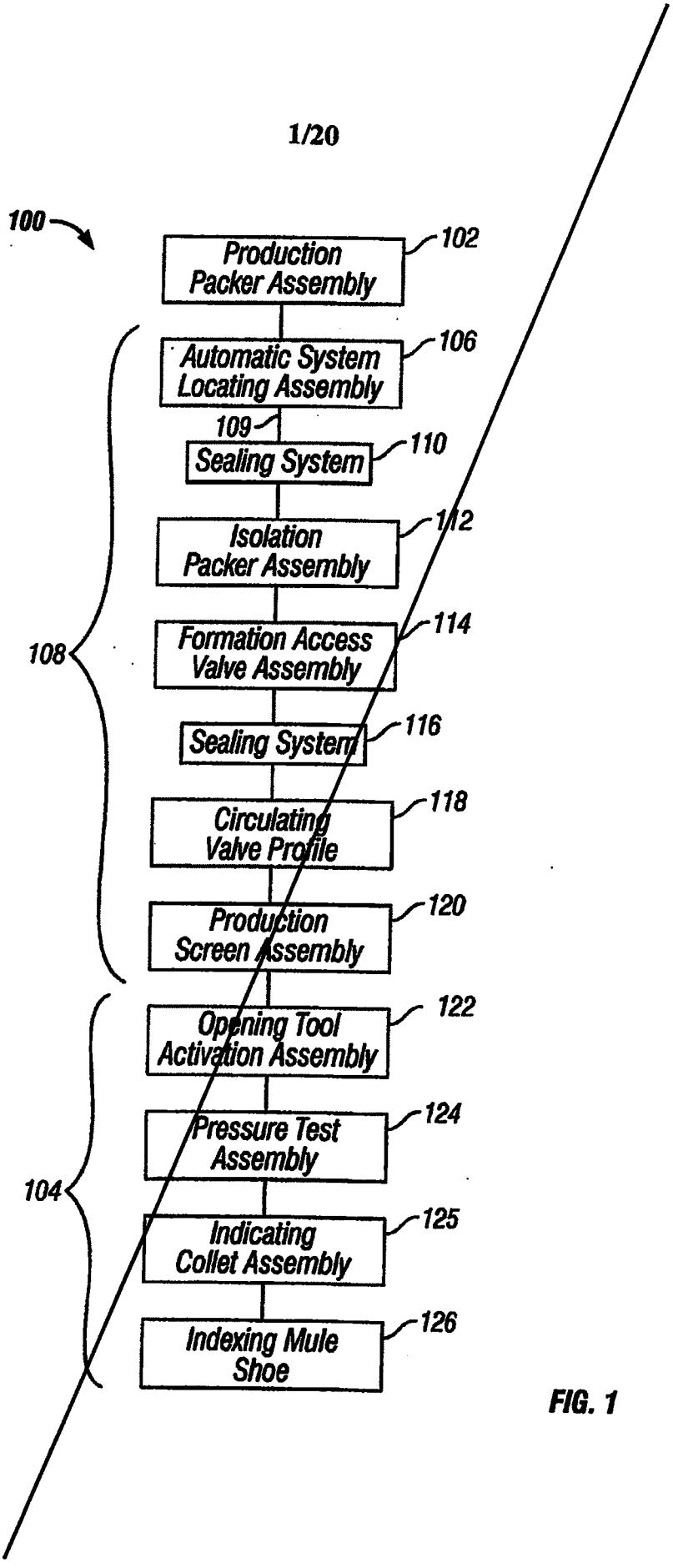

100
Production Packer Assembly
102
Automatic System Locating Assembly
106
109
Sealing System
110
Isolation Packer Assembly
112
Formation Access Valve Assembly
114
Sealing System
116
Circulating Valve Profile
118
Production Screen Assembly
120
108
Opening Tool Activation Assembly
122
Pressure Test Assembly
124
Indicating Collet Assembly
125
Indexing Mule Shoe
126
104

FIG. 1

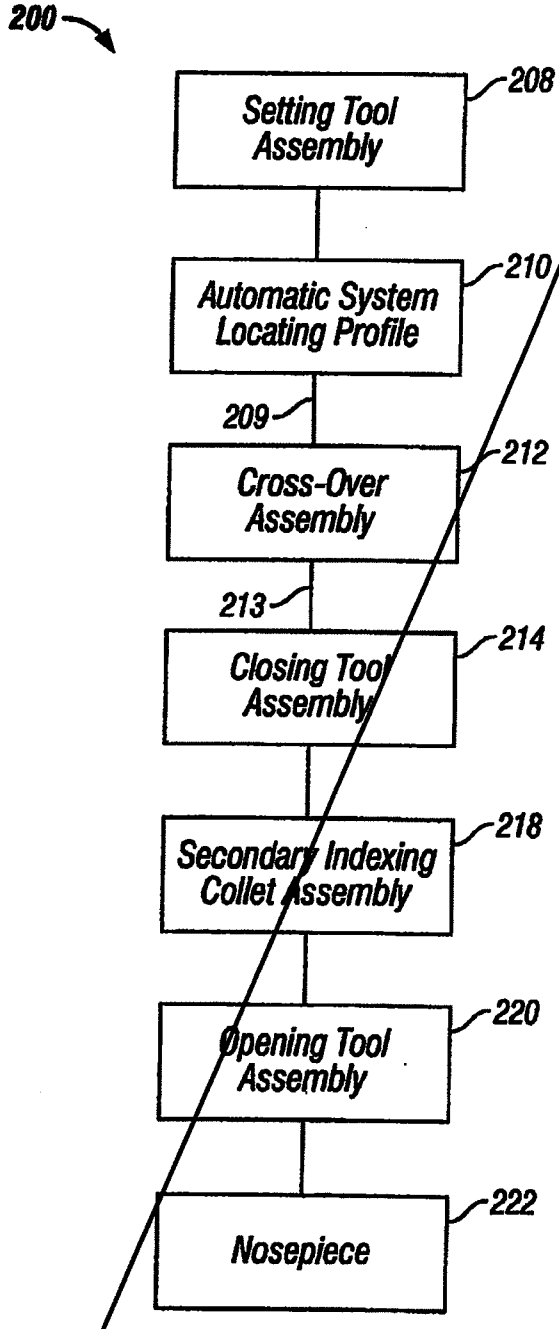

200
Setting Tool Assembly
208
Automatic System Locating Profile
210
209
Cross-Over Assembly
212
213
Closing Tool Assembly
214
Secondary Indexing Collet Assembly
218
Opening Tool Assembly
220
Nosepiece
222

FIG. 2

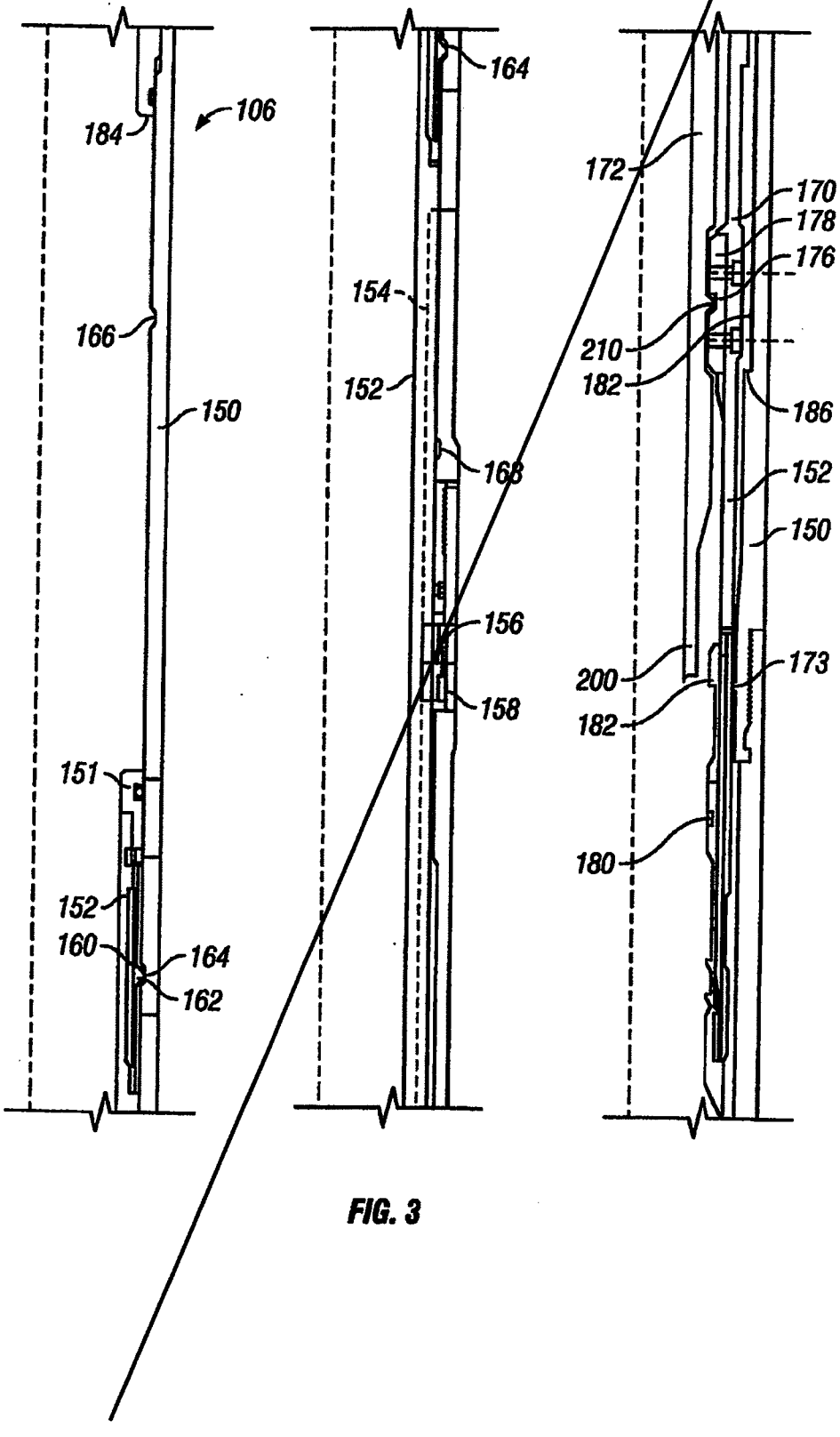

106
184
166
150
151
152
160
164
162
164
154
152
168
156
158
172
170
178
176
210
182
186
152
150
173
200
182
180

FIG. 3

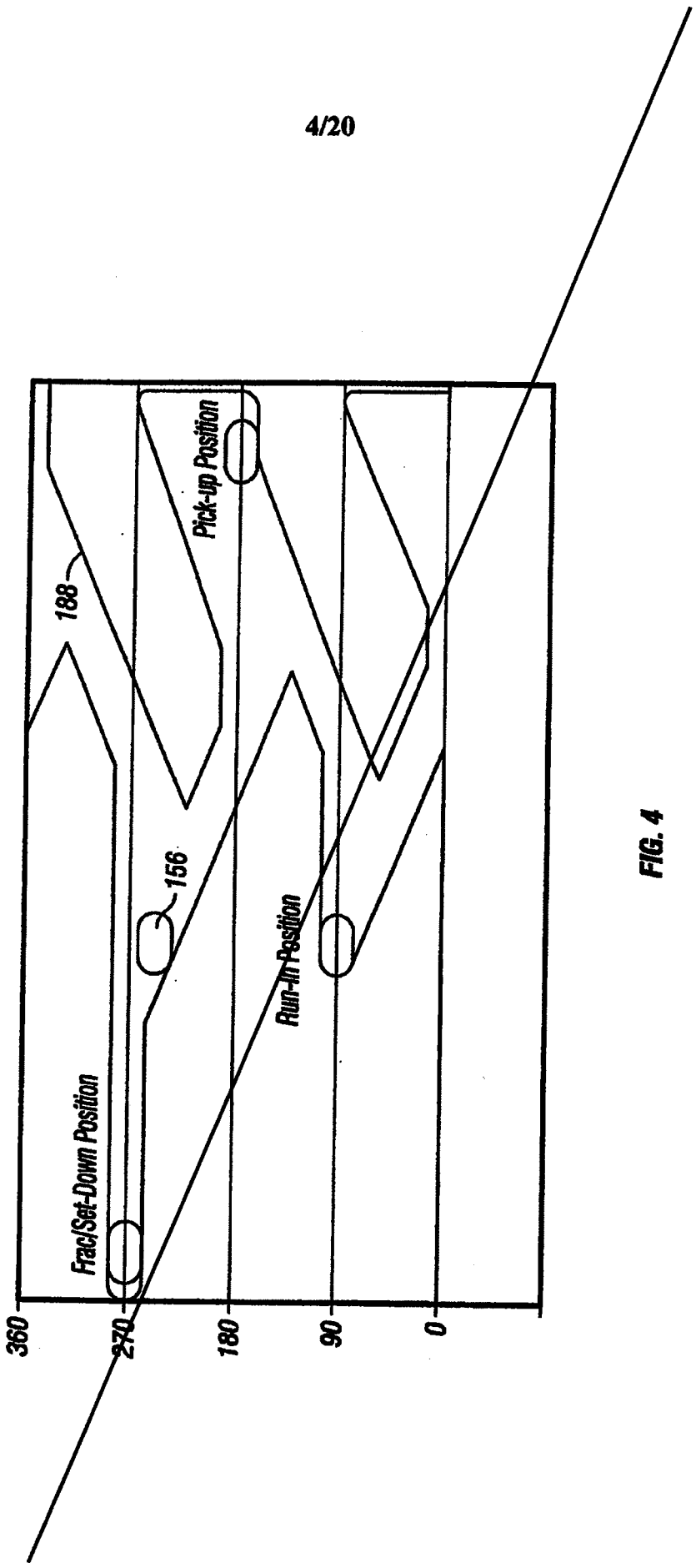

154
188
Pick-up Position
156
Run-In Position
Frac/Set-Down Position
360
270
180
90
0

