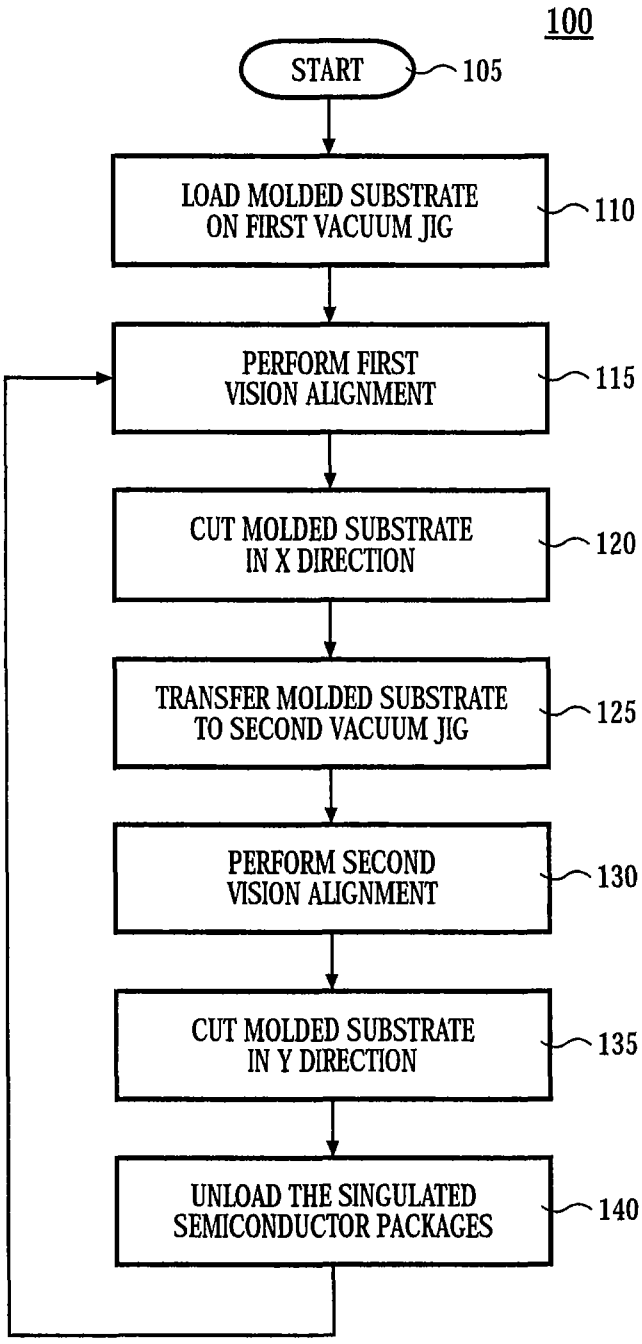


FIG. 1 (PRIOR ART)

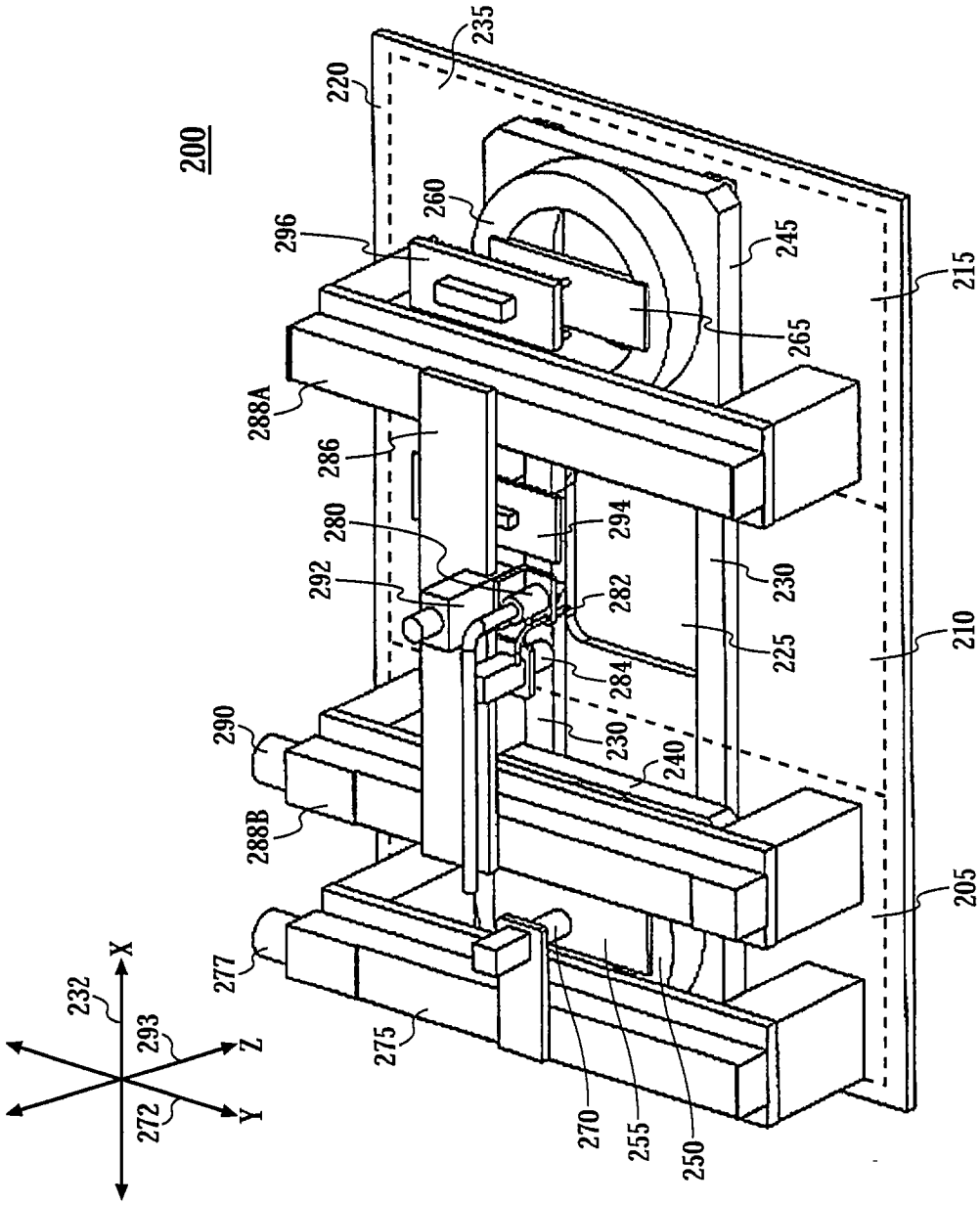

200
235
220
260
296
245
215
265
288A
286
280
294
292
282
230
225
210
284
290
230
240
288B
205
277
275
270
255
250
232
293
272
X
Z
Y

