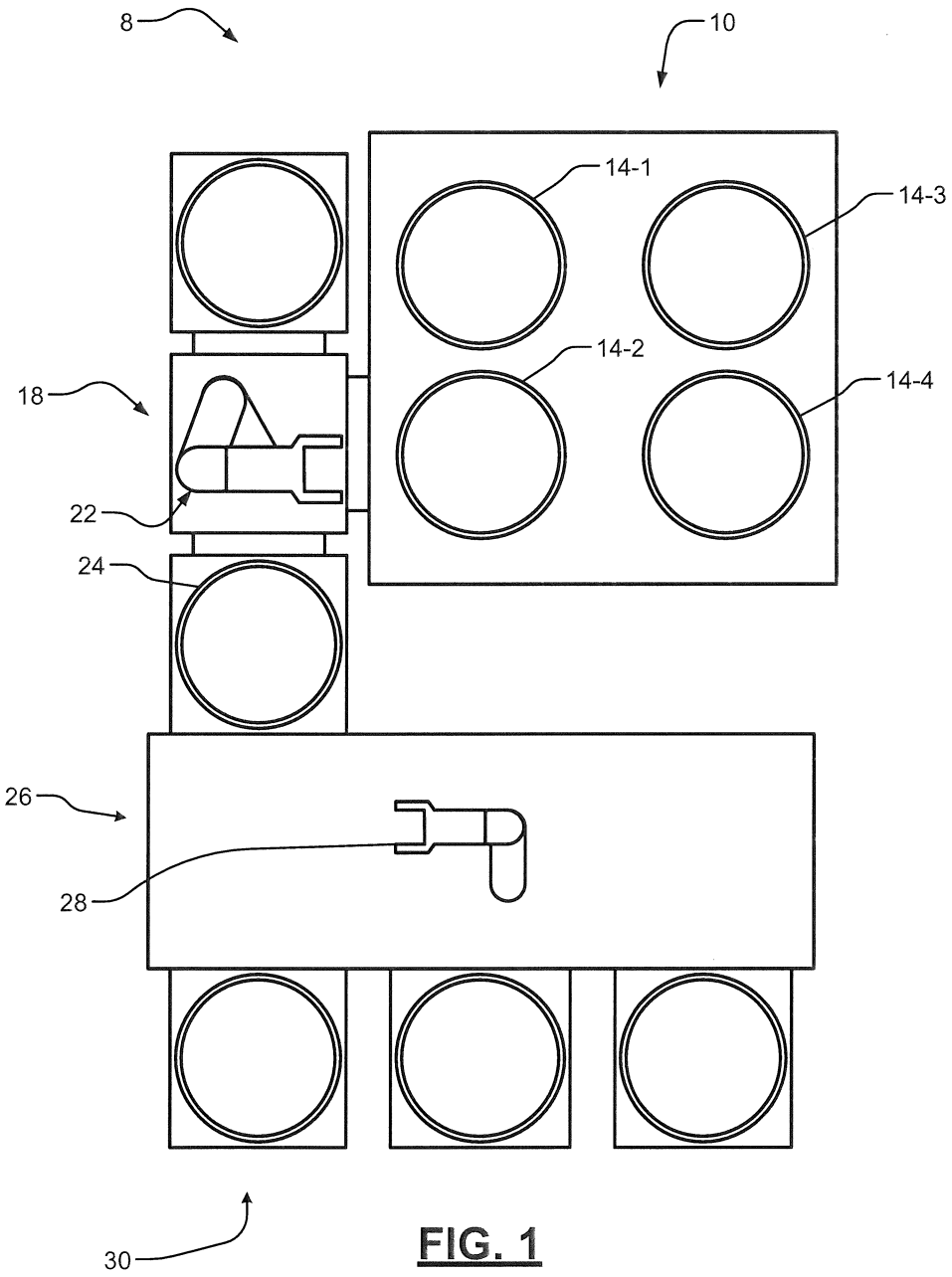


FIG. 1
Prior Art

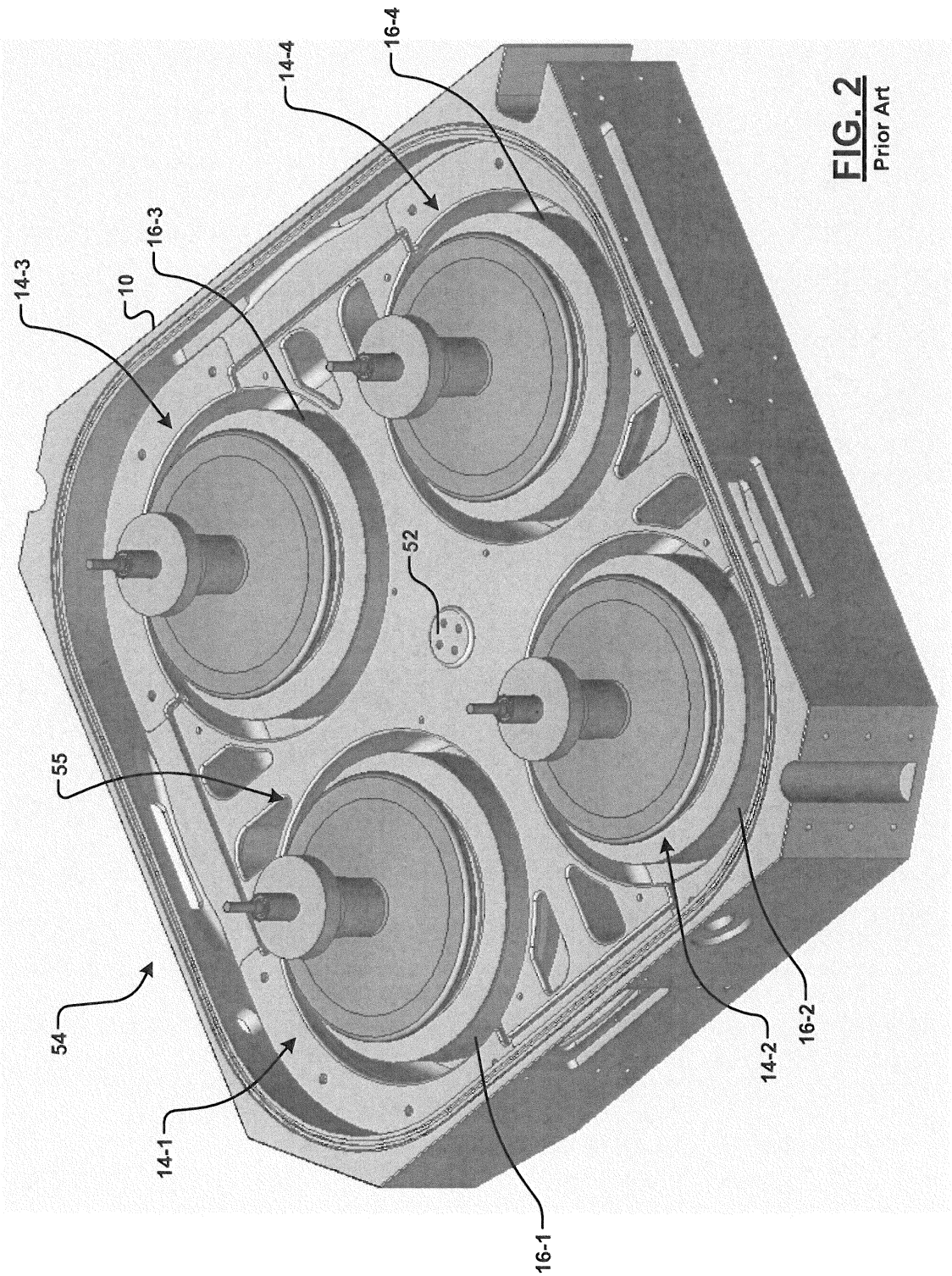


FIG. 2
Prior Art