FIG. 4

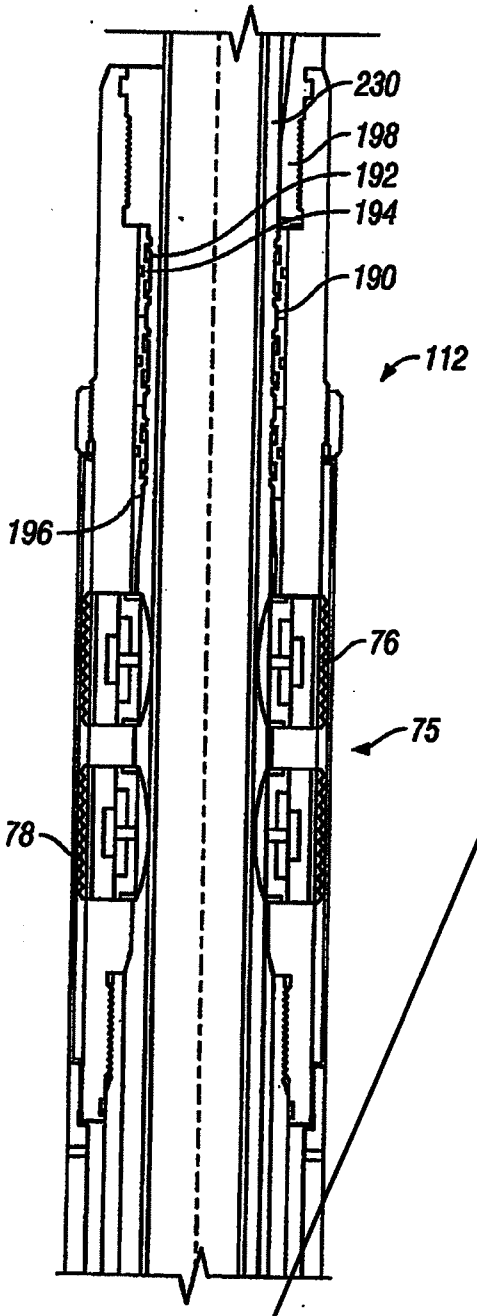

230
198
192
194
190
112
196
76
75
78

FIG. 5A

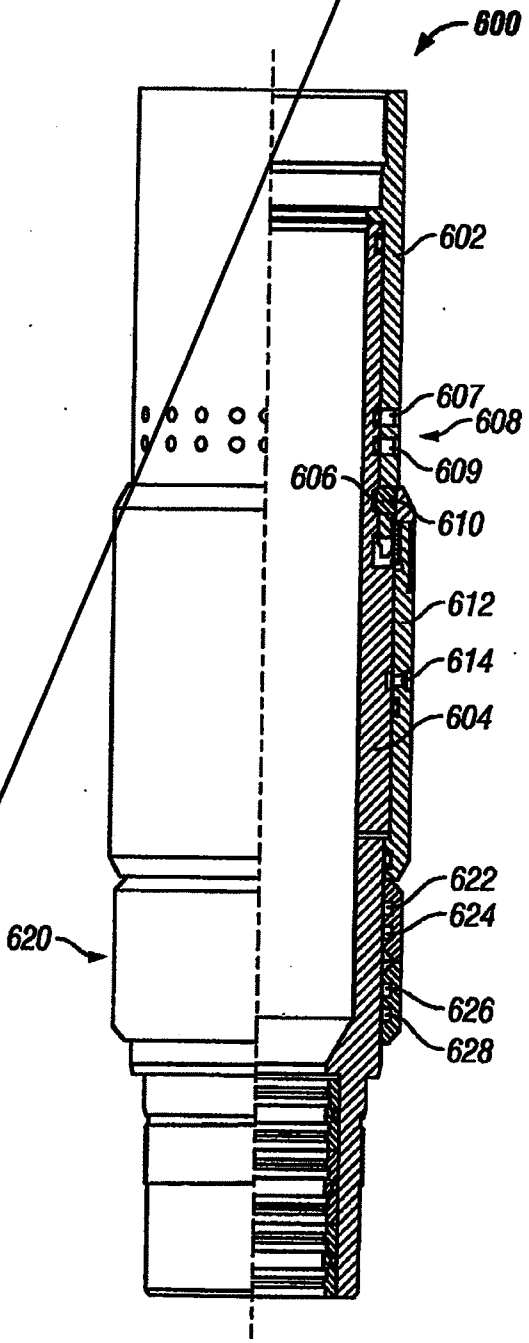

600
602
607
608
609
606
610
612
614
604
622
624
620
626
628

FIG. 5B

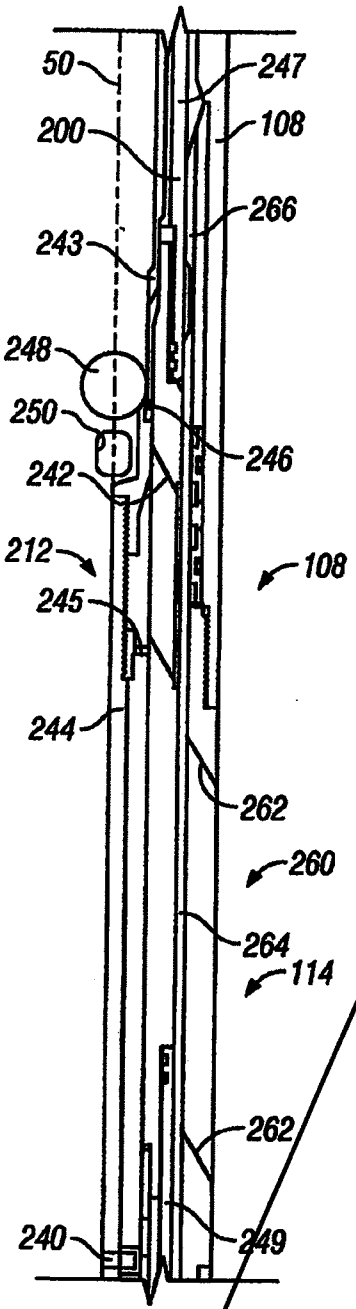

50
247
200
108
266
243
248
250
246
242
212
108
245
244
262
260
264
114
262
240
249

