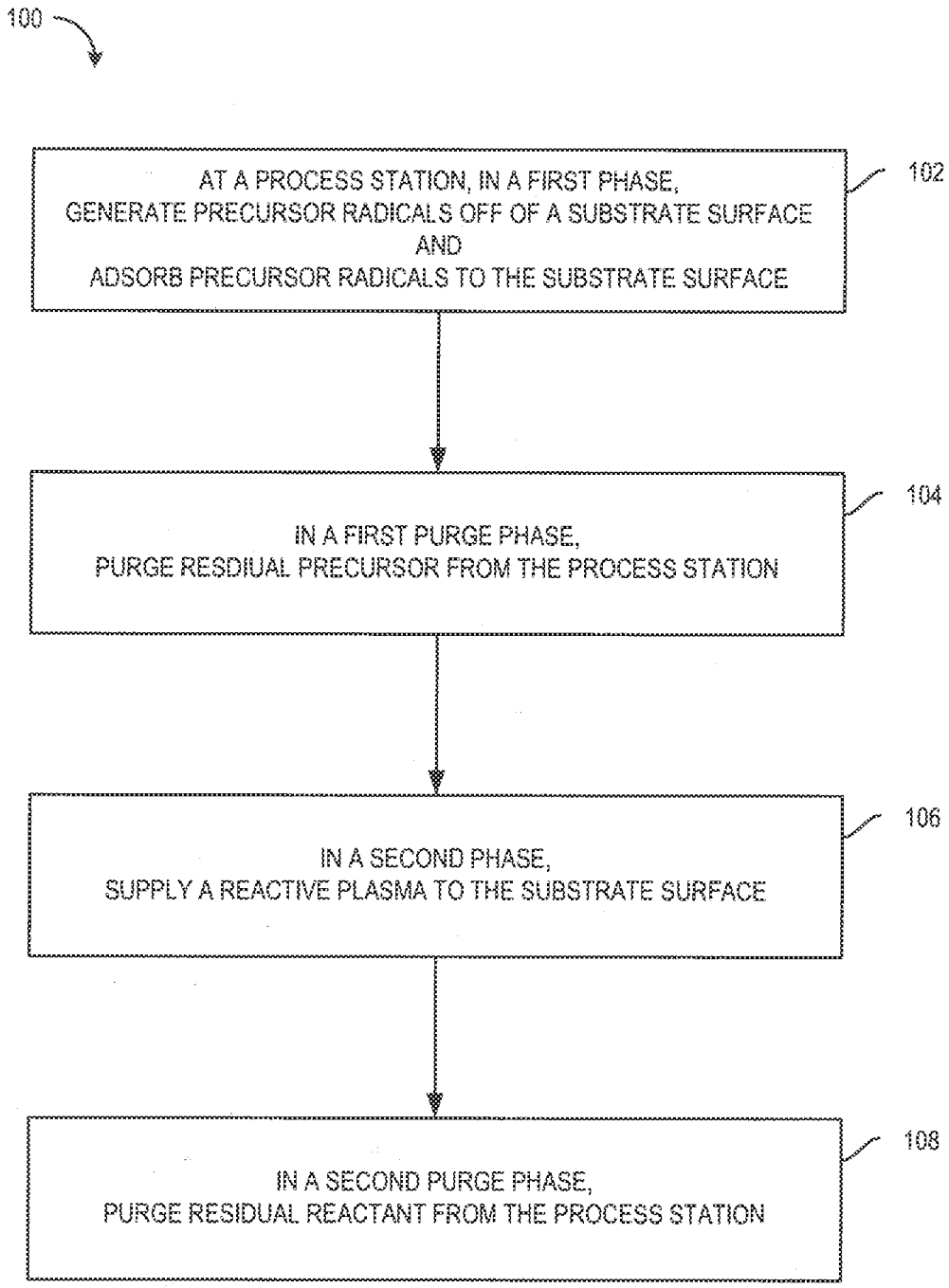

100
AT A PROCESS STATION, IN A FIRST PHASE,
GENERATE PRECURSOR RADICALS OFF OF A SUBSTRATE SURFACE
AND
ADSORB PRECURSOR RADICALS TO THE SUBSTRATE SURFACE
102
IN A FIRST PURGE PHASE,
PURGE RESDIUAL PRECURSOR FROM THE PROCESS STATION
104
IN A SECOND PHASE,
SUPPLY A REACTIVE PLASMA TO THE SUBSTRATE SURFACE
106
IN A SECOND PURGE PHASE,
PURGE RESIDUAL REACTANT FROM THE PROCESS STATION
108

