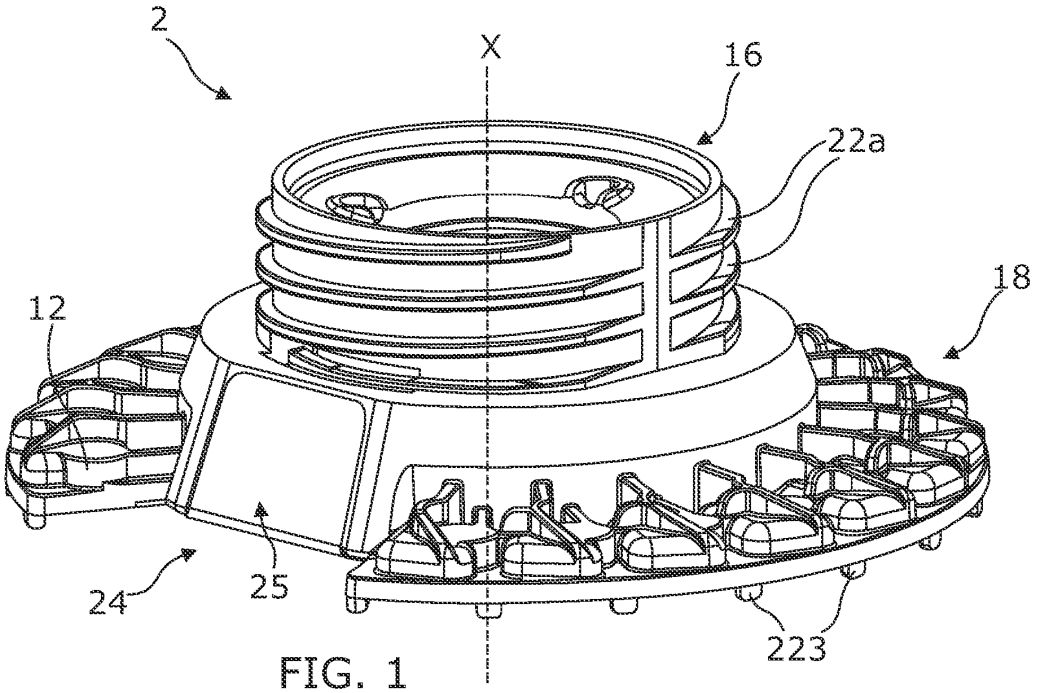


FIG. 1

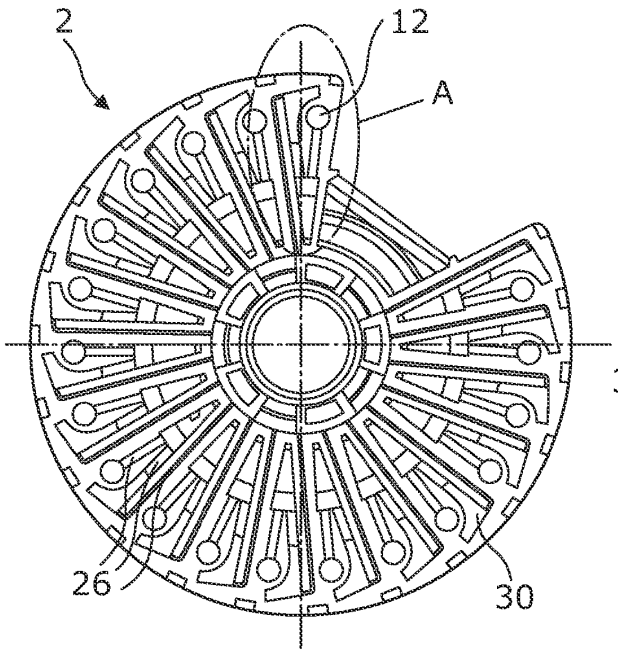


FIG. 2A

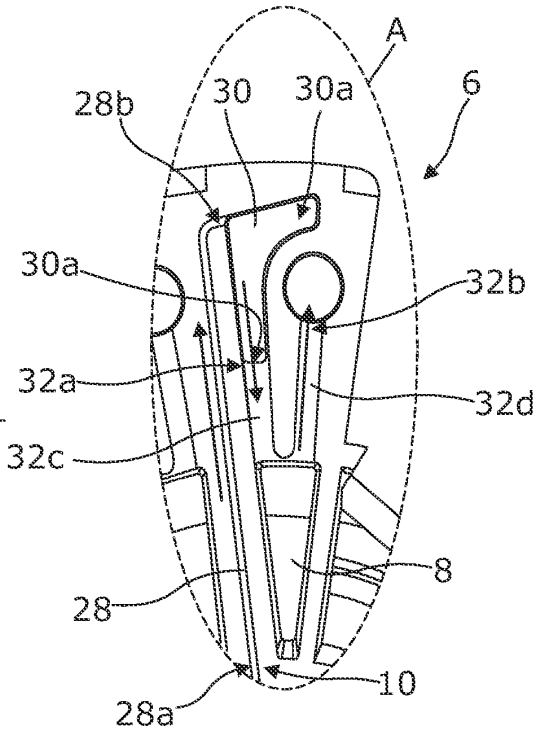


FIG. 2B

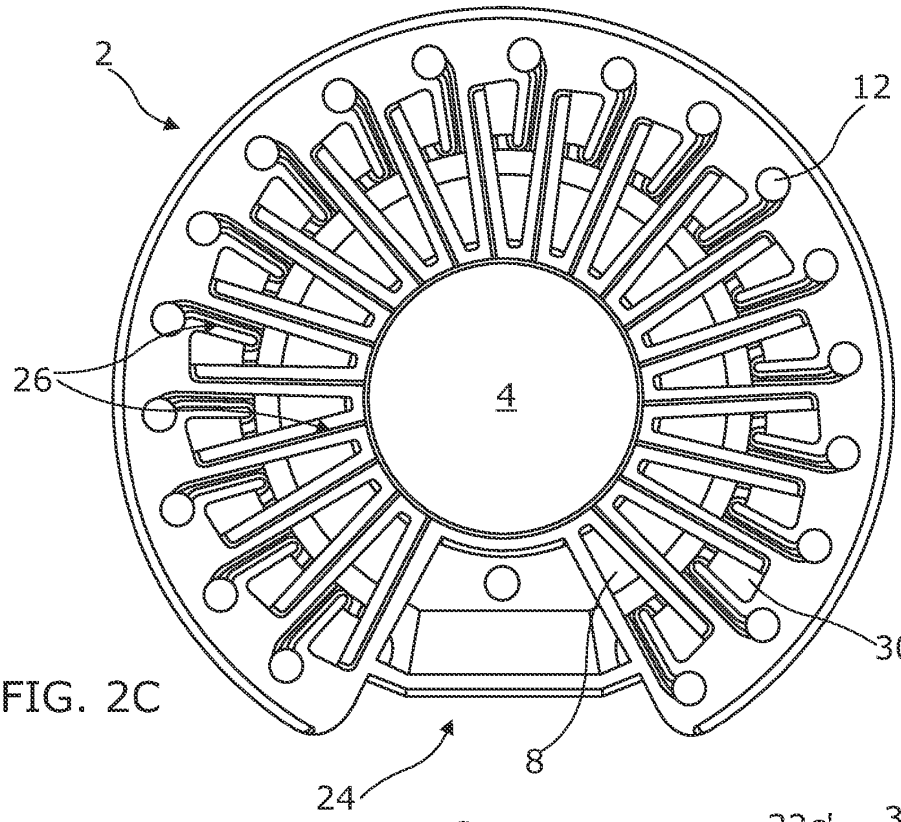


FIG. 2C

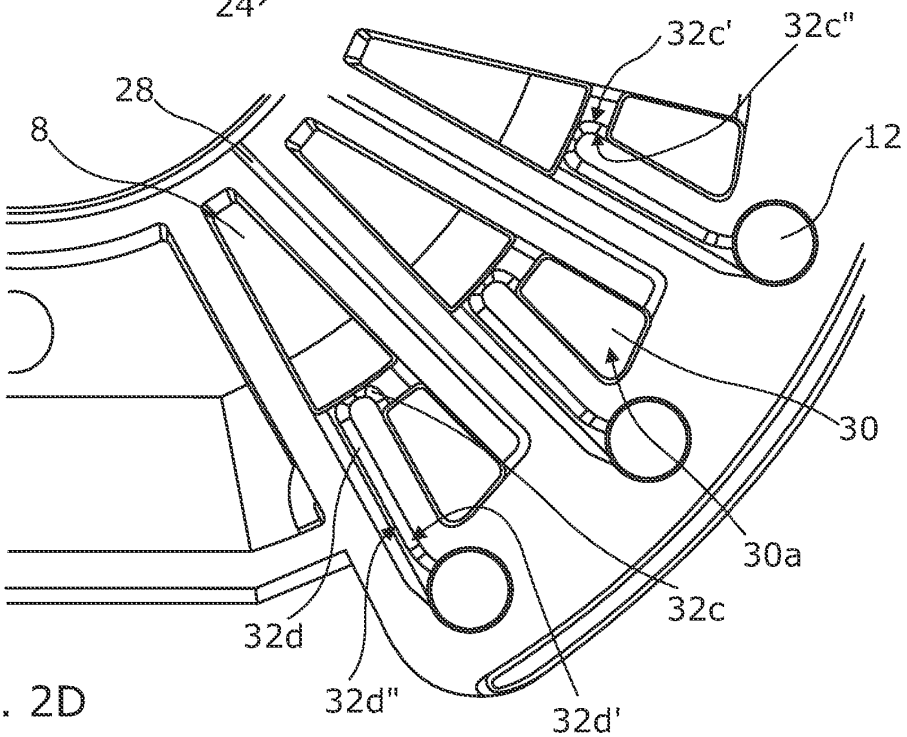


FIG. 2D

