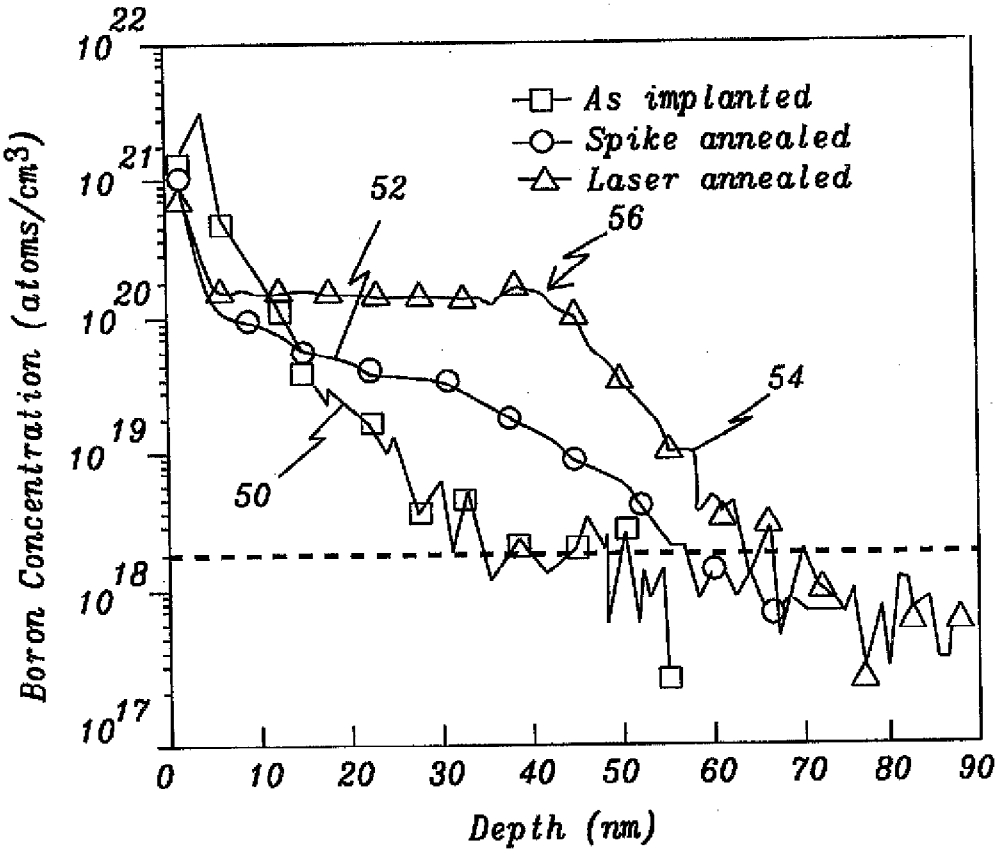

As implanted
Spike annealed
Laser annealed
52
56
54
50
Boron Concentration (atoms/cm3)
Depth (nm)
10^22
10^21
10^20
10^19
10^18
10^17
0
10
20
30
40
50
60
70
80
90

