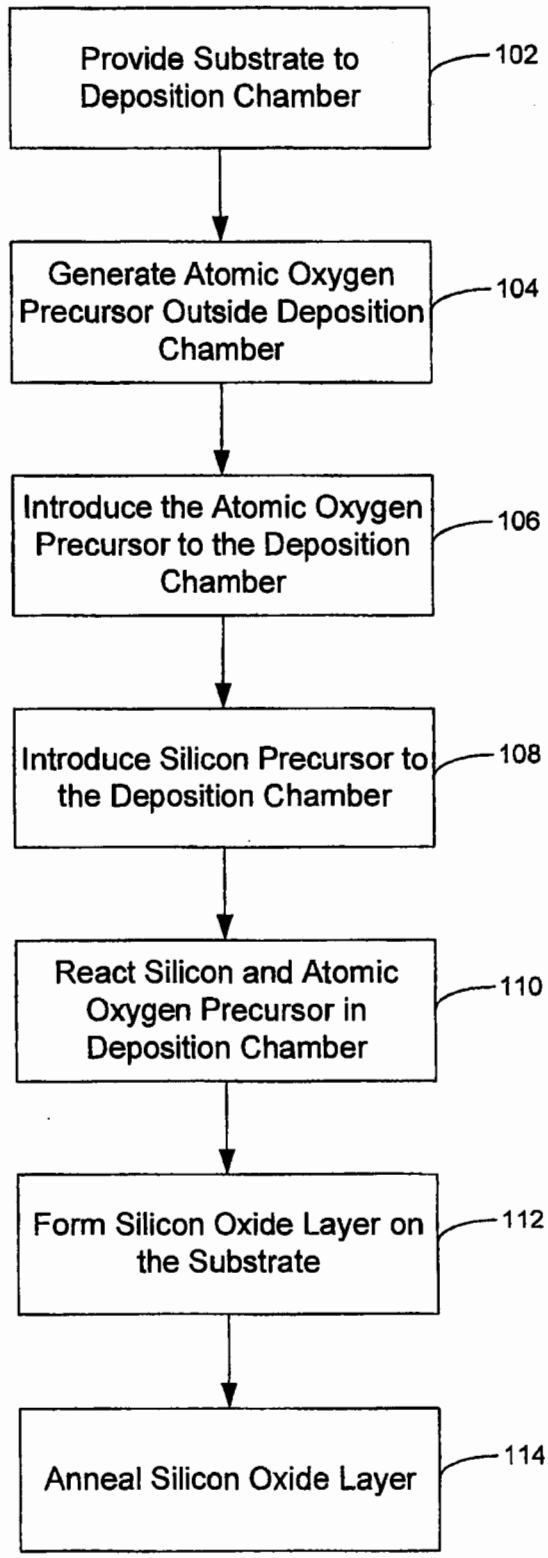

Provide Substrate to Deposition Chamber
102
Generate Atomic Oxygen Precursor Outside Deposition Chamber
104
Introduce the Atomic Oxygen Precursor to the Deposition Chamber
106
Introduce Silicon Precursor to the Deposition Chamber
108
React Silicon and Atomic Oxygen Precursor in Deposition Chamber
110
Form Silicon Oxide Layer on the Substrate
112
Anneal Silicon Oxide Layer
114

