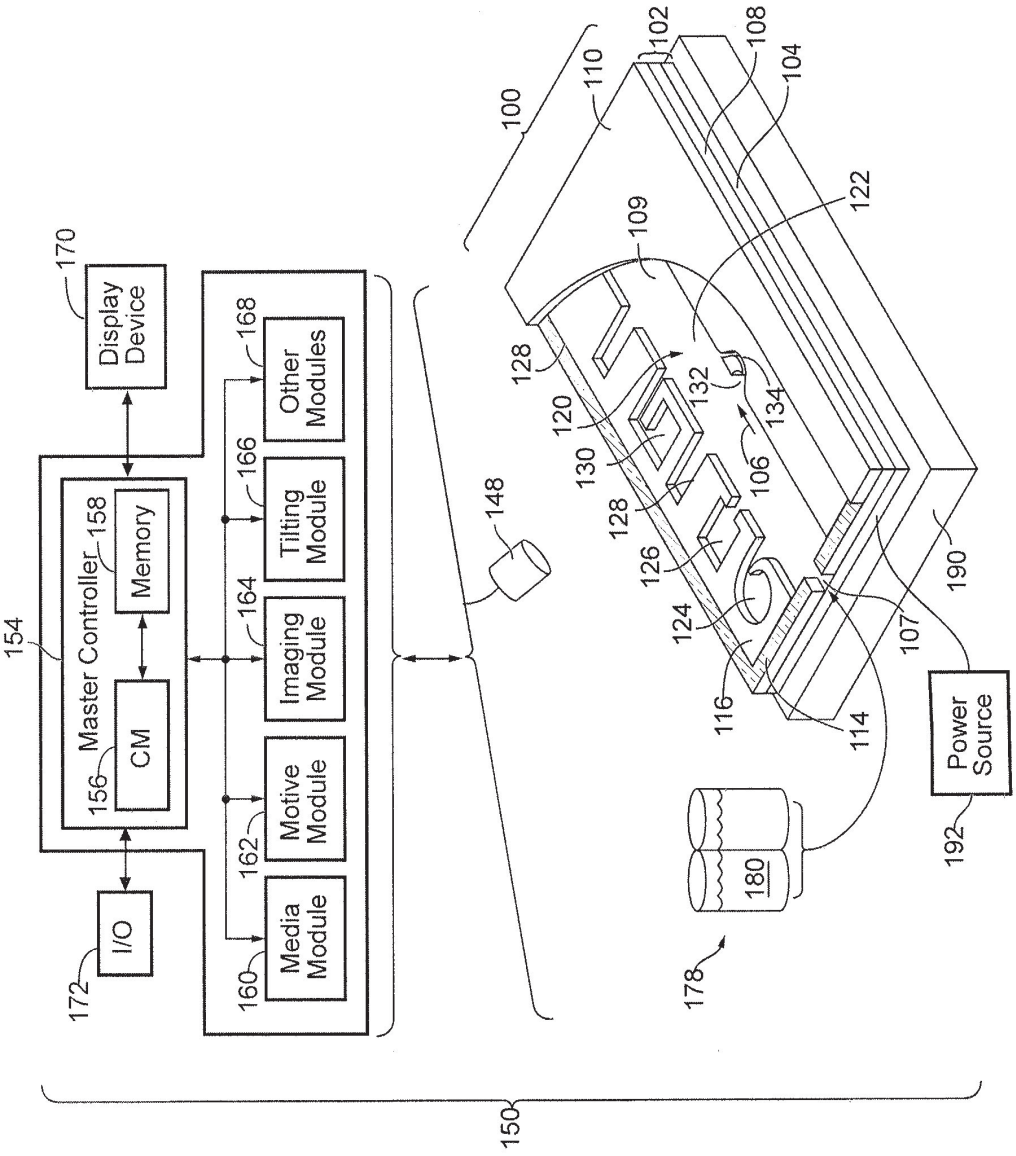
150
154
Master Controller
158
Memory
156
CM
I/O
172
170
Display Device
160
Media Module
162
Motive Module
164
Imaging Module
166
Tilting Module
168
Other Modules
148
100
110
102
108
104
122
109
128
120
130
128
126
124
116
114
132
134
106
107
190
180
178
192
Power Source

FIG. 1A

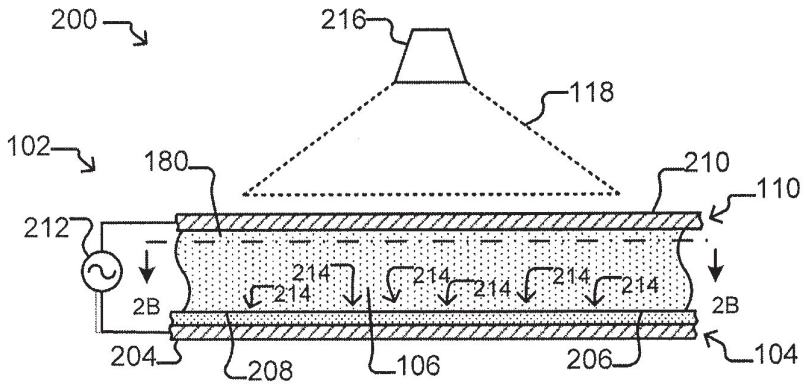
200
216
118
102
180
210
110
212
214
214
214
214
214
214
2B
2B
204
208
106
206
104

FIG. 1B

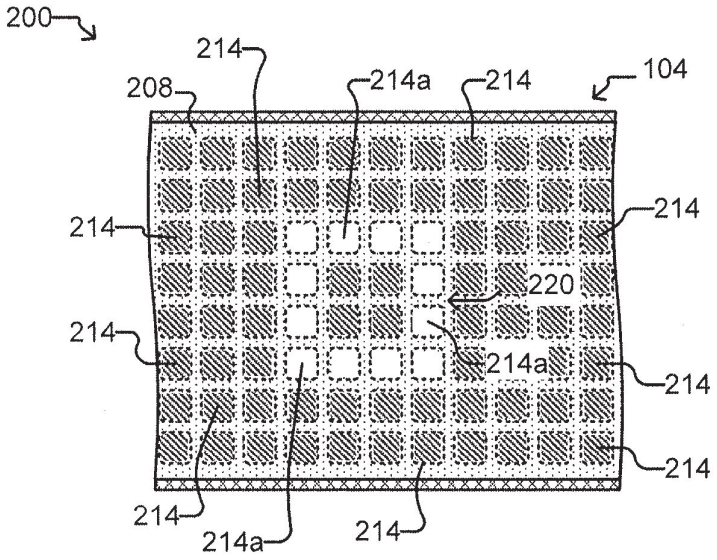
200
214
208
214a
214
104
214
214
220
214
214a
214
214
214
214a
214

FIG. 1C

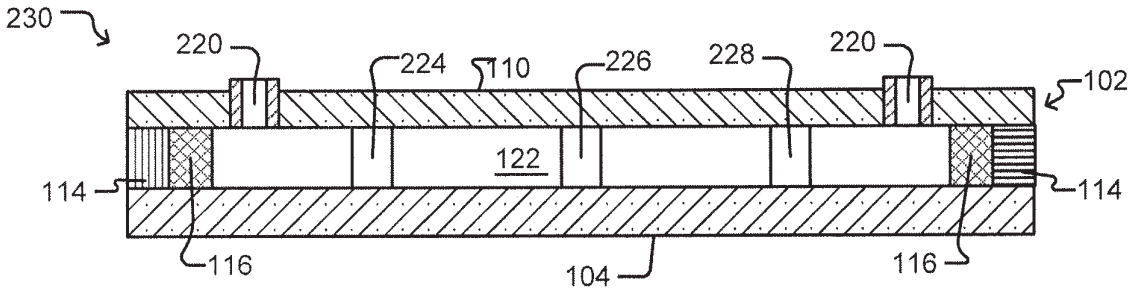
230
220
224
110
226
228
220
102
122
114
114
116
104
116

FIG. 2A

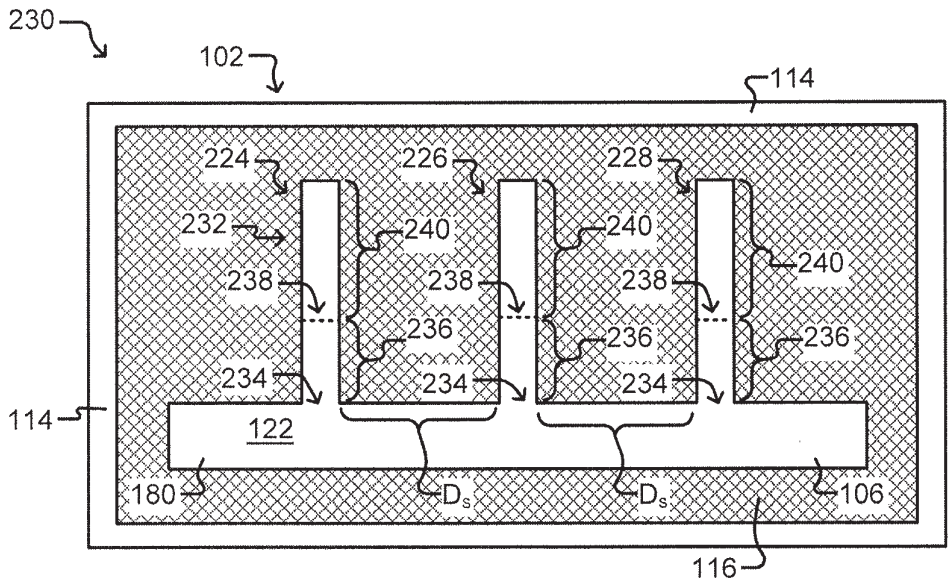
230
102
114
224
226
228
232
240
240
240
238
238
238
236
236
236
234
234
234
114
122
180
D_s
D_s
106
116