FIG. 1

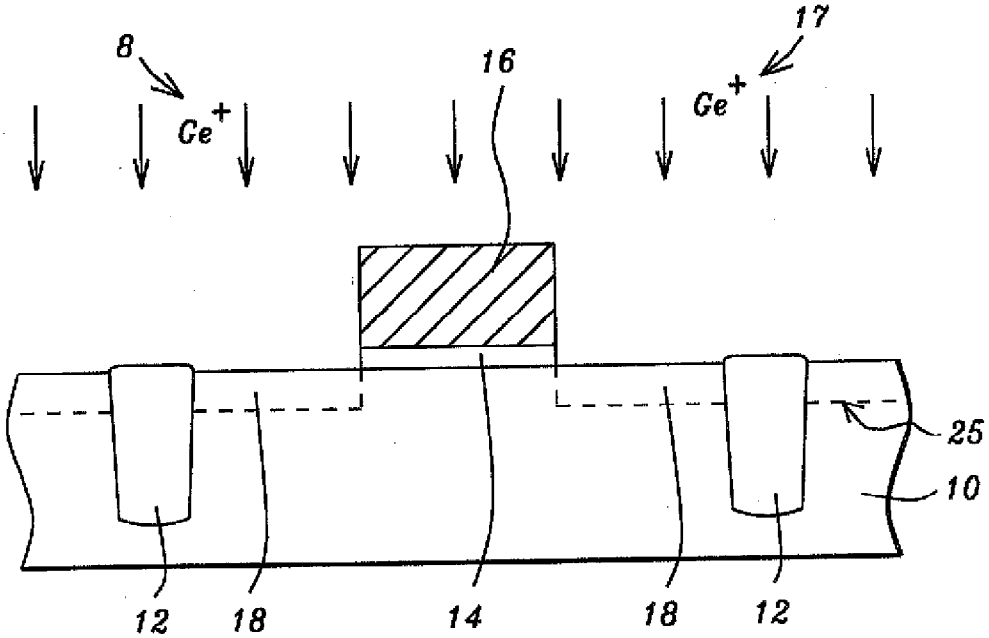

8
Ge+
16
17
Ge+
25
10
12
18
14
18
12

FIG. 2a

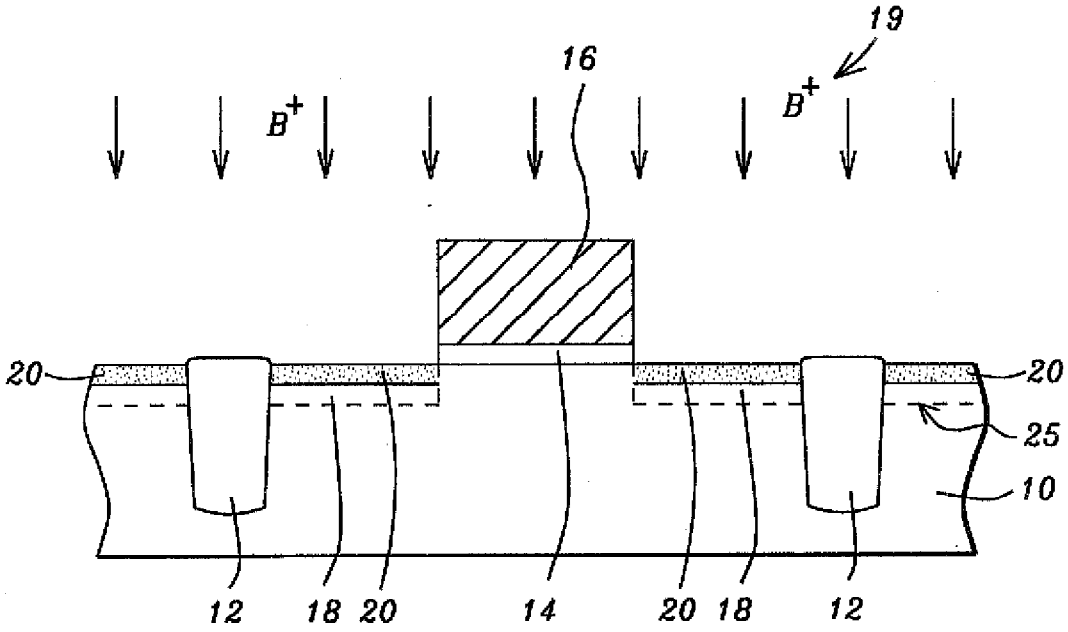

19
16
B+
B+
20
20
25
10
12
18
20
14
20
18
12

FIG. 2b

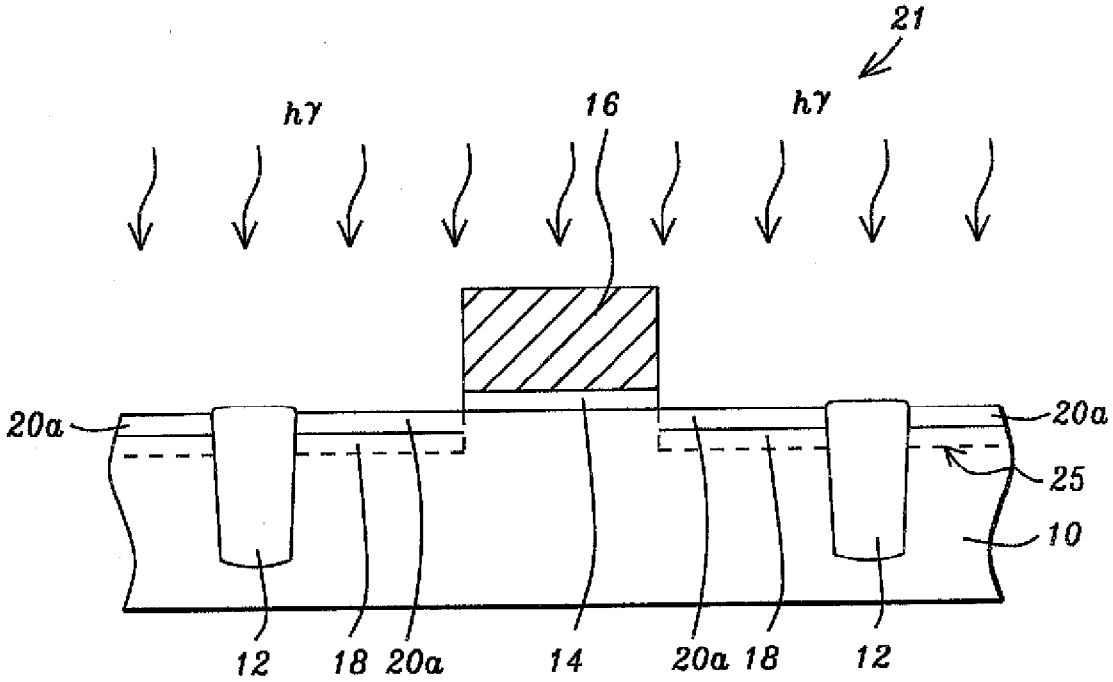

21
hγ
16
hγ
