FIG. 1

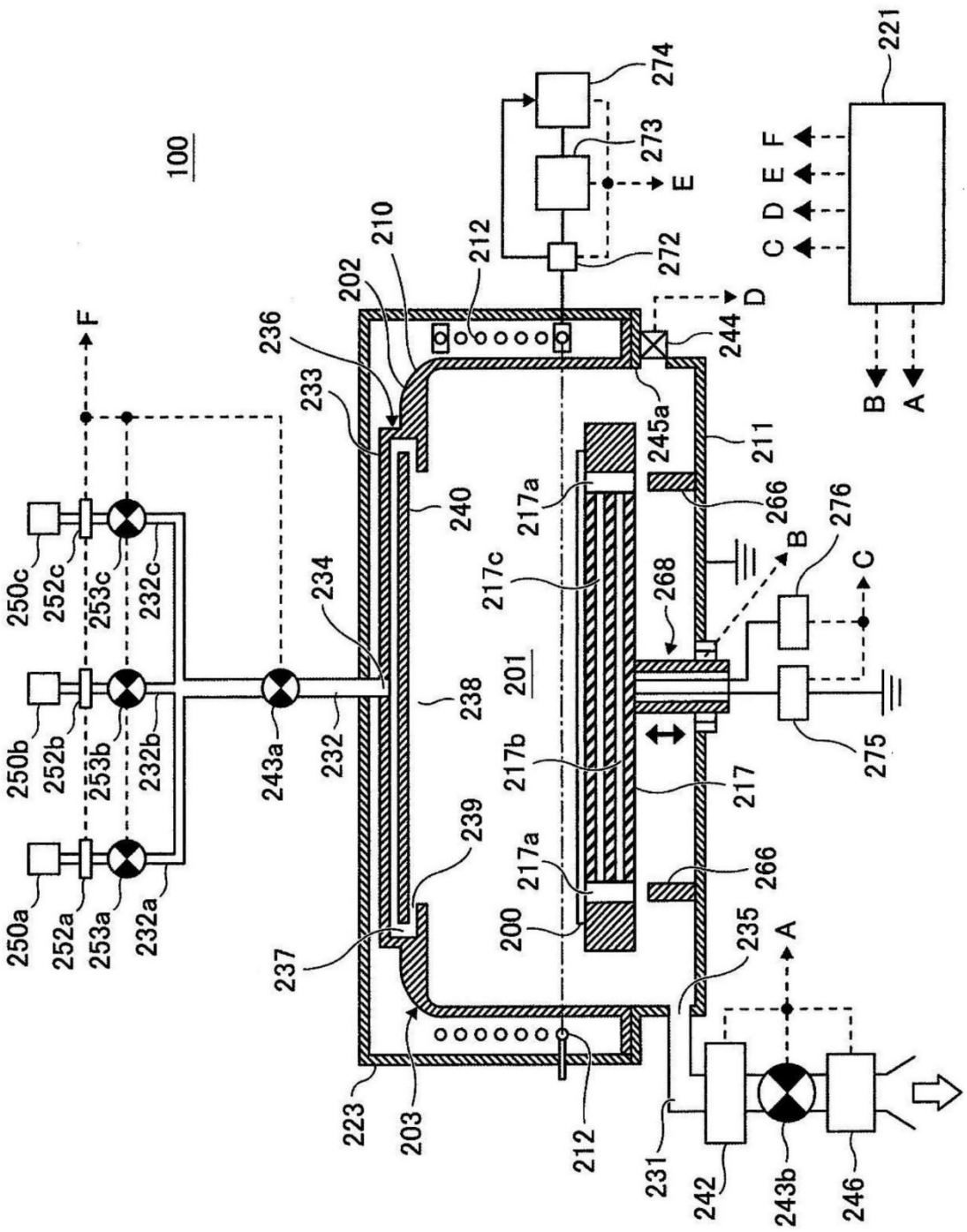

100
201
200
202
203
210
211
212
217
217a
217b
217c
221
223
231
232
232a
232b
232c
233
234
235
236
237
238
239
240
242
243a
243b
244
245a
246
250a
250b
250c
252a
252b
252c
253a
253b
253c
266
268
272
273
274
275
276
A
B
C
D
E
F

