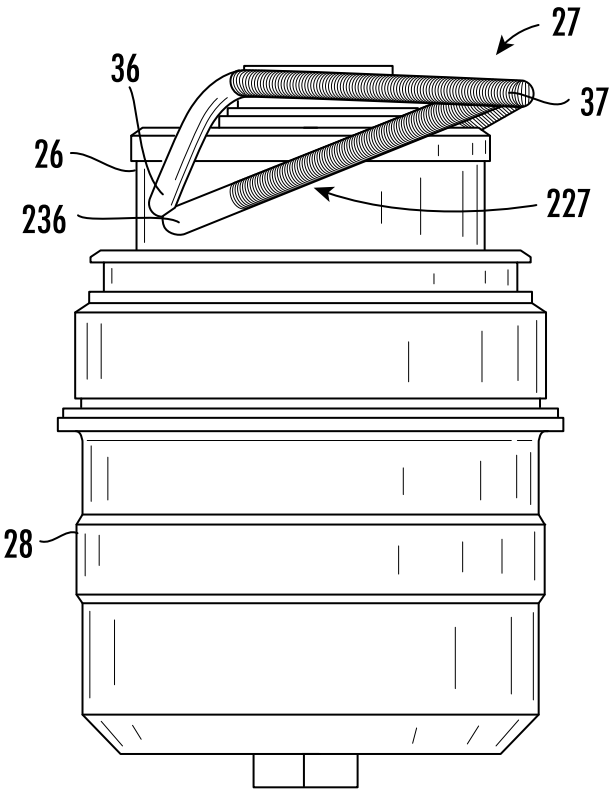

FIG. 13

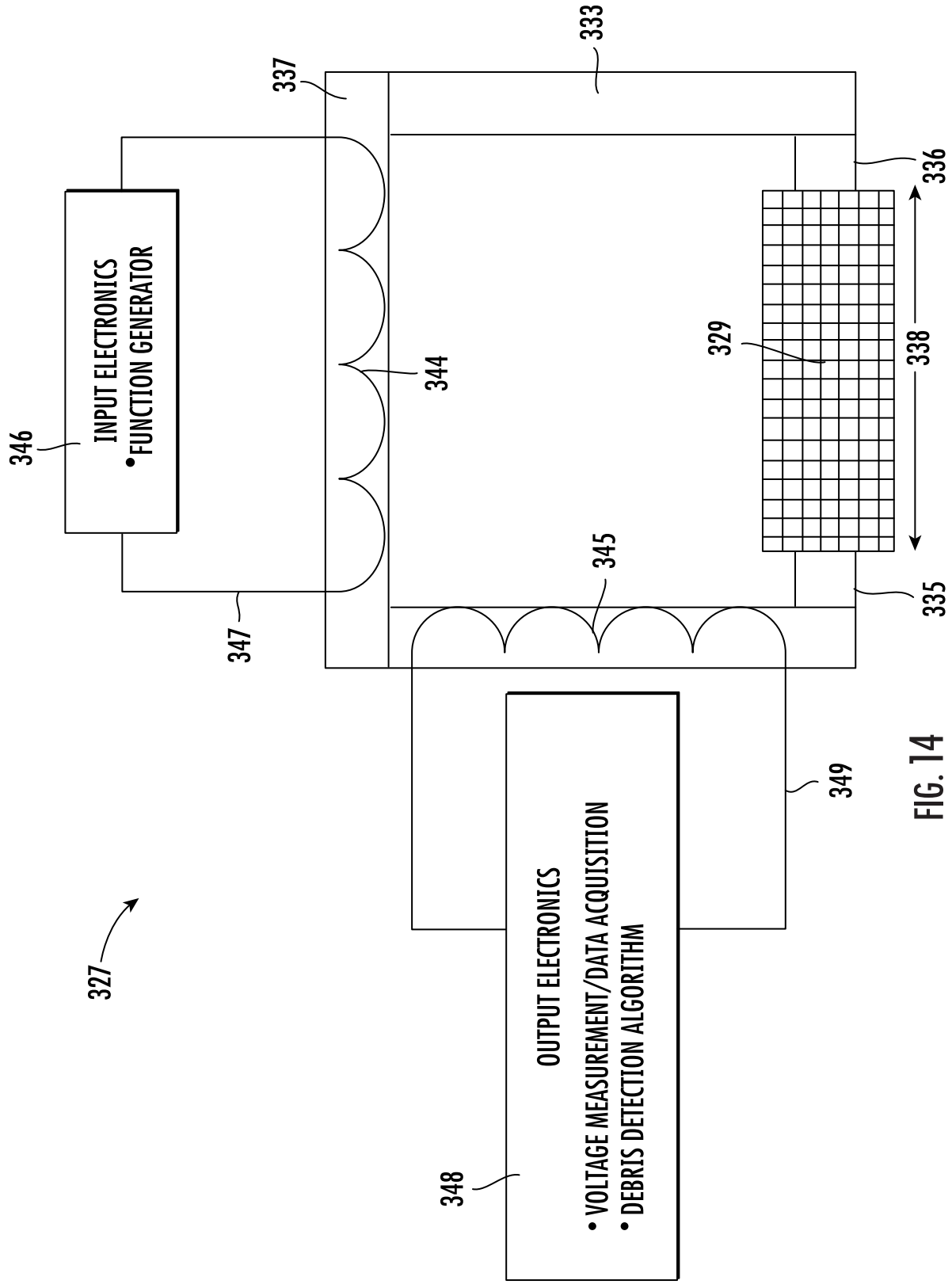
333
337
336
INPUT ELECTRONICS
• FUNCTION GENERATOR
346
344
329
338
345
335
347
349
OUTPUT ELECTRONICS
• VOLTAGE MEASUREMENT/DATA ACQUISITION
• DEBRIS DETECTION ALGORITHM
348
327