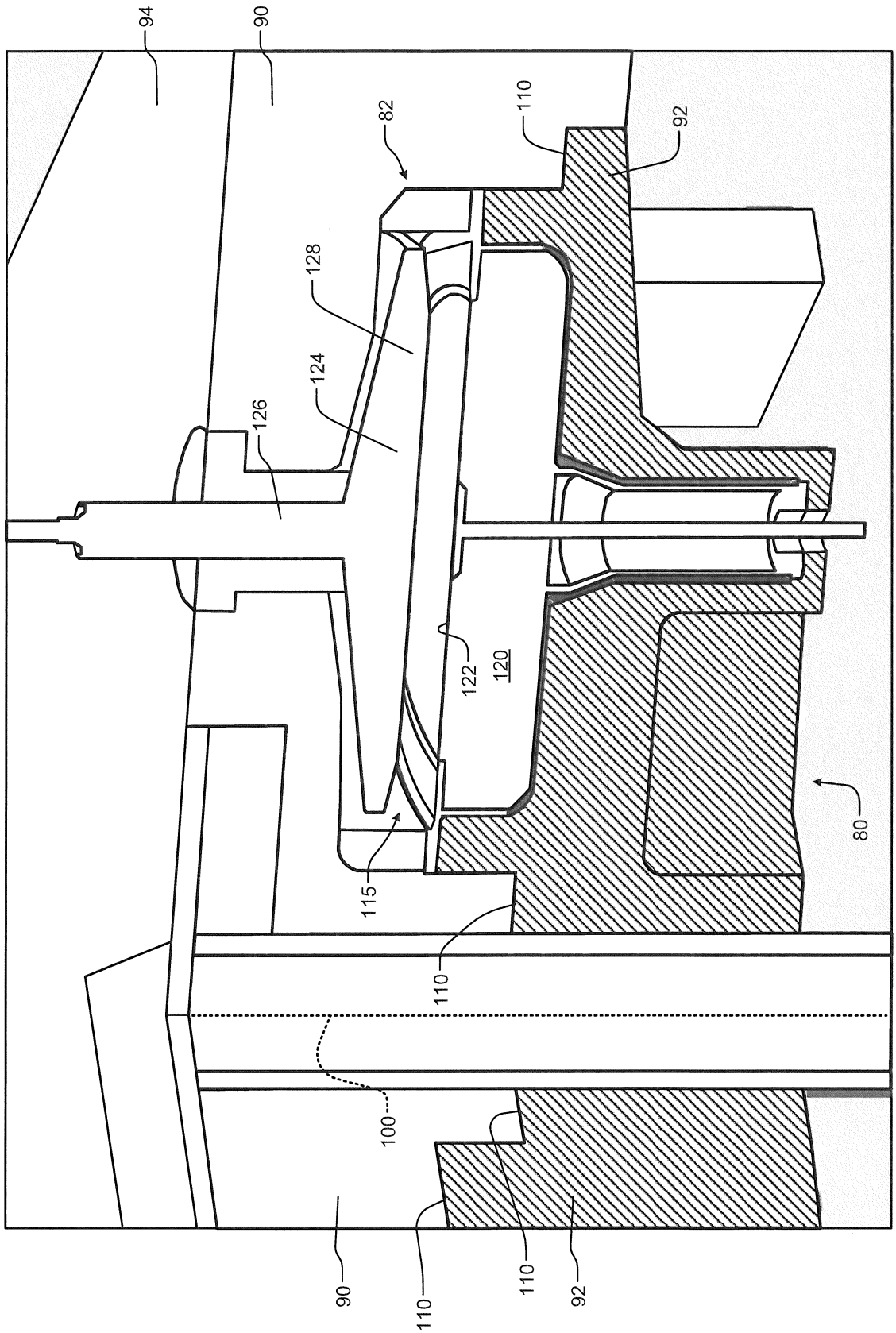


FIG. 3

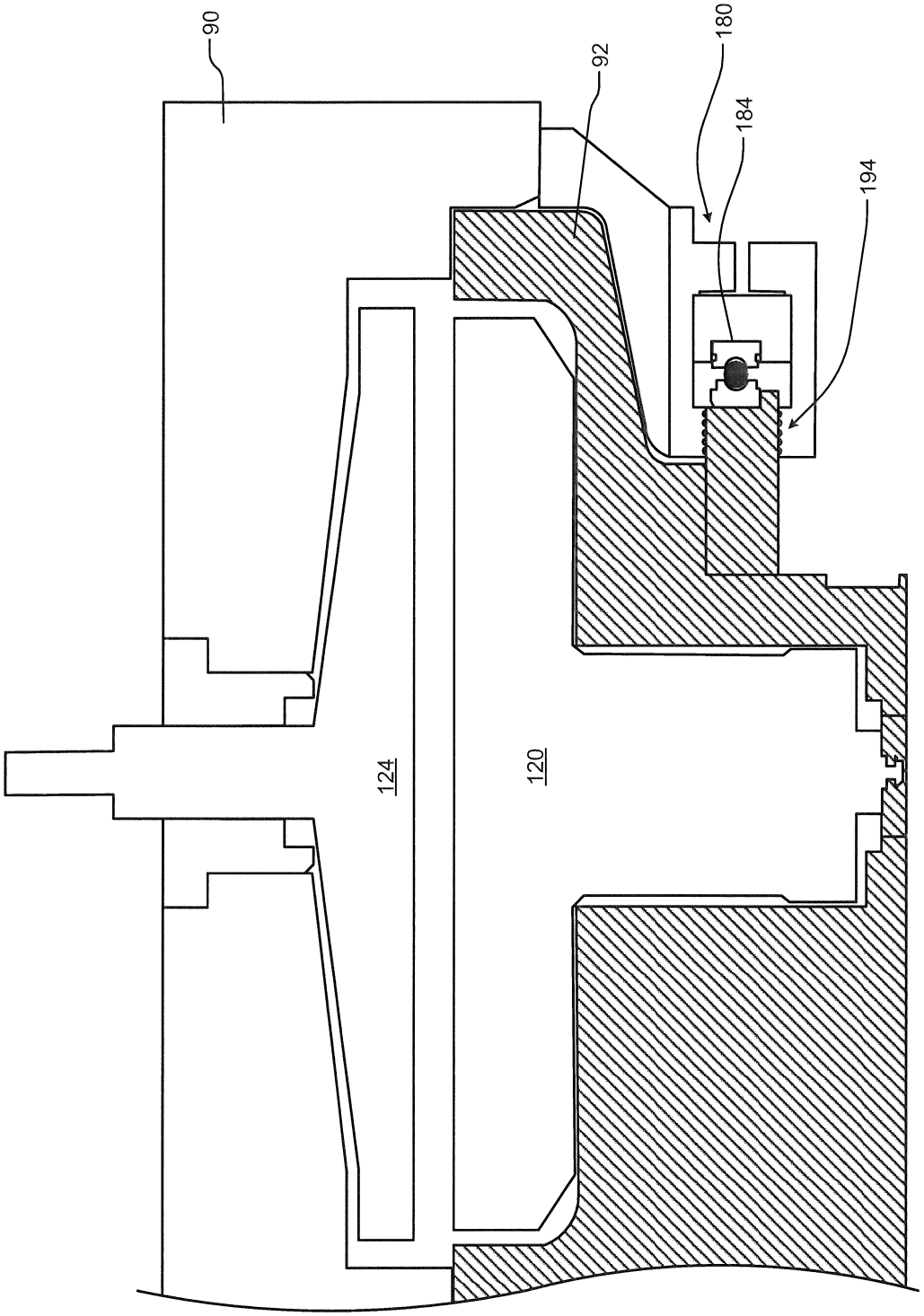


FIG. 4

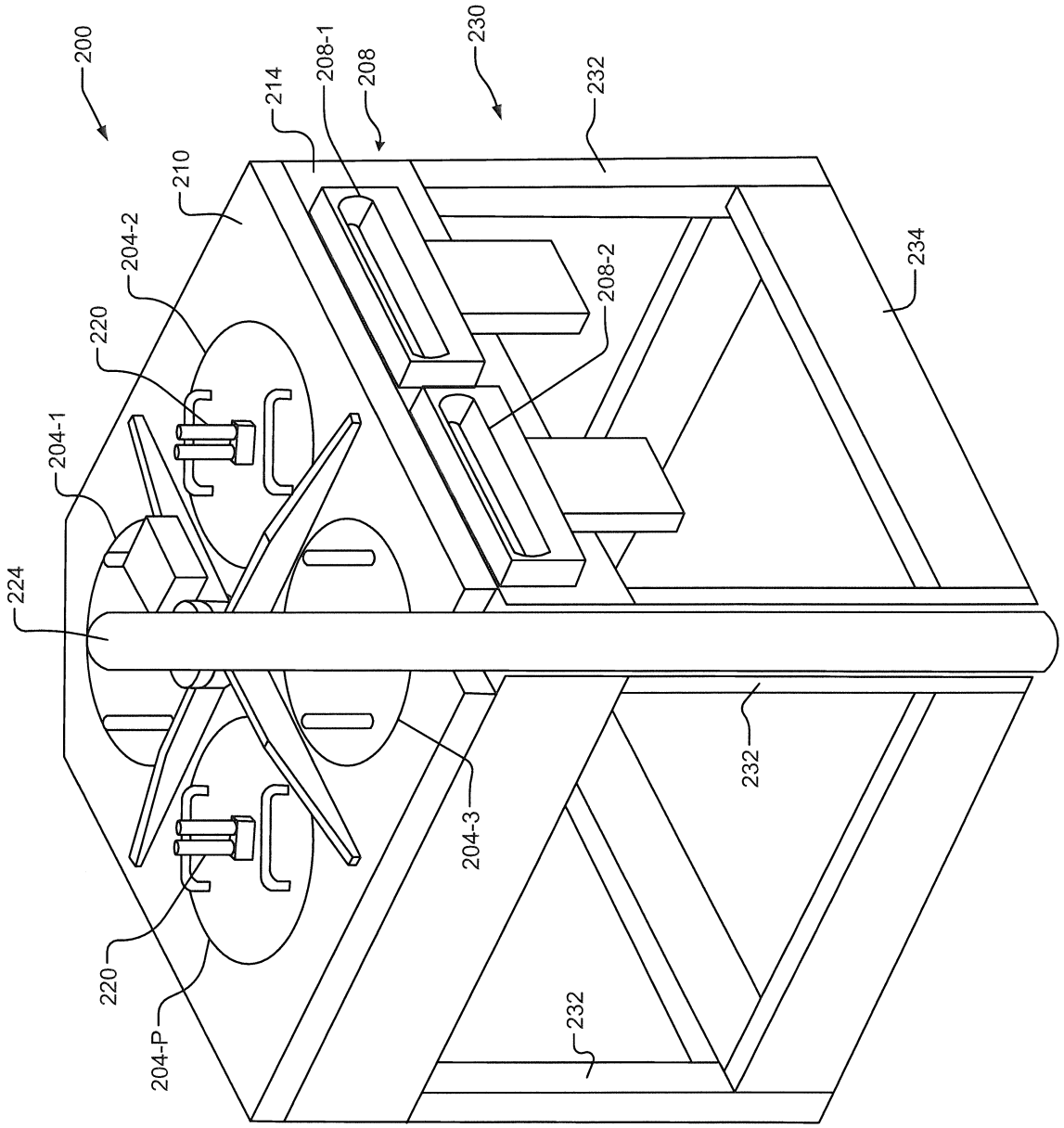