Fig. 1

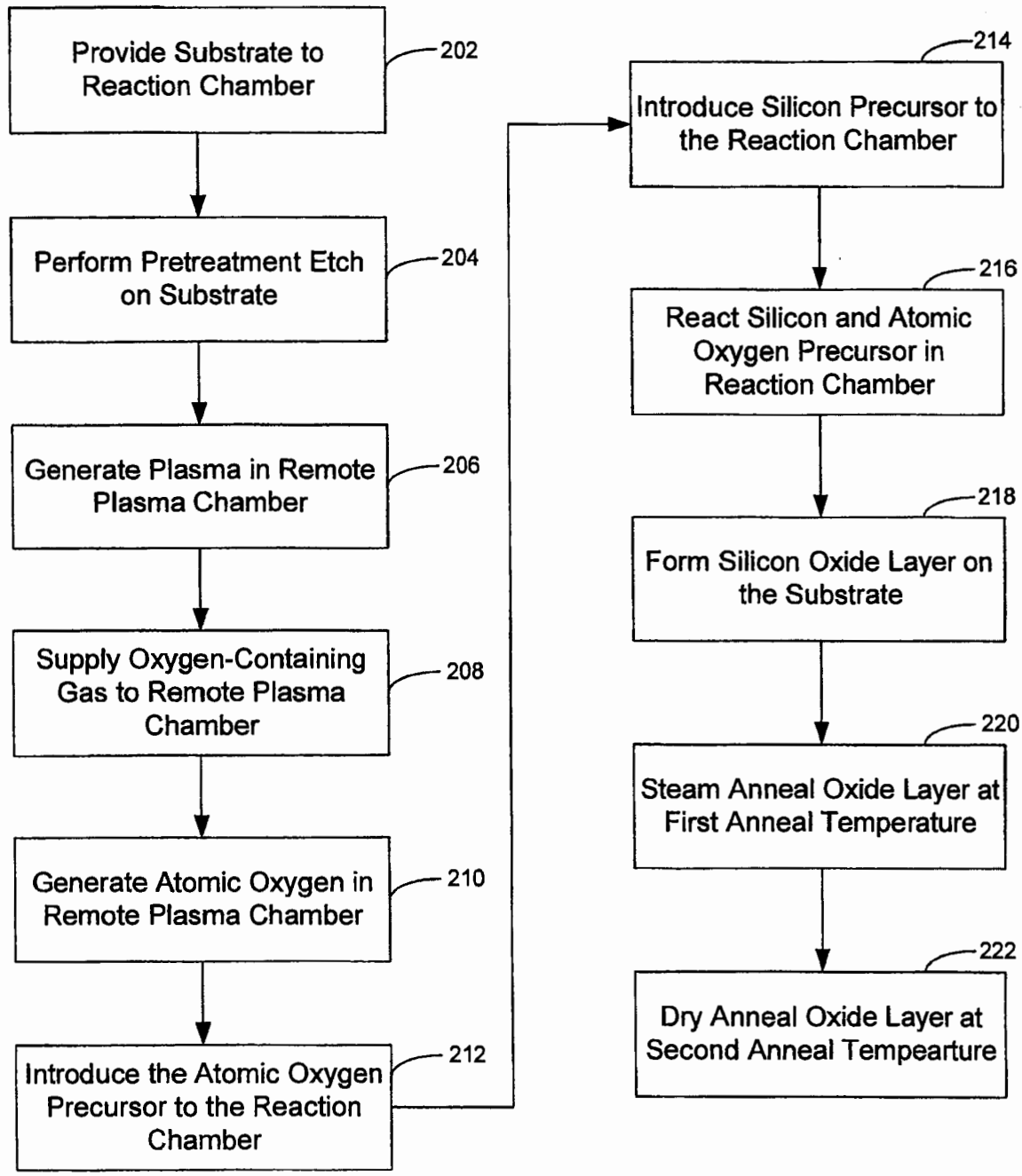

Provide Substrate to Reaction Chamber
202
Perform Pretreatment Etch on Substrate
204
Generate Plasma in Remote Plasma Chamber
206
Supply Oxygen-Containing Gas to Remote Plasma Chamber
208
Generate Atomic Oxygen in Remote Plasma Chamber
210
Introduce the Atomic Oxygen Precursor to the Reaction Chamber
212
Introduce Silicon Precursor to the Reaction Chamber
214
React Silicon and Atomic Oxygen Precursor in Reaction Chamber
216
Form Silicon Oxide Layer on the Substrate
218
Steam Anneal Oxide Layer at First Anneal Temperature
220
Dry Anneal Oxide Layer at Second Anneal Tempearture
222