FIG. 6A

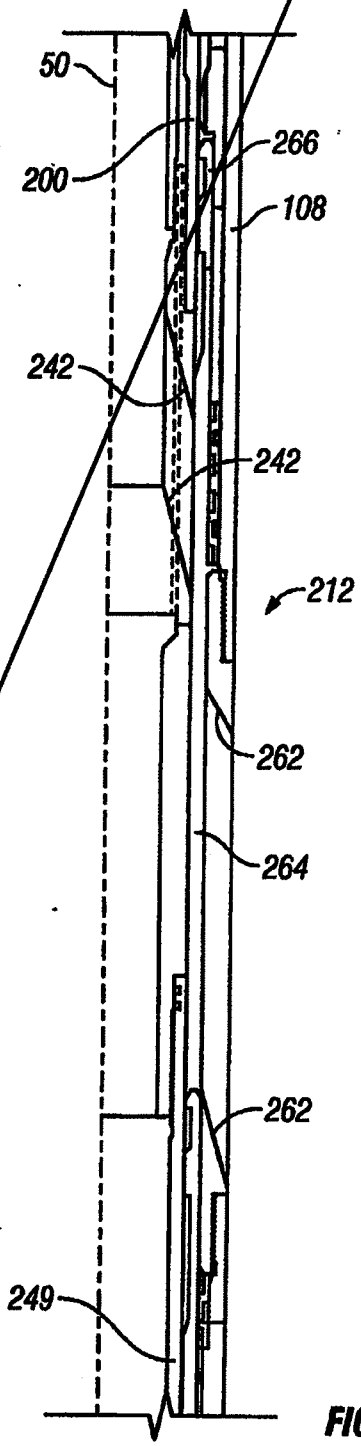

50
200
266
108
242
242
212
262
264
262
249

FIG. 6B

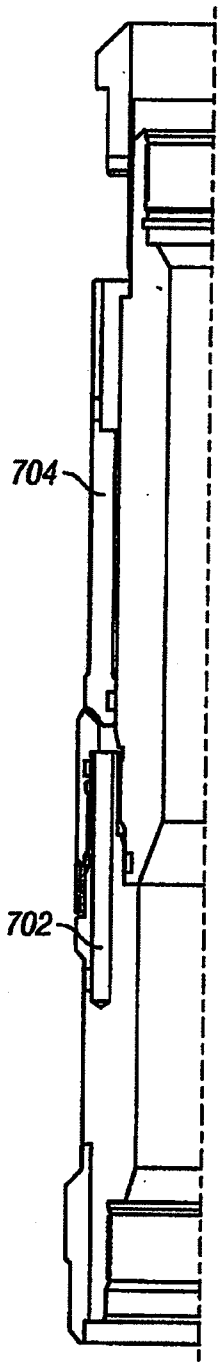


FIG. 7A

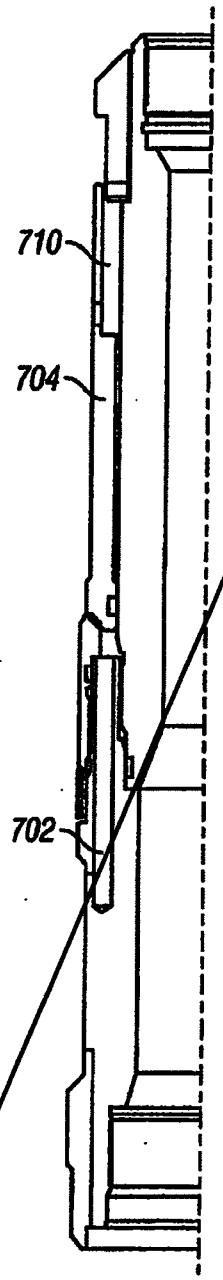


FIG. 7B

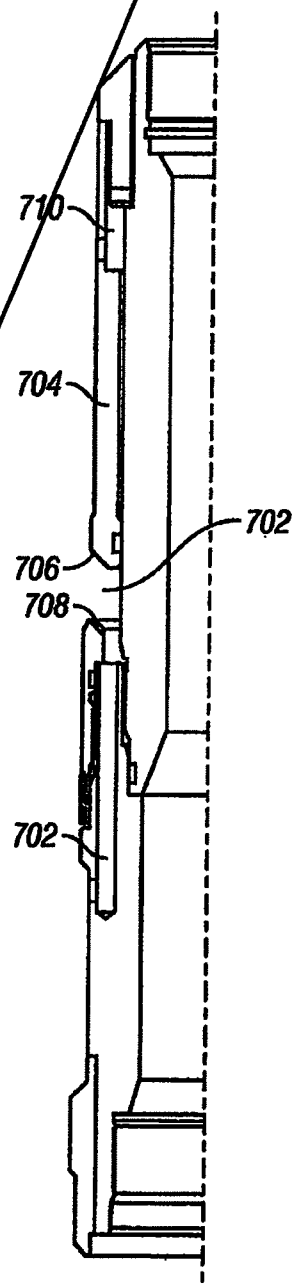


FIG. 7C

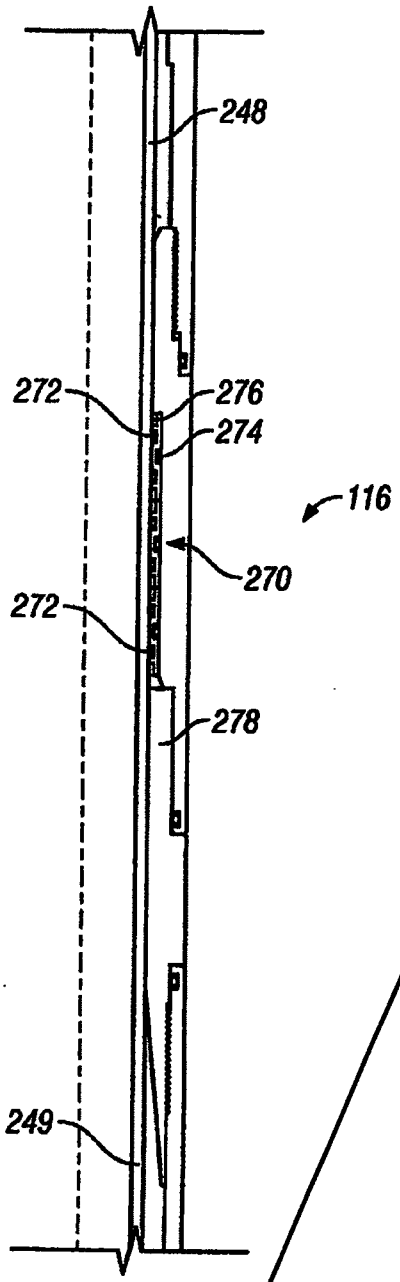


FIG. 8

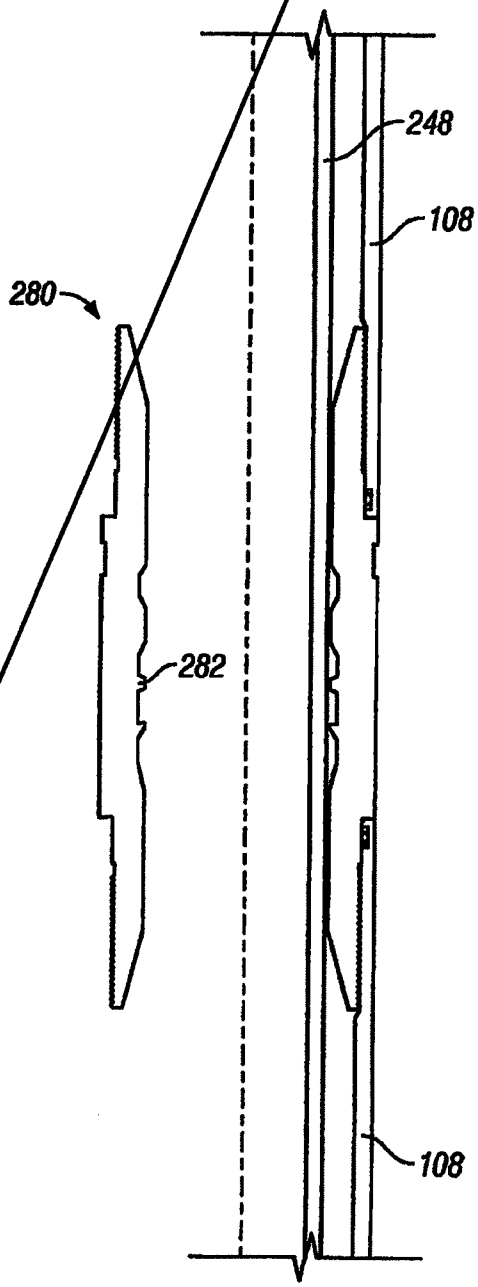


FIG. 9

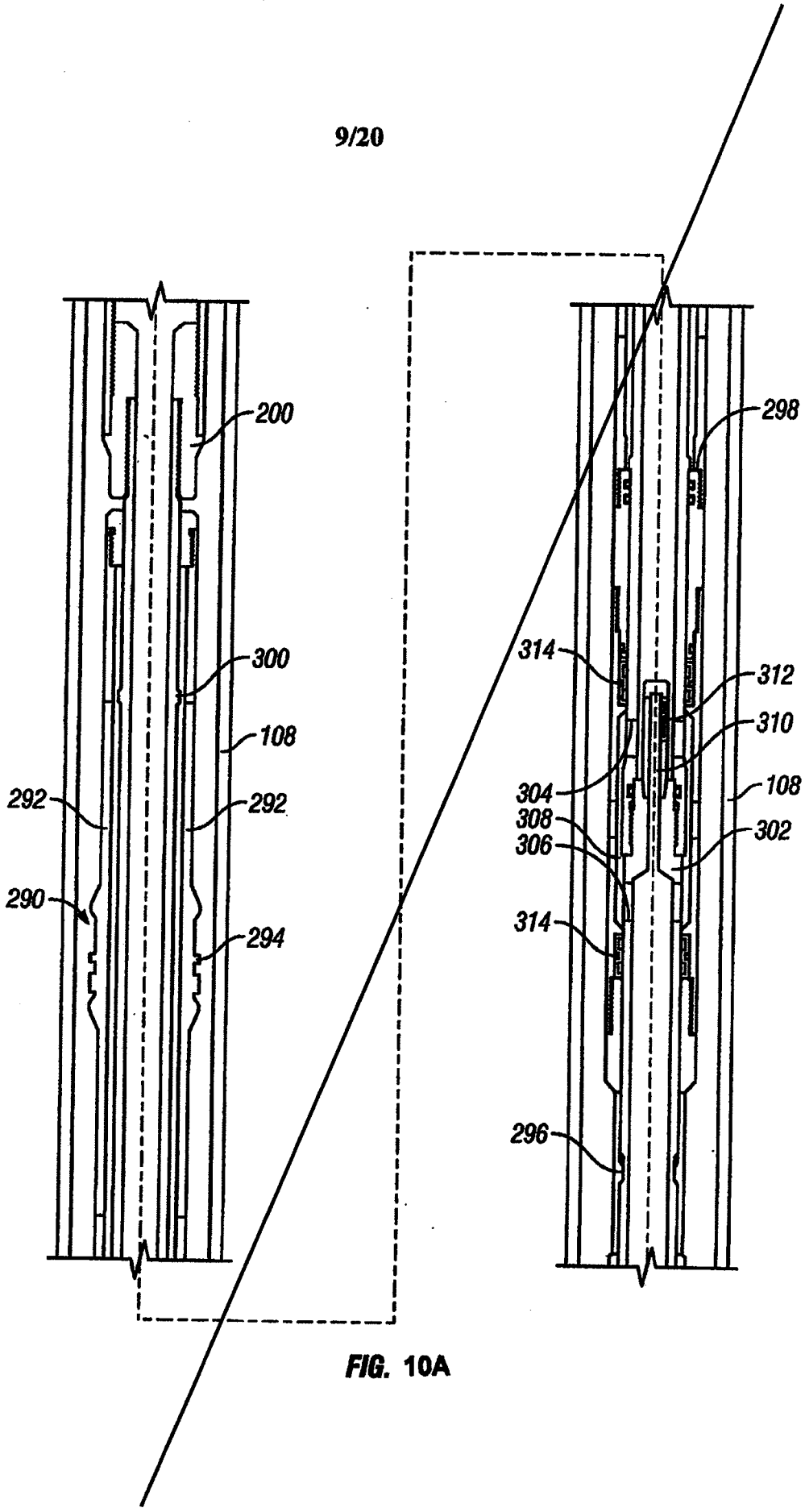

200
300
108
292
292
290
294
298
314
312
310
304
108
308
306
302
314
296

FIG. 10A

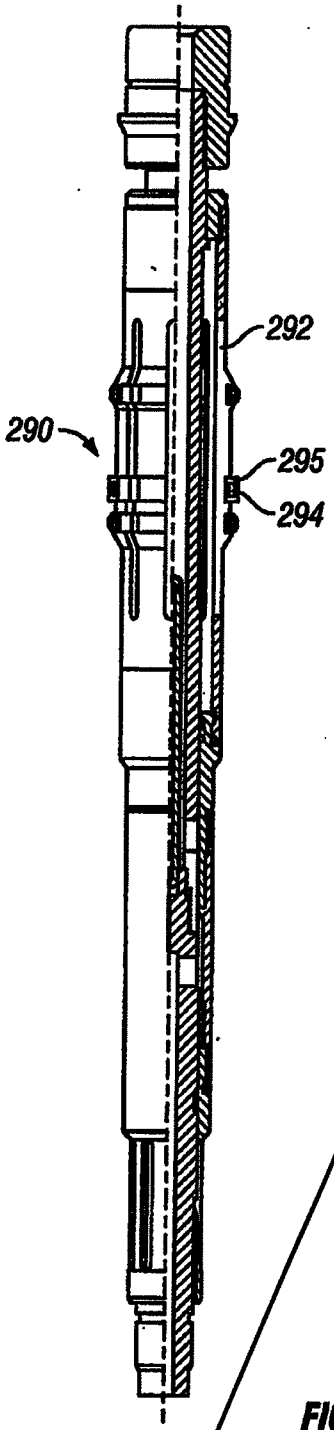


FIG. 10B

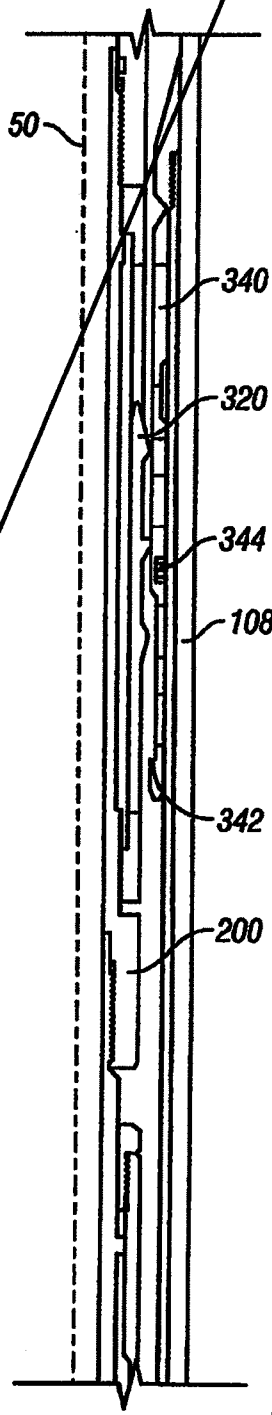


FIG. 11A

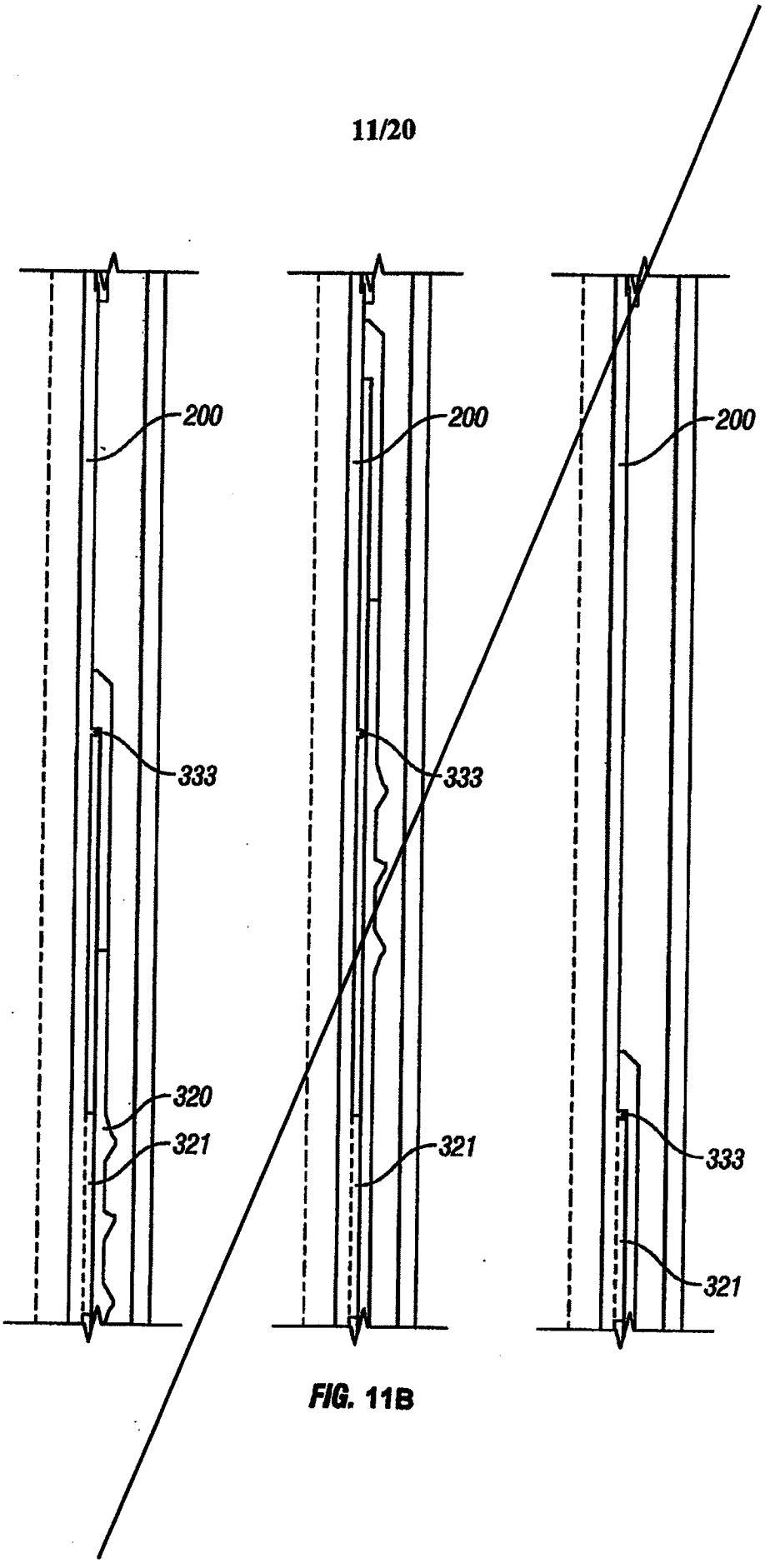


FIG. 11B

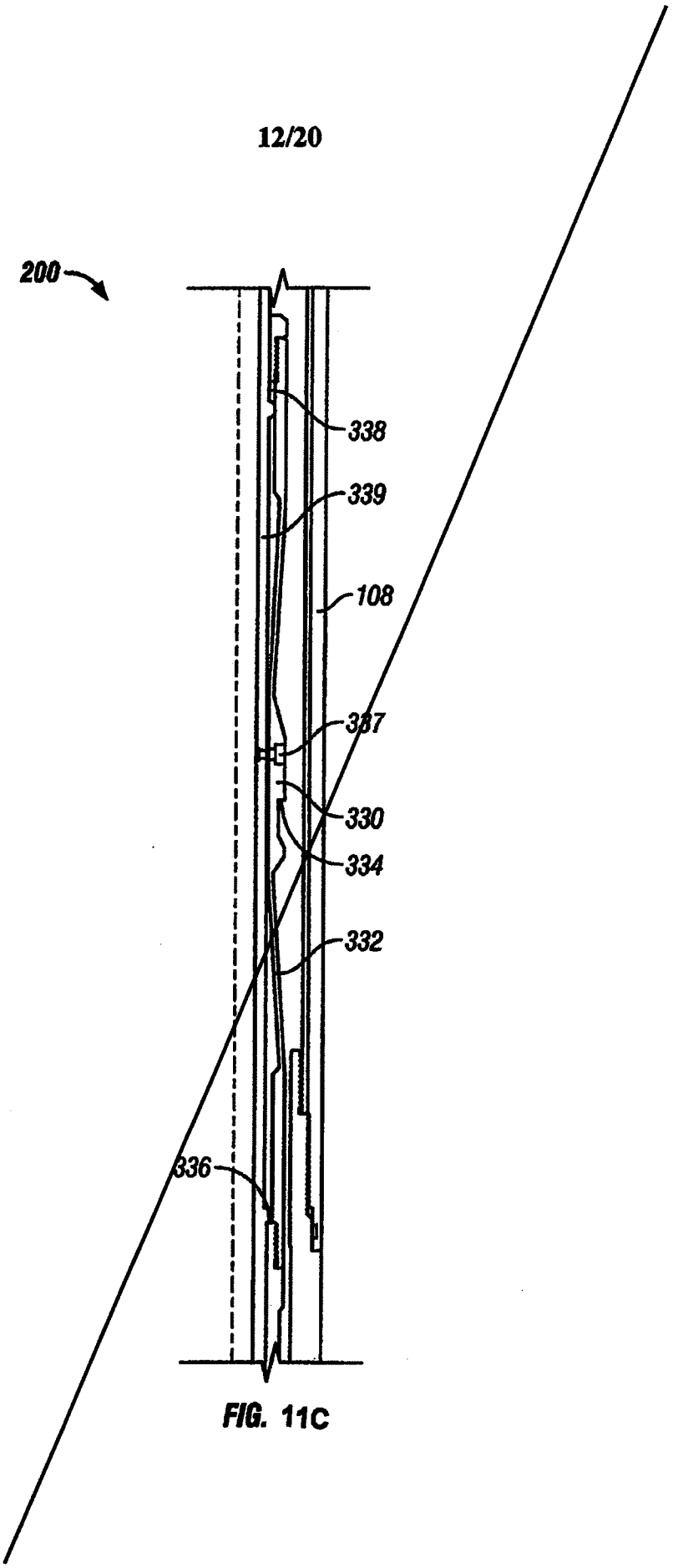


FIG. 11C

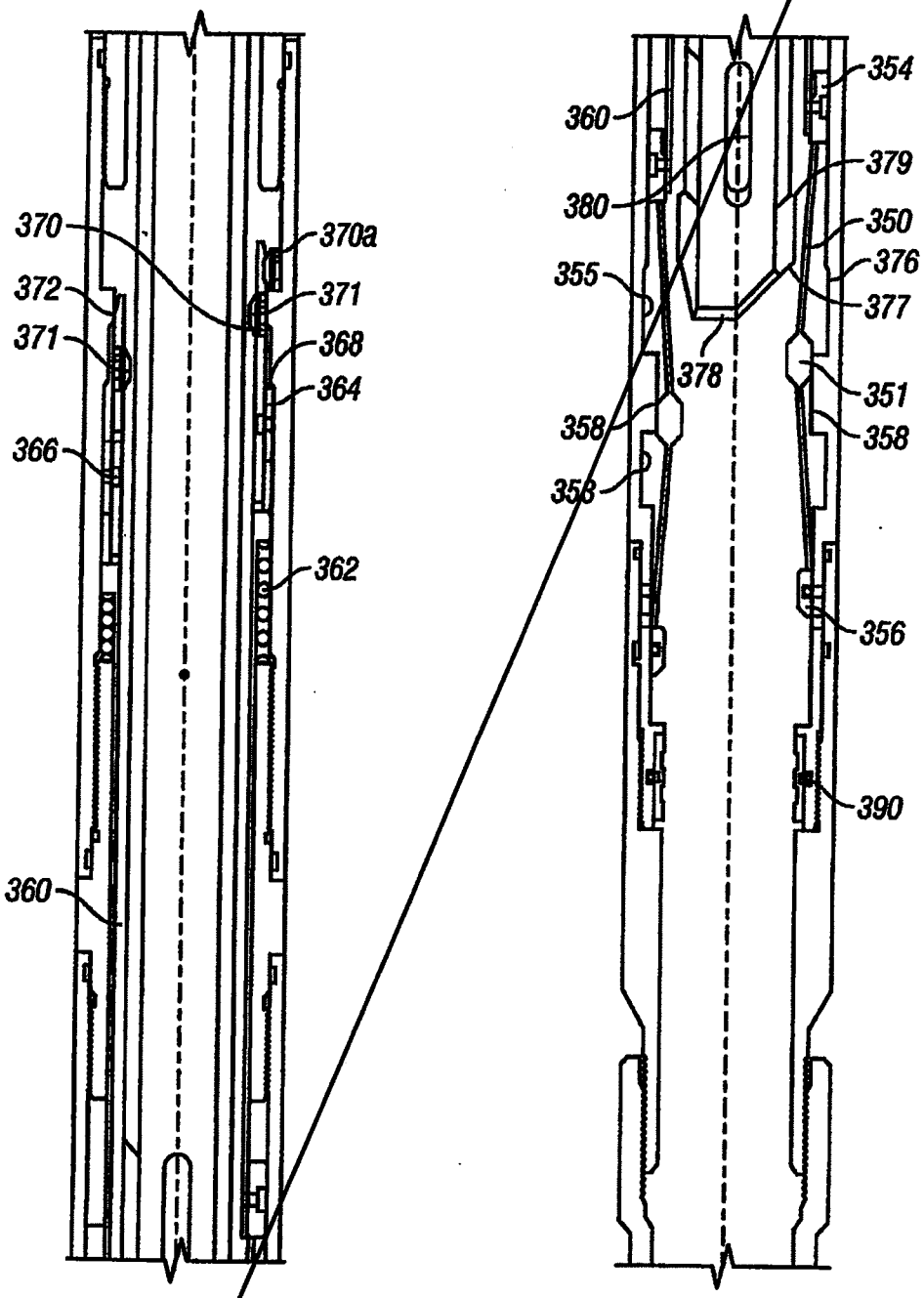

370
372
371
366
360
370a
371
368
364
362
354
360
379
380
350
355
376
377
378
351
358
358
358
356
390

FIG. 12

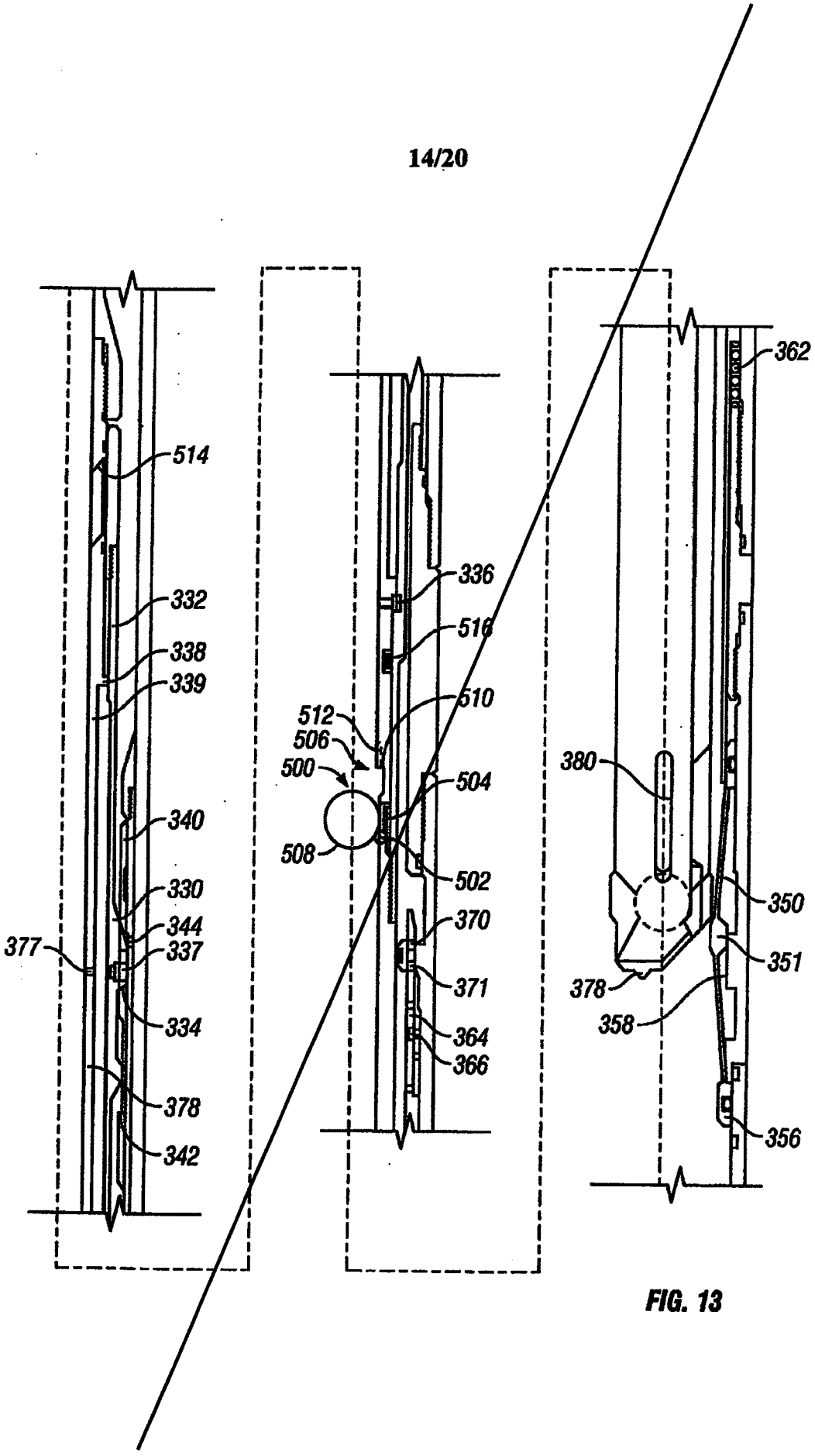

514
332
338
339
340
330
344
337
377
334
378
342
336
516
510
512
506
500
504
508
502
370
371
364
366
362
380
350
351
378
358
356