20a
20a
25
10
12
18
20a
14
20a
18
12

FIG. 2c

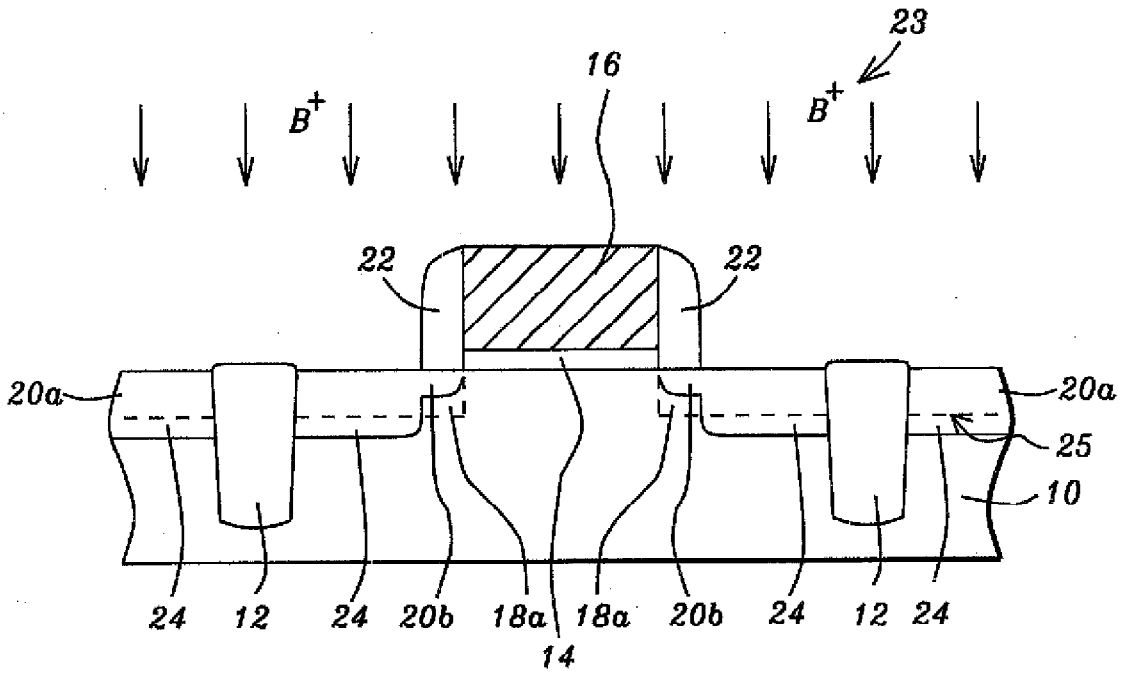

23
16
B+
B+
22
22
20a
20a
25
10
24
12
24
20b
18a
18a
20b
24
12
24
14

FIG. 2d

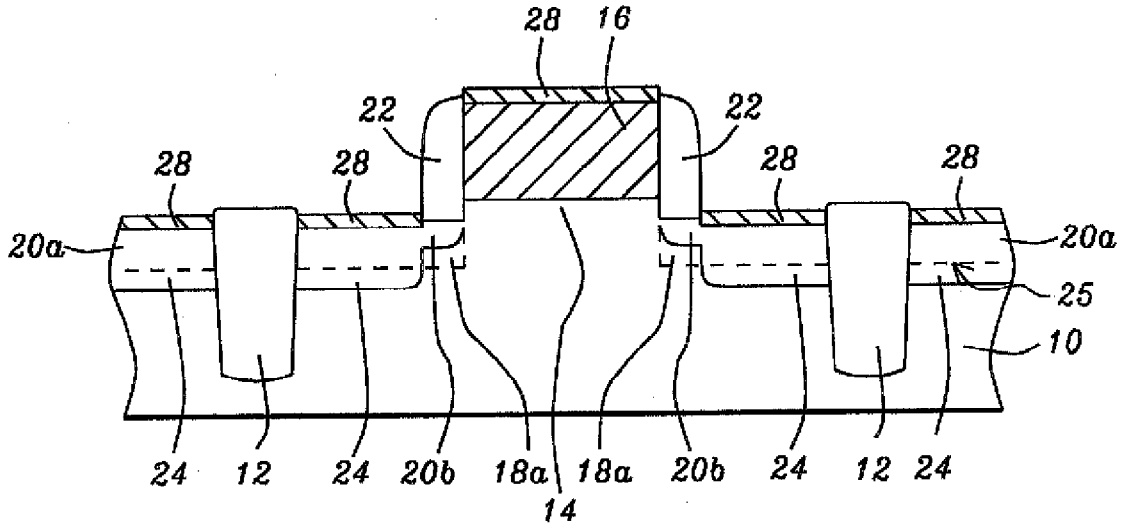

28
16
22
22
28
28
28
28
20a
20a
25
10
24