200
214
208-1
208
230
232
210
204-2
220
208-2
234
204-1
224
232
204-3
220
204-P
232

FIG. 5

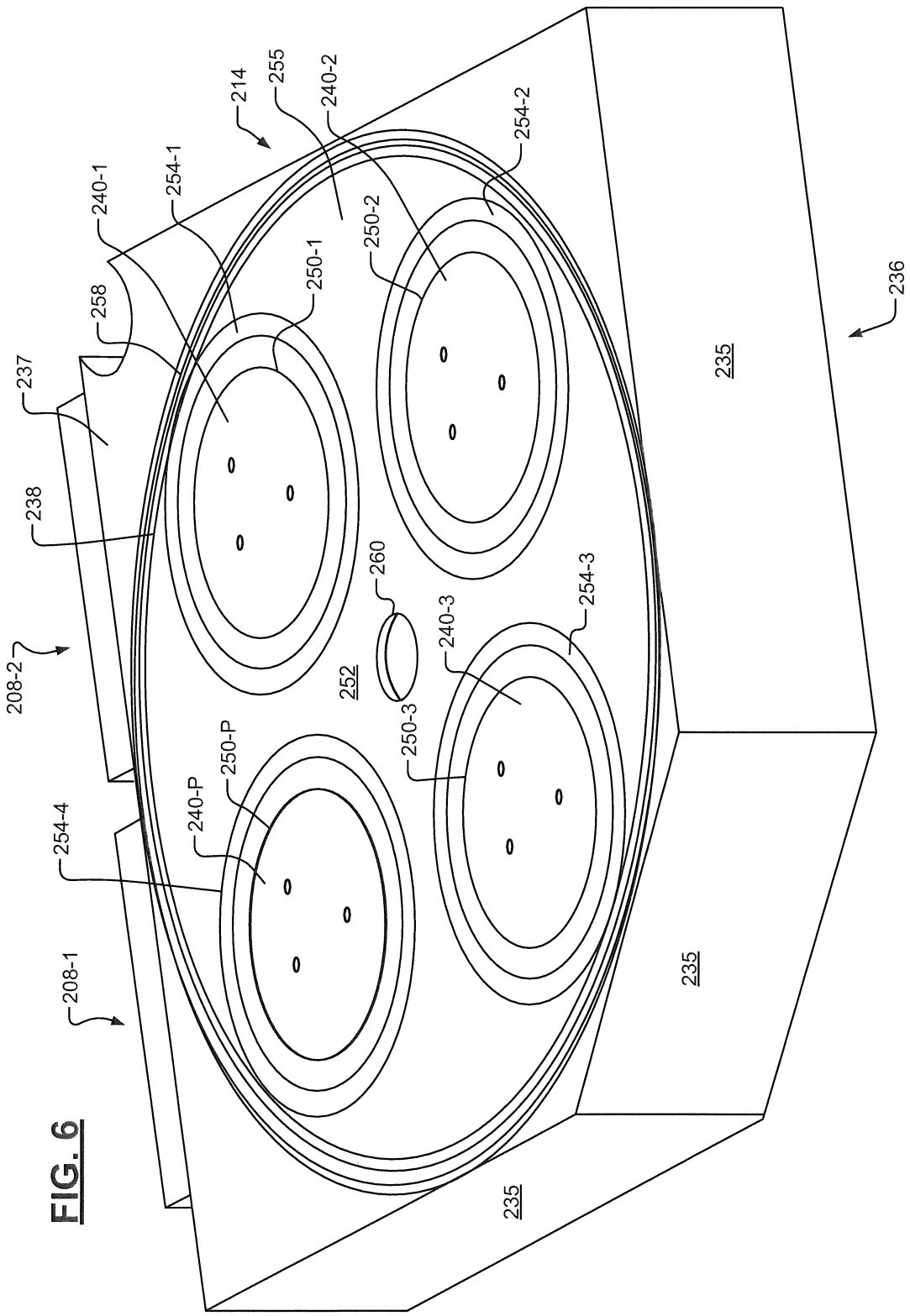

214
255
240-2
254-2
254-1
240-1
250-2
250-1
258
237
236
238
235
260
254-3
208-2
240-3
252
250-3
250-P
240-P
254-4
208-1
235
235

