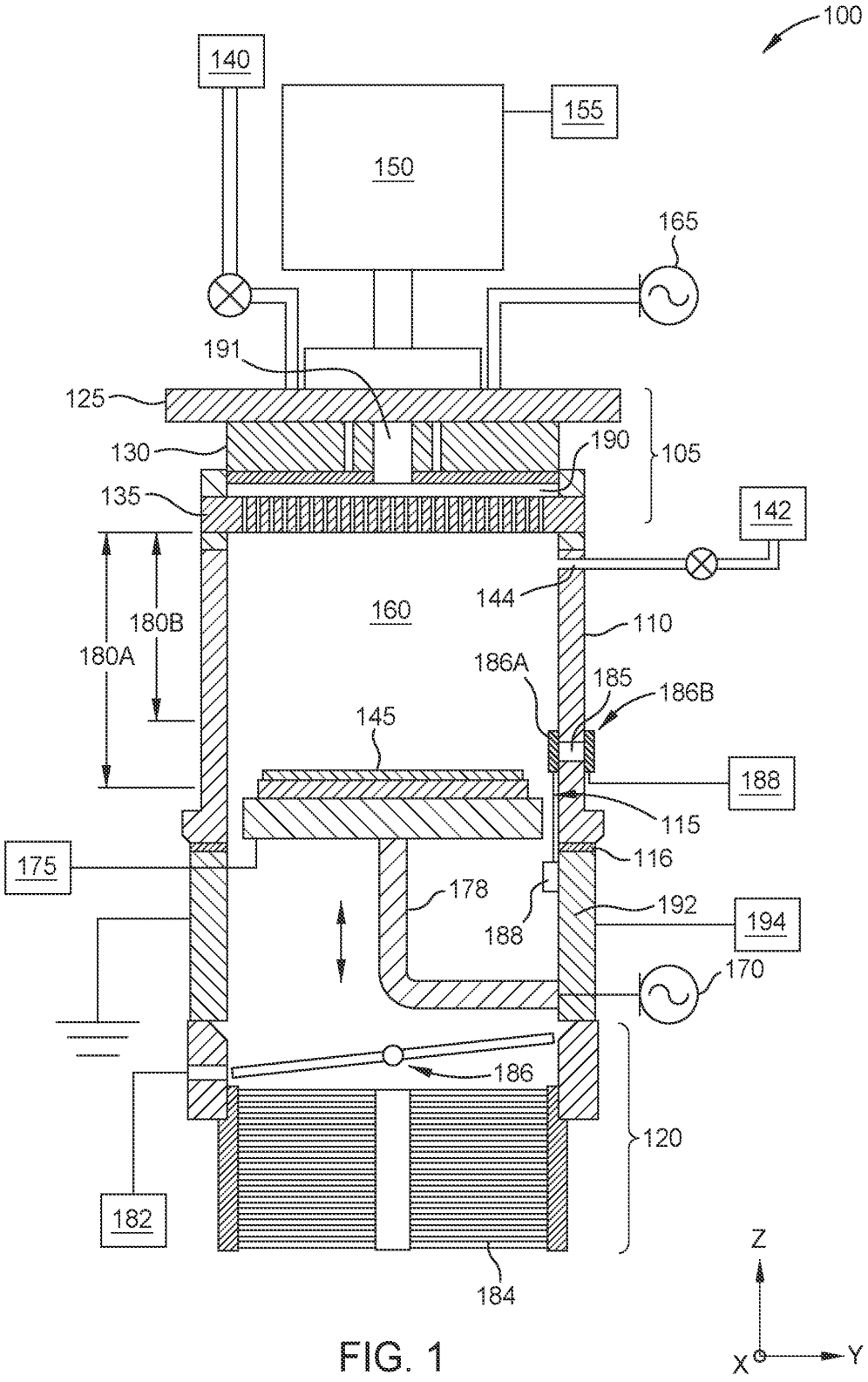

100
140
155
150
165
191
125
130
190
105
135
142
144
160
110
180B
180A
186A
185
186B
145
188
115
175
116
178
192
194
188
170
186
120
182
184
Z
X
Y

