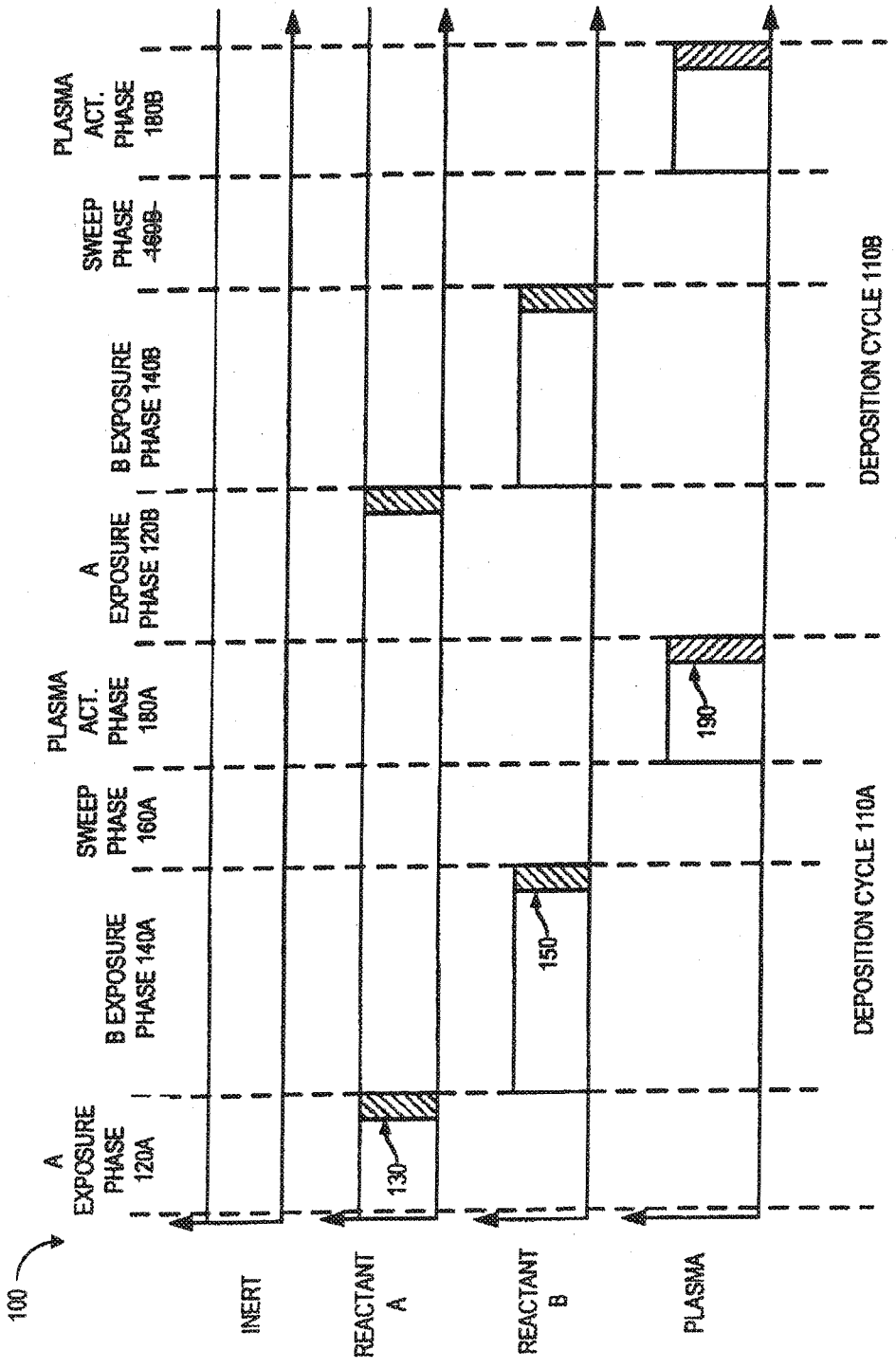

100
A EXPOSURE PHASE 120A
B EXPOSURE PHASE 140A
SWEEP PHASE 160A
PLASMA ACT. PHASE 180A
A EXPOSURE PHASE 120B
B EXPOSURE PHASE 140B
SWEEP PHASE 160B
PLASMA ACT. PHASE 180B
INERT
REACTANT A
REACTANT B
PLASMA
130
150
190
DEPOSITION CYCLE 110A
DEPOSITION CYCLE 110B
TIME