FIG. 2B

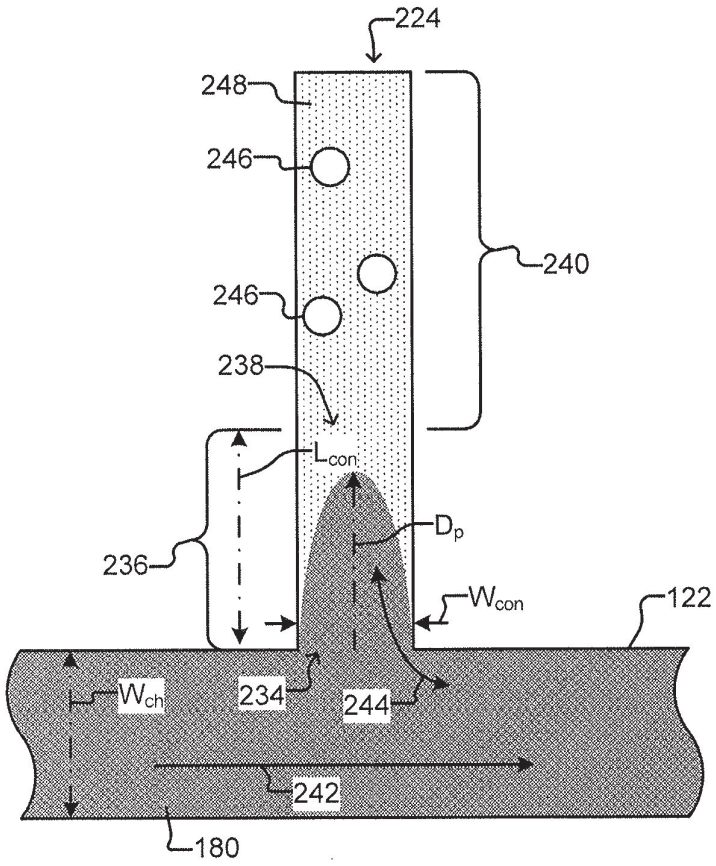

FIG. 2C

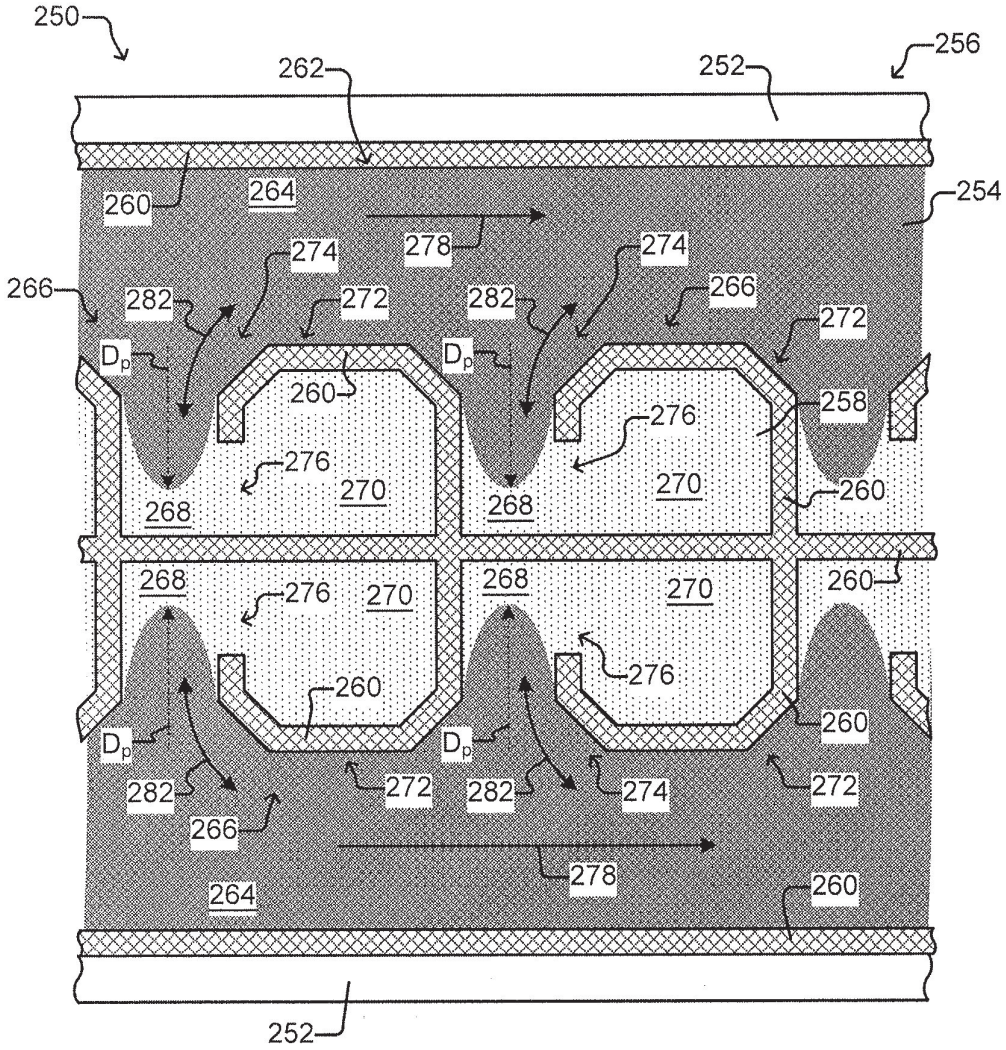
250
256
262
252
260
264
254
278
274
266
282
272
D_p
258
276
270
268

FIG. 2D

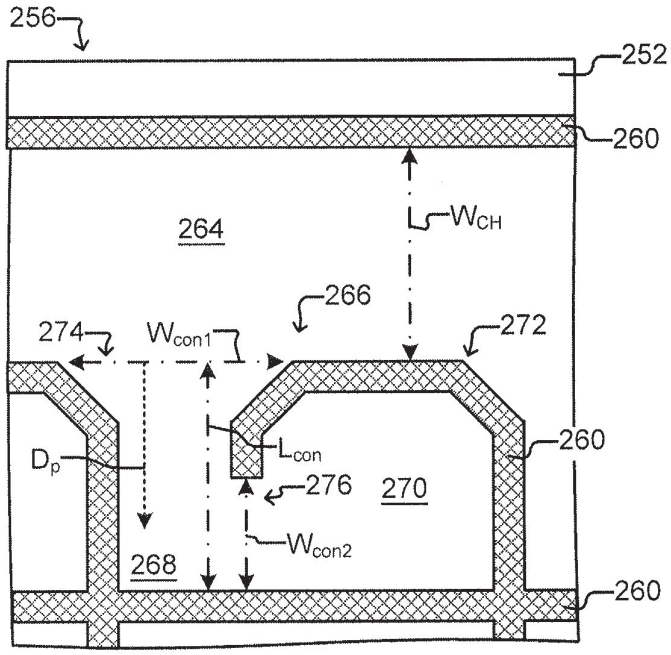
256
252
260
264
W_{CH}
266
274
W_{con1}
272
260
L_{con}
D_p
276
270
W_{con2}
268
260

FIG.2E

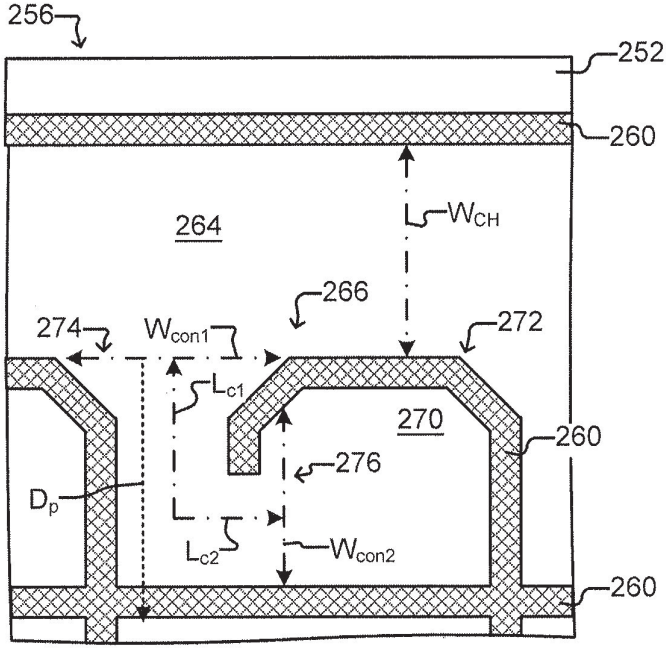
256
252
260
264
W_{CH}
266
274
W_{con1}
272
L_{c1}
270
260
276
D_p
L_{c2}
W_{con2}
260