FIG. 14

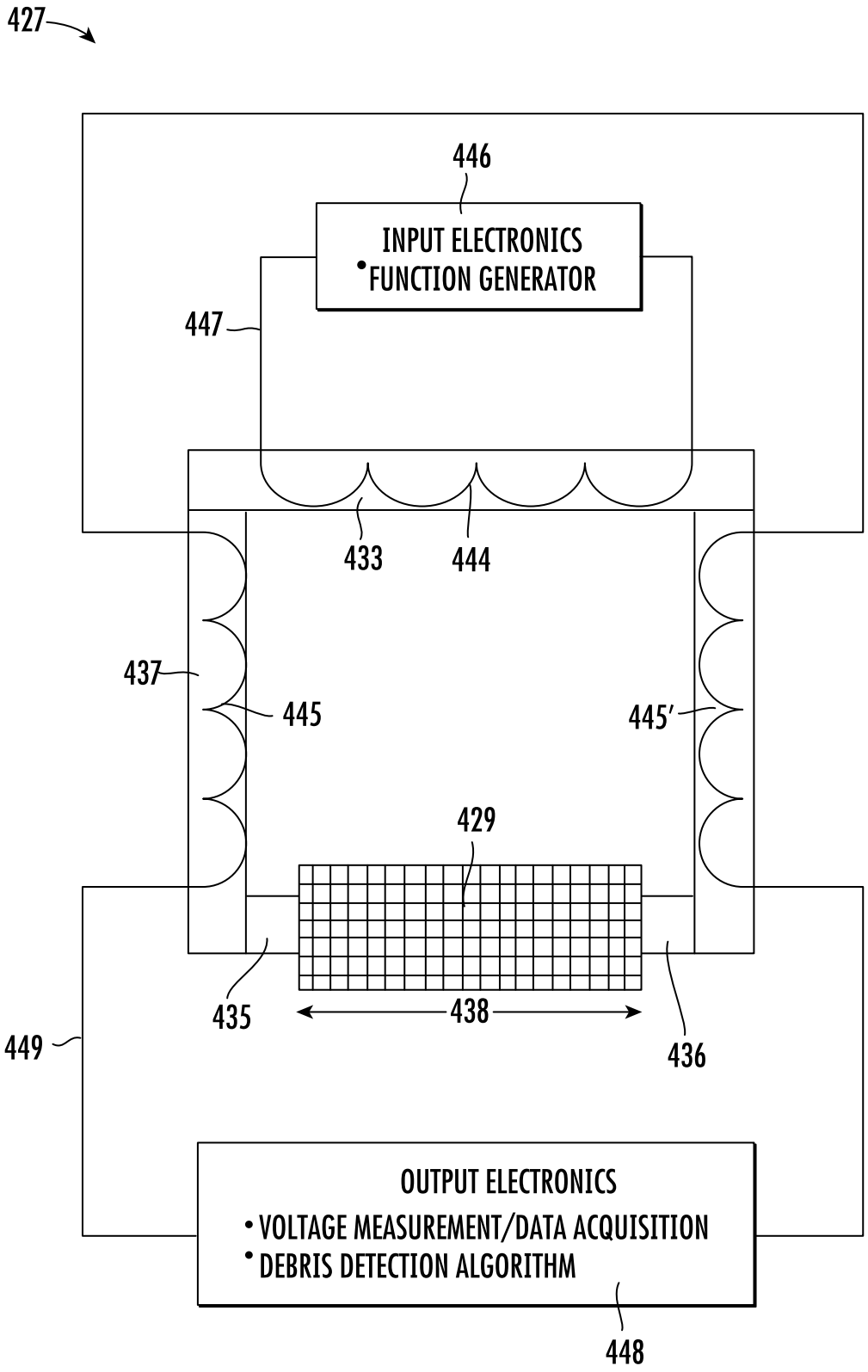
427
446
INPUT ELECTRONICS
• FUNCTION GENERATOR
447
433
444
437
445
445′
429
435
438
436
449
OUTPUT ELECTRONICS
• VOLTAGE MEASUREMENT/DATA ACQUISITION
• DEBRIS DETECTION ALGORITHM
448