FIG. 1

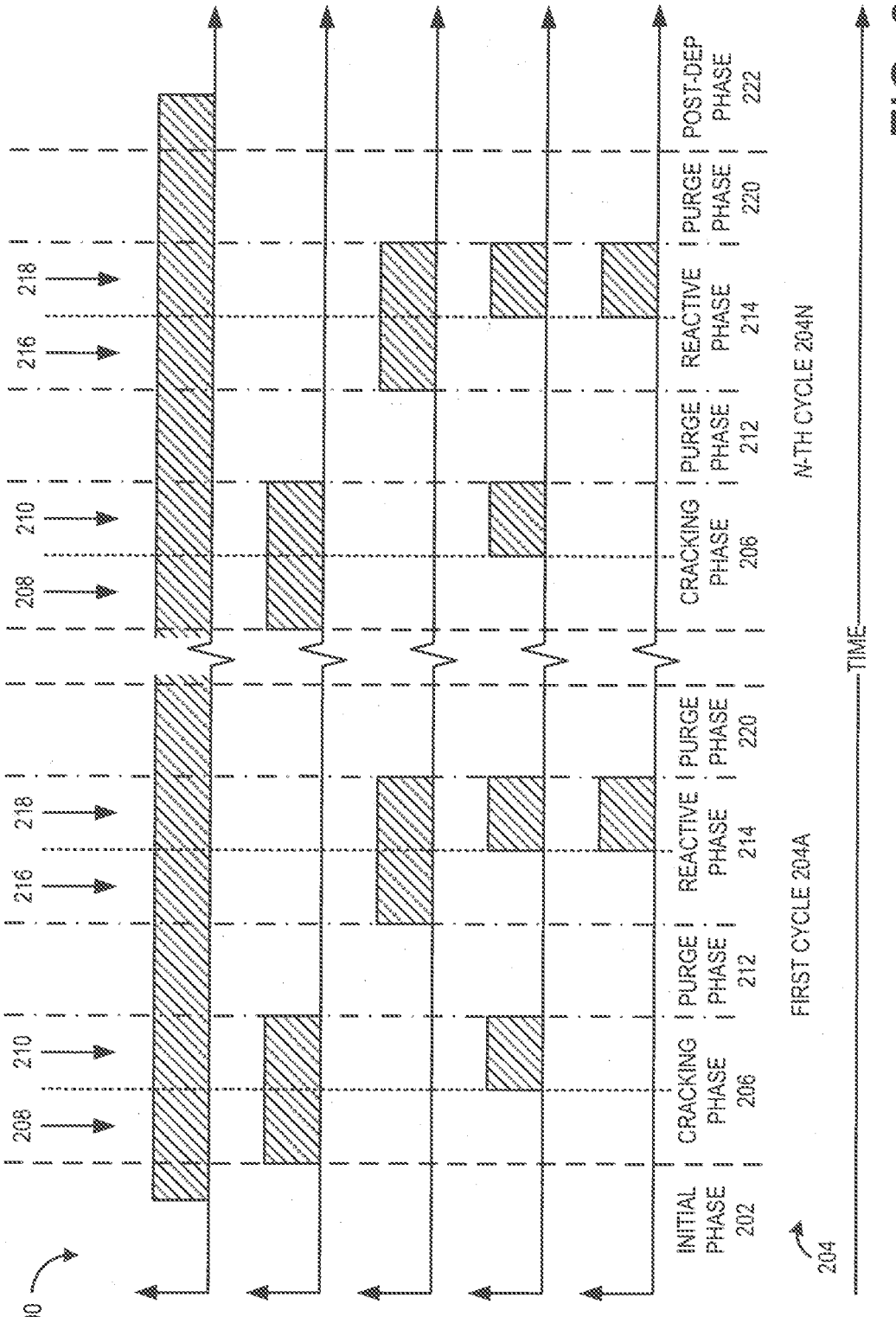

200
INERT
PRECURSOR
REACTANT
HF PLASMA
LF PLASMA
INITIAL PHASE 202
CRACKING PHASE 206
PURGE PHASE 212
REACTIVE PHASE 214
PURGE PHASE 220
CRACKING PHASE 206
PURGE PHASE 212
REACTIVE PHASE 214
PURGE PHASE 220
POST-DEP PHASE 222
208
210
216
218
FIRST CYCLE 204A
N-TH CYCLE 204N
204
TIME

