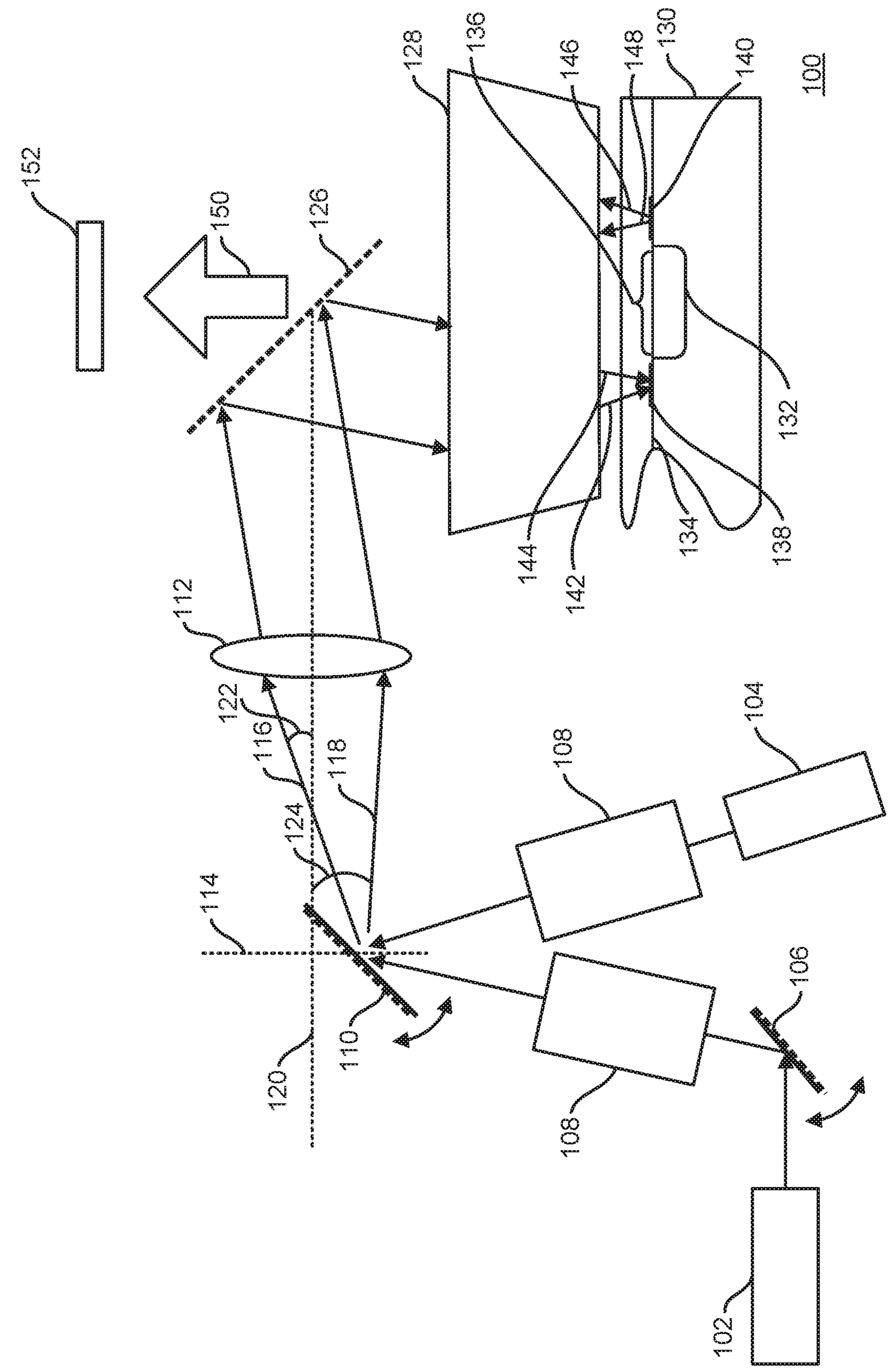
102
104
106
108
108
110
112
114
116
118
120
122
124
126
128
130
132
134
136
138
140
142
144
146
148
150
152
100

FIG. 1

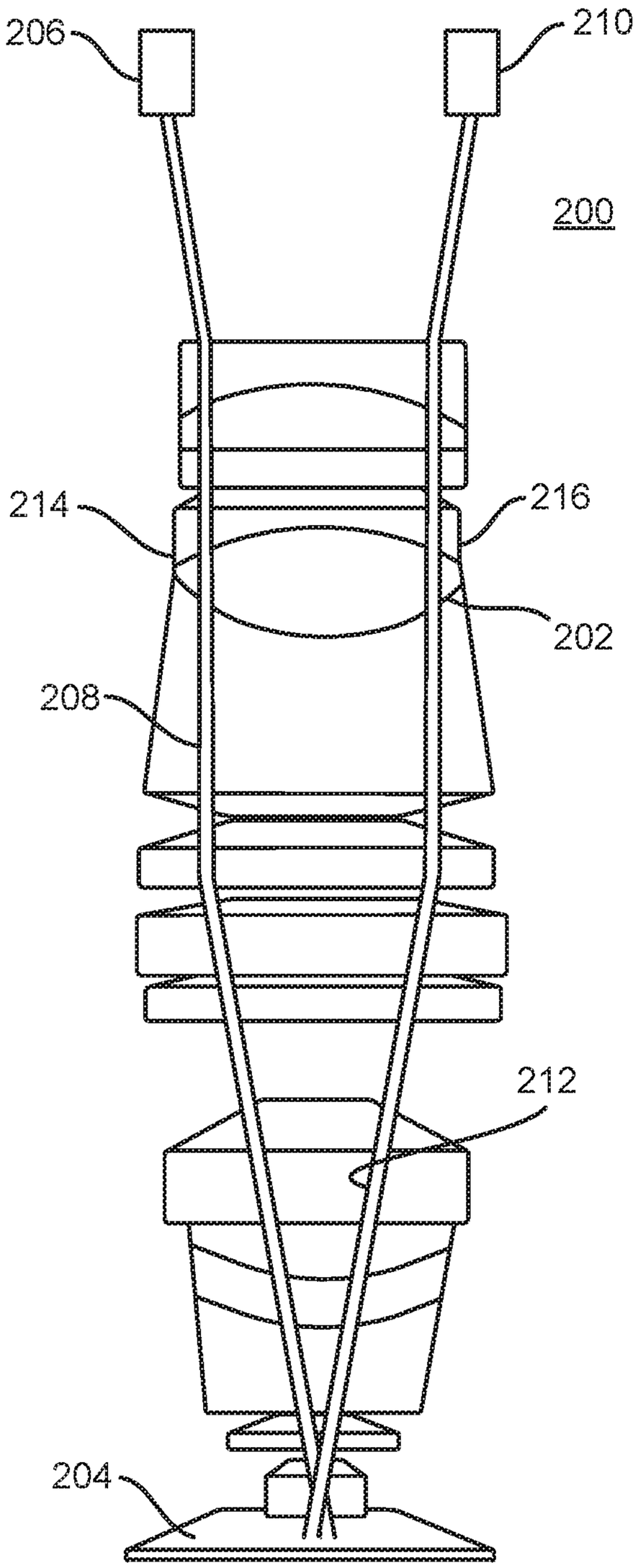

FIG. 2

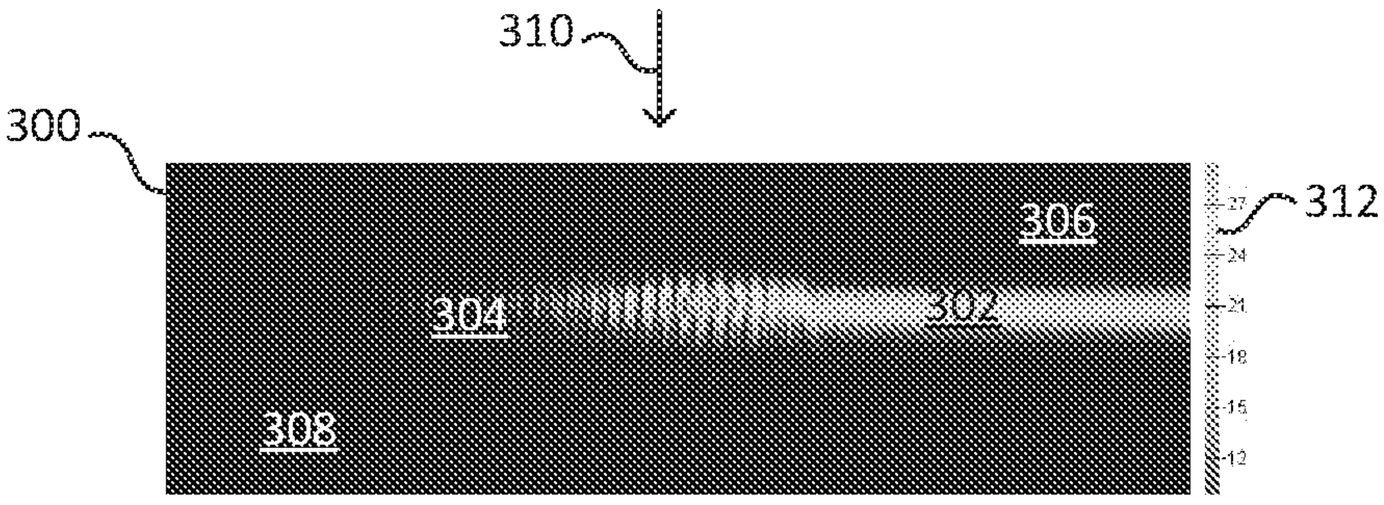
310
300
306
304
302
308
312
27
24
21
18
15
12