12
24
20b
18a
18a
20b
24
12
24
14

FIG. 2e

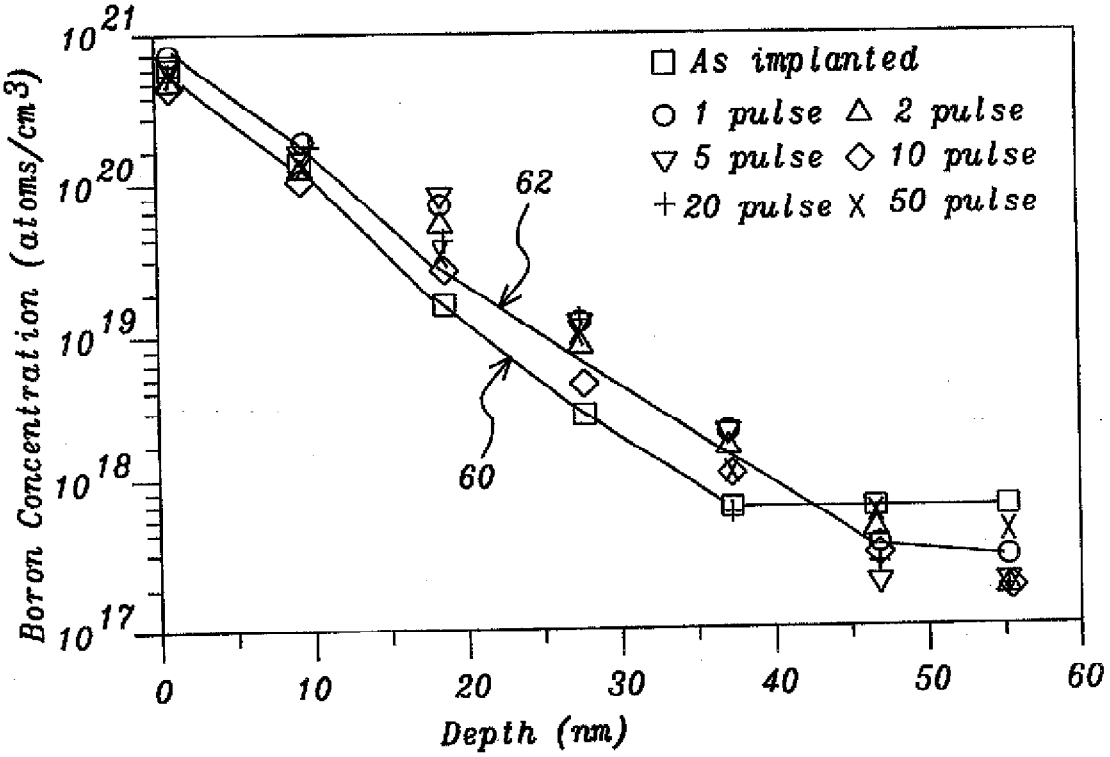

Boron Concentration (atoms/cm3)
10^21
10^20
10^19
10^18
10^17
0
10
20
30
40
50
60
Depth (nm)
As implanted
1 pulse
2 pulse
5 pulse
10 pulse
20 pulse
50 pulse
62
60

