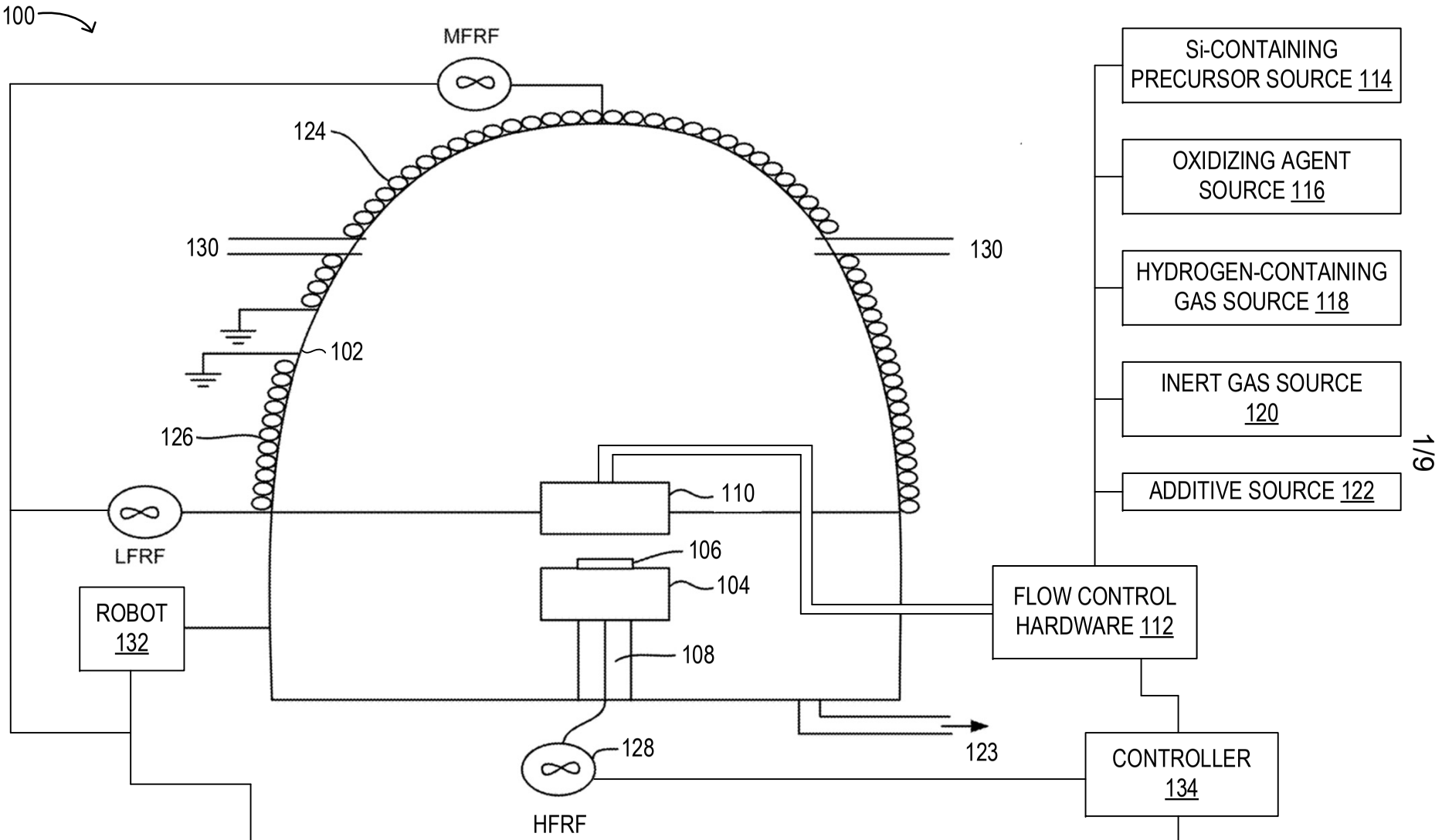

100
MFRF
124
130
130
102
126
LFRF
110
106
104
108
ROBOT
132
FLOW CONTROL
HARDWARE 112
123
128
HFRF
CONTROLLER
134
Si-CONTAINING
PRECURSOR SOURCE 114
OXIDIZING AGENT
SOURCE 116
HYDROGEN-CONTAINING
GAS SOURCE 118
INERT GAS SOURCE
120
ADDITIVE SOURCE 122

