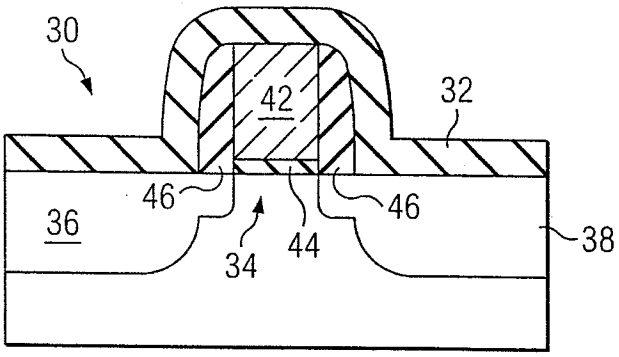


FIG. 1
(PRIOR ART)

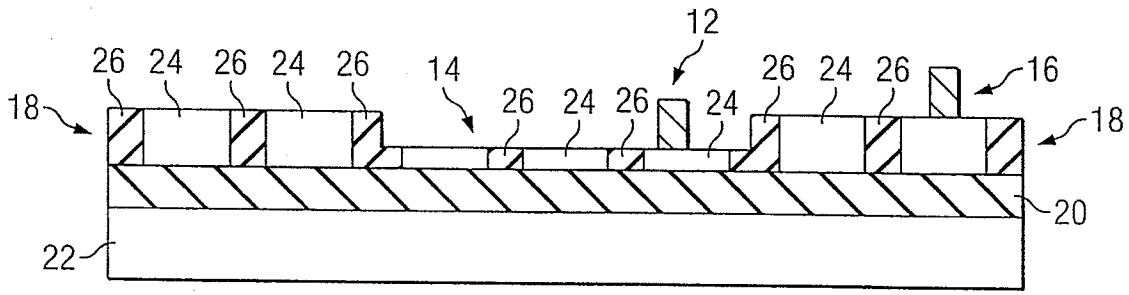


FIG. 2
(PRIOR ART)