FIG. 2A

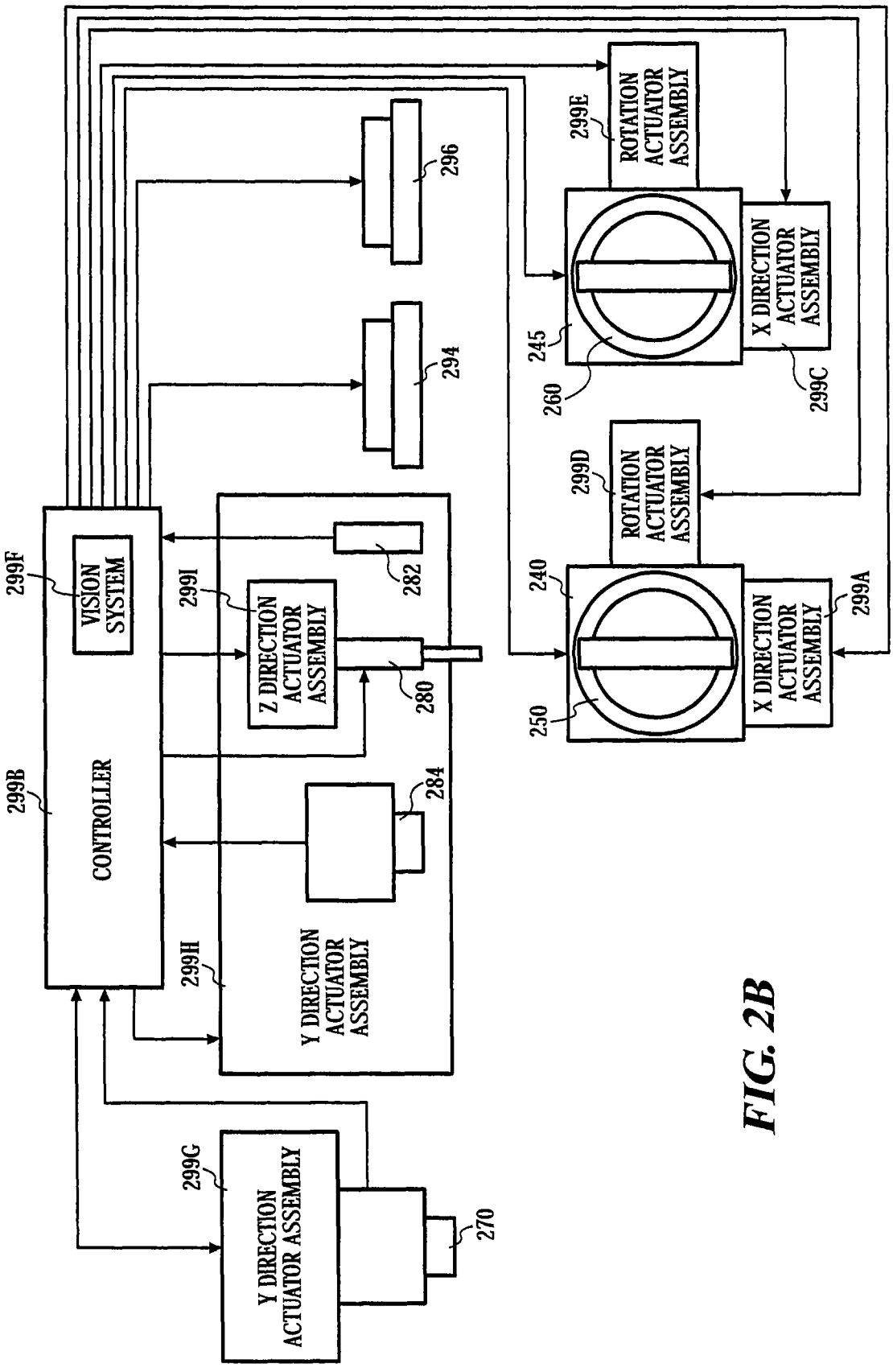

299B
CONTROLLER
299F
VISION SYSTEM
299I
Z DIRECTION ACTUATOR ASSEMBLY
299H
Y DIRECTION ACTUATOR ASSEMBLY
299G
Y DIRECTION ACTUATOR ASSEMBLY
299E
ROTATION ACTUATOR ASSEMBLY
299D
ROTATION ACTUATOR ASSEMBLY
299C
X DIRECTION ACTUATOR ASSEMBLY
299A
X DIRECTION ACTUATOR ASSEMBLY
296
294
282
280
284
270
245
260
240
250