Fig. 2

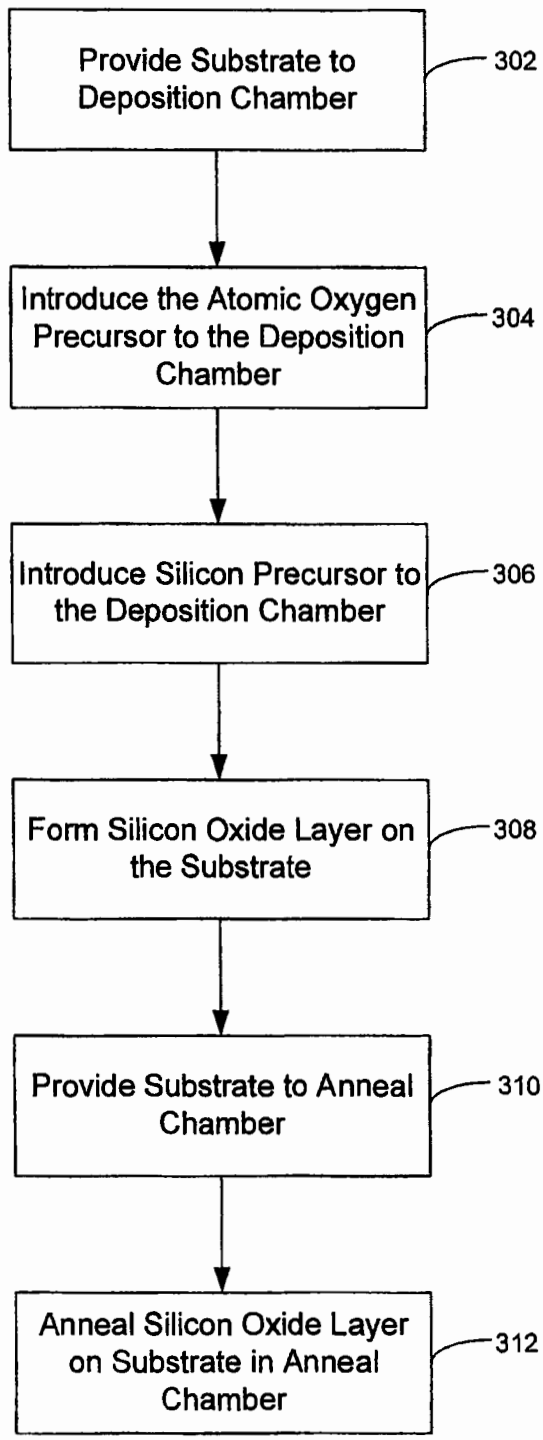

Provide Substrate to Deposition Chamber
302
Introduce the Atomic Oxygen Precursor to the Deposition Chamber
304
Introduce Silicon Precursor to the Deposition Chamber
306
Form Silicon Oxide Layer on the Substrate
308
Provide Substrate to Anneal Chamber
310
Anneal Silicon Oxide Layer on Substrate in Anneal Chamber
312

