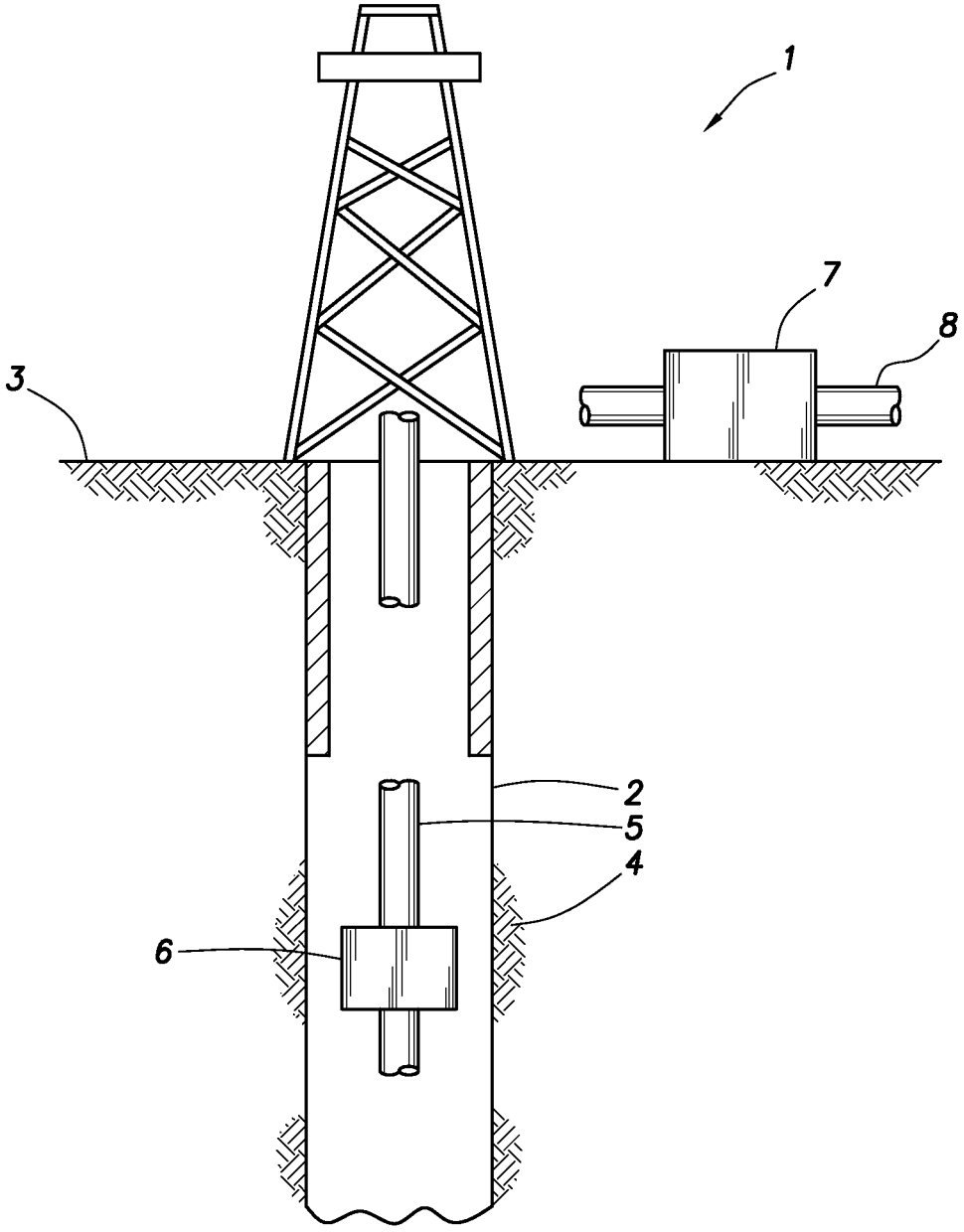


FIG. 1

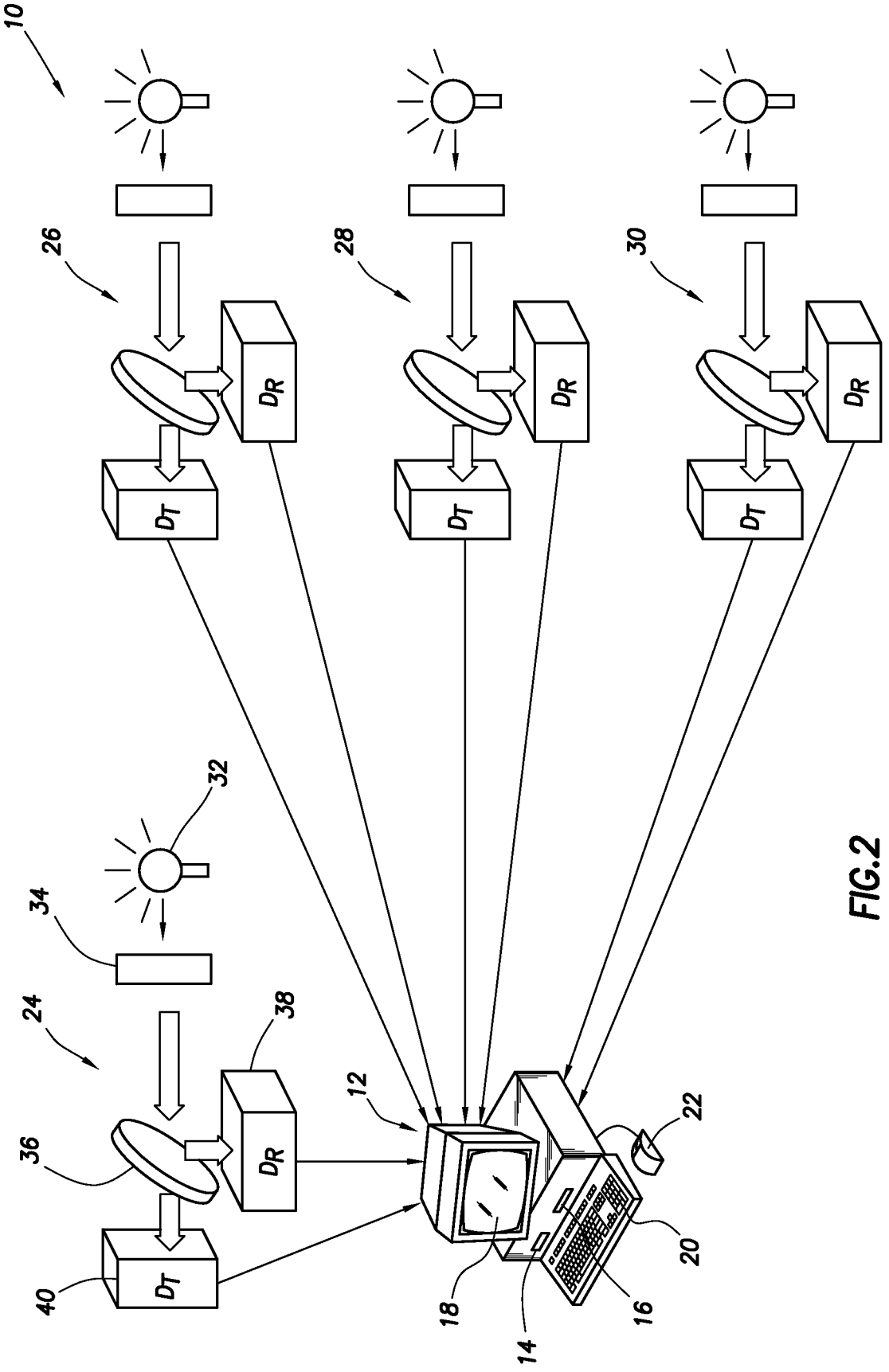


FIG.2

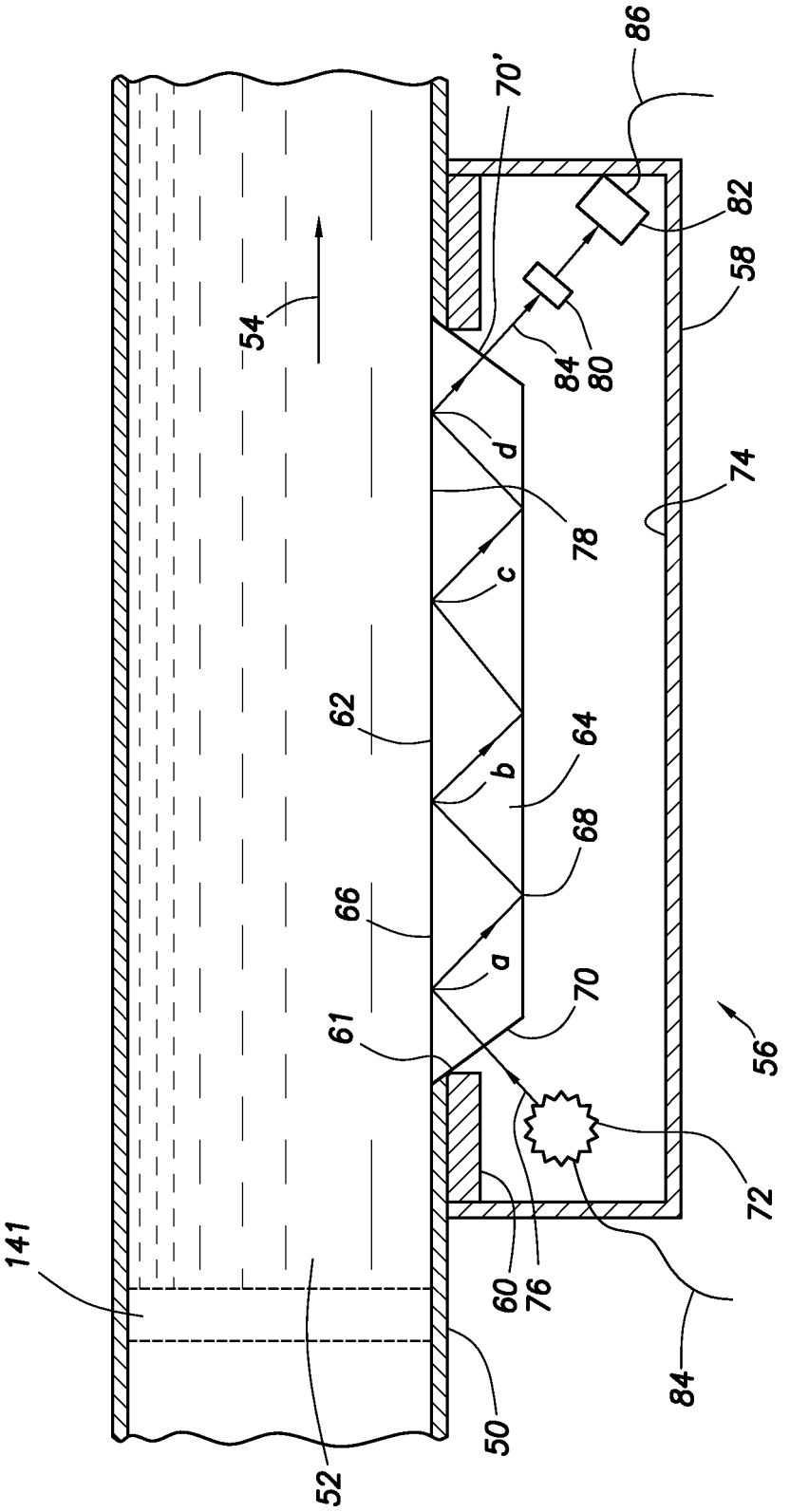