FIG. 2B

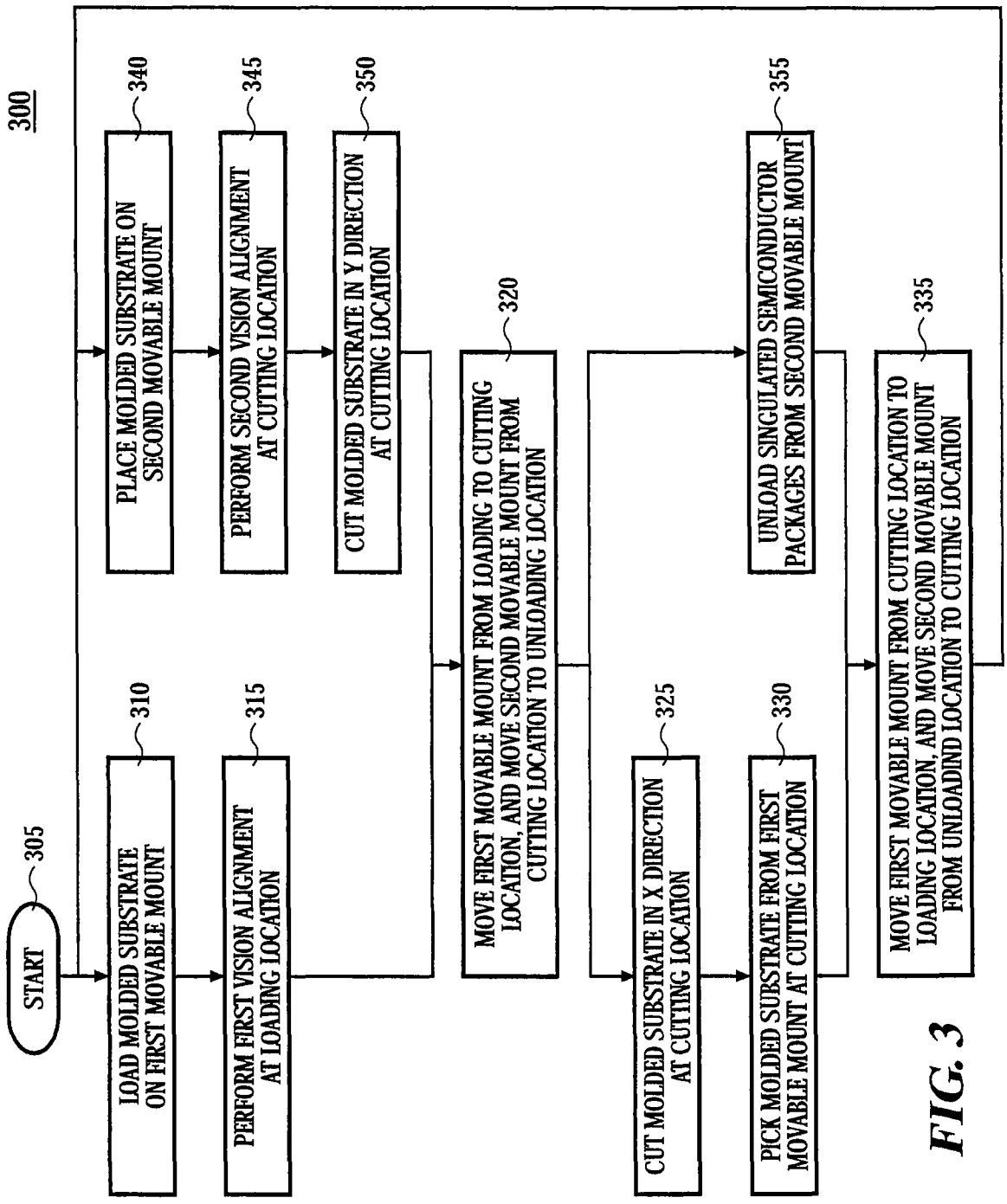

300
START
305
LOAD MOLDED SUBSTRATE ON FIRST MOVABLE MOUNT
310
PERFORM FIRST VISION ALIGNMENT AT LOADING LOCATION
315
PLACE MOLDED SUBSTRATE ON SECOND MOVABLE MOUNT
340
PERFORM SECOND VISION ALIGNMENT AT CUTTING LOCATION
345
CUT MOLDED SUBSTRATE IN Y DIRECTION AT CUTTING LOCATION
350
MOVE FIRST MOVABLE MOUNT FROM LOADING TO CUTTING LOCATION, AND MOVE SECOND MOVABLE MOUNT FROM CUTTING LOCATION TO UNLOADING LOCATION
320
CUT MOLDED SUBSTRATE IN X DIRECTION AT CUTTING LOCATION
325
PICK MOLDED SUBSTRATE FROM FIRST MOVABLE MOUNT AT CUTTING LOCATION
330
UNLOAD SINGULATED SEMICONDUCTOR PACKAGES FROM SECOND MOVABLE MOUNT
355
MOVE FIRST MOVABLE MOUNT FROM CUTTING LOCATION TO LOADING LOCATION, AND MOVE SECOND MOVABLE MOUNT FROM UNLOADIND LOCATION TO CUTTING LOCATION
335

FIG. 3

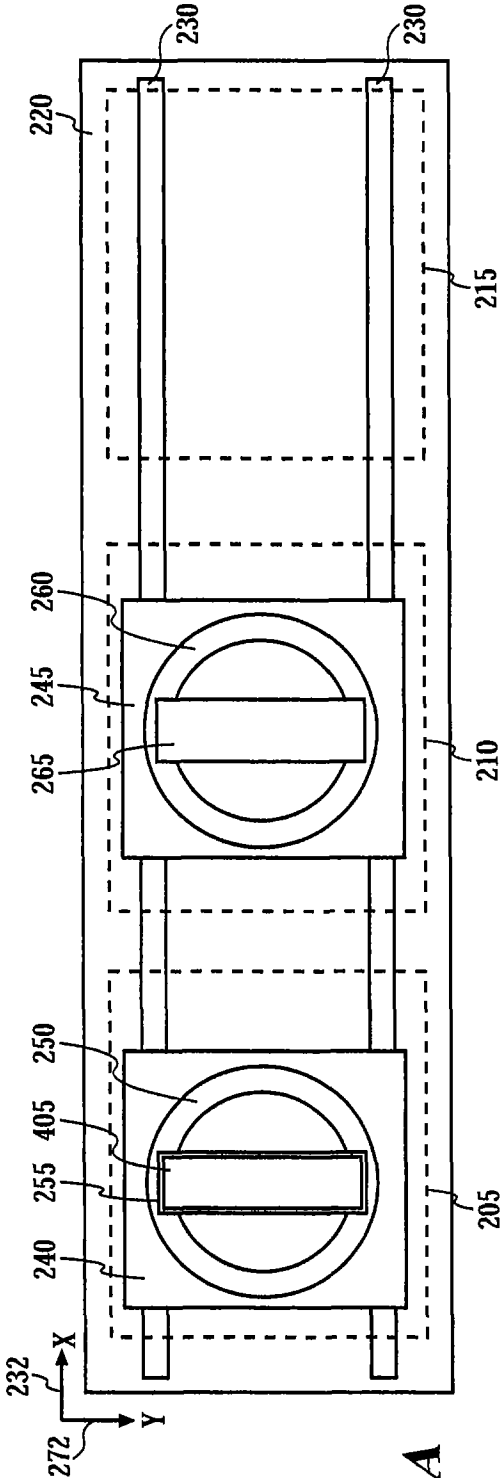

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230
220
215
260
245
265
210
250
405
255
240
205
232
X
Y
272

FIG. 4A

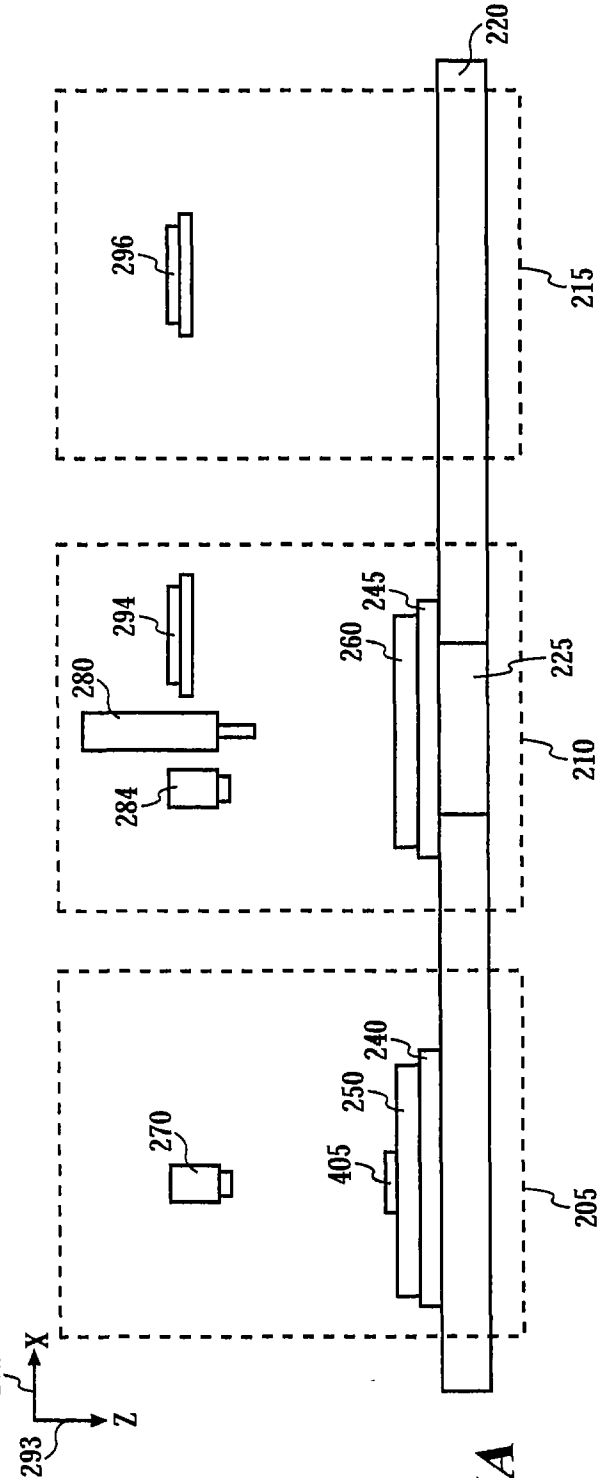

220
296
215
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280
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260
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405
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232
X
Z
293