FIG. 1

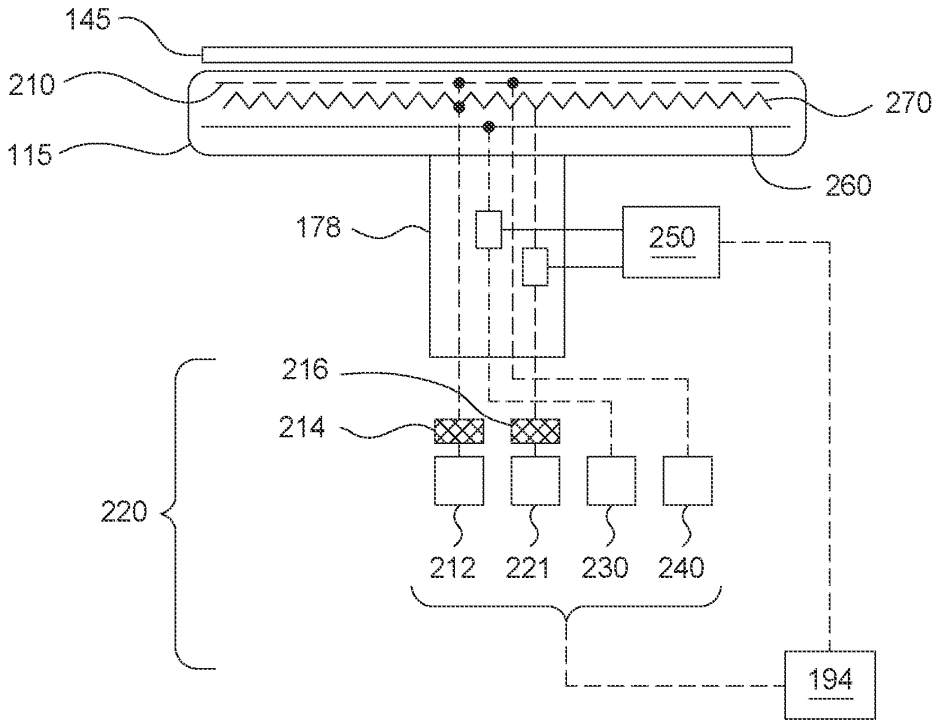


FIG. 2

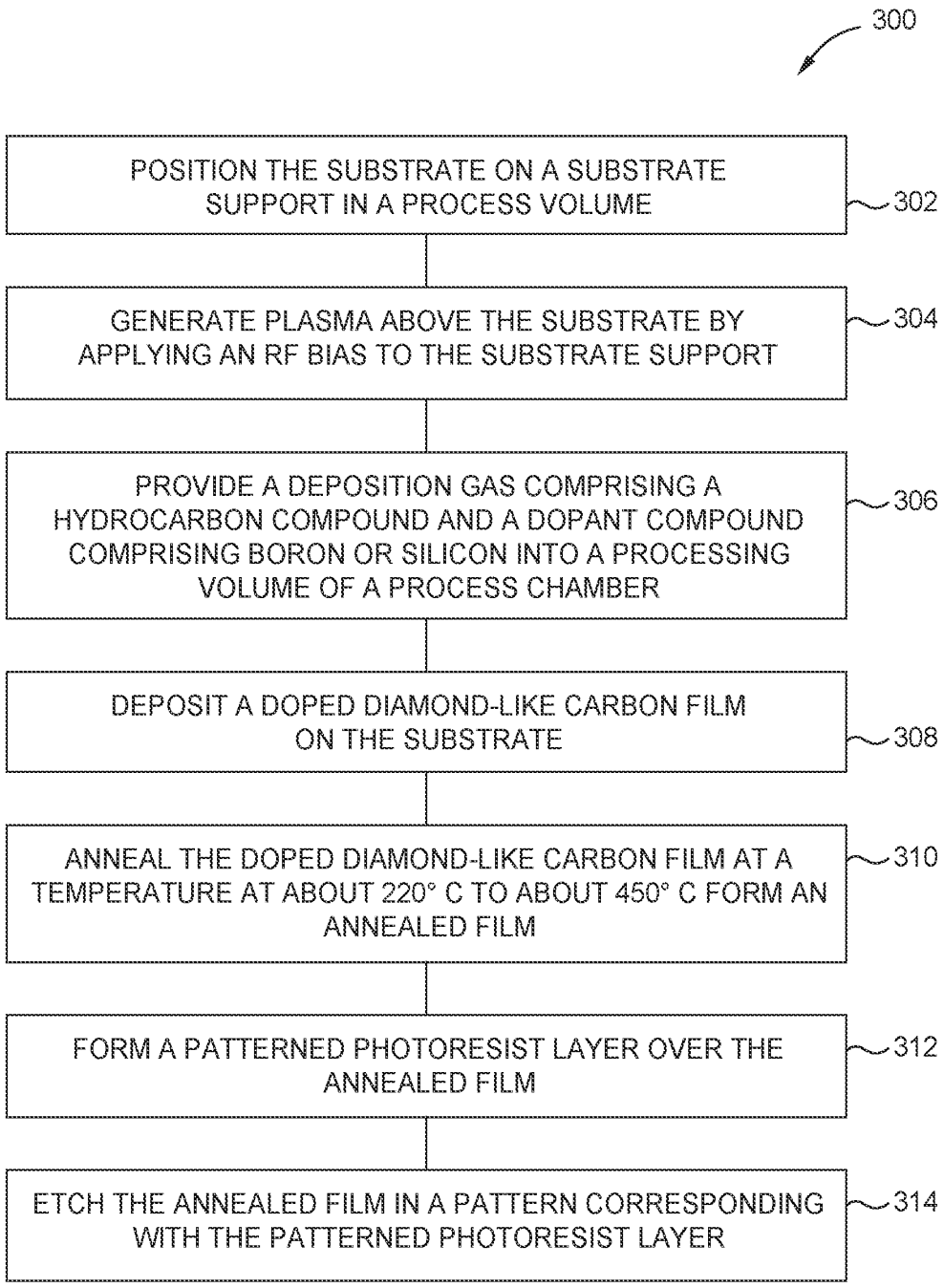

300
POSITION THE SUBSTRATE ON A SUBSTRATE SUPPORT IN A PROCESS VOLUME
302
GENERATE PLASMA ABOVE THE SUBSTRATE BY APPLYING AN RF BIAS TO THE SUBSTRATE SUPPORT
304
PROVIDE A DEPOSITION GAS COMPRISING A HYDROCARBON COMPOUND AND A DOPANT COMPOUND COMPRISING BORON OR SILICON INTO A PROCESSING VOLUME OF A PROCESS CHAMBER
306