FIG. 2F

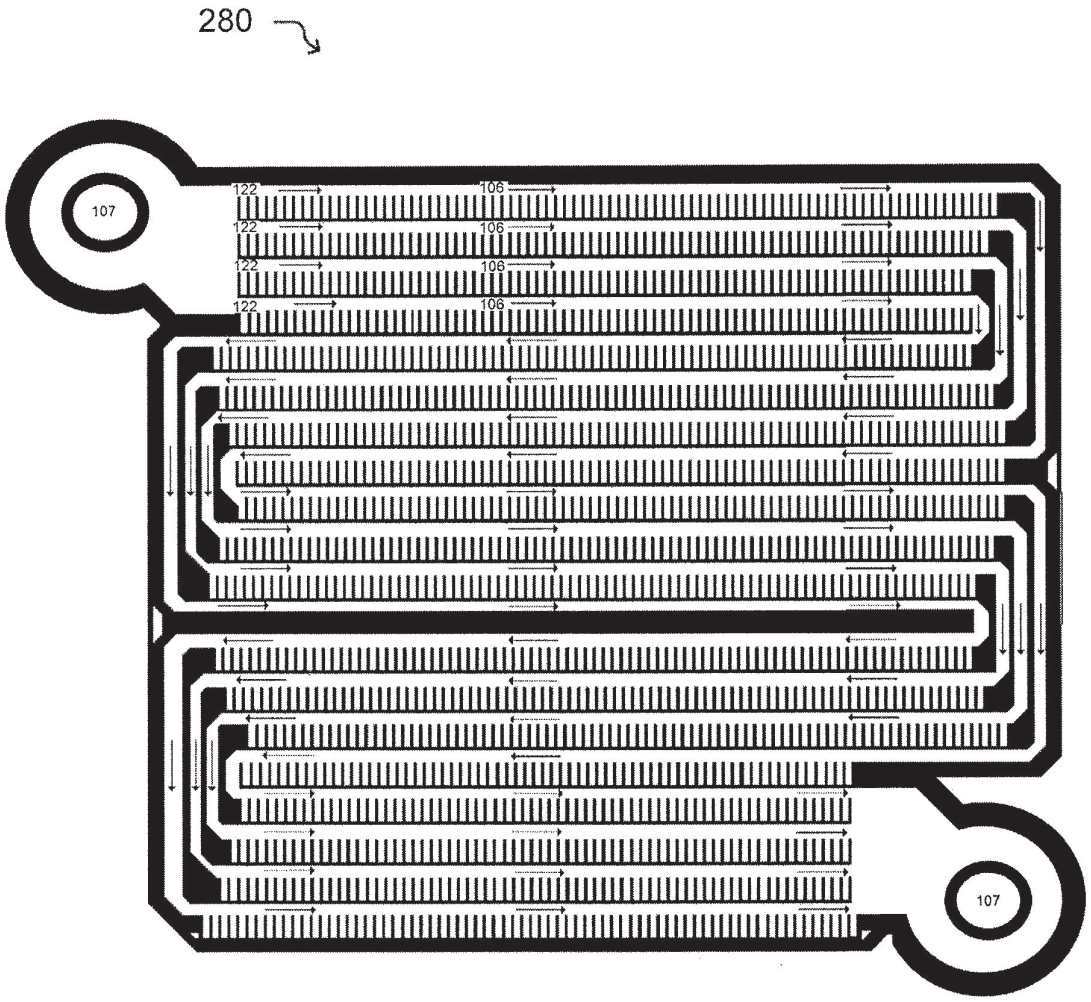

FIG. 2G

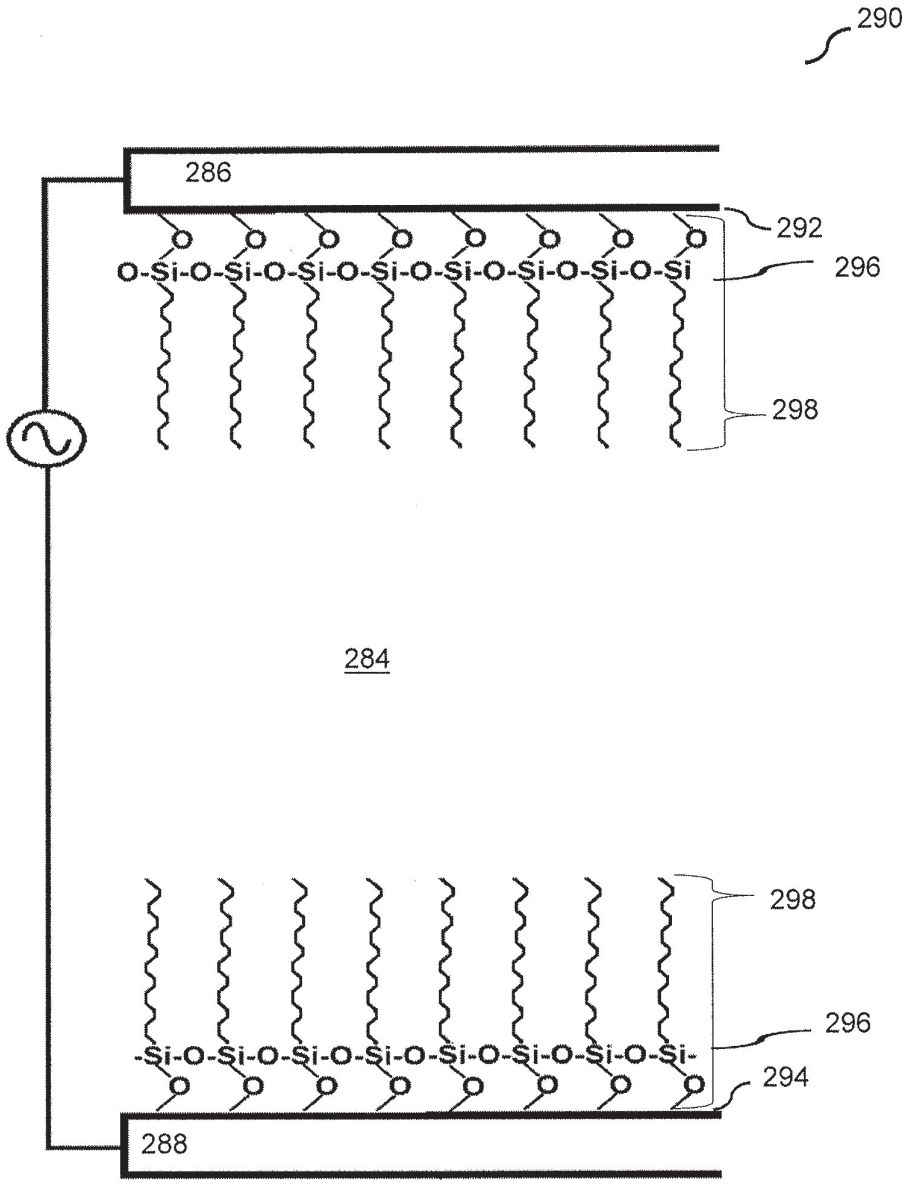
290
286
292
O-Si-O-Si-O-Si-O-Si-O-Si-O-Si-O-Si-O-Si
296
298
284
298
296
-Si-O-Si-O-Si-O-Si-O-Si-O-Si-O-Si-O-Si-
294
288

FIG. 2H

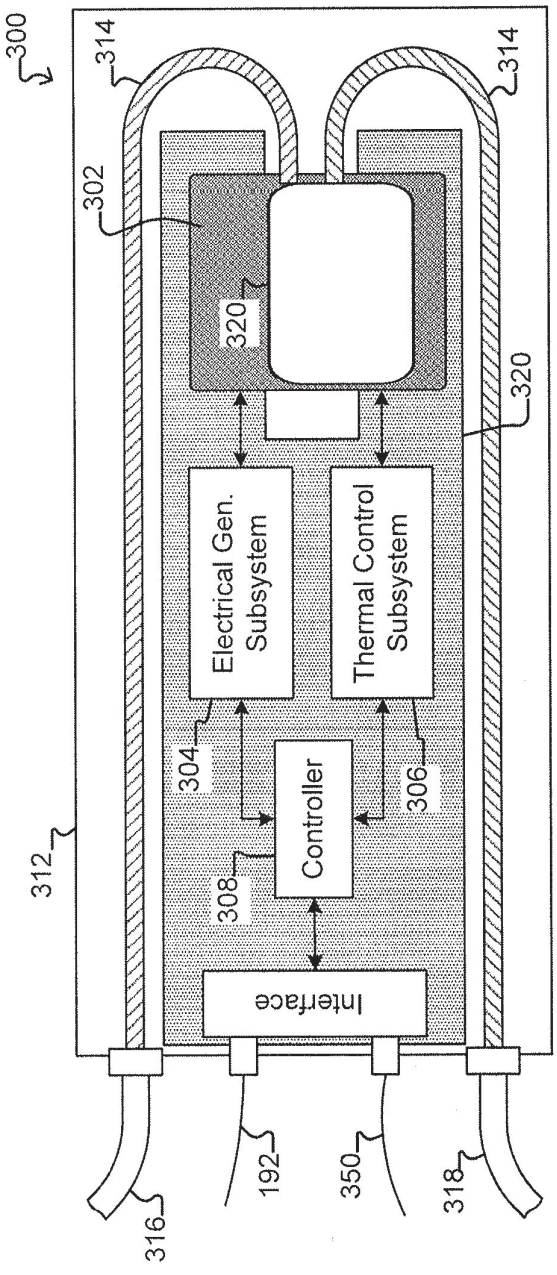
300
314
314
302
320
320
Electrical Gen. Subsystem
Thermal Control Subsystem
304
306
Controller
308
312
Interface
316
192
350
318

FIG. 3A

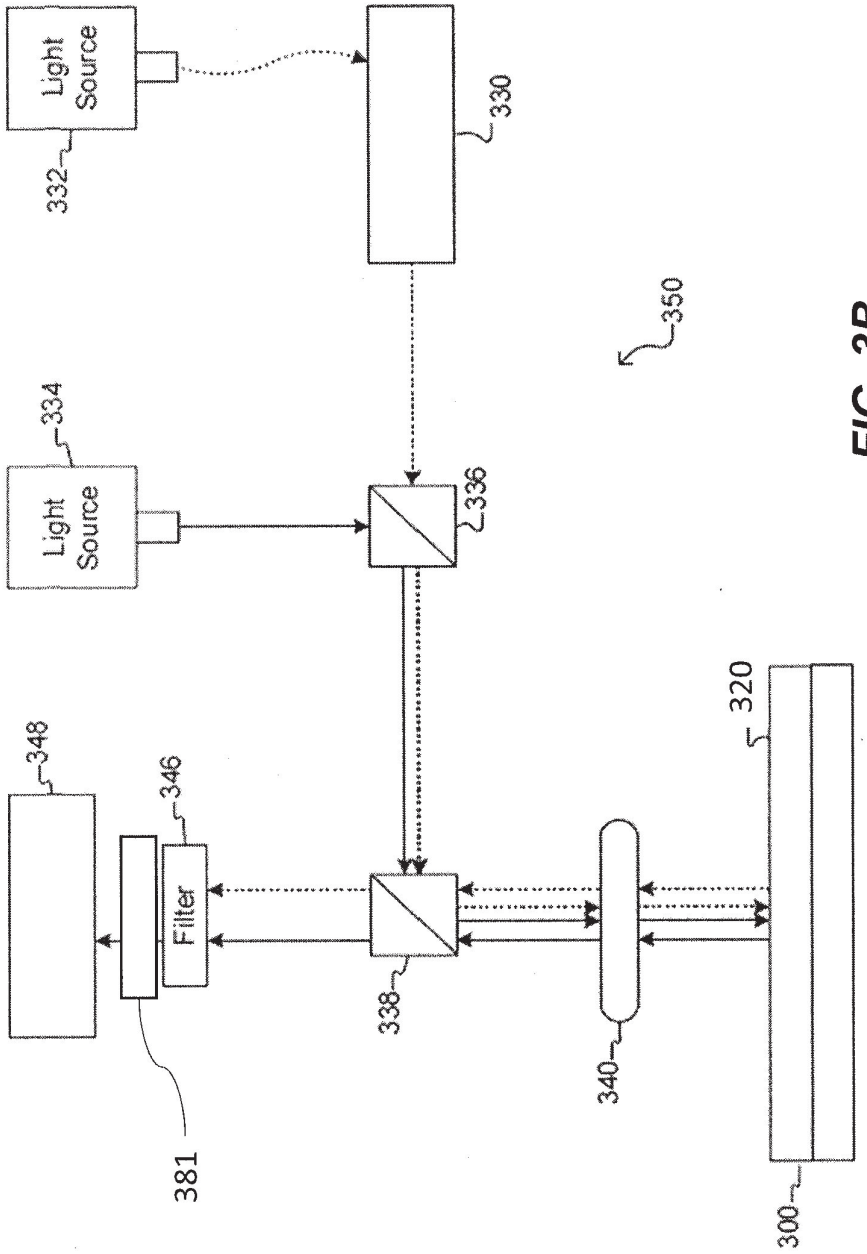
Light Source
332
330
350
Light Source
334
336
348
346
Filter
320
338
340
381
300