FIG. 5A

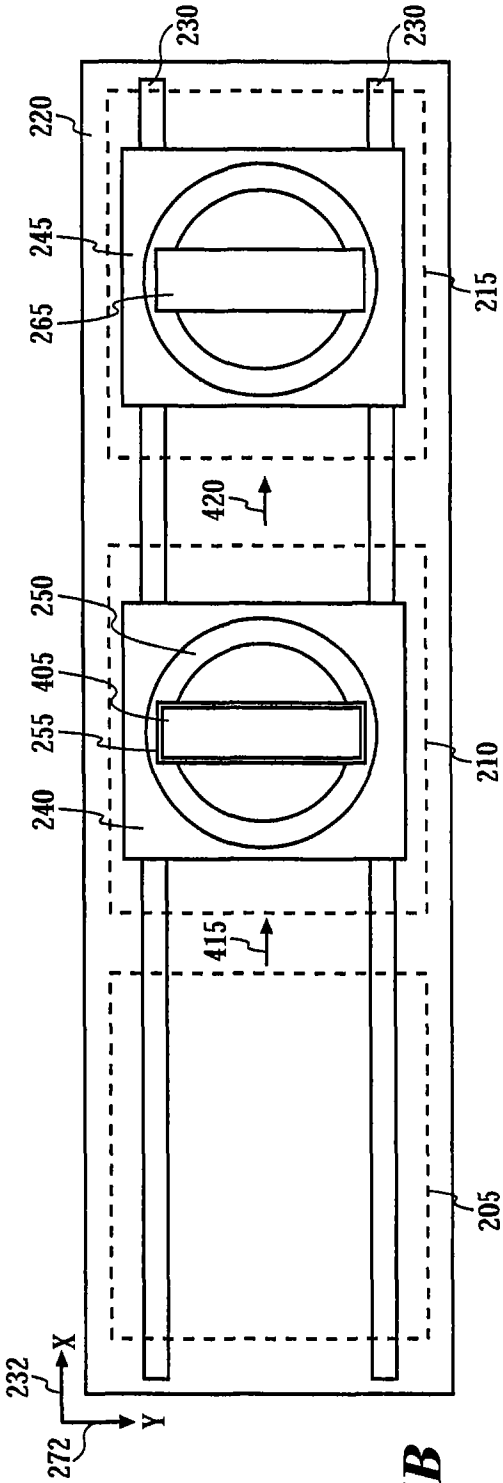

230
230
220
245
265
215
420
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210
415
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232
X
Y
272

FIG. 4B

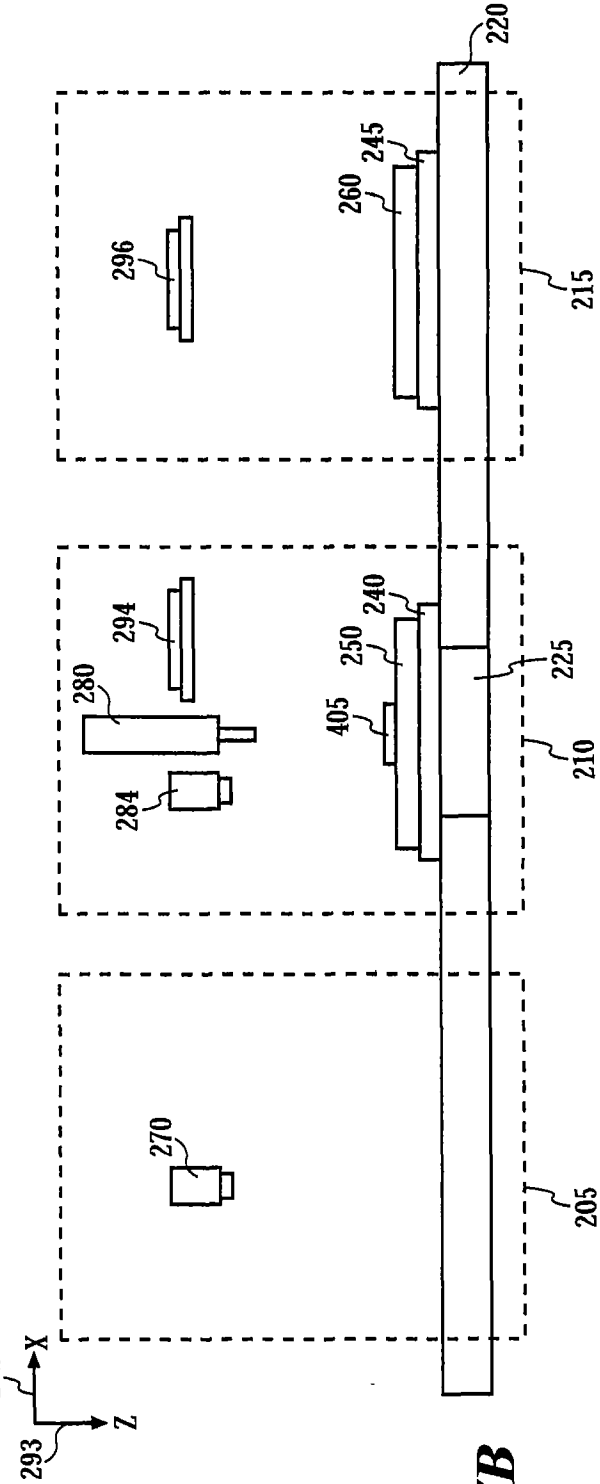

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245
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215
294
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X
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293

FIG. 5B

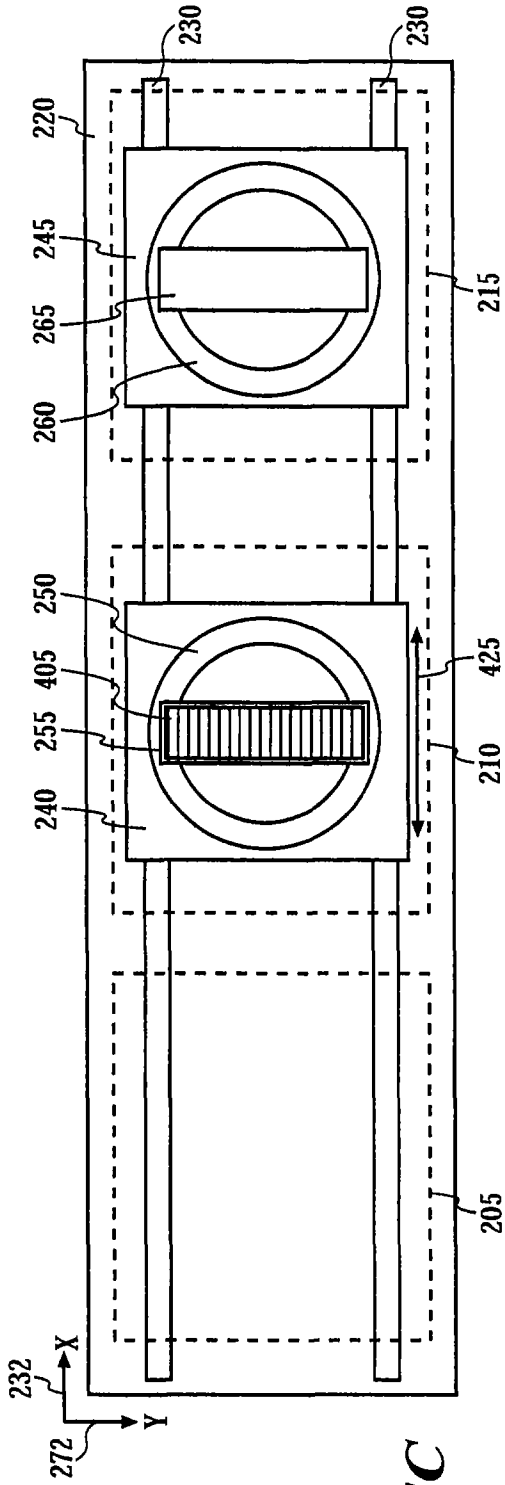

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232
X
Y
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FIG. 4C