FIG. 3

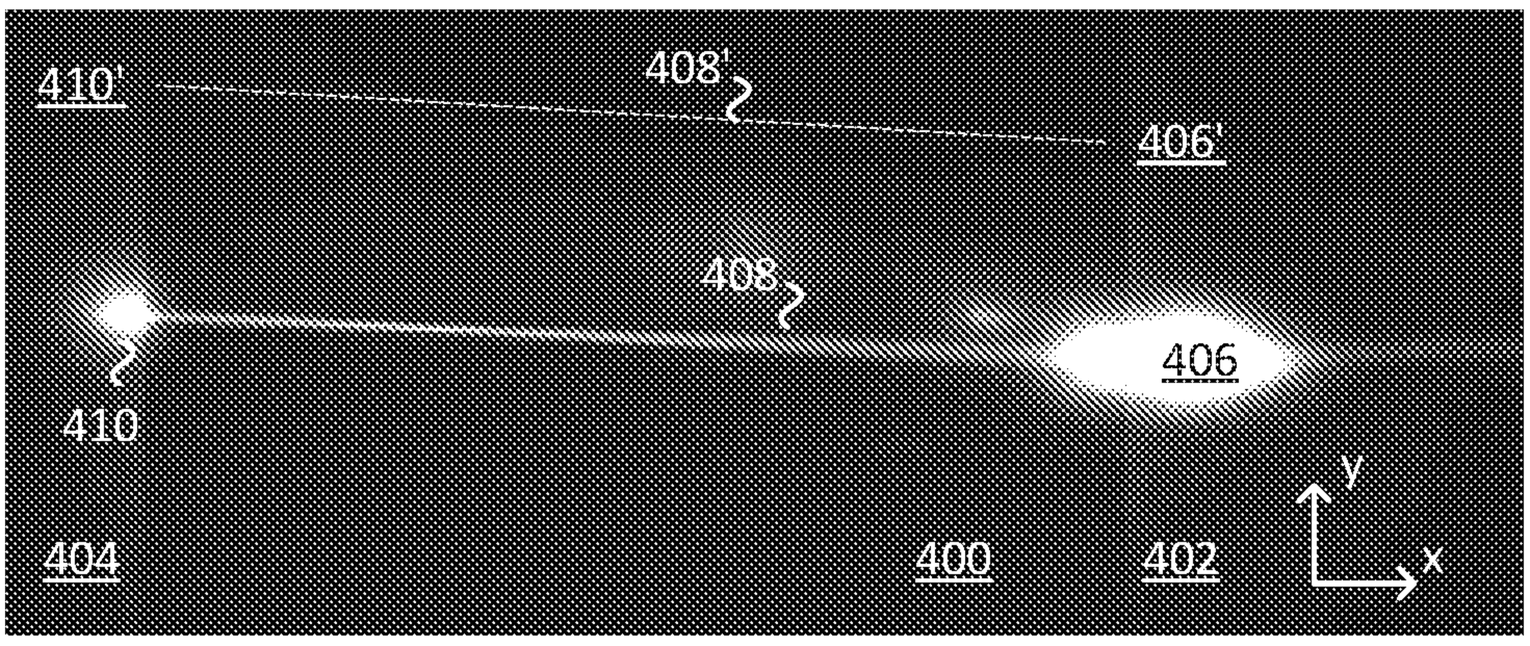
410'
408'
406'
408
406
410
404
400
402
y
x