FIG. 3B

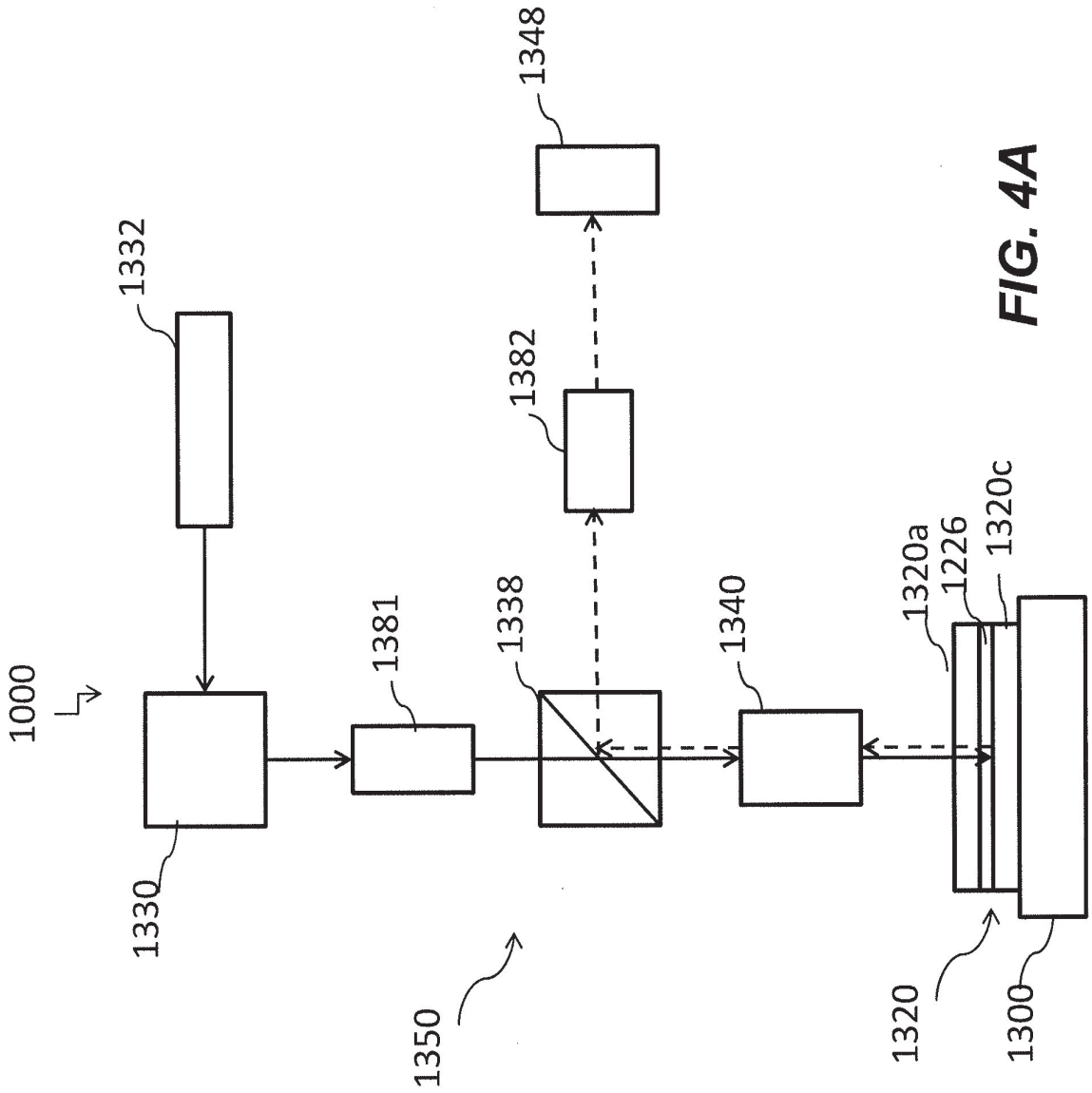
1000
1330
1332
1381
1338
1382
1348
1340
1320a
1226
1320c
1320
1300
1350