FIG. 13

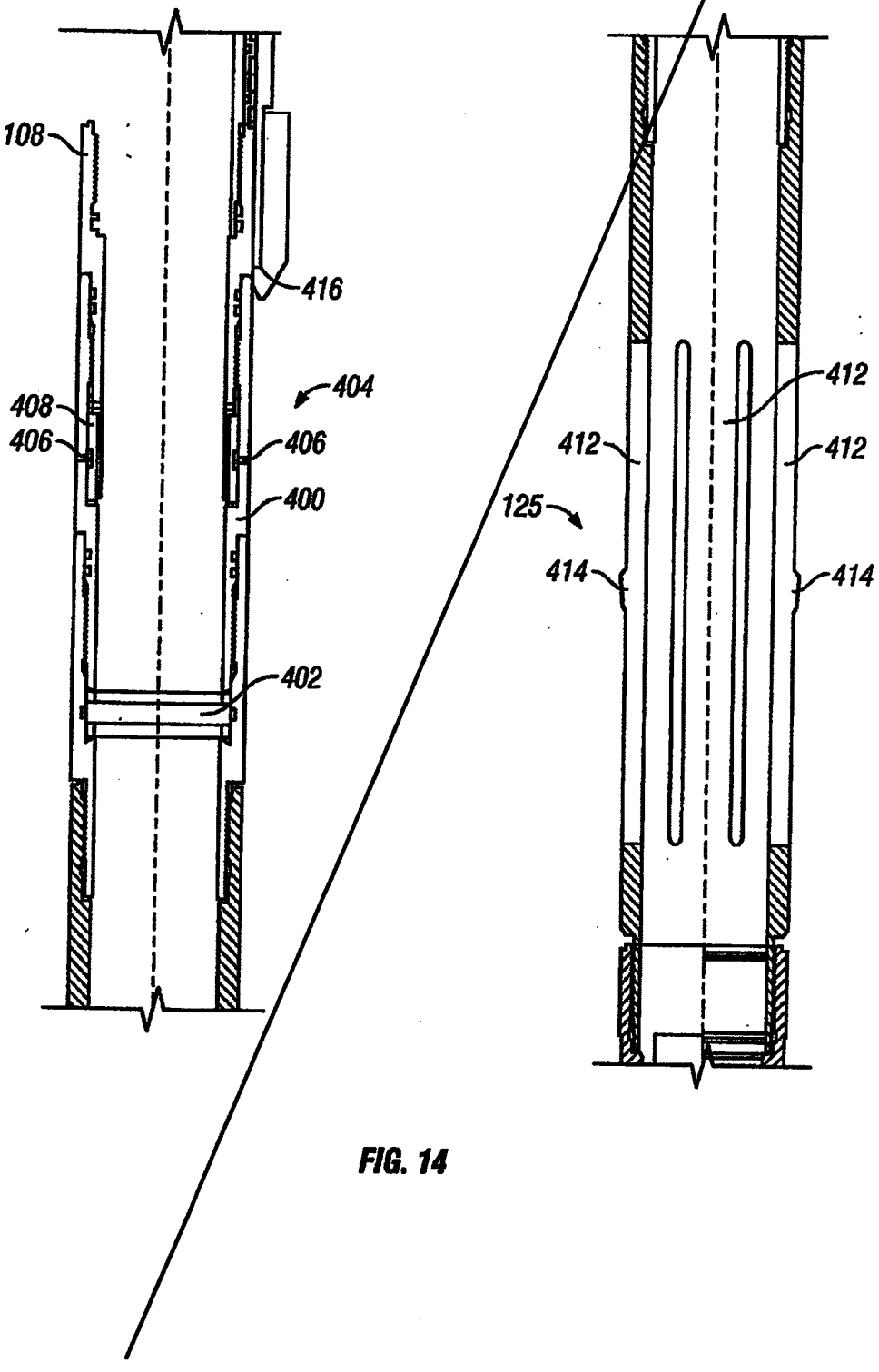


FIG. 14

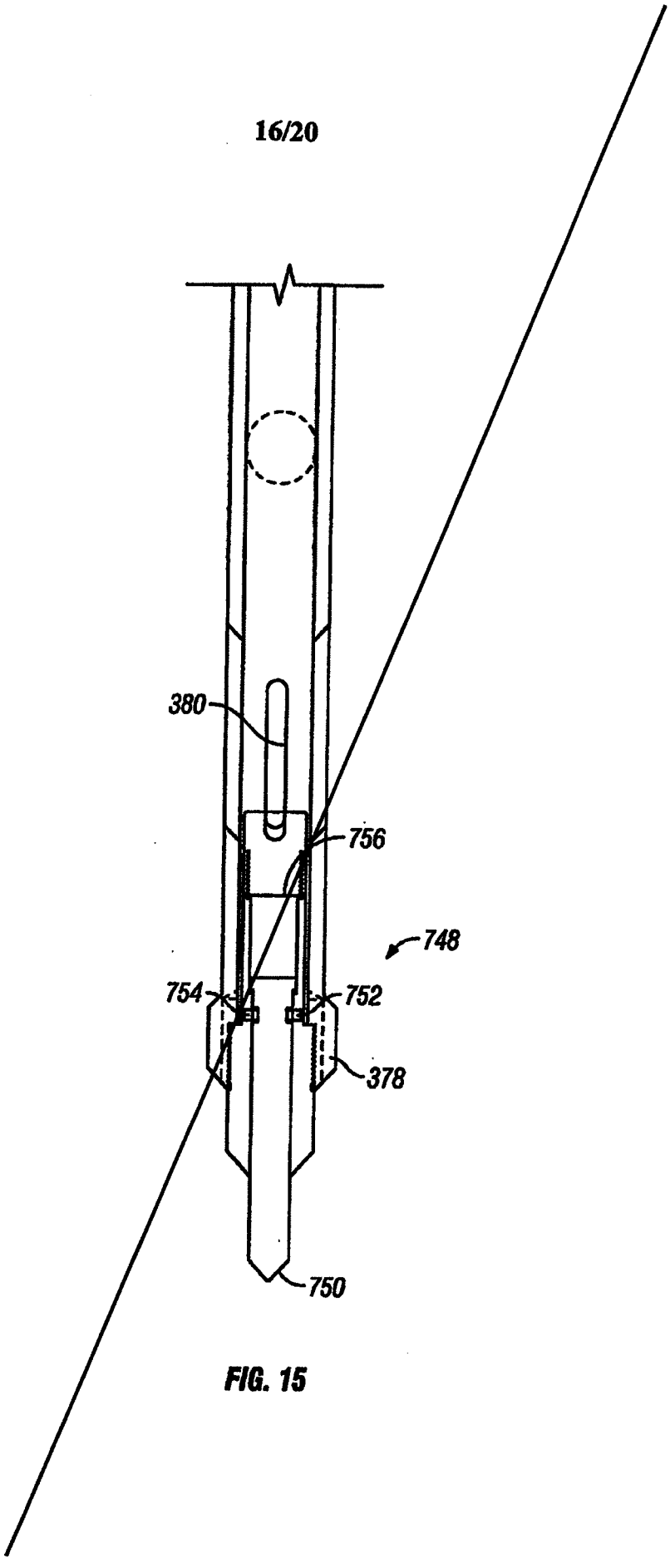


FIG. 15

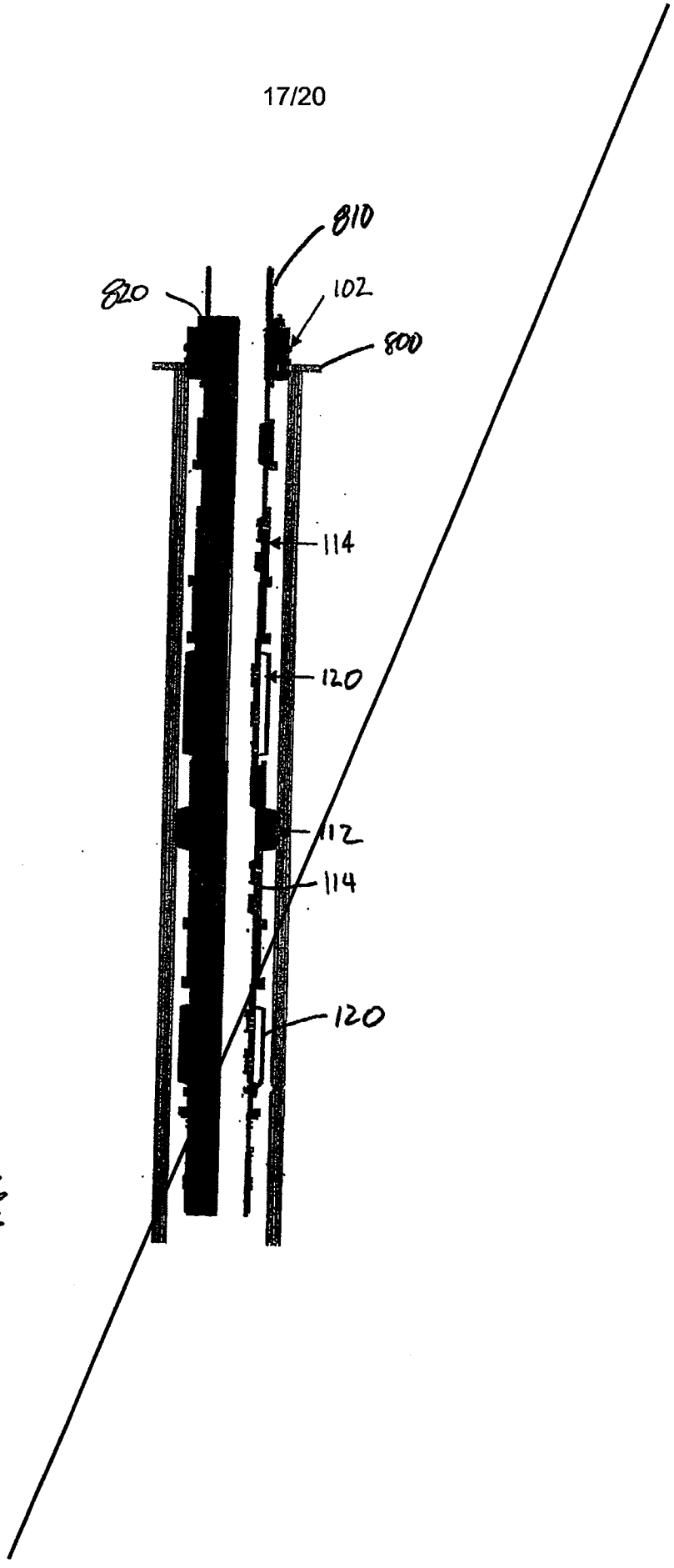
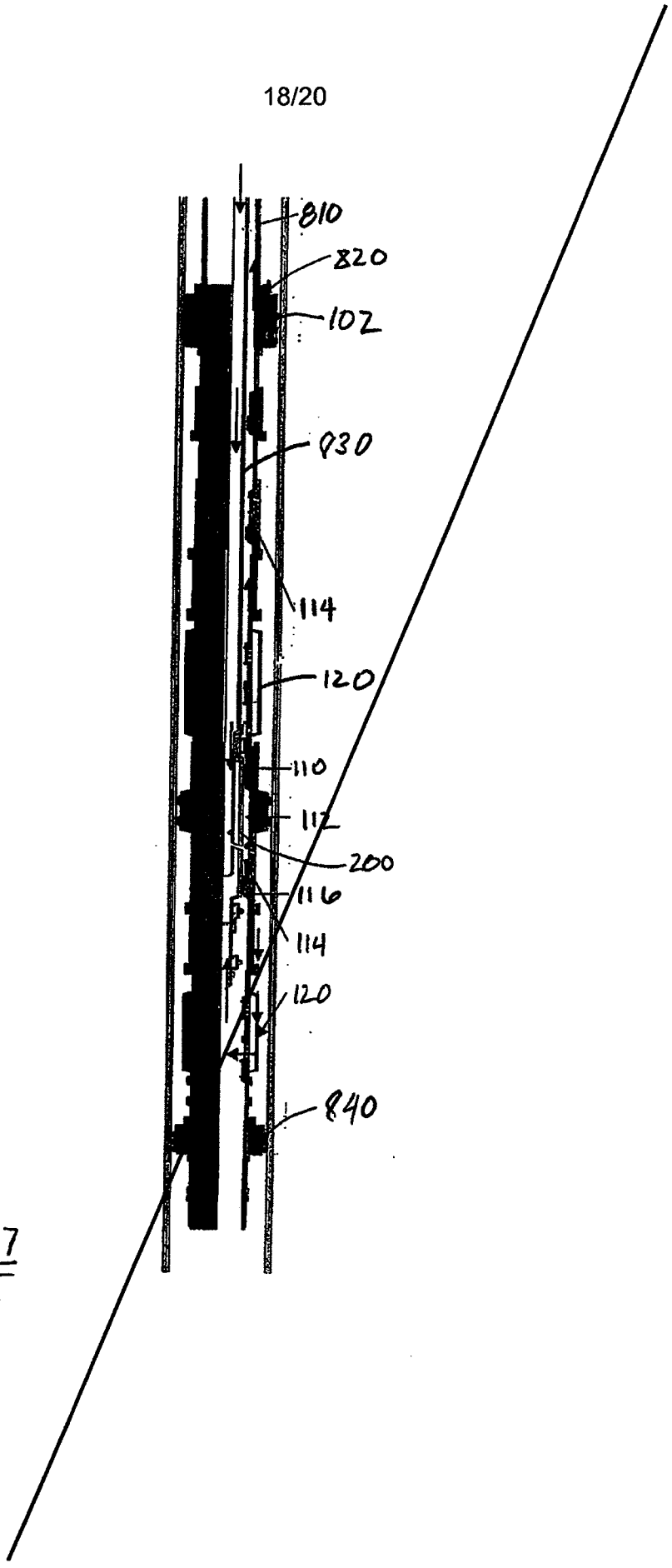