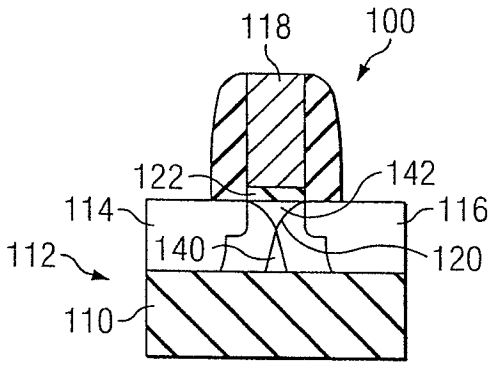


FIG. 3a

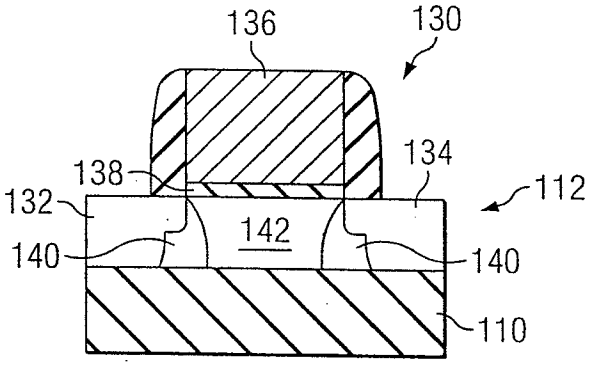


FIG. 3b

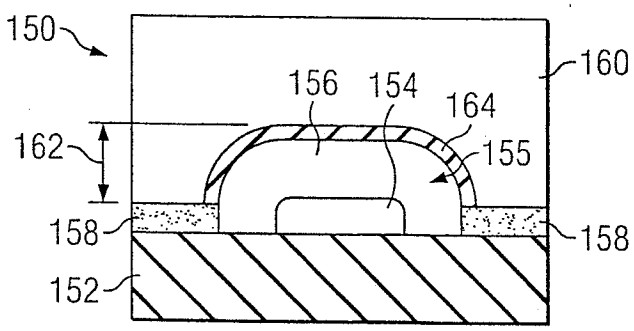