FIG. 4A

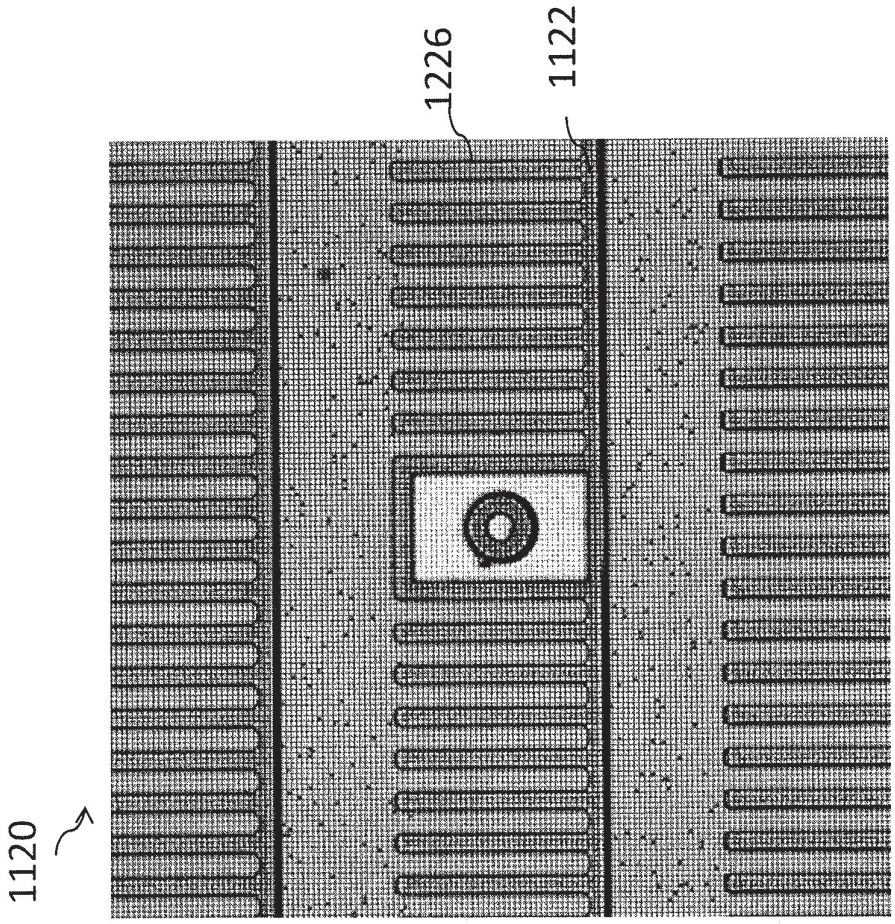

FIG. 4B

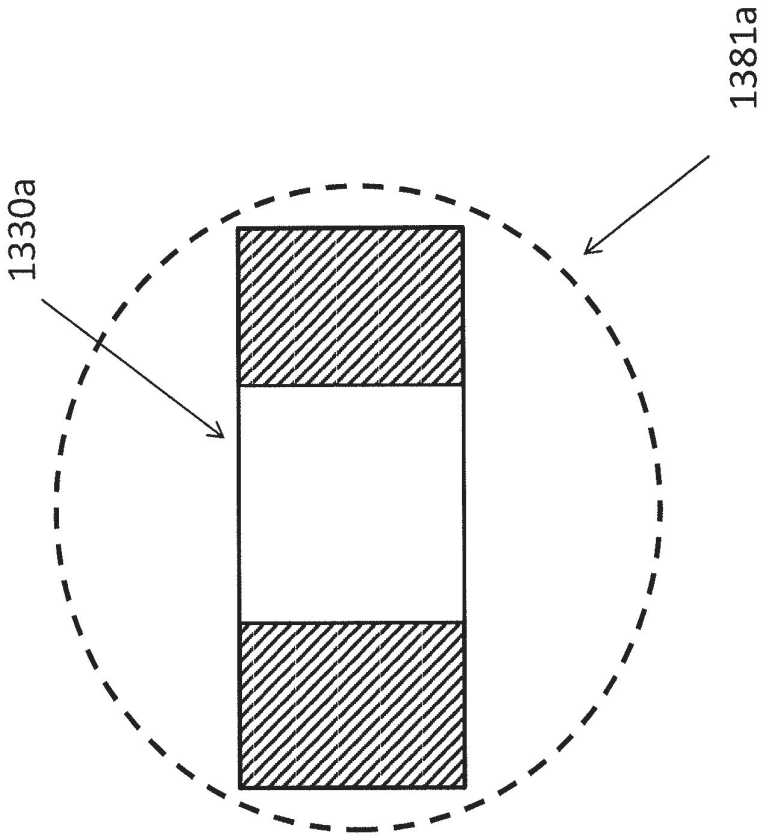

FIG. 4C

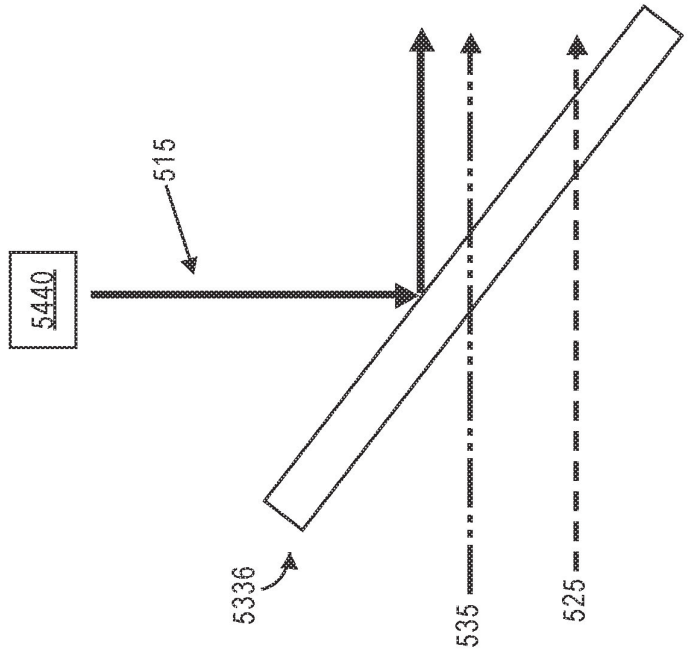
5440
515
5336
535
525

FIG. 5B

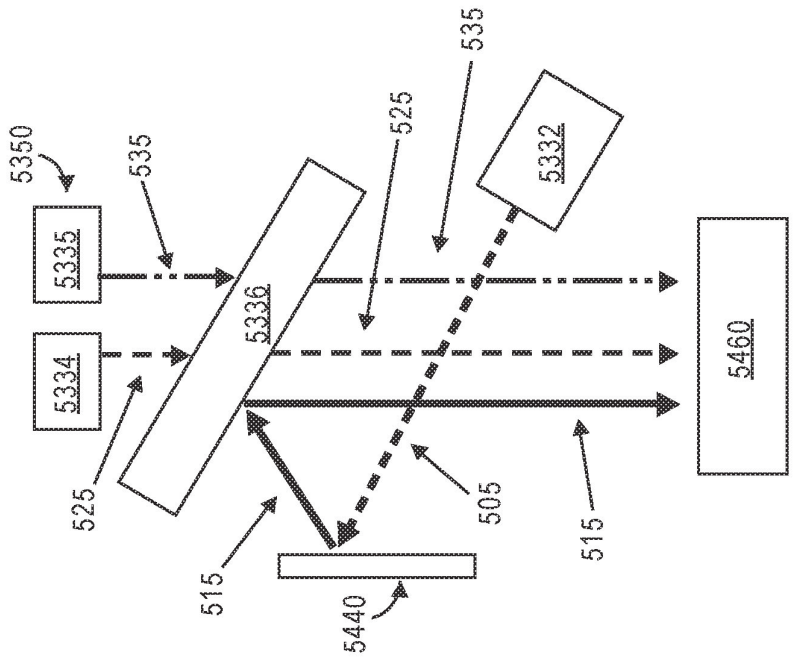
5350
5335
5334
535
525
5336
525
535
5332
5460
515
505
515
5440

FIG. 5A

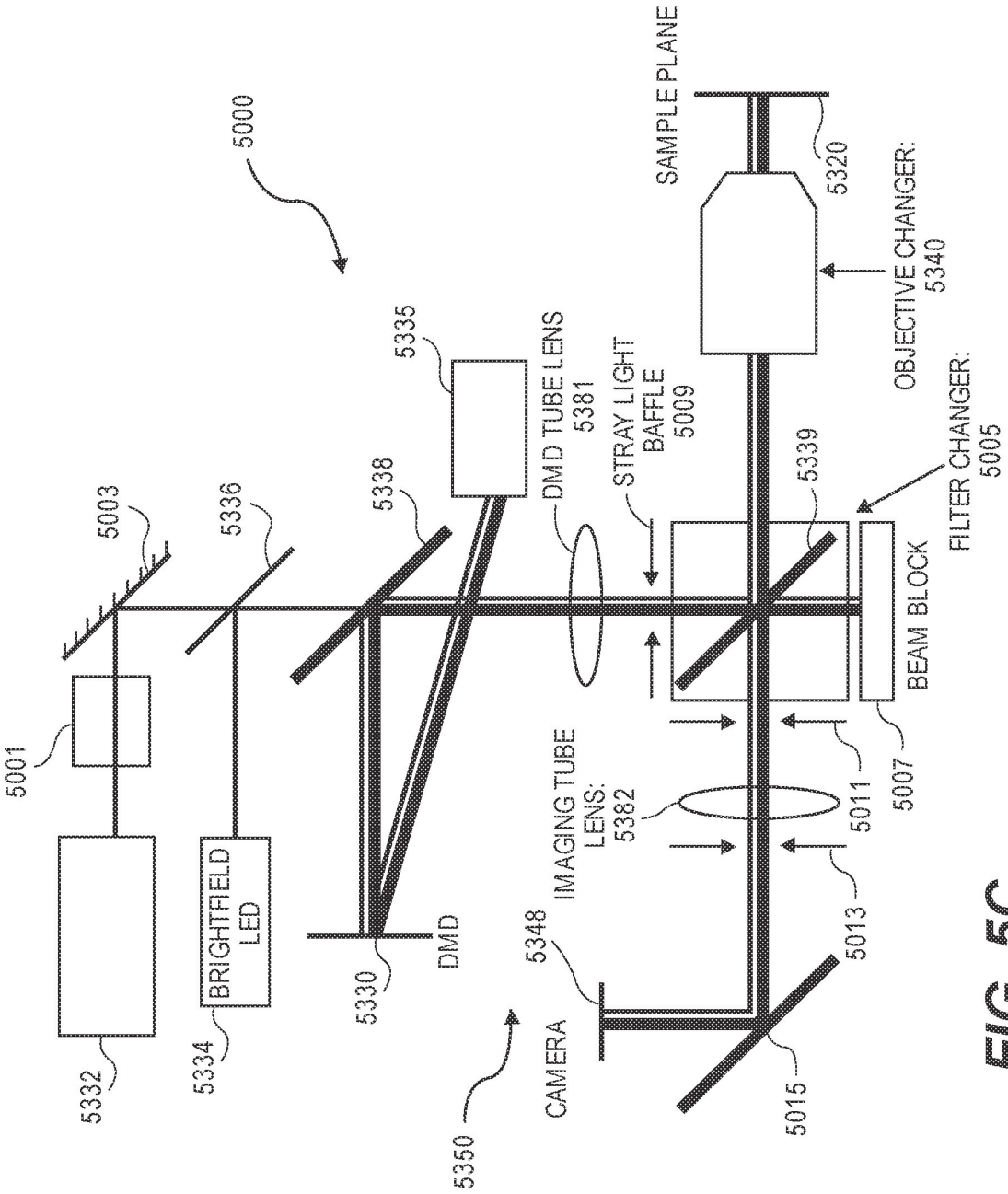
5000
SAMPLE PLANE
5320
OBJECTIVE CHANGER:
5340
FILTER CHANGER:
5005
5335
DMD TUBE LENS
5381
STRAY LIGHT
BAFFLE
5009
5339
BEAM BLOCK
5007
5011
5013
5015
5003
5336
5338
5001
5332
BRIGHTFIELD
LED
5334
5330
DMD
5348
IMAGING TUBE
LENS:
5382
CAMERA
5350

FIG. 5C

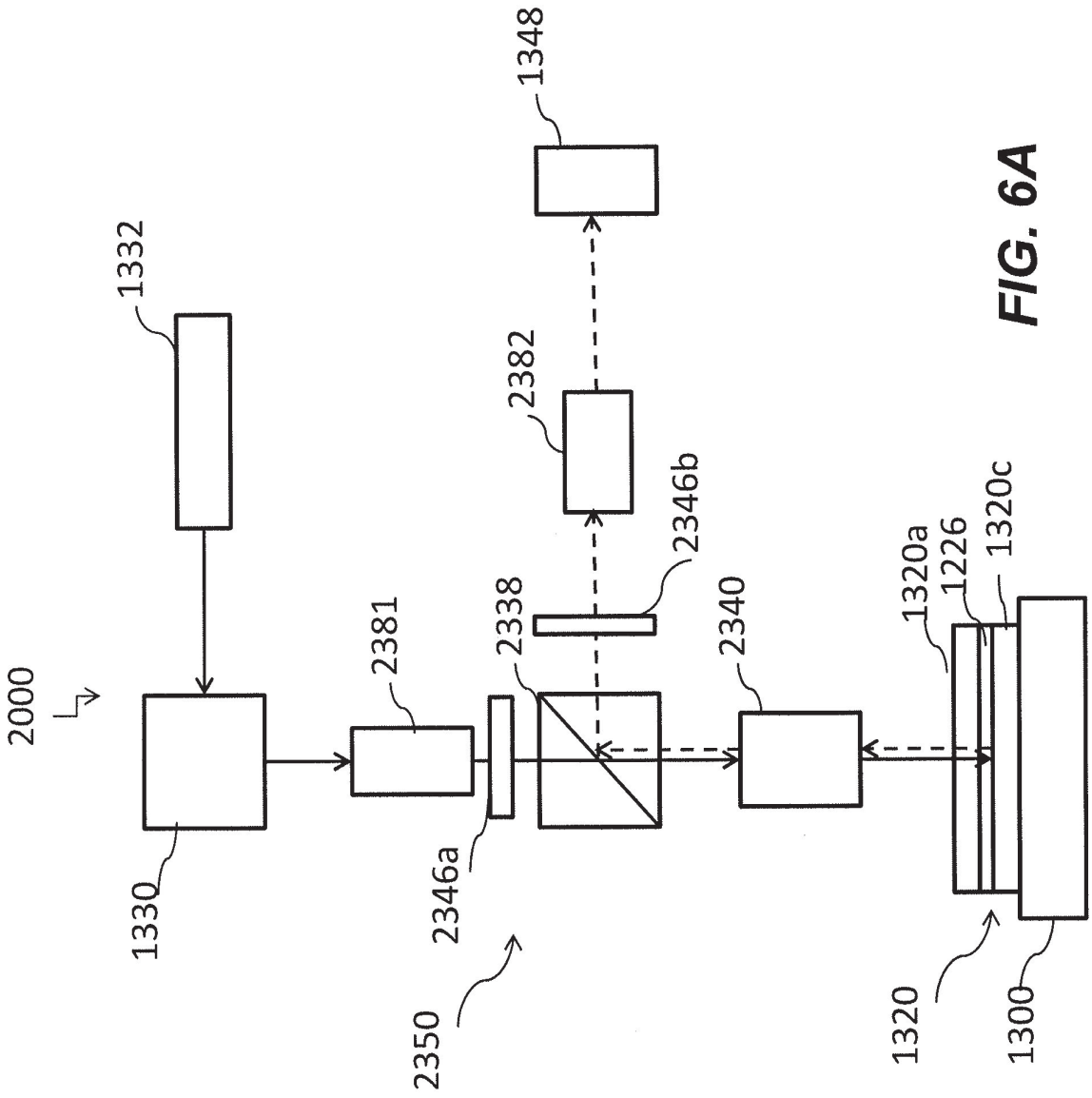
2000
1332
1330
2381
2346a
2350
2338
2346b
2382
1348
2340
1320a
1226
1320c
1320
1300