FIG. 2

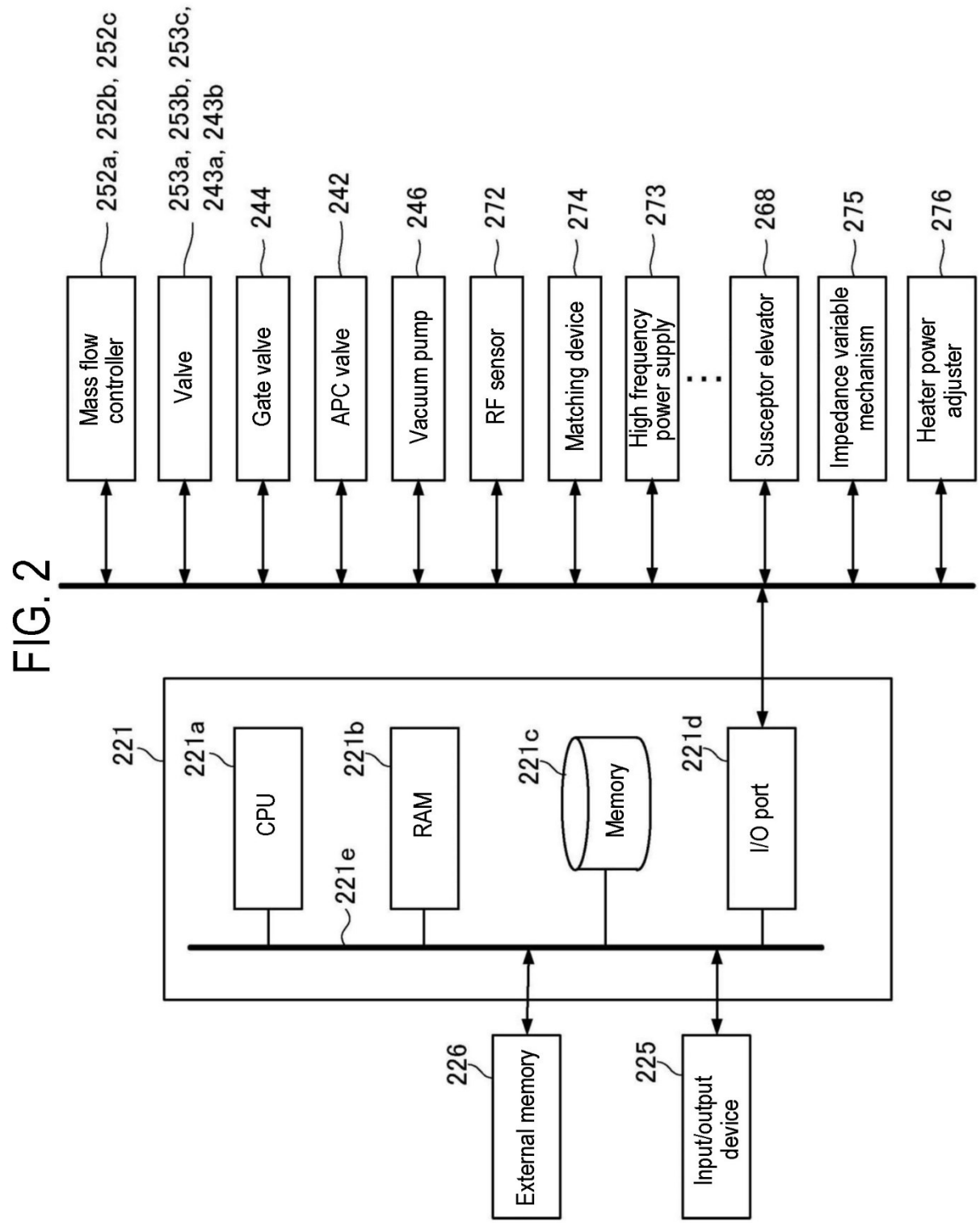

252a, 252b, 252c
253a, 253b, 253c, 243a, 243b
244
242
246
272
274
273
268
275
276
Mass flow controller
Valve
Gate valve
APC valve
Vacuum pump
RF sensor
Matching device
High frequency power supply
Susceptor elevator
Impedance variable mechanism
Heater power adjuster
221
221a
CPU
221b
RAM
221c
Memory
221d
I/O port
221e
226
External memory
225
Input/output device