FIG. 1

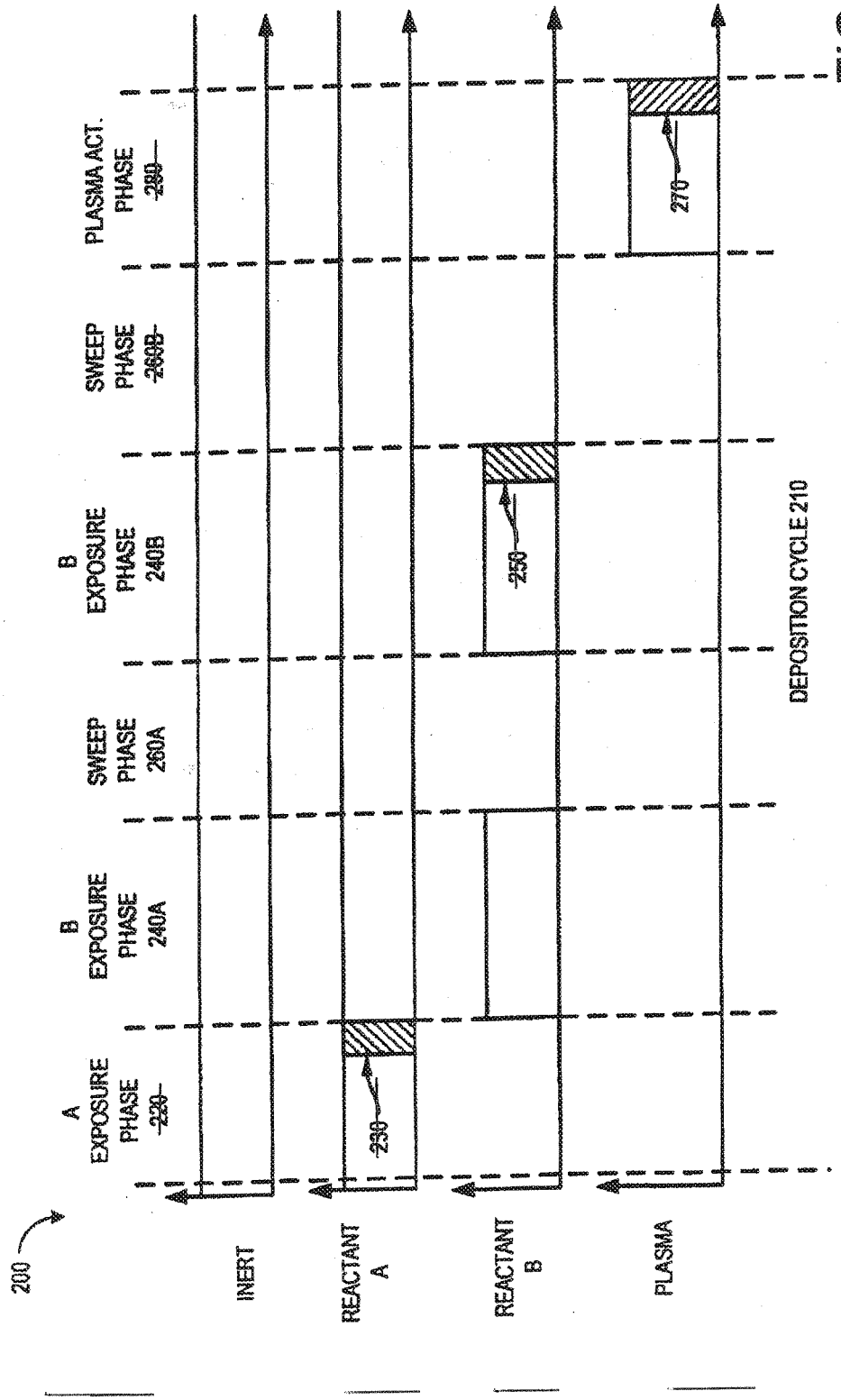

200
INERT
REACTANT A
REACTANT B
PLASMA
A EXPOSURE PHASE 220
B EXPOSURE PHASE 240A
SWEEP PHASE 260A
B EXPOSURE PHASE 240B
SWEEP PHASE 260B
PLASMA ACT. PHASE 280
230
250
270
DEPOSITION CYCLE 210
TIME

