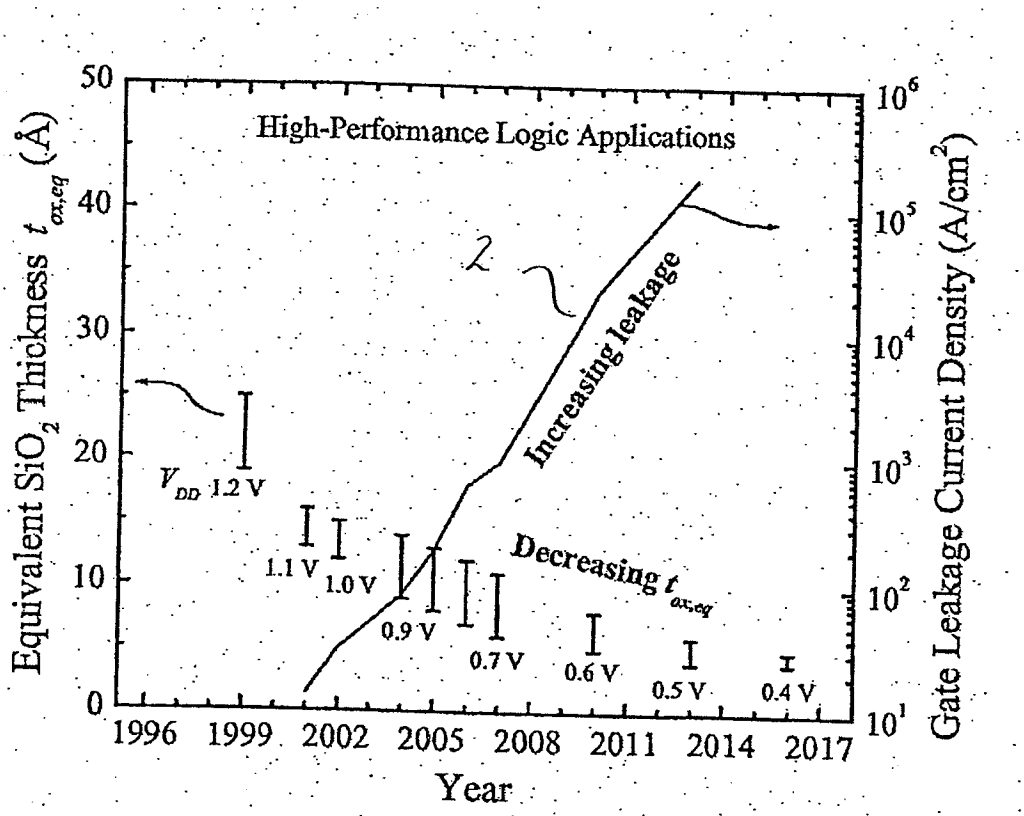

High-Performance Logic Applications
Equivalent SiO2 Thickness tox,eq (Å)
Gate Leakage Current Density (A/cm2)
Year
Increasing leakage
Decreasing tox,eq
VDD 1.2 V
1.1 V
1.0 V
0.9 V
0.7 V
0.6 V
0.5 V
0.4 V
0
10
20
30
40
50
1996
1999
2002
2005
2008
2011
2014
2017
10^1
10^2
10^3
10^4
10^5
10^6

Figure 1.