FIG. 3

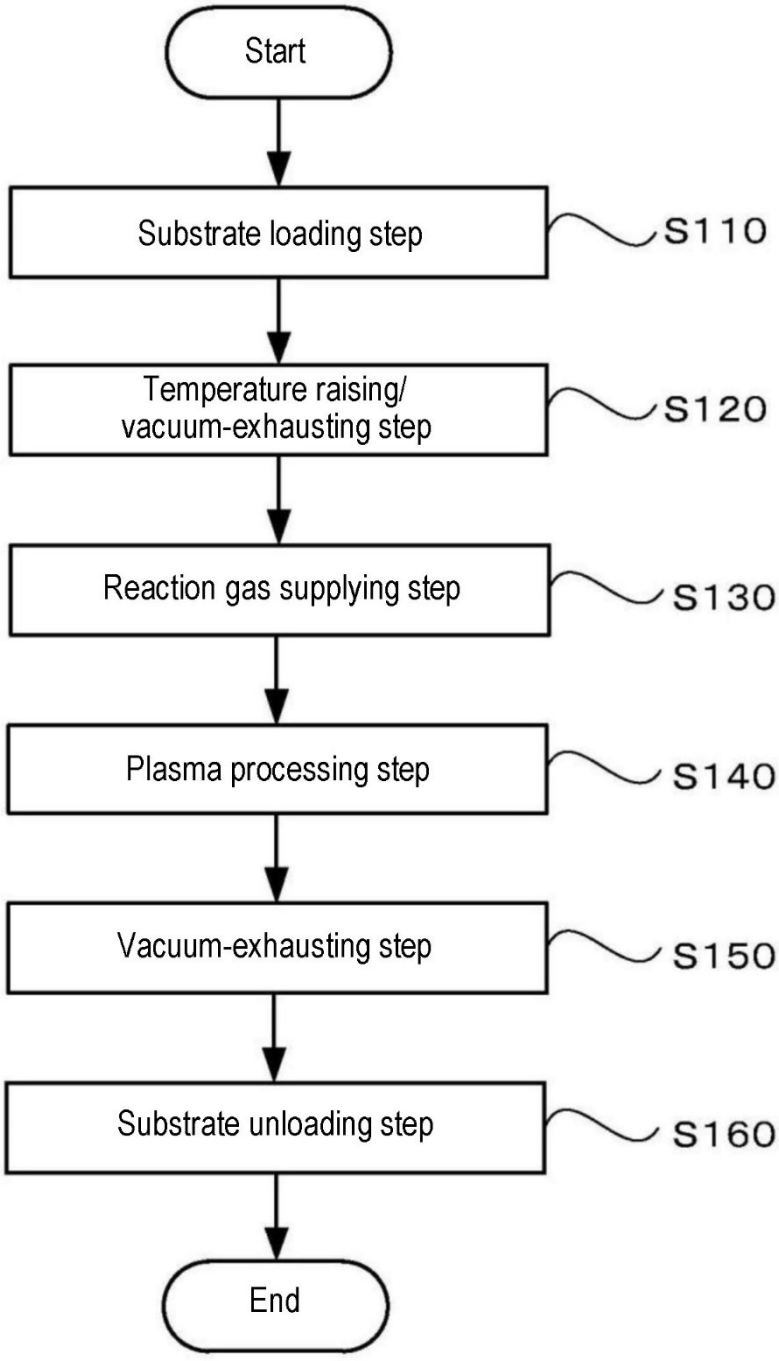

Start
Substrate loading step
S110
Temperature raising/
vacuum-exhausting step
S120
Reaction gas supplying step
S130
Plasma processing step
S140
Vacuum-exhausting step
S150
Substrate unloading step
S160
End