FIG. 6A

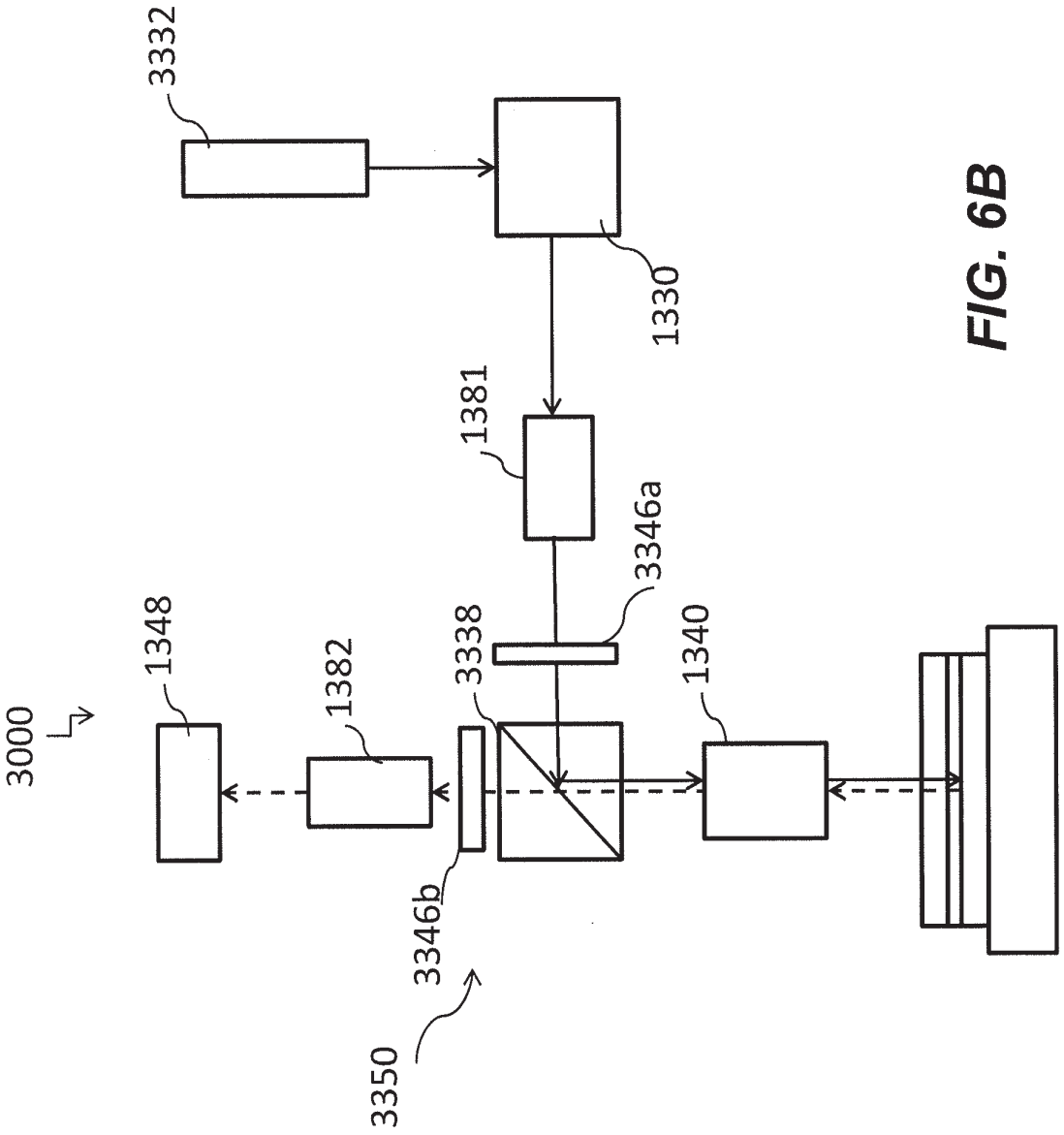

FIG. 6B

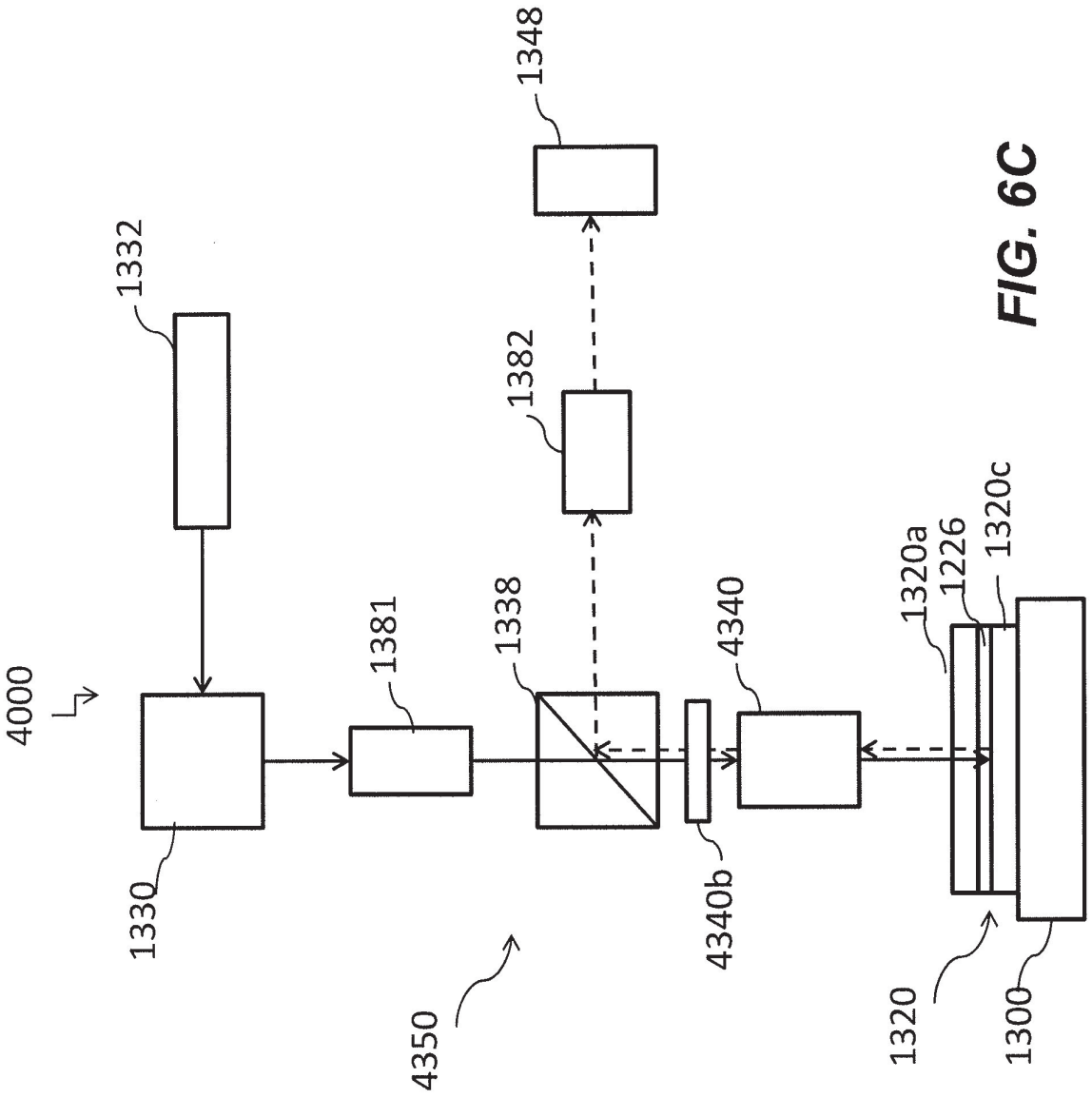
4000
1330
1332
1381
1338
1348
1382
4340
4340b
1320a
1226
1320c
1320
1300
4350

