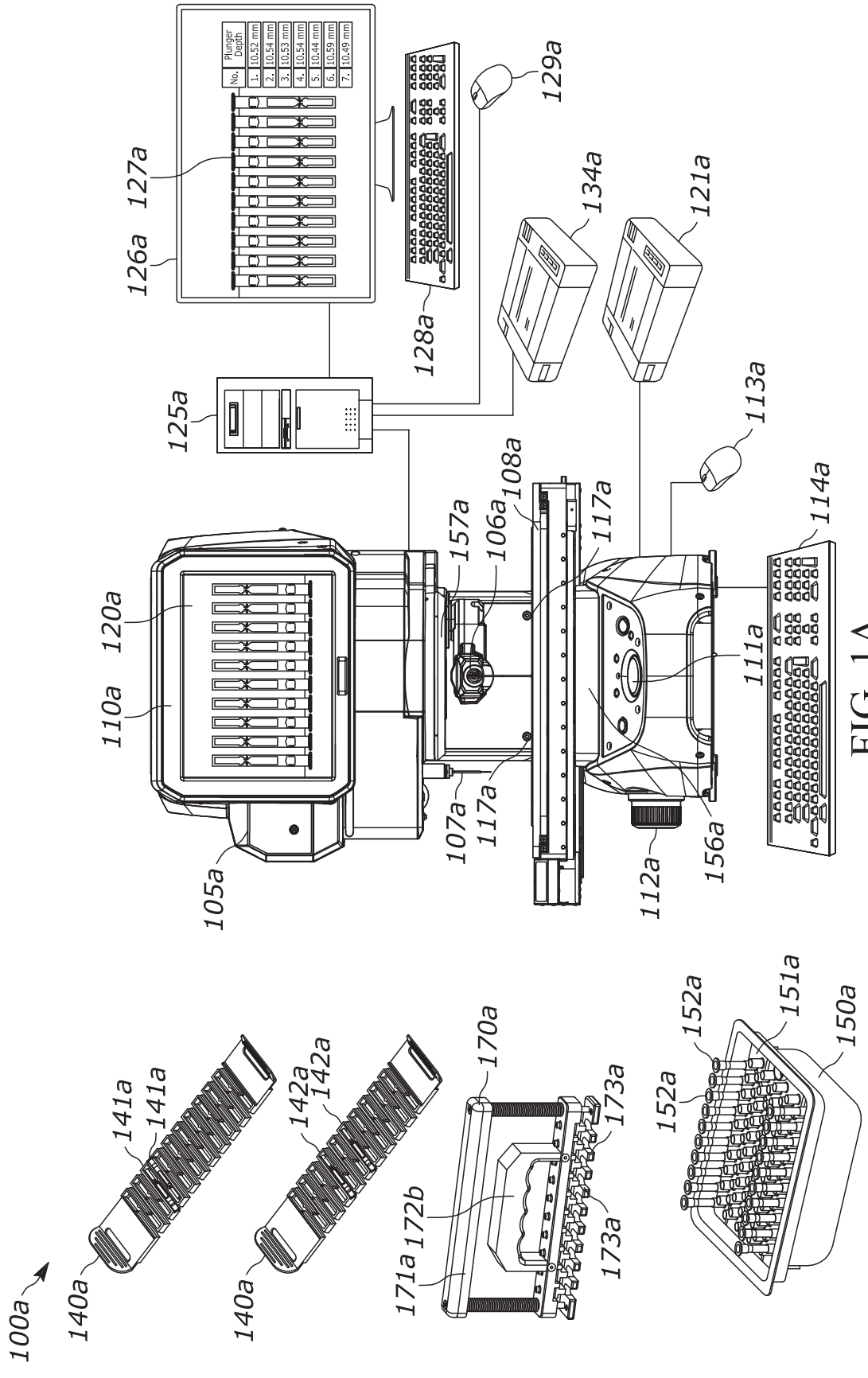

100a
140a
141a
141a
142a
142a
140a
171a
172b
170a
173a
173a
152a
152a
151a
150a
105a
110a
120a
157a
106a
108a
117a
107a
117a
112a
156a
111a
114a
113a
125a
126a
127a
128a
129a
134a
121a
No.
Plunger Depth
1. 10.52 mm
2. 10.54 mm
3. 10.53 mm
4. 10.54 mm
5. 10.44 mm
6. 10.59 mm
7. 10.49 mm

FIG. 1A

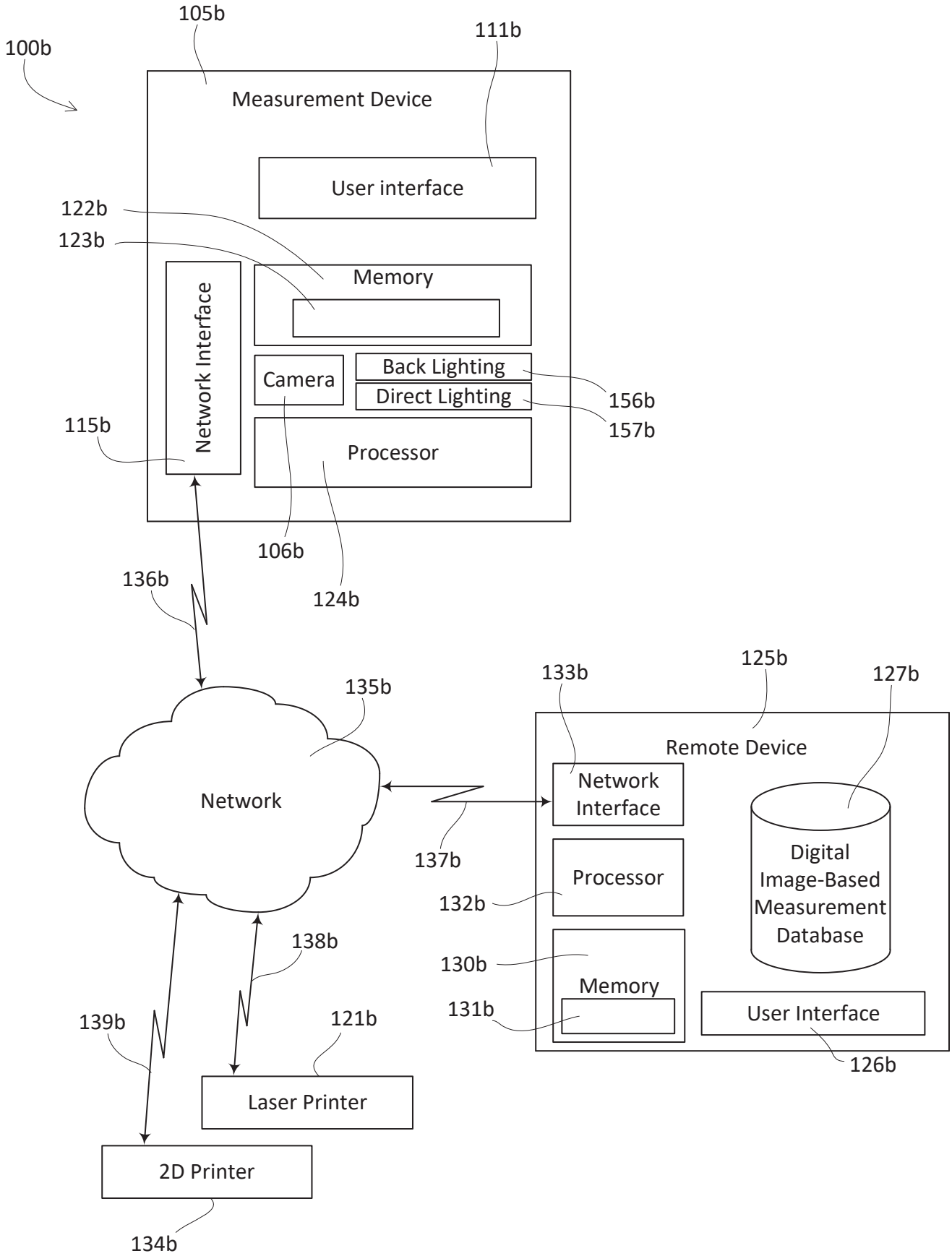

100b
105b
111b
Measurement Device
User interface
122b
123b
Memory
Network Interface
Camera
Back Lighting
Direct Lighting
156b
157b
115b
Processor
106b
124b
136b
135b
Network
125b
133b
127b
Remote Device
Network Interface
Digital Image-Based Measurement Database
137b
Processor
132b
130b
Memory
131b
User Interface
126b
138b
139b
121b
Laser Printer
2D Printer
134b