FIG. 4

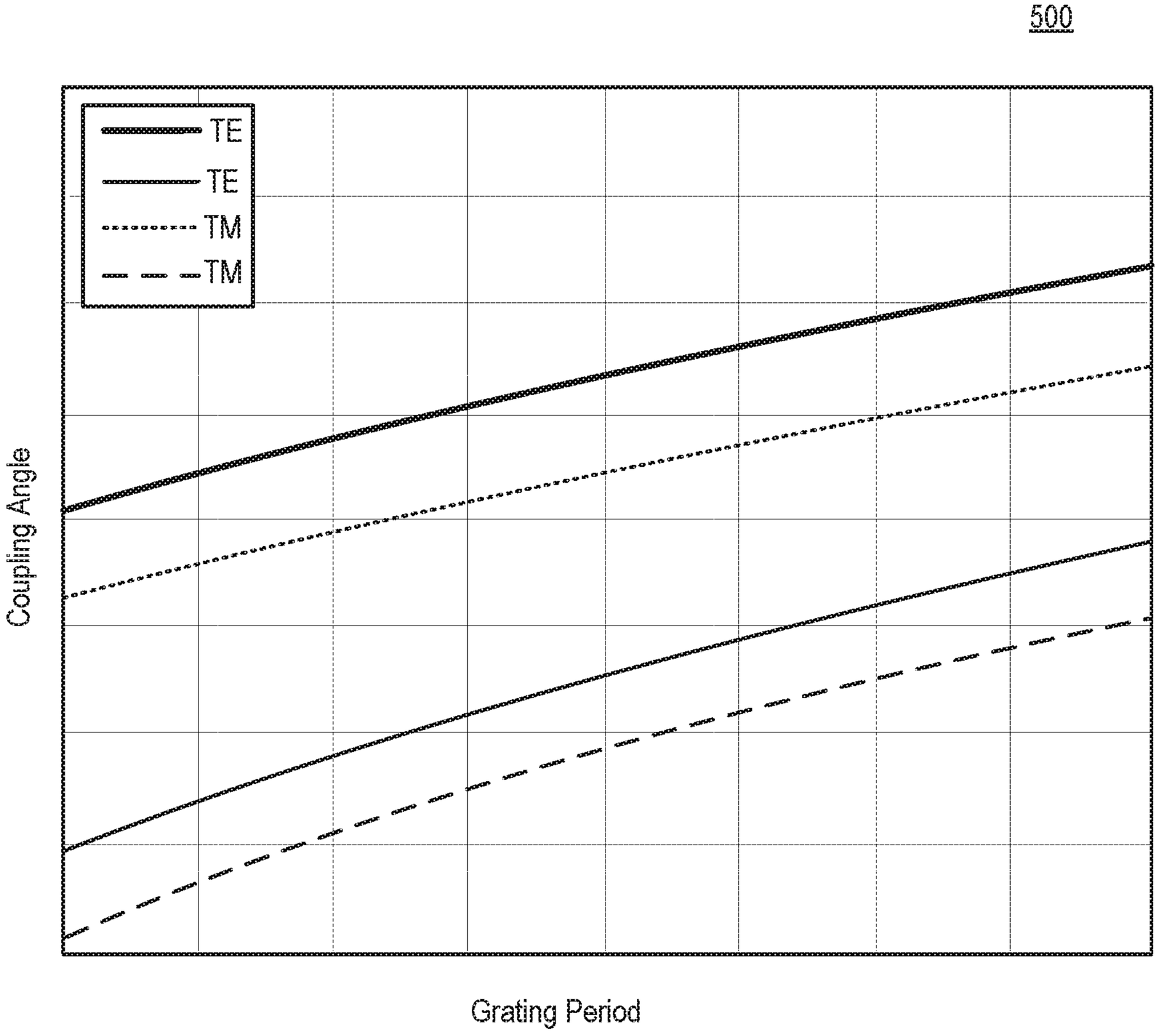

FIG. 5

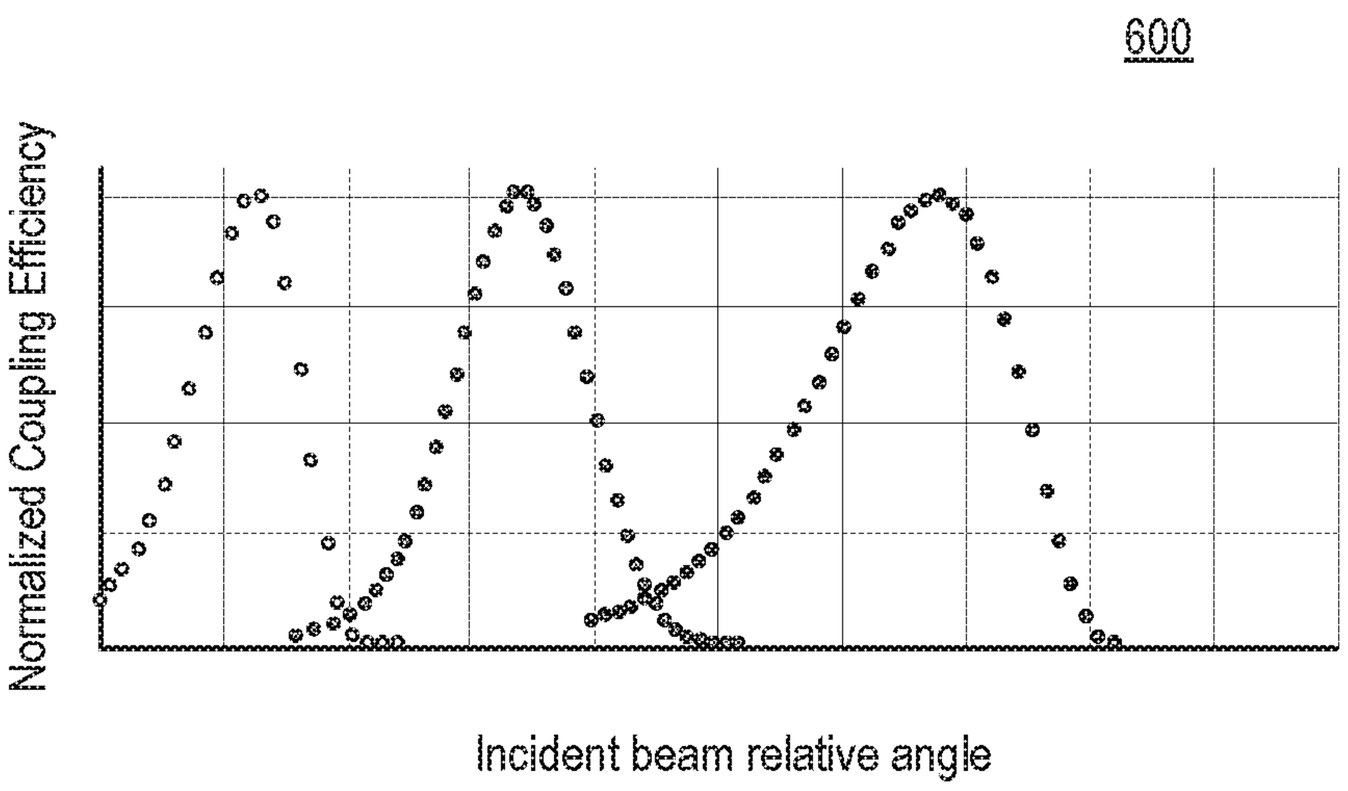
600
Normalized Coupling Efficiency
Incident beam relative angle

FIG. 6

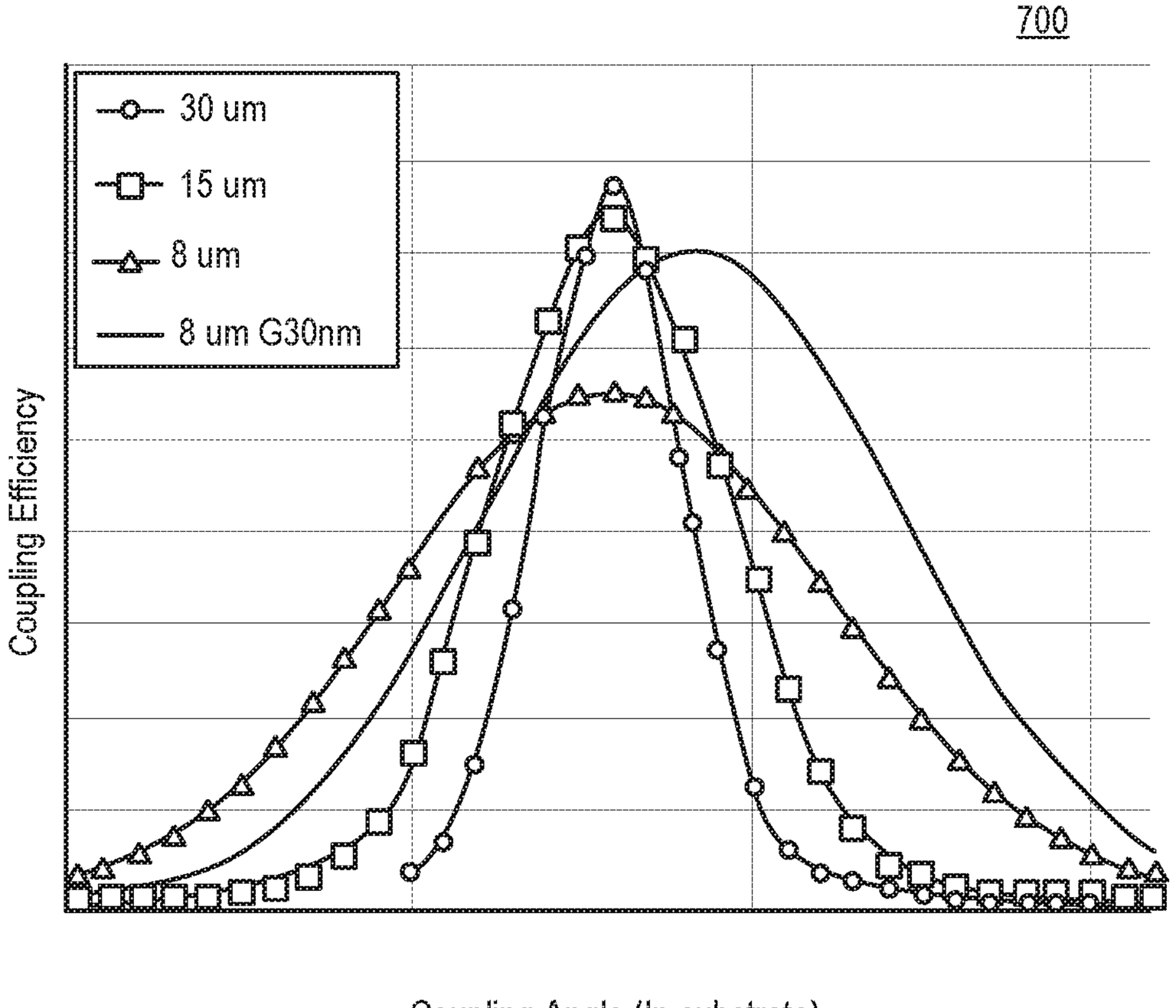
700
30 um
15 um
8 um
8 um G30nm
Coupling Efficiency
Coupling Angle (In substrate)