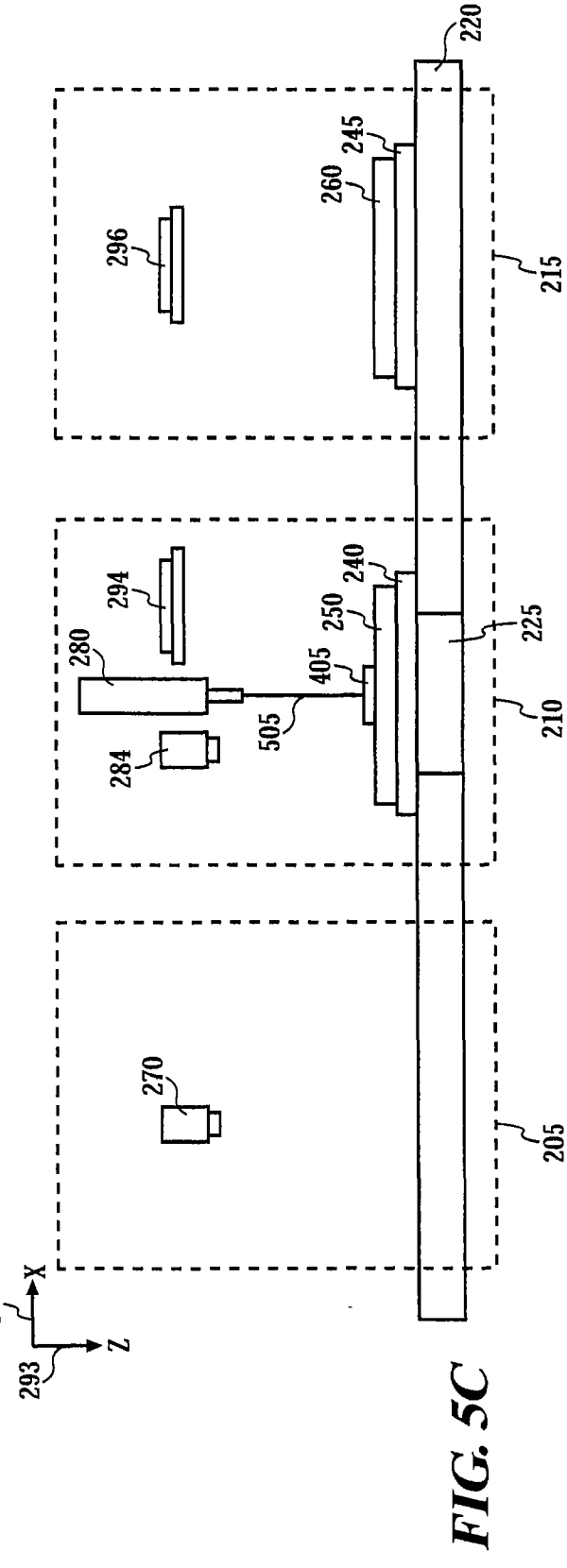

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FIG. 5C

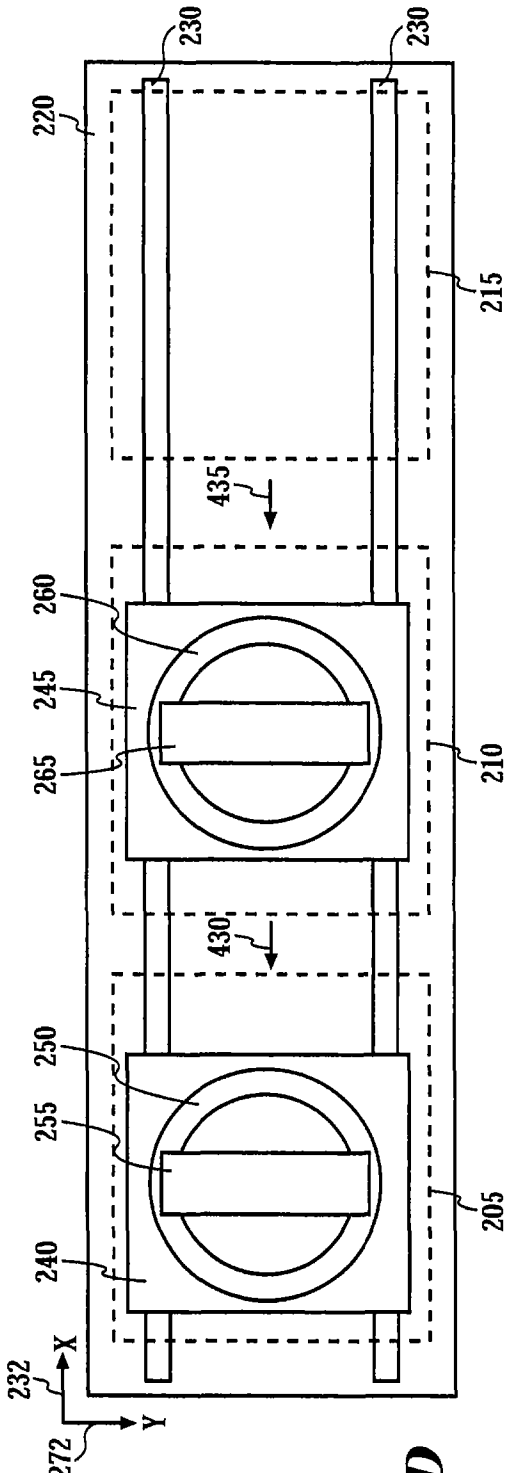

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FIG. 4D

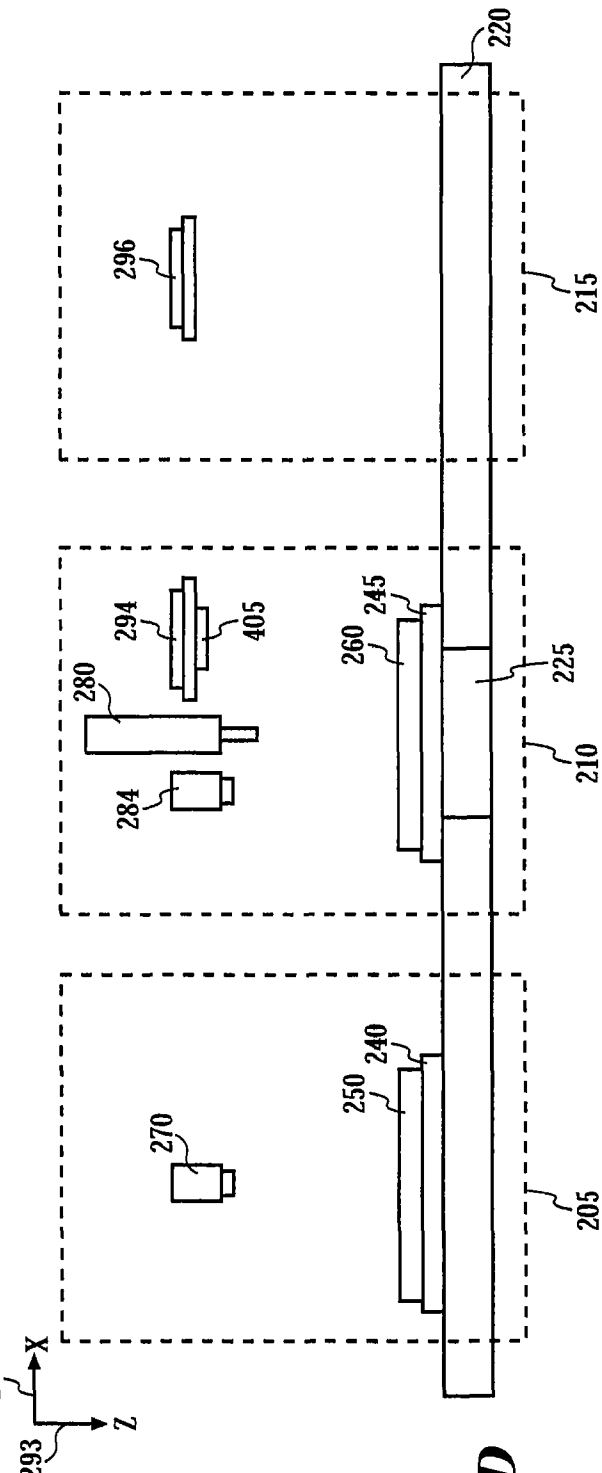

220
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FIG. 5D