Fig. 1B

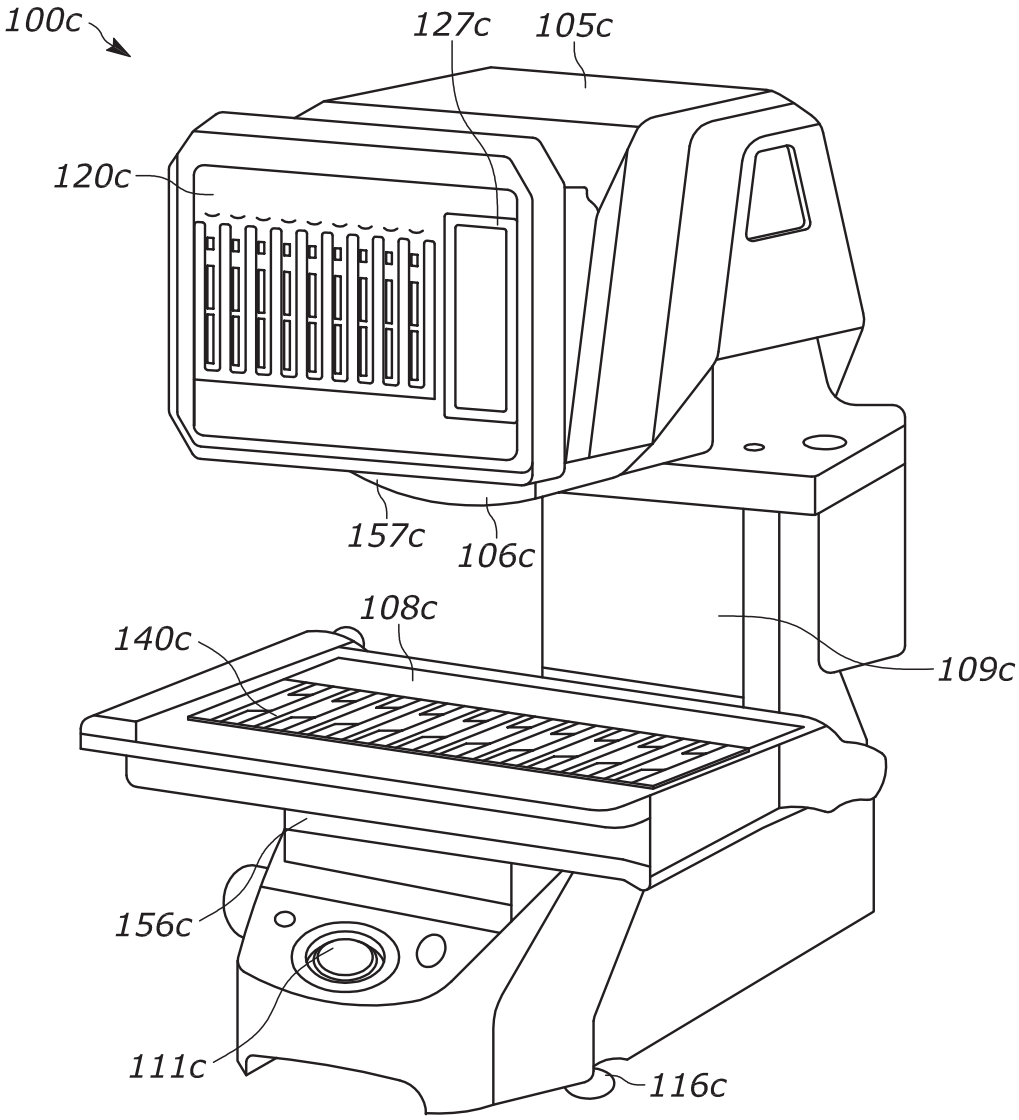


FIG. 1C

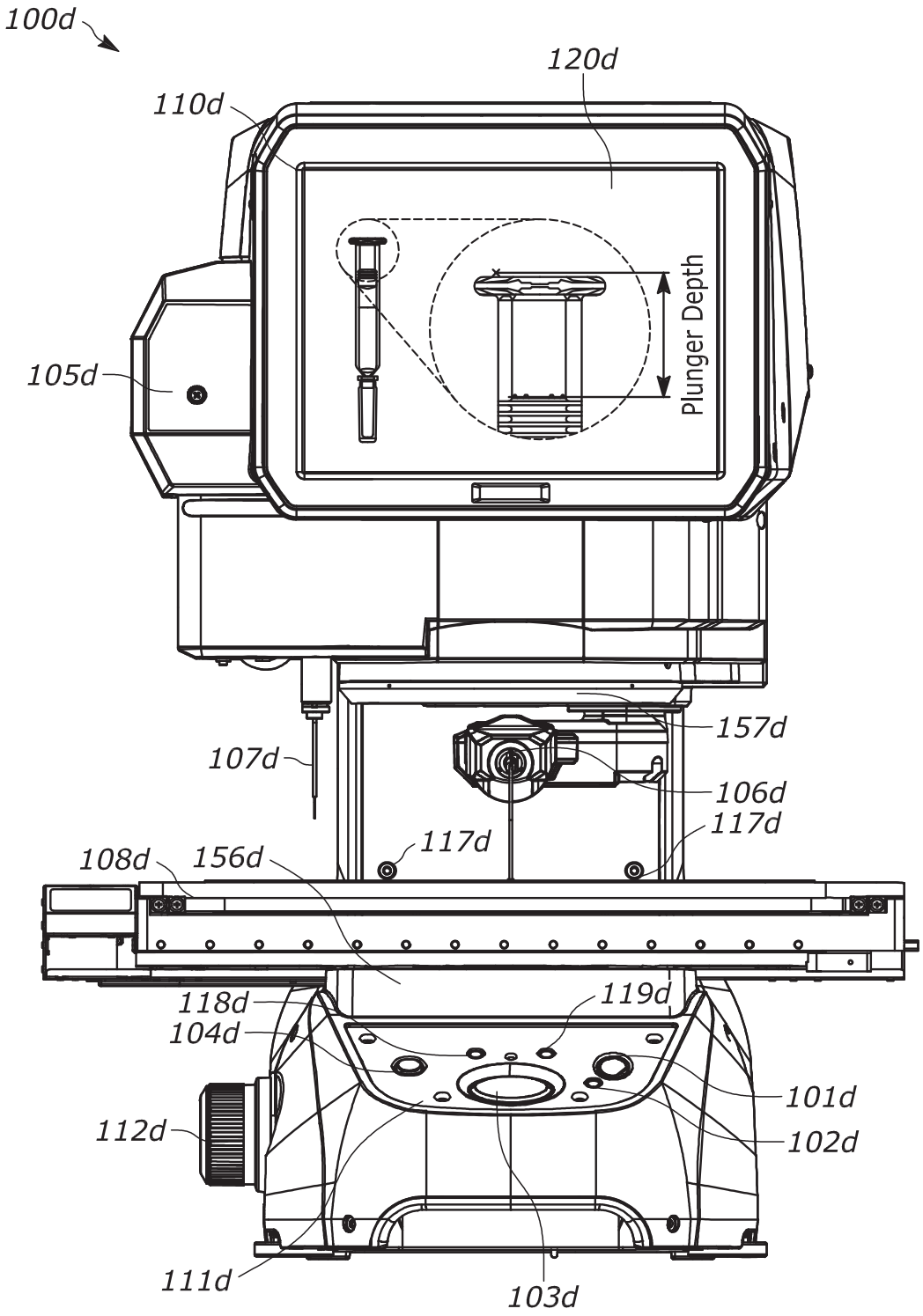

100d
120d
110d
Plunger Depth
105d
157d
107d
106d
117d
117d
108d
156d
118d
119d
104d
101d
112d
102d
111d
103d

FIG. 1D

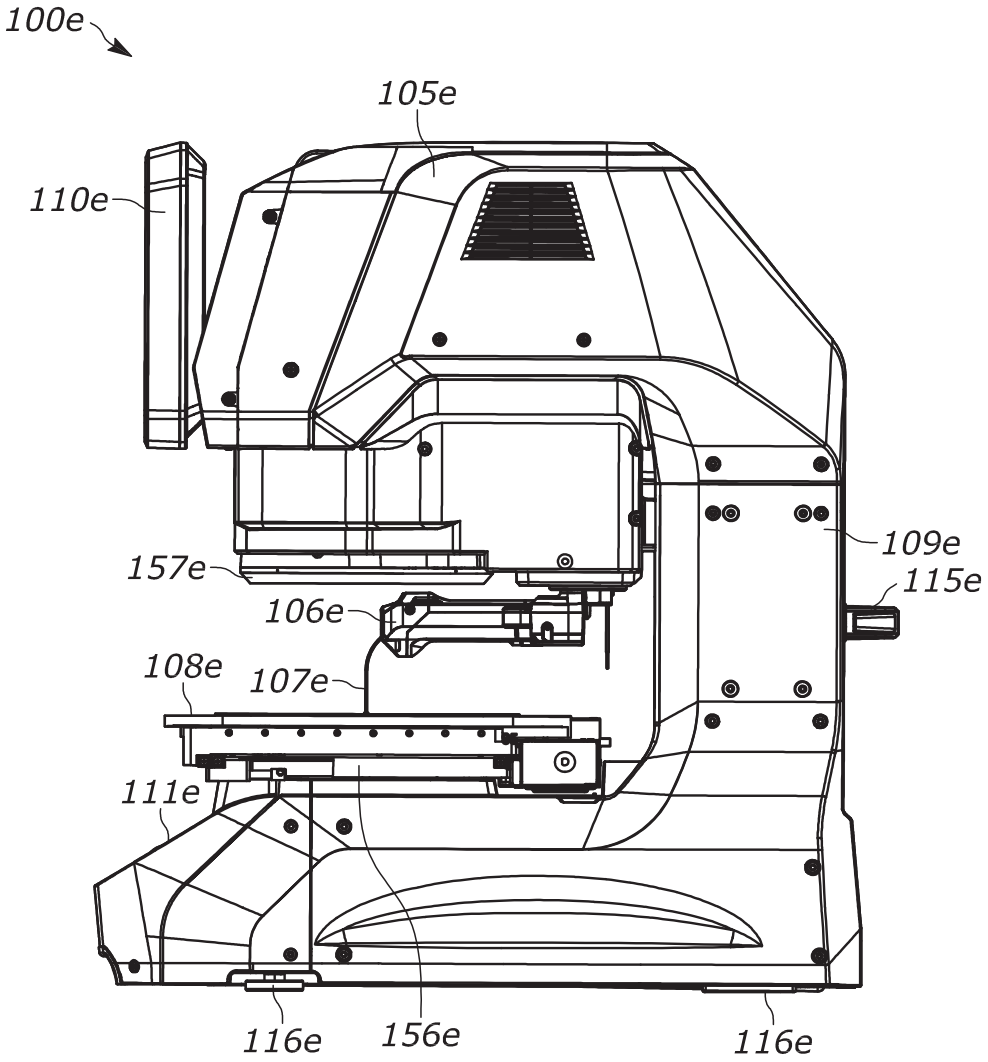
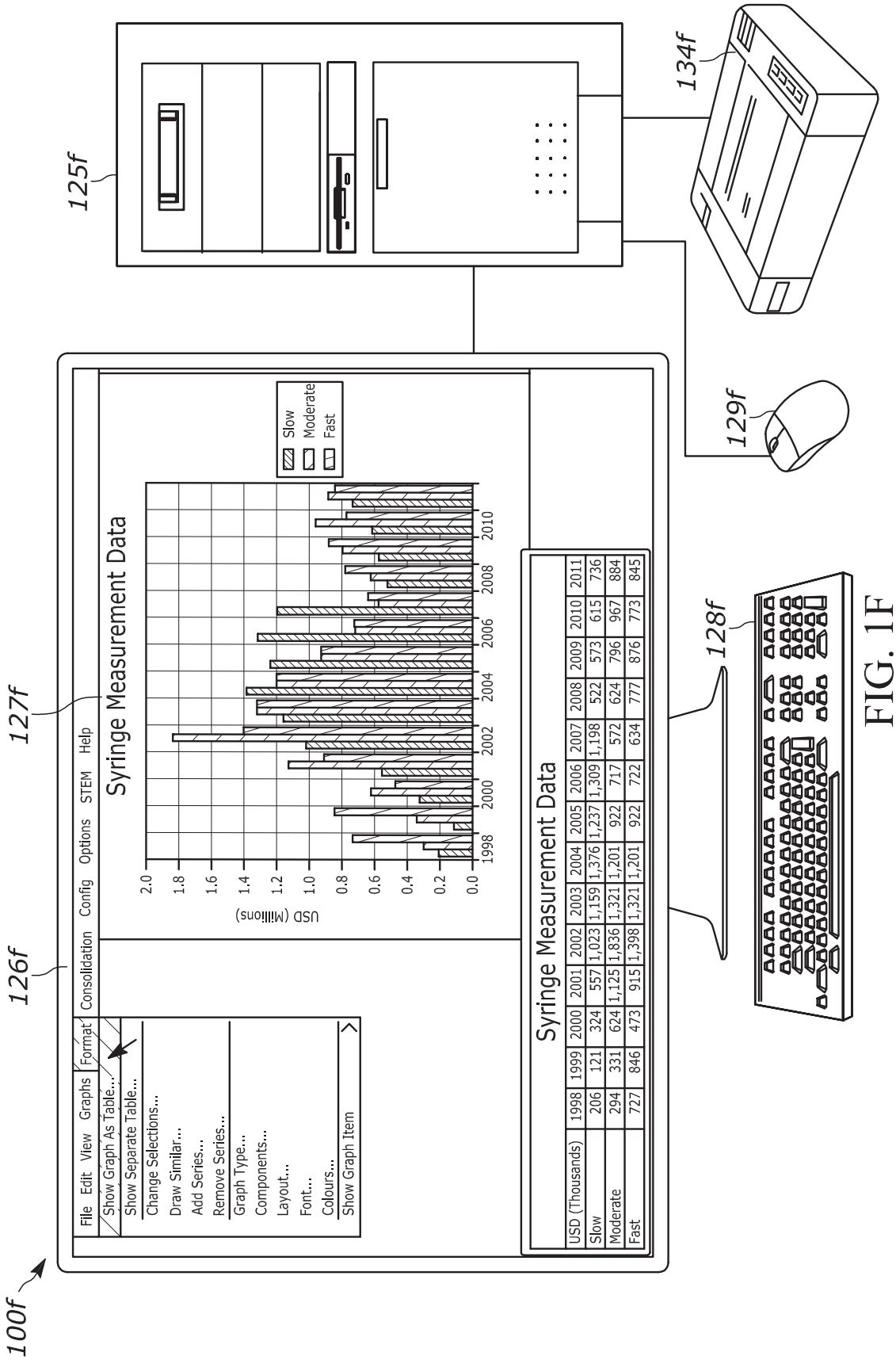

100e
105e
110e
109e
115e
157e
106e
108e
107e
111e
116e
156e
116e

FIG. 1E



USD (Thousands)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Slow	206	121	324	557	1,023	1,159	1,376	1,237	1,309	1,198	522	573	615	736
Moderate	294	331	624	1,125	1,836	1,321	1,201	922	717	572	624	796	967	884
Fast	727	846	473	915	1,398	1,321	1,201	922	722	634	777	876	773	845