FIG. 6

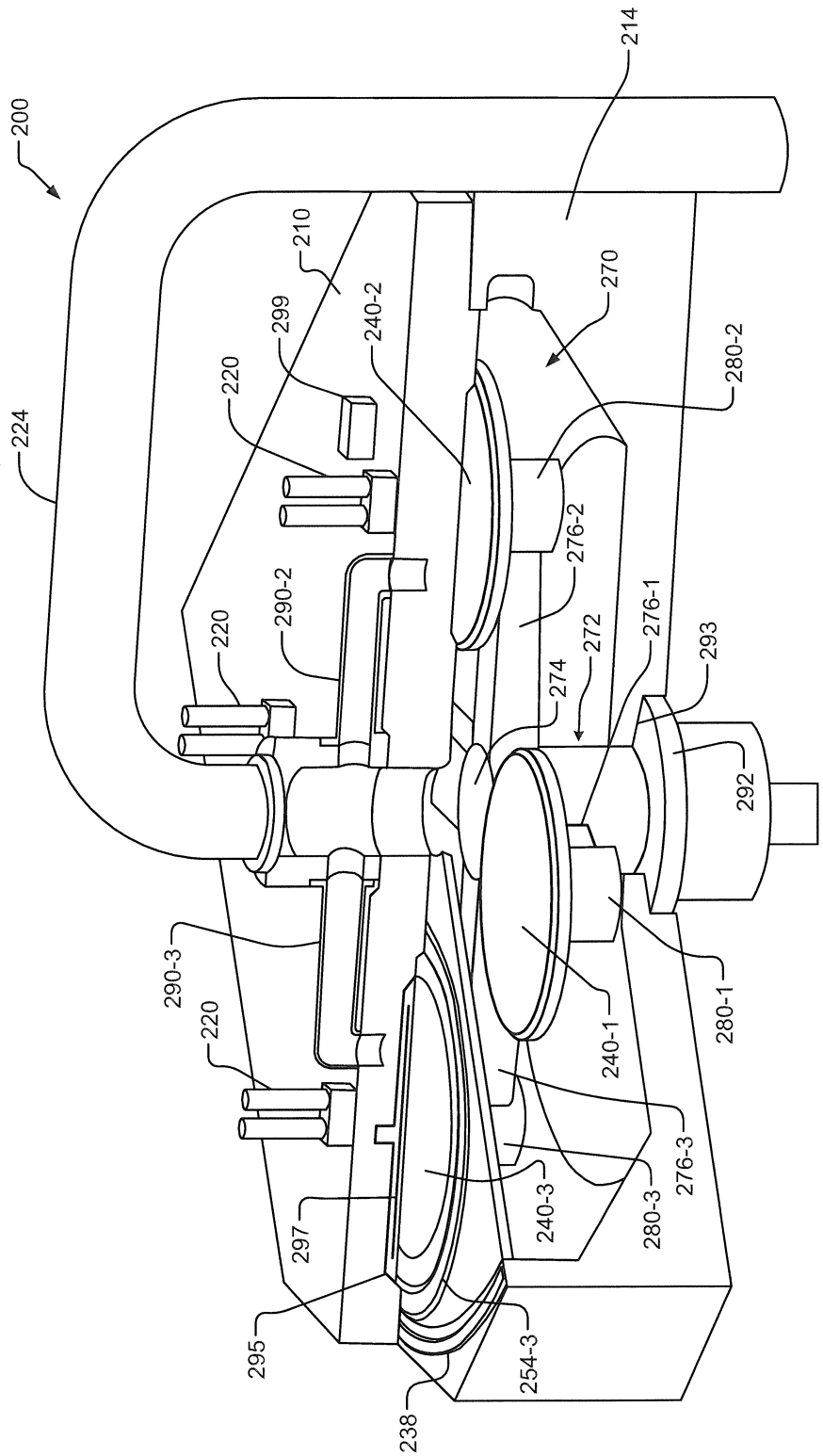

200
214
210
299
240-2
270
220
280-2
224
276-2
290-2
220
276-1
272
293
274
292
290-3
220
240-1
280-1
276-3
240-3
280-3
297
295
254-3
238