FIG. 7

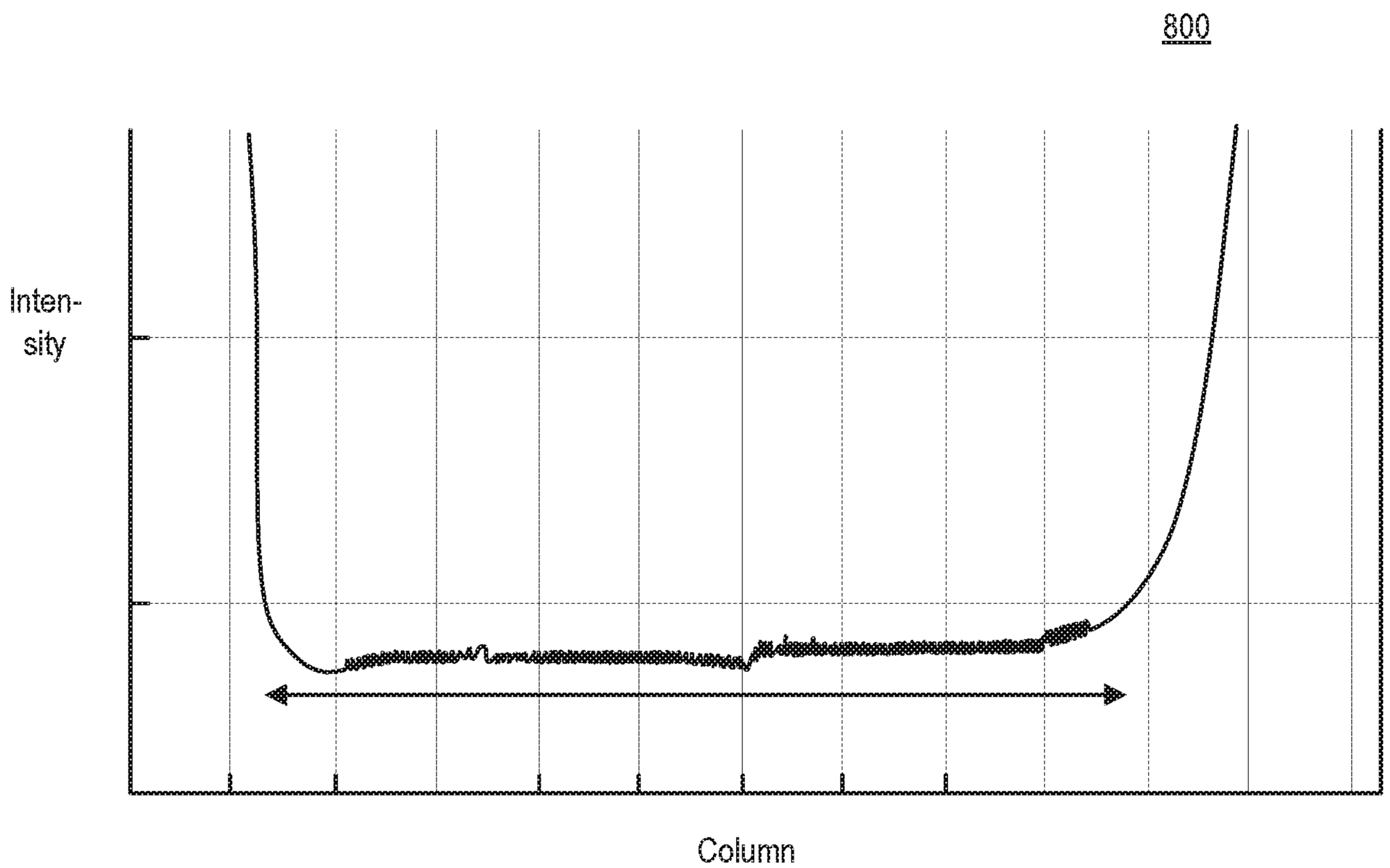

FIG. 8

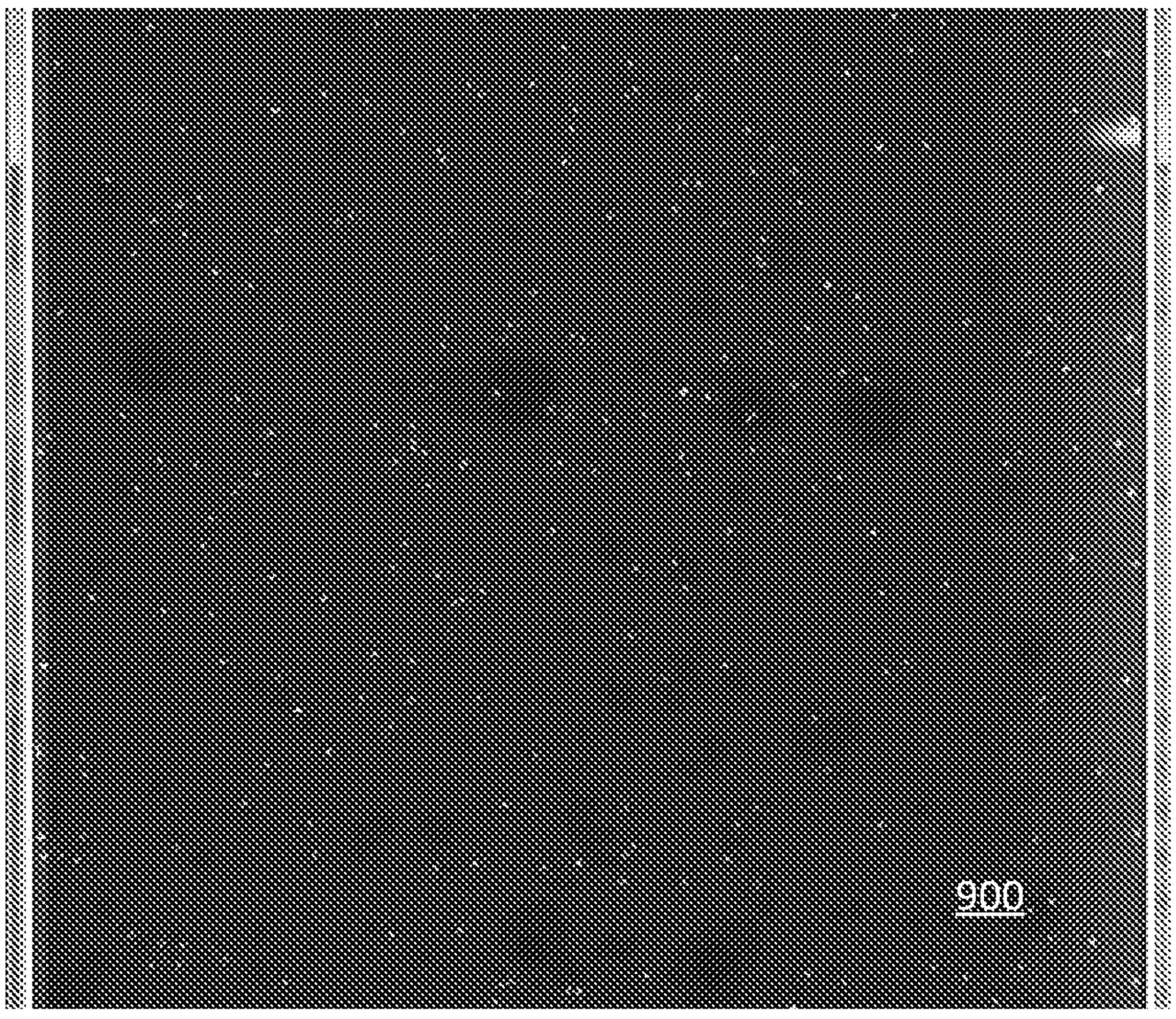

FIG. 9

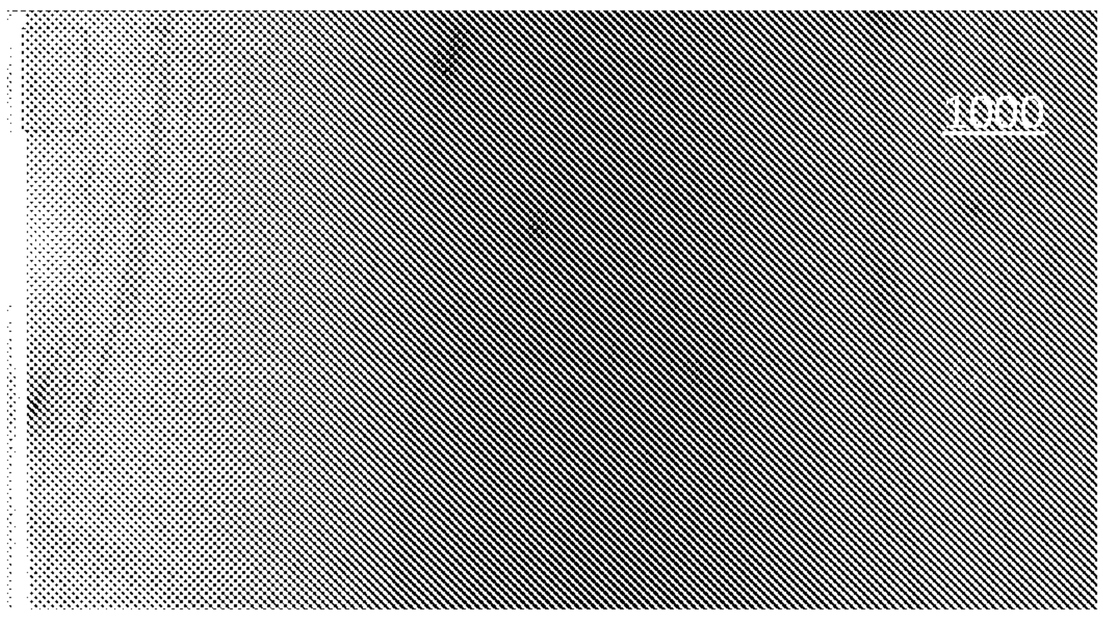

FIG. 10

FIG. 11

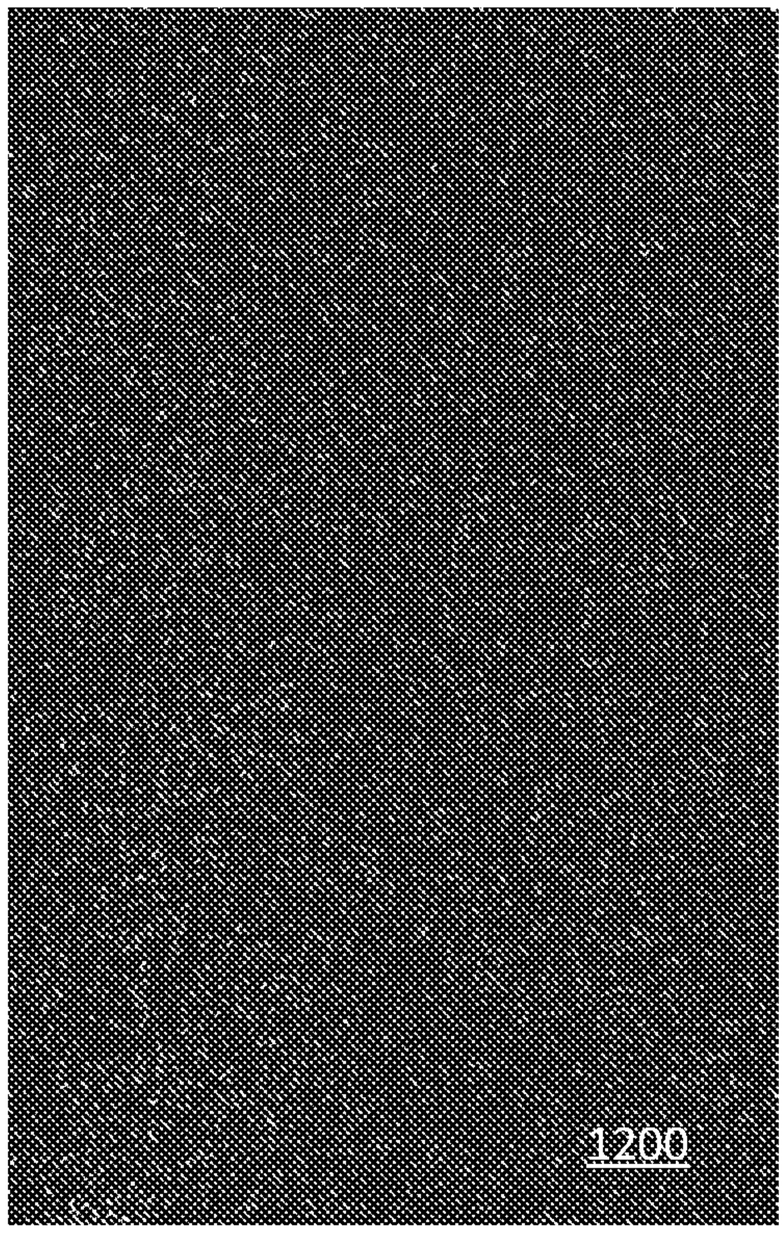

FIG. 12

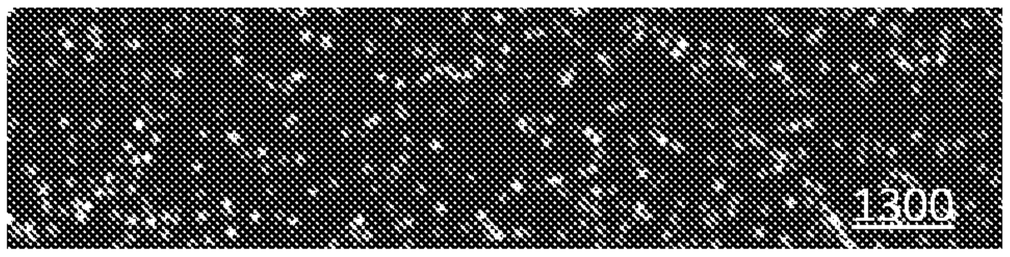