FIG. 4

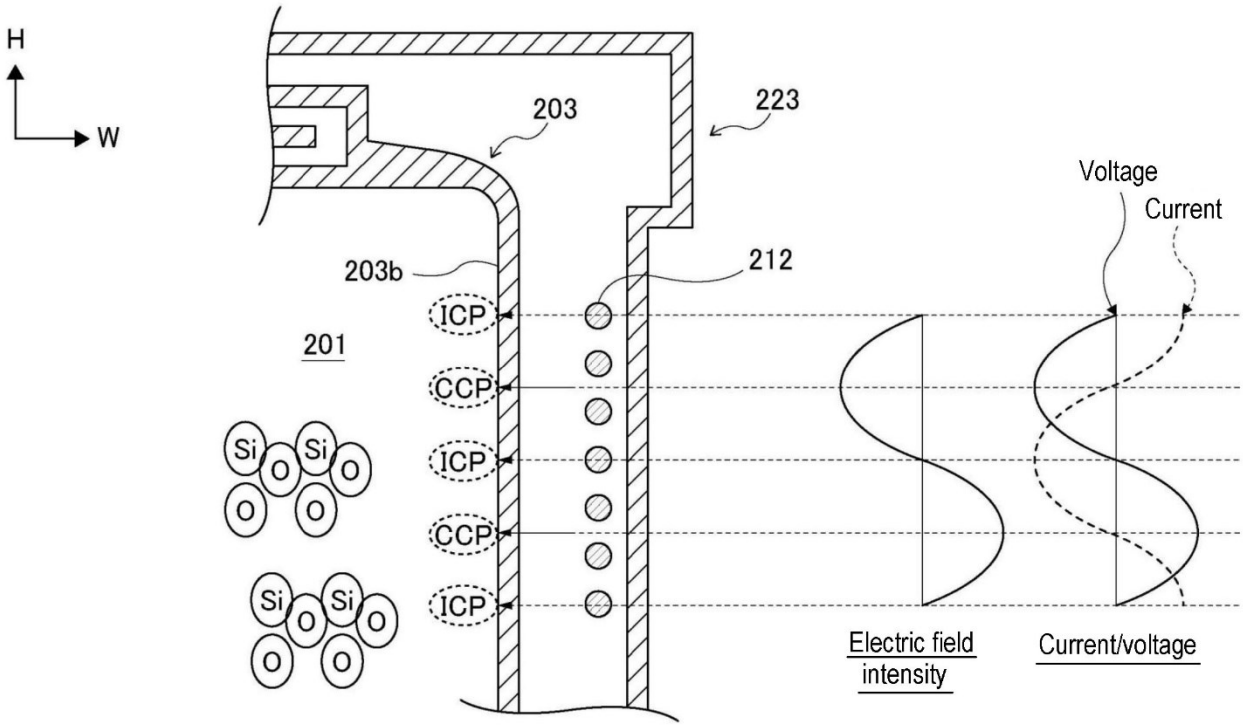

H
W
203
223
212
203b
ICP
CCP
ICP
CCP
ICP
201
Si
O
Voltage
Current
Electric field intensity
Current/voltage

FIG. 5

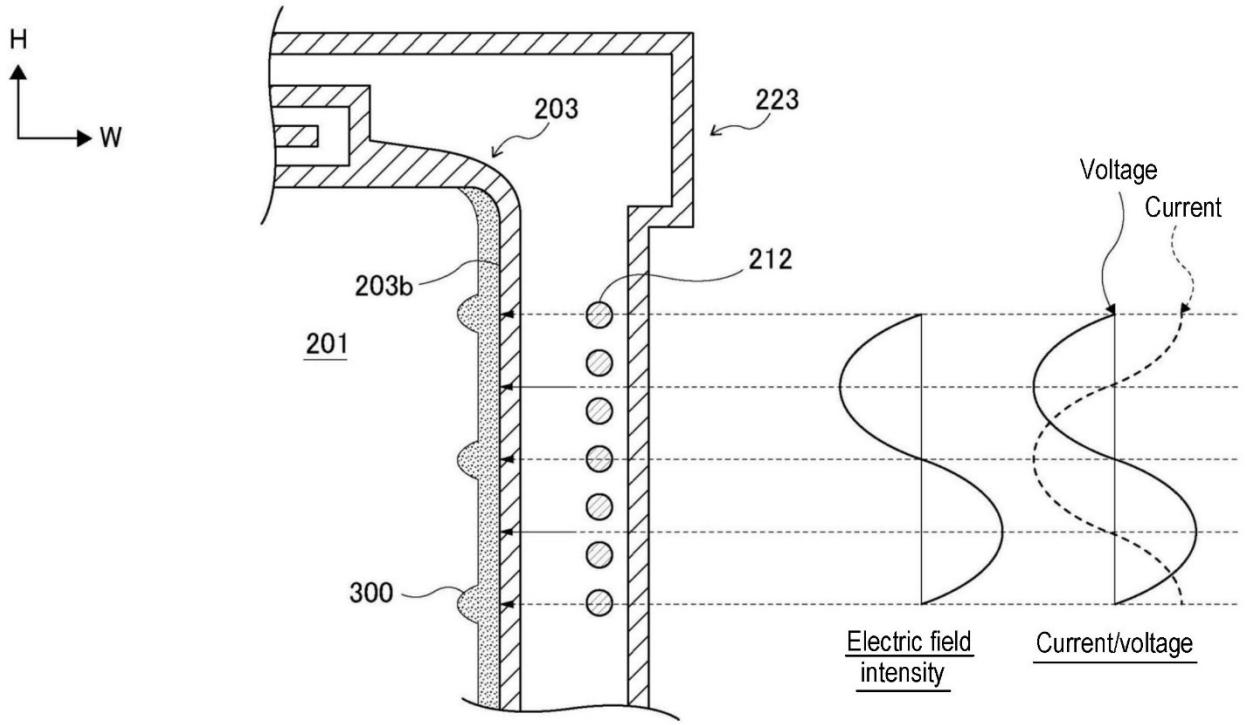

H
W
203
223
212
203b
201
300
Voltage
Current
Electric field intensity
Current/voltage