FIG. 16



F16. 17

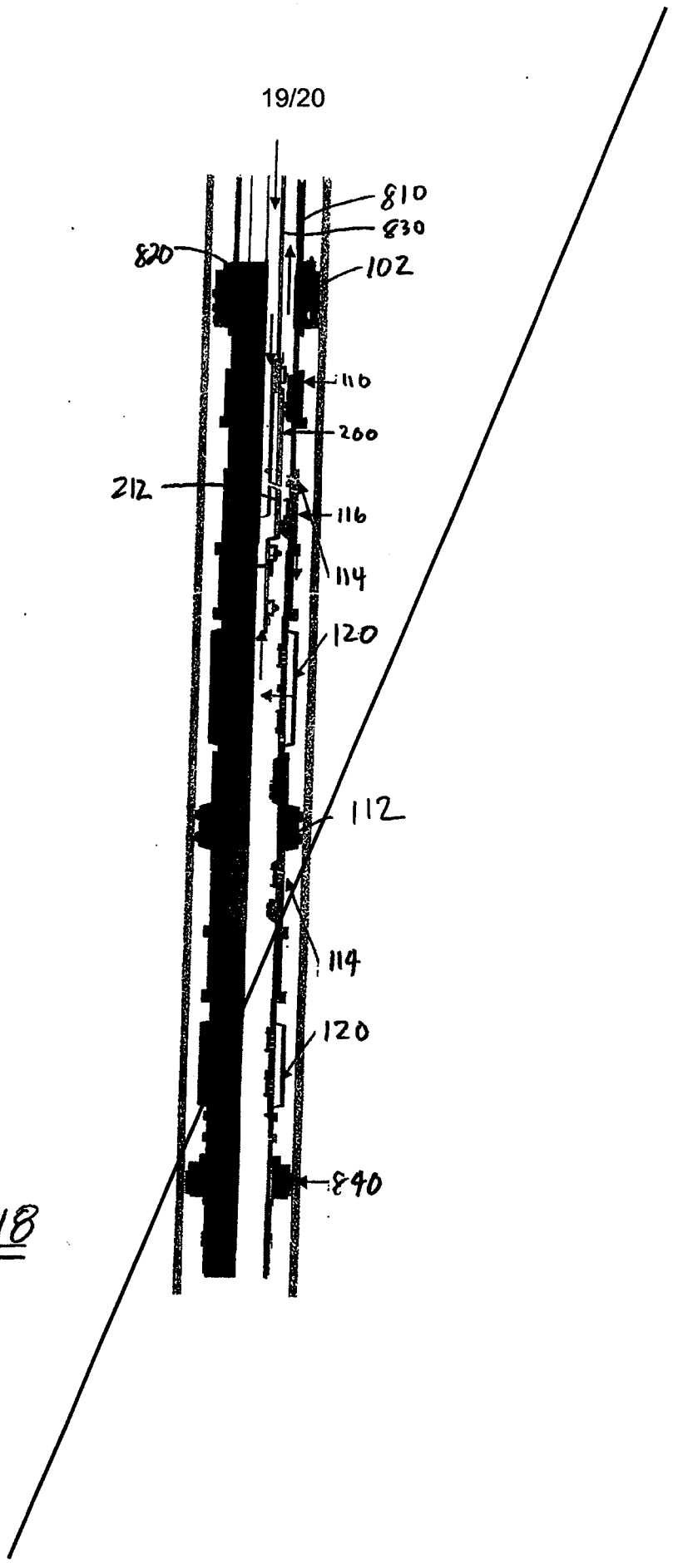


FIG. 18

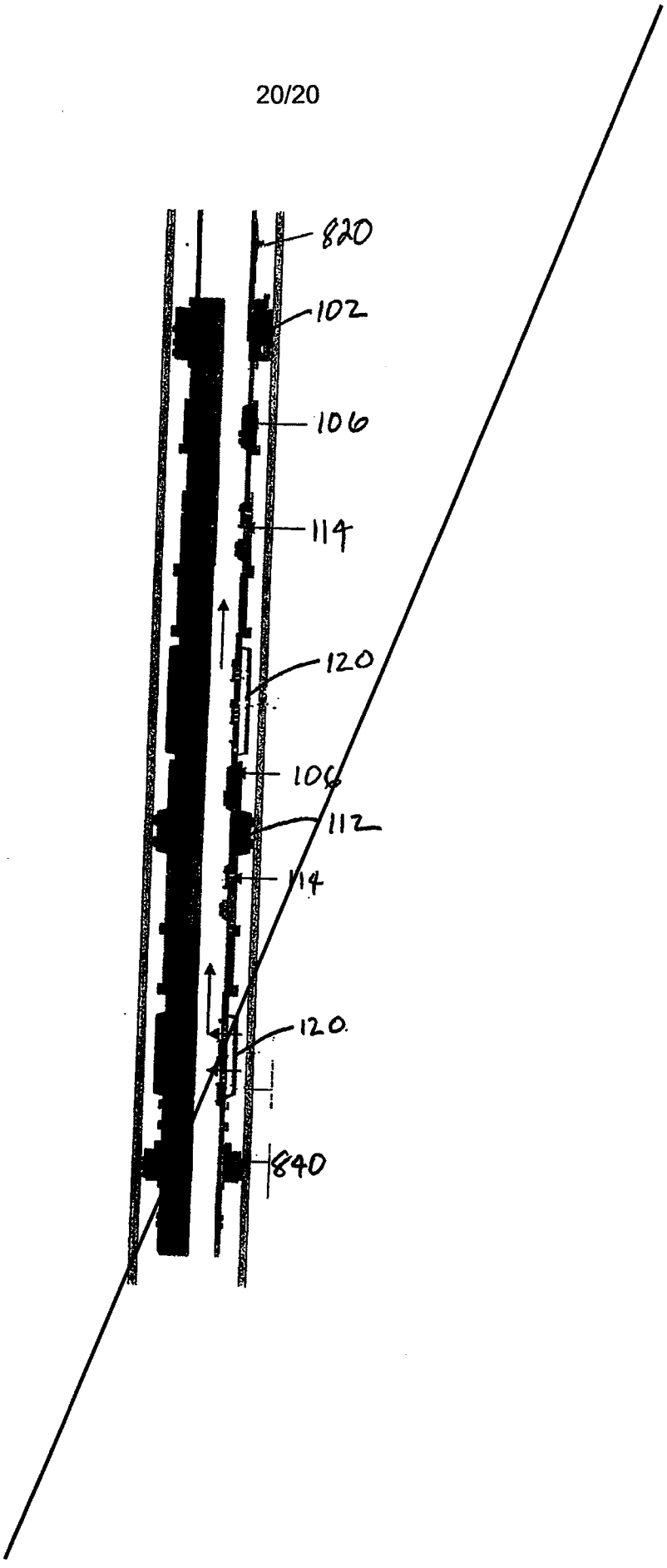


FIG. 19

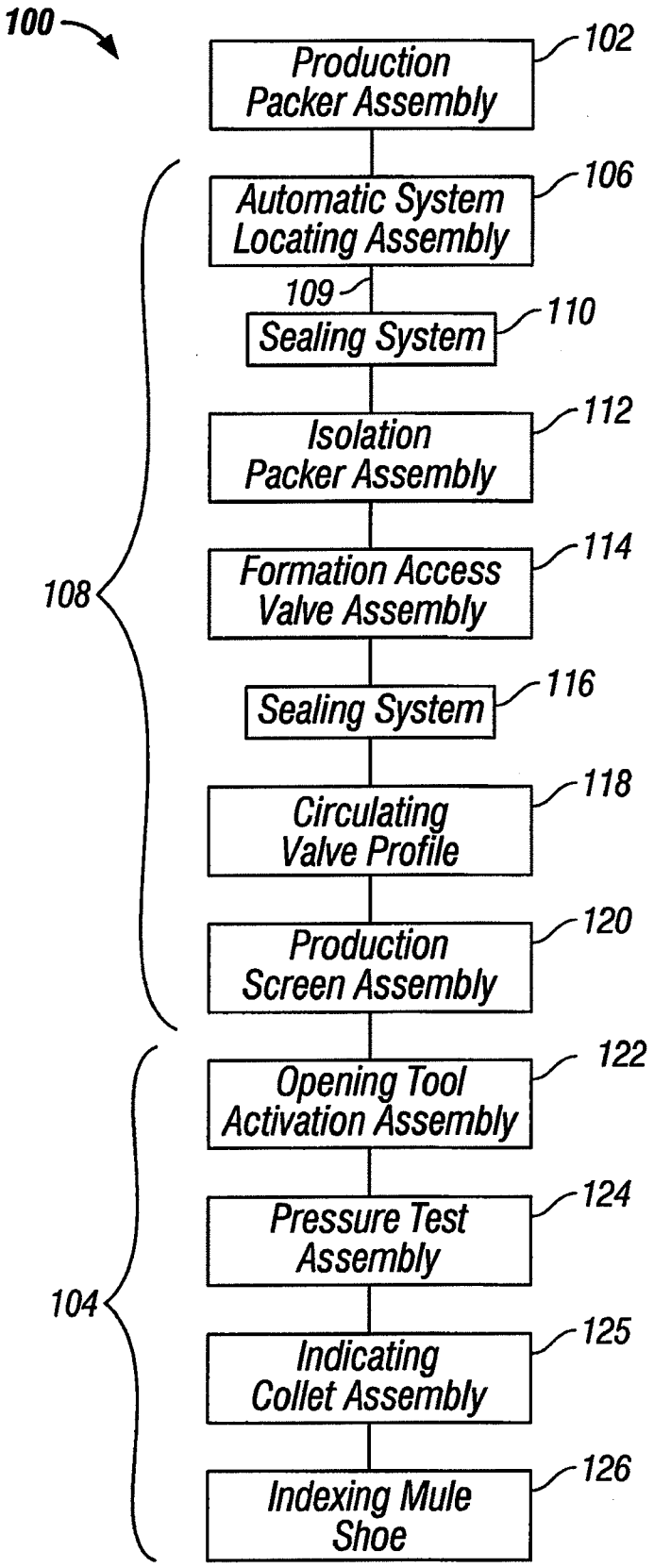

100
Production Packer Assembly
102
Automatic System Locating Assembly
106
109
Sealing System
110
Isolation Packer Assembly
112
Formation Access Valve Assembly
114
Sealing System
116
Circulating Valve Profile
118
Production Screen Assembly
120
108
Opening Tool Activation Assembly
122
Pressure Test Assembly
124
Indicating Collet Assembly
125
Indexing Mule Shoe
126
104

FIG. 1

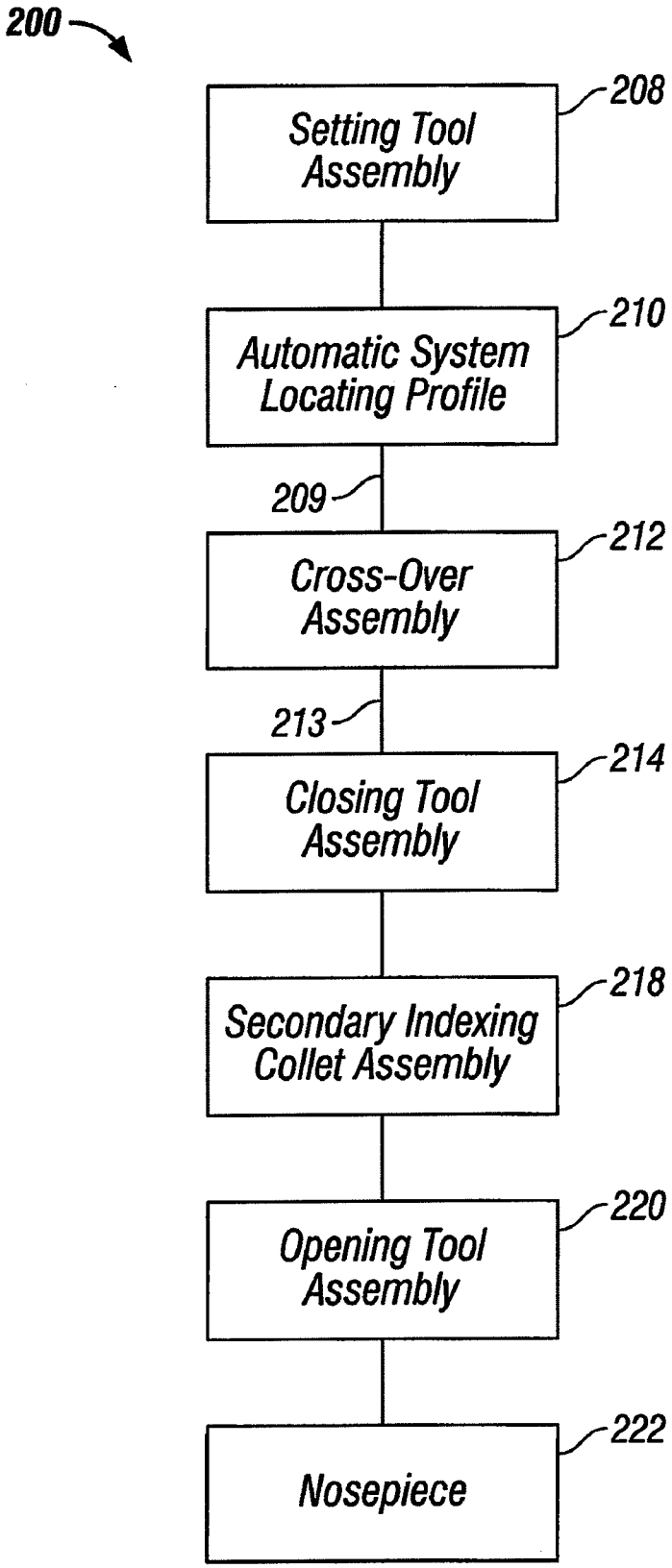

200
Setting Tool Assembly
208
Automatic System Locating Profile
210
209
Cross-Over Assembly
212
213
Closing Tool Assembly
214
Secondary Indexing Collet Assembly
218
Opening Tool Assembly
220
Nosepiece
222

FIG. 2

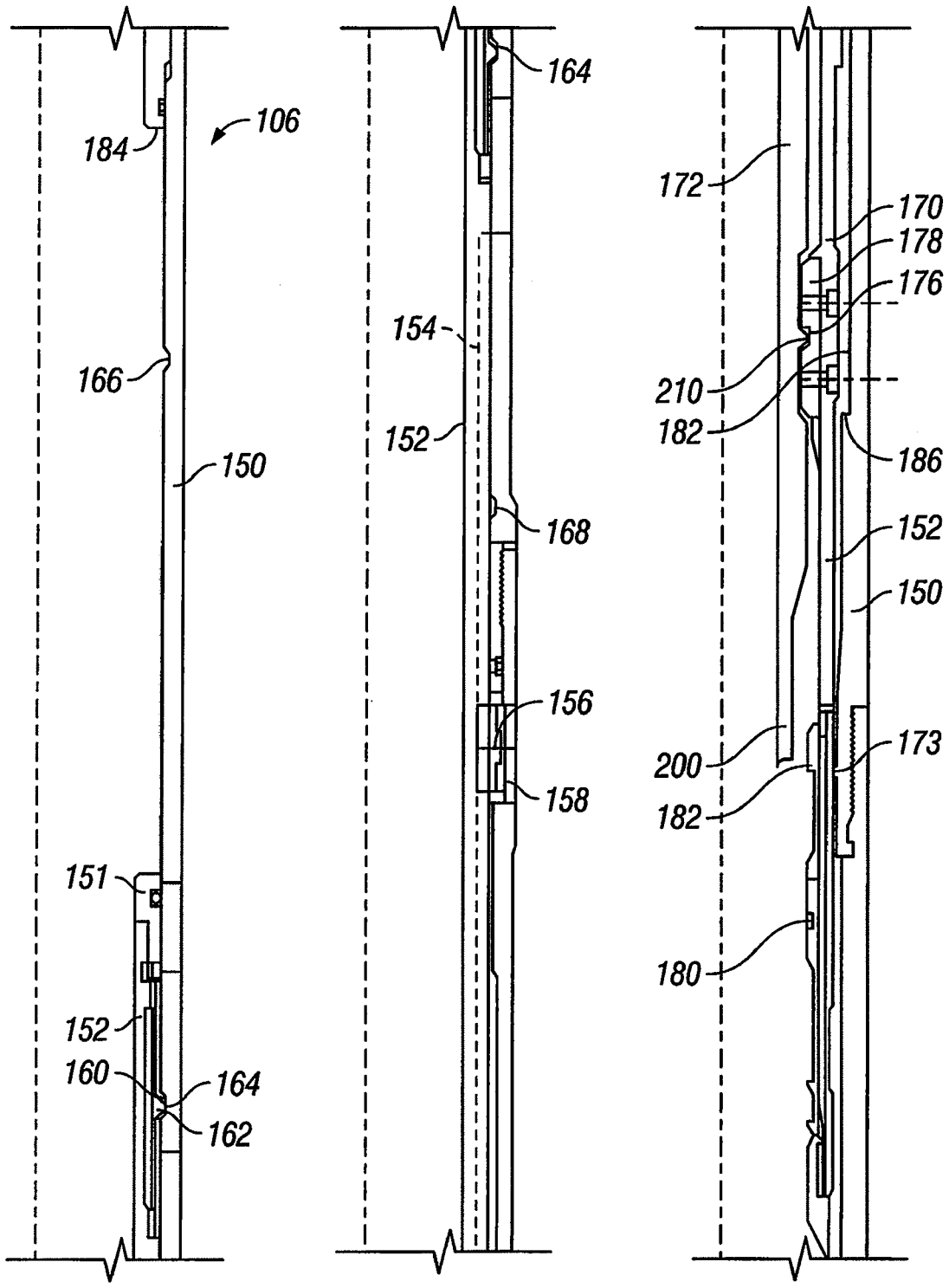

106
184
166
150
151
152
160
164
162
164
154
152
168
156
158
172
170
178
176
210
182
186
152
150
200
182
173
180

FIG. 3

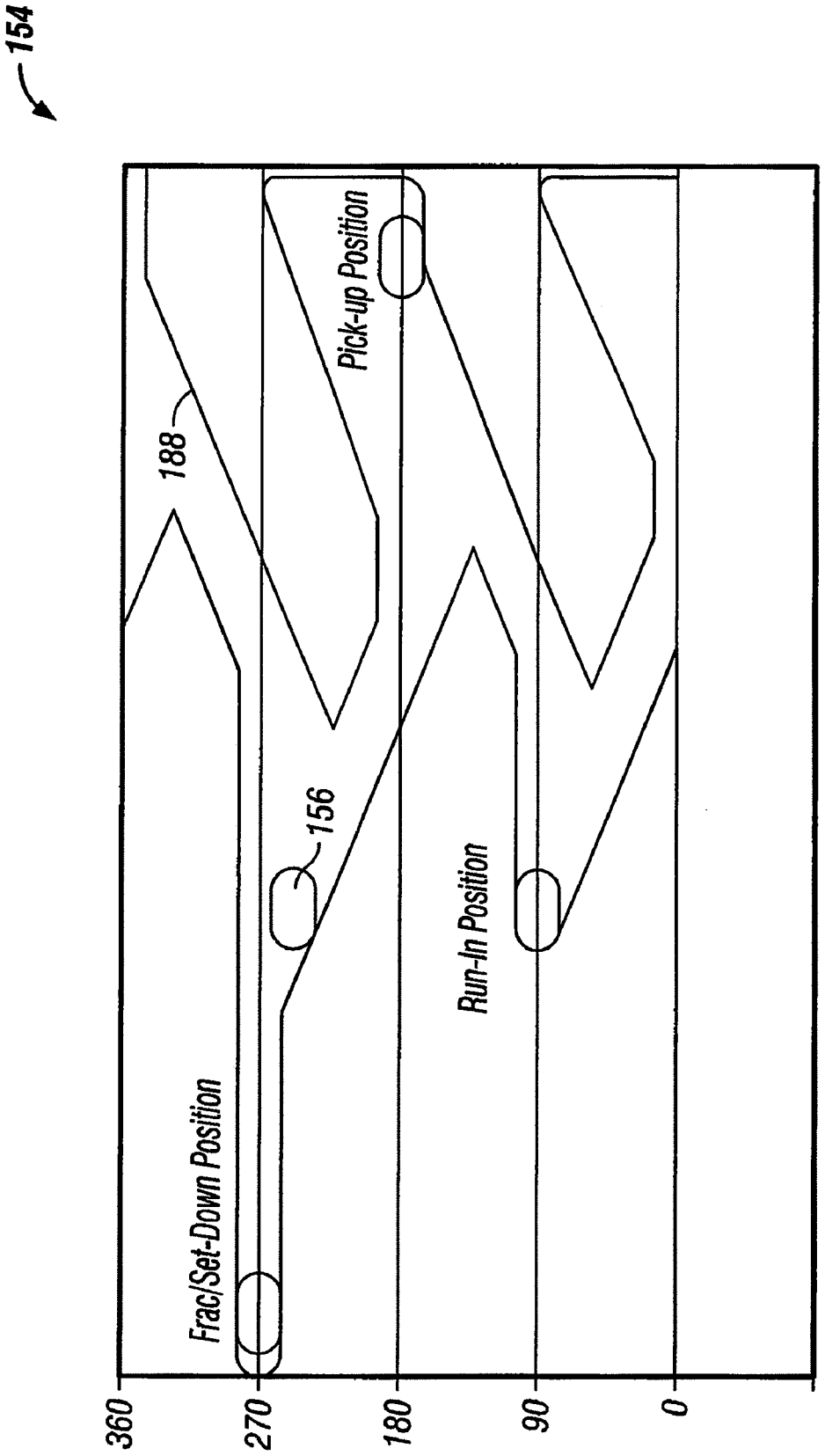

154
188
156
Frac/Set-Down Position
Pick-up Position
Run-In Position
360
270
180
90
0