Fig. 3

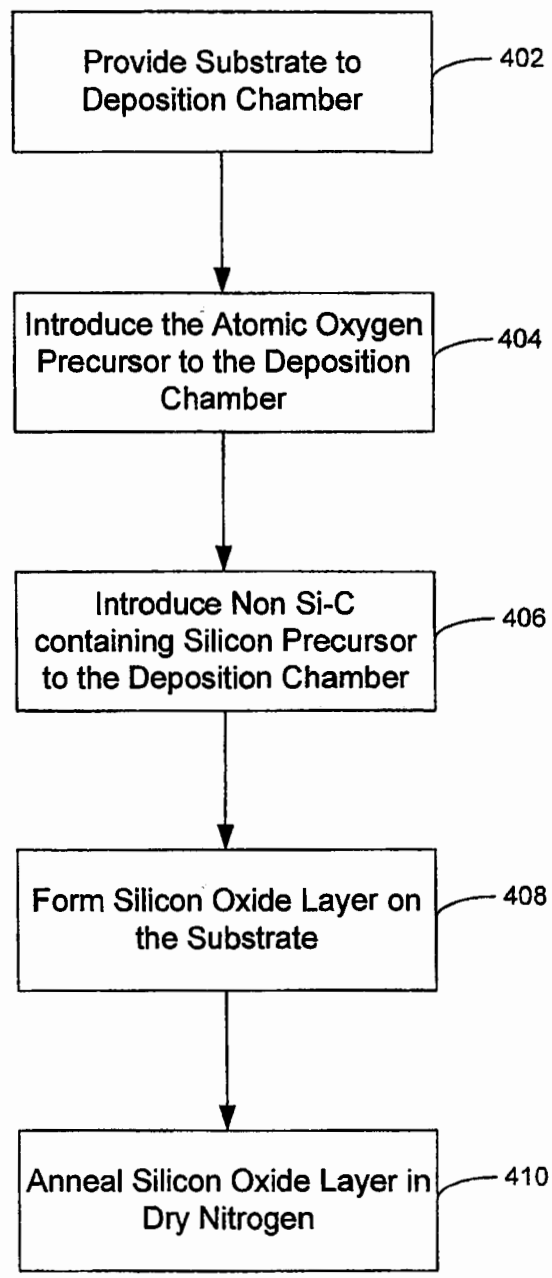

Provide Substrate to Deposition Chamber
402
Introduce the Atomic Oxygen Precursor to the Deposition Chamber
404
Introduce Non Si-C containing Silicon Precursor to the Deposition Chamber
406
Form Silicon Oxide Layer on the Substrate
408
Anneal Silicon Oxide Layer in Dry Nitrogen
410