FIG. 15

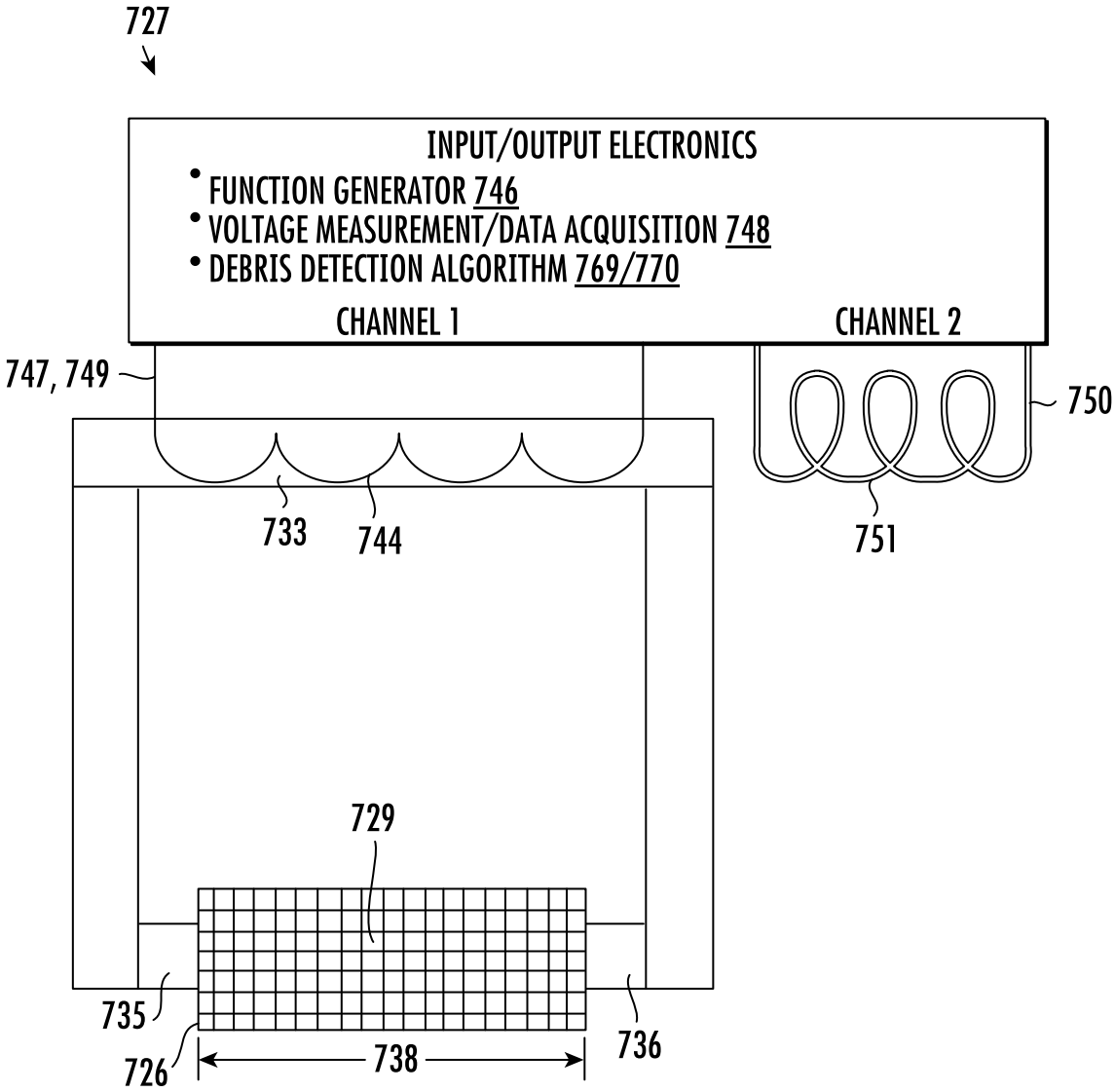
727
INPUT/OUTPUT ELECTRONICS
• FUNCTION GENERATOR 746
• VOLTAGE MEASUREMENT/DATA ACQUISITION 748
• DEBRIS DETECTION ALGORITHM 769/770
CHANNEL 1
CHANNEL 2
747, 749
750
733
744
751
729
735
736
726
738