FIG. 3

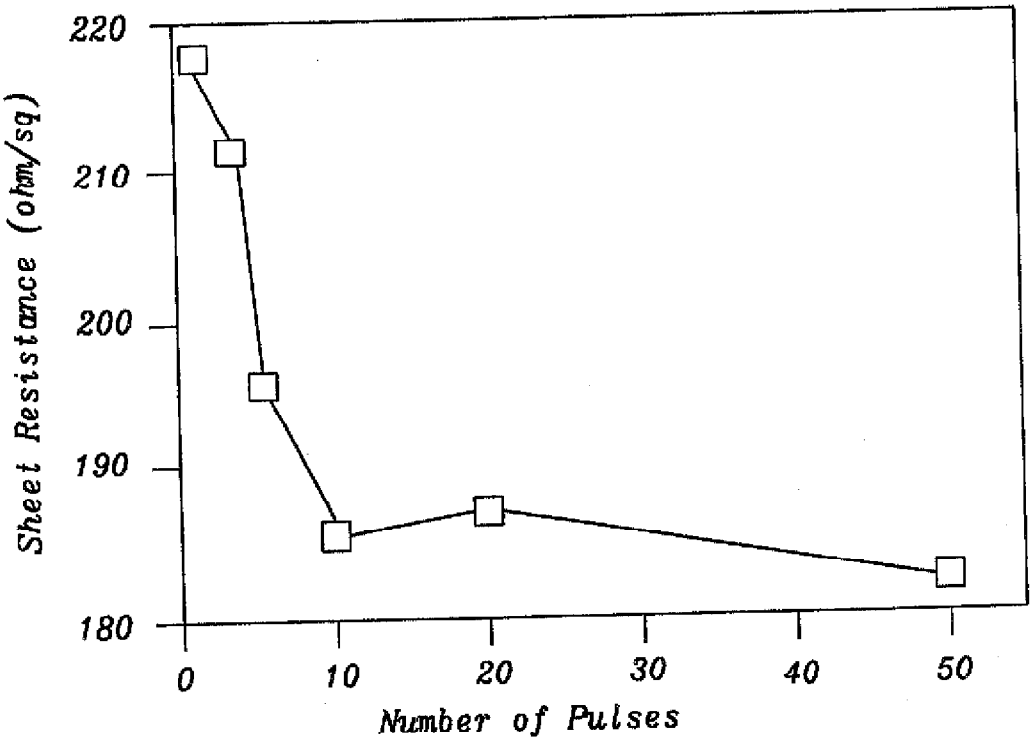

Sheet Resistance (ohm/sq)
220
210
200
190
180
0
10
20
30
40
50
Number of Pulses

FIG. 4

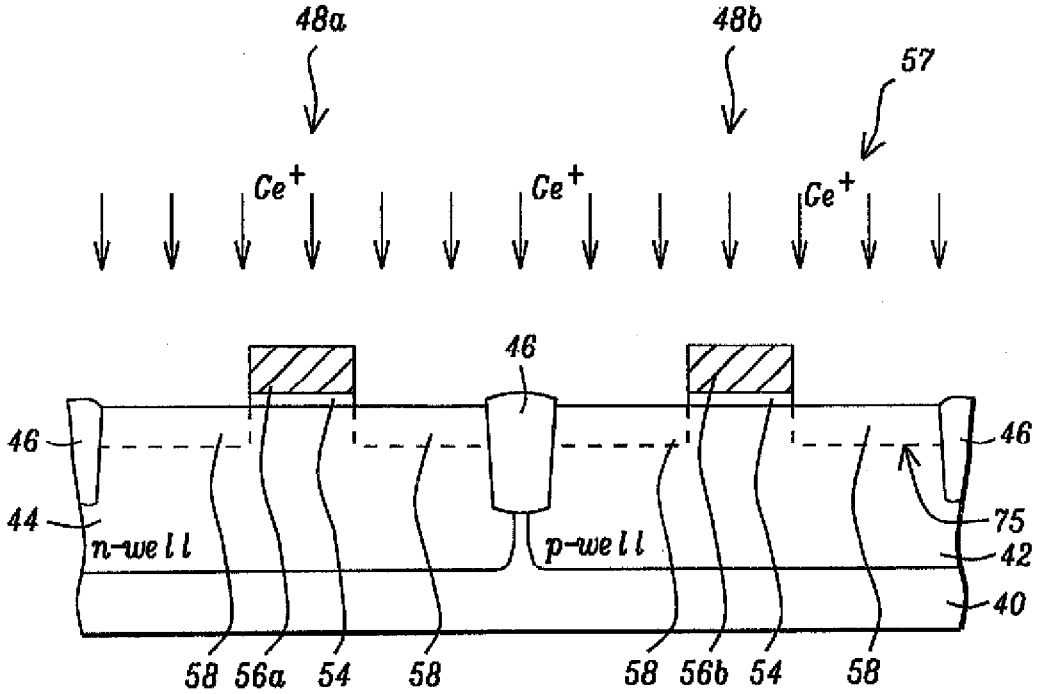

48a
48b
57
Ce+
Ce+
Ce+
46
46
46
44
n-well
p-well
75
42
40
58
56a
54
58
58
56b
54
58