FIG. 13

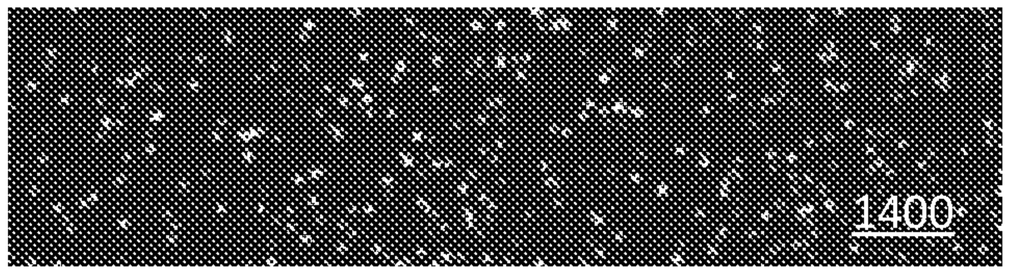

FIG. 14

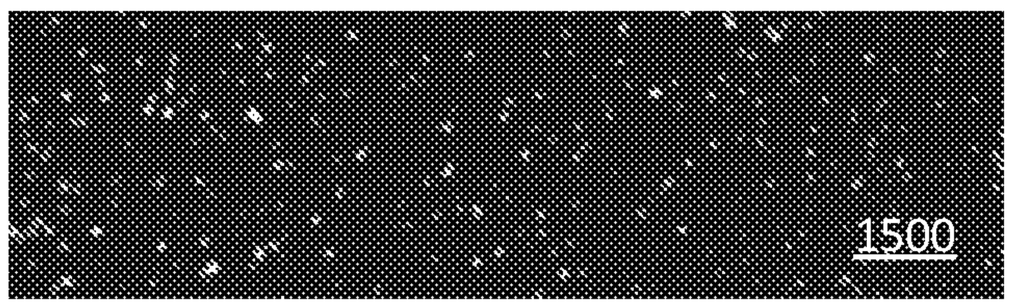

FIG. 15

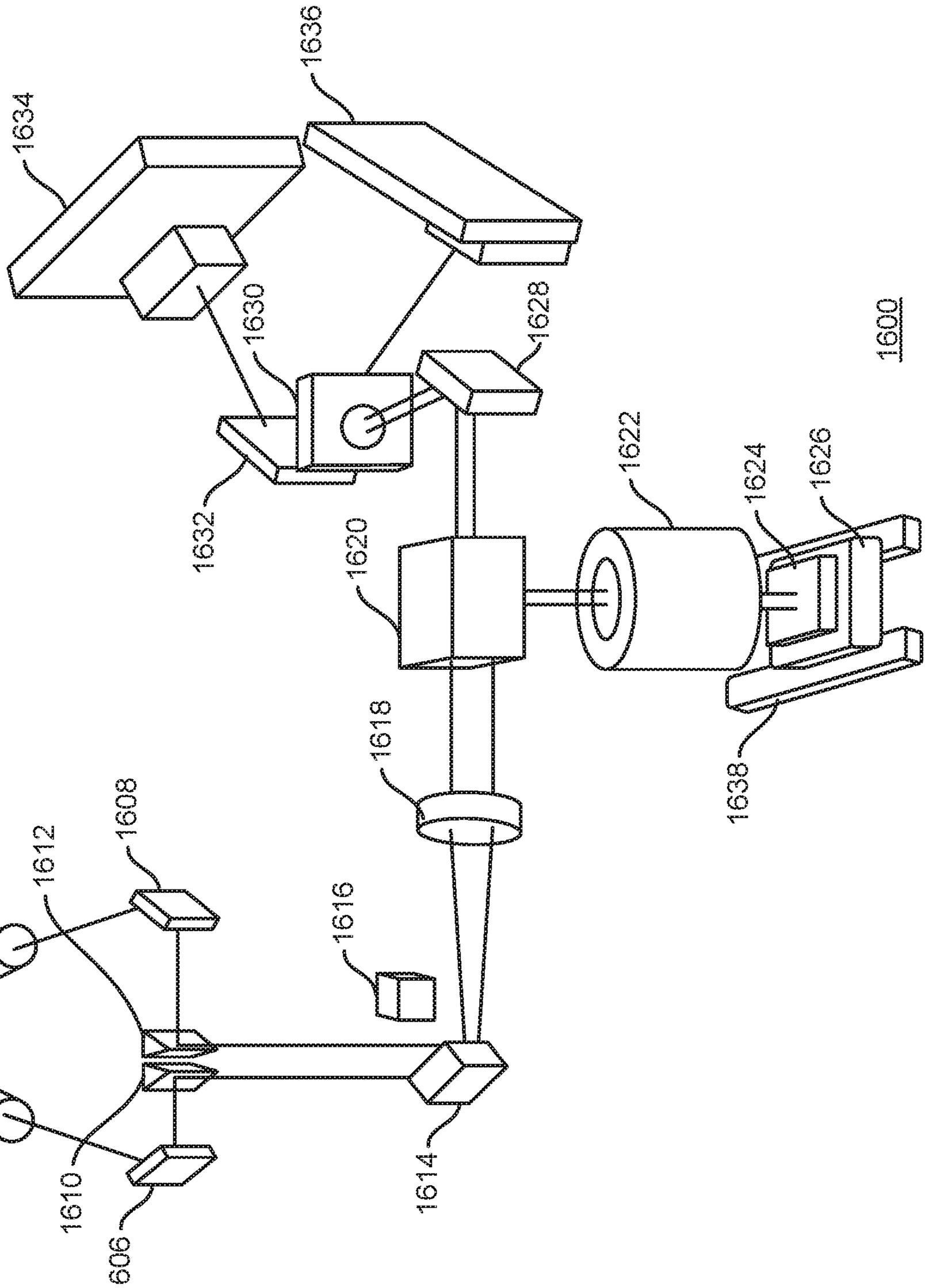
1600
1602
1604
1606
1608
1610
1612
1614
1616
1618
1620
1622
1624
1626
1628
1630
1632
1634
1636
1638