FIG. 16

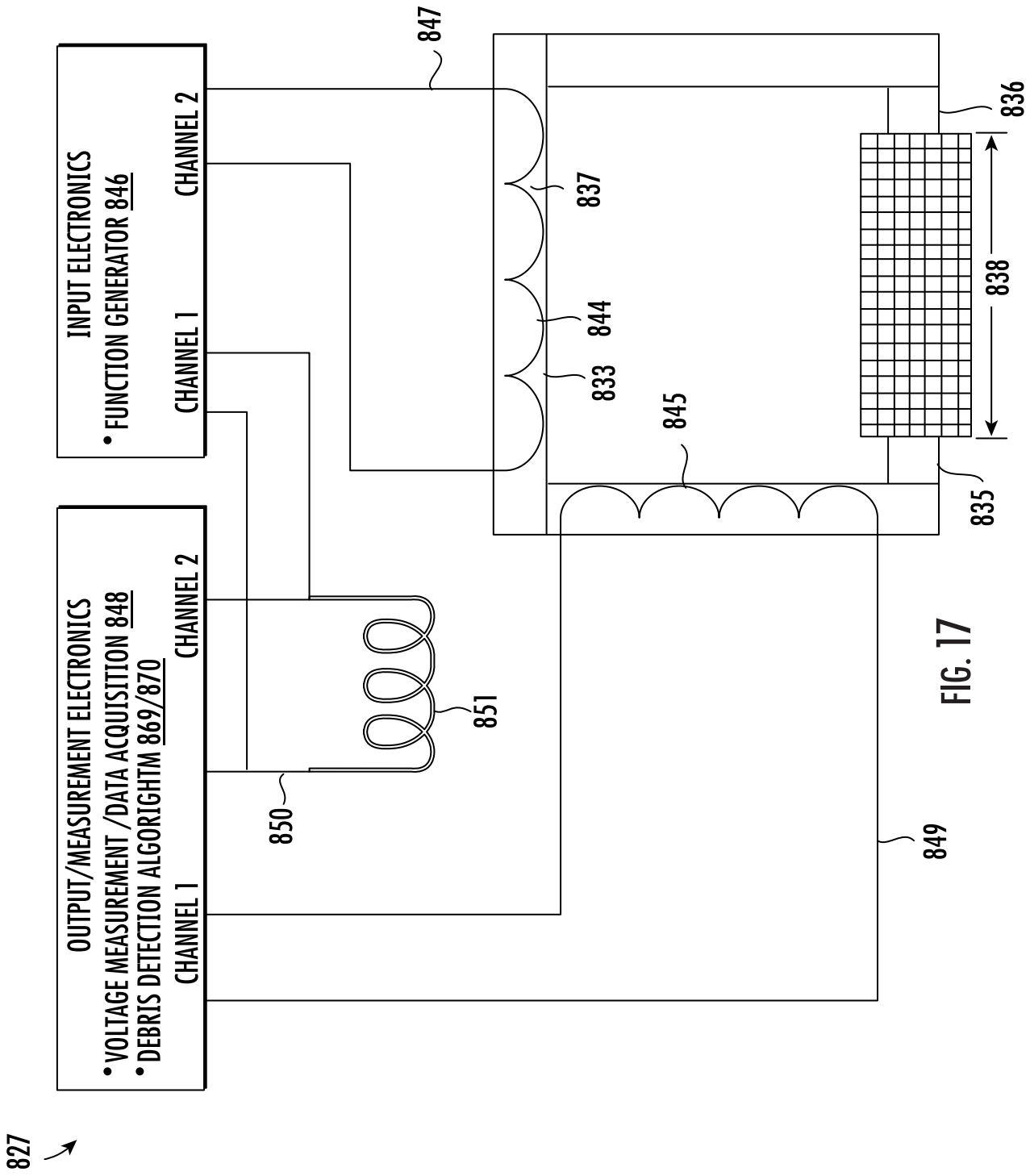
827
INPUT ELECTRONICS
• FUNCTION GENERATOR 846
CHANNEL 1
CHANNEL 2
OUTPUT/MEASUREMENT ELECTRONICS
• VOLTAGE MEASUREMENT /DATA ACQUISITION 848
• DEBRIS DETECTION ALGORIGHTM 869/870
CHANNEL 1
CHANNEL 2
847
836
837
838
844
833
845
835
851
850
849