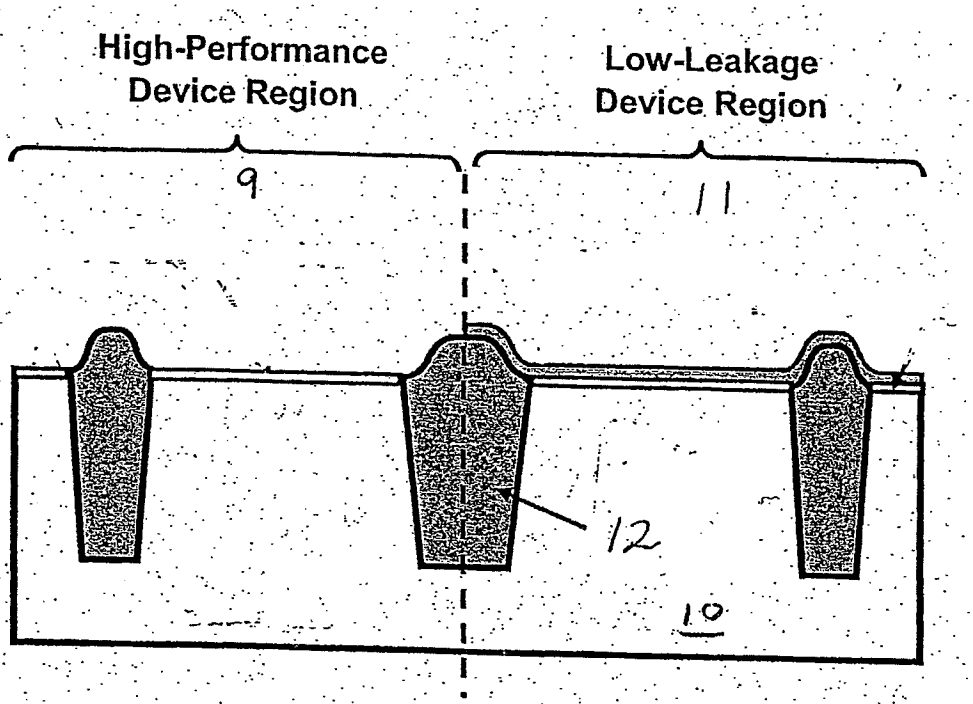

High-Performance
Device Region
Low-Leakage
Device Region
9
11
12
10

Figure 2.

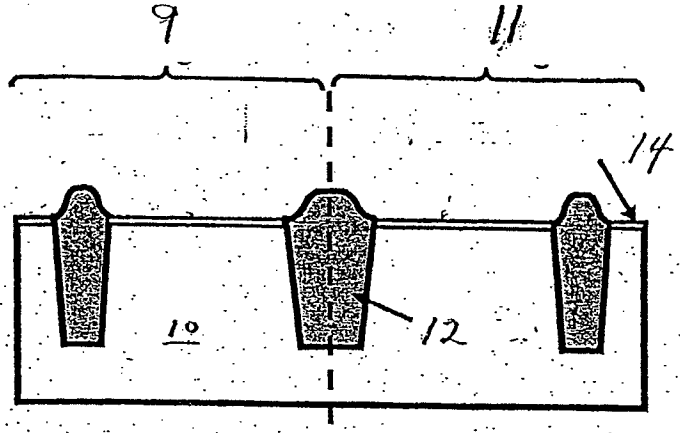


Fig. 3(a)

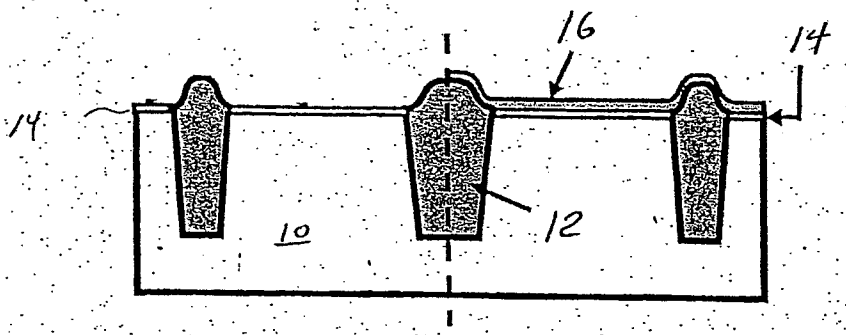


Fig. 3(b)

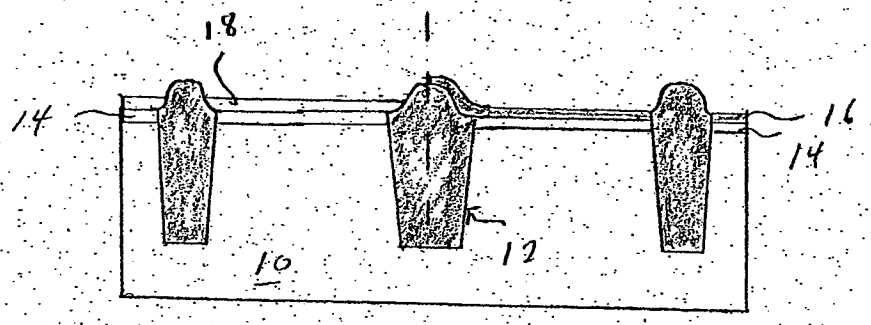


Fig. 3(c)