FIG. 3c

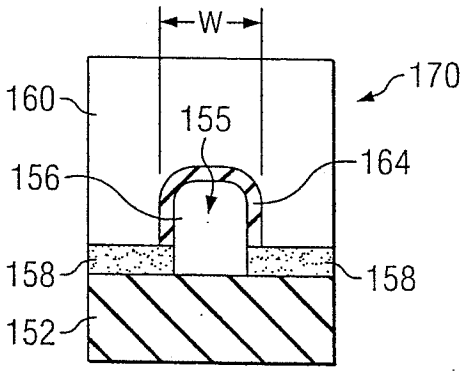


FIG. 3d

FIG. 4a

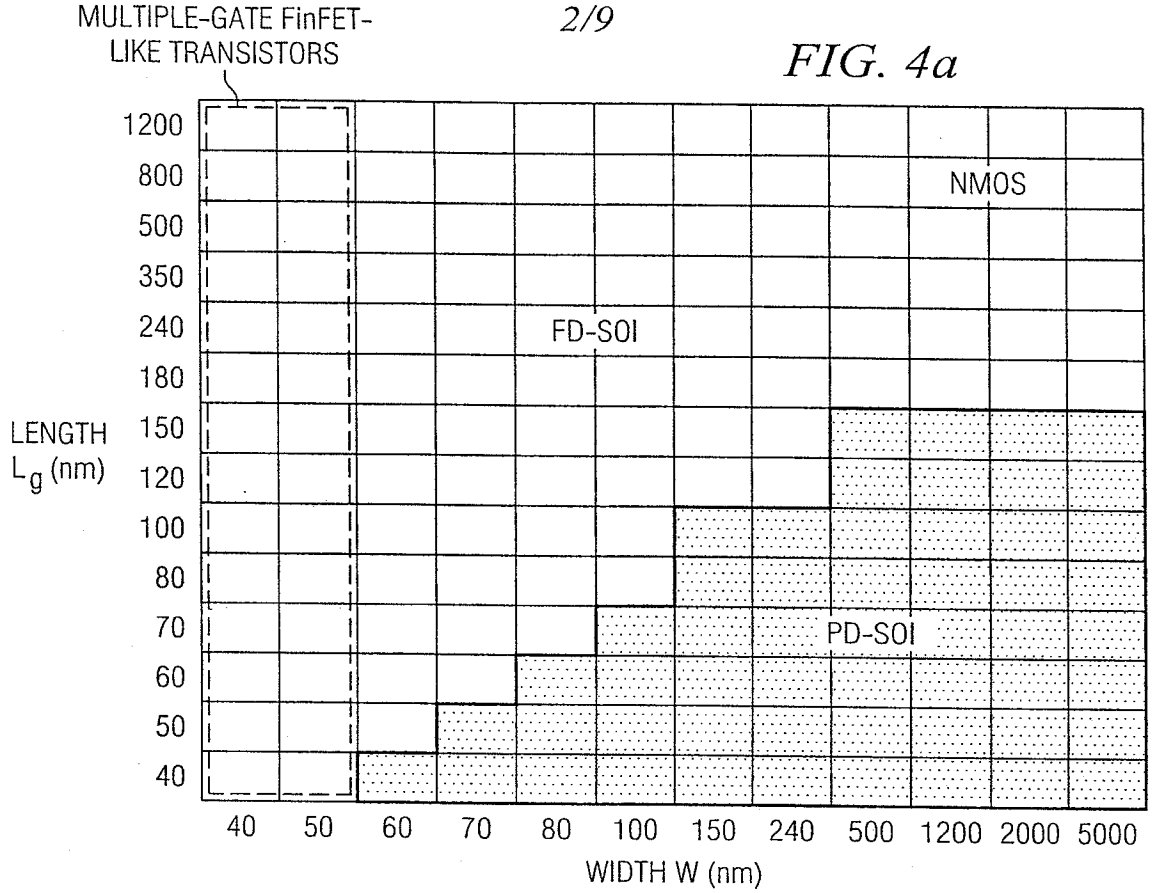
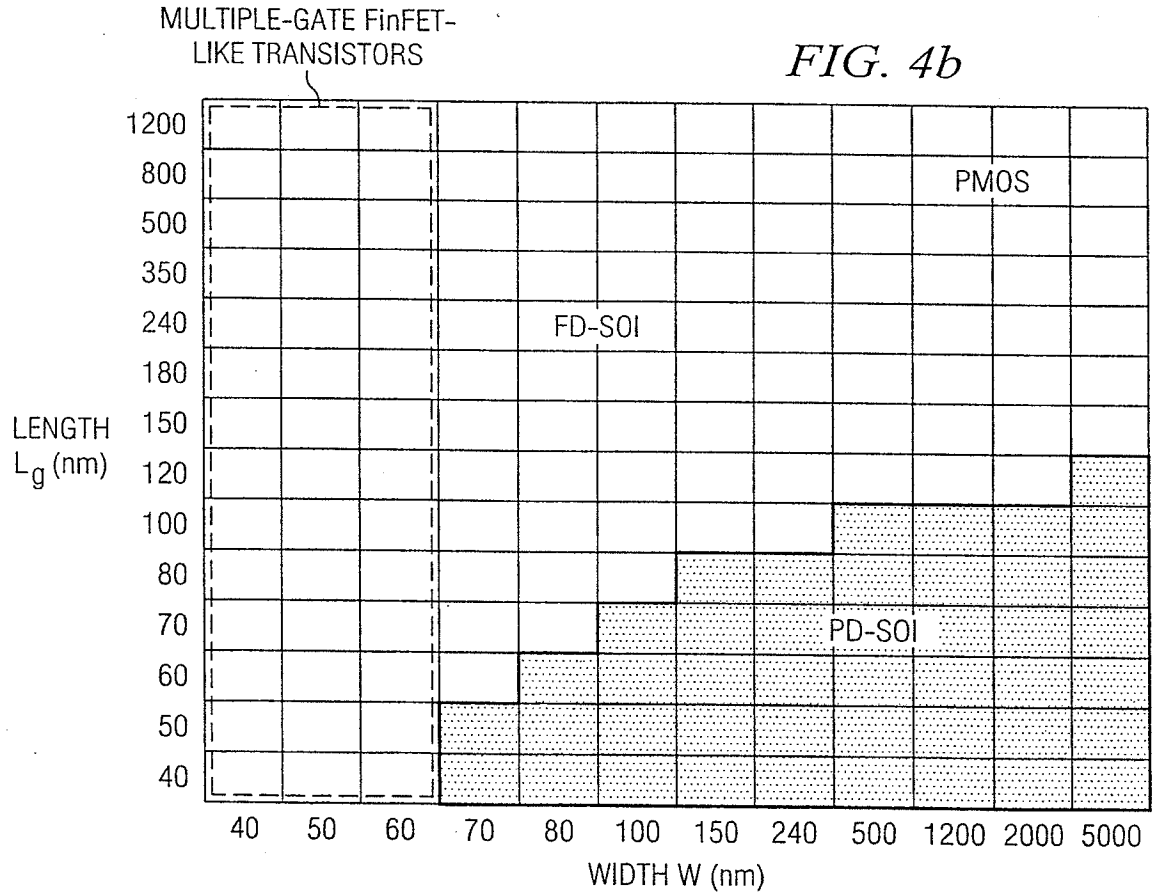