Fig. 4

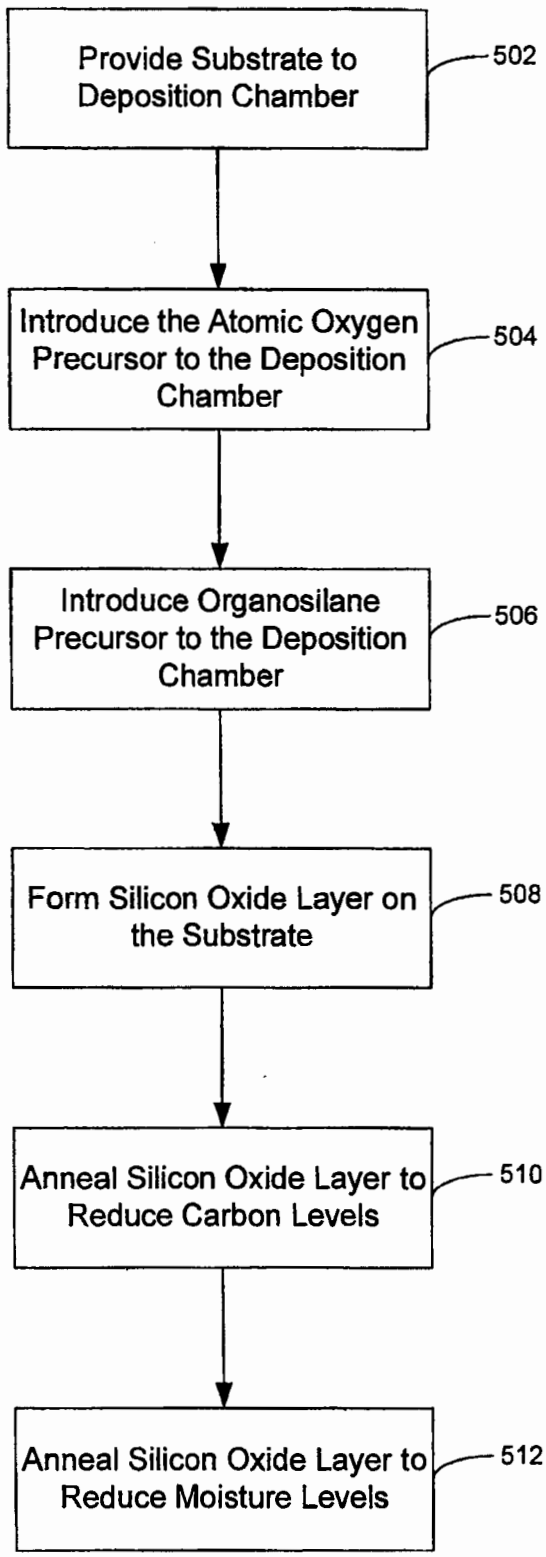

Provide Substrate to Deposition Chamber
502
Introduce the Atomic Oxygen Precursor to the Deposition Chamber
504
Introduce Organosilane Precursor to the Deposition Chamber
506
Form Silicon Oxide Layer on the Substrate
508
Anneal Silicon Oxide Layer to Reduce Carbon Levels
510
Anneal Silicon Oxide Layer to Reduce Moisture Levels
512