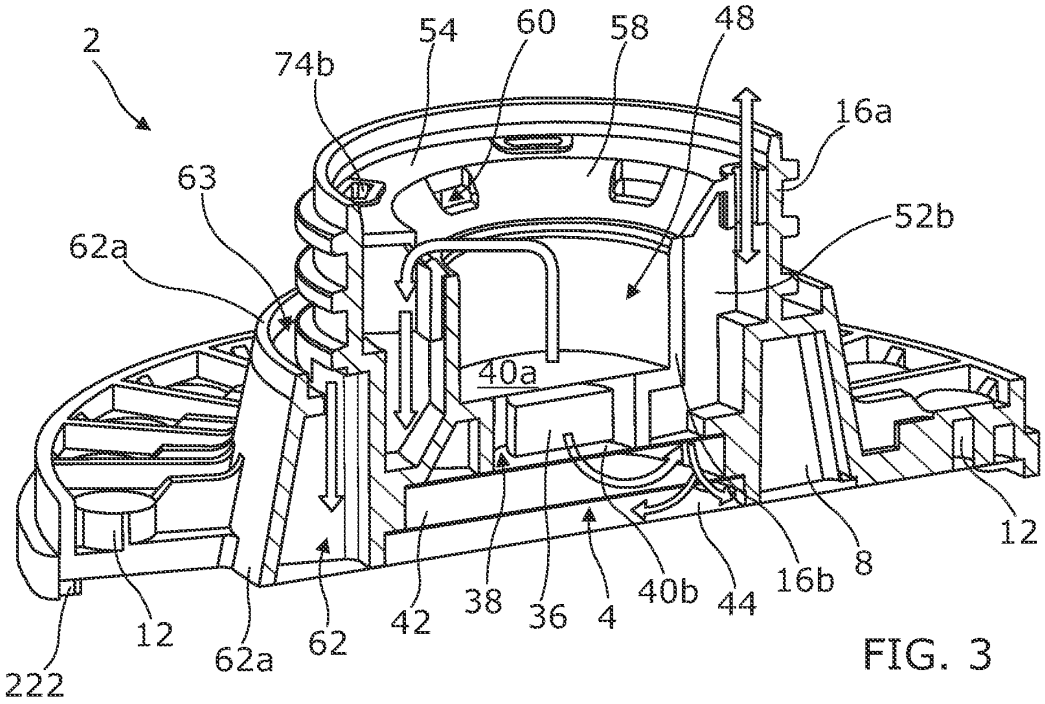

2
74b
54
60
58
48
16a
63
52b
62a
40a
12
222
12
62a
62
42
38
36
4
40b
44
16b
8
12

FIG. 3

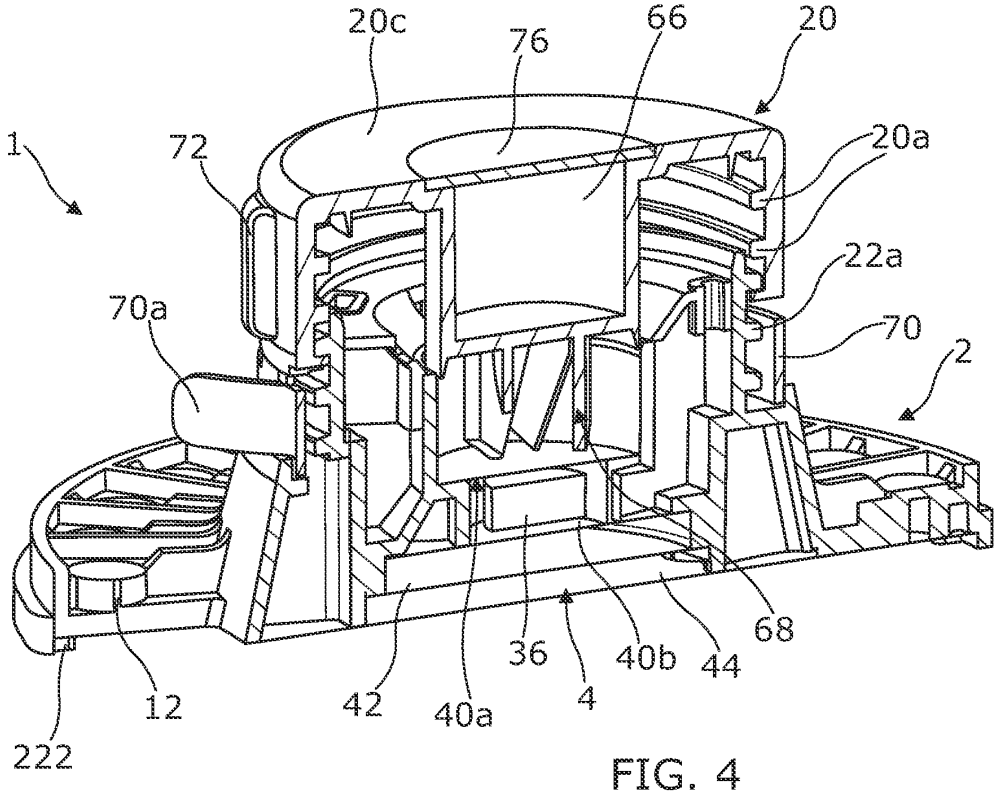

20c
76
66
20
1
72
20a
22a
70a
70
2
222
12
42
40a
36
4
40b
44
68

FIG. 4