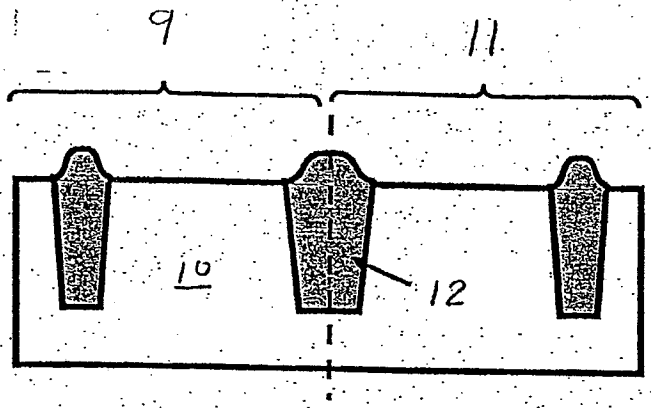


Fig. 4 (a)

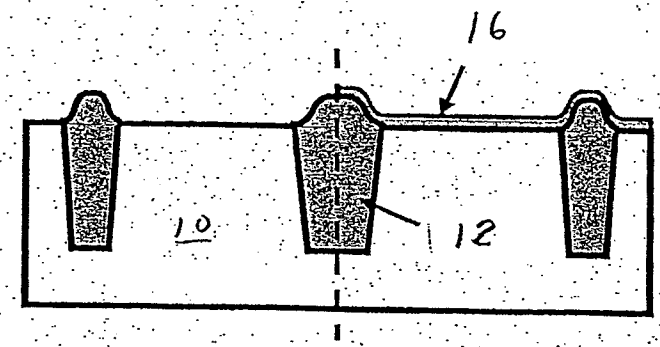


Fig. 4 (b)

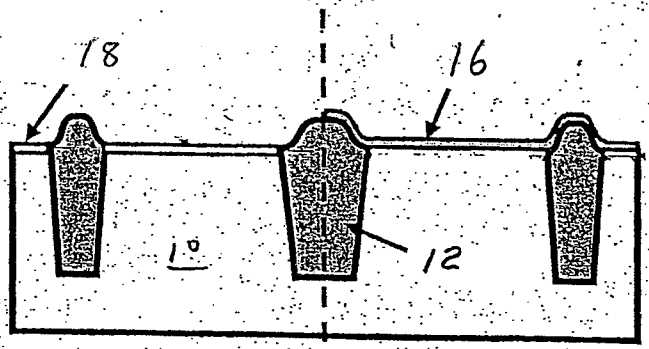


Fig. 4 (c)

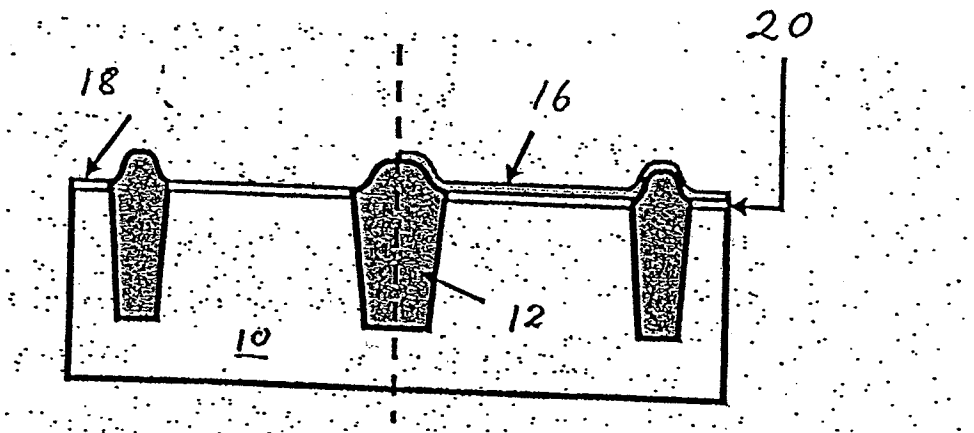


Figure 4(d)

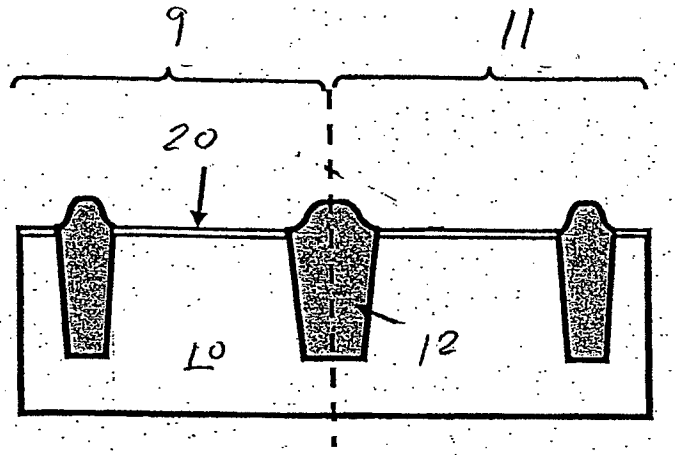


Fig. 5 (a)