MULTIPLE-GATE FinFET-LIKE TRANSISTORS
1200
800
500
350
240
180
150
120
100
80
70
60
50
40
NMOS
FD-SOI
PD-SOI
LENGTH L_g (nm)
40 50 60 70 80 100 150 240 500 1200 2000 5000
WIDTH W (nm)

FIG. 4b


MULTIPLE-GATE FinFET-LIKE TRANSISTORS
1200
800
500
350
240
180
150
120
100
80
70
60
50
40
PMOS
FD-SOI
PD-SOI
LENGTH L_g (nm)
40 50 60 70 80 100 150 240 500 1200 2000 5000
WIDTH W (nm)

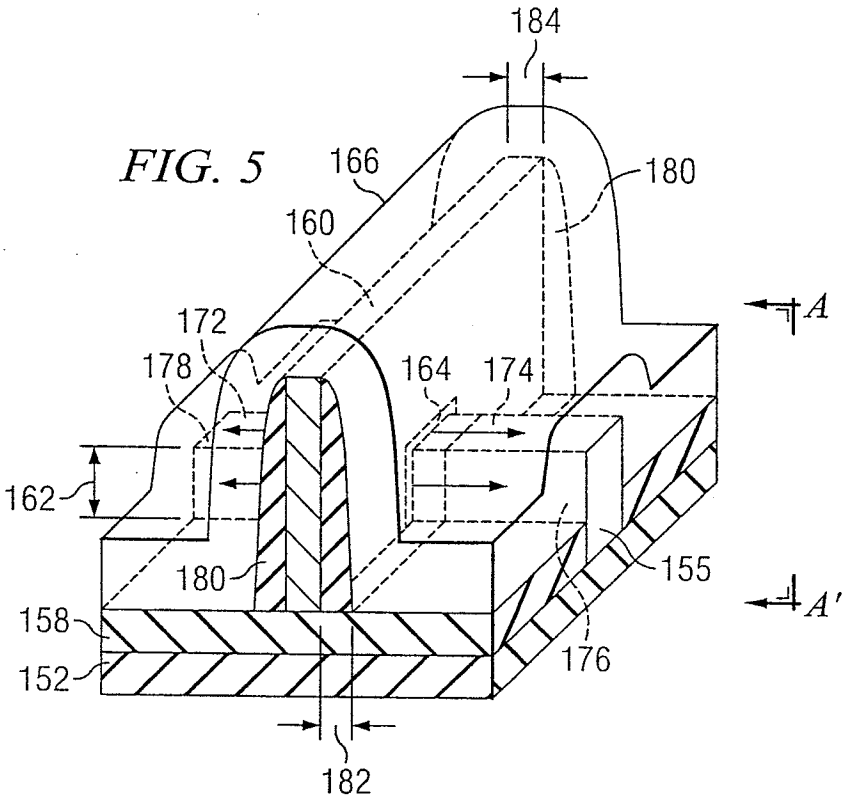

184
166
180
160
172
178
164
174
162
180
155
158
152
176
182
A
A'