FIG. 7

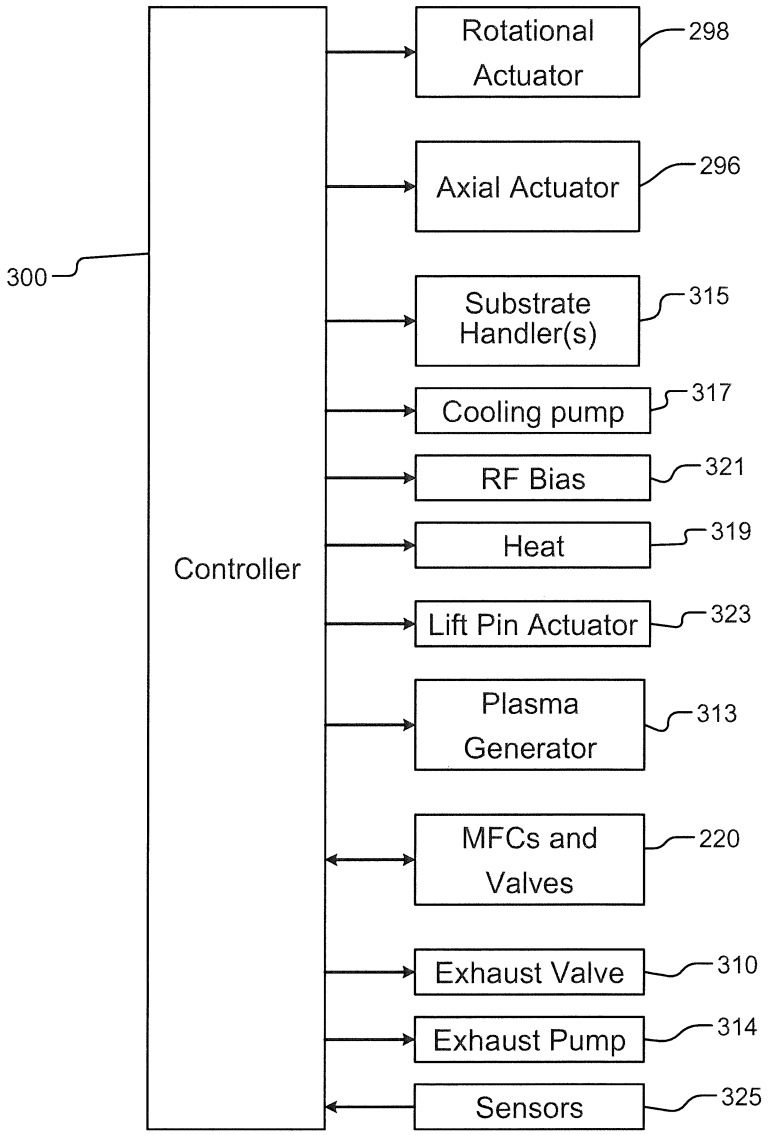

300
Controller
Rotational Actuator
298
Axial Actuator
296
Substrate Handler(s)
315
Cooling pump
317
RF Bias
321
Heat
319
Lift Pin Actuator
323
Plasma Generator
313
MFCs and Valves
220
Exhaust Valve
310
Exhaust Pump
314
Sensors
325