FIG. 1F

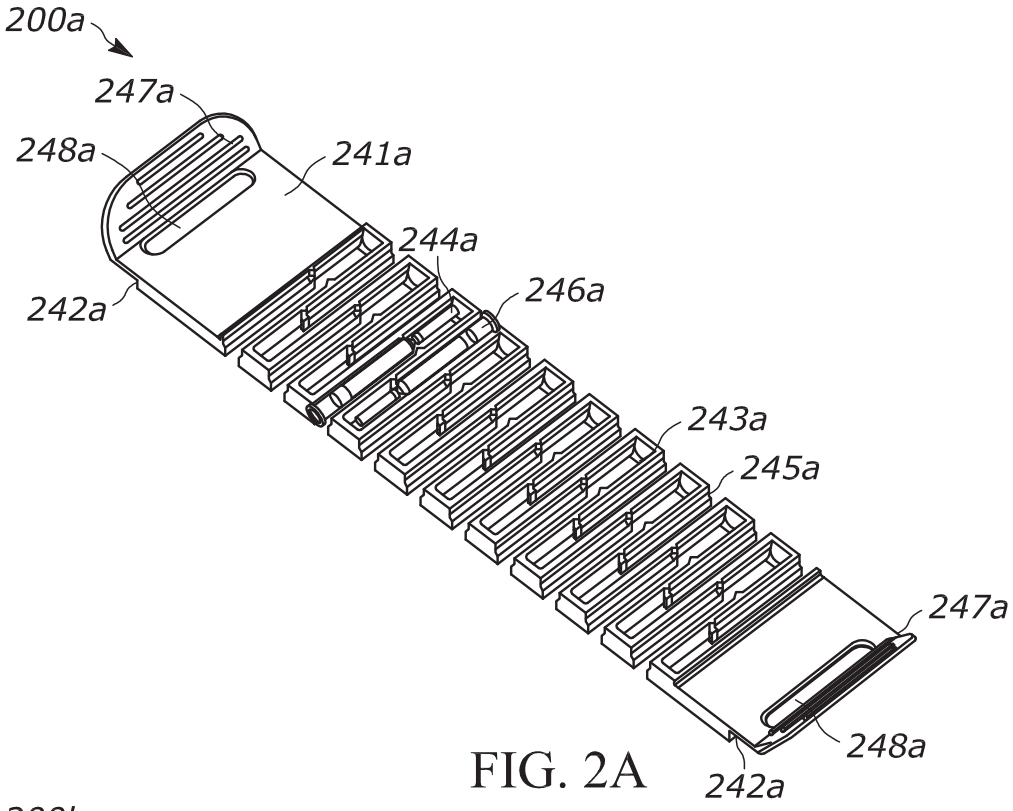

200a
247a
248a
241a
244a
246a
242a
243a
245a
247a
248a
242a

FIG. 2A

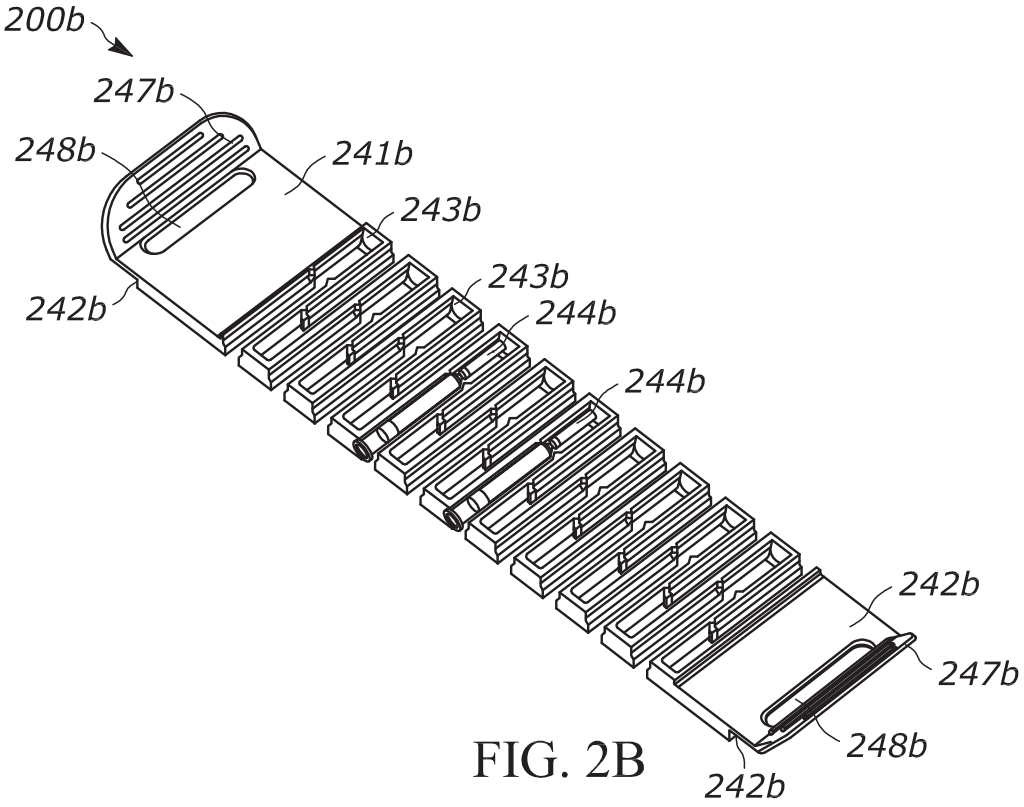

200b
247b
248b
241b
243b
243b
242b
244b
244b
242b
247b
248b
242b

FIG. 2B

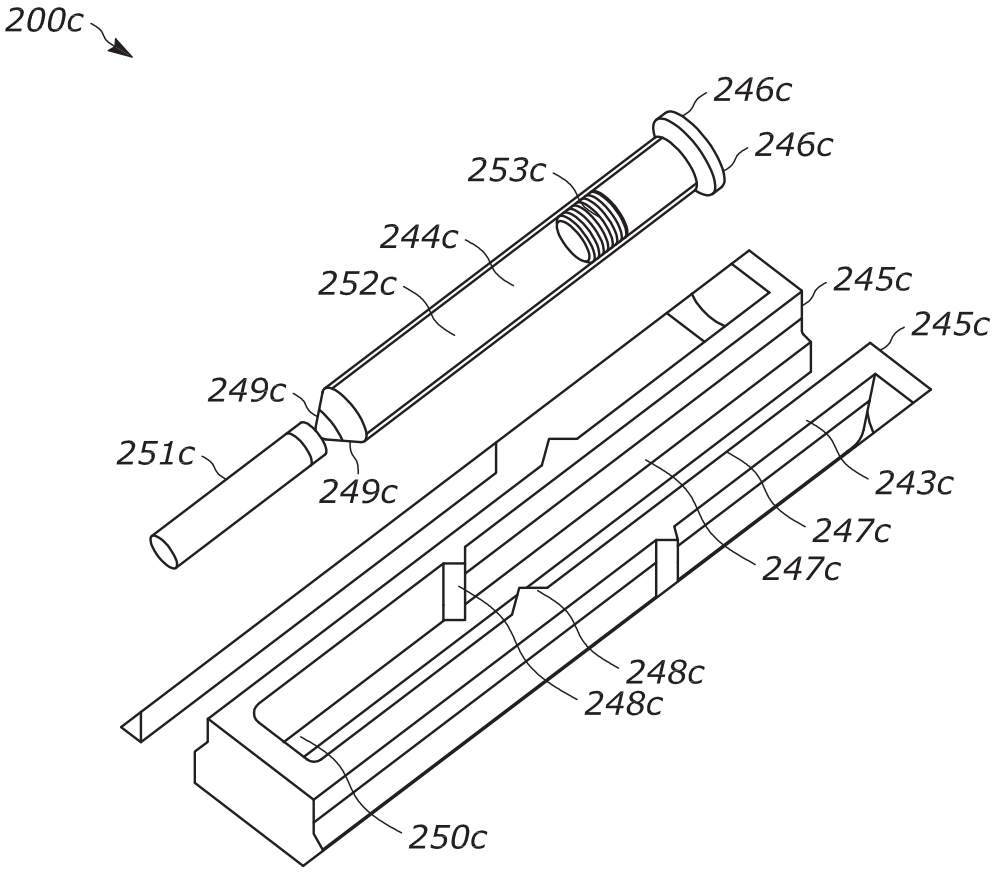

200c
246c
246c
253c
244c
252c
245c
245c
249c
251c
249c
243c
247c
247c
248c
248c
250c