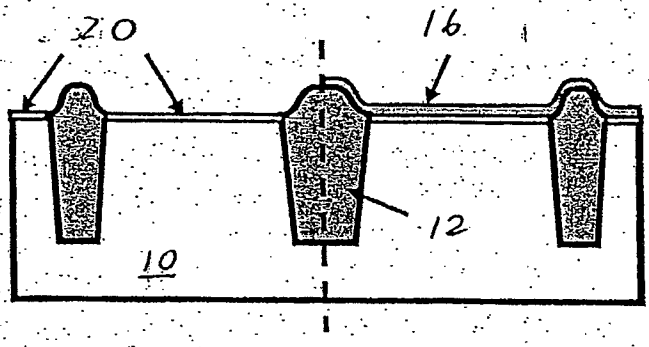


Fig. 5 (b)

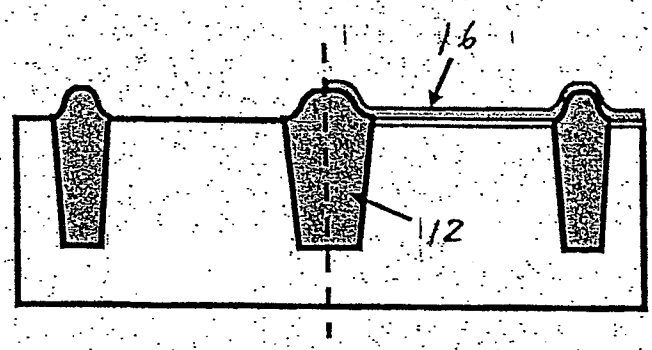


Fig. 5 (c)