Fig. 5

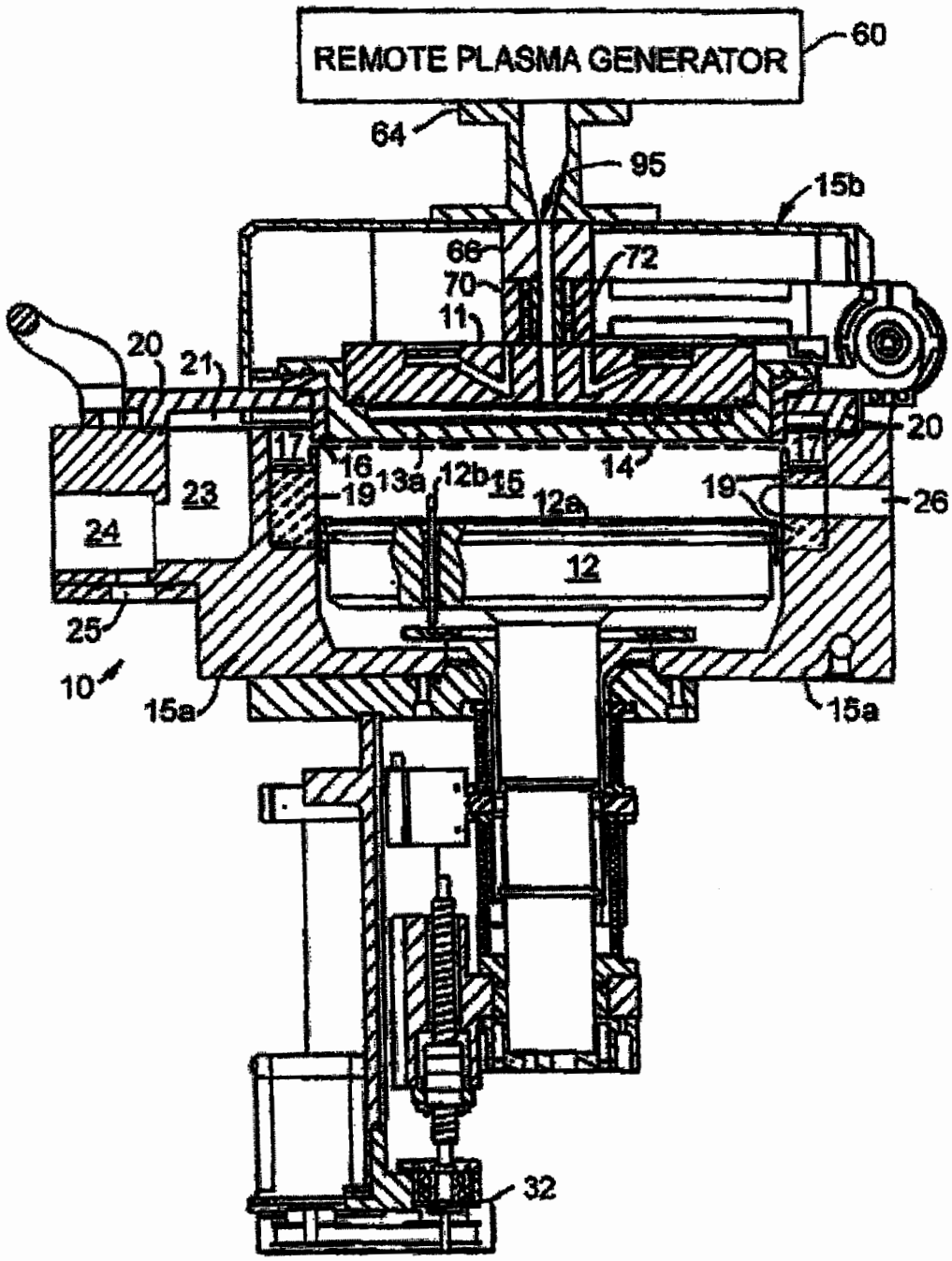

REMOTE PLASMA GENERATOR
60
64
95
15b
66
72
70
11
20
21
20
17
16
13a
12b
15
14
17
19
19
26
23
24
12
25
10
15a
15a
32

Fig. 6A

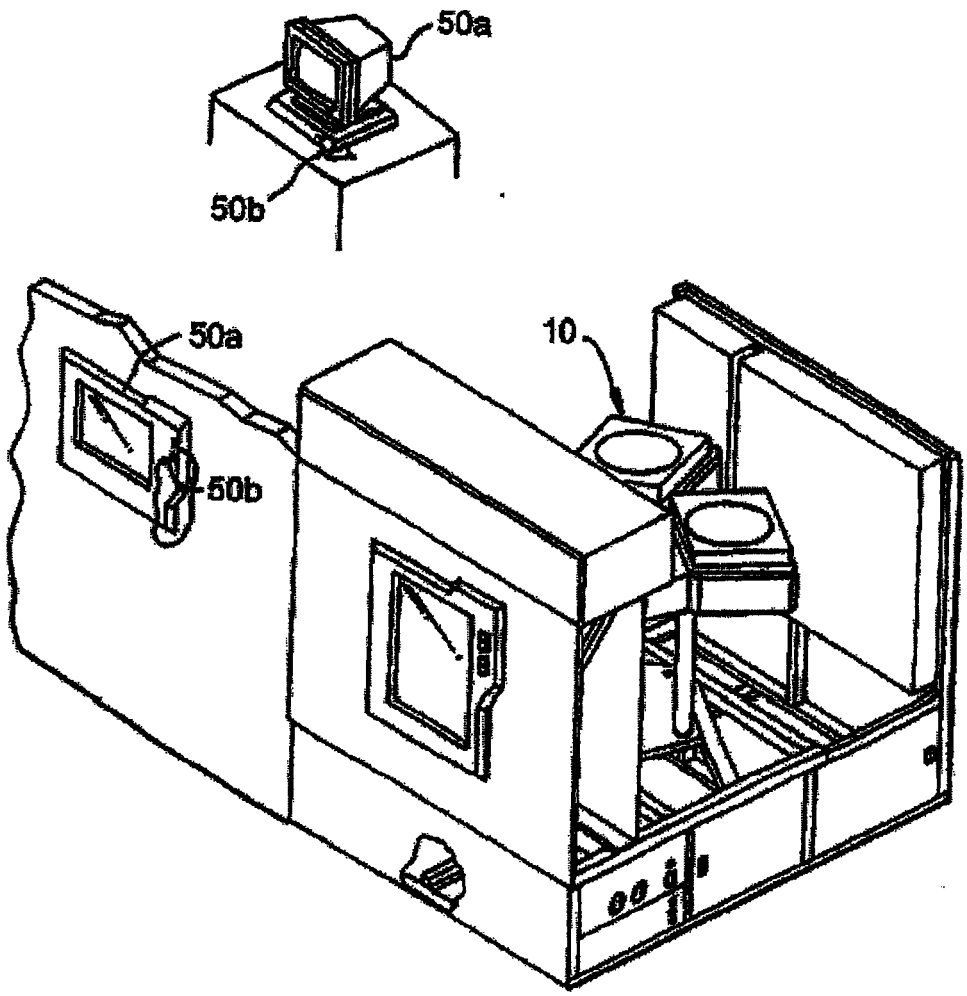


Fig. 6B