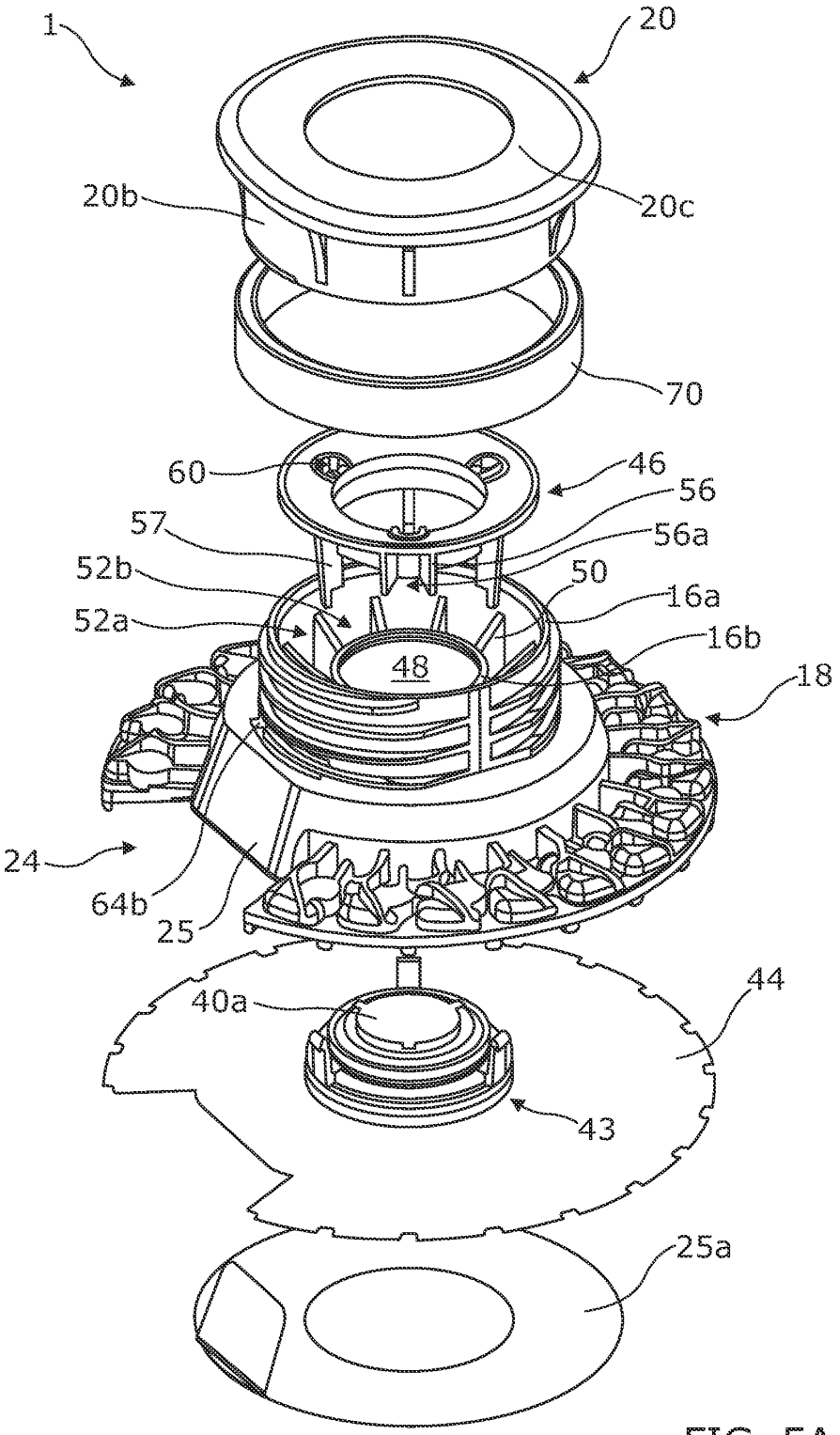

1
20
20b
20c
70
60
46
56
57
56a
52b
50
52a
16a
16b
48
18
24
64b
25
44
40a
43
25a

FIG. 5A

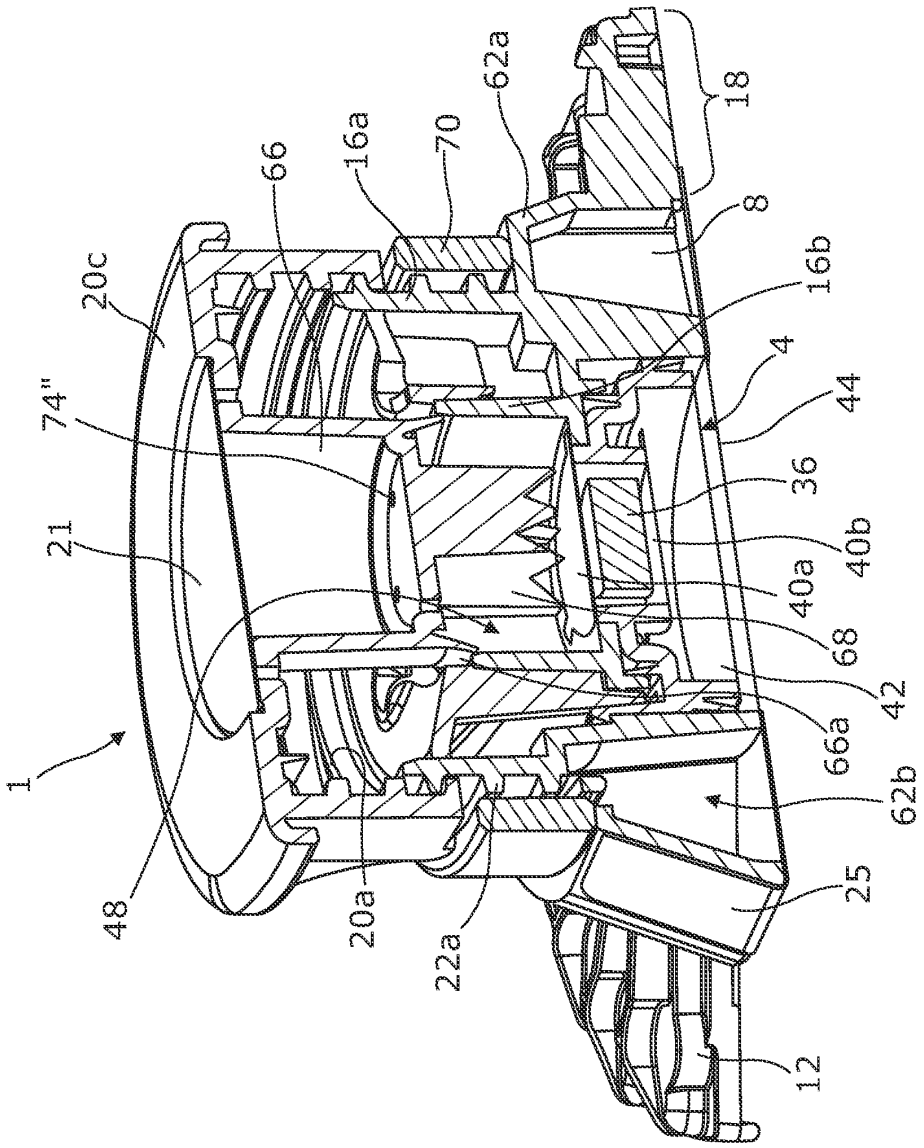

1
48
20a
22a
12
25
66a
62b
42
68
40a
40b
36
44
4
16b
8
18
62a
70
16a
66
20c
74"
21