FIG. 2C

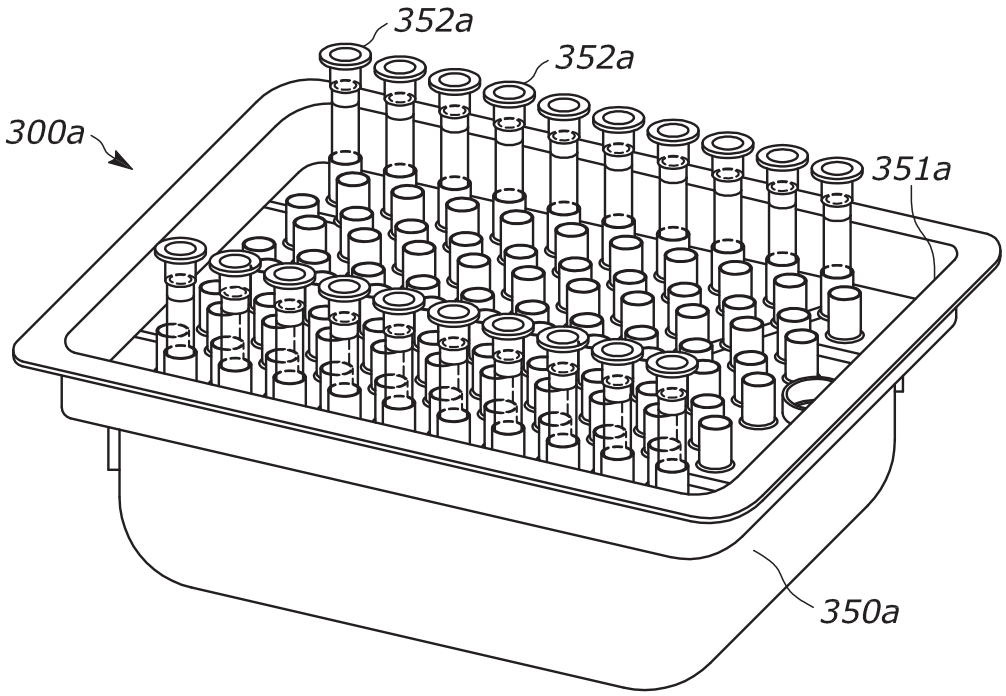


FIG. 3A

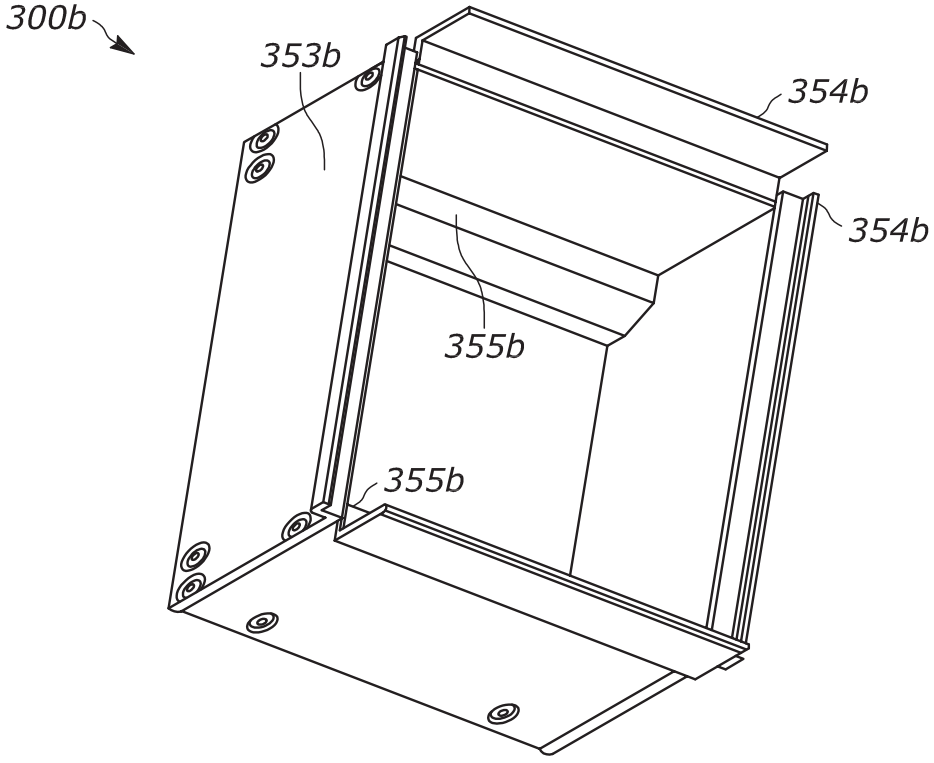


FIG. 3B

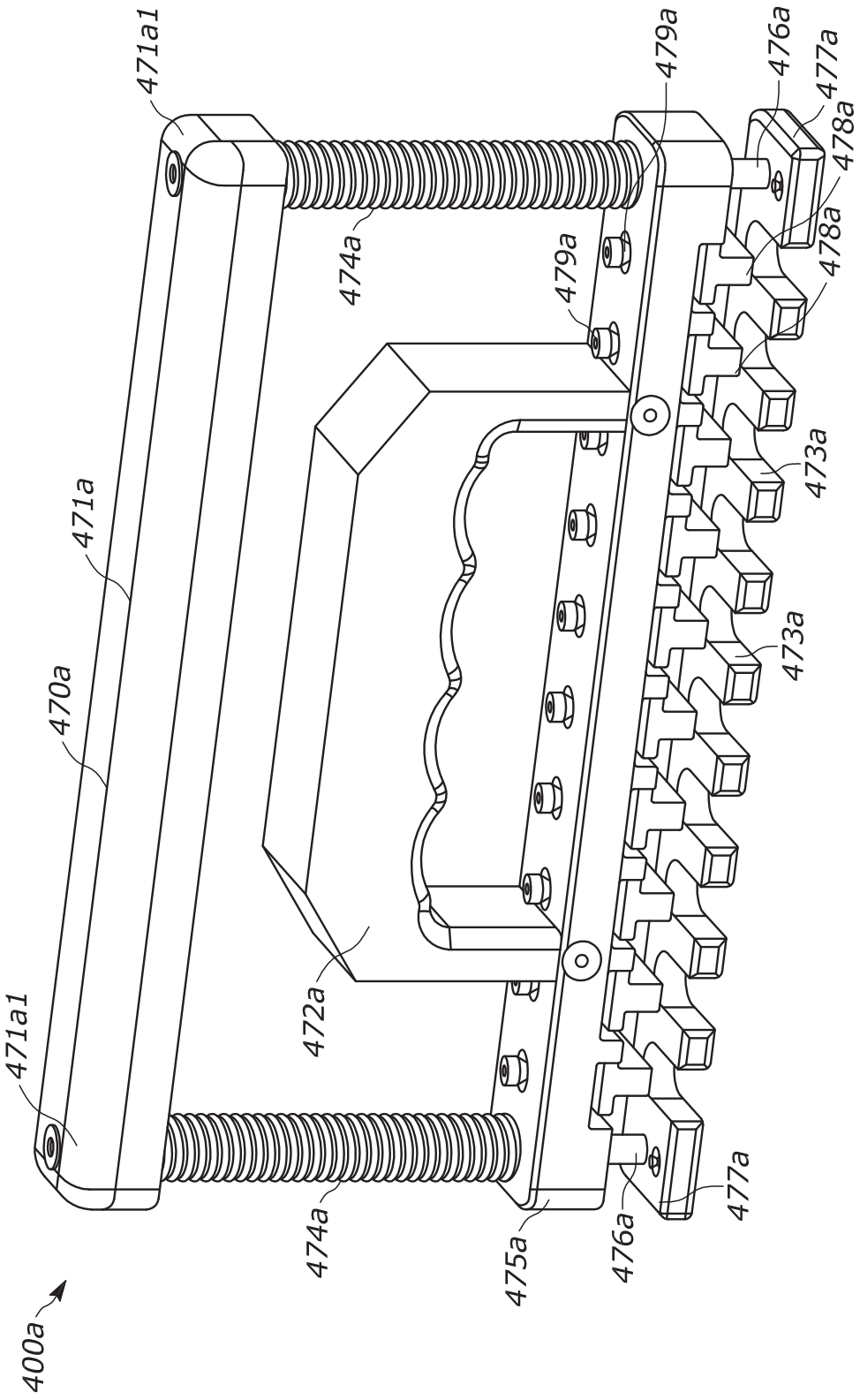
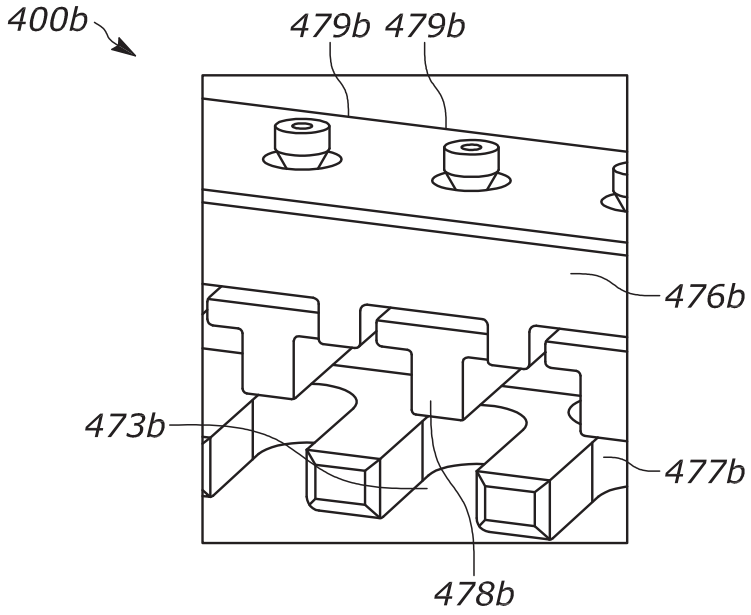

400a
471a1
471a
470a
471a1
472a
474a
475a
476a
477a
473a
473a
478a
478a
477a
476a
479a
479a
474a