FIG. 1

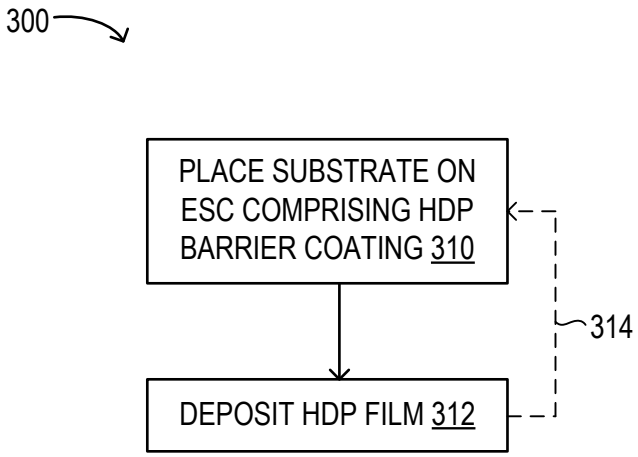

300
PLACE SUBSTRATE ON ESC COMPRISING HDP BARRIER COATING 310
314
DEPOSIT HDP FILM 312

FIG. 3

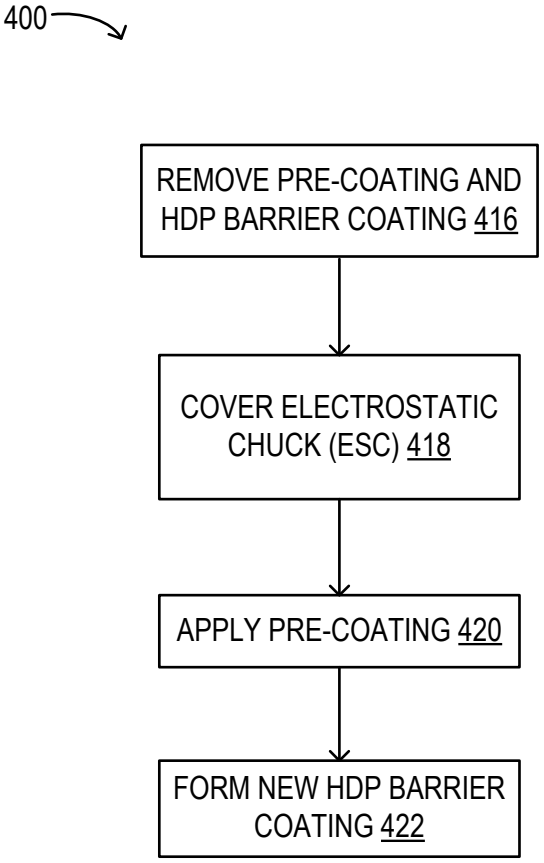

400
REMOVE PRE-COATING AND HDP BARRIER COATING 416
COVER ELECTROSTATIC CHUCK (ESC) 418
APPLY PRE-COATING 420
FORM NEW HDP BARRIER COATING 422