FIG. 5

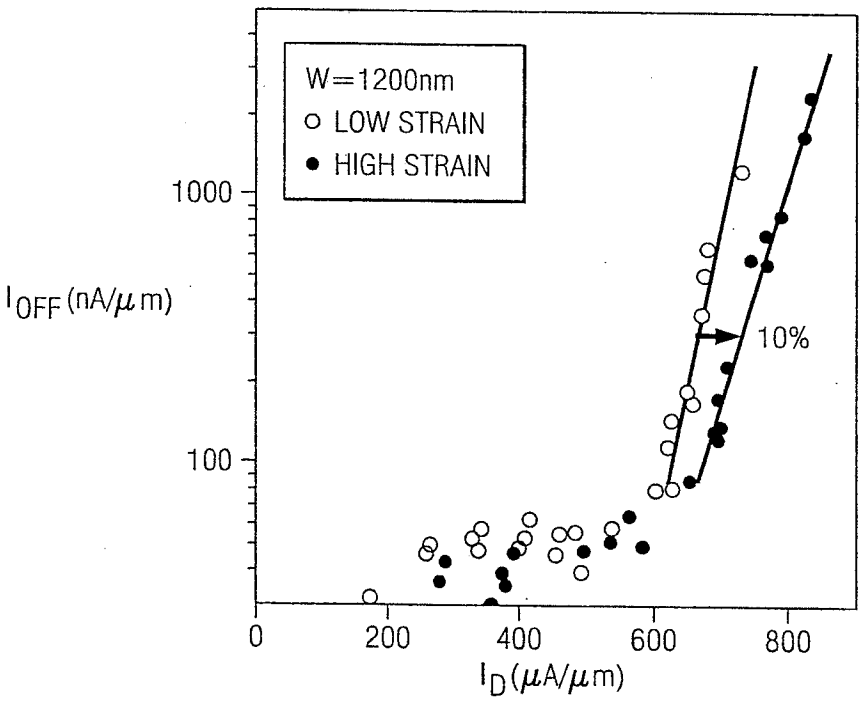

W=1200nm
LOW STRAIN
HIGH STRAIN
1000
100
I_{OFF} (nA/μm)
10%
0
200
400
600
800
I_D (μA/μm)

FIG. 6a

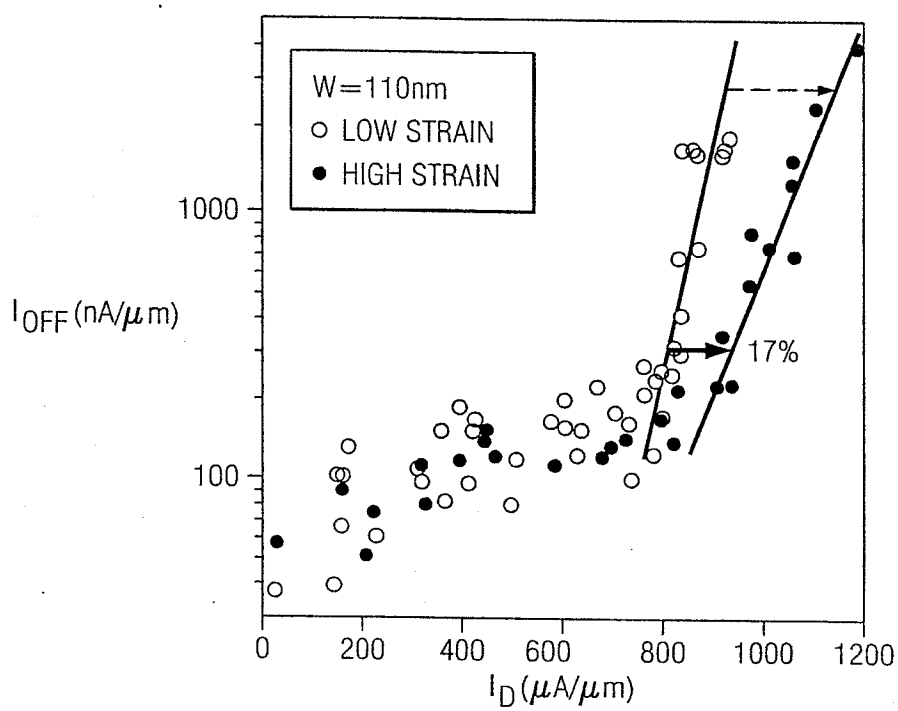
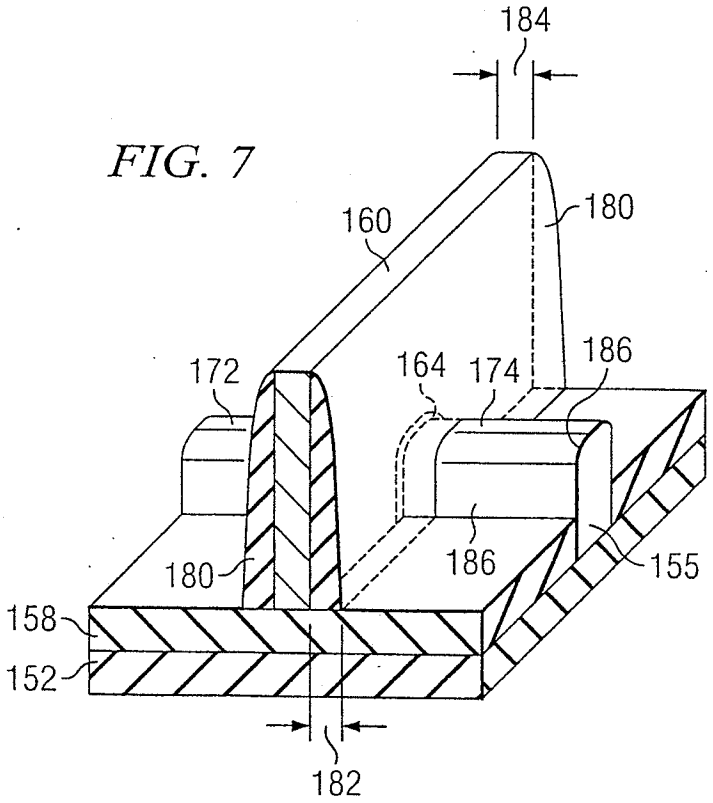