FIG. 4A



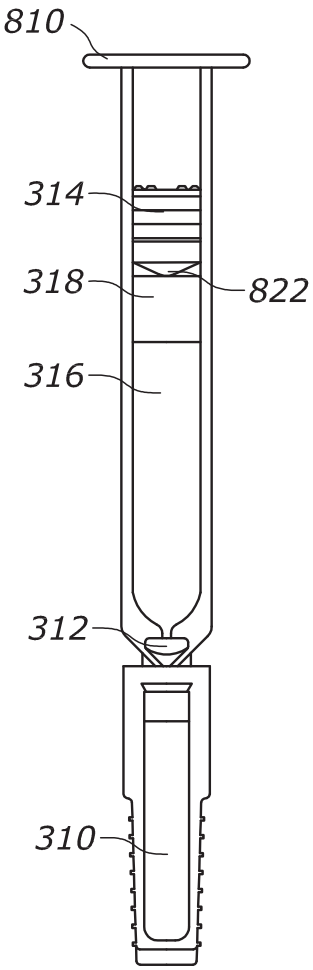


FIG. 4B

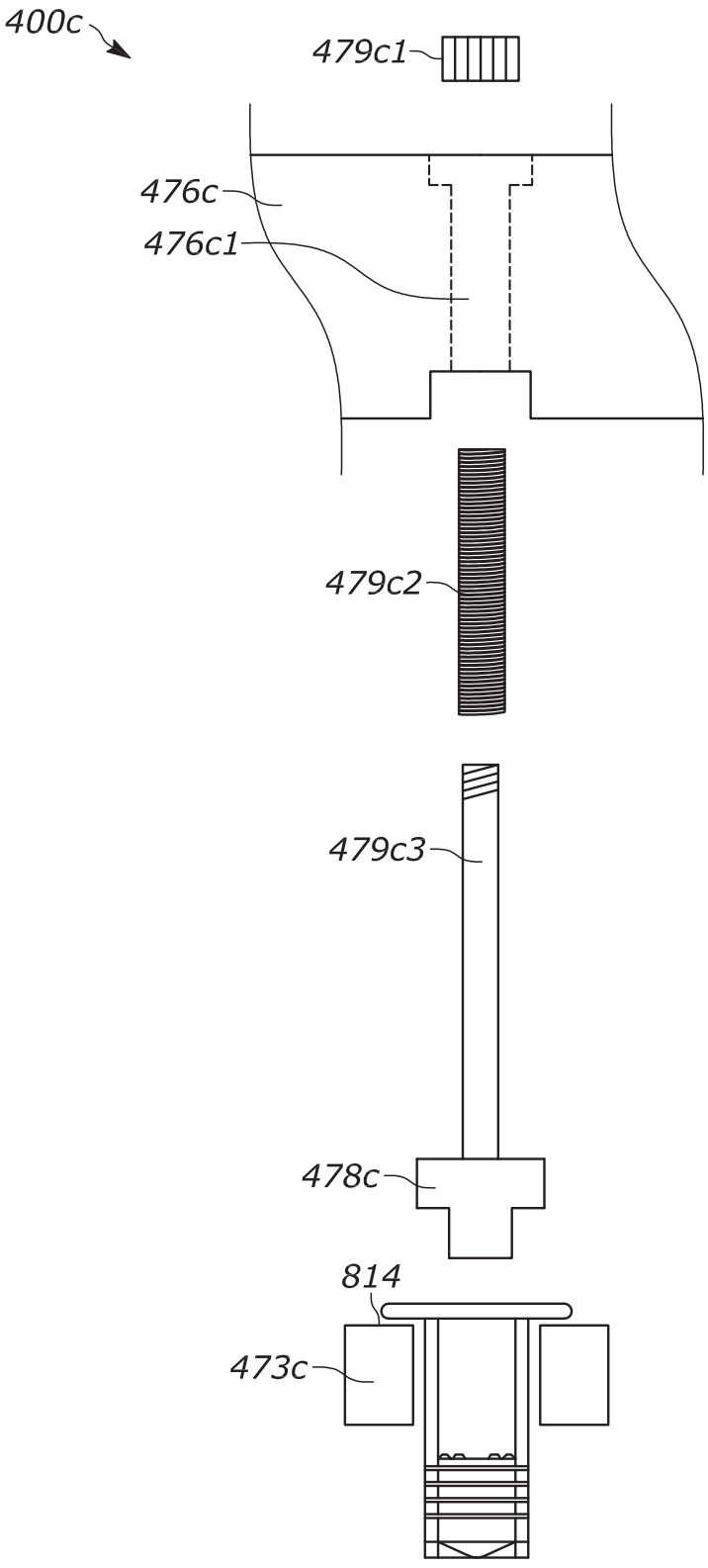


FIG. 4C

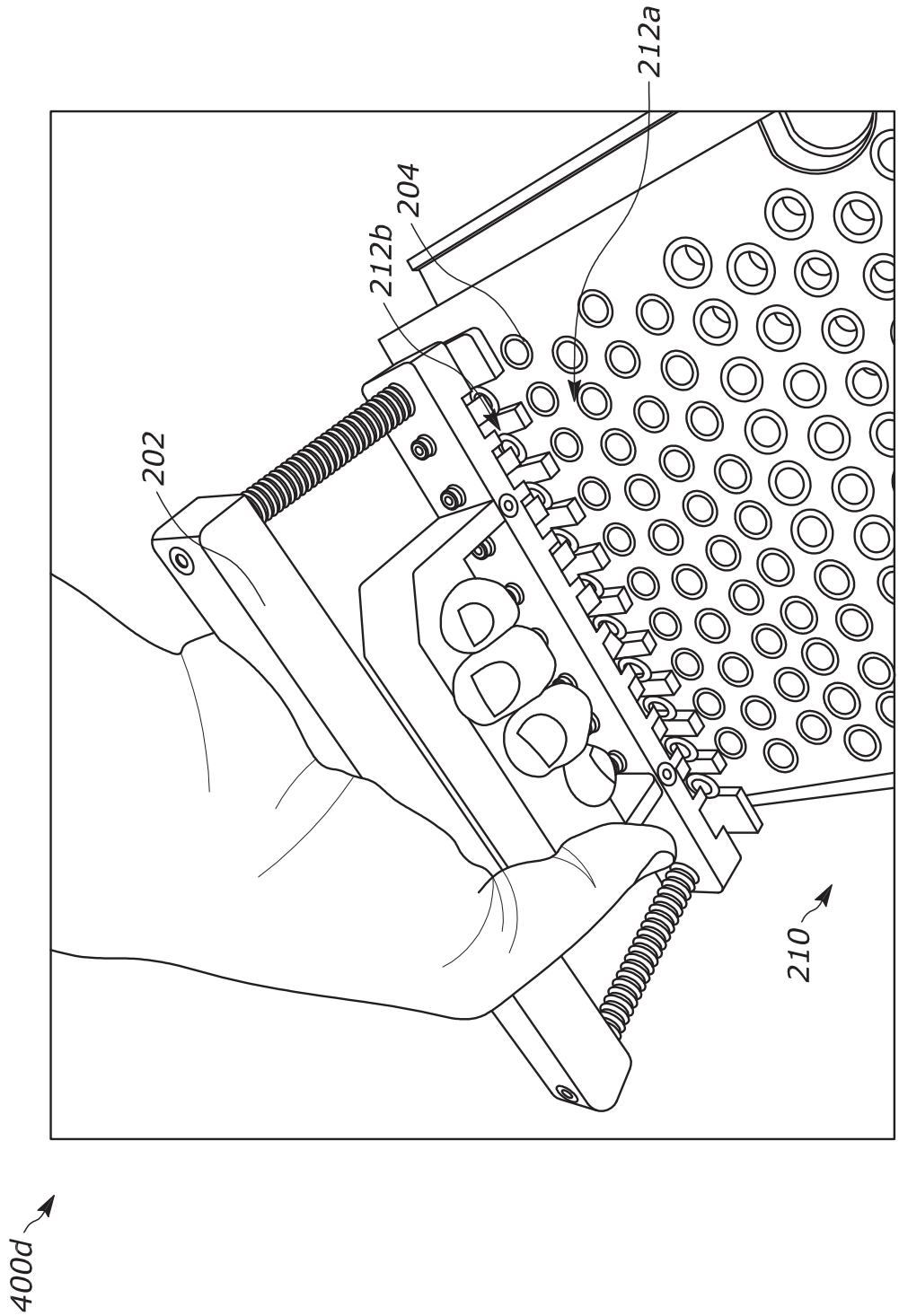


FIG. 4D

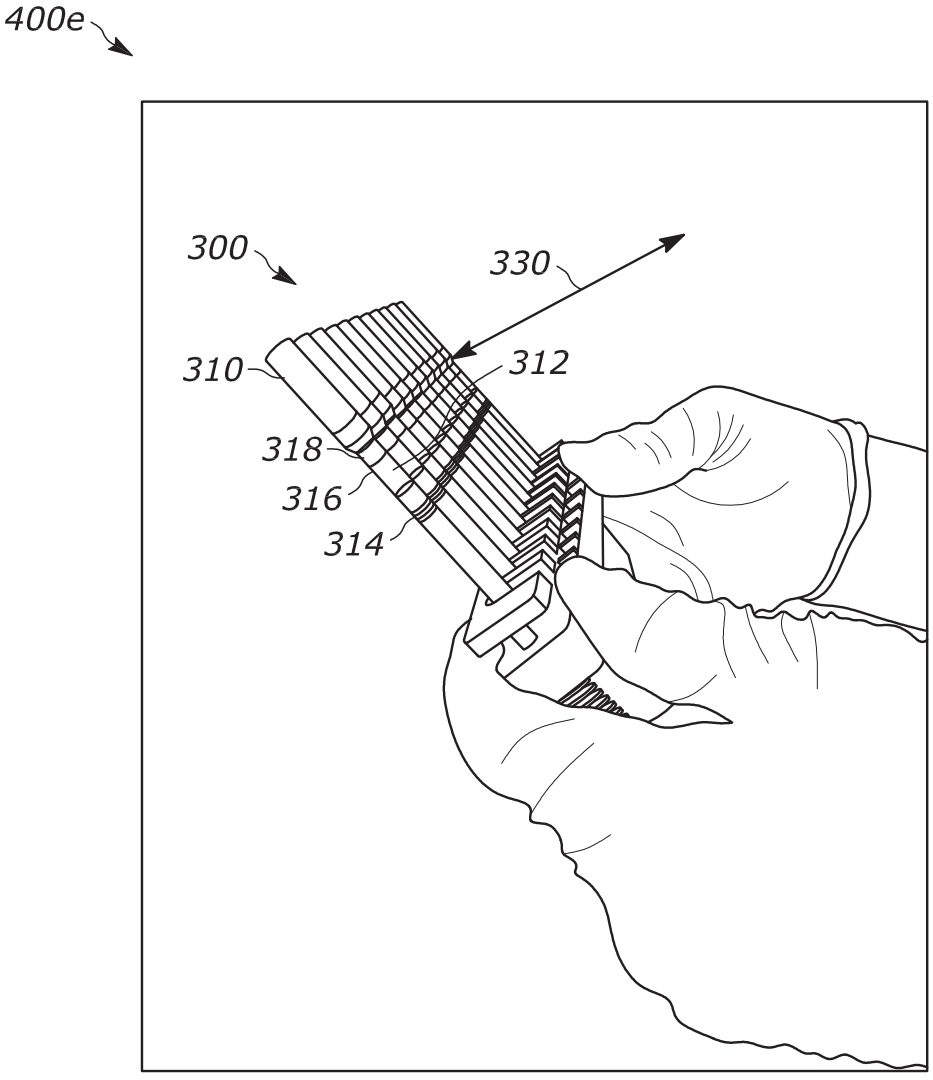


FIG. 4E

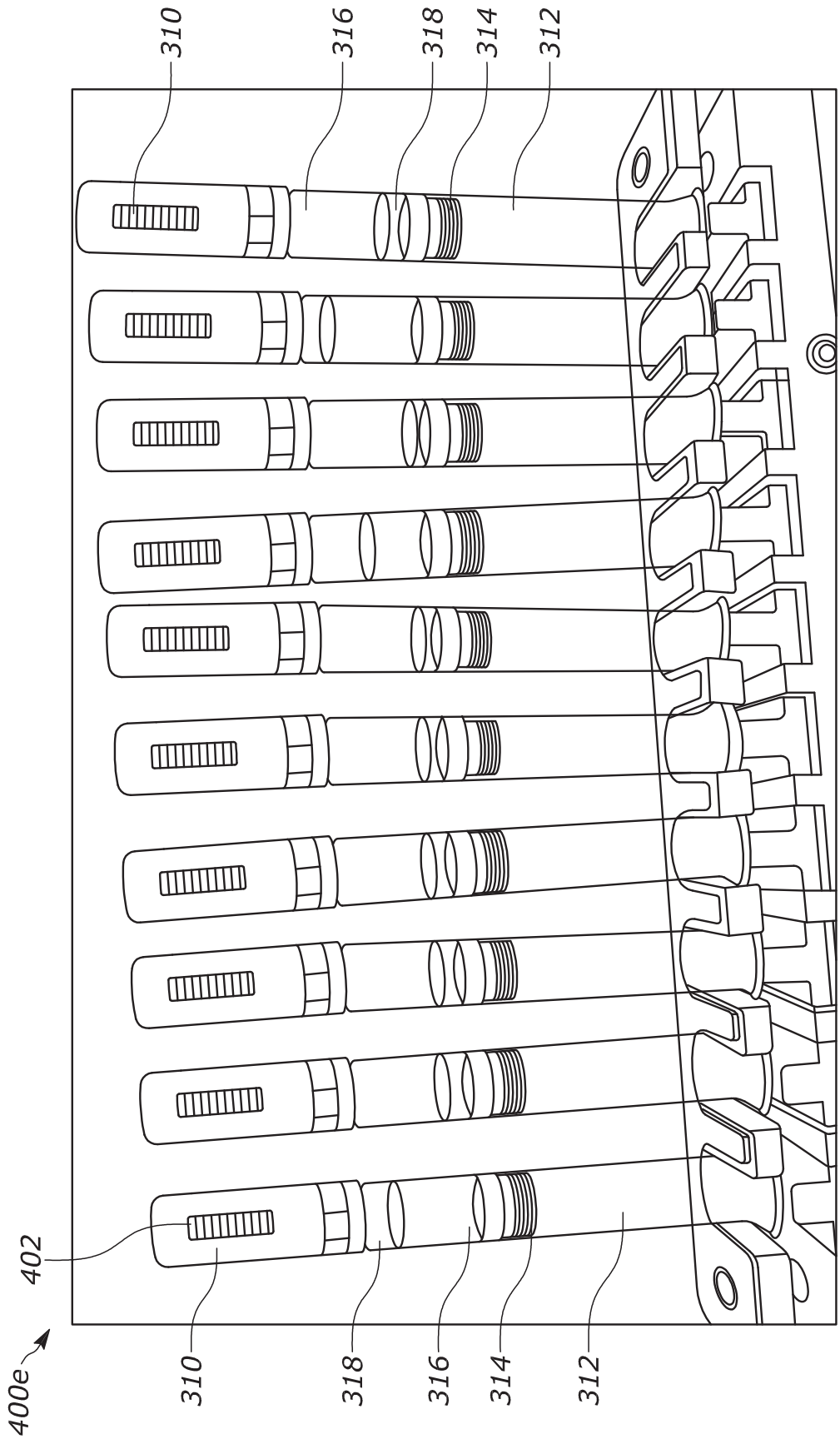


FIG. 4F

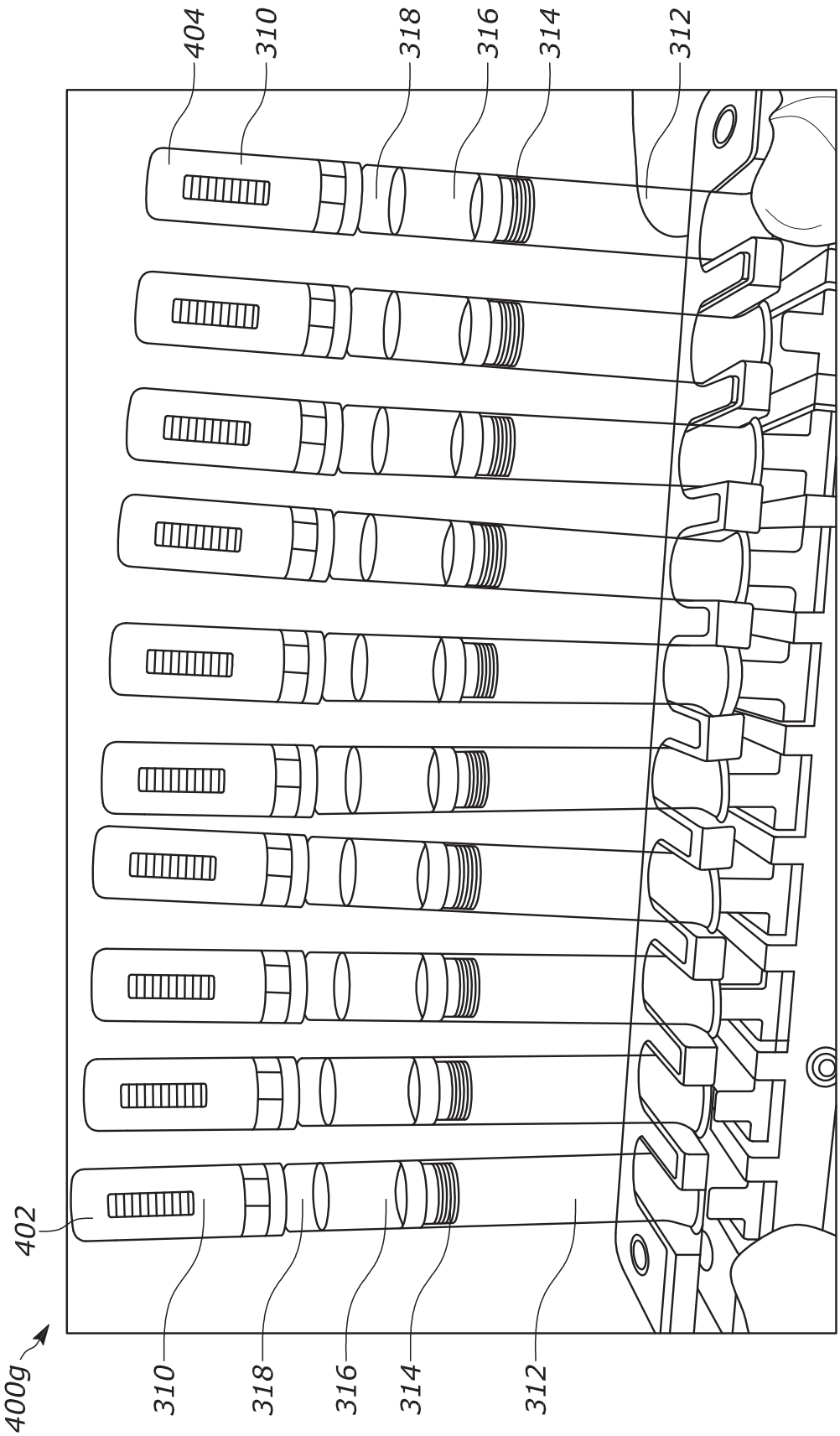


FIG. 4G

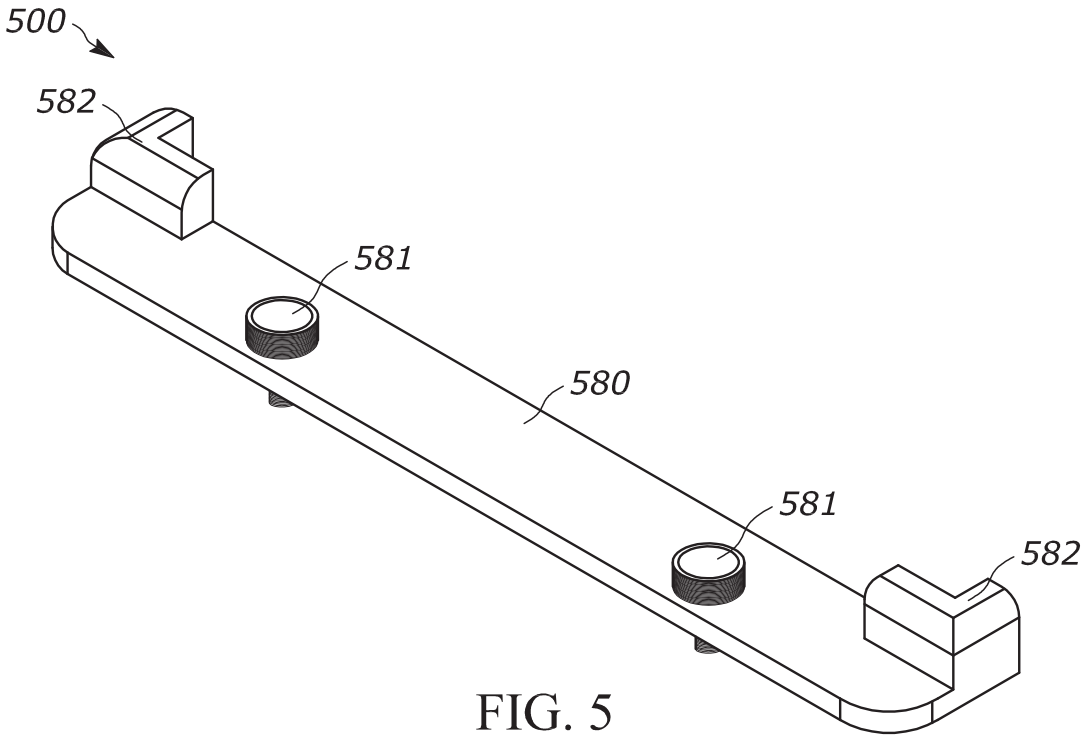


FIG. 5

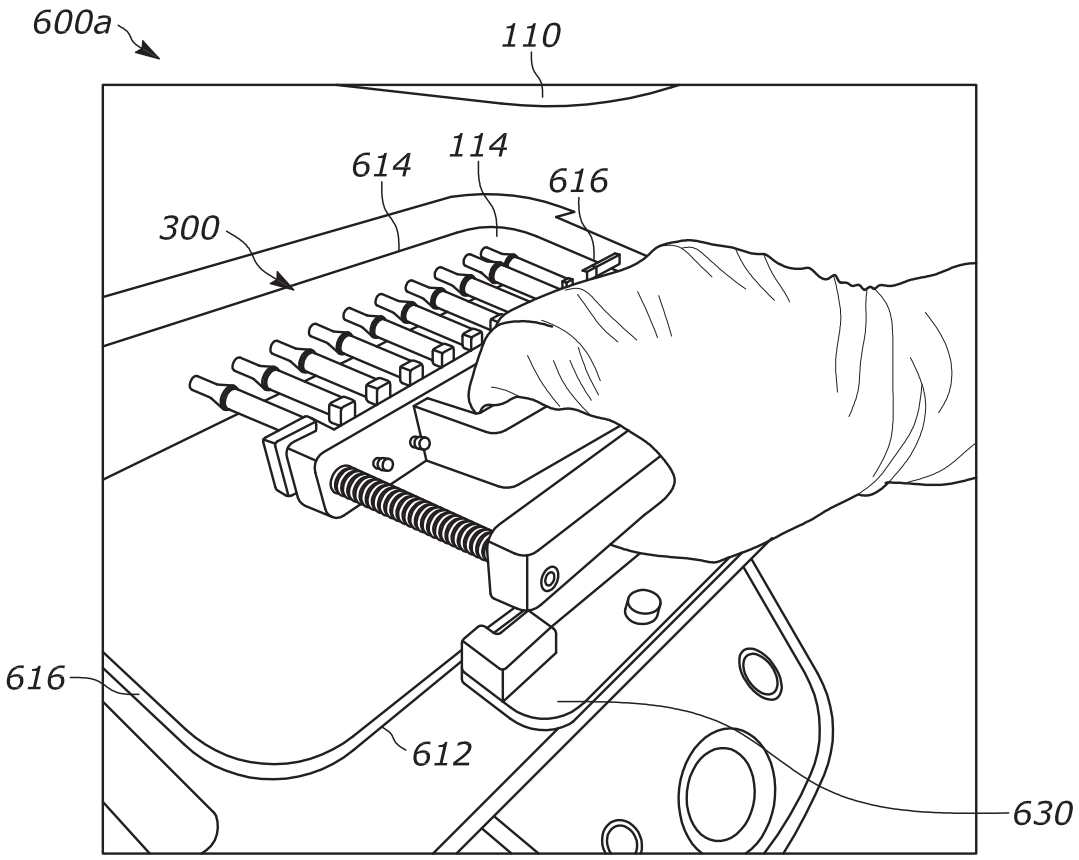