FIG. 5a

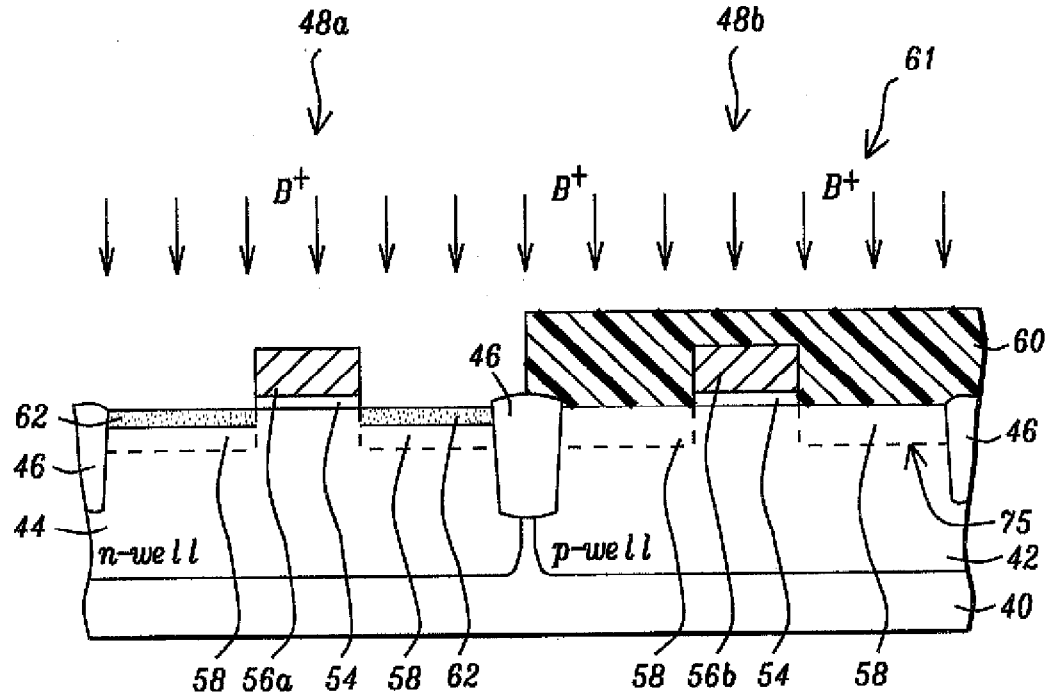

48a
48b
61
B+
B+
B+
60
46
62
46
46
44
n-well
p-well
75
42
40
58
56a
54
58
62
58
56b
54
58

FIG. 5b

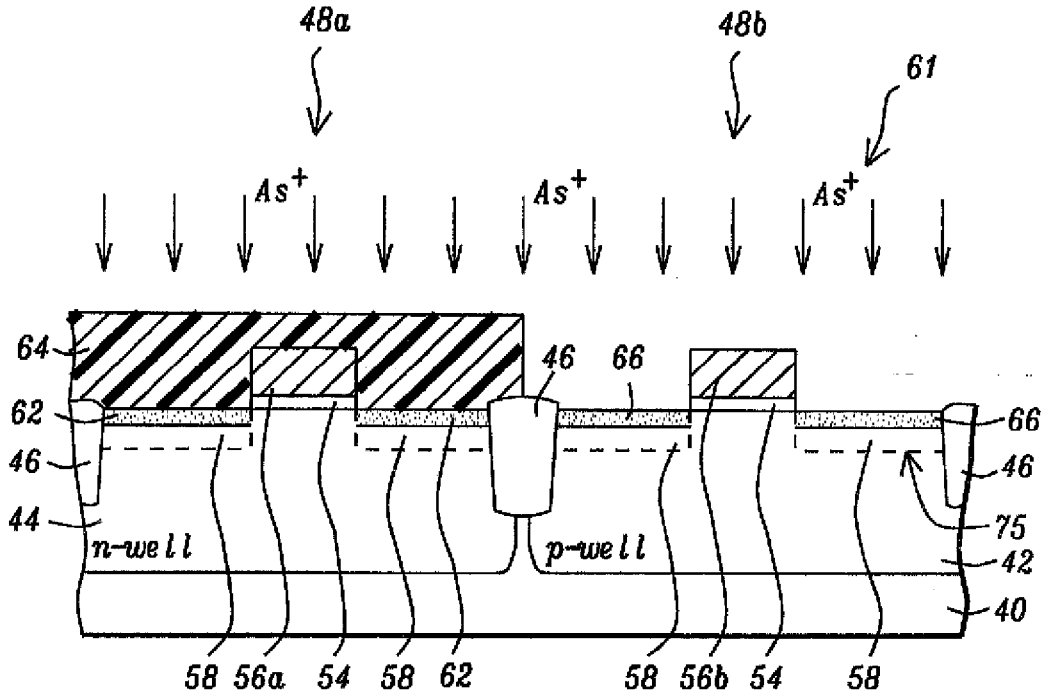

48a
48b
61
As+
As+
As+
64
62
46
44
n-well
46
66
p-well
66
46
75
42
40
58
56a
54
58
62
58
56b
54
58