FIG. 16

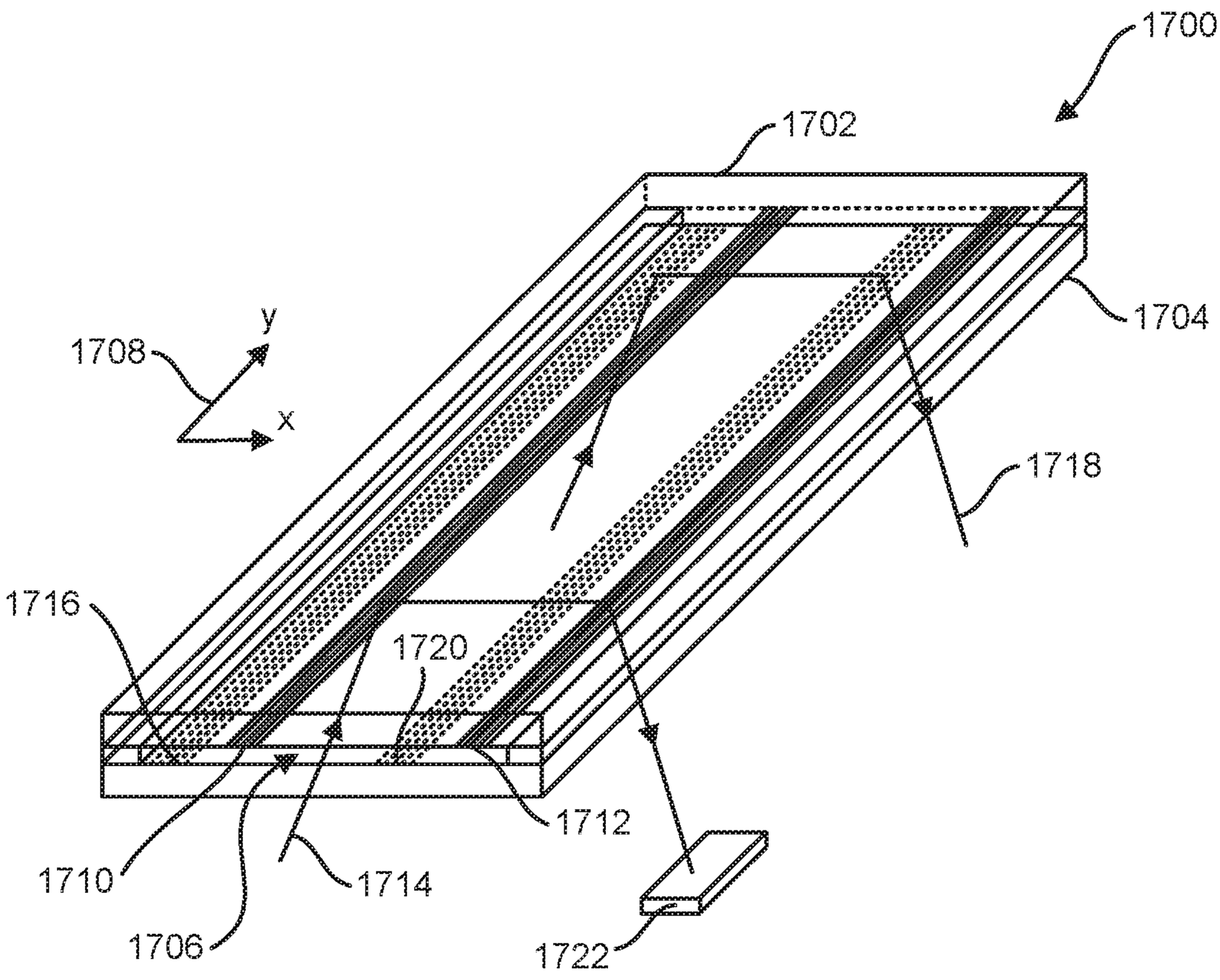
1700
1702
1704
y
1708
x
1718
1716
1720
1712
1710
1714
1706
1722