DEPOSIT A DOPED DIAMOND-LIKE CARBON FILM ON THE SUBSTRATE
308
ANNEAL THE DOPED DIAMOND-LIKE CARBON FILM AT A TEMPERATURE AT ABOUT 220° C TO ABOUT 450° C FORM AN ANNEALED FILM
310
FORM A PATTERNED PHOTORESIST LAYER OVER THE ANNEALED FILM
312
ETCH THE ANNEALED FILM IN A PATTERN CORRESPONDING WITH THE PATTERNED PHOTORESIST LAYER
314

FIG. 3

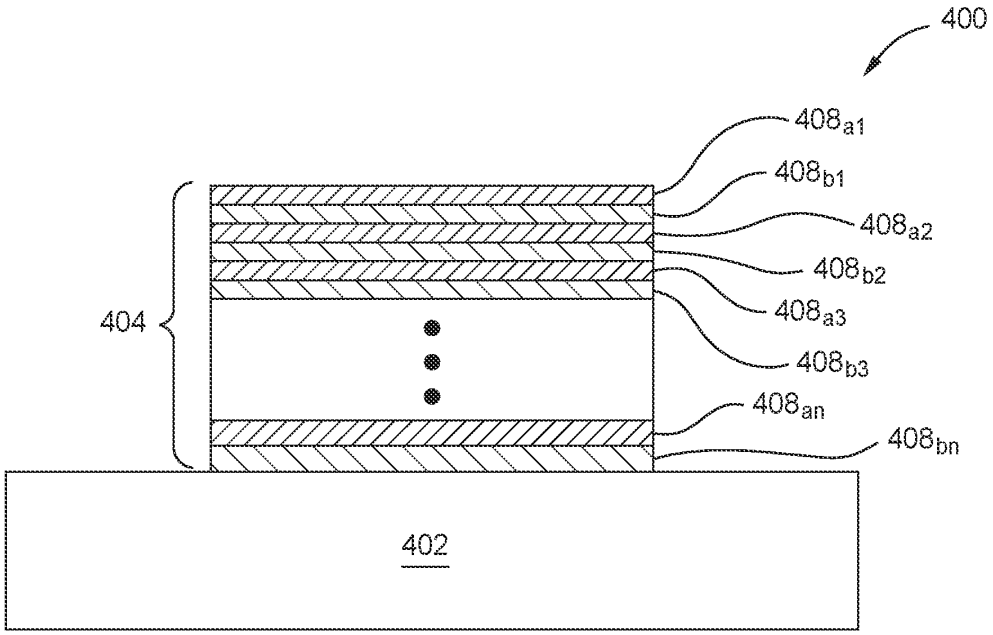

400
408_{a1}
408_{b1}
408_{a2}
408_{b2}
408_{a3}
408_{b3}
408_{an}
408_{bn}
404
402