FIG. 6A

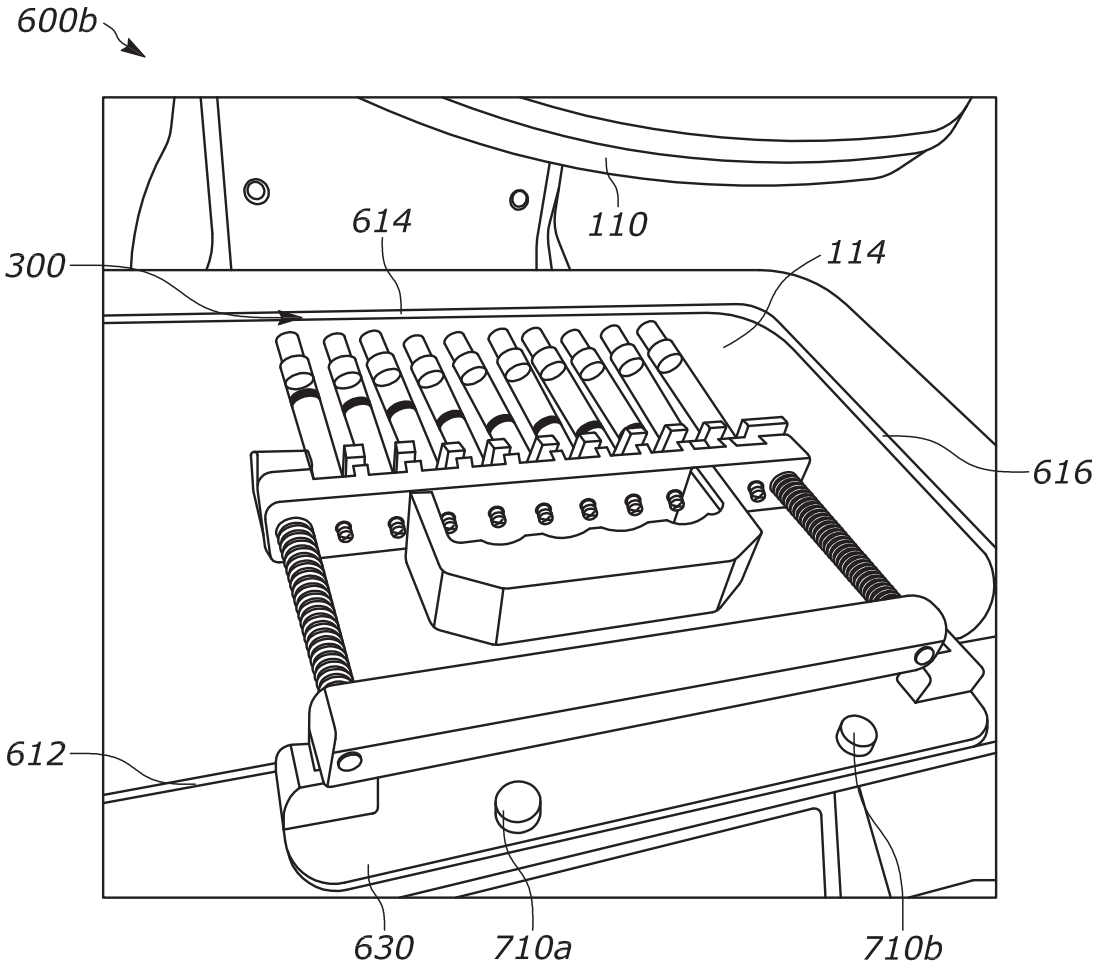


FIG. 6B

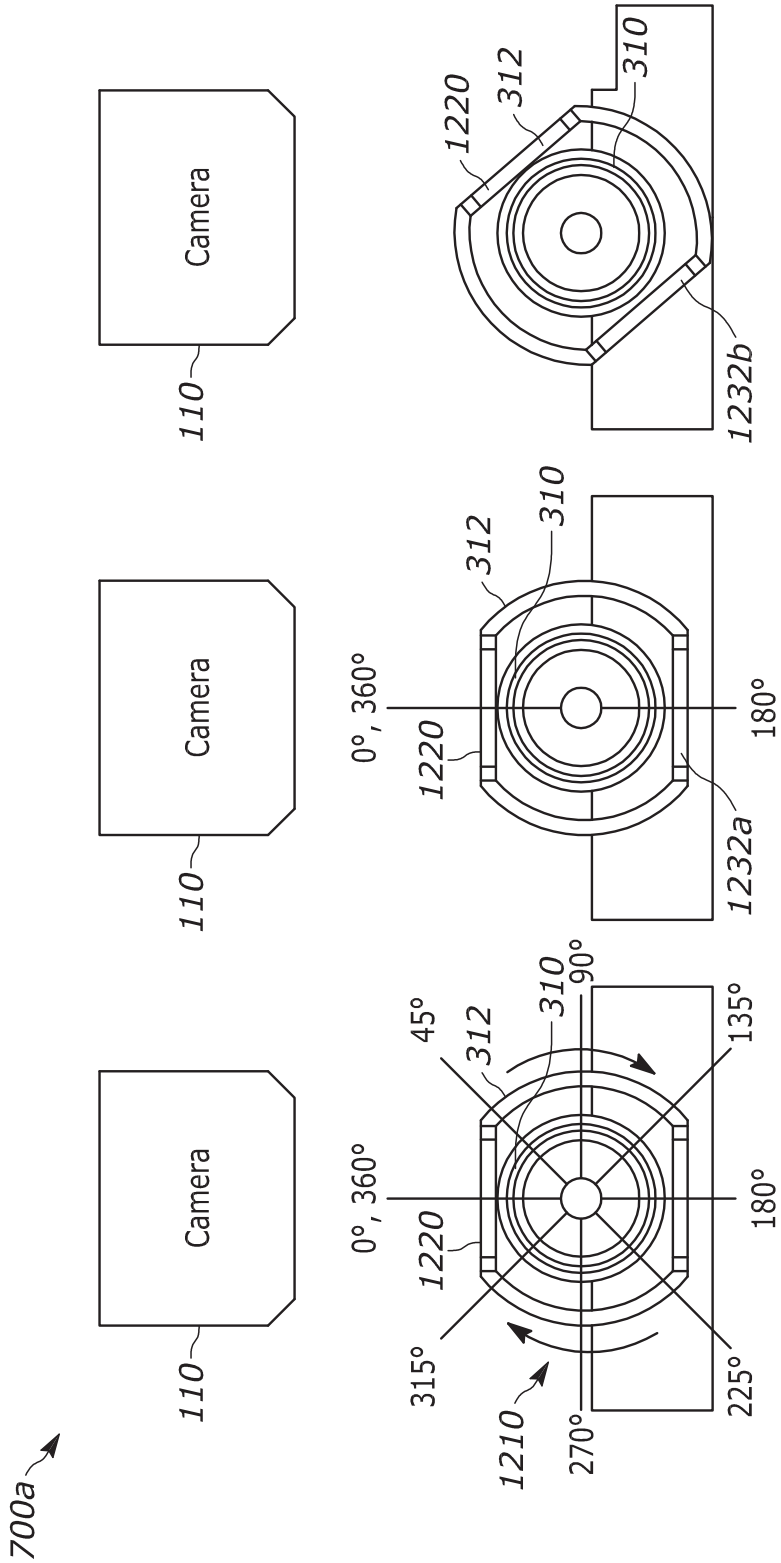

700a
Camera
110
Camera
110
Camera
110
1210
1220
1232a
1232b
310
312
0°, 360°
45°
90°
135°
180°
225°
270°
315°

FIG. 7A

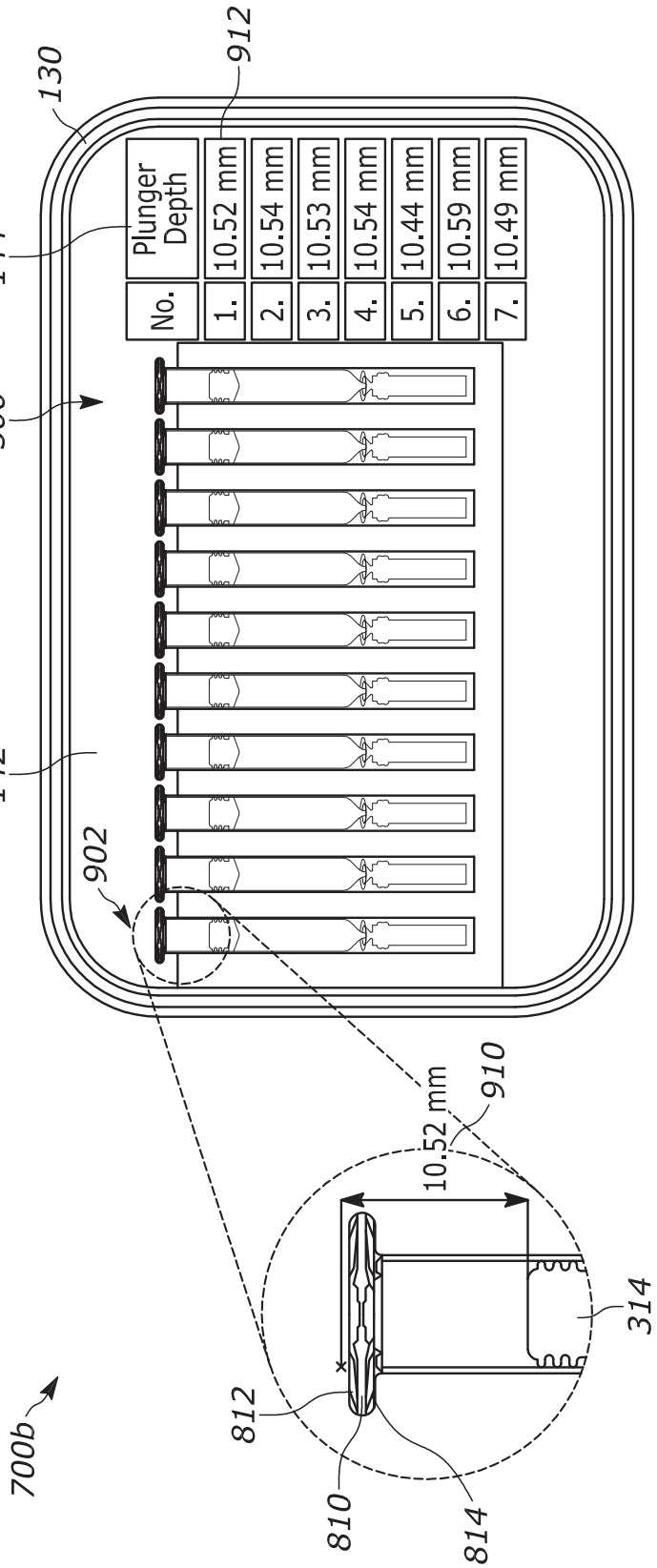

700b
130
912
144
300
142
902
No.
Plunger Depth
1.
10.52 mm
2.
10.54 mm
3.
10.53 mm
4.
10.54 mm
5.
10.44 mm
6.
10.59 mm
7.
10.49 mm
910
10.52 mm
812
810
814
314