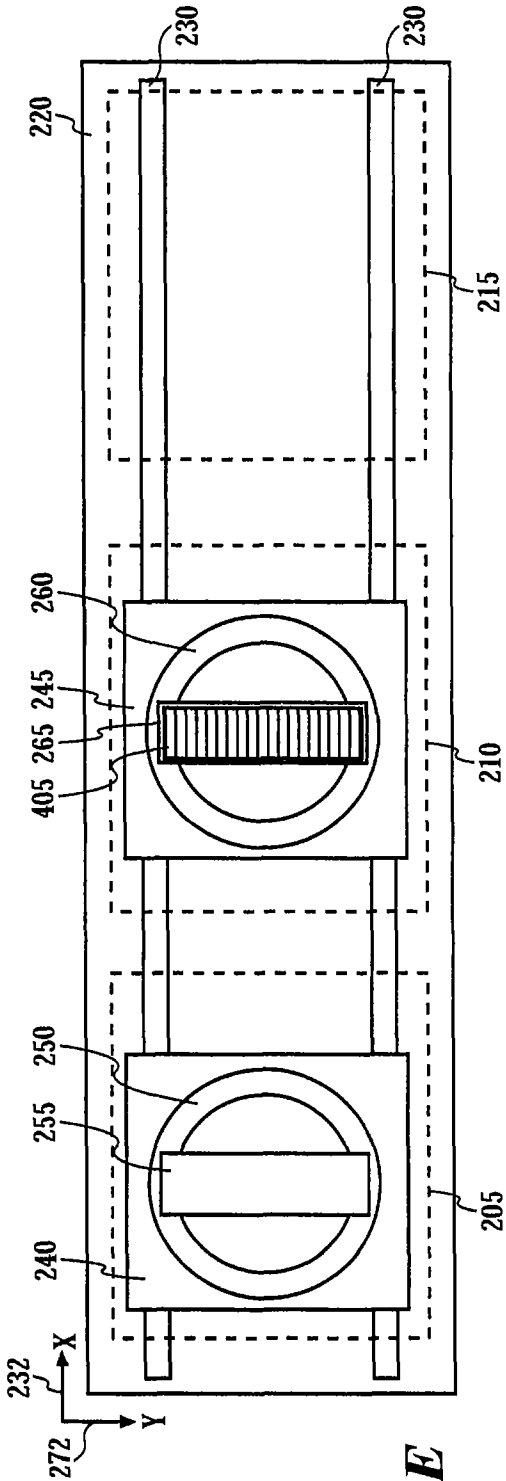

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FIG. 4E

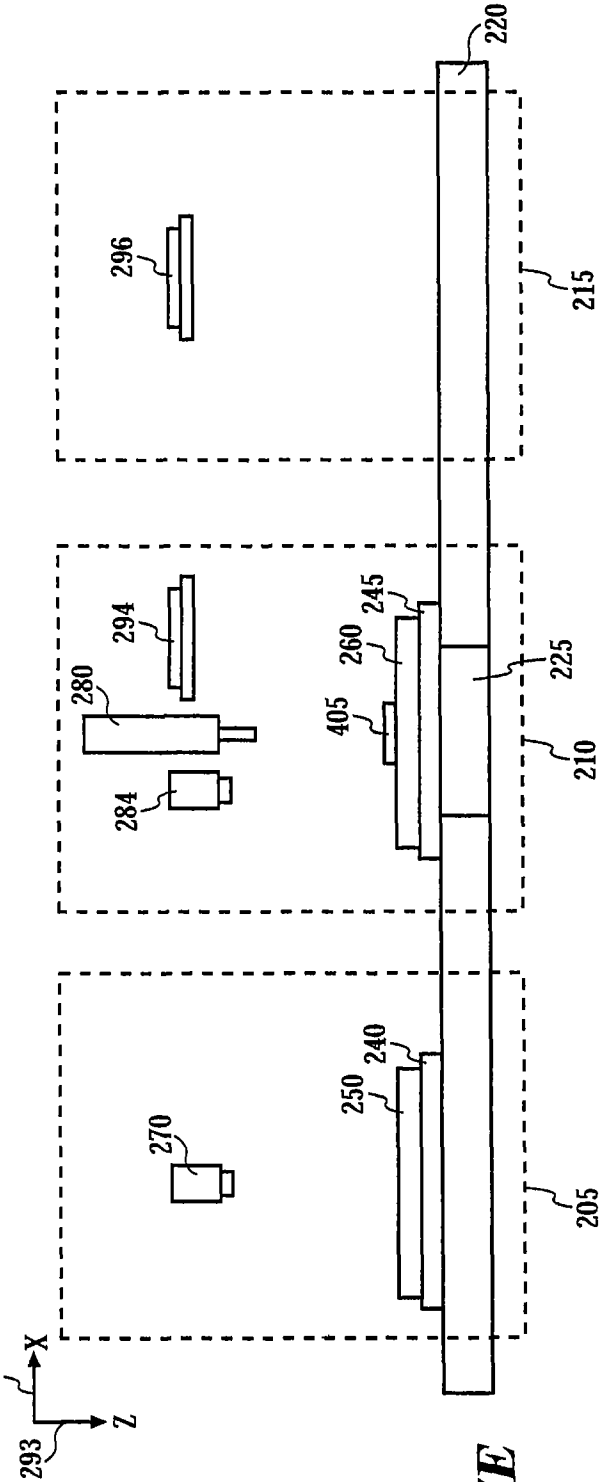

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FIG. 5E

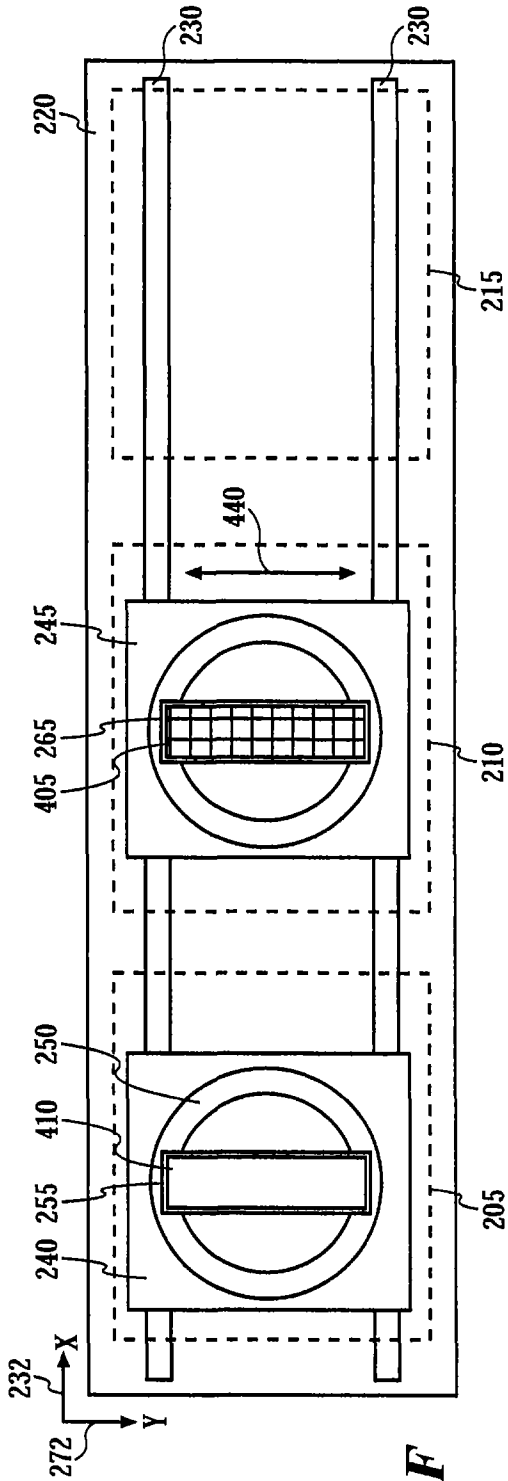