W=110nm
LOW STRAIN
HIGH STRAIN
1000
100
I_{OFF} (nA/μm)
17%
0
200
400
600
800
1000
1200
I_D (μA/μm)

FIG. 6b

FIG. 7


184
160
180
172
164
174
186
180
186
155
158
152
182

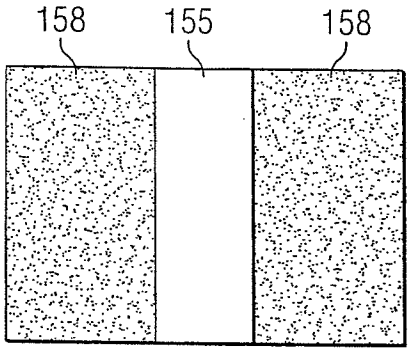


FIG. 8a

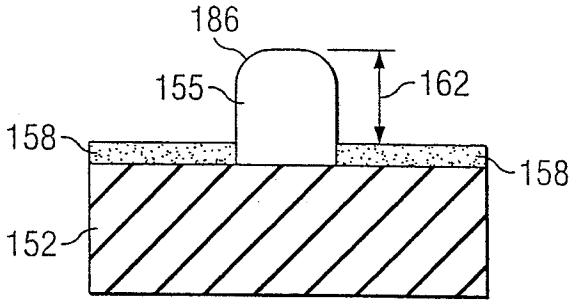


FIG. 8b

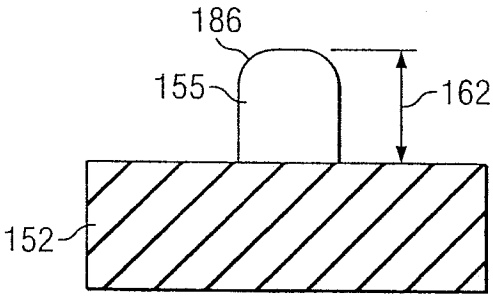


FIG. 8c