FIG. 5B

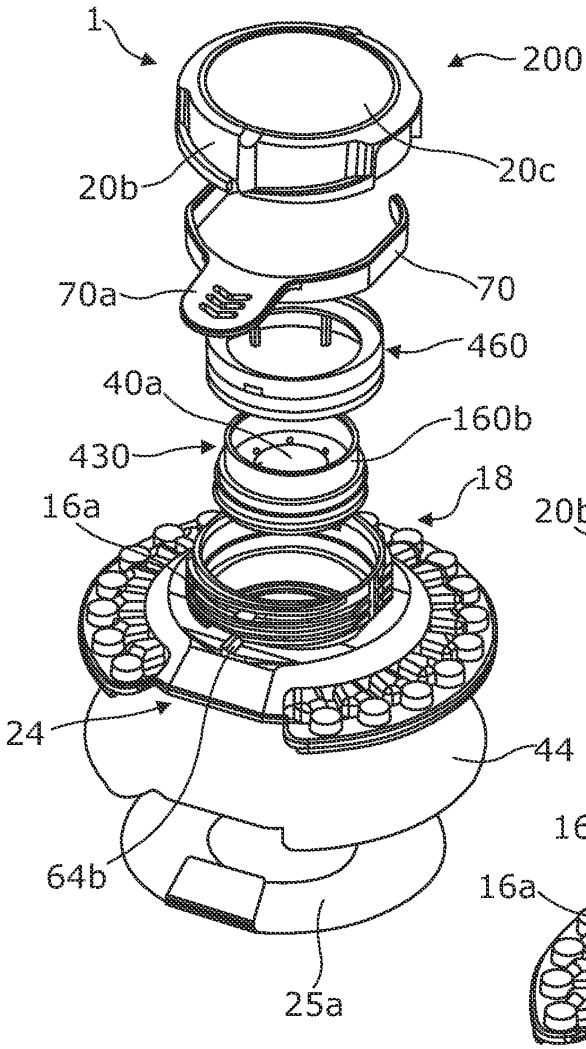

1
200
20b
20c
70a
70
460
40a
160b
430
18
16a
24
44
64b
25a

FIG. 5C

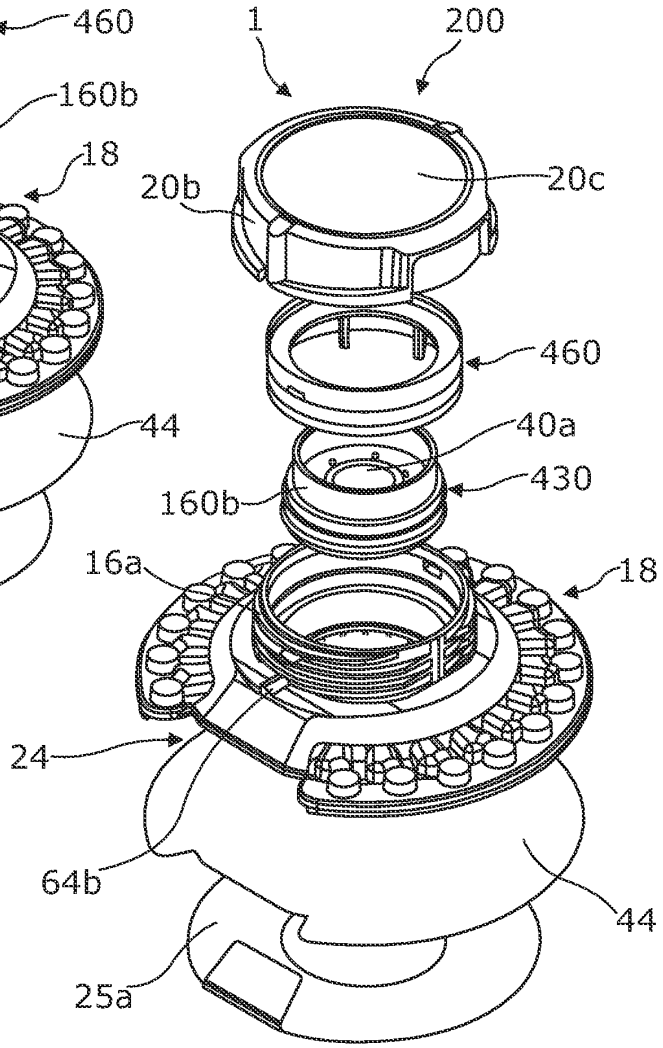

1
200
20b
20c
460
40a
430
160b
16a
18
24
64b
44
25a

FIG. 5D

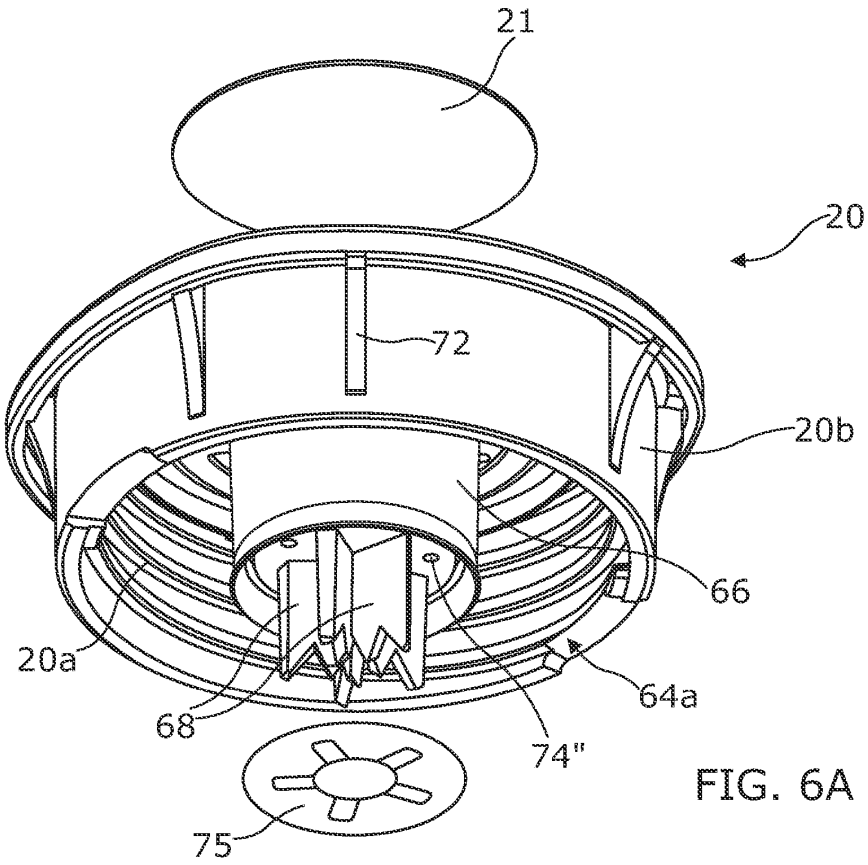


FIG. 6A

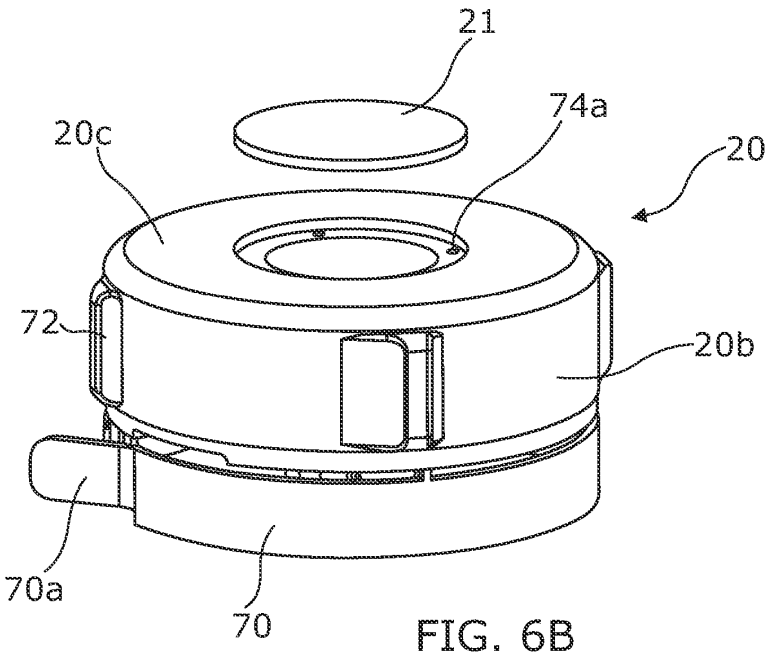


FIG. 6B

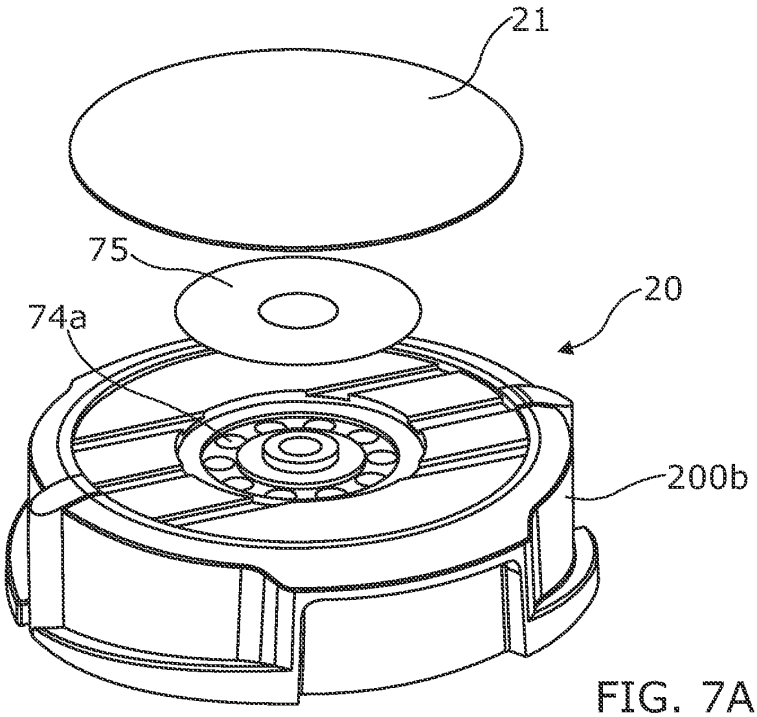


FIG. 7A

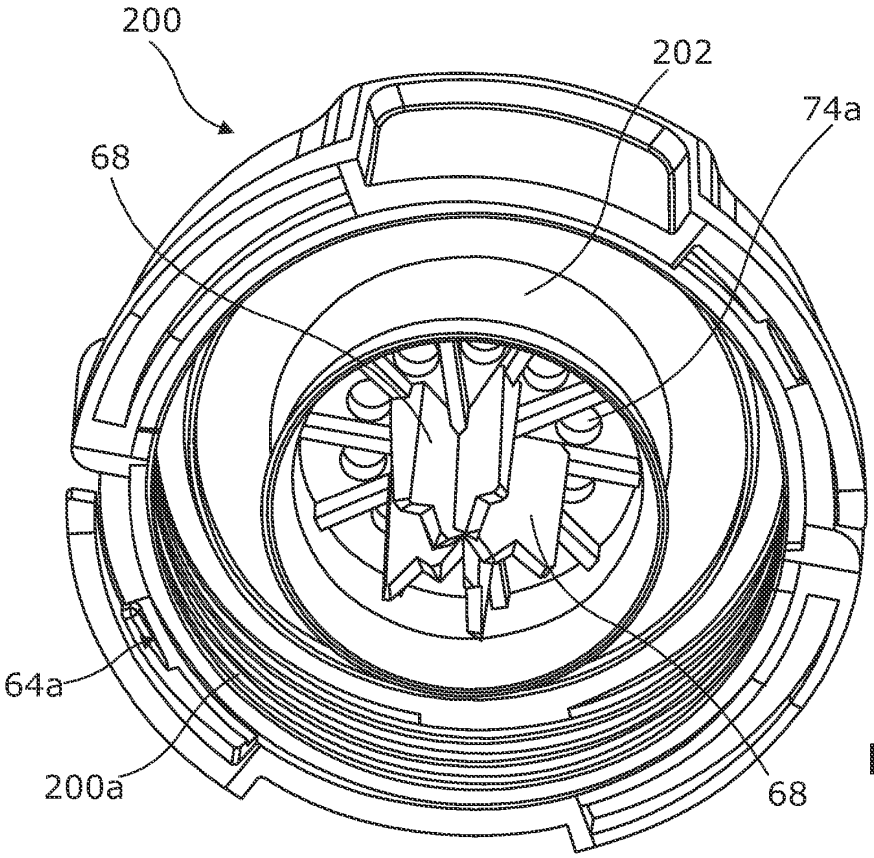


FIG. 7B

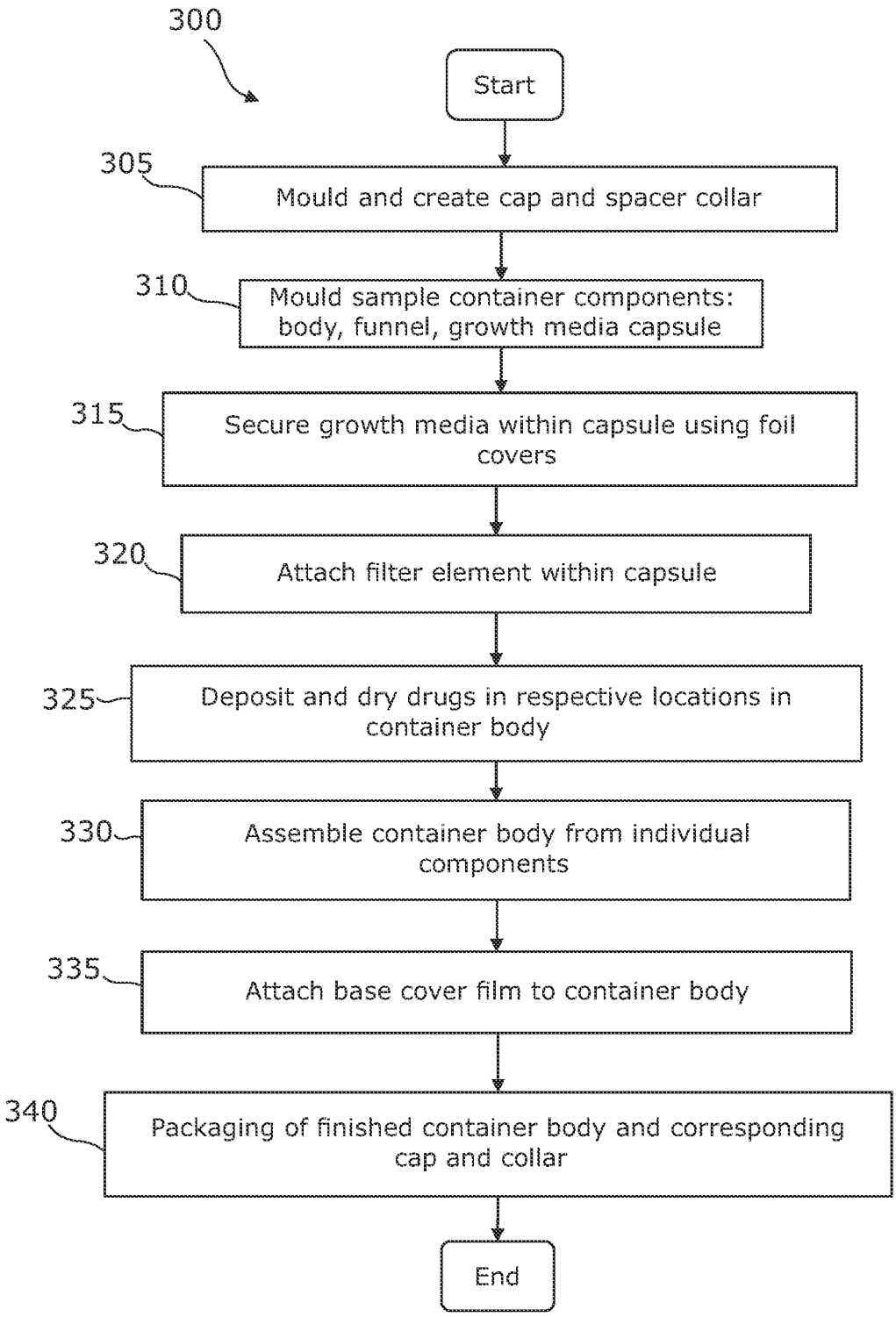

300
Start
305
Mould and create cap and spacer collar
310
Mould sample container components: body, funnel, growth media capsule
315
Secure growth media within capsule using foil covers
320
Attach filter element within capsule
325
Deposit and dry drugs in respective locations in container body
330
Assemble container body from individual components
335
Attach base cover film to container body
340
Packaging of finished container body and corresponding cap and collar
End