86
70'
82
58
54
84
80
d
74
78
c
62
64
b
68
66
a
70
61
56
72
141
60
76
84
50
52

FIG.3

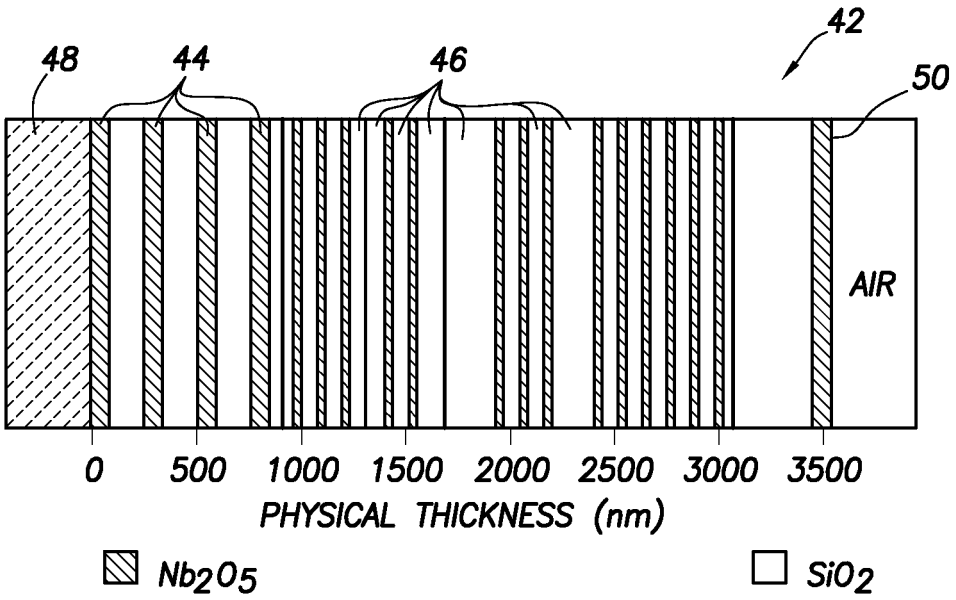