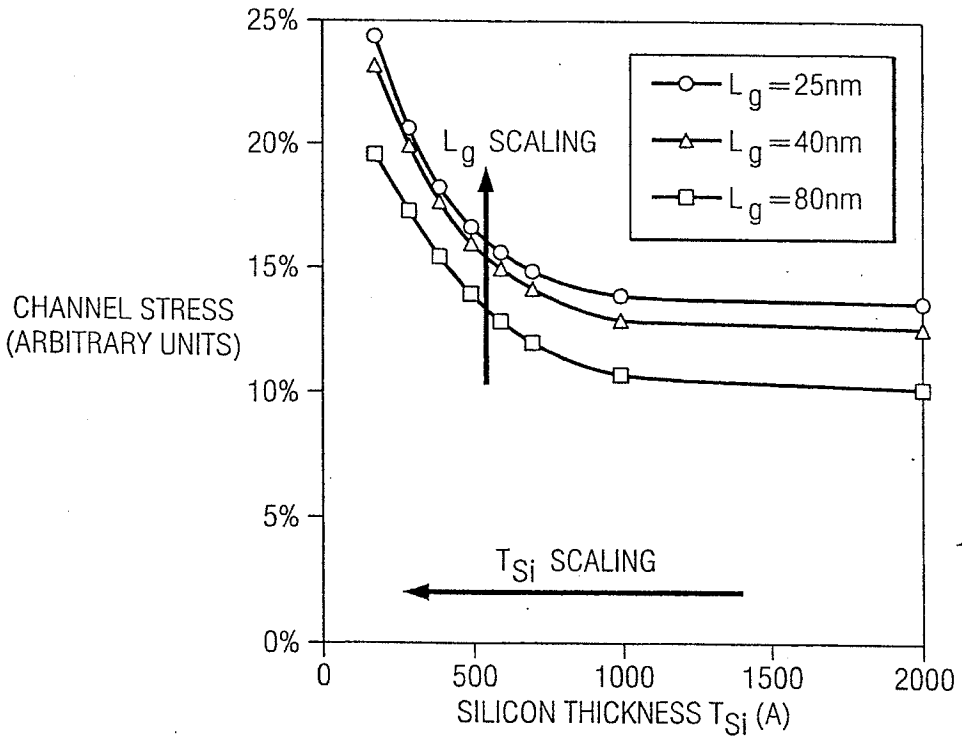


FIG. 9

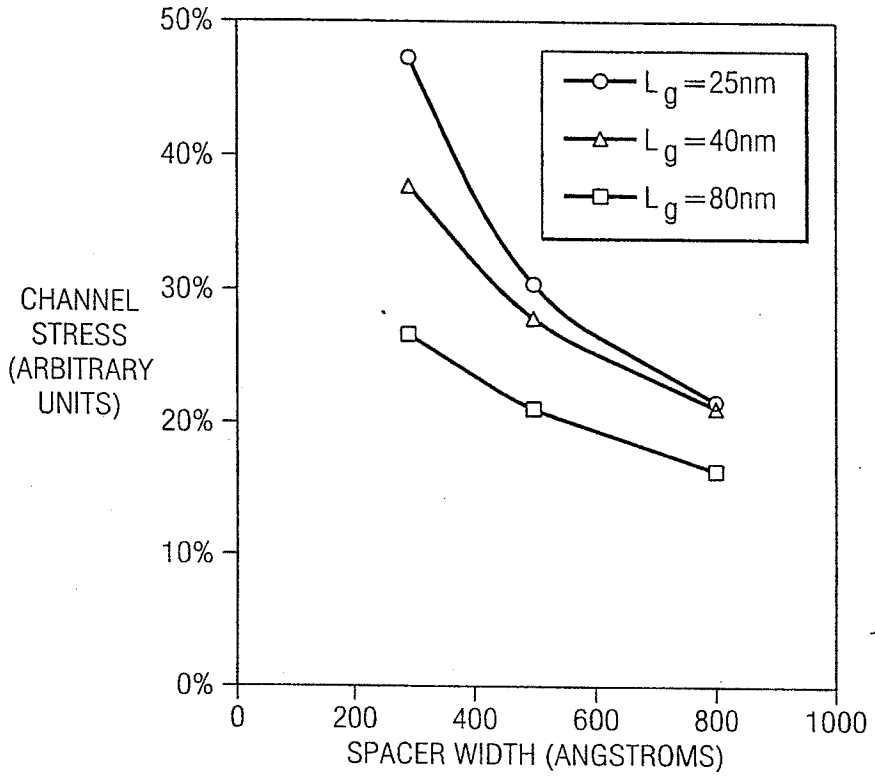


FIG. 10

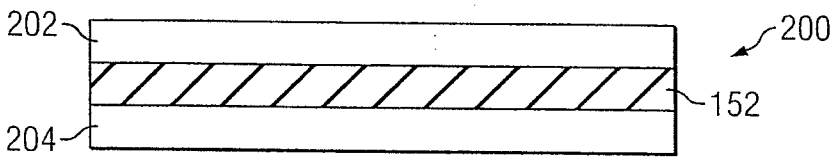


FIG. 11

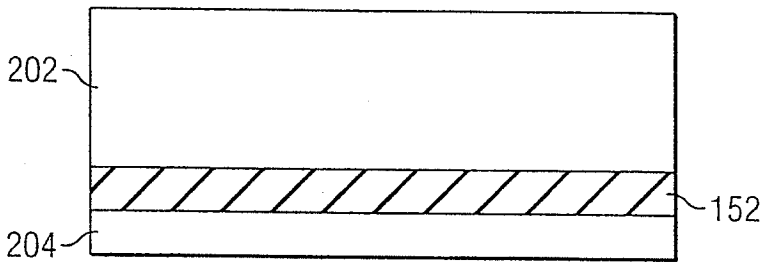


FIG. 12a

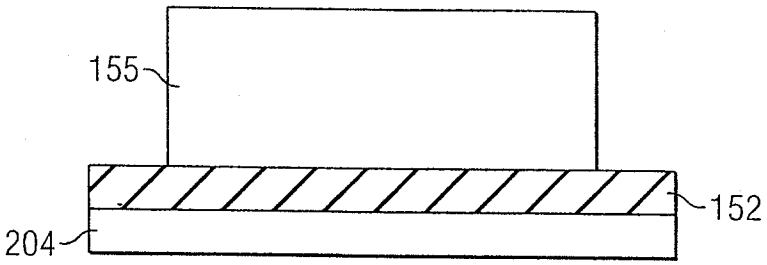


FIG. 12b

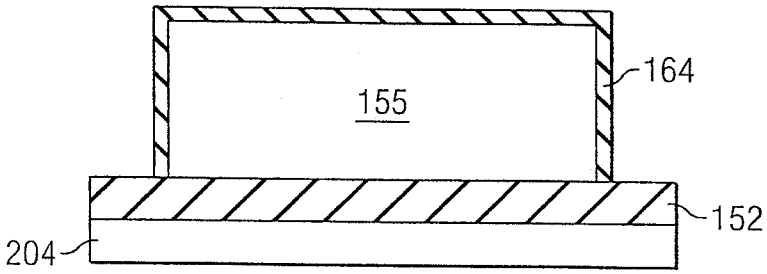


FIG. 12c

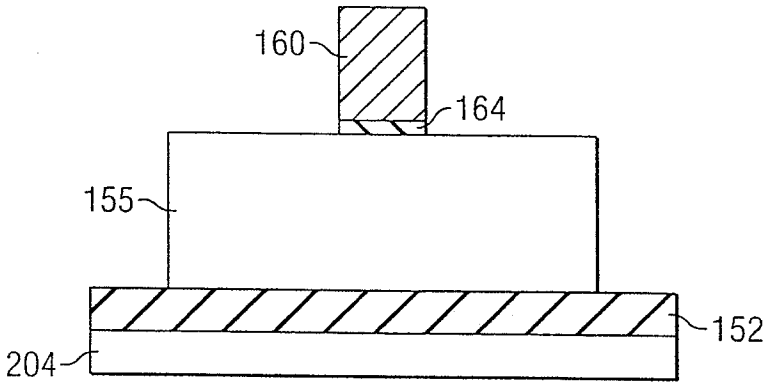