FIG. 7B

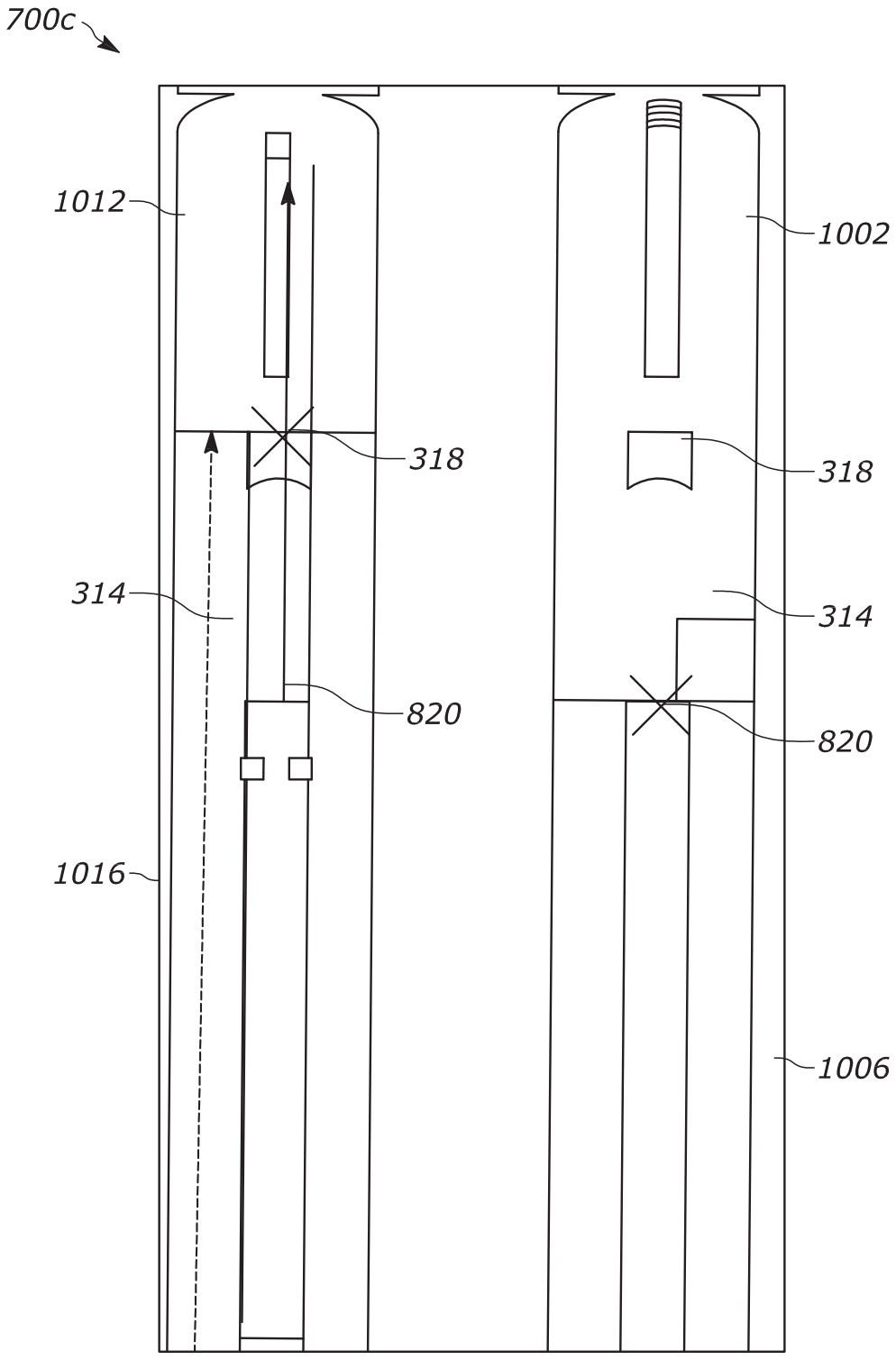


FIG. 7C

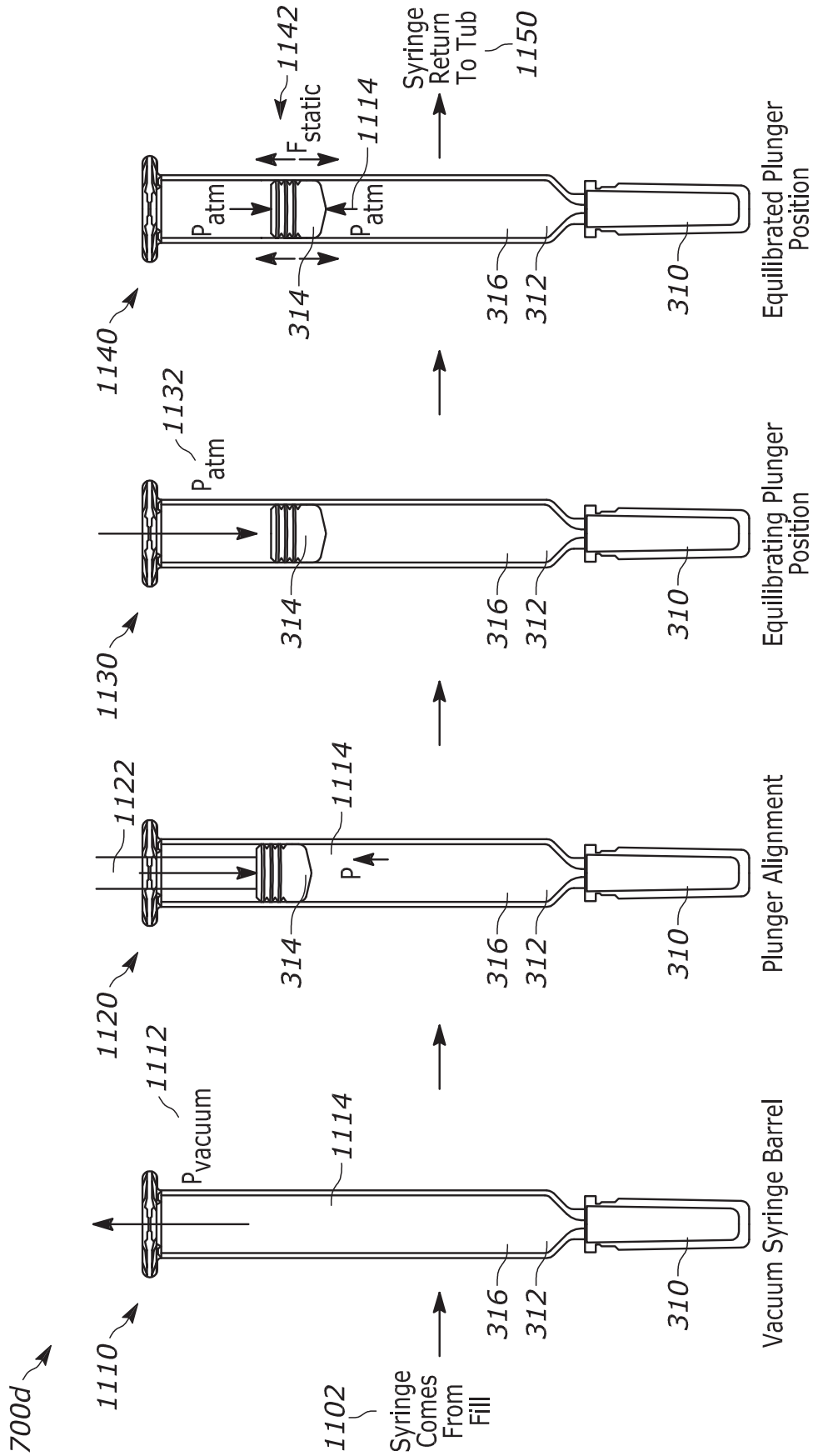

700d
1110
1102
Syringe Comes From Fill
1112
P_{vacuum}
1114
Vacuum Syringe Barrel
1120
1122
1114
P
Plunger Alignment
1130
1132
P_{atm}
Equilibrating Plunger Position
1140
1142
F_{static}
1114
P_{atm}
P_{atm}
Syringe Return To Tub
1150
Equilibrated Plunger Position
310
312
314
316