FIG. 6C

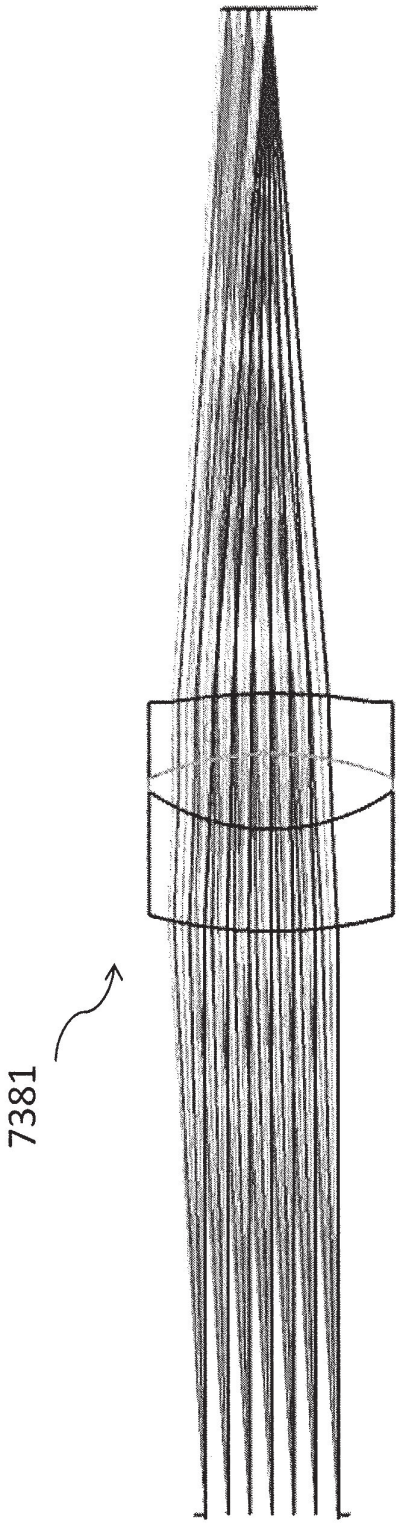

FIG. 7A

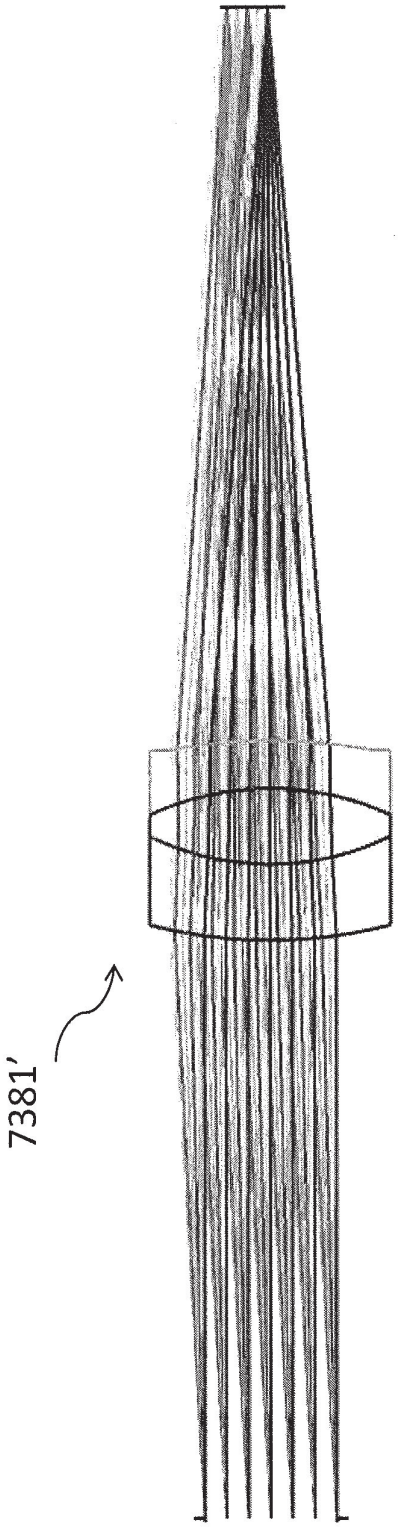

FIG. 7B

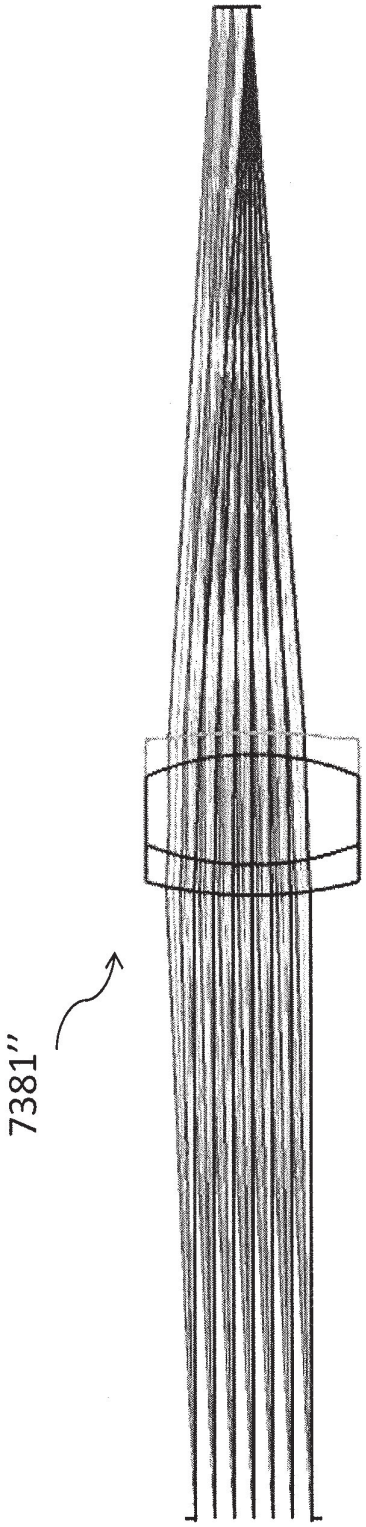

FIG. 7C

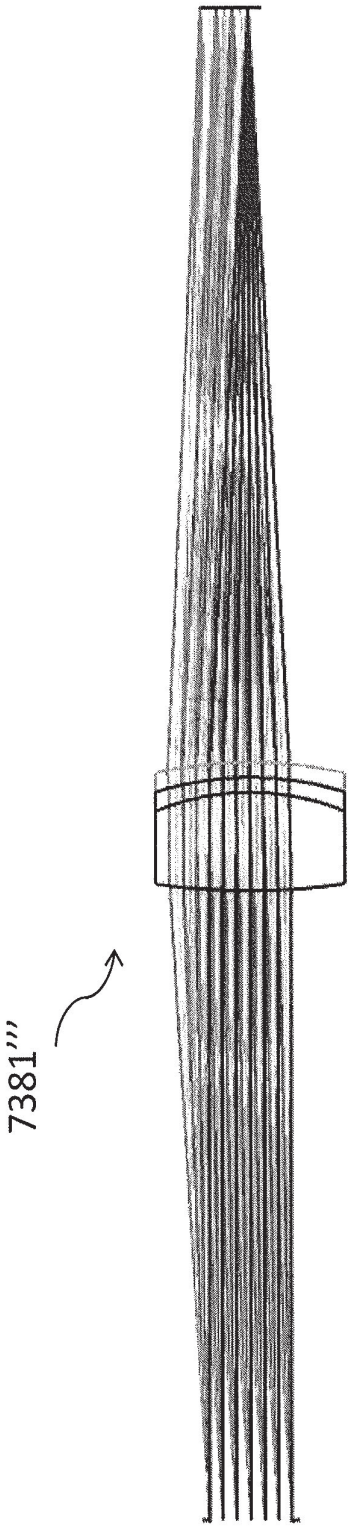

FIG. 7D

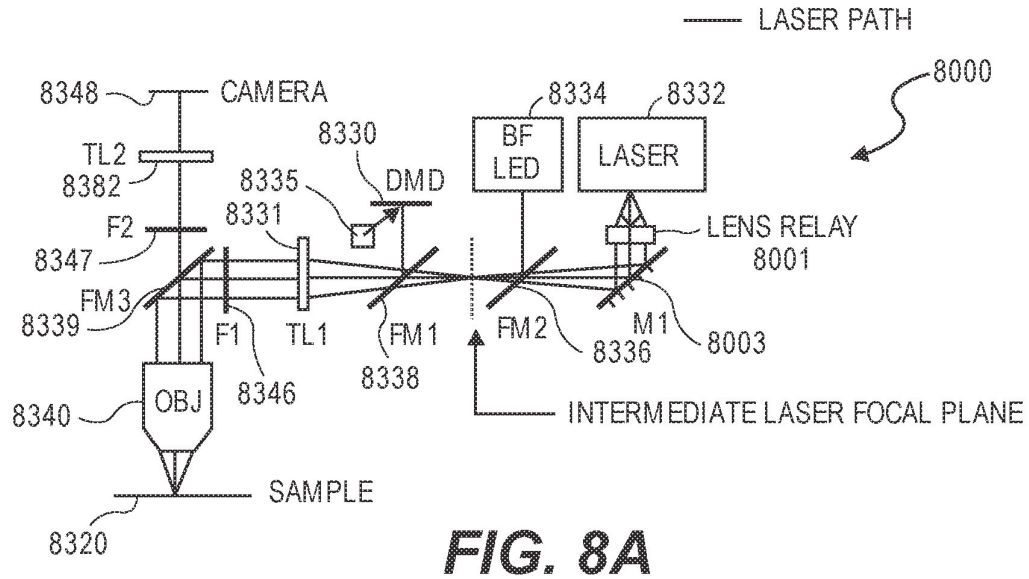
LASER PATH
8000
8348
CAMERA
8334
8332
8330
BF LED
LASER
TL2
8382
8335
DMD
8331
F2
8347
LENS RELAY
8001
FM3
8339
F1
TL1
FM1
FM2
M1
8336
8003
8338
8346
OBJ
8340
INTERMEDIATE LASER FOCAL PLANE
SAMPLE
8320