FIG. 8

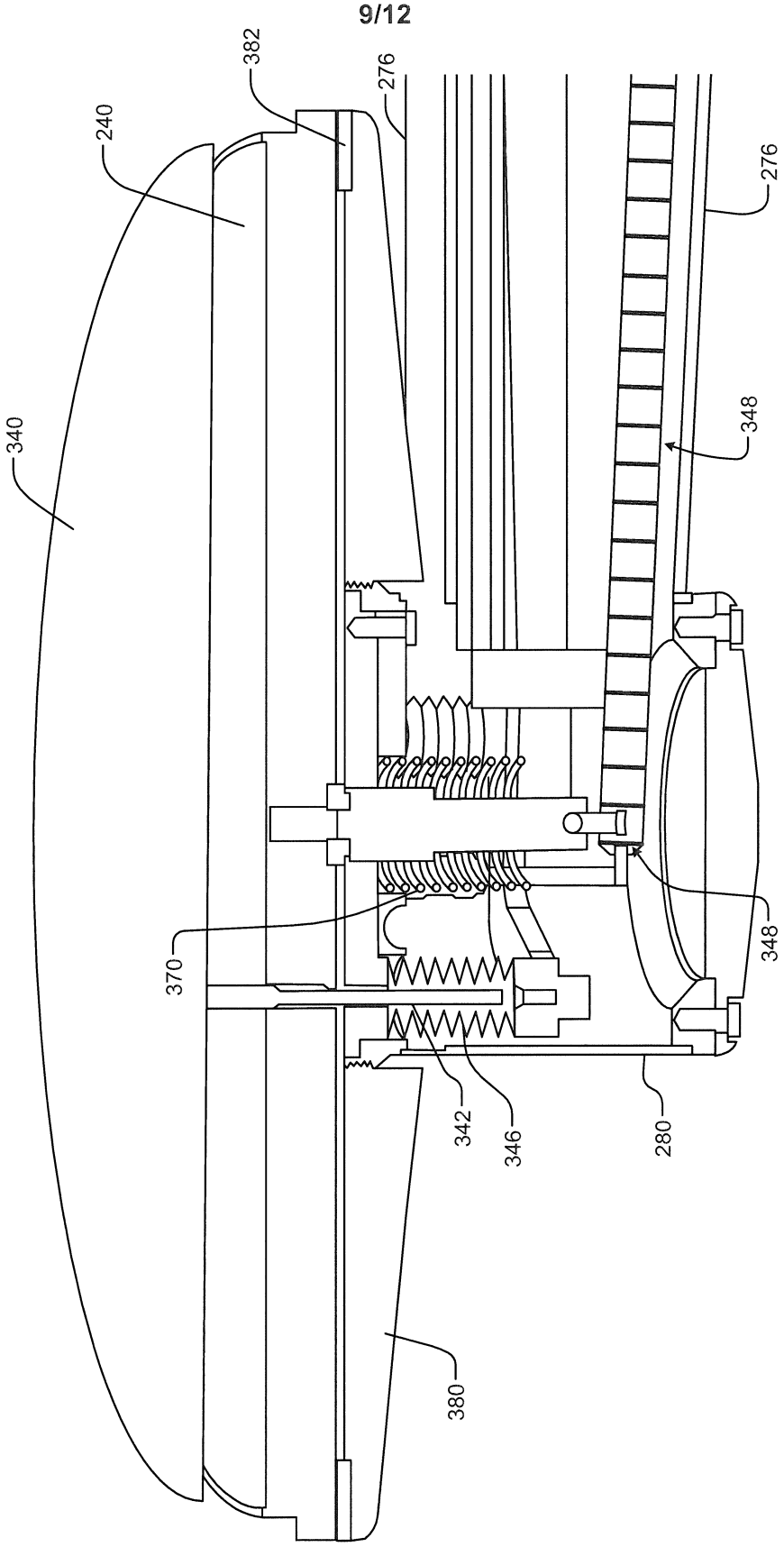


FIG. 9

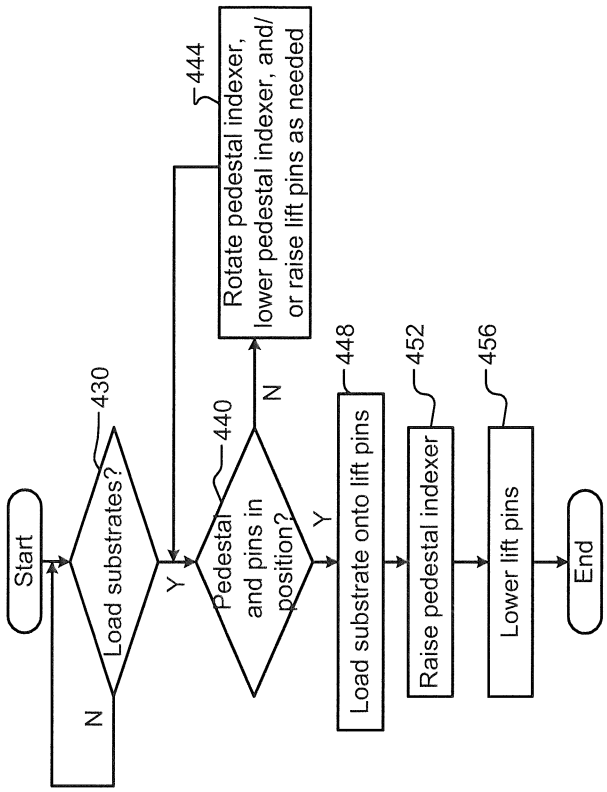

Start
Load substrates?
430
N
Y
Pedestal and pins in position?
440
N
Y
444
Rotate pedestal indexer, lower pedestal indexer, and/or raise lift pins as needed
448
Load substrate onto lift pins
452
Raise pedestal indexer
456
Lower lift pins
End

FIG. 11

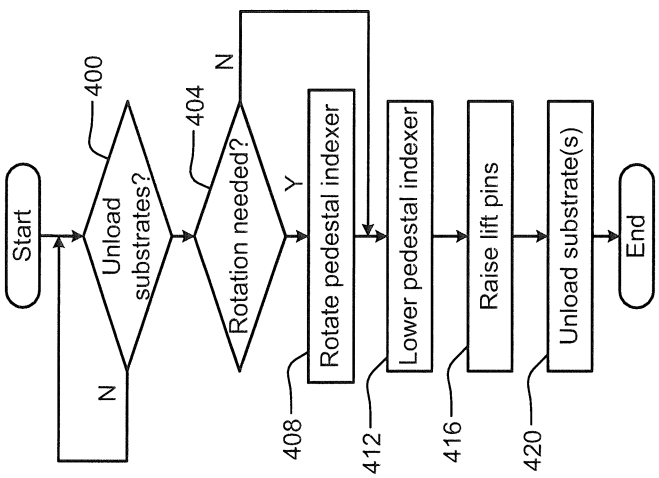

Start
Unload substrates?
400
N
Rotation needed?
404
N
Y
408
Rotate pedestal indexer
412
Lower pedestal indexer
416
Raise lift pins
420
Unload substrate(s)
End