FIG. 7D

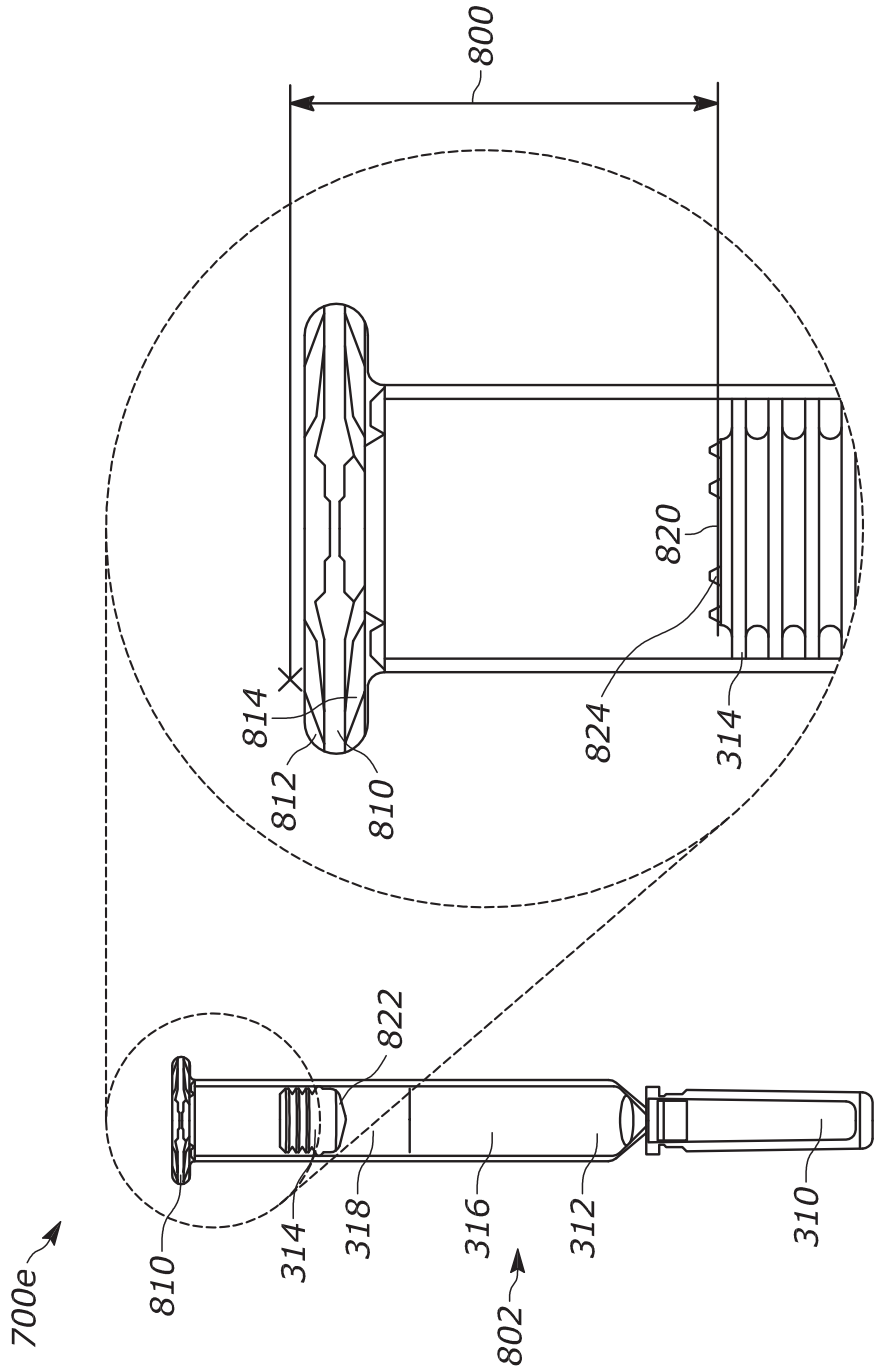


FIG. 7E

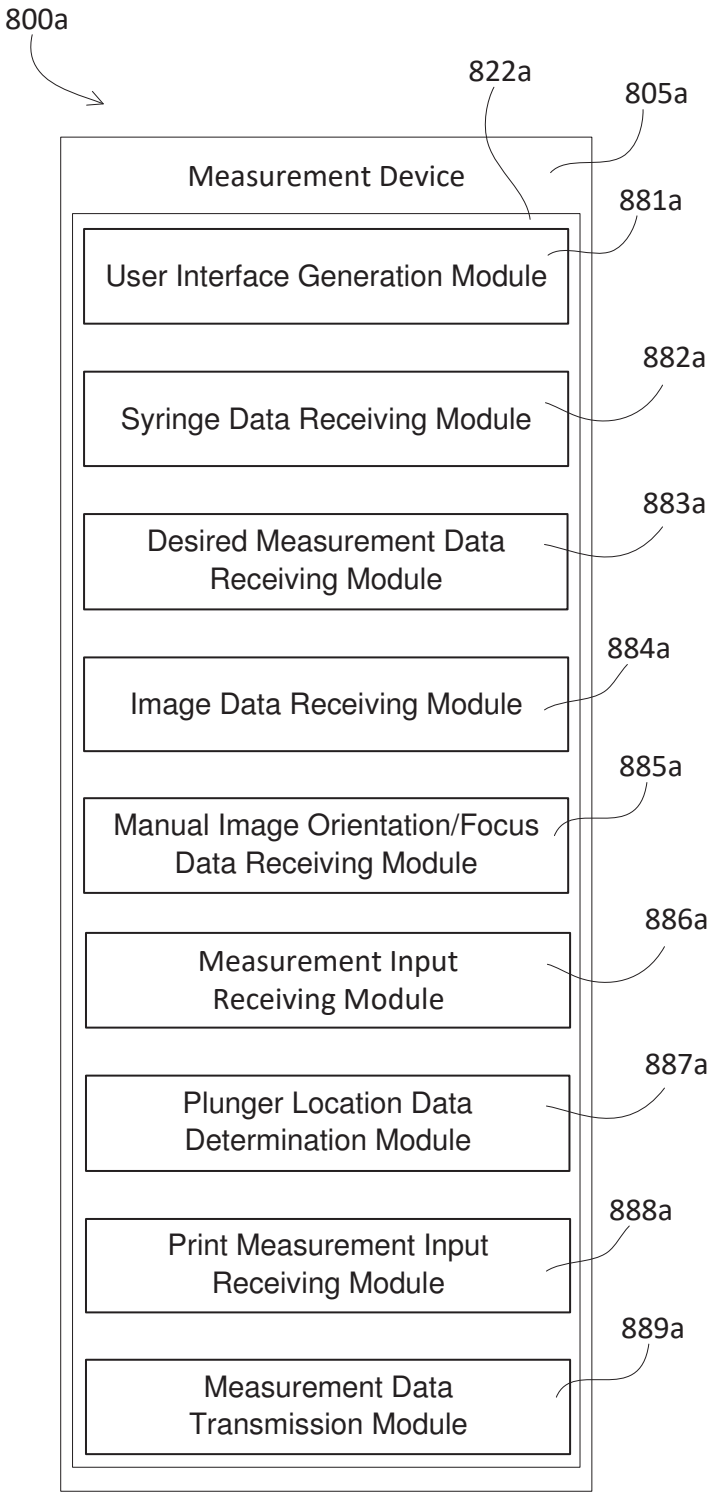

800a
822a
805a
Measurement Device
881a
User Interface Generation Module
882a
Syringe Data Receiving Module
883a
Desired Measurement Data Receiving Module
884a
Image Data Receiving Module
885a
Manual Image Orientation/Focus Data Receiving Module
886a
Measurement Input Receiving Module
887a
Plunger Location Data Determination Module
888a
Print Measurement Input Receiving Module
889a
Measurement Data Transmission Module

Fig. 8A

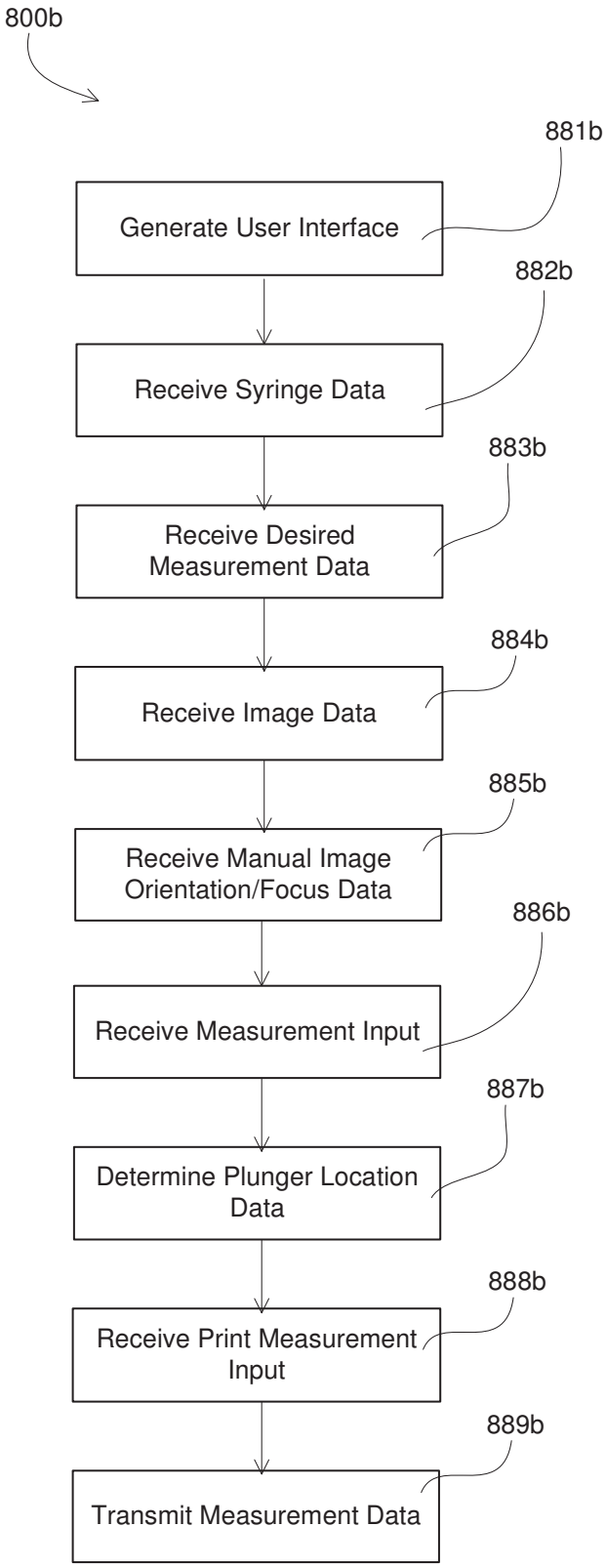

800b
881b
Generate User Interface
882b
Receive Syringe Data
883b
Receive Desired Measurement Data
884b
Receive Image Data
885b
Receive Manual Image Orientation/Focus Data
886b
Receive Measurement Input
887b
Determine Plunger Location Data
888b
Receive Print Measurement Input
889b
Transmit Measurement Data

Fig. 8B

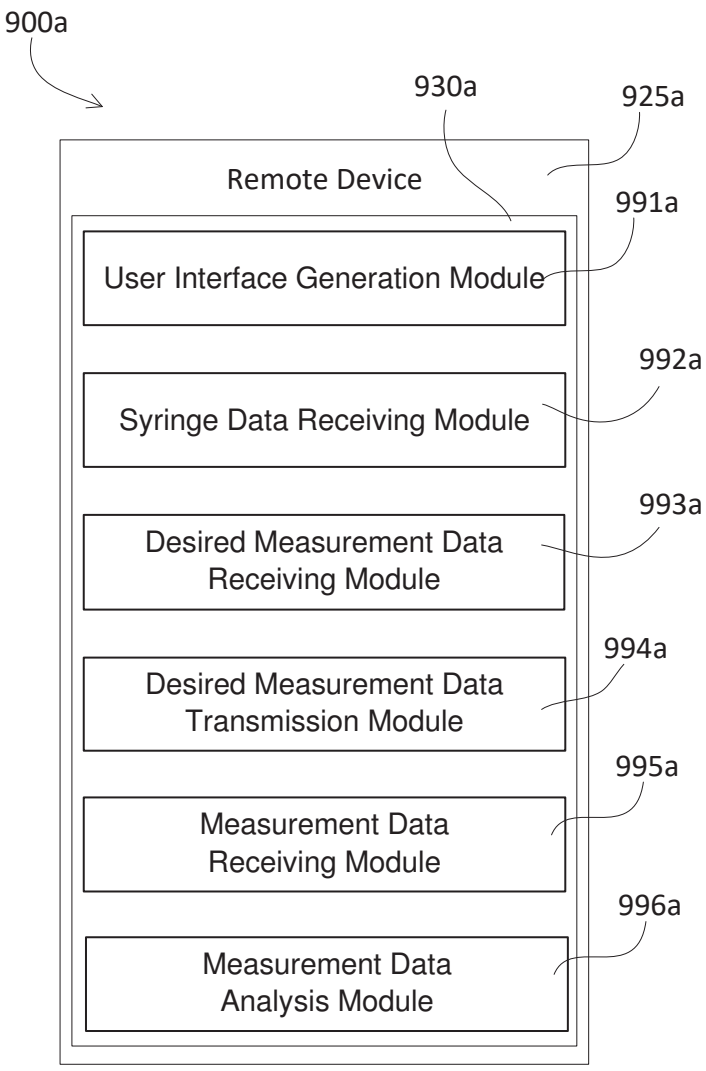

900a
930a
925a
Remote Device
991a
User Interface Generation Module
992a
Syringe Data Receiving Module
993a
Desired Measurement Data Receiving Module
994a
Desired Measurement Data Transmission Module
995a
Measurement Data Receiving Module
996a
Measurement Data Analysis Module

Fig. 9A

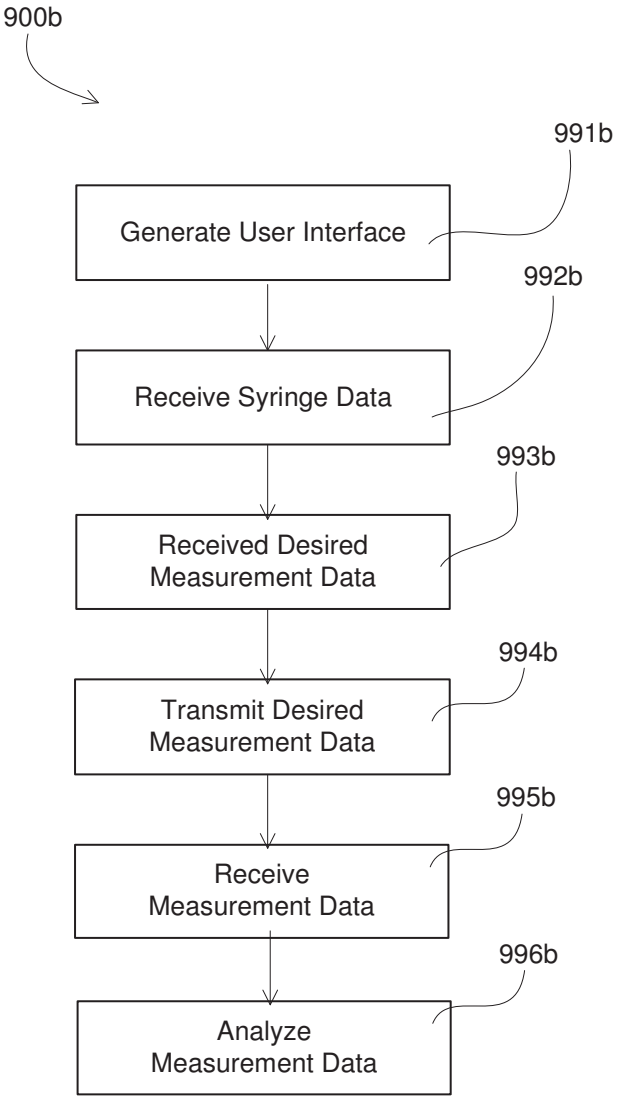

900b
991b
Generate User Interface
992b
Receive Syringe Data
993b
Received Desired Measurement Data
994b
Transmit Desired Measurement Data
995b
Receive Measurement Data
996b
Analyze Measurement Data

Fig. 9B