FIG. 8

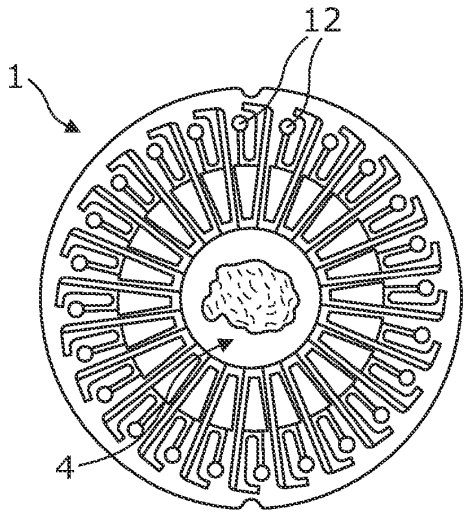


FIG. 9A

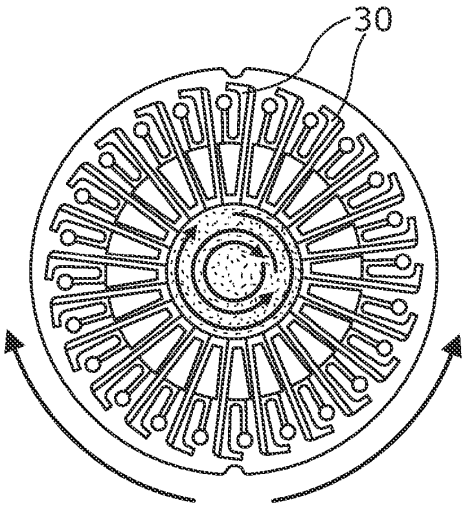


FIG. 9B

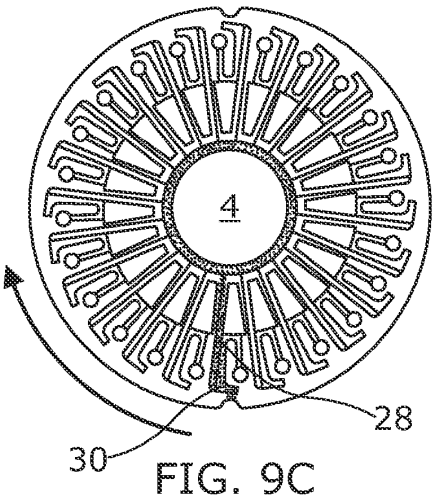


FIG. 9C

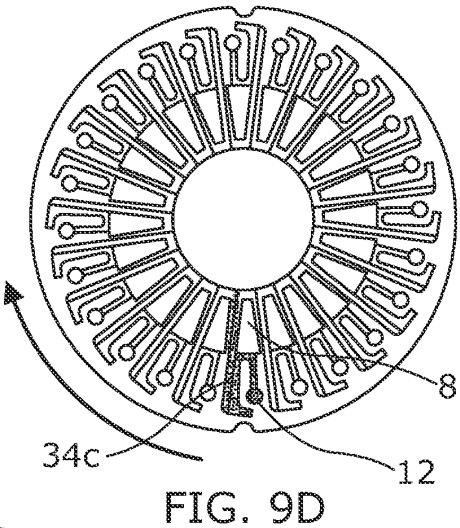


FIG. 9D

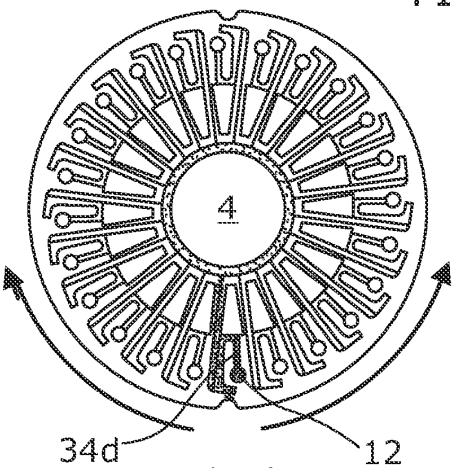


FIG. 9E

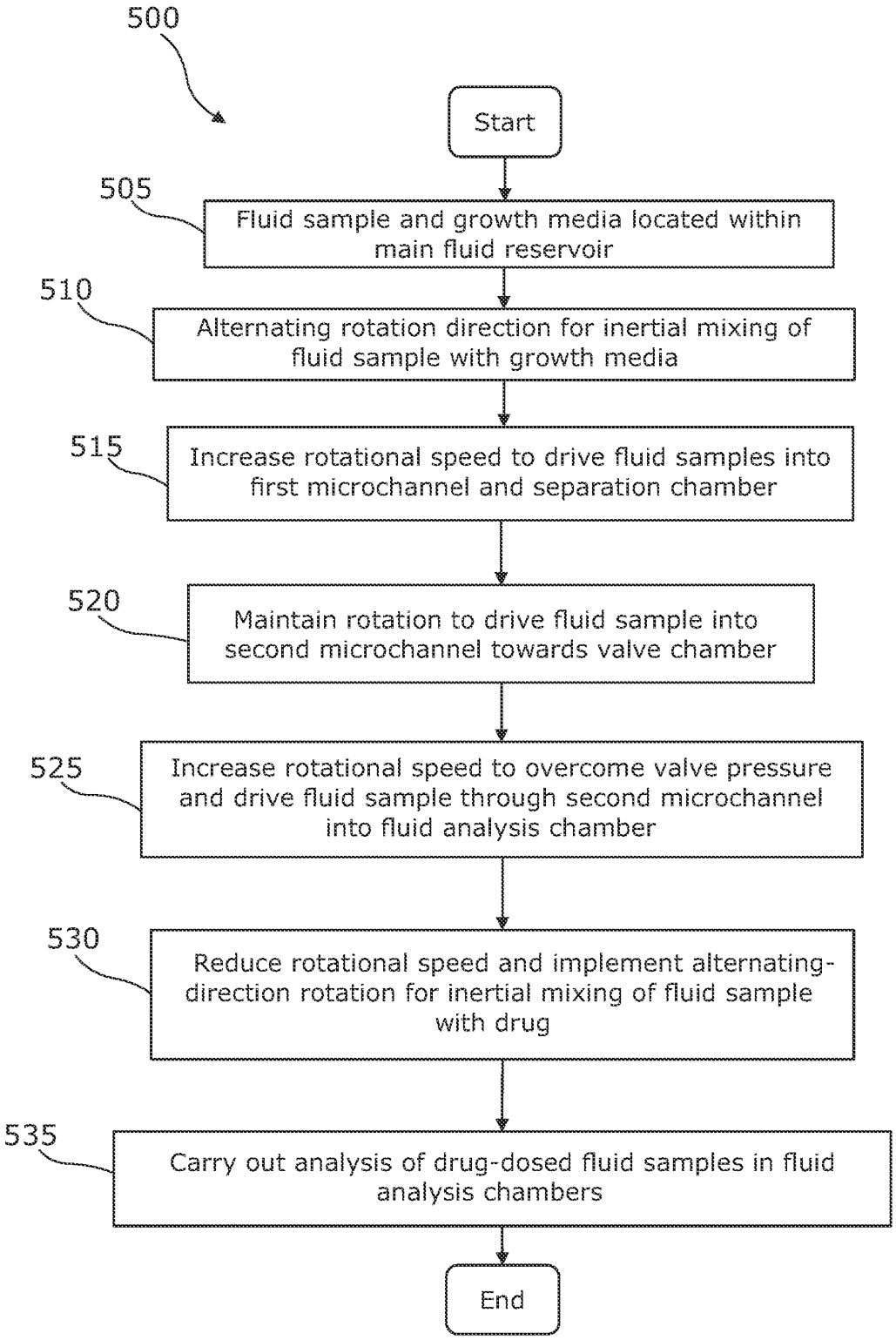

500
Start
505
Fluid sample and growth media located within main fluid reservoir
510
Alternating rotation direction for inertial mixing of fluid sample with growth media
515
Increase rotational speed to drive fluid samples into first microchannel and separation chamber
520
Maintain rotation to drive fluid sample into second microchannel towards valve chamber
525
Increase rotational speed to overcome valve pressure and drive fluid sample through second microchannel into fluid analysis chamber
530
Reduce rotational speed and implement alternating-direction rotation for inertial mixing of fluid sample with drug
535
Carry out analysis of drug-dosed fluid samples in fluid analysis chambers
End

FIG. 10

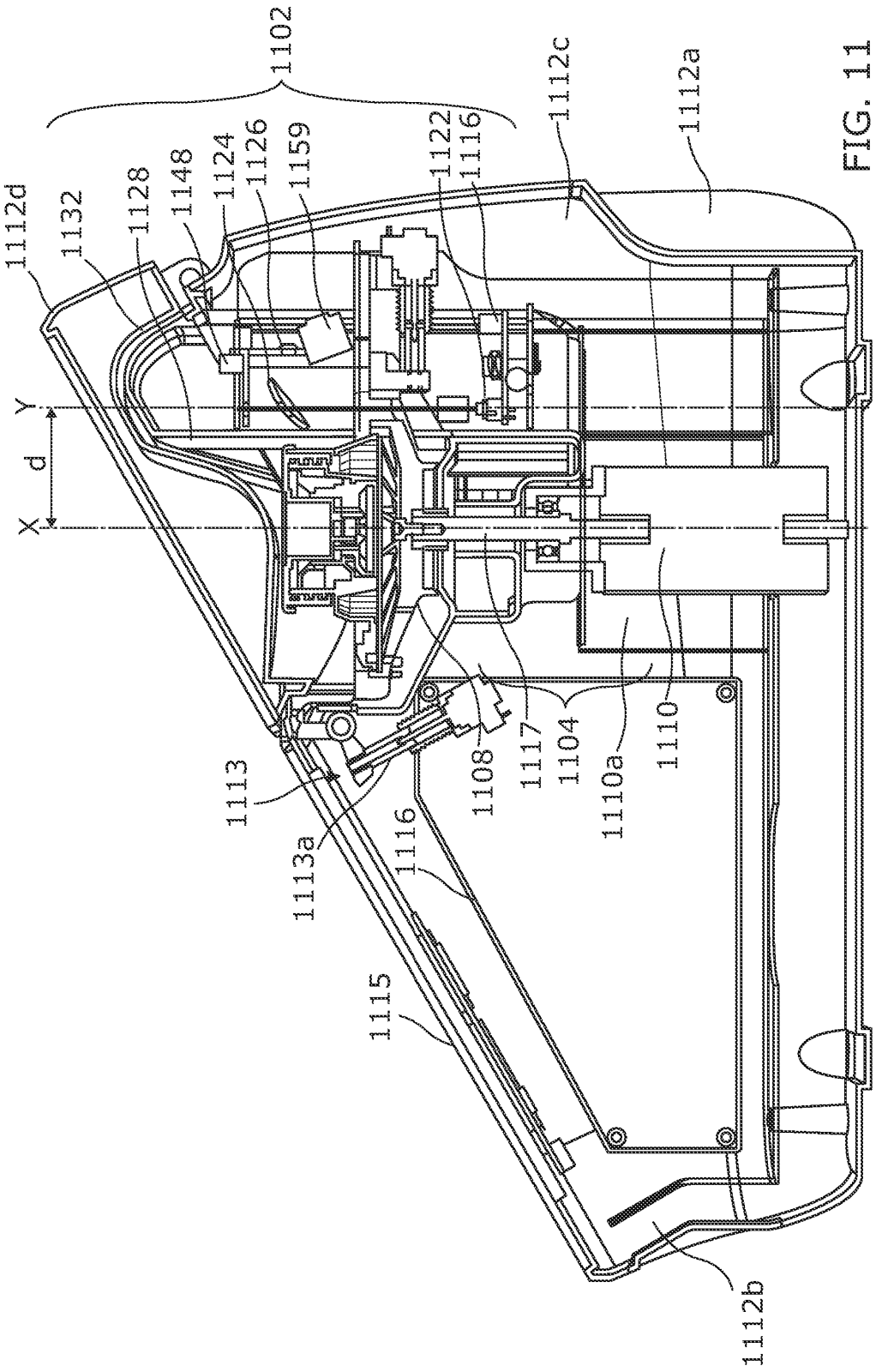

1102
1112c
1112a
1112d
1132
1128
1148
1124
1126
1159
1122
1116
Y
d
X
1113
1113a
1116
1115
1108
1117
1104
1110a
1110
1112b