FIG. 5c

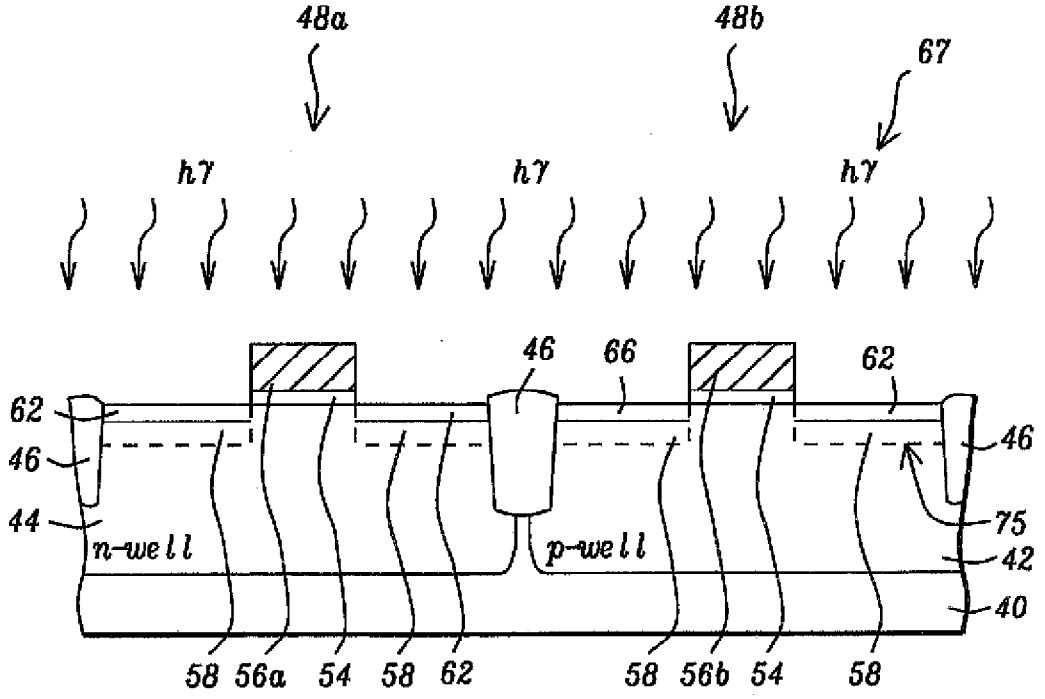

48a
48b
67
hγ
hγ
hγ
62
46
44
n-well
46
66
p-well
62
46
75
42
40
58
56a
54
58
62
58
56b
54
58

FIG. 5d

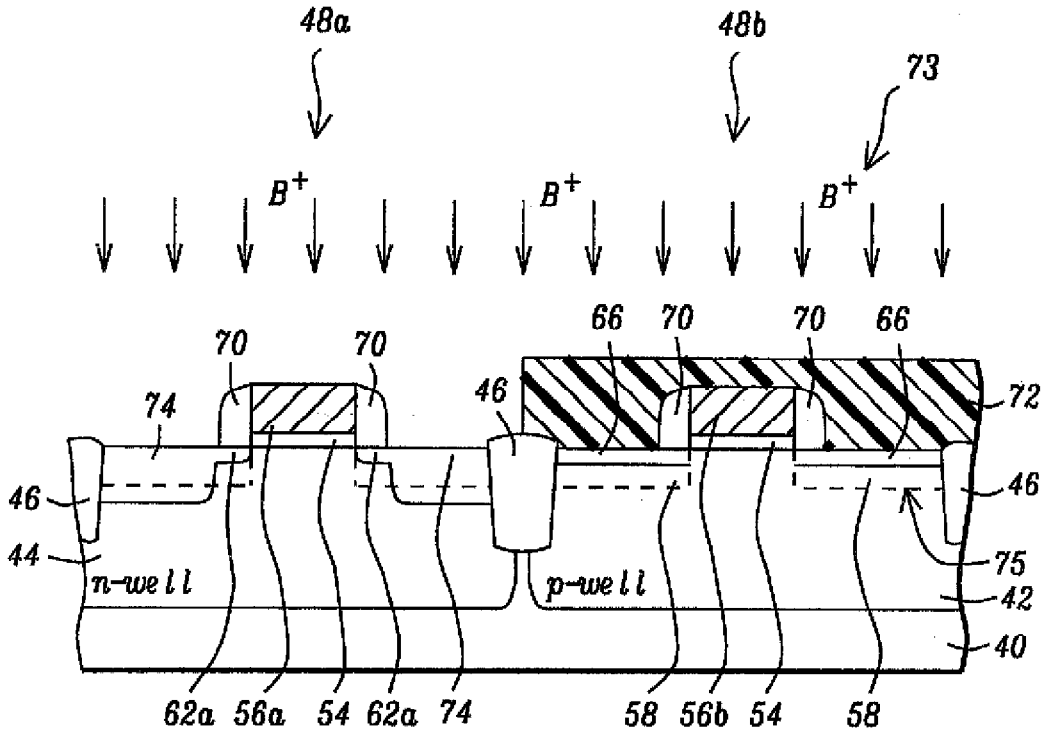

48a
48b
73
B+
B+
B+
70
70
66
70
70
66
74
46
72
46
46
44
n-well
p-well
75
42
40
62a
56a
54
62a
74
58
56b
54
58