FIG. 2

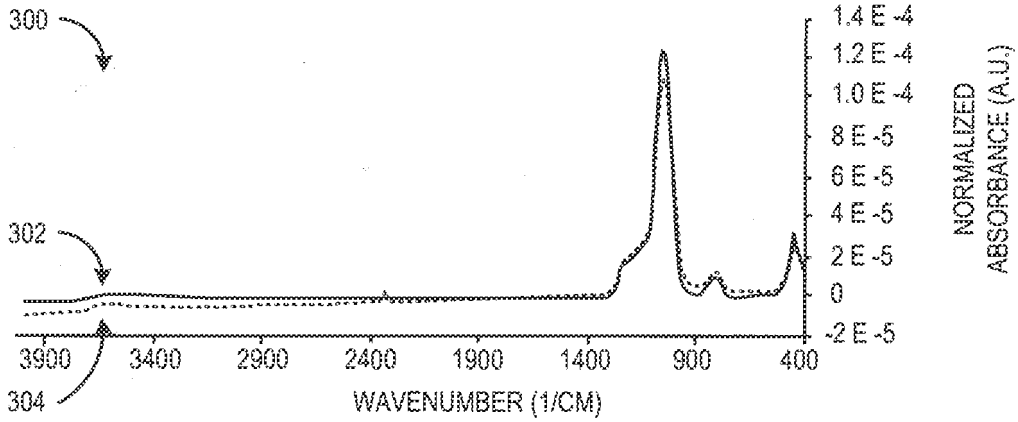


FIG. 3

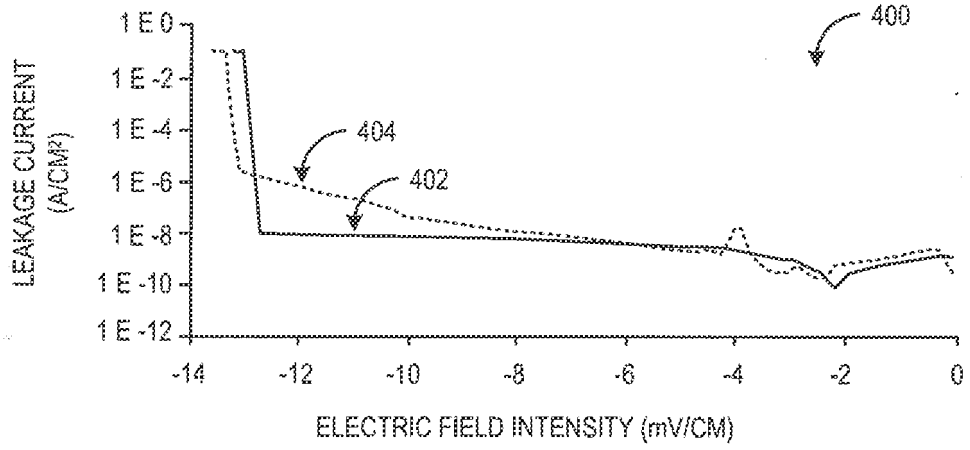


FIG. 4

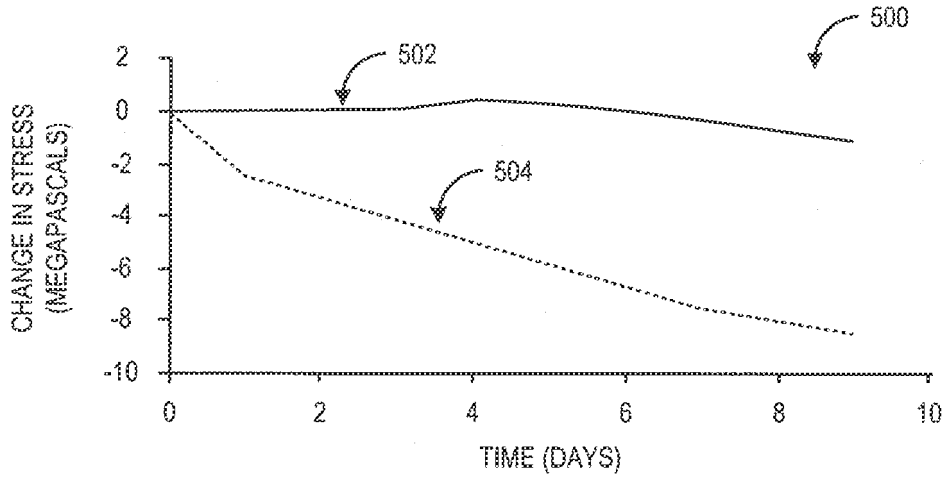


FIG. 5

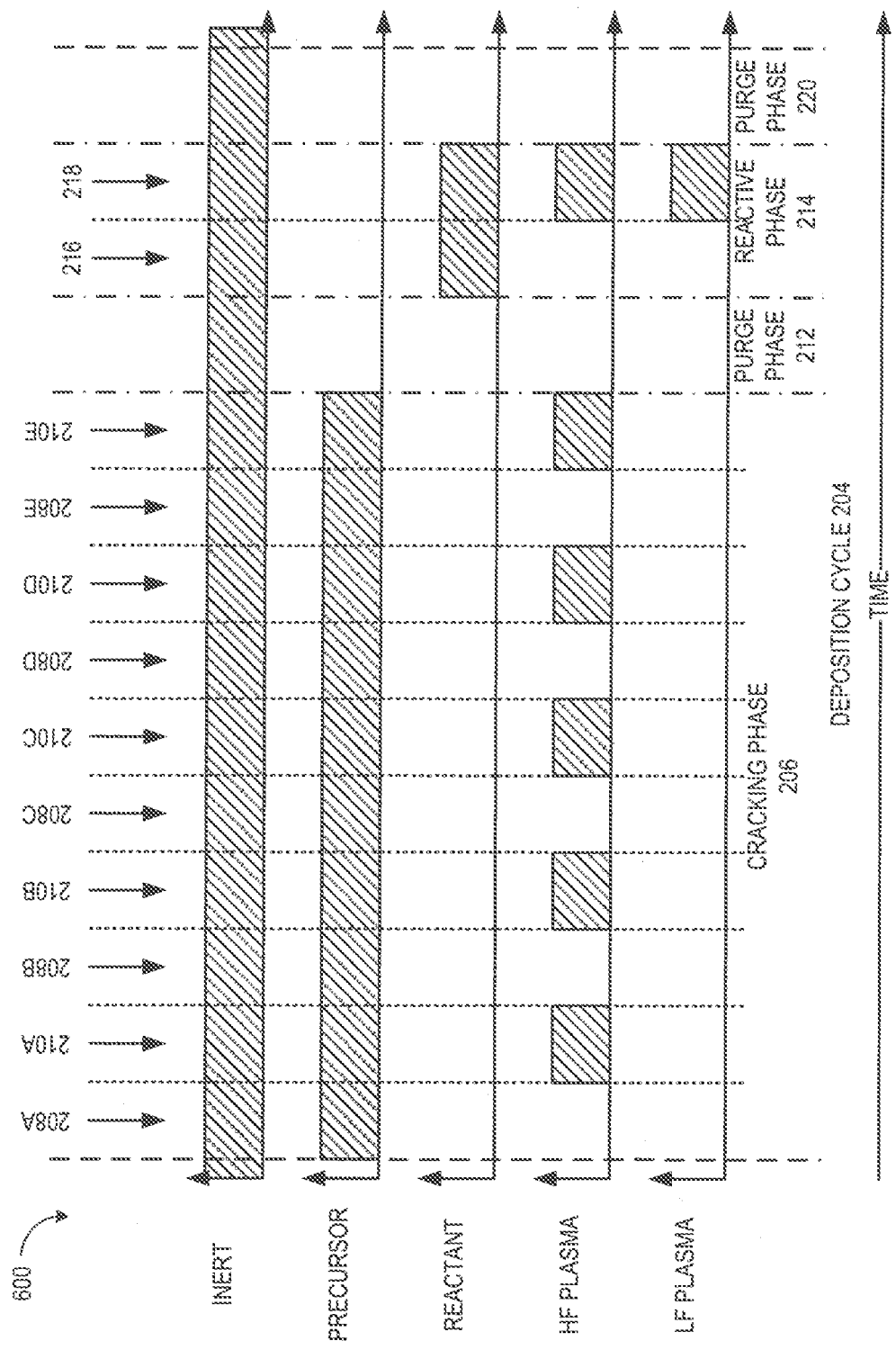

600
208, 210
208A
210A
208B
210B
208C
210C
208D
210D
208E
210E
216
218
INERT
PRECURSOR
REACTANT
HF PLASMA
LF PLASMA
PURGE PHASE 212
REACTIVE PHASE 214
PURGE PHASE 220
CRACKING PHASE 206
DEPOSITION CYCLE 204
TIME