FIG. 12d

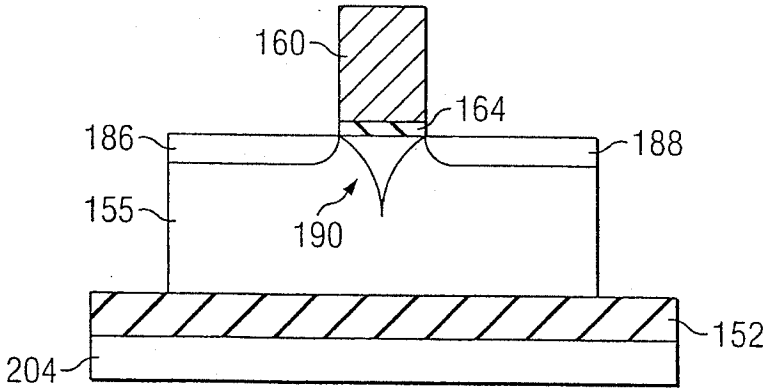


FIG. 12e

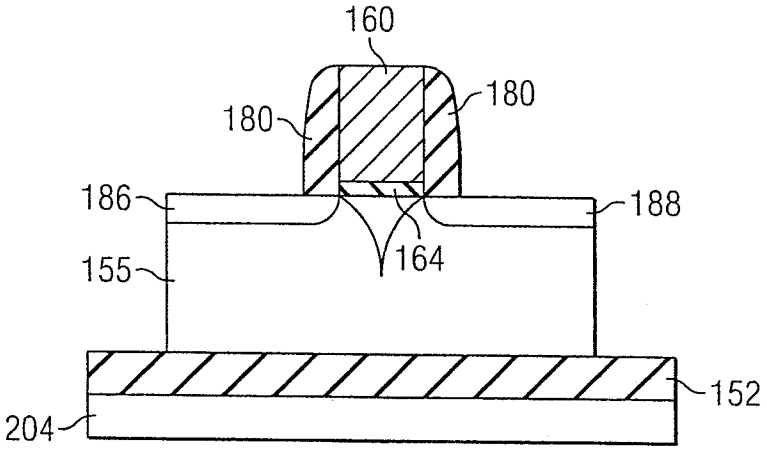


FIG. 12f

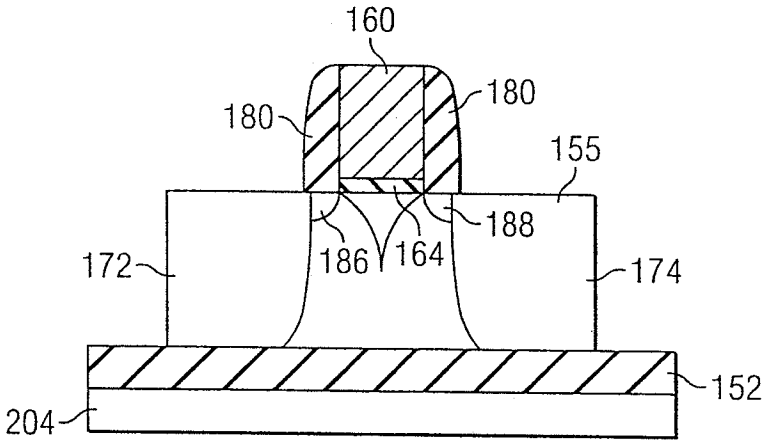


FIG. 12g

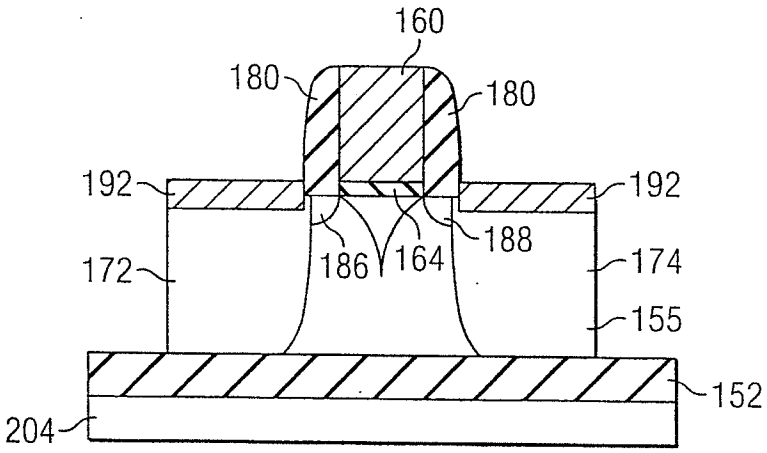


FIG. 12h

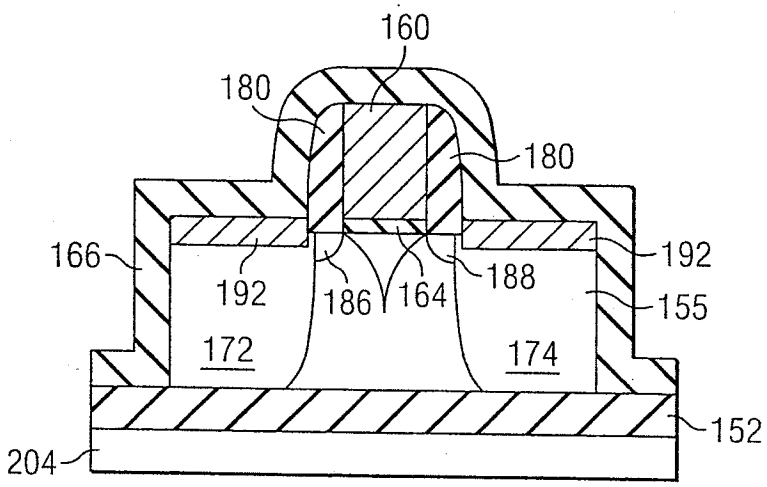


FIG. 12i

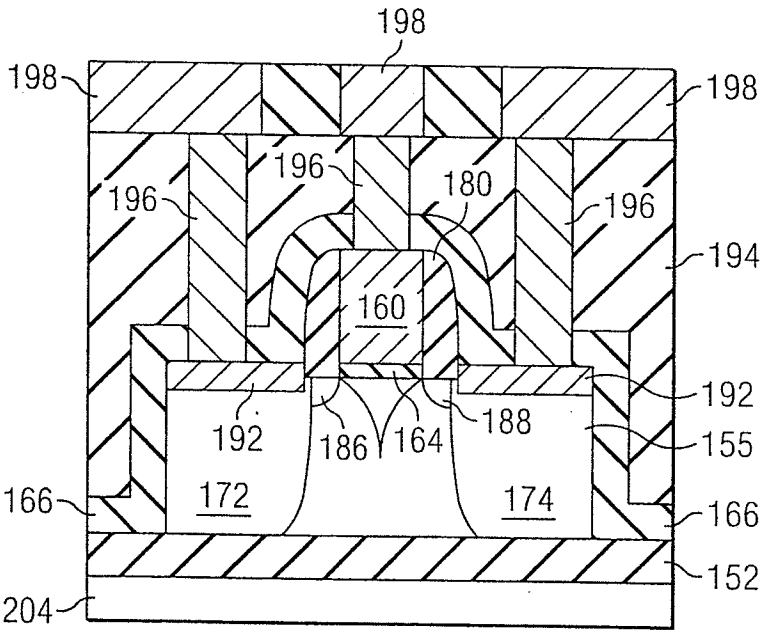


FIG. 12j