FIG. 4

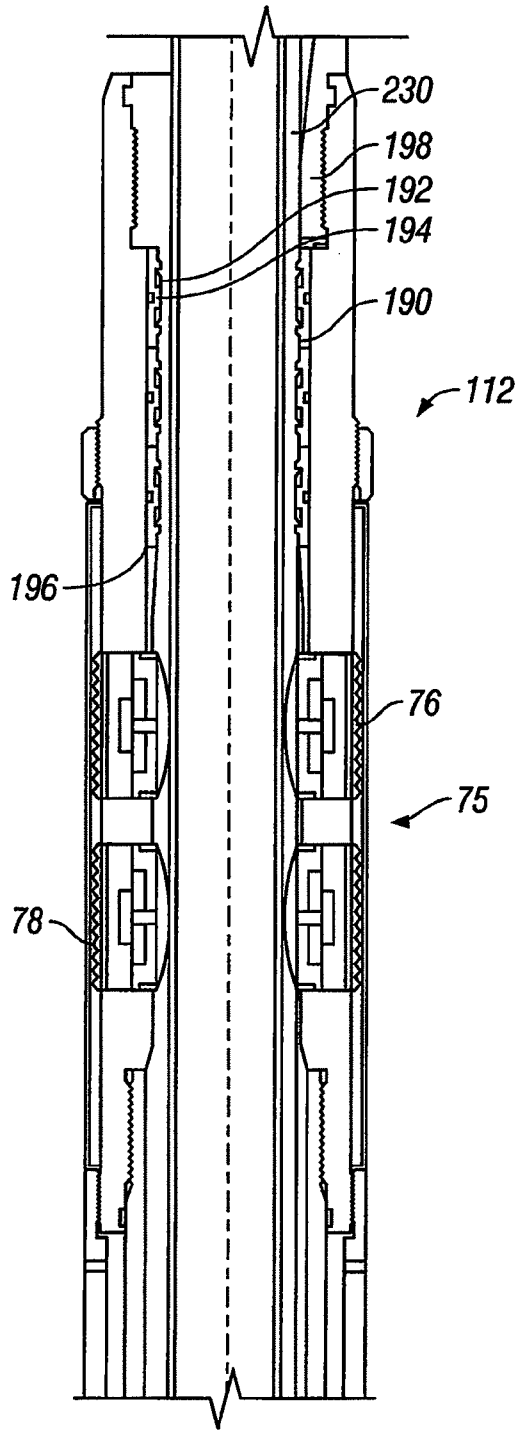

230
198
192
194
190
112
196
76
75
78

FIG. 5a

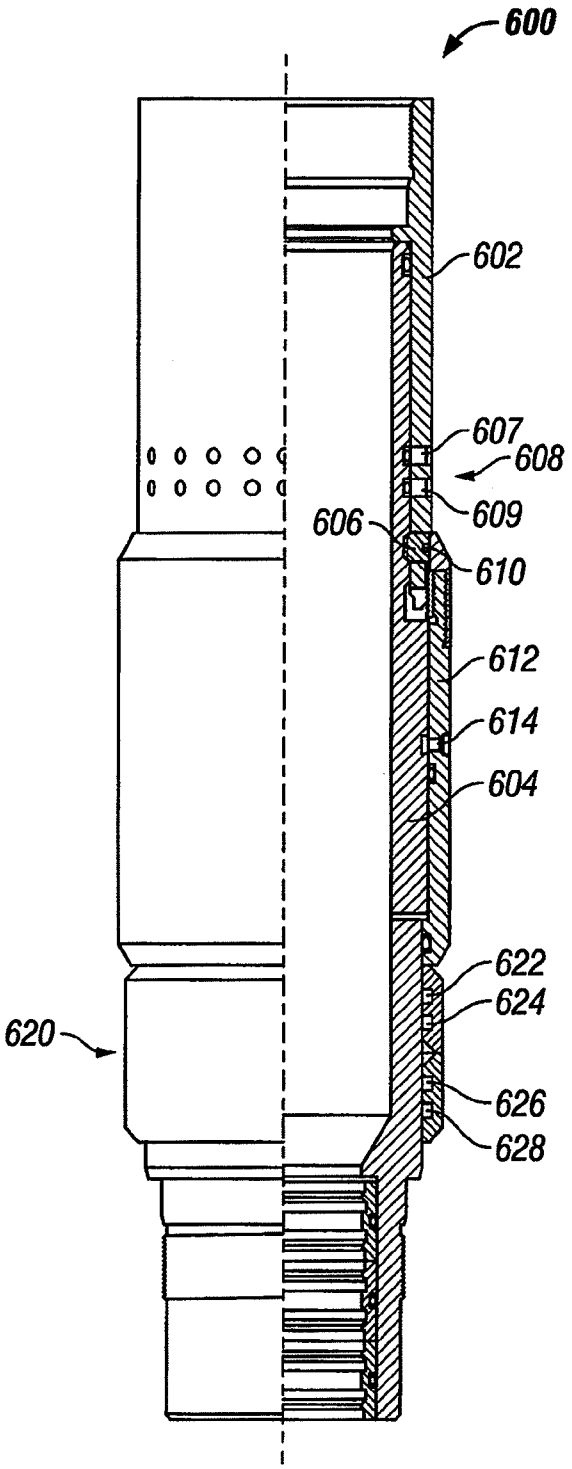

600
602
607
608
609
606
610
612
614
604
622
624
620
626
628

FIG. 5b

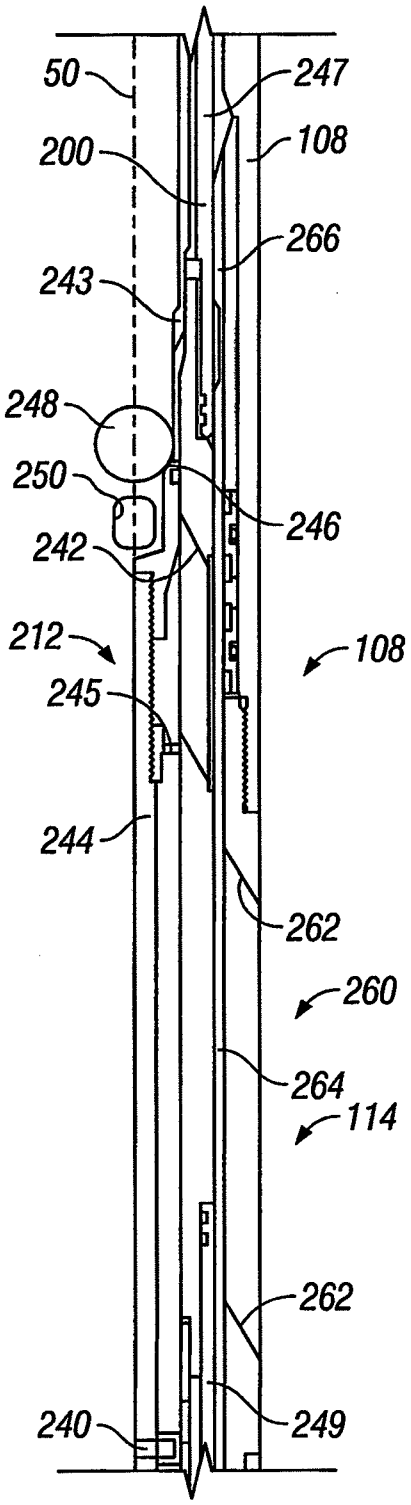

50
247
200
108
266
243
248
250
246
242
212
108
245
244
262
260
264
114
262
240
249