FIG. 6

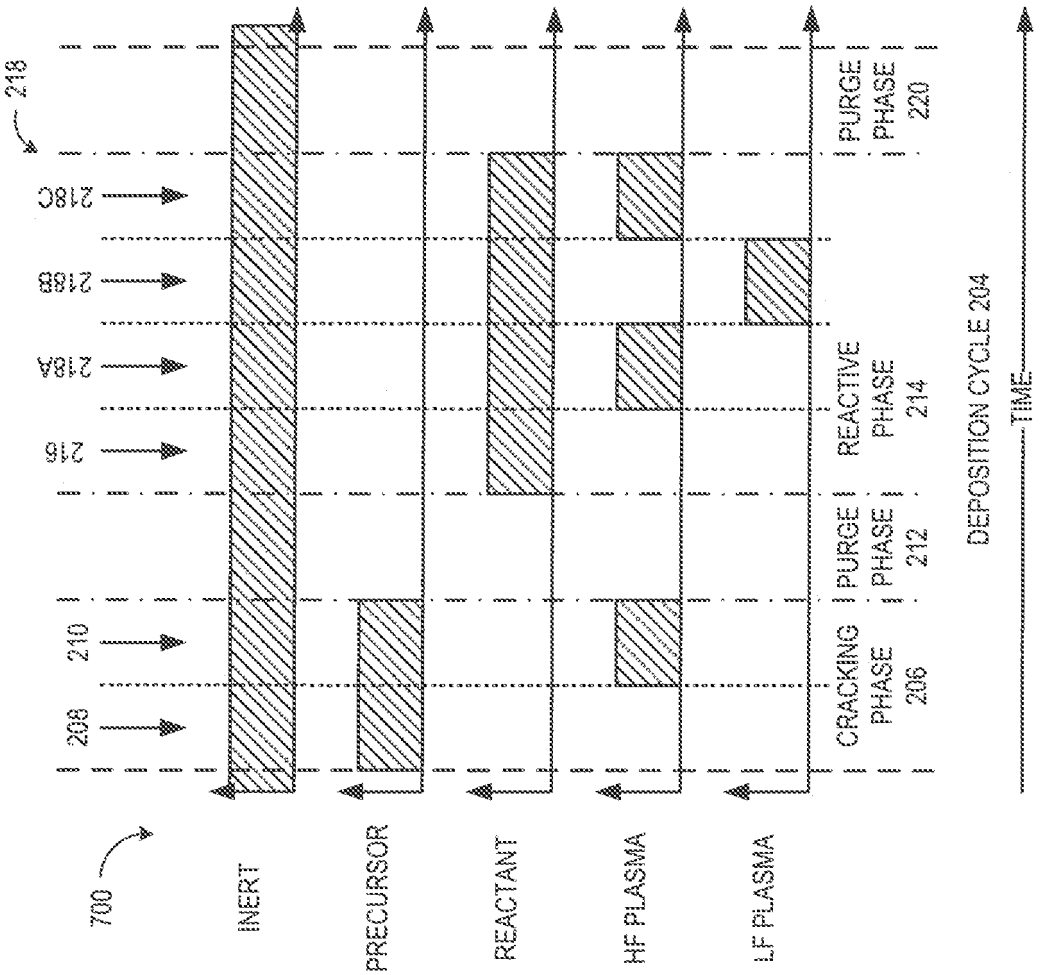

700
INERT
PRECURSOR
REACTANT
HF PLASMA
LF PLASMA
208
210
212
214
216
218A
218B
218C
218
CRACKING PHASE 206
PURGE PHASE 212
REACTIVE PHASE 214
PURGE PHASE 220
DEPOSITION CYCLE 204
TIME