FIG. 17

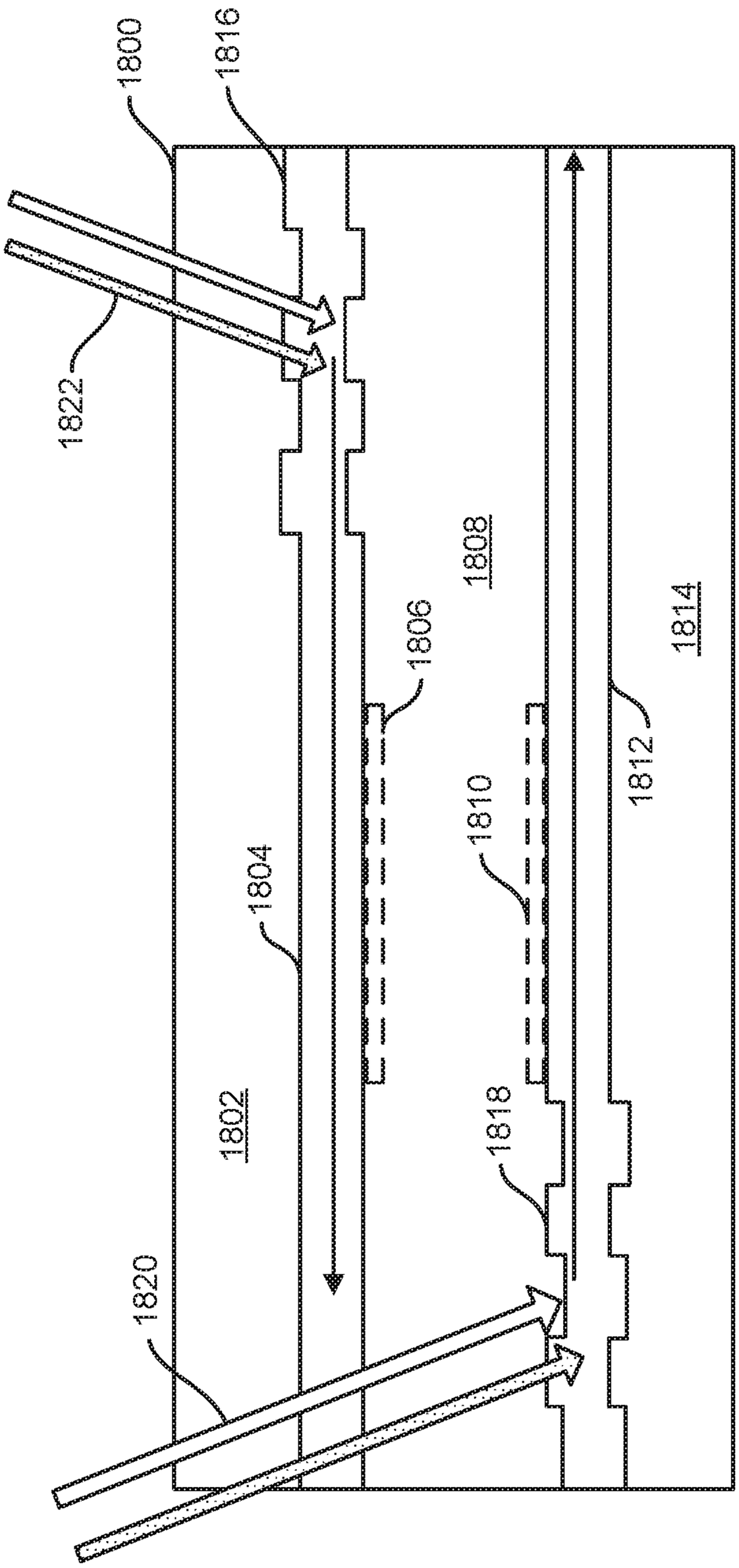

FIG. 18

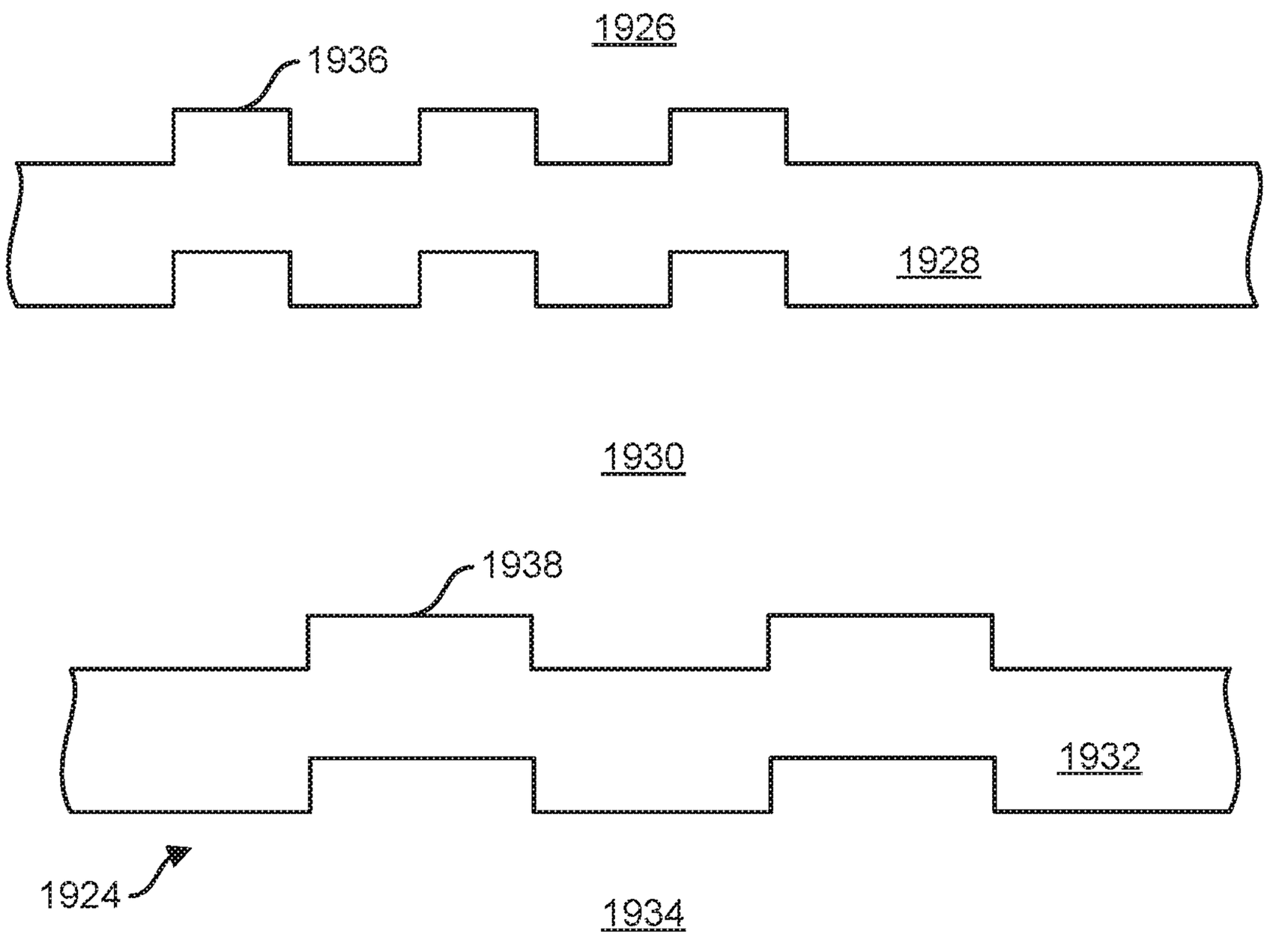

FIG. 19

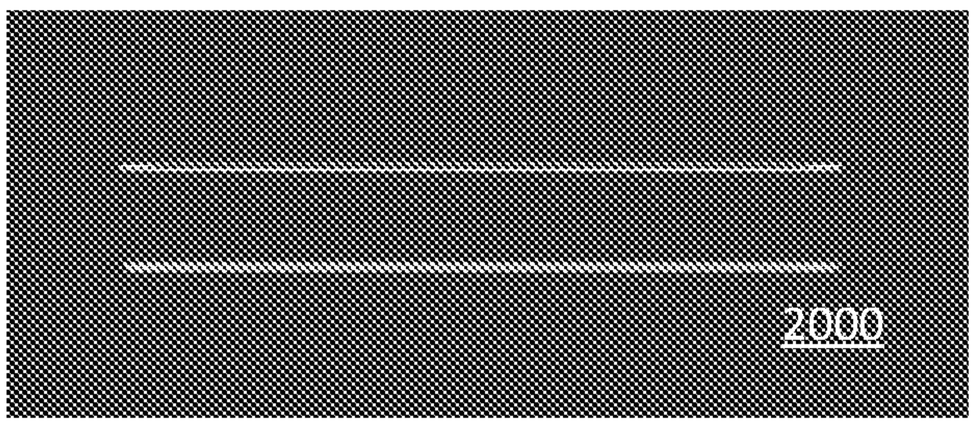

FIG. 20

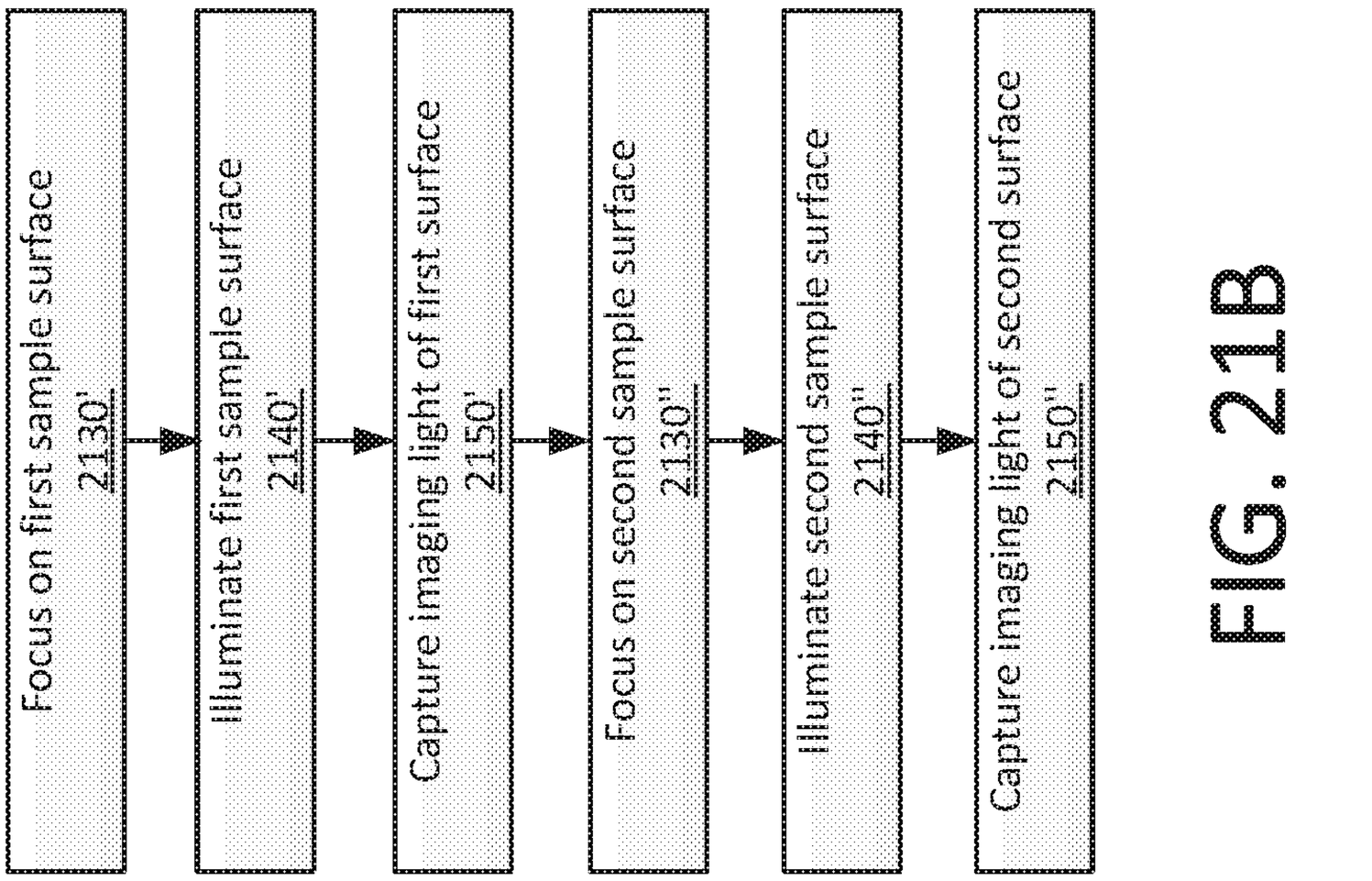

FIG. 21A

FIG. 21B

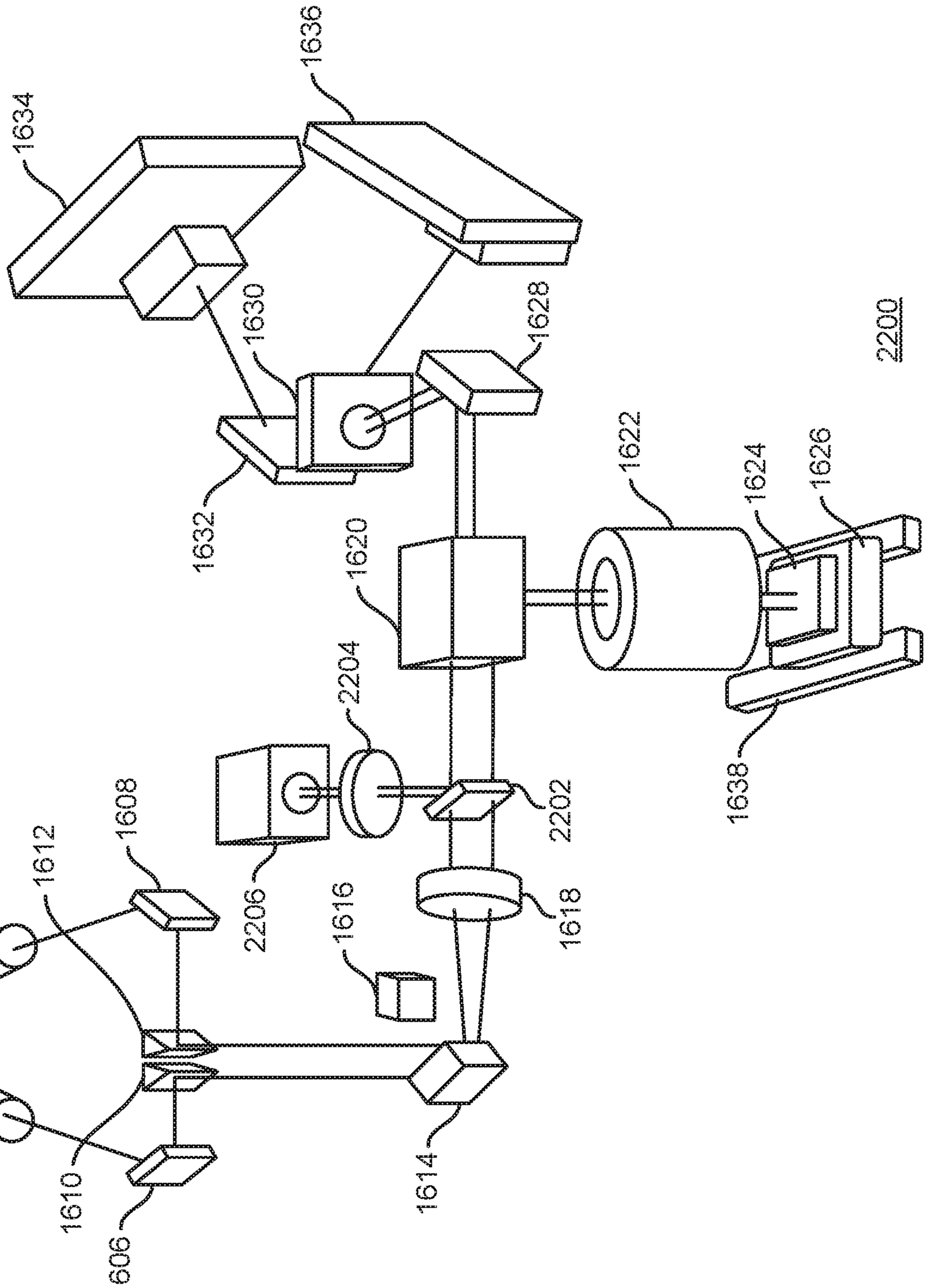
1636
1634
1630
1628
2200
1632
1622
1624
1626
1620
2204
1638
1602
1604
1612
1608
2206
1616
2202
1618
1610
1614
1606