FIG. 6

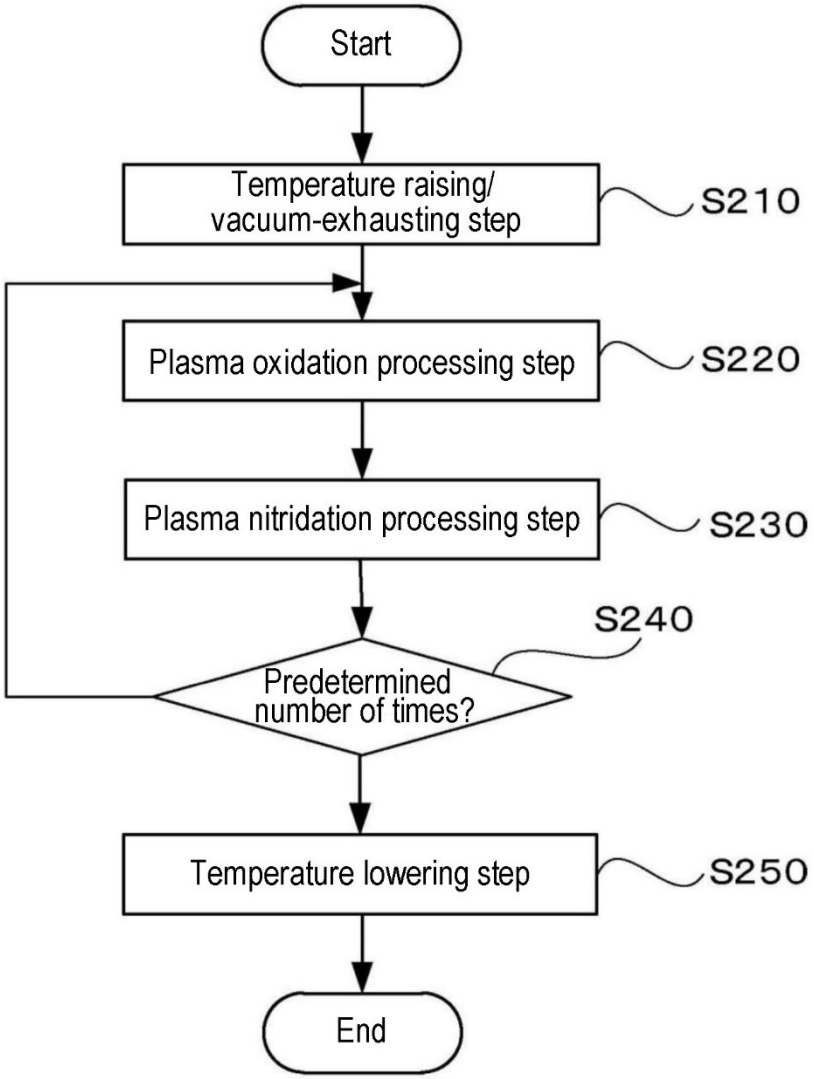

Start
Temperature raising/ vacuum-exhausting step
S210
Plasma oxidation processing step
S220
Plasma nitridation processing step
S230
S240
Predetermined number of times?
Temperature lowering step
S250
End

FIG. 7A

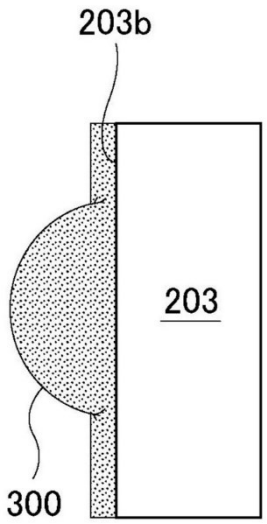


FIG. 7B

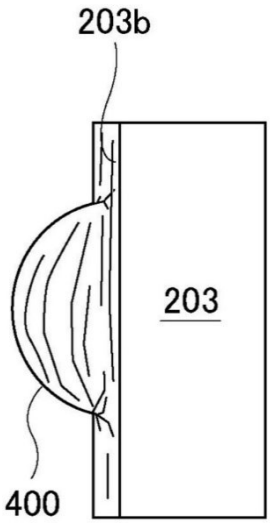


FIG. 7C