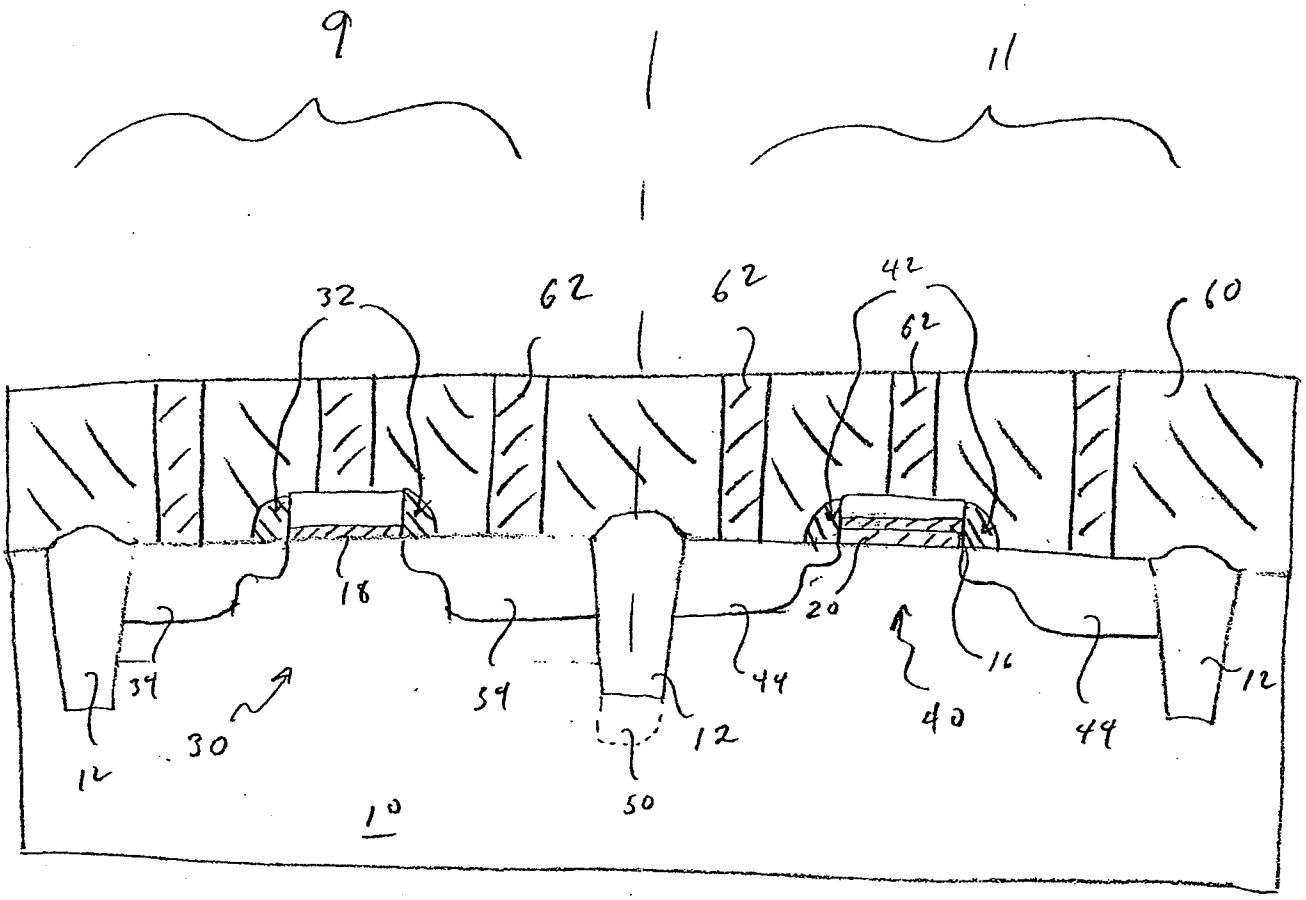


Fig. 6

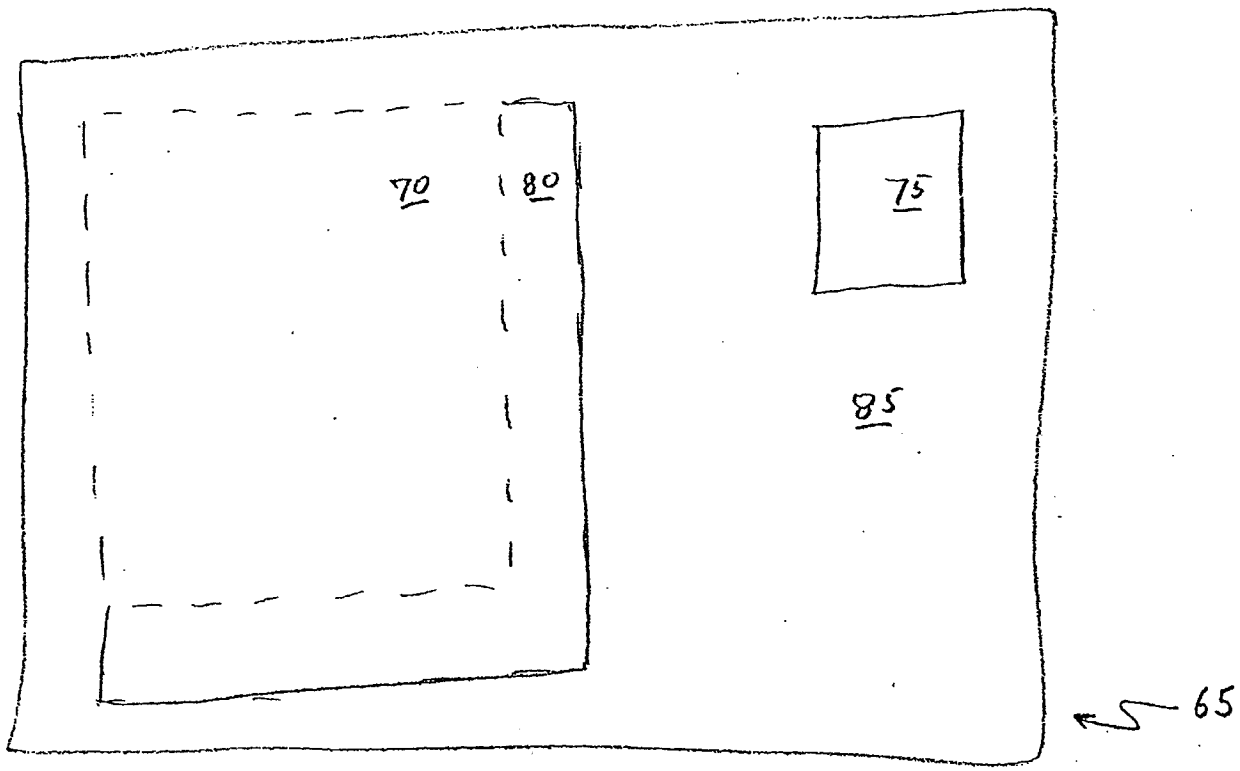


Fig. 7