FIG. 4A

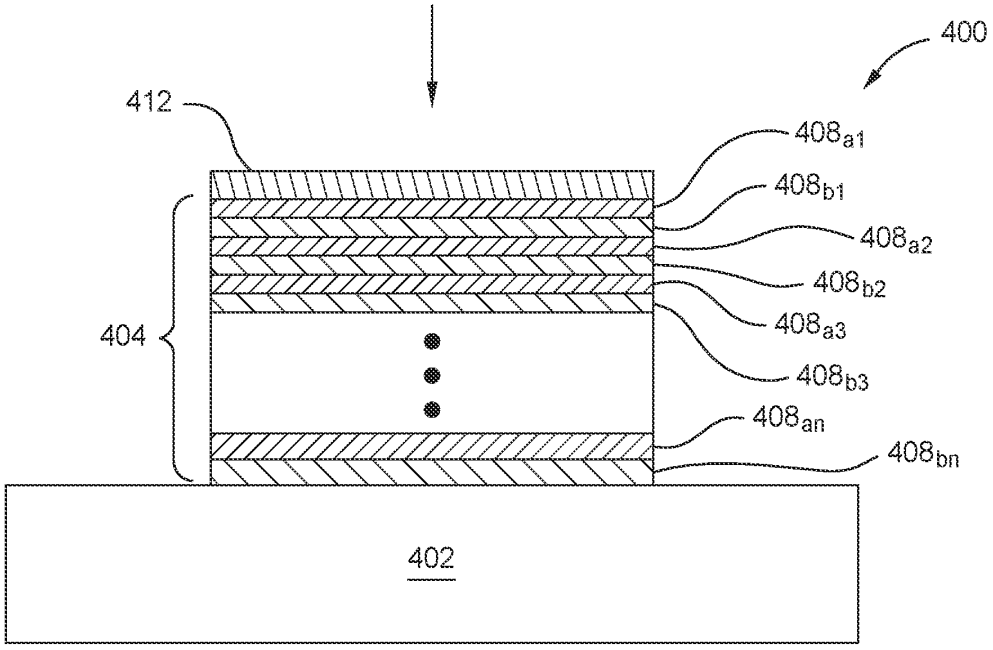

400
412
408_{a1}
408_{b1}
408_{a2}
408_{b2}
408_{a3}
408_{b3}
408_{an}
408_{bn}
404
402

FIG. 4B

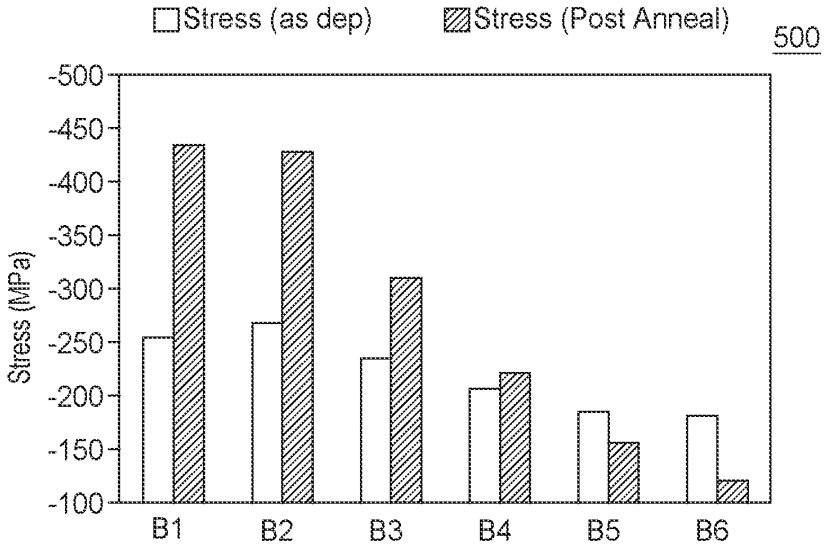

Stress (as dep)
Stress (Post Anneal)
500
-500
-450
-400
-350
-300
-250
-200
-150
-100
Stress (MPa)
B1
B2
B3
B4
B5
B6

FIG. 5

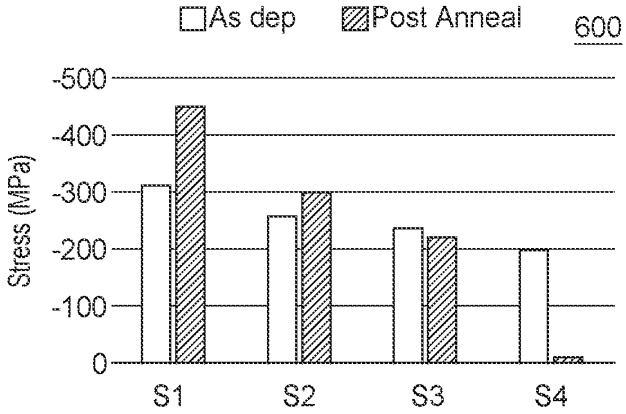

As dep
Post Anneal
600
-500
-400
-300
-200
-100
0
Stress (MPa)
S1
S2
S3
S4

FIG. 6