FIG. 6a

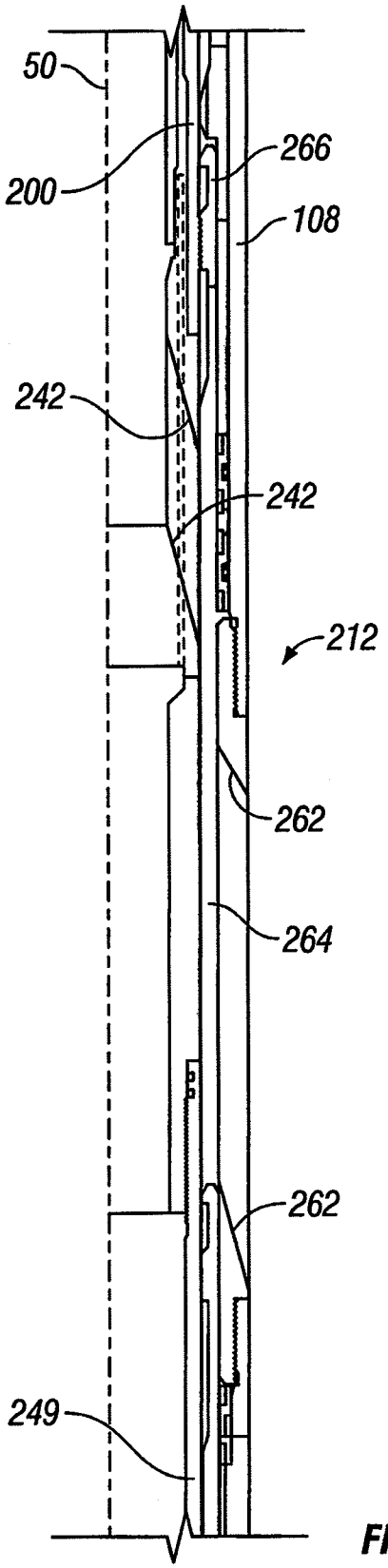

50
200
266
108
242
242
212
262
264
262
249

FIG. 6b

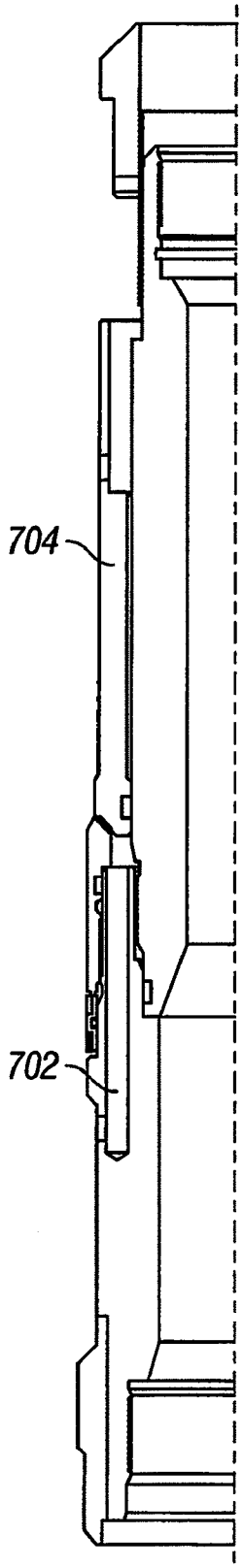


FIG. 7a

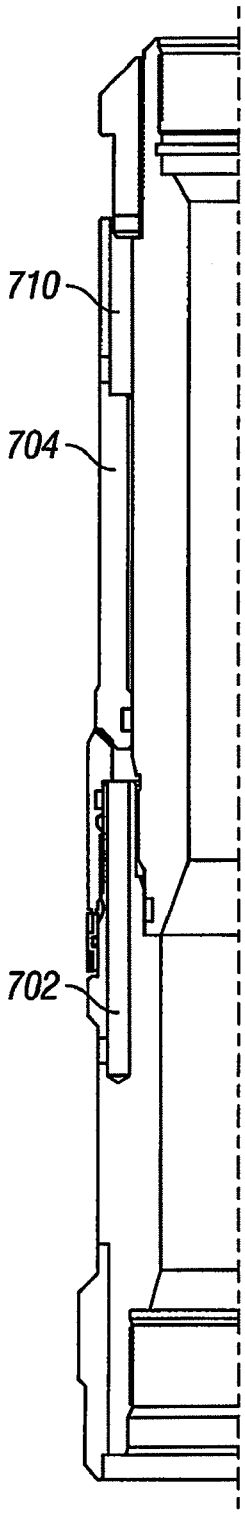


FIG. 7b

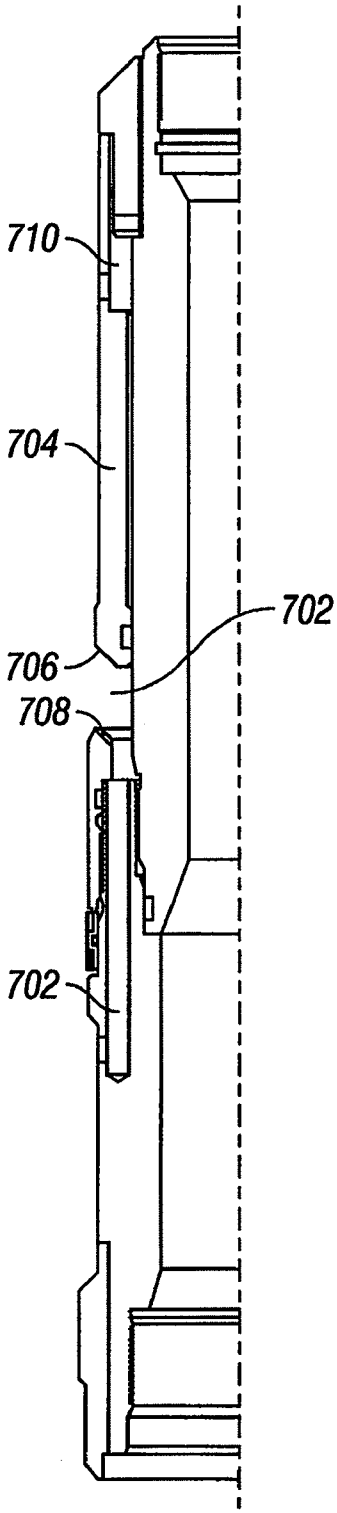


FIG. 7c

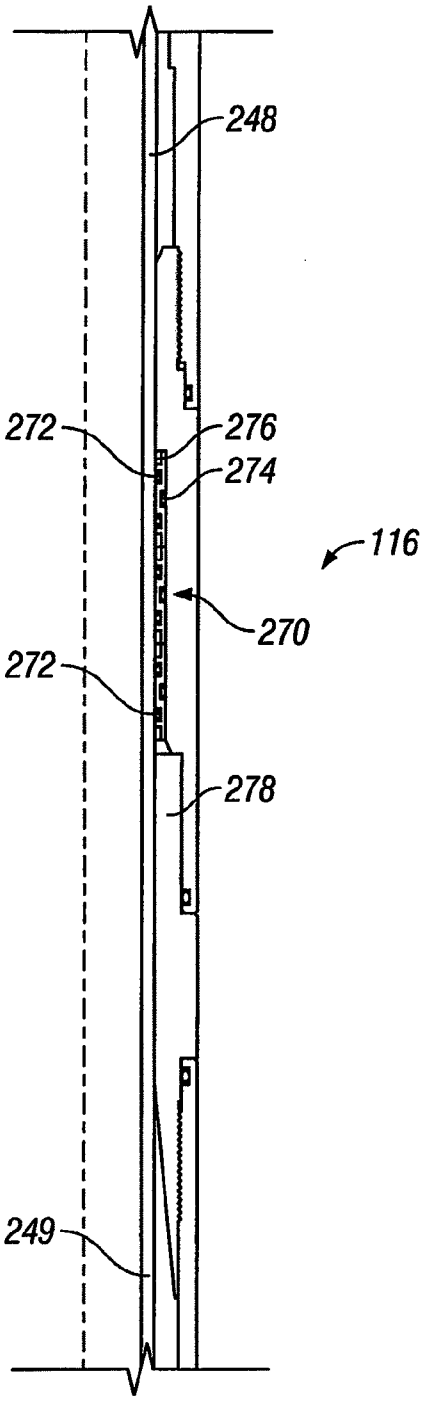


FIG. 8

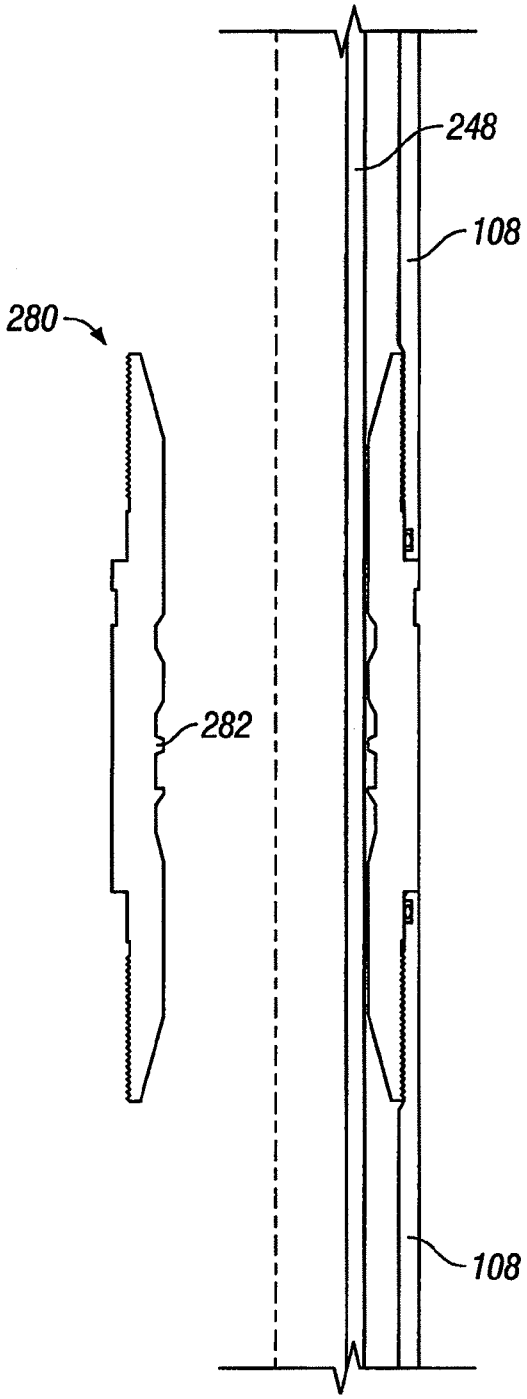


FIG. 9

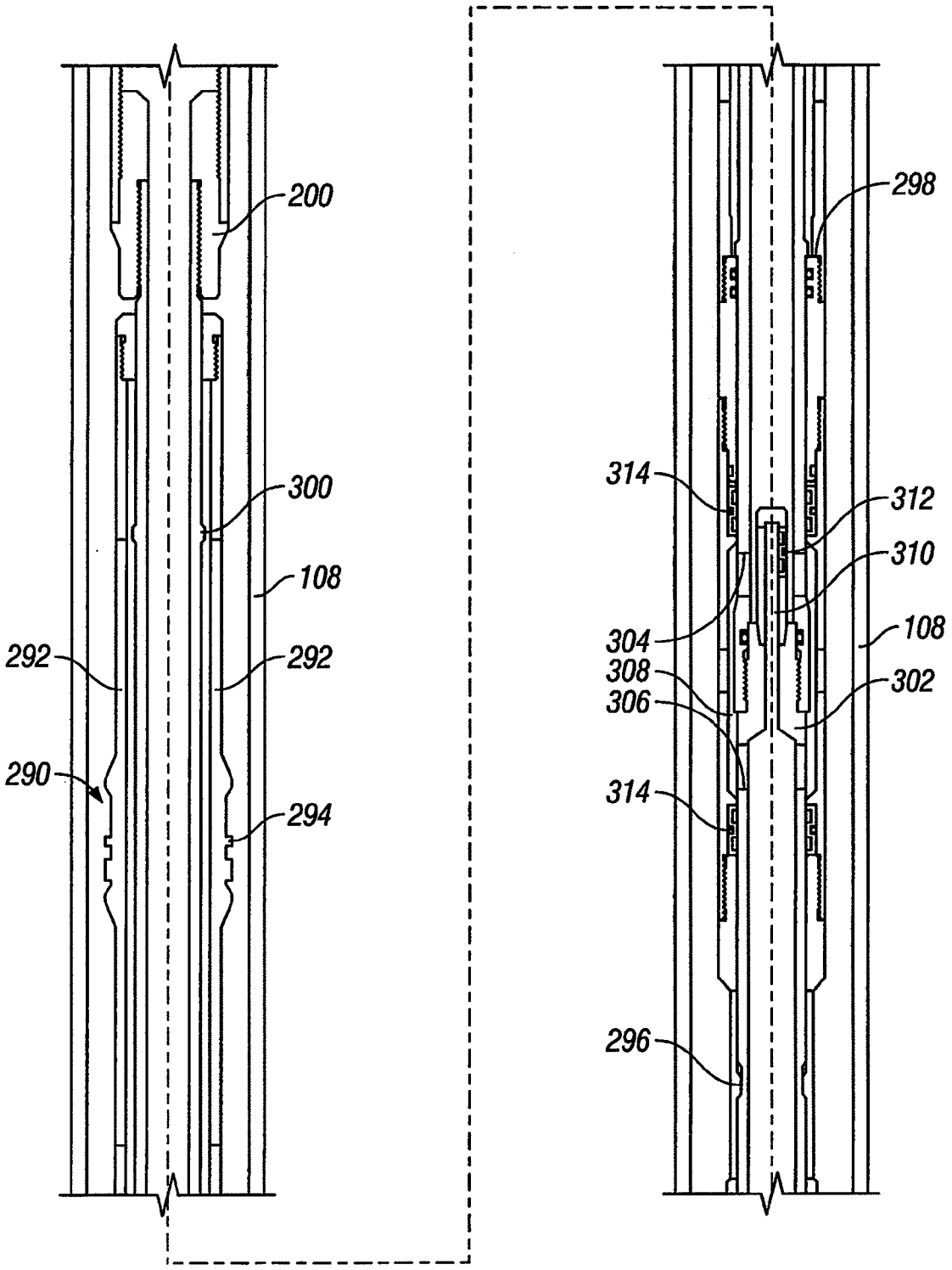

200
300
108
292
292
290
294
298
314
312
310
304
108
308
302
306
314
296

FIG. 10a

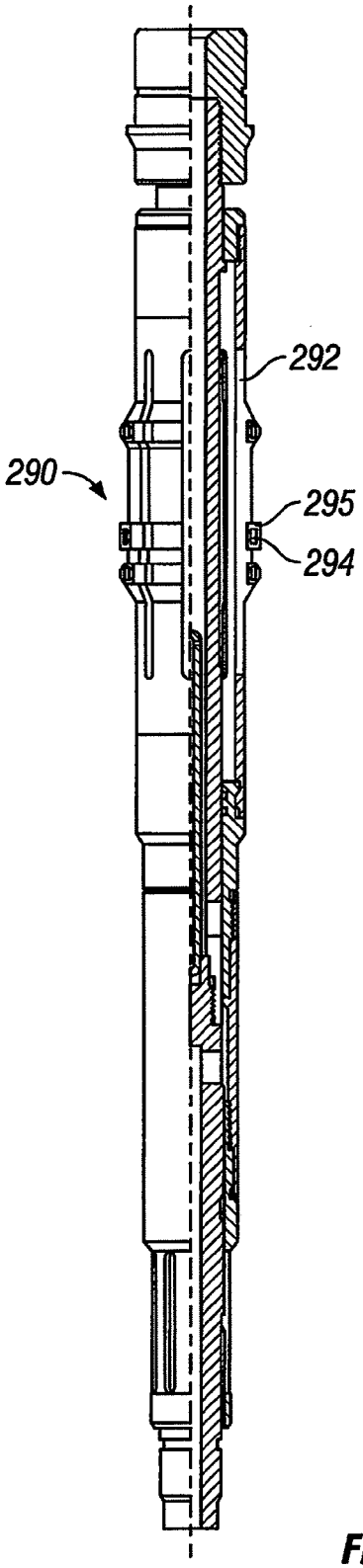


FIG. 10b

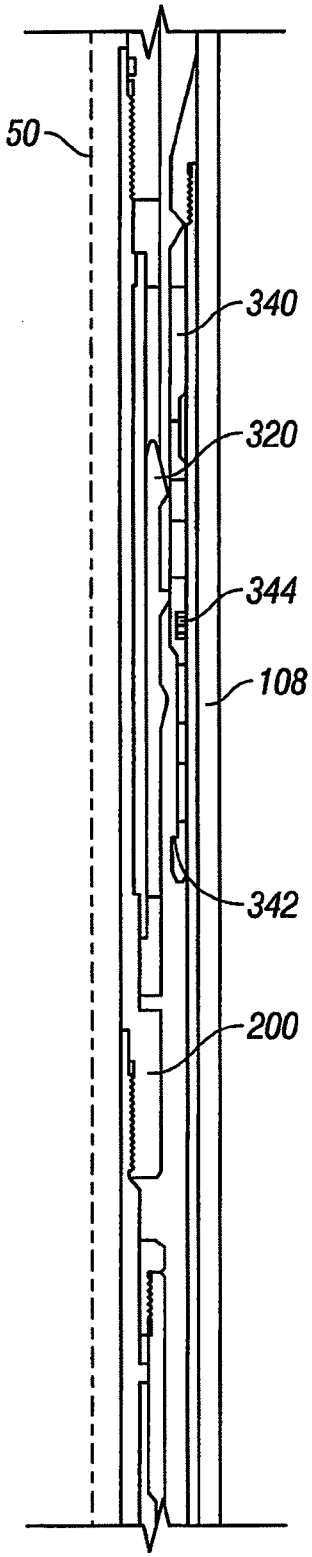


FIG. 11a

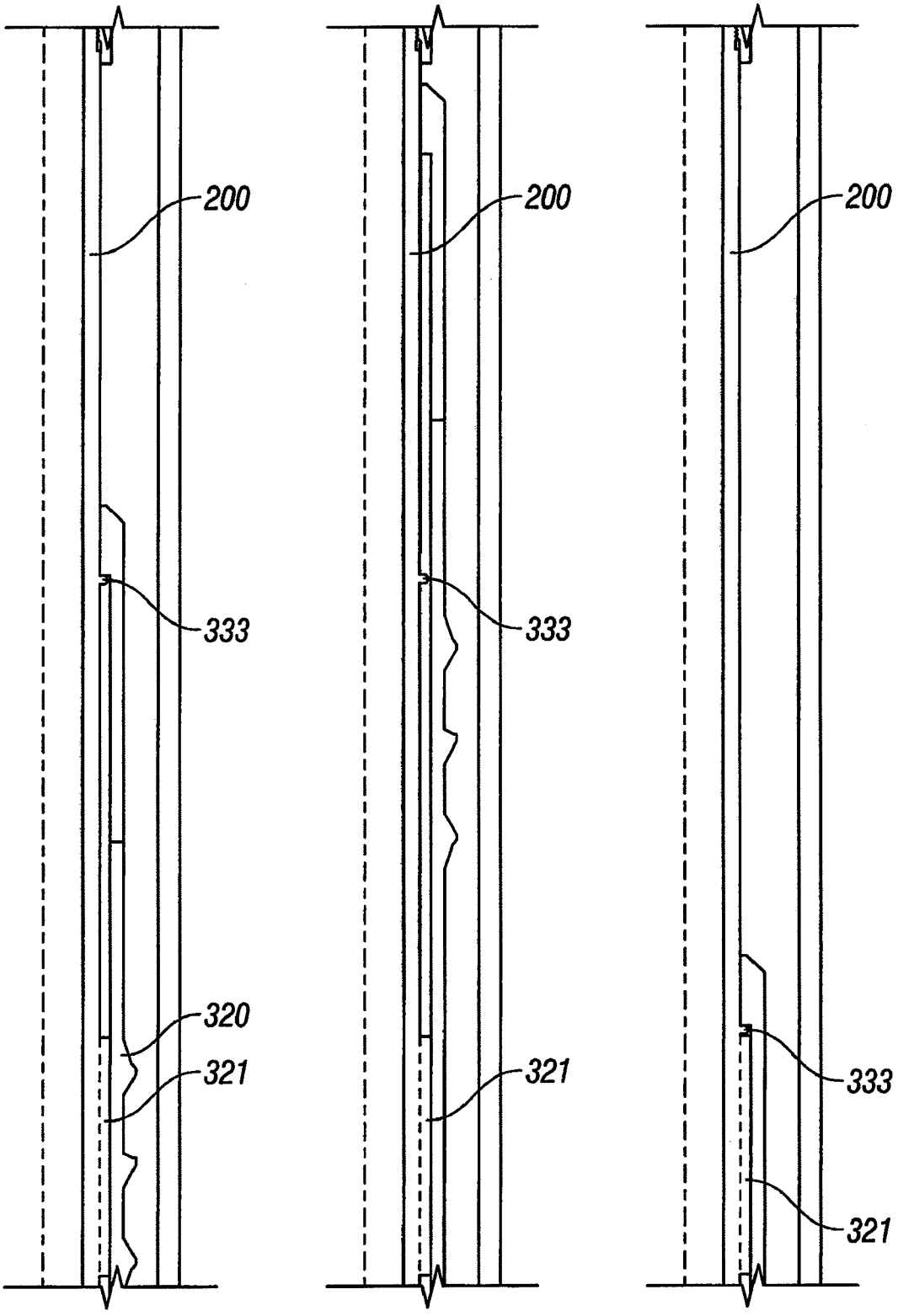


FIG. 11b

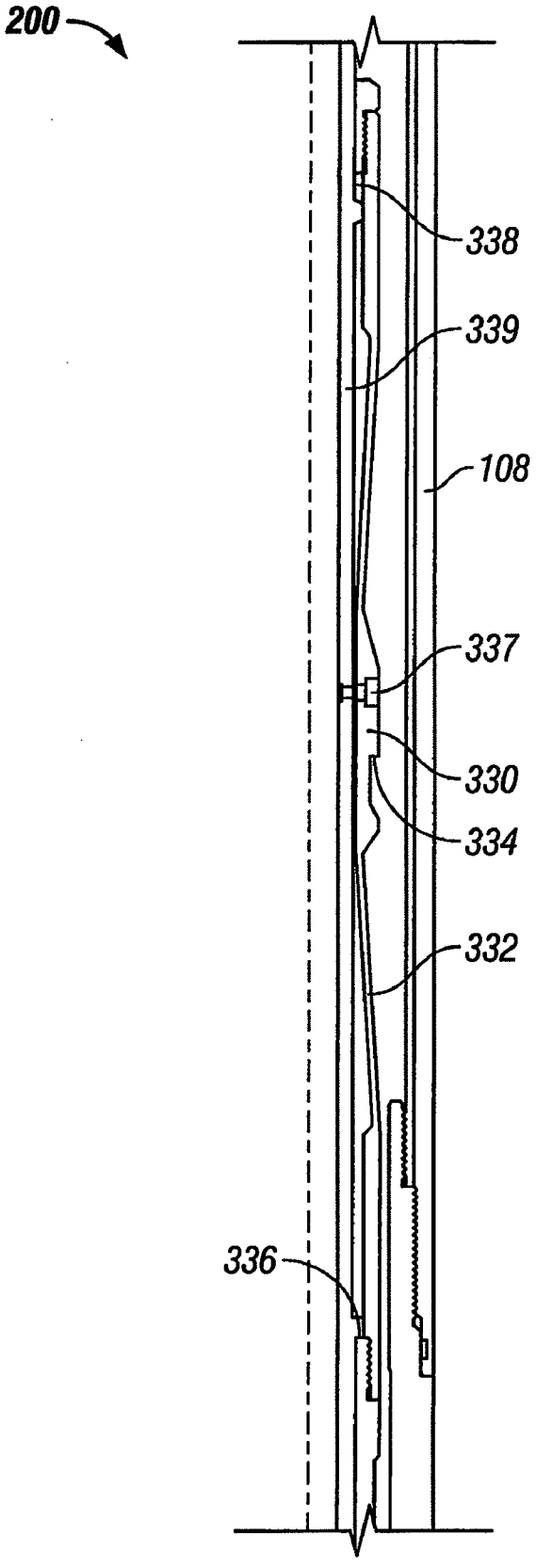


FIG. 11c

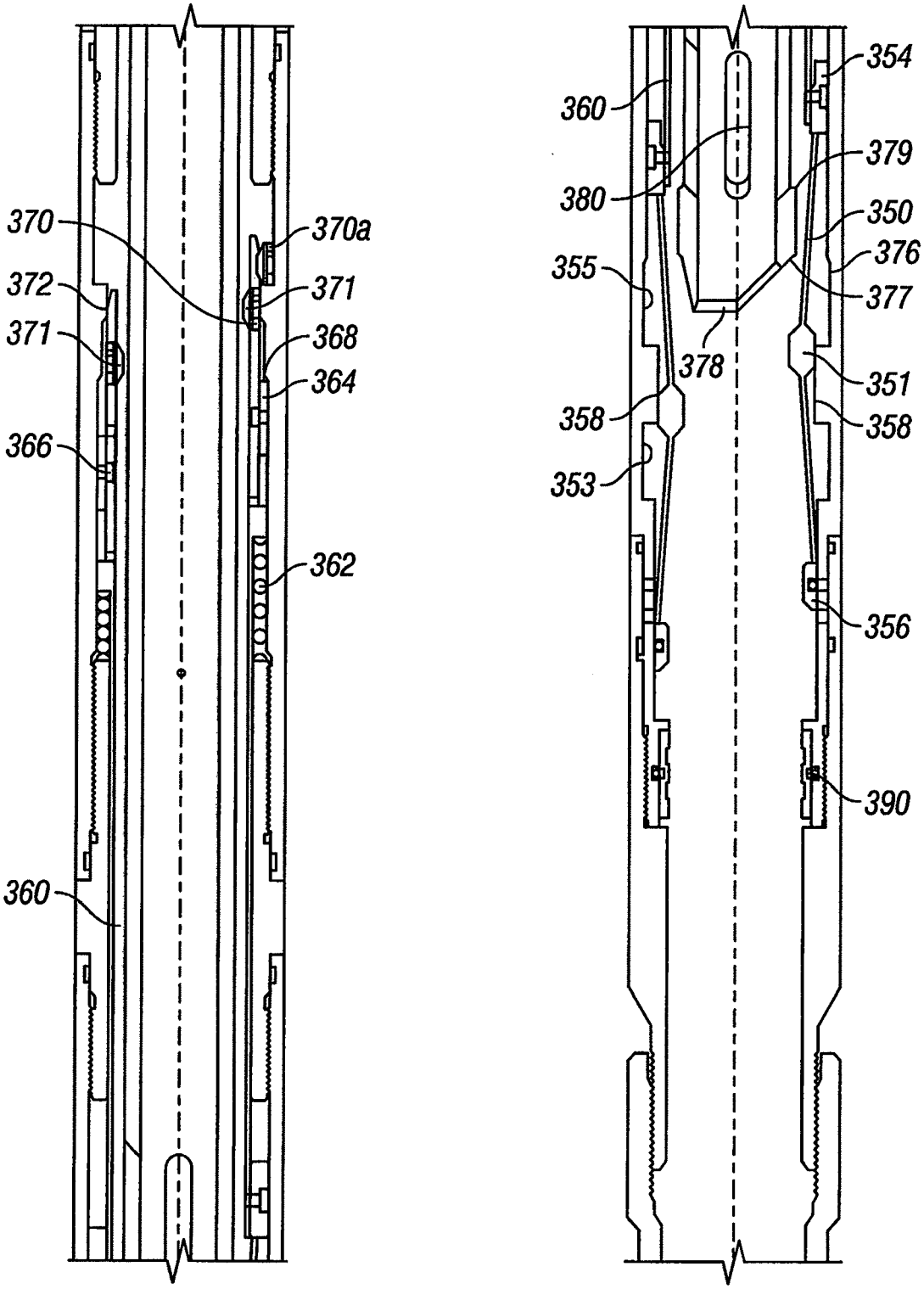

370
370a
372
371
371
368
364
366
362
360
354
360
379
380
350
376
355
377
378
351
358
358
353
356
390