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FIG. 4F

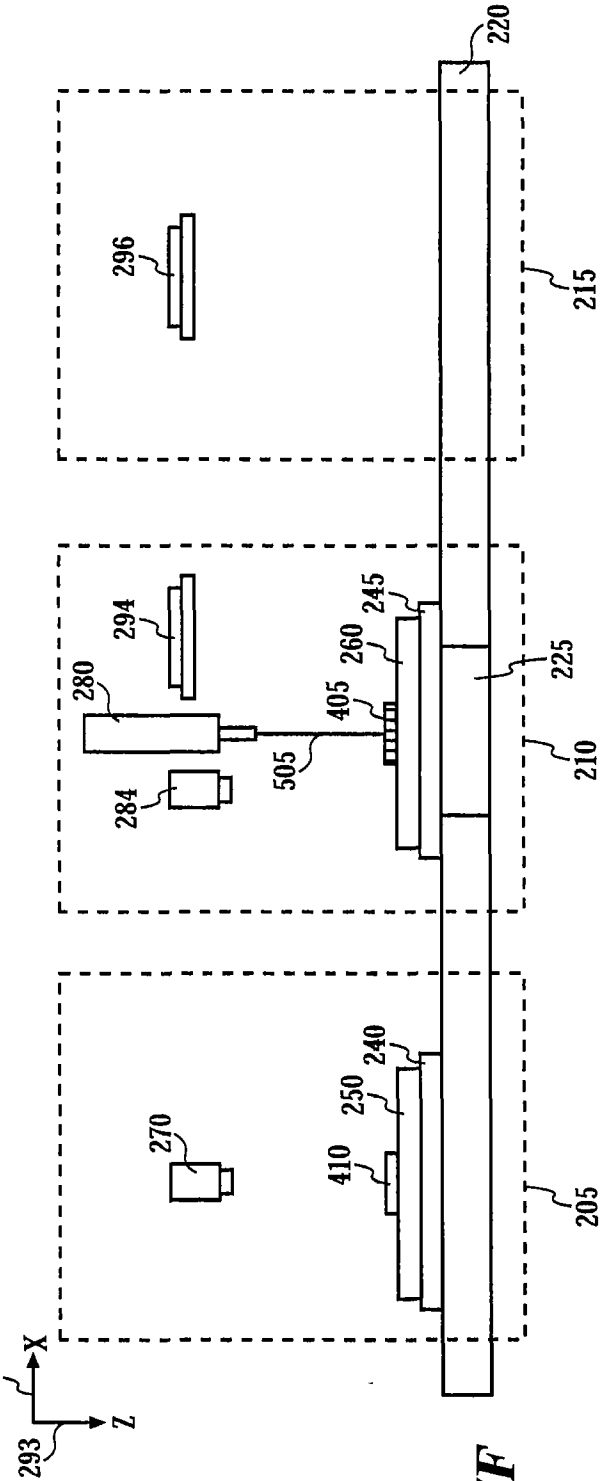

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FIG. 5F

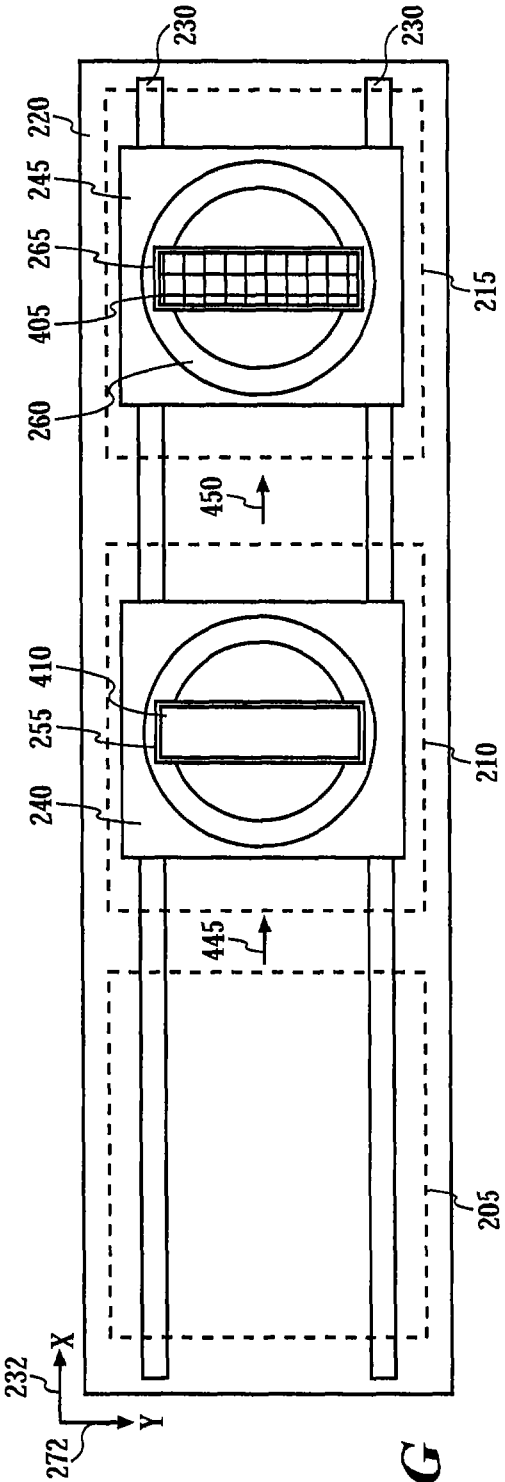

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FIG. 4G

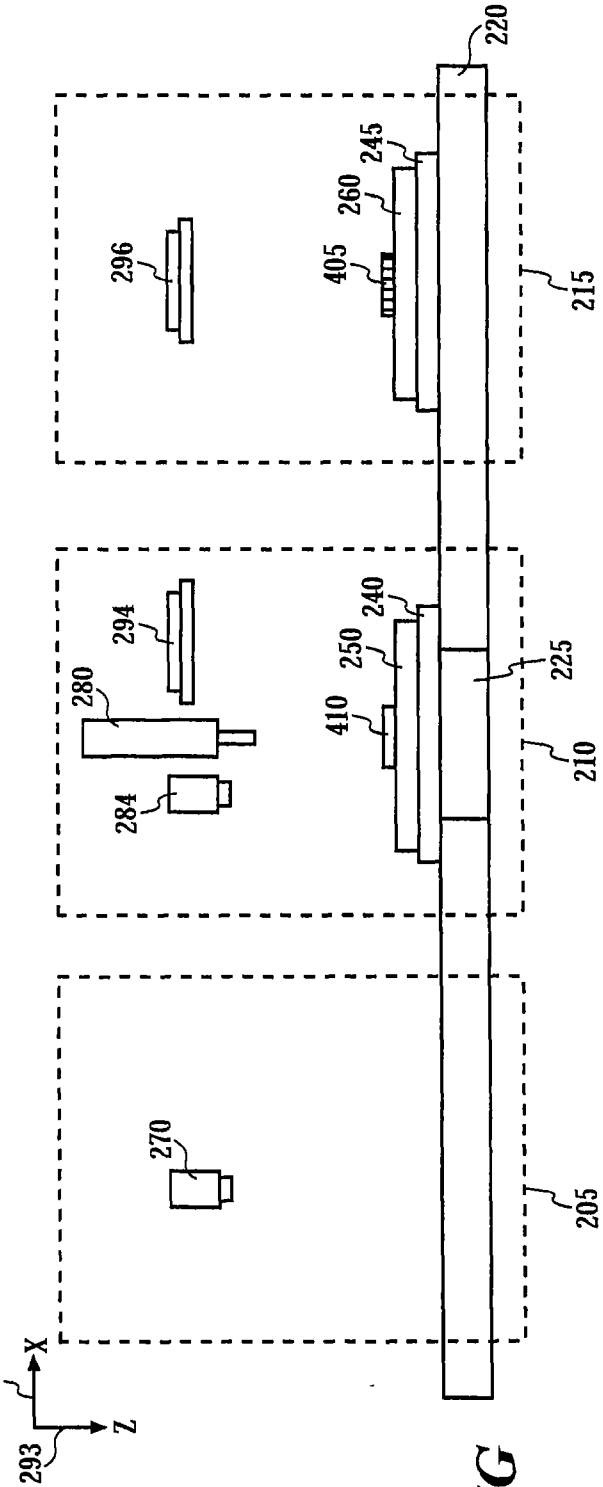