FIG. 11

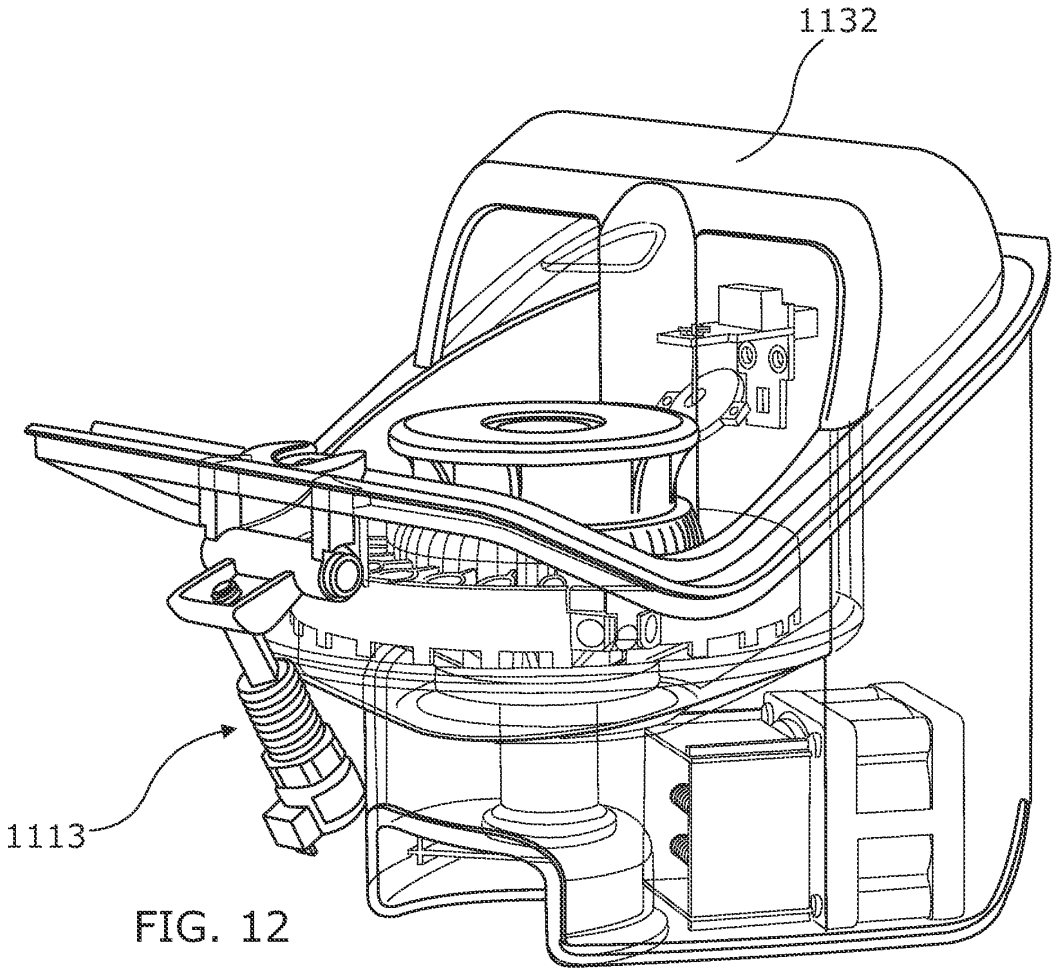


FIG. 12

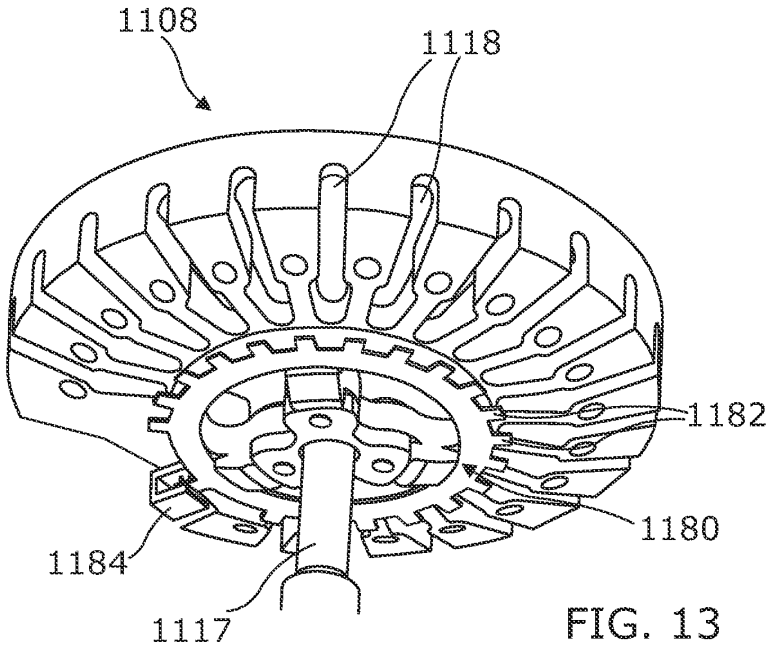


FIG. 13

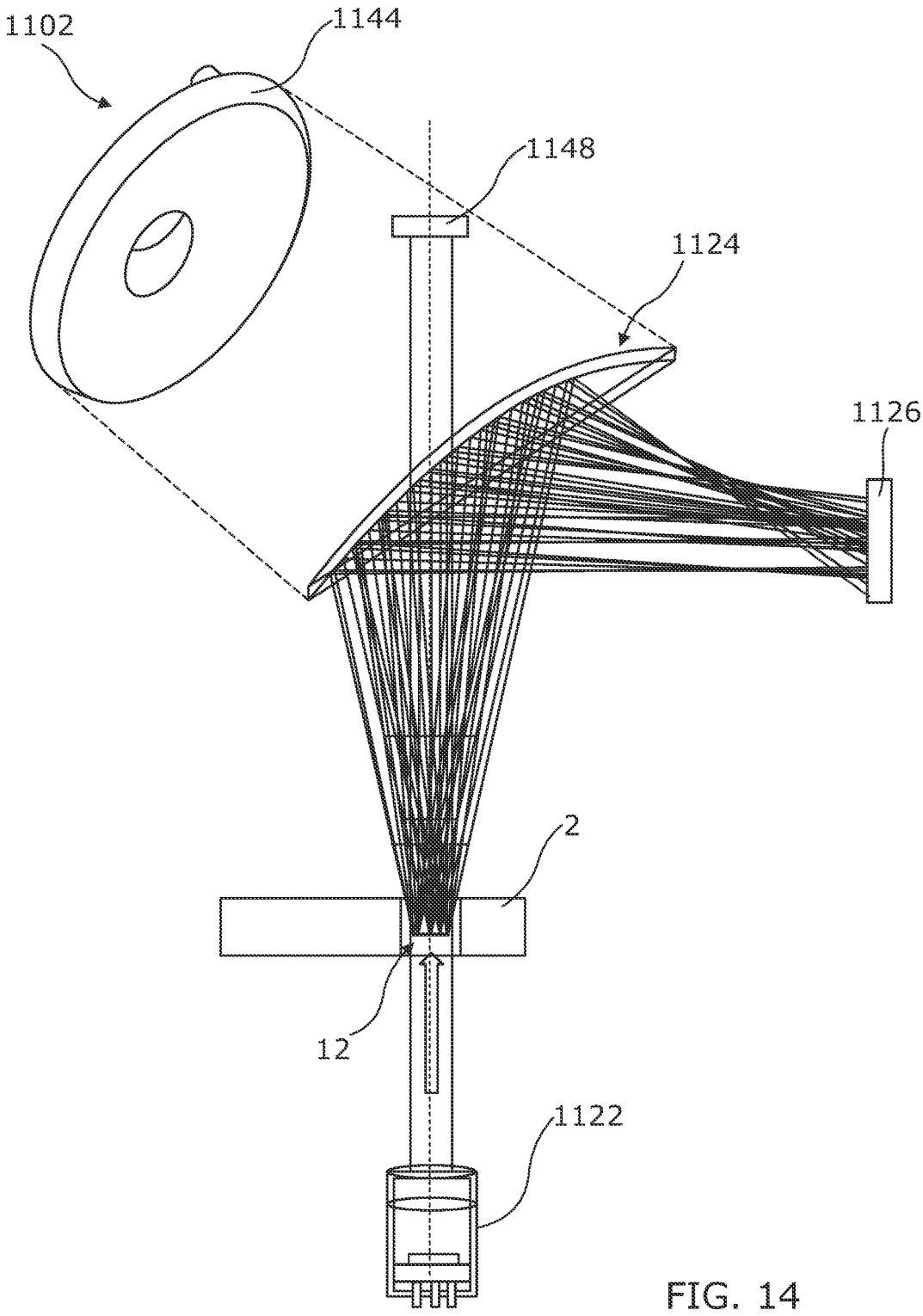


FIG. 14

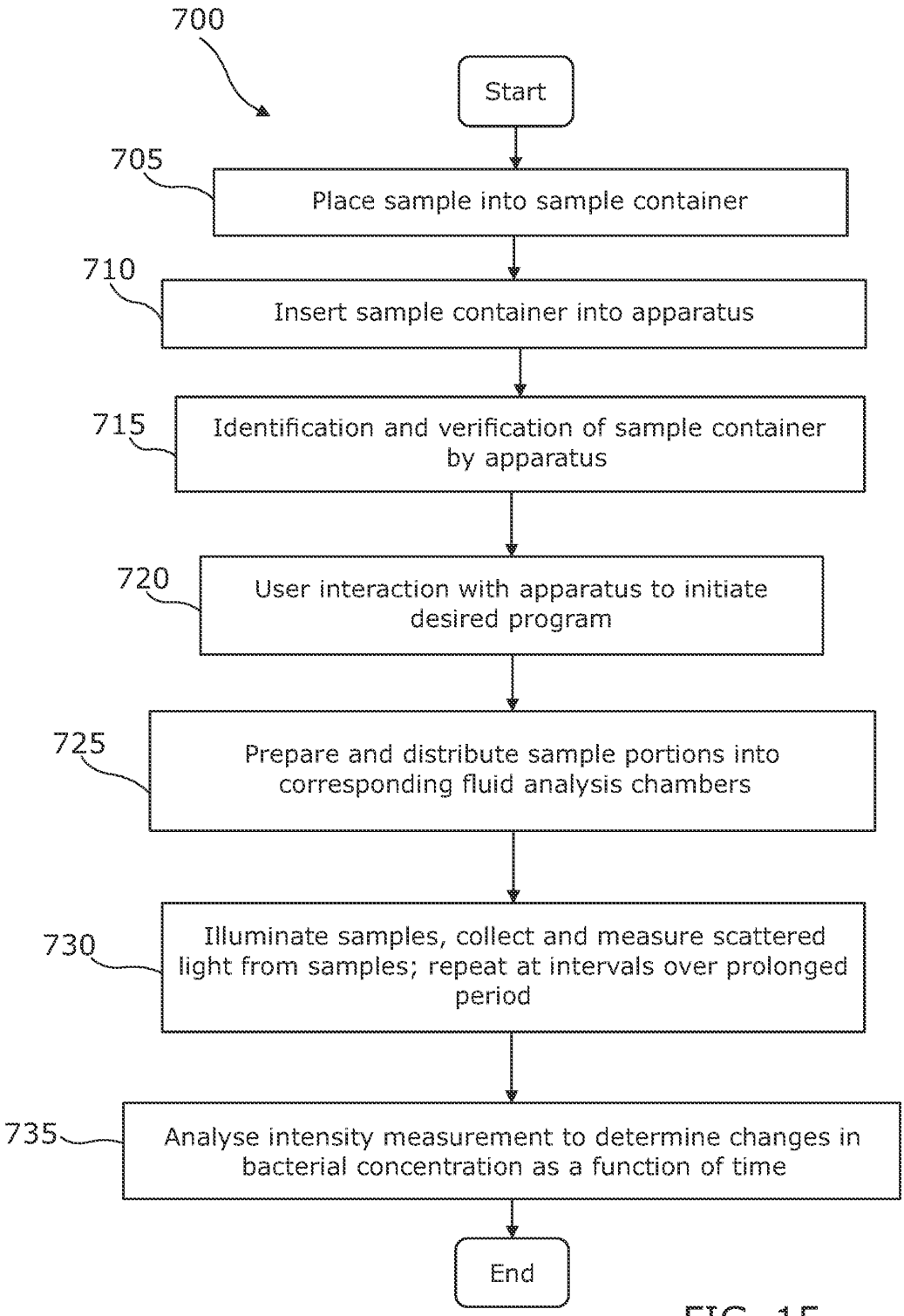

700
Start
705
Place sample into sample container
710
Insert sample container into apparatus
715
Identification and verification of sample container by apparatus
720
User interaction with apparatus to initiate desired program
725
Prepare and distribute sample portions into corresponding fluid analysis chambers
730