FIG. 12

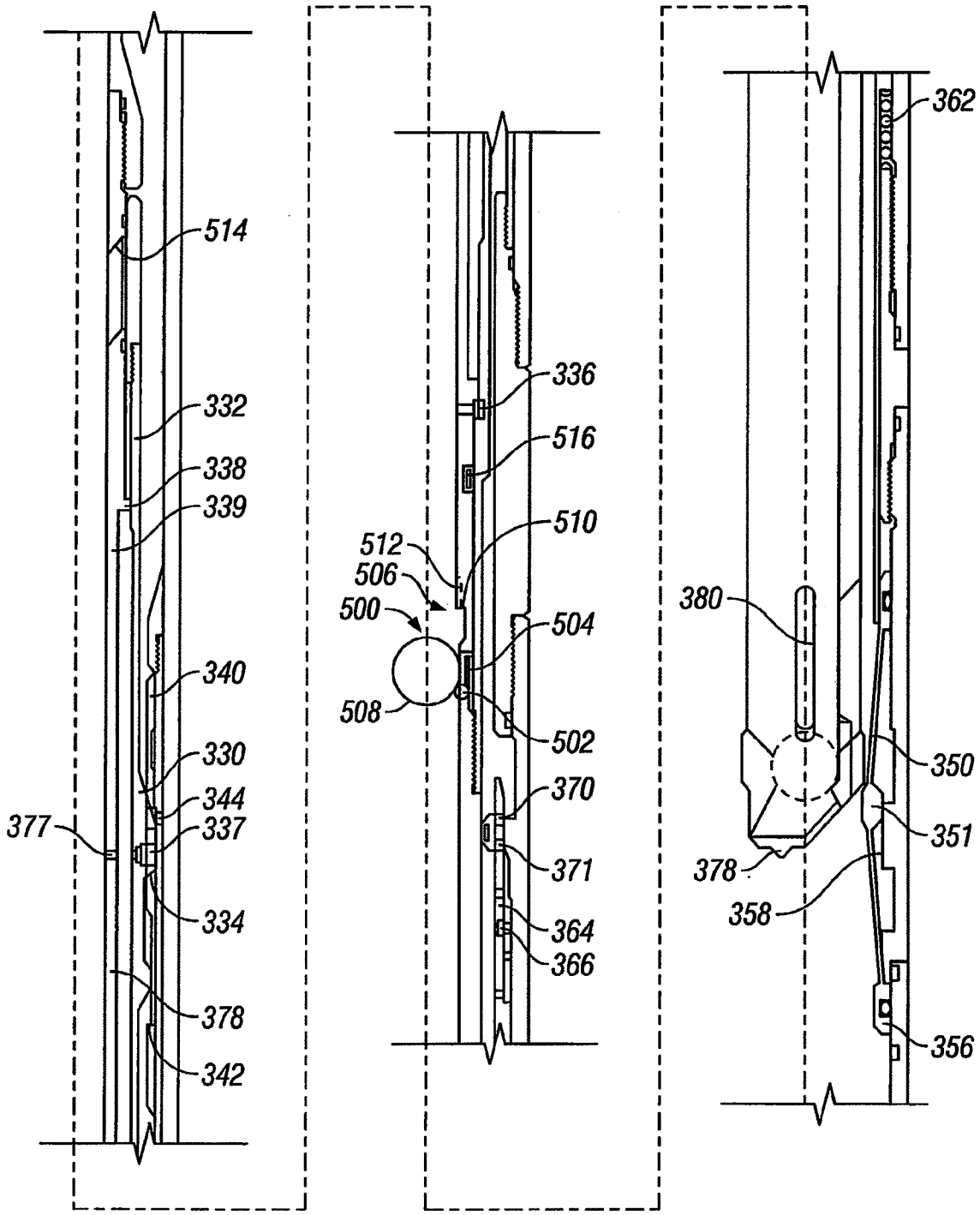

514
332
338
339
340
330
344
337
377
334
378
342
336
516
510
512
506
500
504
508
502
370
371
364
366
362
380
350
351
378
358
356

FIG. 13

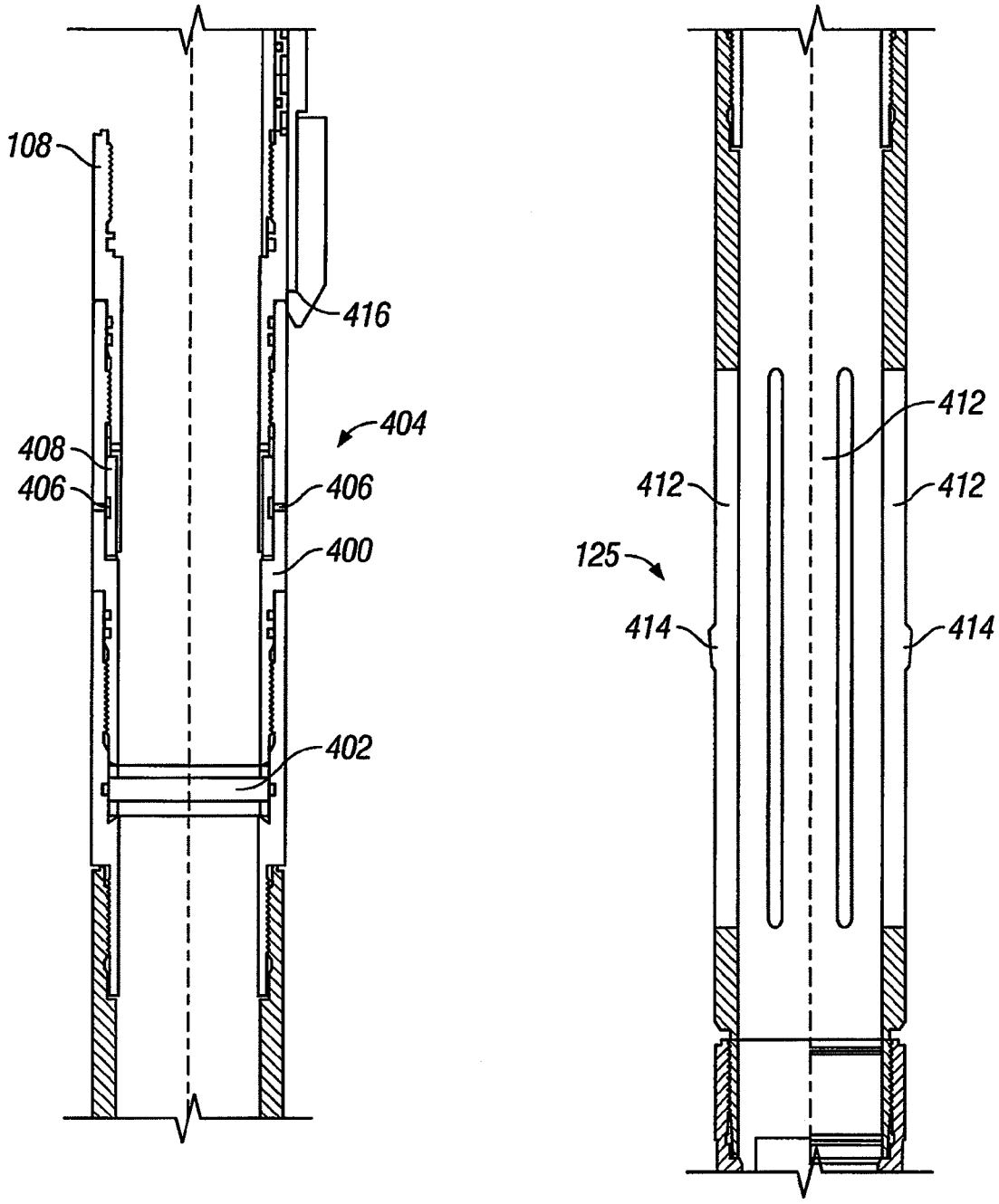


FIG. 14

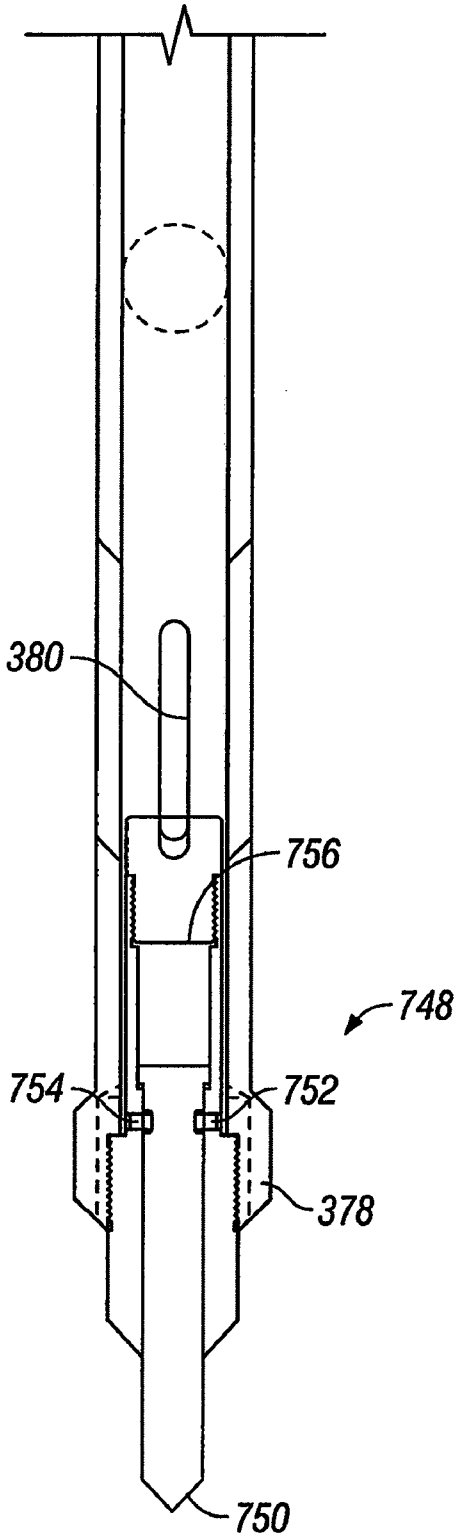


FIG. 15

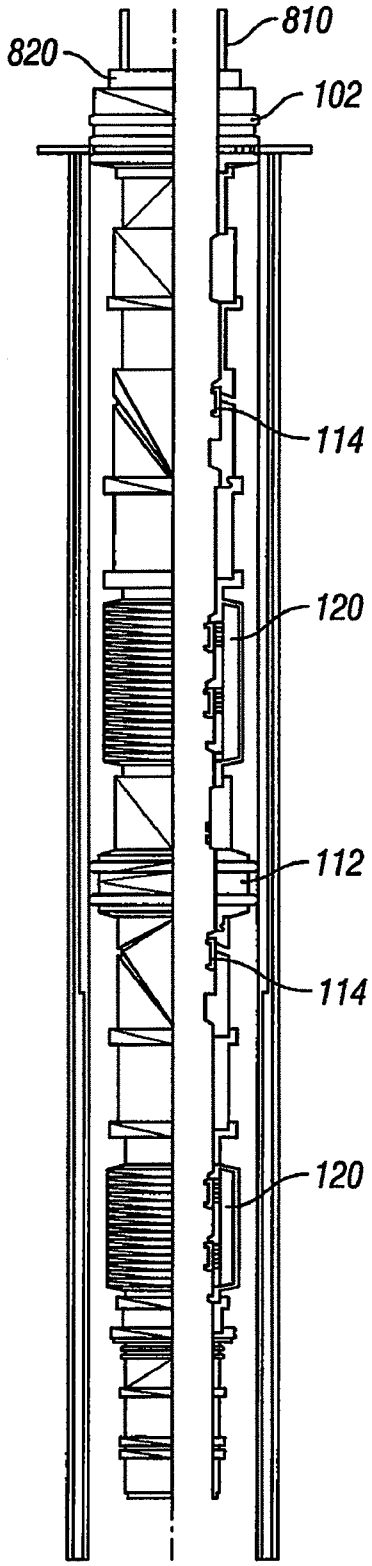


FIG. 16

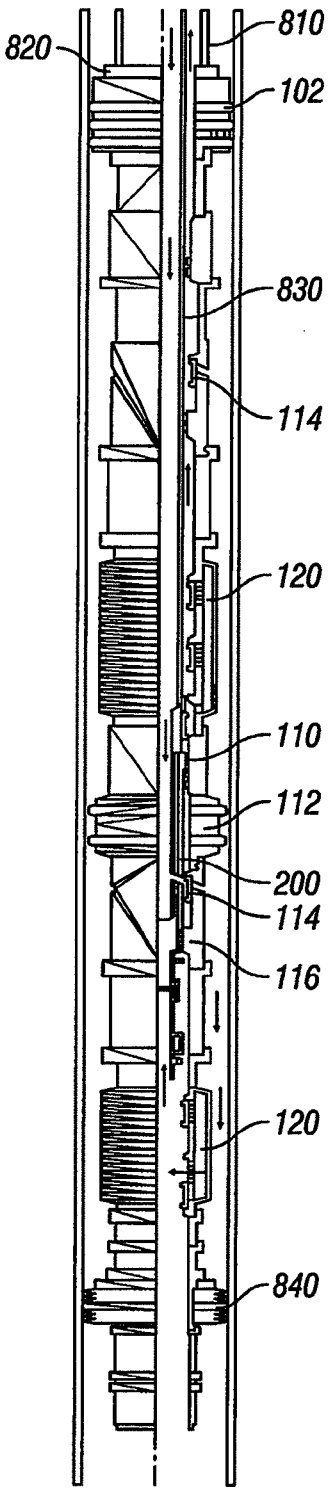


FIG. 17

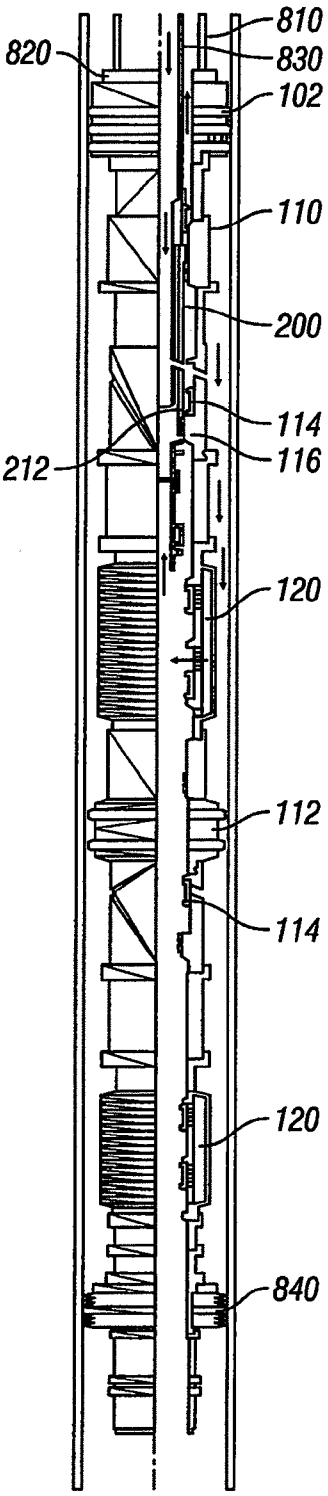


FIG. 18

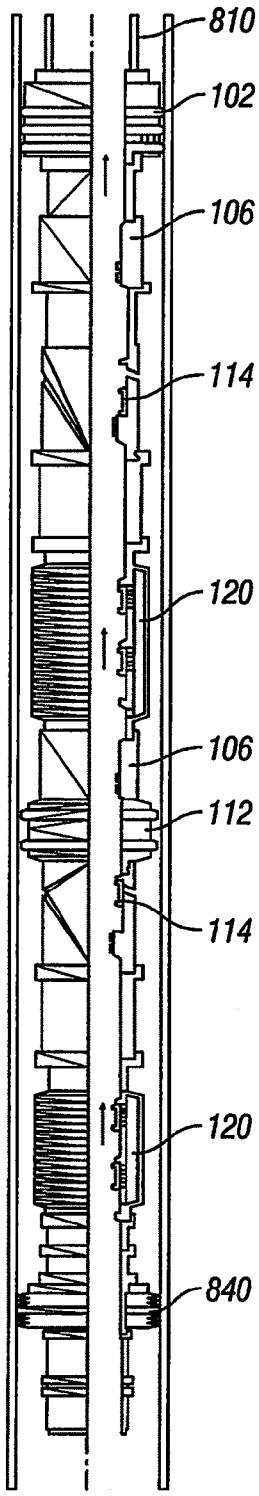


FIG. 19