FIG. 7

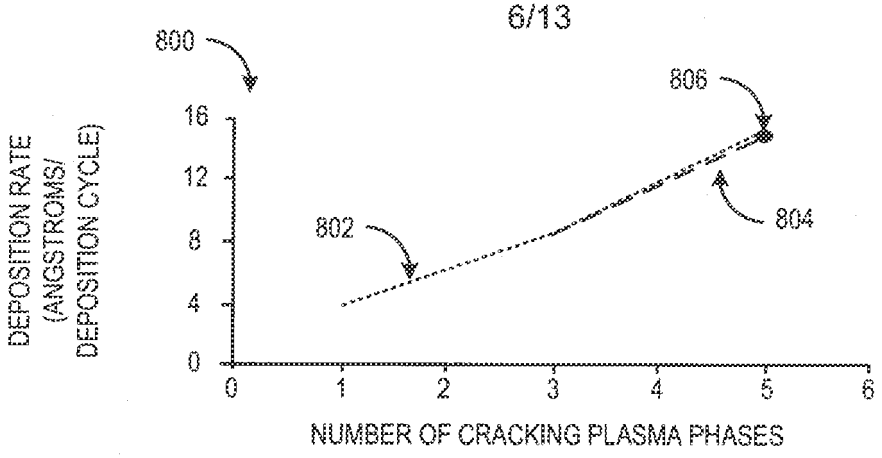


FIG. 8

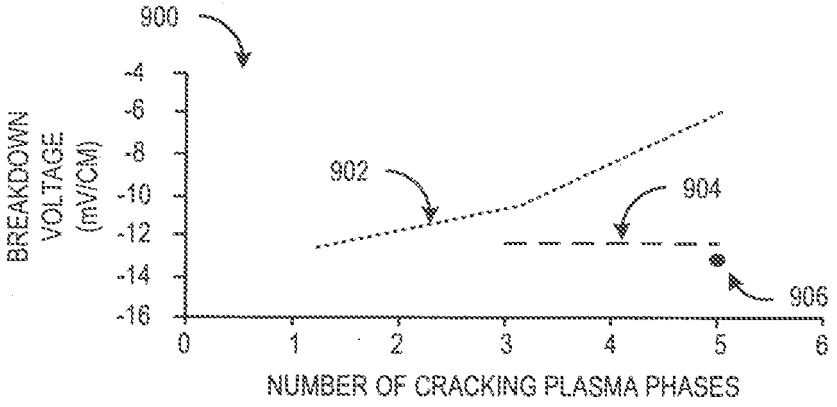


FIG. 9

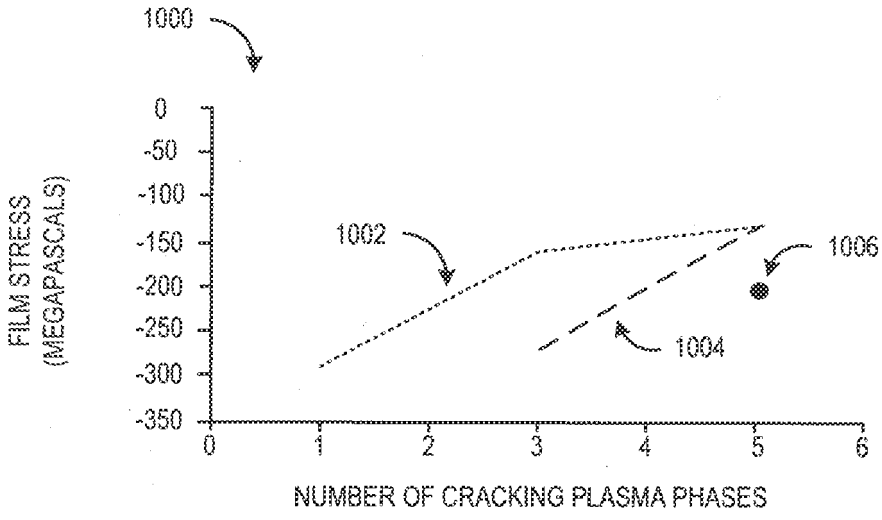


FIG. 10

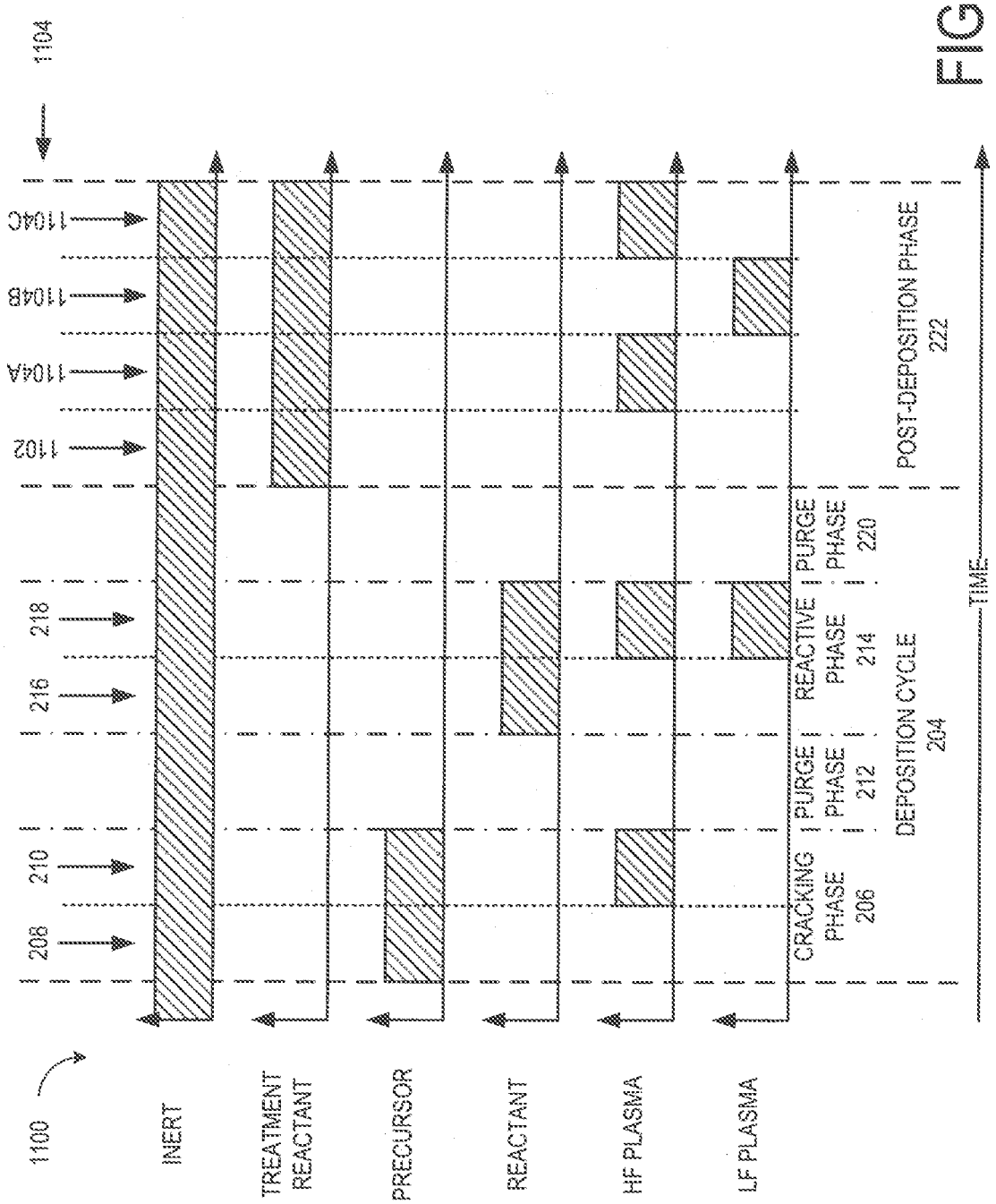

1100
INERT
TREATMENT REACTANT
PRECURSOR
REACTANT
HF PLASMA
LF PLASMA
208
210
216
218
1102
1104A
1104B
1104C
1104
CRACKING PHASE 206
PURGE PHASE 212
REACTIVE PHASE 214
PURGE PHASE 220
DEPOSITION CYCLE 204
POST-DEPOSITION PHASE 222
TIME