FIG. 22

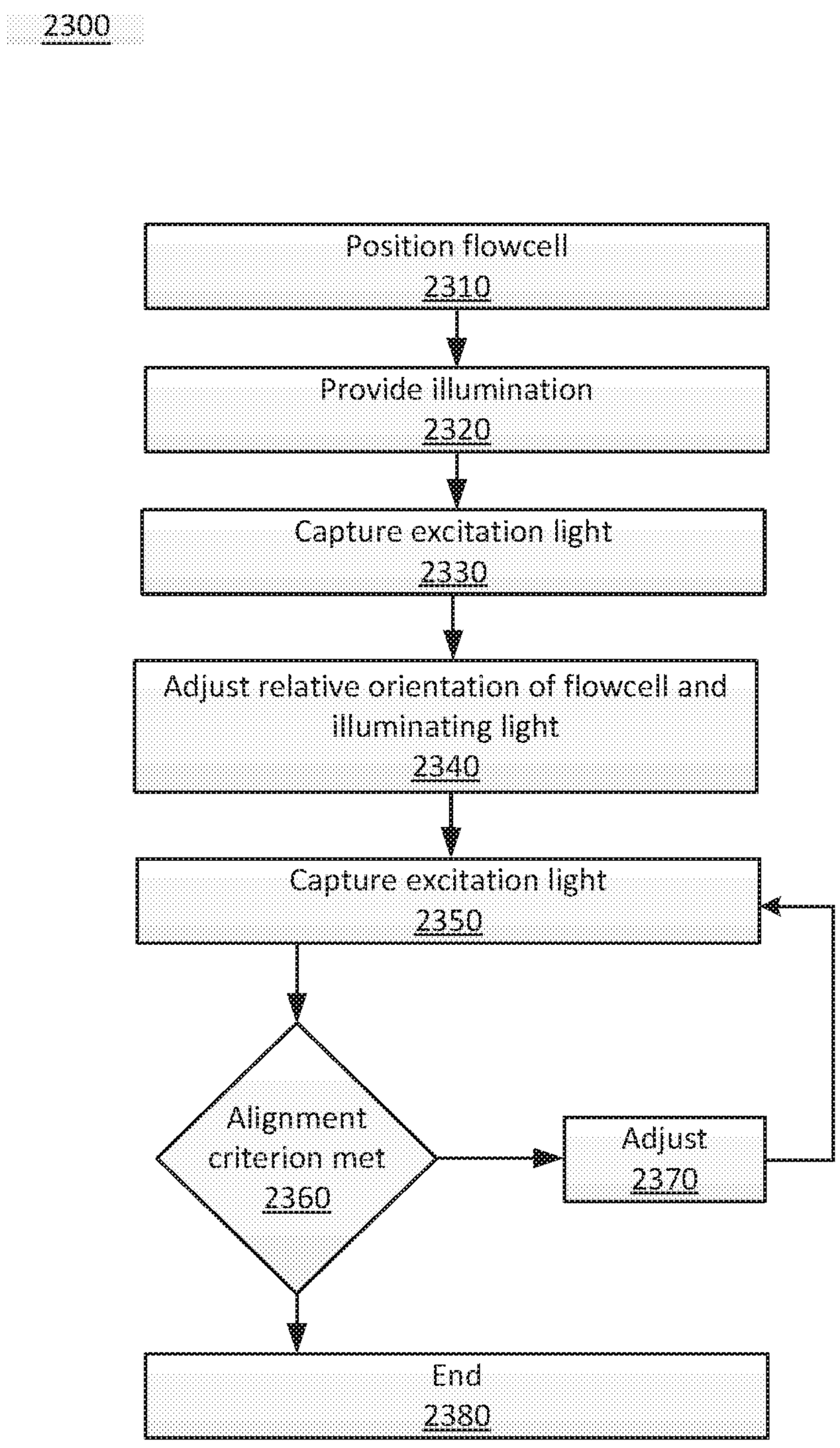
2300
Position flowcell
2310
Provide illumination
2320
Capture excitation light
2330
Adjust relative orientation of flowcell and illuminating light
2340
Capture excitation light
2350
Alignment criterion met
2360
Adjust
2370
End
2380

FIG. 23

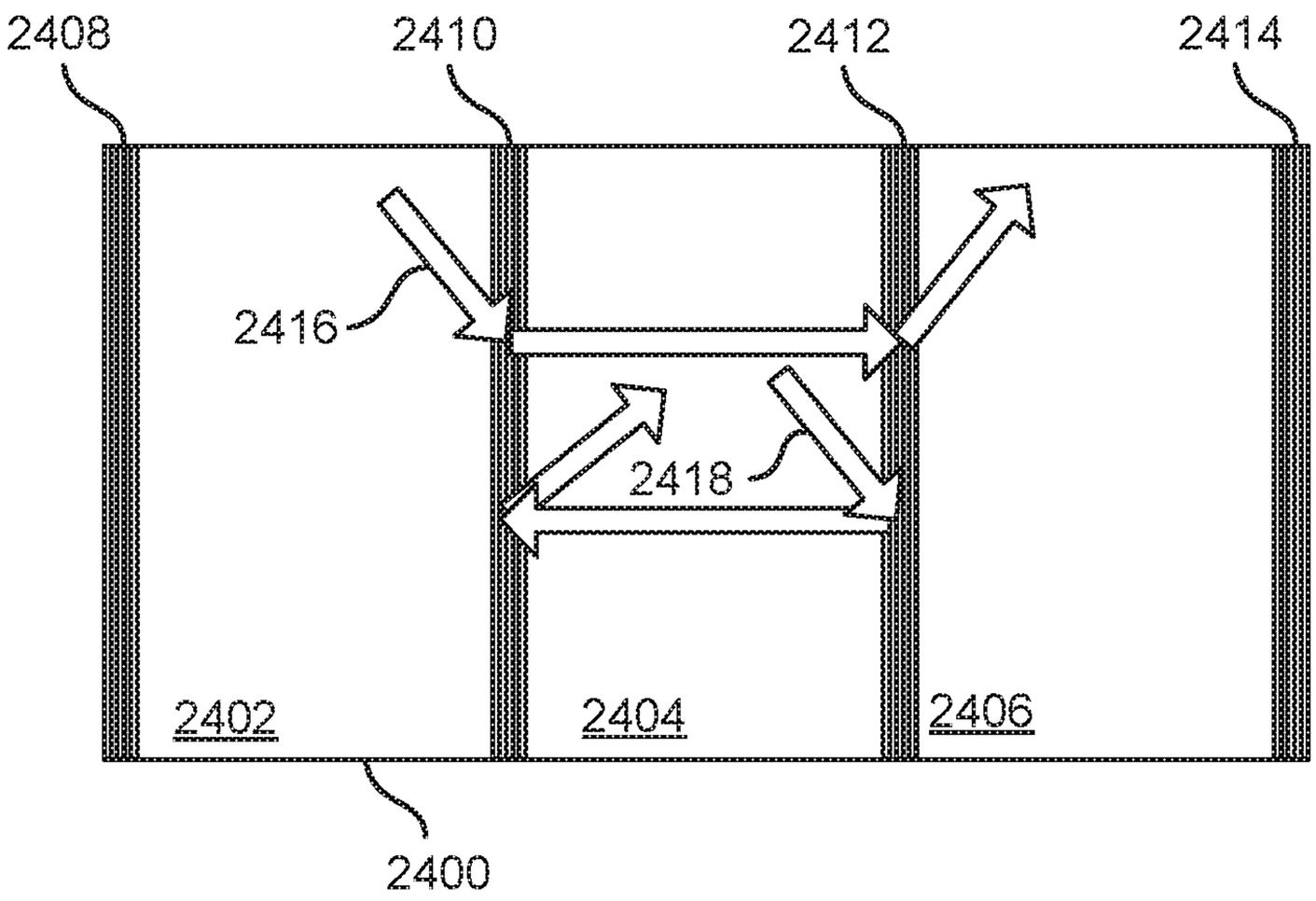

FIG. 24