42
48
44
46
50
AIR
0
500
1000
1500
2000
2500
3000
3500
PHYSICAL THICKNESS (nm)
Nb2O5
SiO2

FIG.4

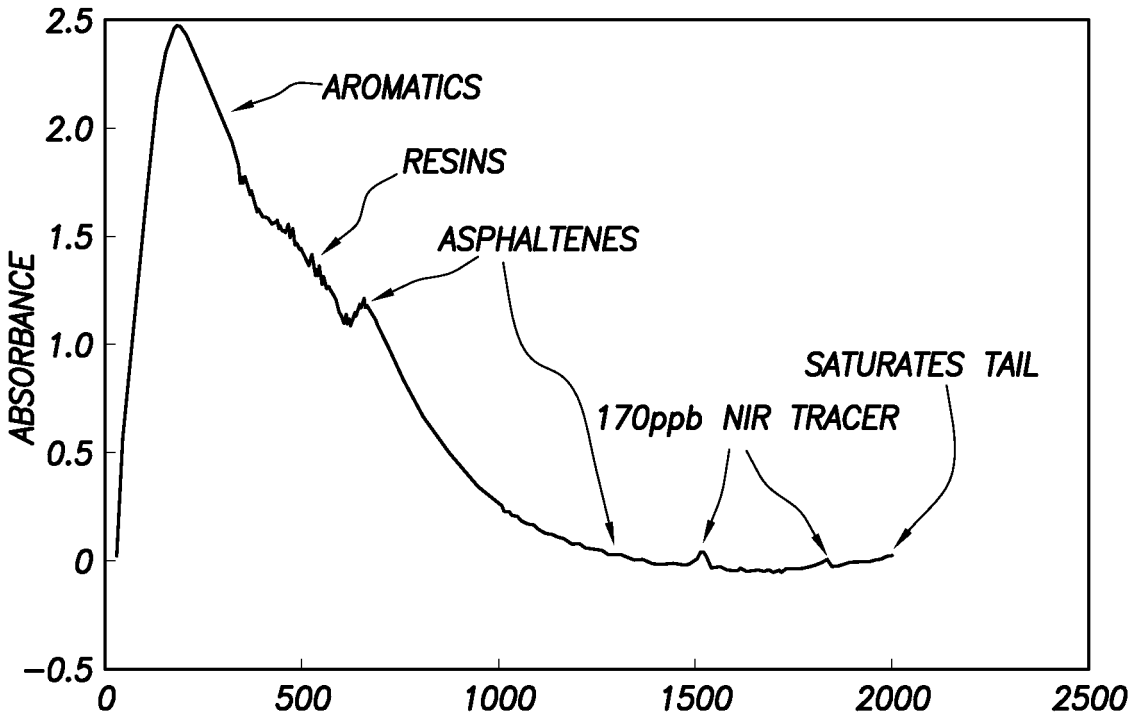

2.5
2.0
1.5
1.0
0.5
0
−0.5
ABSORBANCE
AROMATICS
RESINS
ASPHALTENES
SATURATES TAIL
170ppb NIR TRACER
0
500
1000
1500
2000
2500