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FIG. 5G

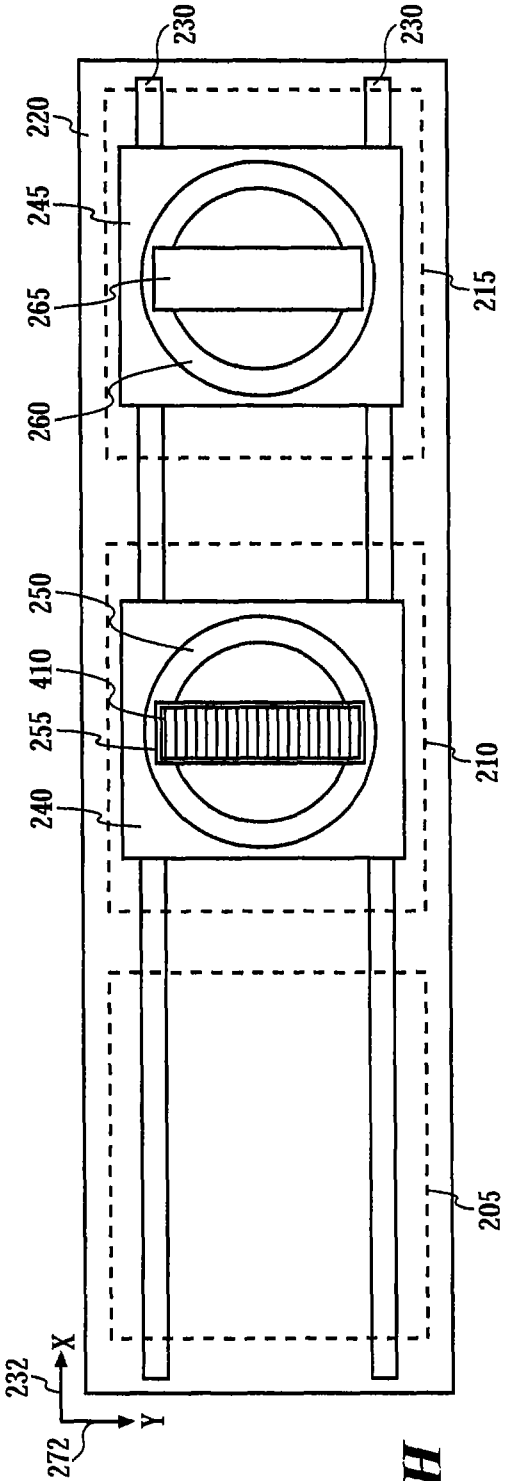

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FIG. 4H

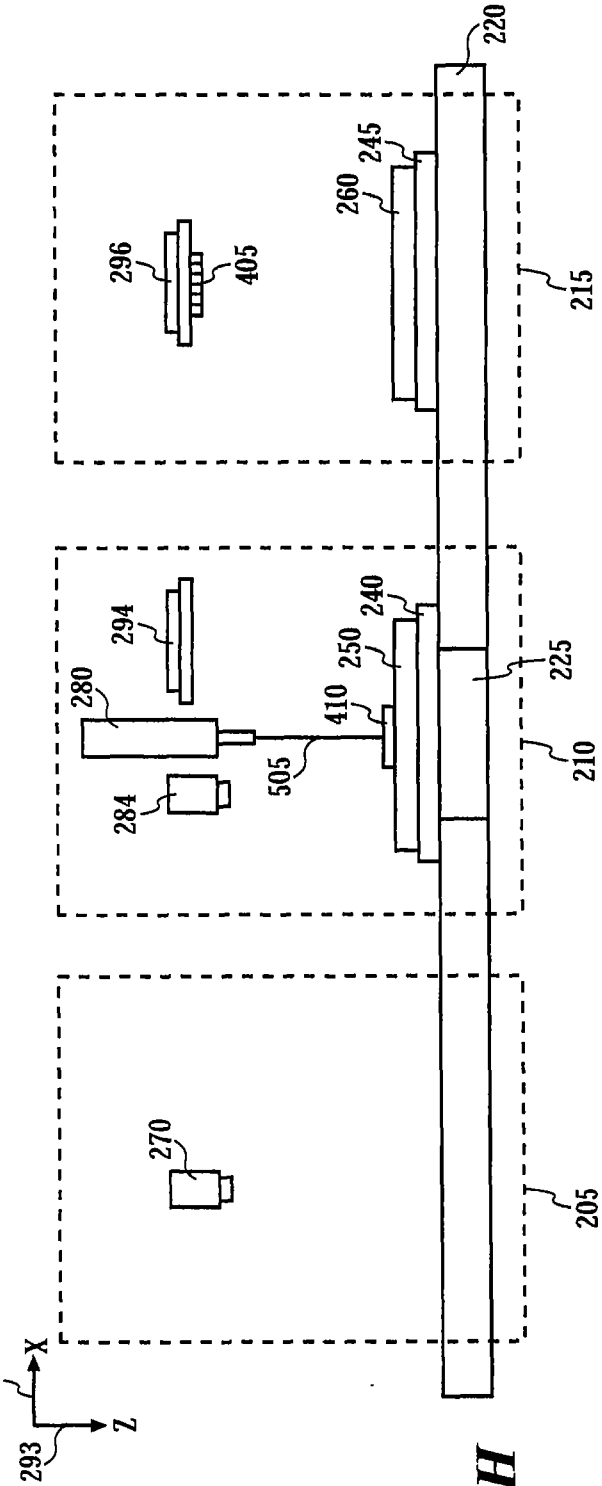

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FIG. 5H