FIG. 2

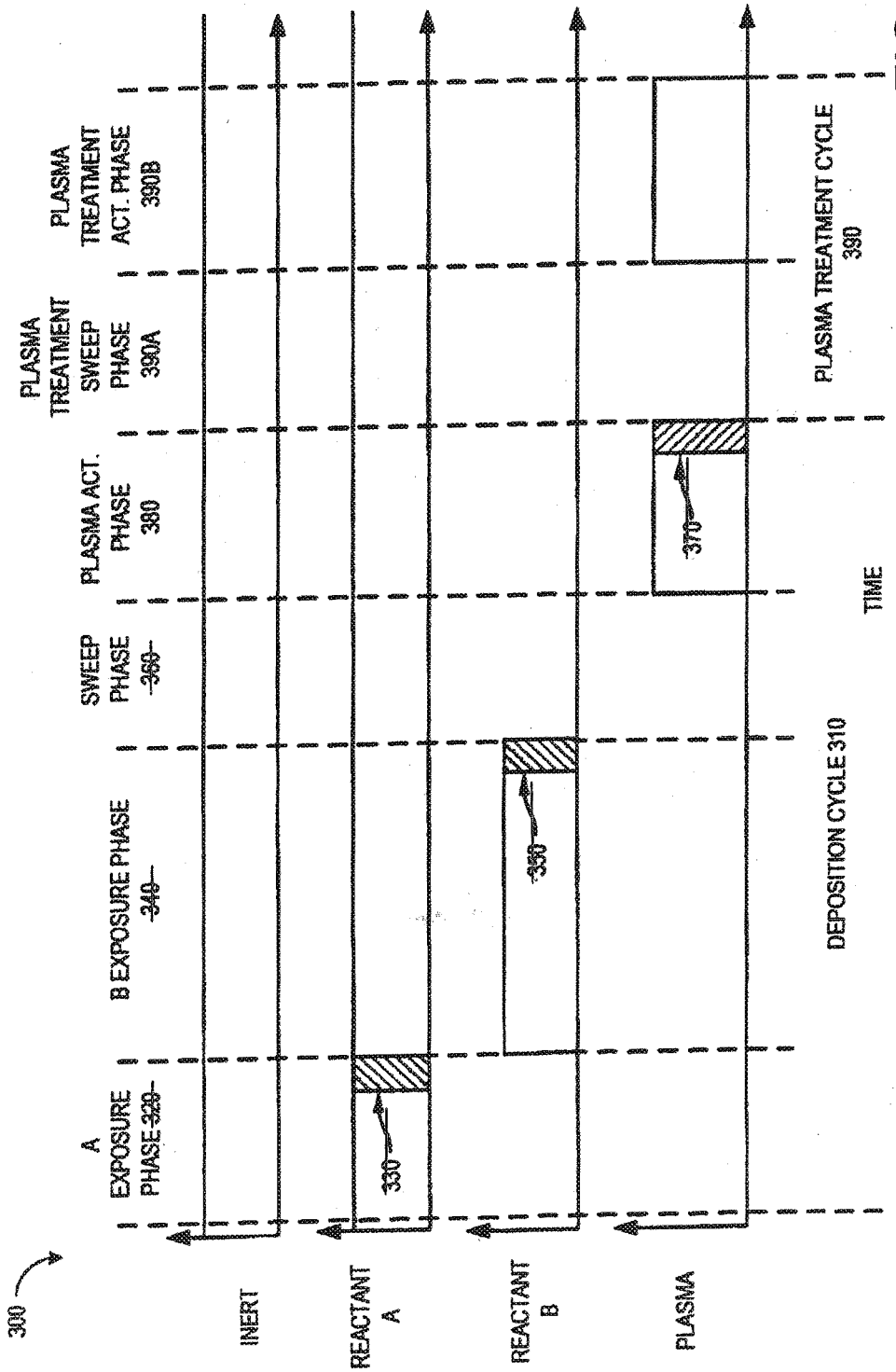

300
A EXPOSURE PHASE 320
B EXPOSURE PHASE 340
SWEEP PHASE 360
PLASMA ACT. PHASE 380
PLASMA TREATMENT SWEEP PHASE 390A
PLASMA TREATMENT ACT. PHASE 390B
330
350
370
INERT
REACTANT A
REACTANT B
PLASMA
DEPOSITION CYCLE 310
PLASMA TREATMENT CYCLE 390
TIME