FIG.5

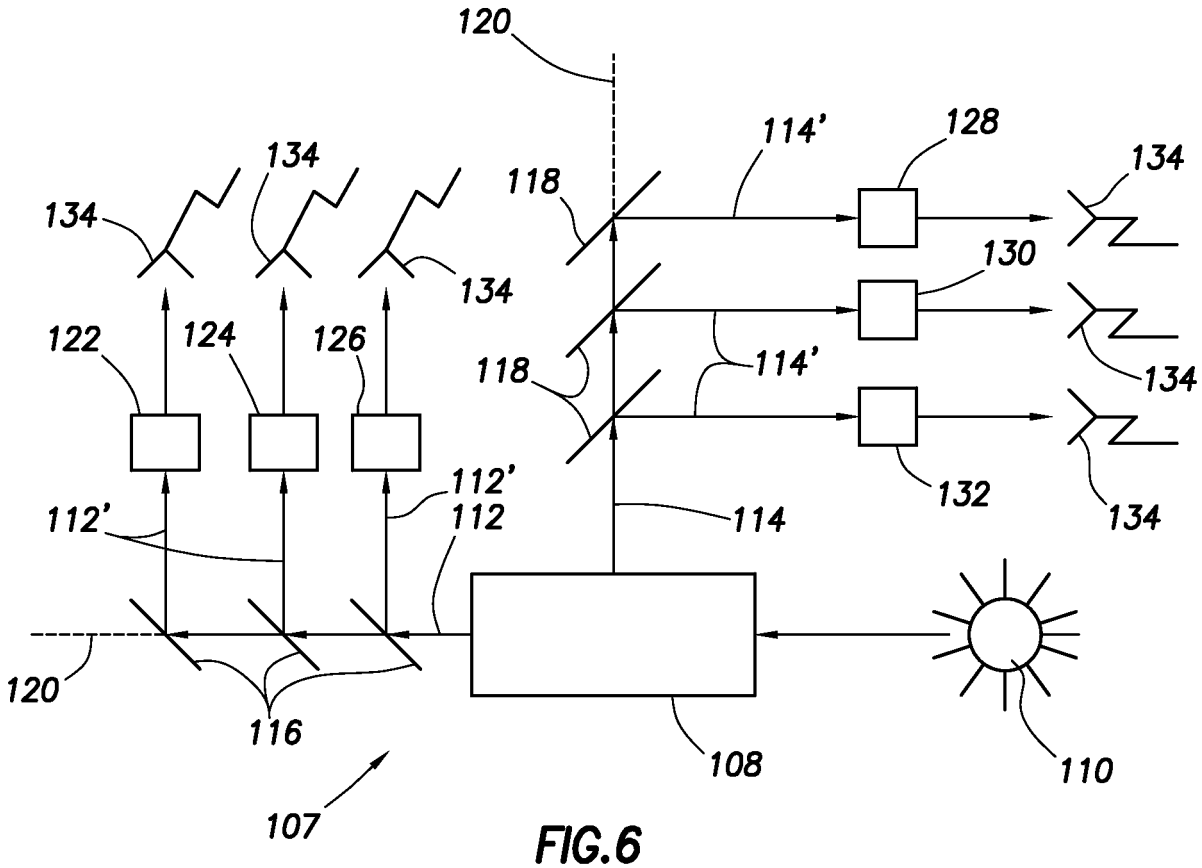

120
134
134
134
118
114'
128
134
130
122
124
126
118
114'
134
112'
112'
112
114
132
134
120
116
108
110
107