FIG. 10

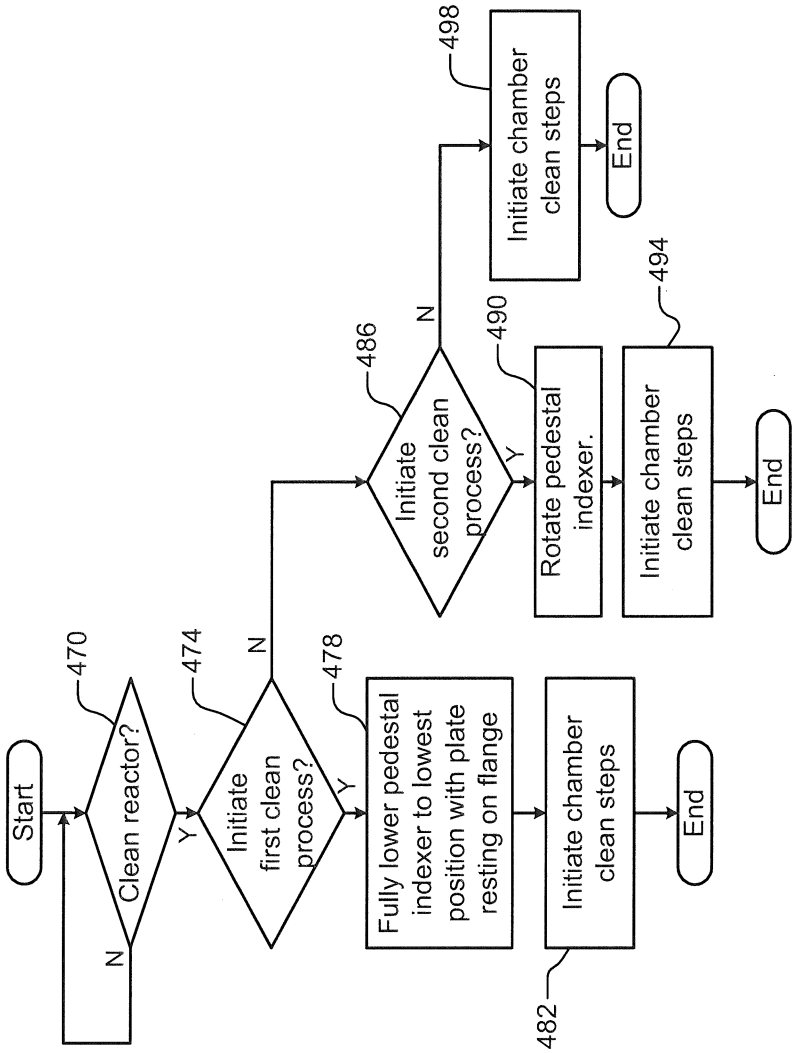
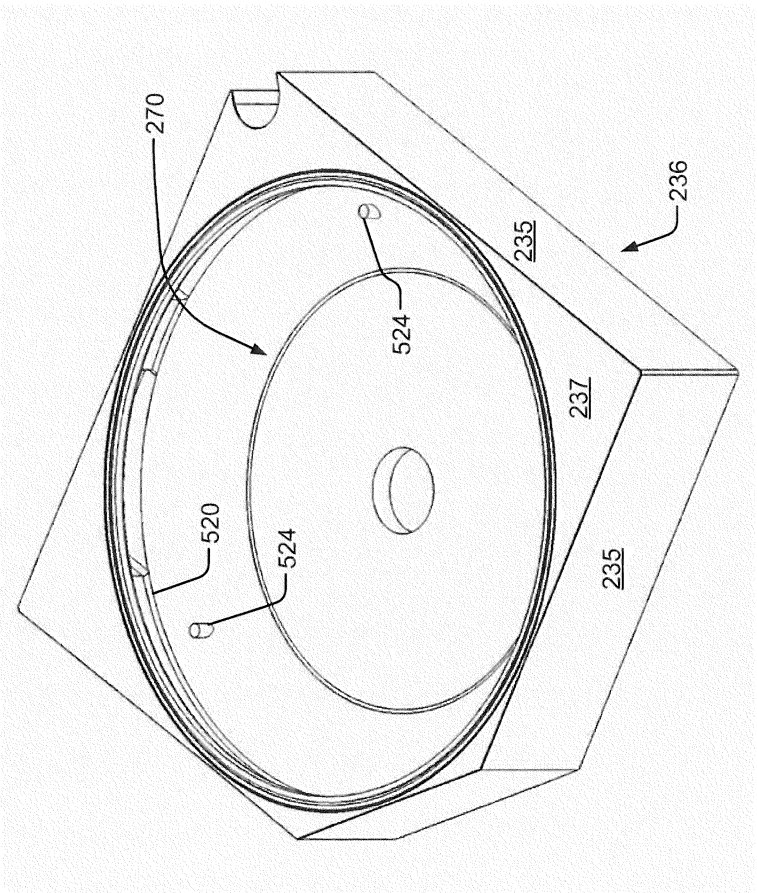

Start
Clean reactor?
470
N
Y
Initiate first clean process?
474
N
Y
Fully lower pedestal indexer to lowest position with plate resting on flange
478
Initiate chamber clean steps
482
End
Initiate second clean process?
486
N
Y
Rotate pedestal indexer.
490
Initiate chamber clean steps
494
End
Initiate chamber clean steps
498
End

FIG. 12

FIG. 13



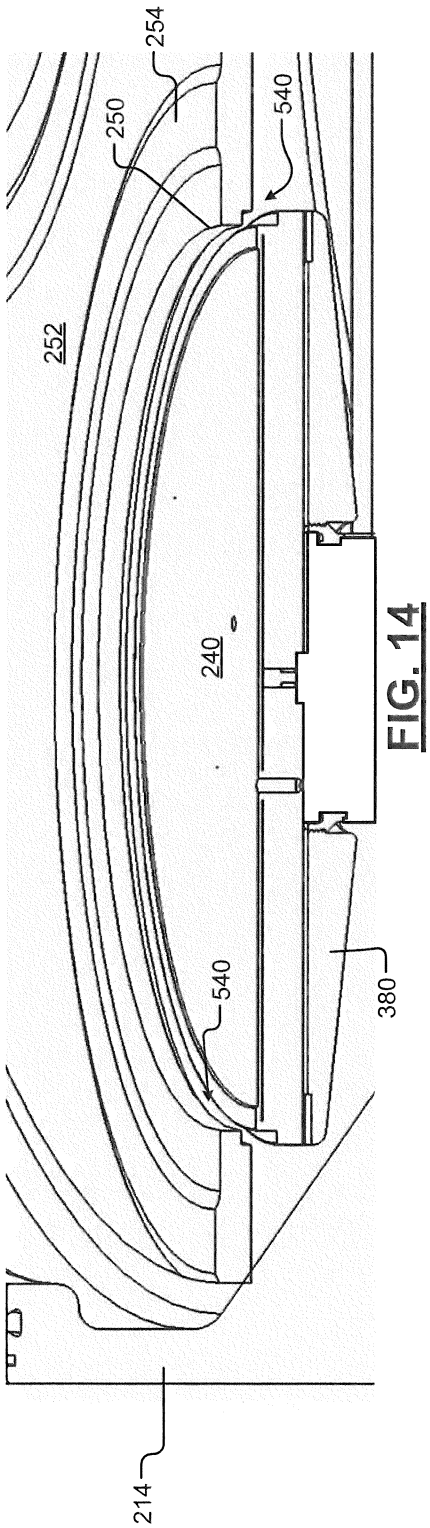


FIG. 14