FIG. 3

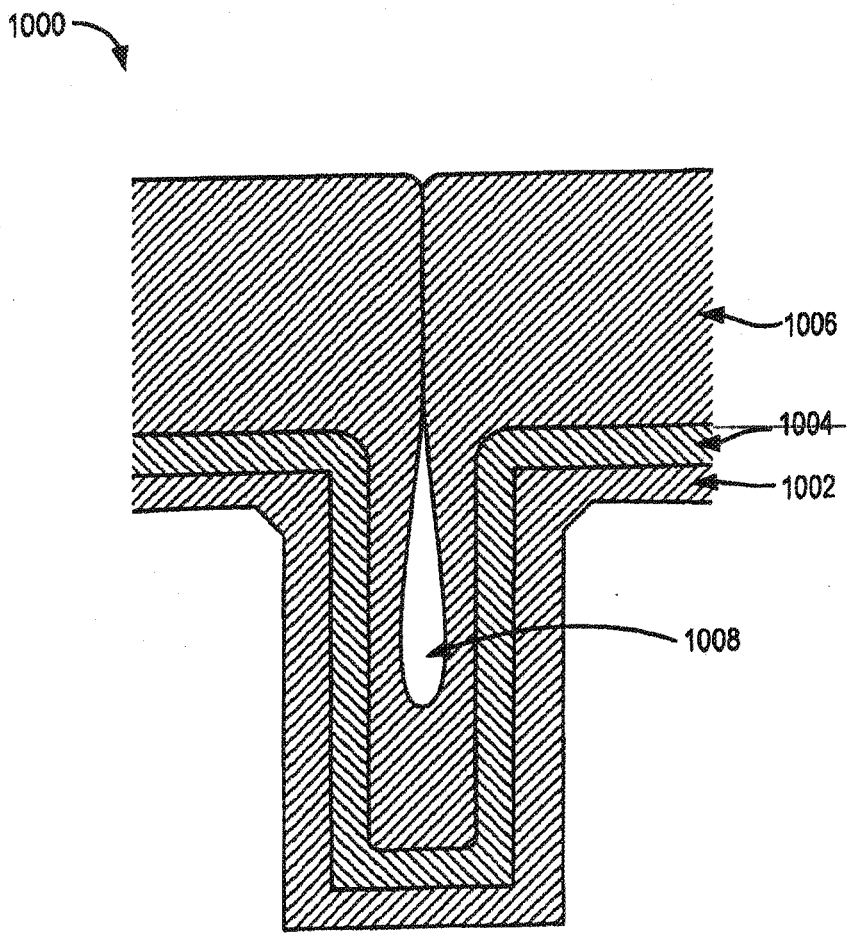


FIG. 10

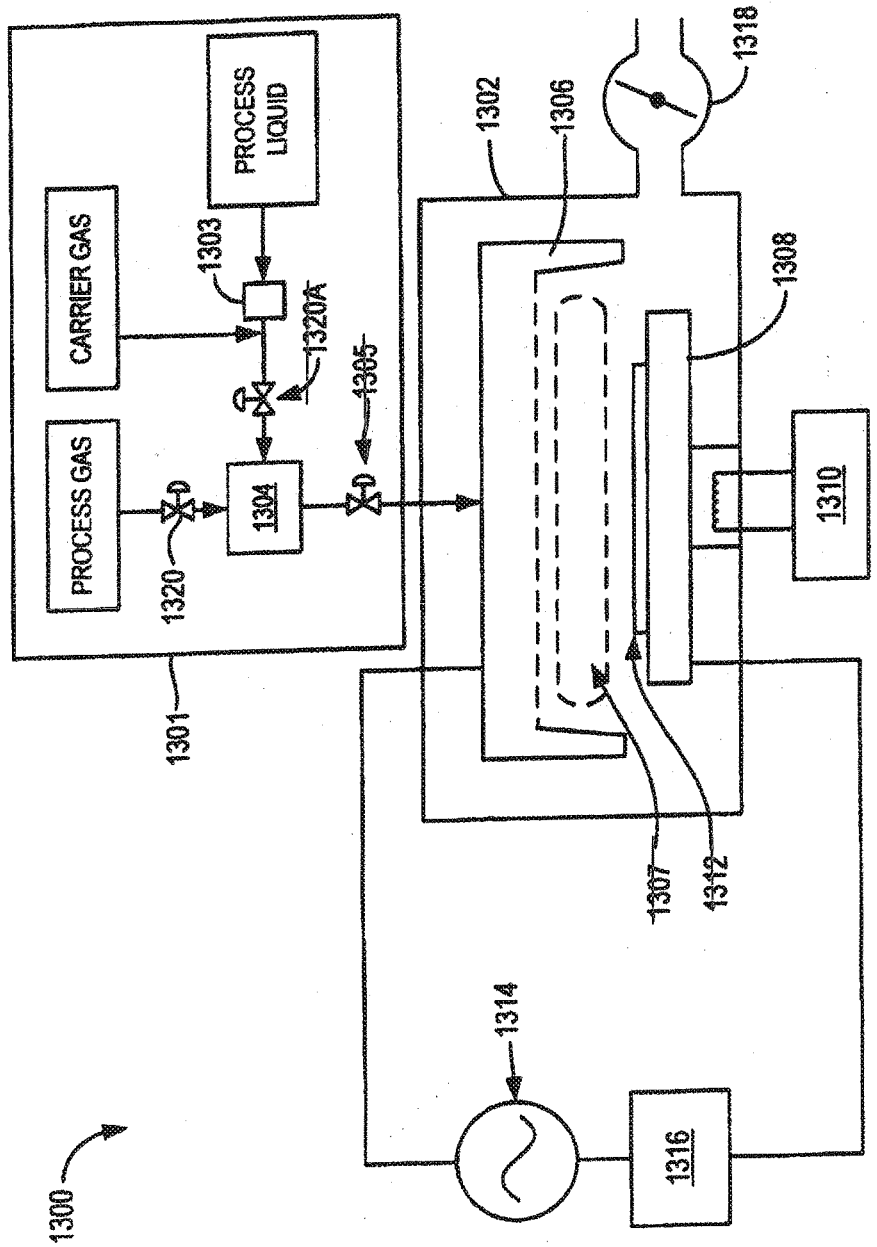

PROCESS LIQUID
CARRIER GAS