FIG.6

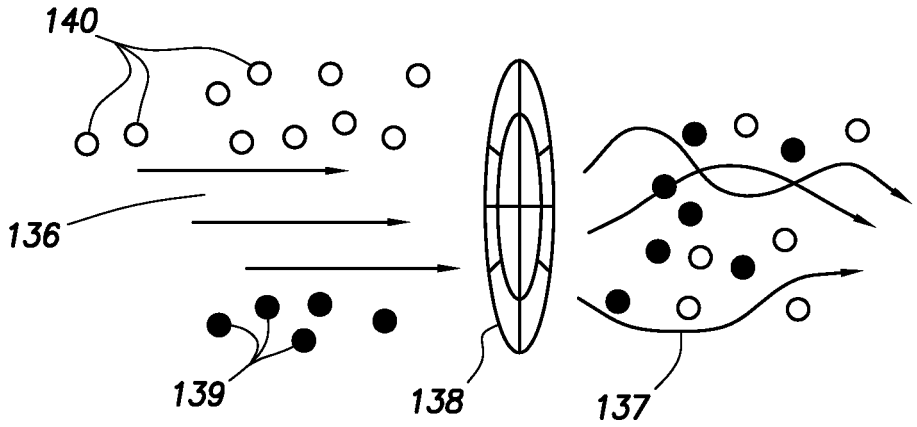

140
136
139
138
137

FIG.8

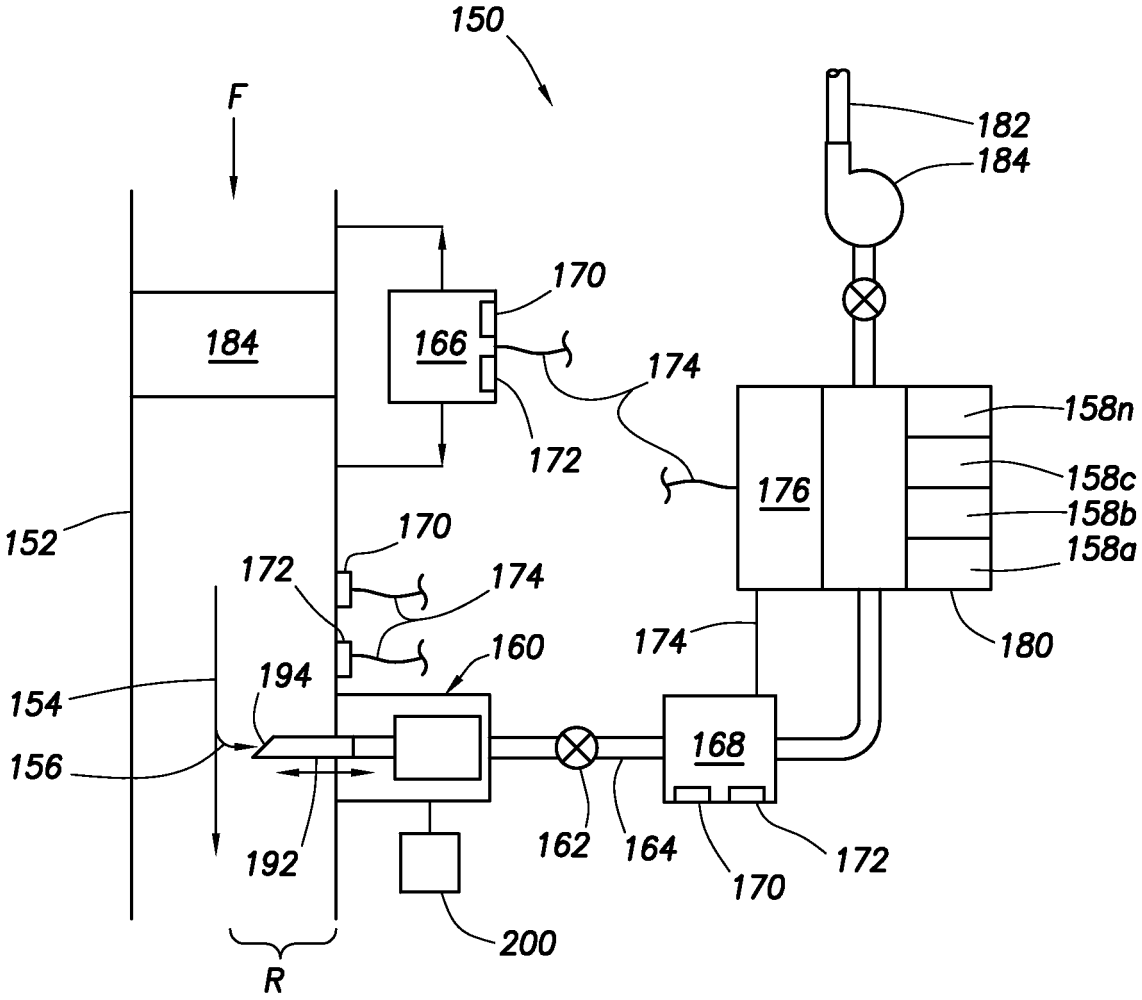

150
F
182
184
170
166
184
174
158n
158c
158b
158a
172
176
152
170
172
174
160
174
180
154
194
156
168
162
164
170
172
192
200
R