FIG. 11

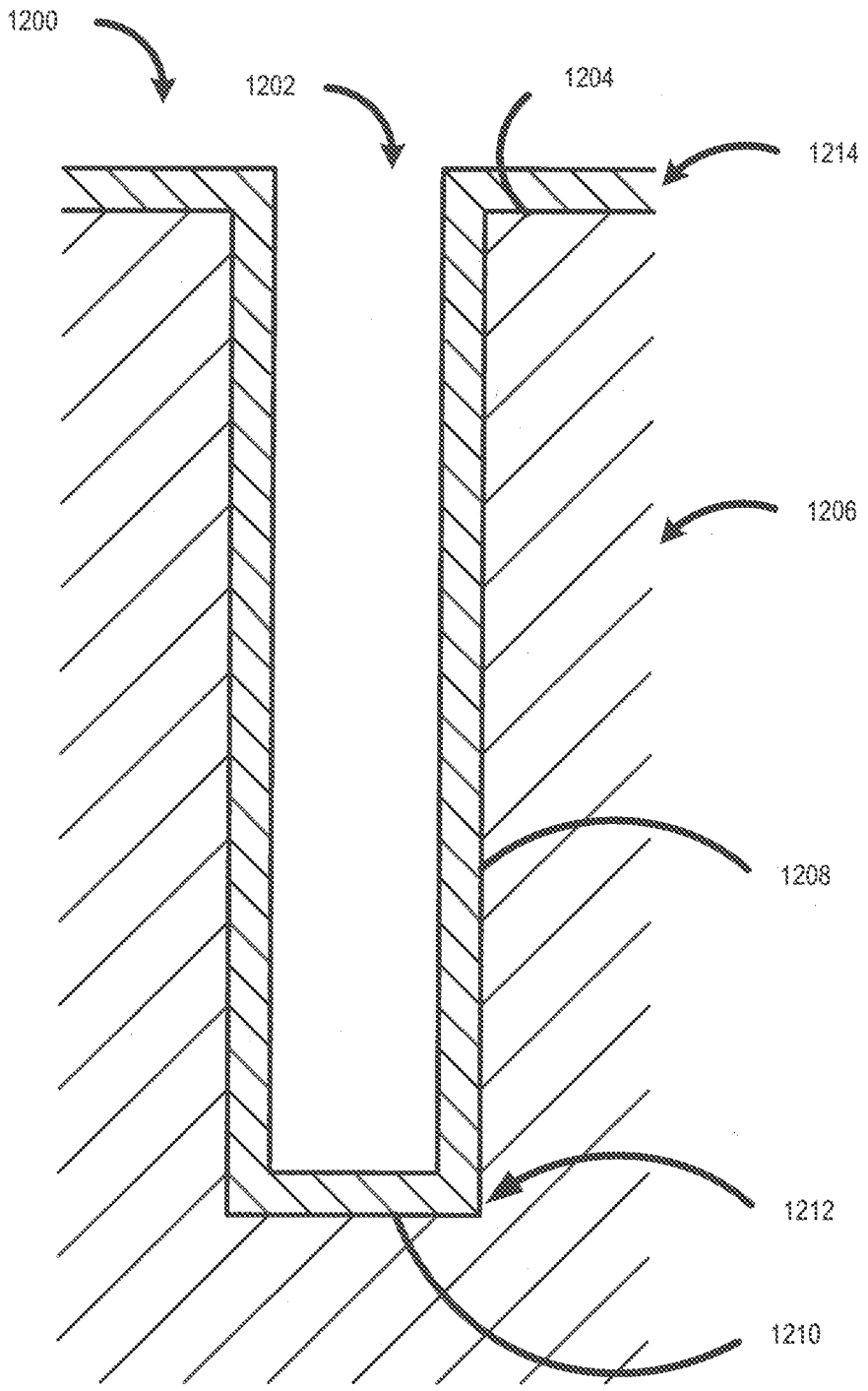


FIG. 12

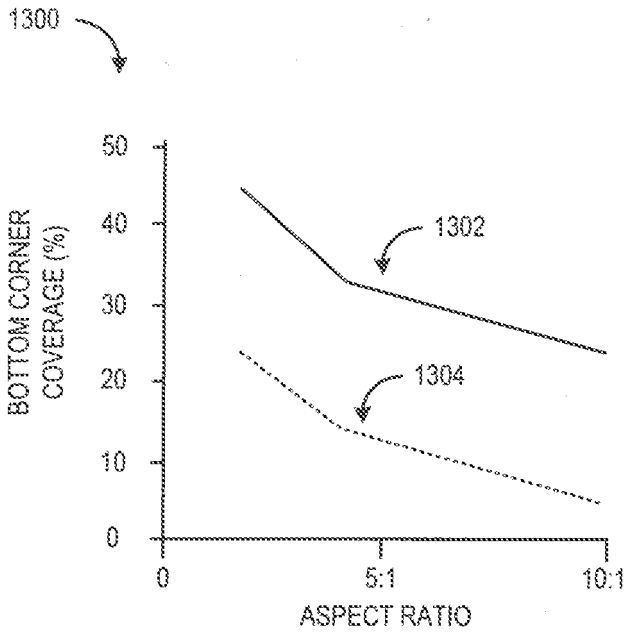

1300
50
40
30
20
10
0
BOTTOM CORNER COVERAGE (%)
1302
1304
0
5:1
10:1
ASPECT RATIO

FIG. 13