FIG. 8A

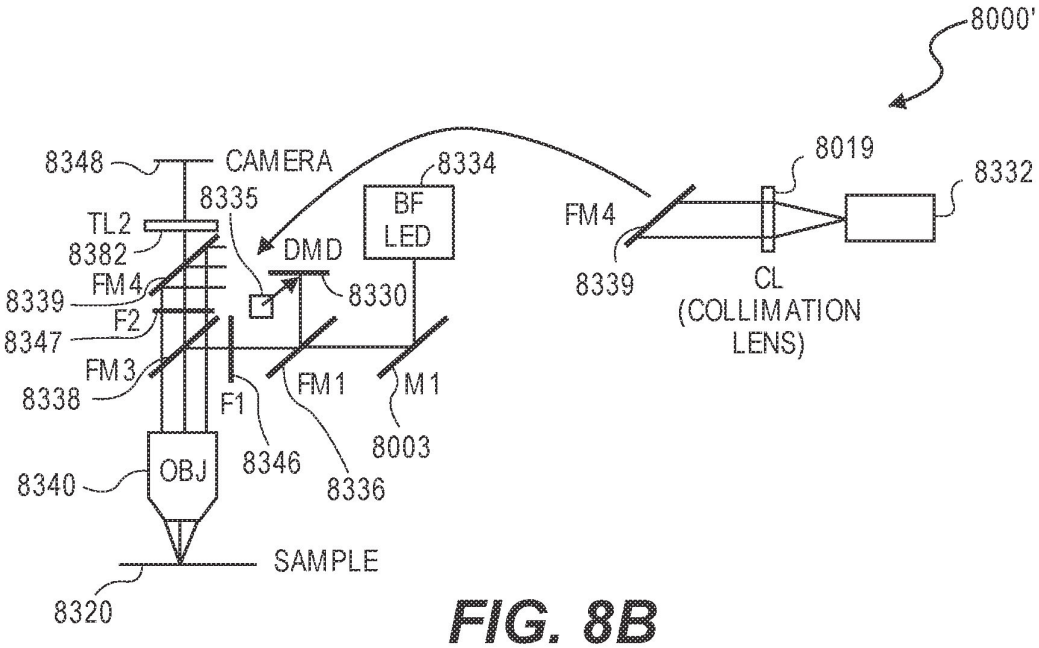
8000'
8348
CAMERA
8334
8019
8332
8335
BF LED
TL2
8382
DMD
FM4
8339
8330
F2
8347
FM3
8338
F1
FM1
M1
8003
8346
8336
OBJ
8340
CL
(COLLIMATION LENS)
SAMPLE
8320

FIG. 8B

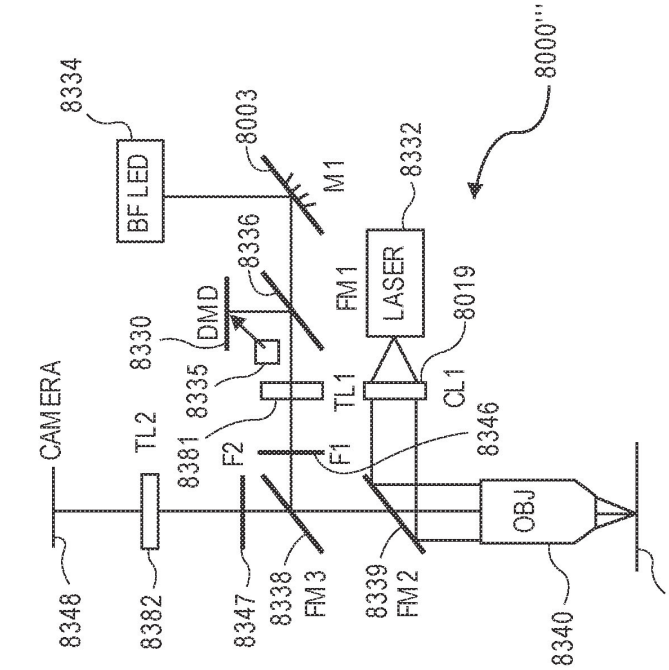
8000'''
8334
BF LED
8003
M1
8332
LASER
8019
FM1
8336
DMD
8330
8335
TL1
CL1
CAMERA
TL2
8381
F2
F1
8346
OBJ
8348
8382
8347
8338
FM3
8339
FM2
8340
8320

FIG. 8D

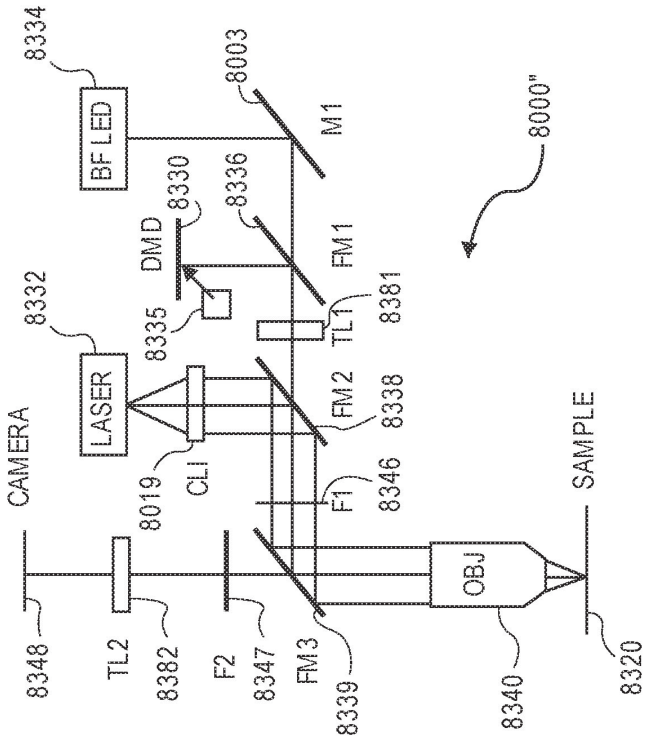
8000"
8334
BF LED
8003
M1
8330
8336
DMD
FM1
8332
8335
TL1
8381
LASER
FM2
8338
CAMERA
8019
CLI
F1
8346
SAMPLE
OBJ
8348
TL2
8382
F2
8347
FM3
8339
8340
8320

FIG. 8C

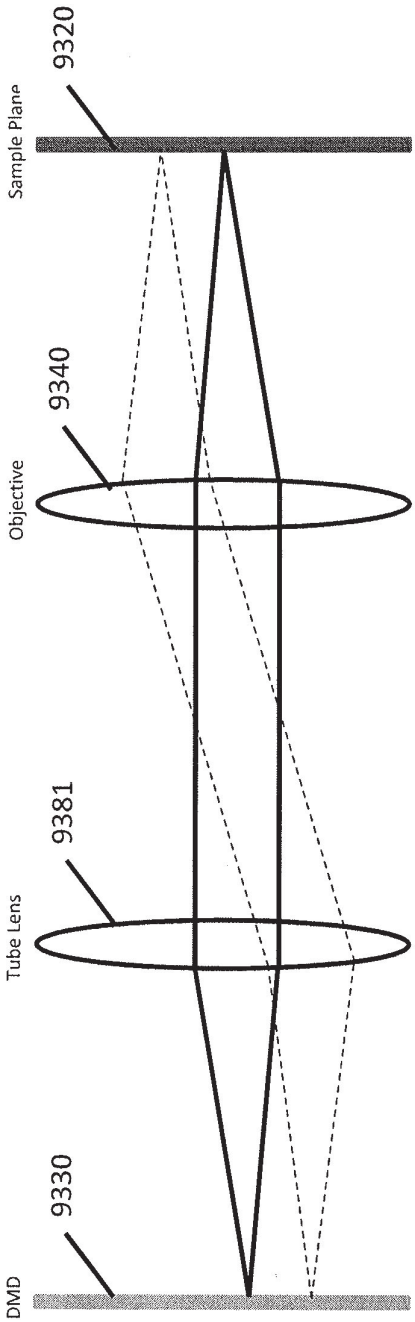

FIG. 9A

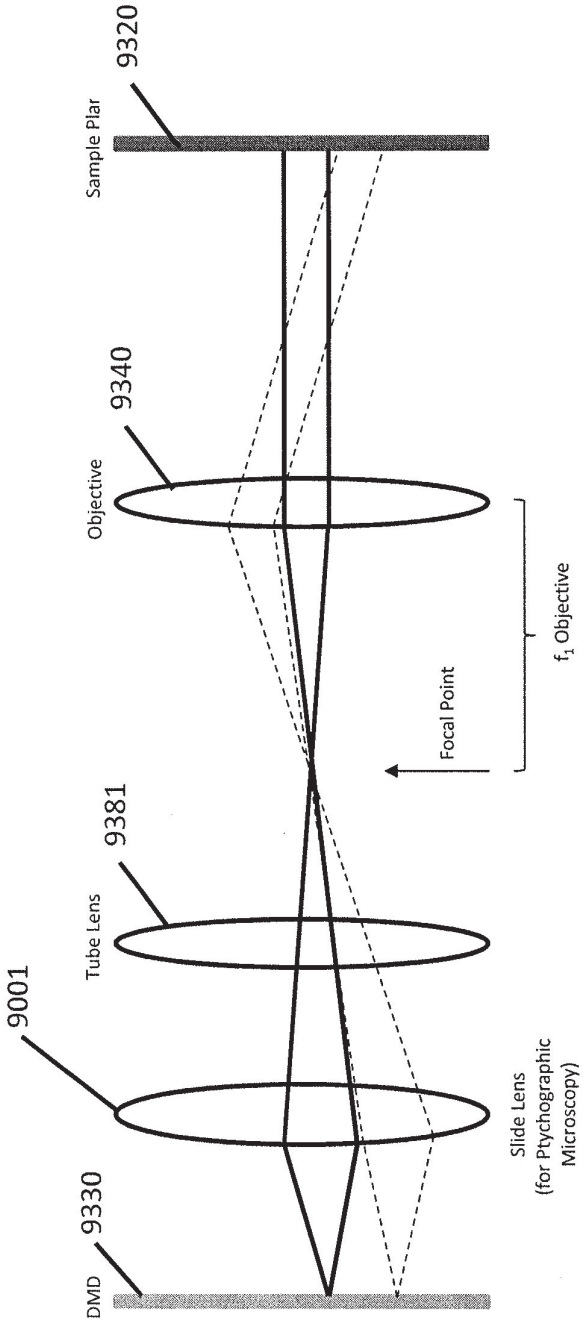
9320
Sample Plar
9340
Objective
Focal Point
f_1 Objective
9381
Tube Lens
9001
Slide Lens
(for Ptychographic
Microscopy)
9330
DMD

FIG. 9B