FIG. 7

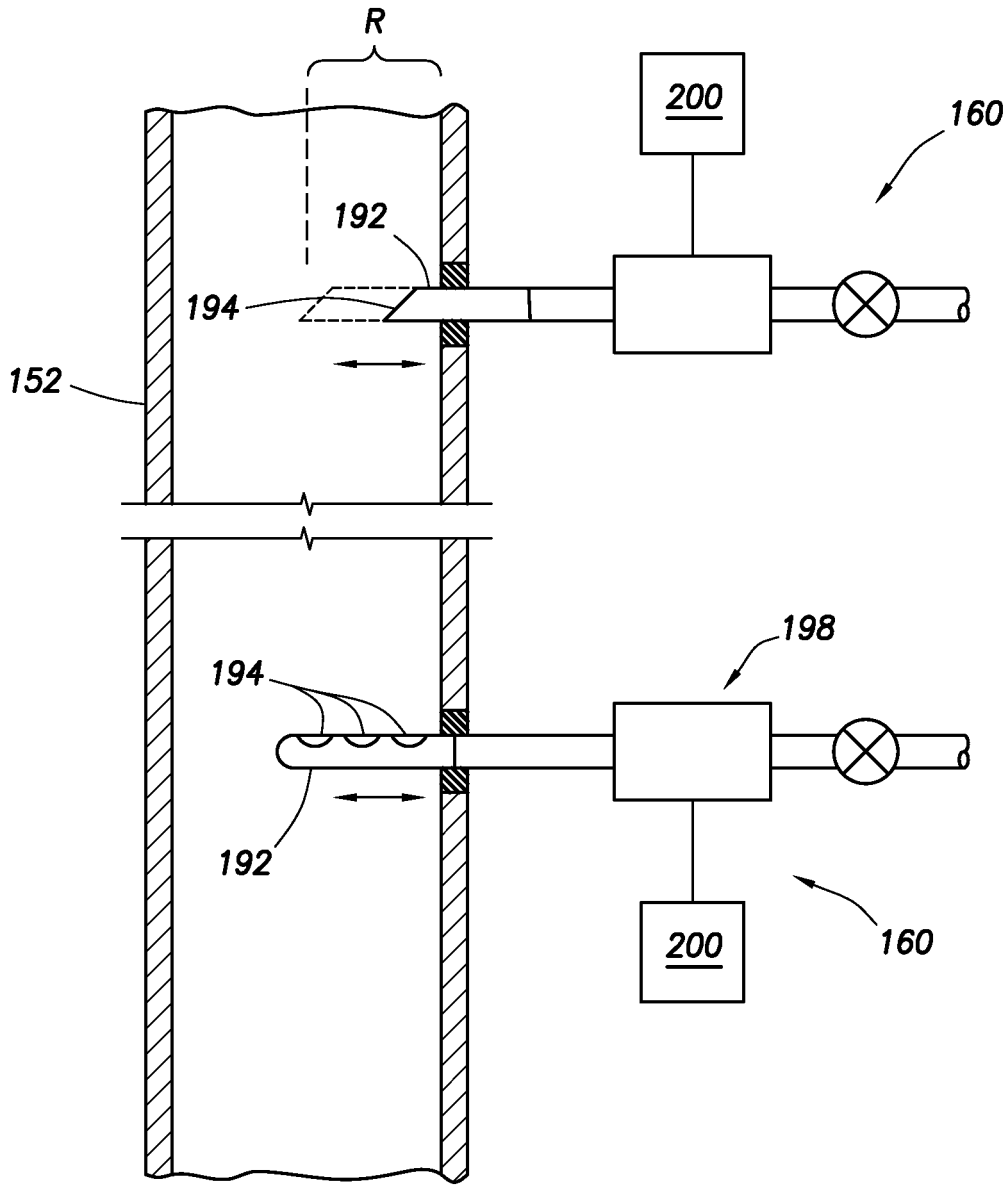


FIG.9