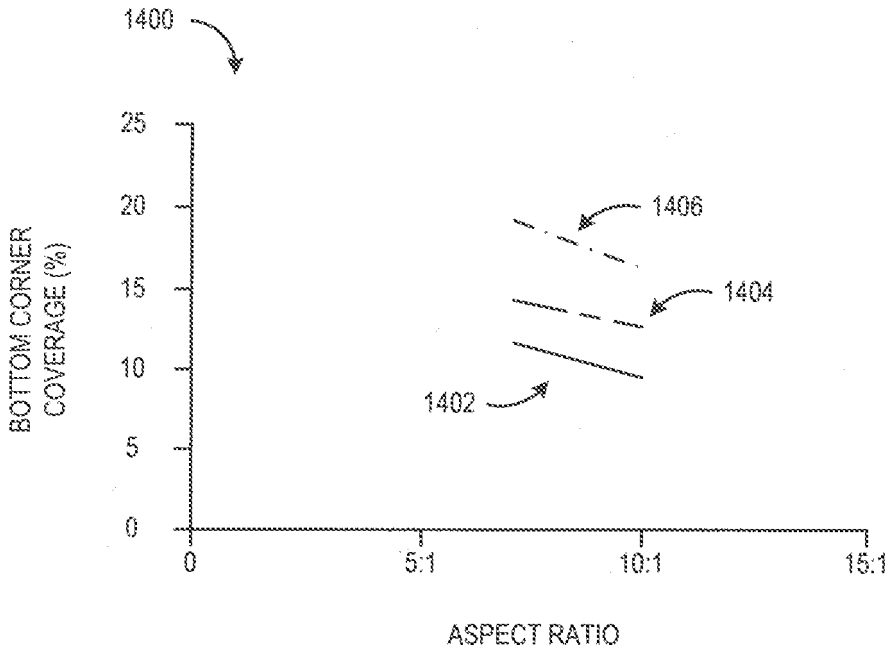

1400
25
20
15
10
5
0
BOTTOM CORNER COVERAGE (%)
1406
1404
1402
0
5:1
10:1
15:1
ASPECT RATIO

FIG. 14

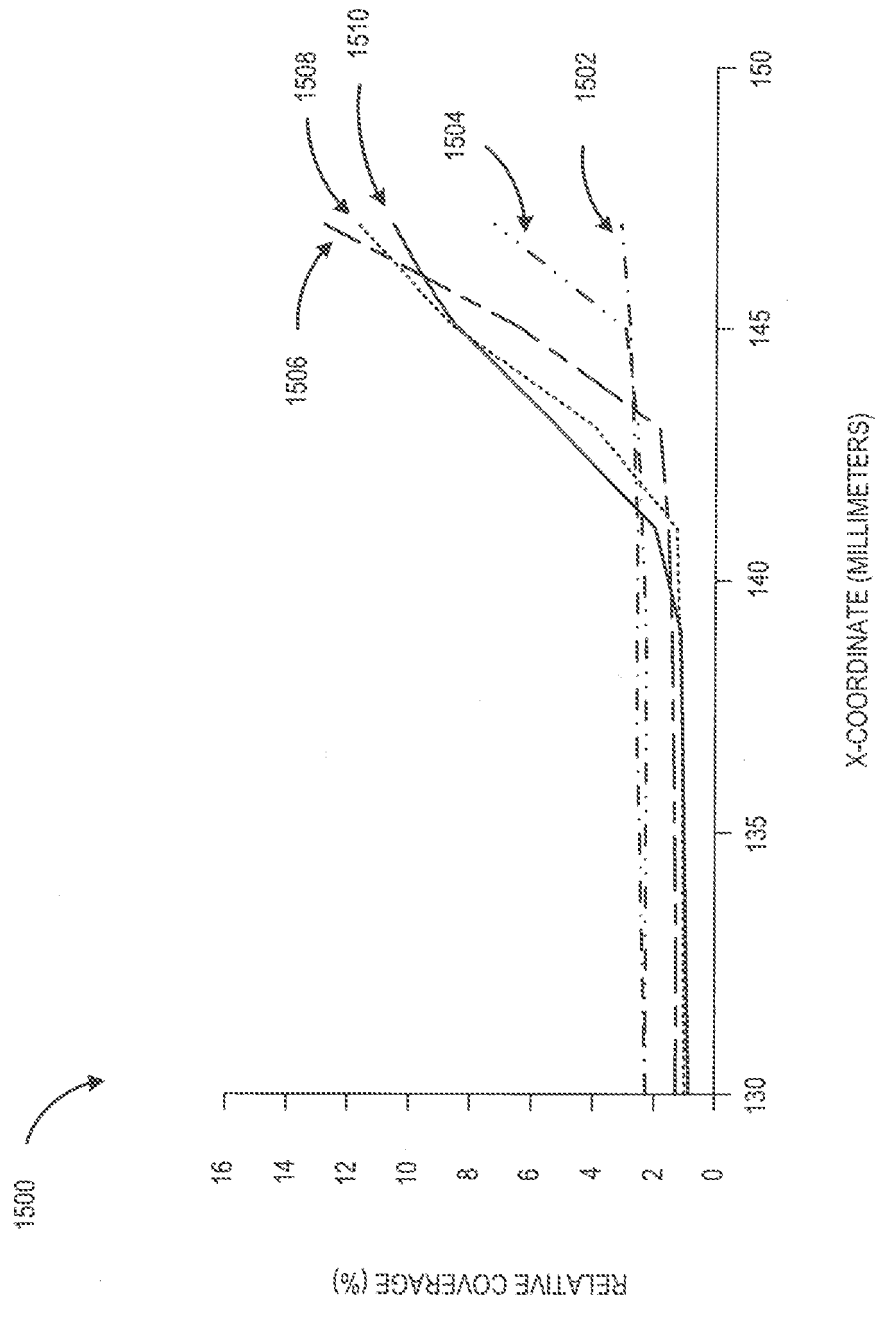
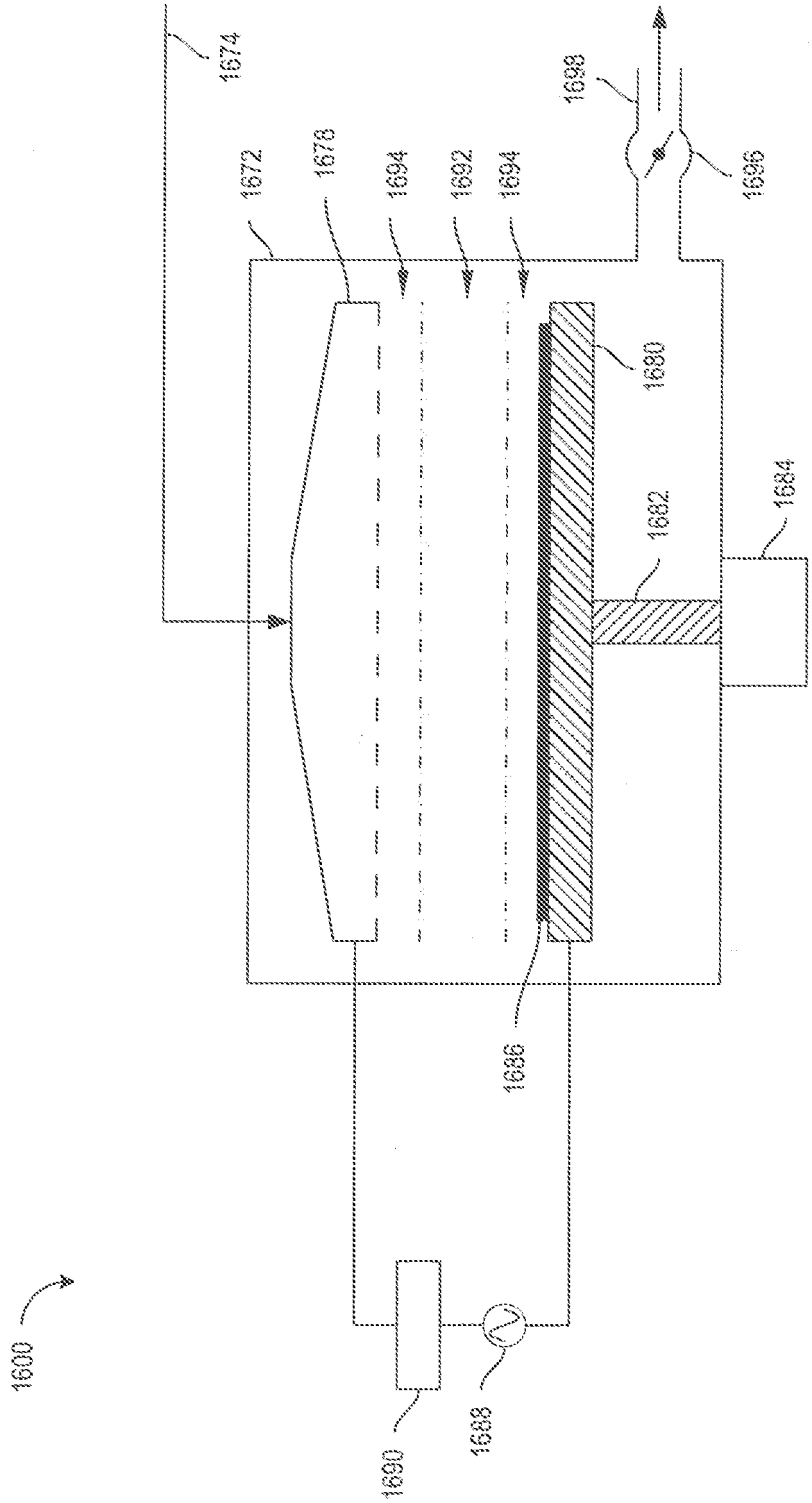