FIG. 5e

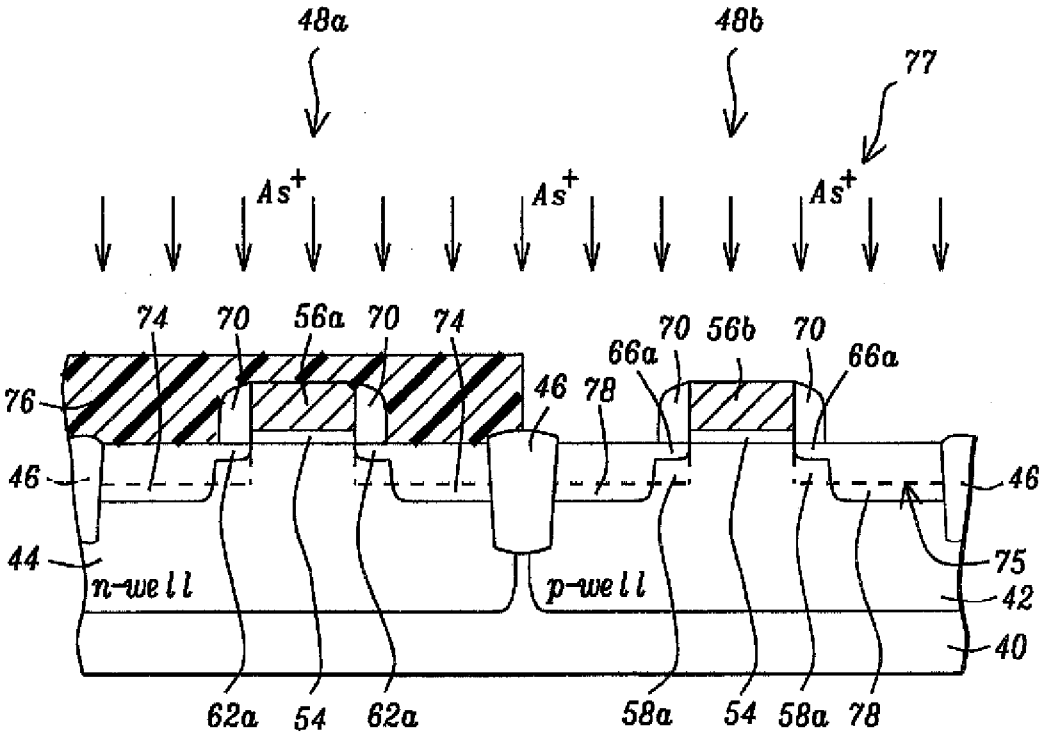

48a
48b
77
As+
As+
As+
74
70
56a
70
74
70
56b
70
66a
66a
76
46
78
46
46
44
n-well
p-well
75
42
40
62a
54
62a
58a
54
58a
78

FIG. 5f

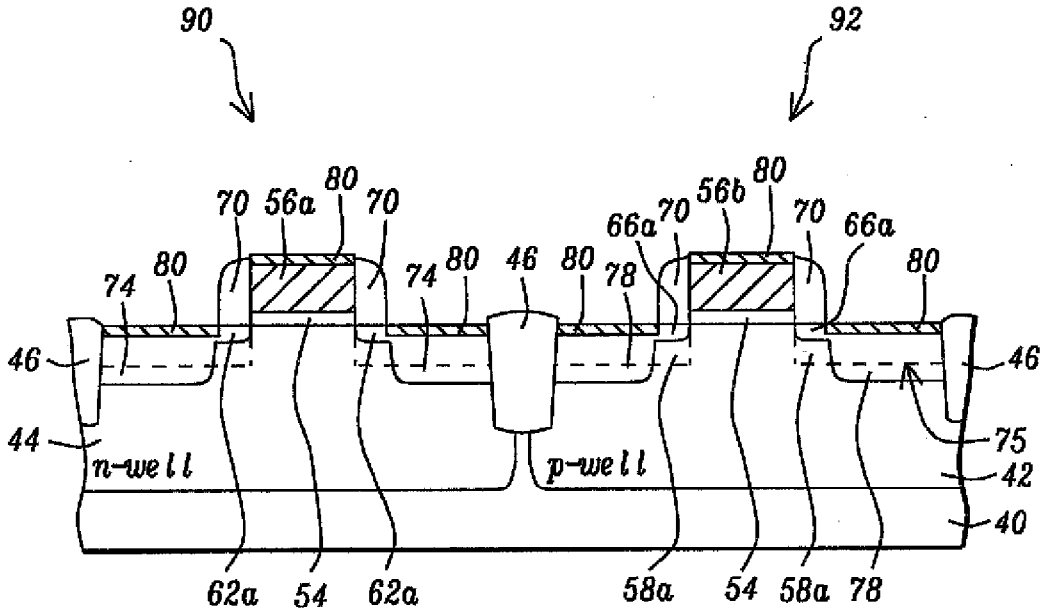

90
92
70
56a
80
70
66a
70
56b
80
70
66a
74
80
74
80
46
80
78
80
46
46
44
n-well
p-well
75
42
40
62a
54
62a
58a
54
58a
78

FIG. 5g