PROCESS GAS
1303
1320A
1305
1320
1304
1301
1302
1306
1318
1308
1310
1307
1312
1314
1316
1300

FIG. 13

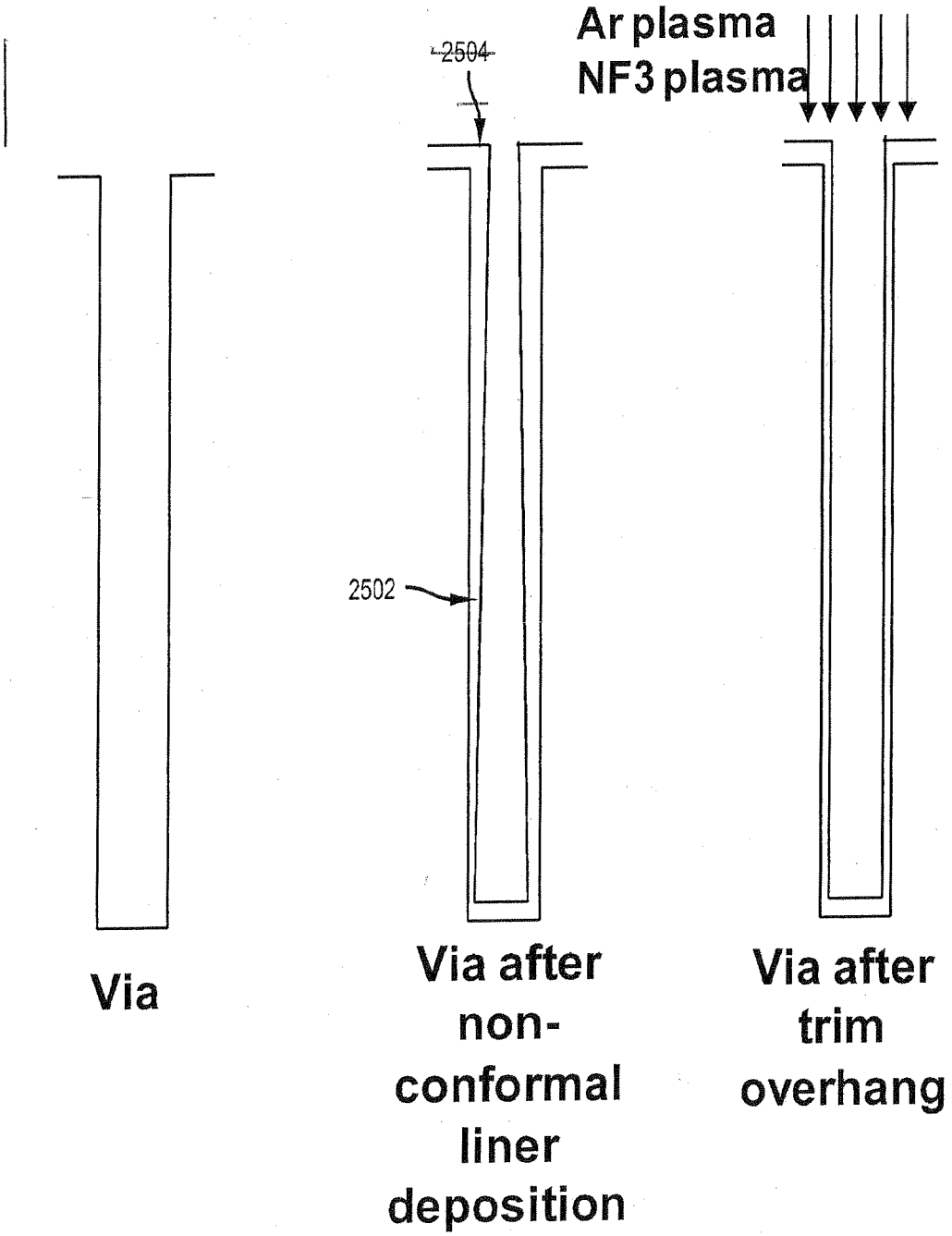

Ar plasma
NF3 plasma
2504
2502
Via
Via after non-conformal liner deposition
Via after trim overhang

FIG. 15