1500
1502
1504
1506
1508
1510
RELATIVE COVERAGE (%)
0
2
4
6
8
10
12
14
16
X-COORDINATE (MILLIMETERS)
130
135
140
145
150

FIG. 15

FIG. 16


1600
1674
1672
1678
1694
1692
1694
1698
1696
1680
1682
1684
1686
1688
1690

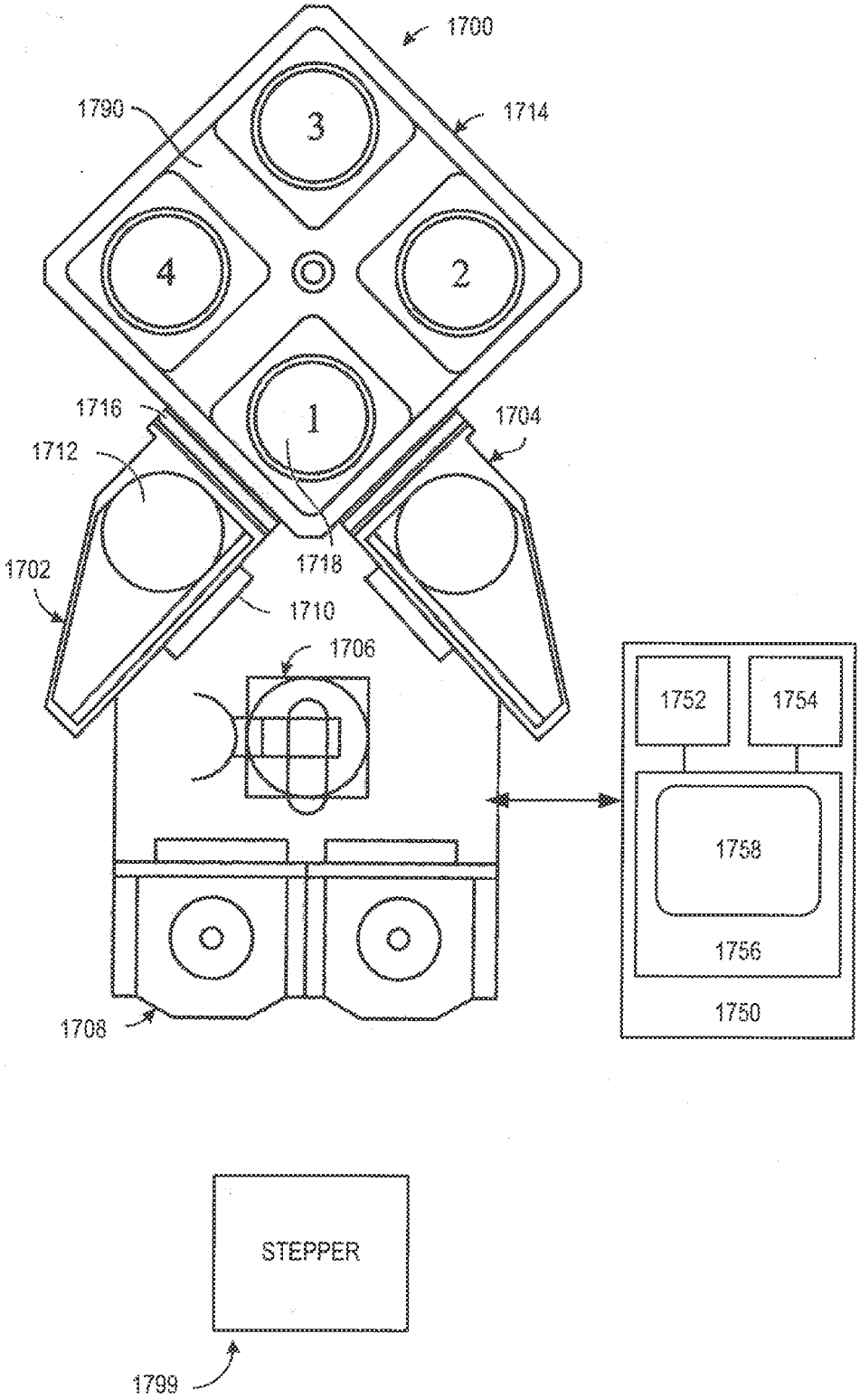

1700
1790
1714
3
4
2
1
1716
1704
1712
1718
1702
1710
1706
1752
1754
1758
1756
1750
1708
STEPPER
1799

FIG. 17

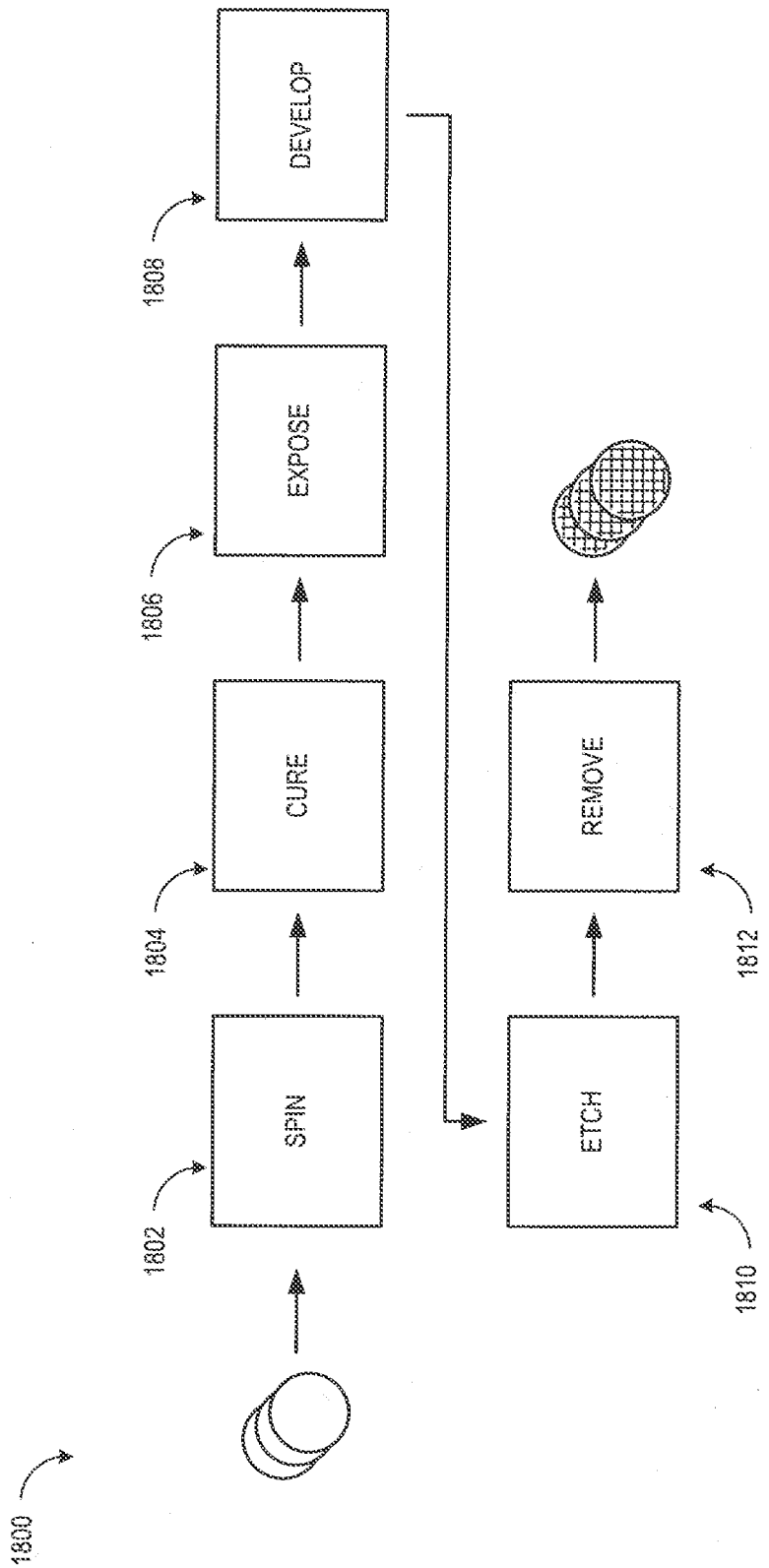

1800
1802
SPIN
1804
CURE
1806
EXPOSE
1808
DEVELOP
1810
ETCH
1812
REMOVE

FIG. 18