FIG. 4

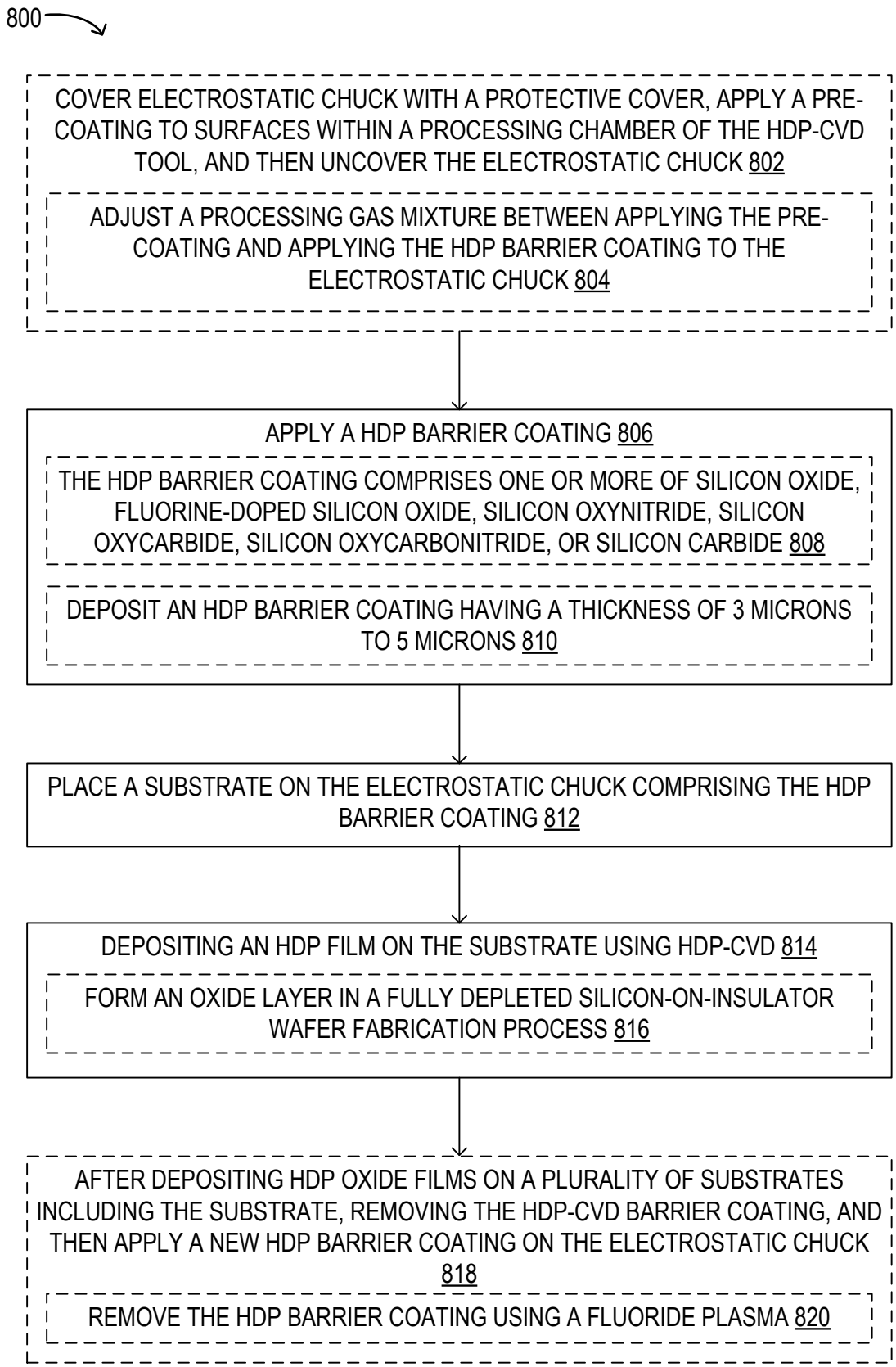

800
COVER ELECTROSTATIC CHUCK WITH A PROTECTIVE COVER, APPLY A PRE-COATING TO SURFACES WITHIN A PROCESSING CHAMBER OF THE HDP-CVD TOOL, AND THEN UNCOVER THE ELECTROSTATIC CHUCK 802
ADJUST A PROCESSING GAS MIXTURE BETWEEN APPLYING THE PRE-COATING AND APPLYING THE HDP BARRIER COATING TO THE ELECTROSTATIC CHUCK 804
APPLY A HDP BARRIER COATING 806
THE HDP BARRIER COATING COMPRISES ONE OR MORE OF SILICON OXIDE, FLUORINE-DOPED SILICON OXIDE, SILICON OXYNITRIDE, SILICON OXYCARBIDE, SILICON OXYCARBONITRIDE, OR SILICON CARBIDE 808
DEPOSIT AN HDP BARRIER COATING HAVING A THICKNESS OF 3 MICRONS TO 5 MICRONS 810
PLACE A SUBSTRATE ON THE ELECTROSTATIC CHUCK COMPRISING THE HDP BARRIER COATING 812
DEPOSITING AN HDP FILM ON THE SUBSTRATE USING HDP-CVD 814
FORM AN OXIDE LAYER IN A FULLY DEPLETED SILICON-ON-INSULATOR WAFER FABRICATION PROCESS 816
AFTER DEPOSITING HDP OXIDE FILMS ON A PLURALITY OF SUBSTRATES INCLUDING THE SUBSTRATE, REMOVING THE HDP-CVD BARRIER COATING, AND THEN APPLY A NEW HDP BARRIER COATING ON THE ELECTROSTATIC CHUCK 818
REMOVE THE HDP BARRIER COATING USING A FLUORIDE PLASMA 820

FIG. 8