FIG. 17

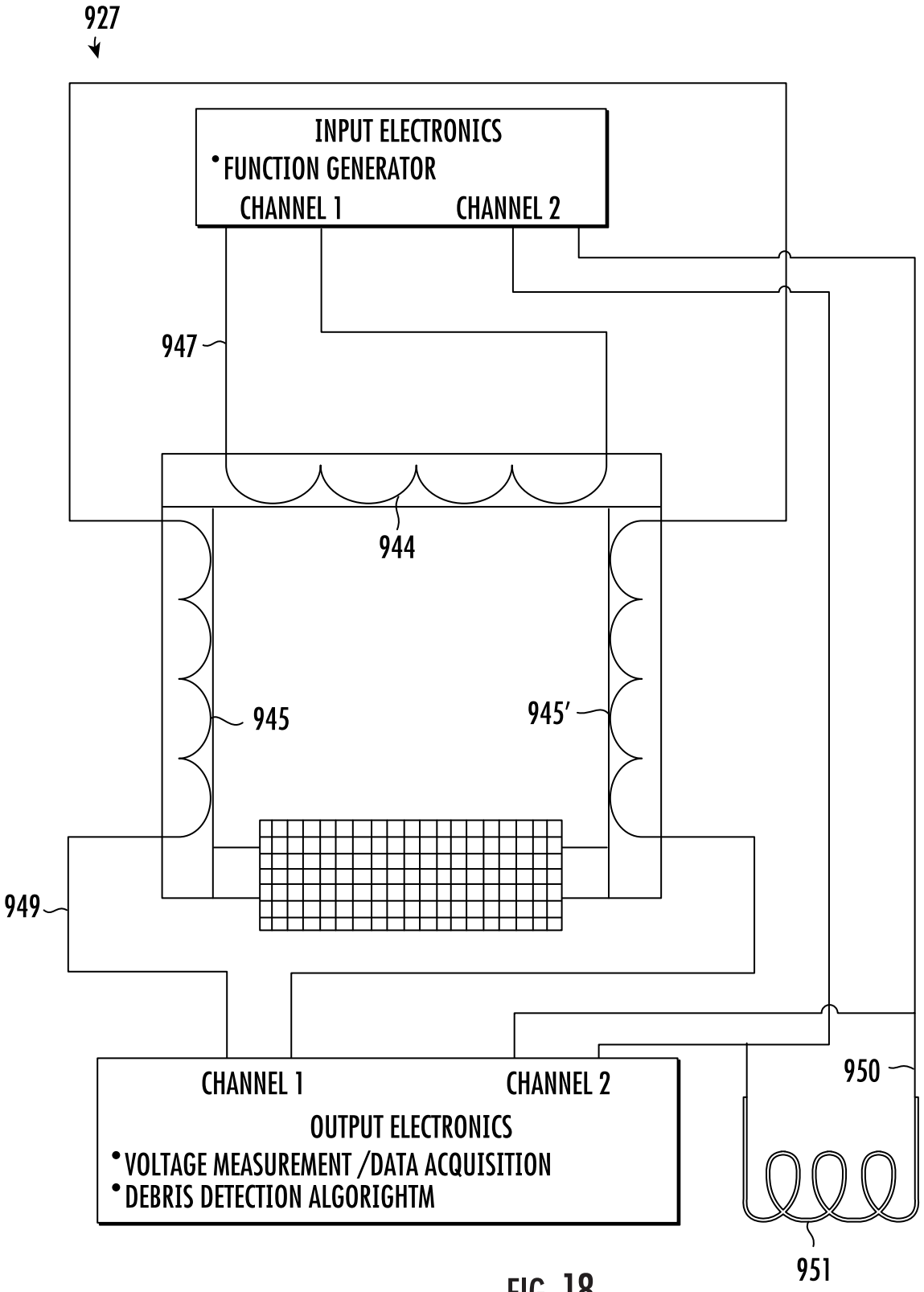
927
INPUT ELECTRONICS
• FUNCTION GENERATOR
CHANNEL 1
CHANNEL 2
947
944
945
945′
949
CHANNEL 1
CHANNEL 2
OUTPUT ELECTRONICS
• VOLTAGE MEASUREMENT /DATA ACQUISITION
• DEBRIS DETECTION ALGORIGHTM
950
951