Illuminate samples, collect and measure scattered light from samples; repeat at intervals over prolonged period
735
Analyse intensity measurement to determine changes in bacterial concentration as a function of time
End

FIG. 15

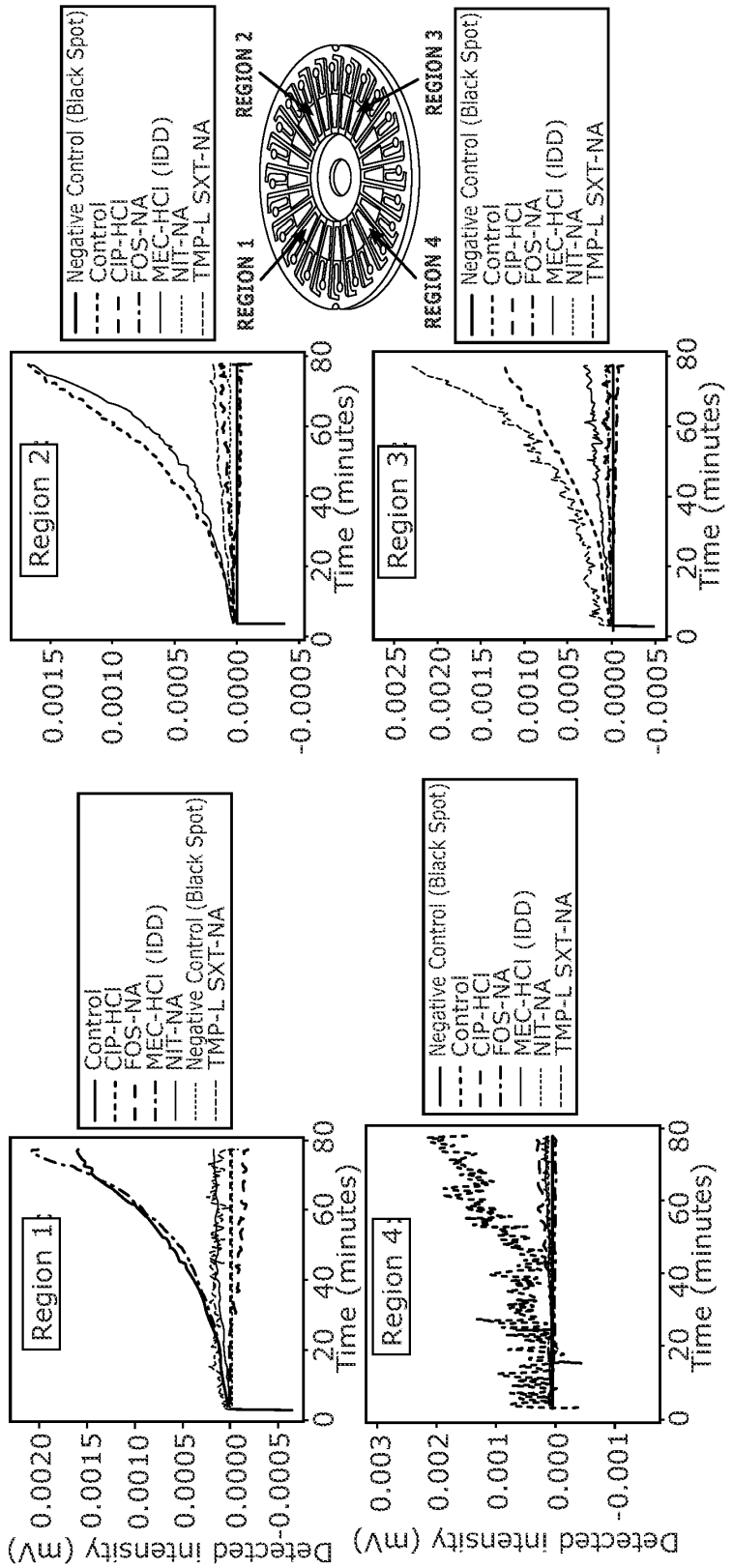

Region 1
Region 2
Region 3
Region 4
Time (minutes)
Detected intensity (mV)
Control
CIP-HCl
FOS-NA
MEC-HCl (IDD)
NIT-NA
Negative Control (Black Spot)
TMP-L SXT-NA
REGION 1
REGION 2
REGION 3
REGION 4

FIG. 16

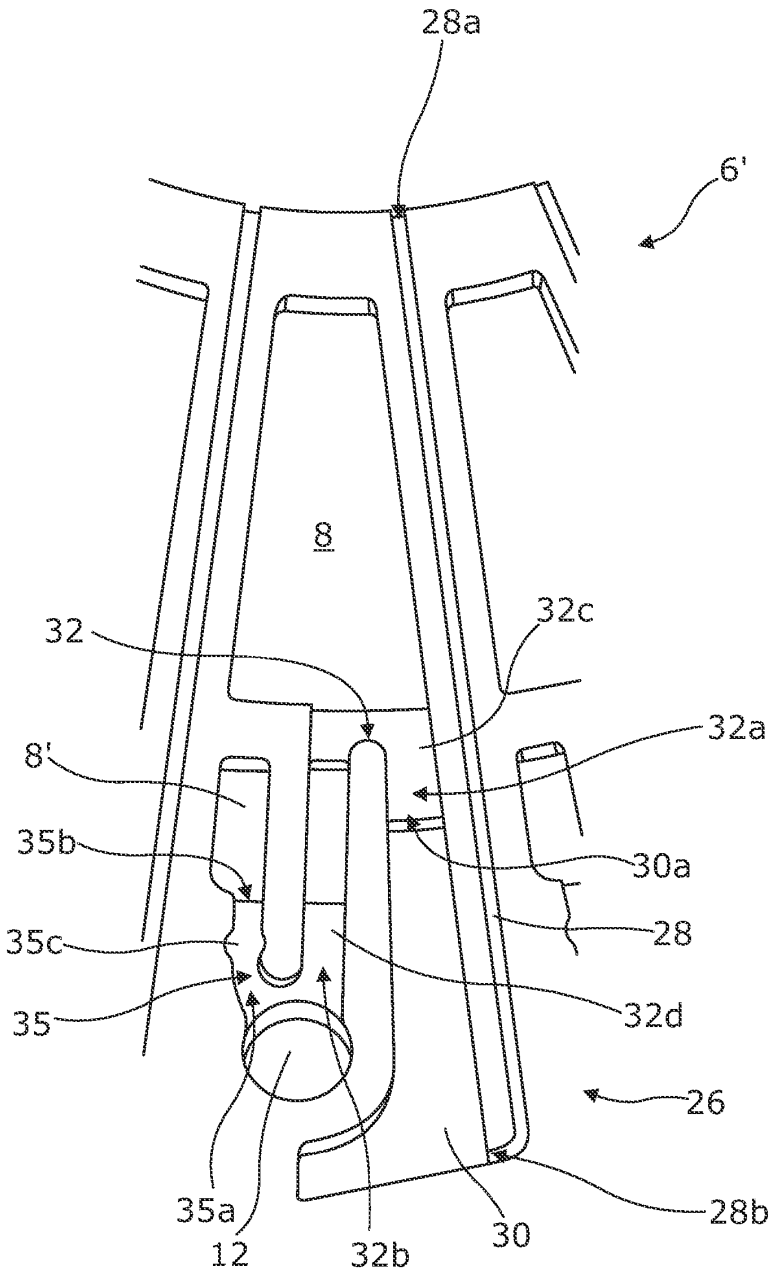


FIG. 17