FIG. 18

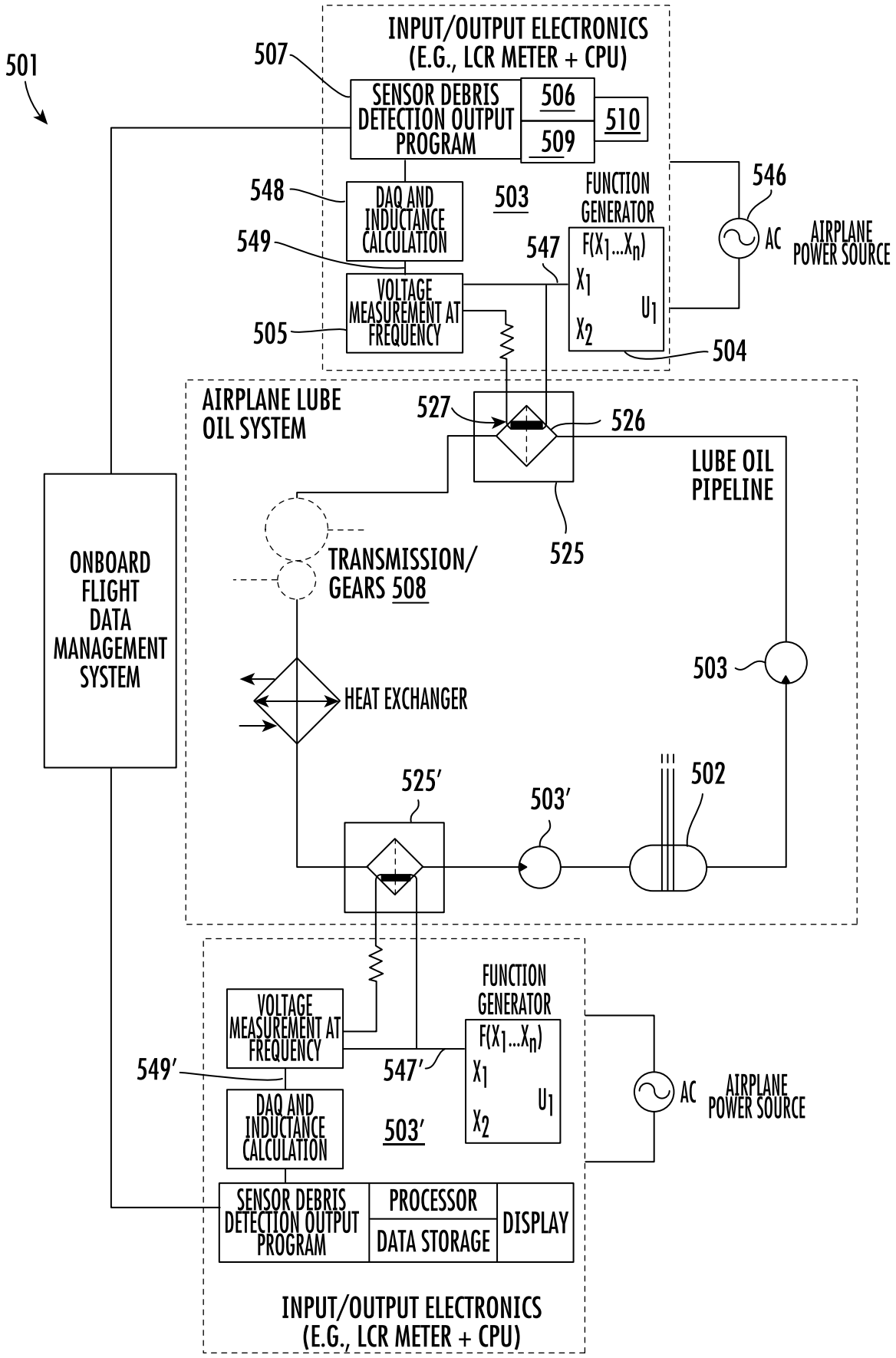
501
INPUT/OUTPUT ELECTRONICS
(E.G., LCR METER + CPU)
507
SENSOR DEBRIS DETECTION OUTPUT PROGRAM
506
509
510
548
DAQ AND INDUCTANCE CALCULATION
503
FUNCTION GENERATOR
549
547
F(X1...Xn)
X1
U1
X2
546
AC
AIRPLANE POWER SOURCE
505
VOLTAGE MEASUREMENT AT FREQUENCY
504
AIRPLANE LUBE OIL SYSTEM
527
526
LUBE OIL PIPELINE
525
TRANSMISSION/ GEARS 508
ONBOARD FLIGHT DATA MANAGEMENT SYSTEM
503
HEAT EXCHANGER
525′
503′
502
549′
547′
503′
SENSOR DEBRIS DETECTION OUTPUT PROGRAM
PROCESSOR
DATA STORAGE
DISPLAY
INPUT/OUTPUT ELECTRONICS
(E.G., LCR METER + CPU)

FIG. 19