

- [54] BURIED FIELD SHIELD FOR AN INTEGRATED CIRCUIT
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- [73] Assignee: International Business Machines Corporation, Armonk, N.Y.
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- [51] Int. Cl.⁴ H01L 21/20; H01L 21/31
- [52] U.S. Cl. 29/576 W; 29/576 E; 29/577 C; 29/580; 148/DIG. 25; 148/DIG. 50; 148/DIG. 135; 148/187
- [58] Field of Search 29/576 W, 576 E, 571, 29/577 C, 580; 148/DIG. 26, DIG. 25, DIG. 50, DIG. 135, 187; 357/34, 49, 53

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[57] ABSTRACT

A method for fabrication of a buried field shield in a semiconductor substrate. A seed substrate is prepared by depositing an epitaxial layer or a seed wafer and then depositing a heavily doped layer and a thin dielectric. The thin dielectric is patterned for contact holes and then a conductive field shield is deposited and patterned. A thick quartz layer is deposited over the field shield and dielectric. A mechanical substrate is anodically bonded to the quartz of the seed substrate and the original seed wafer is etched back to expose the epitaxial layer for further fabrication.

10 Claims, 17 Drawing Figures

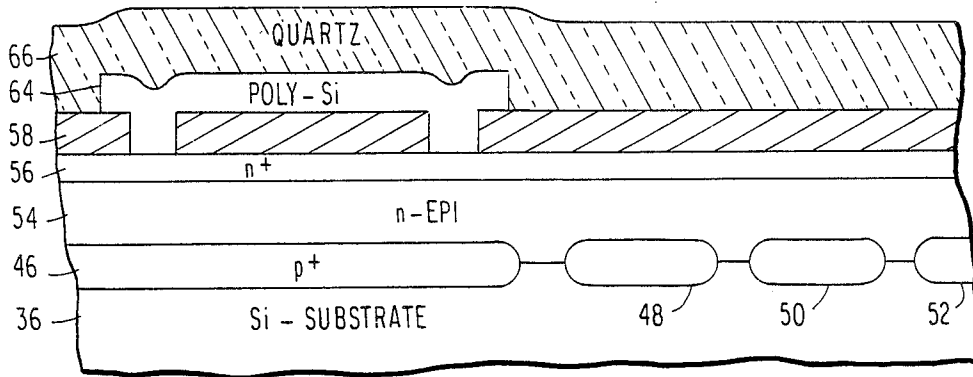


FIG. 1
PRIOR ART

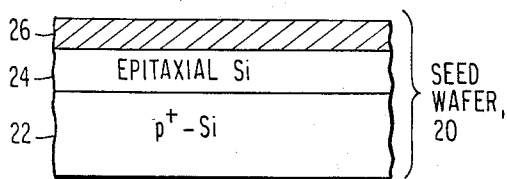


FIG. 2
PRIOR ART

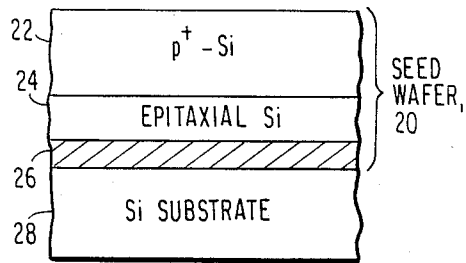


FIG. 3
PRIOR ART

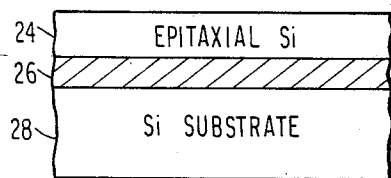


FIG. 4

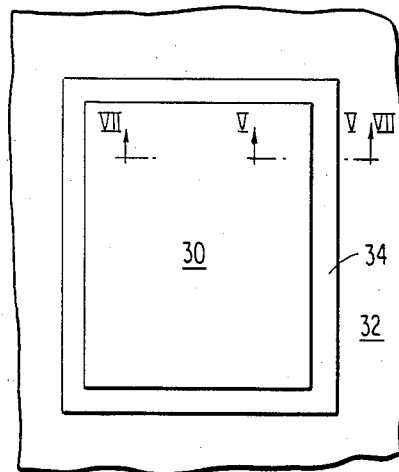


FIG. 5

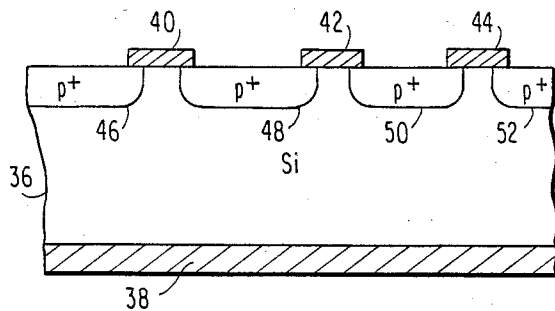
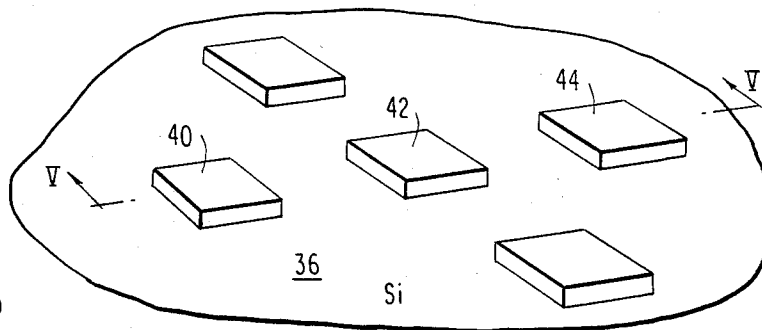
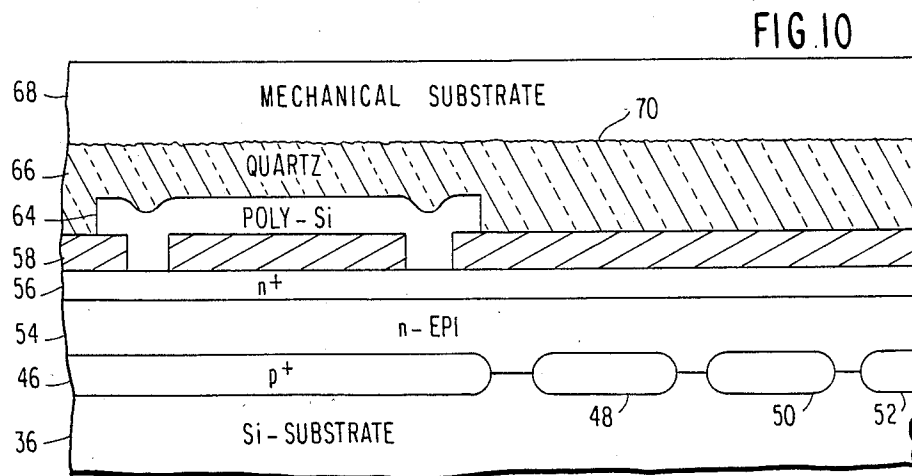
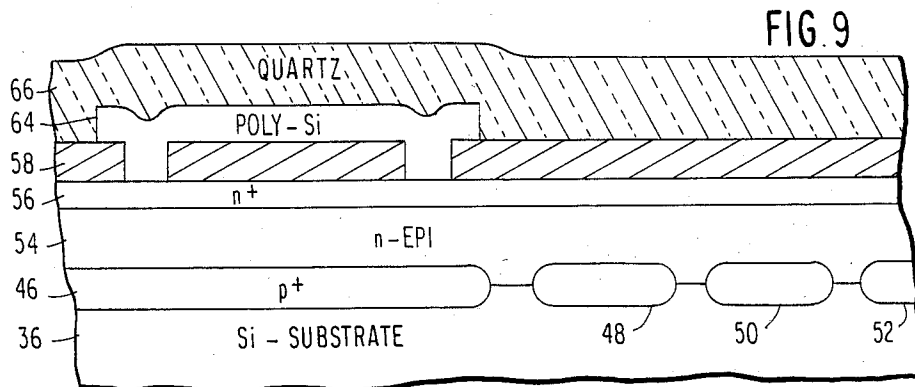
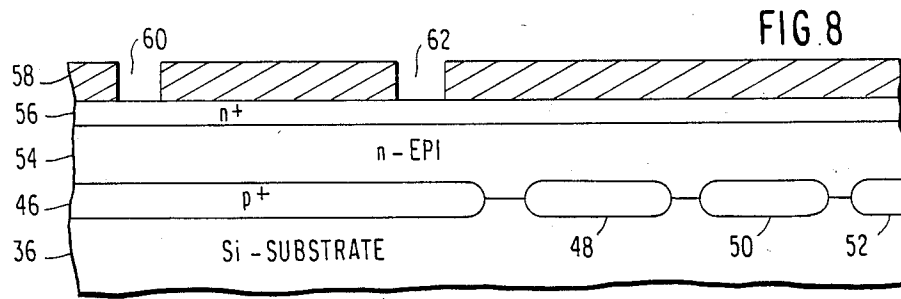
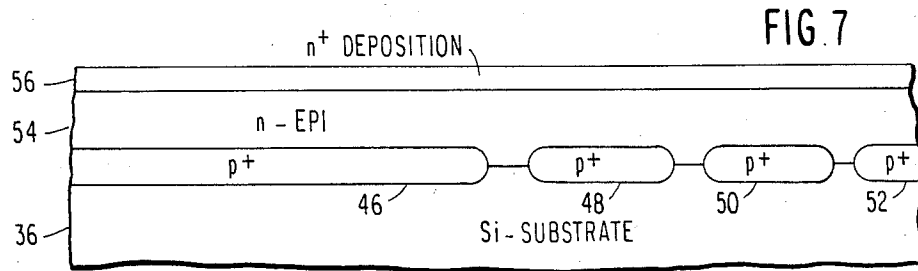
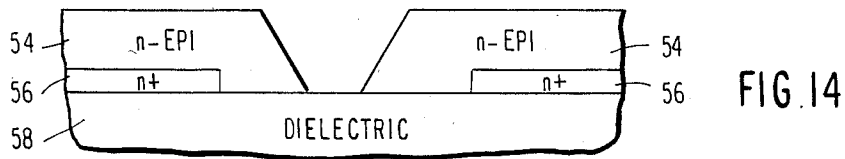
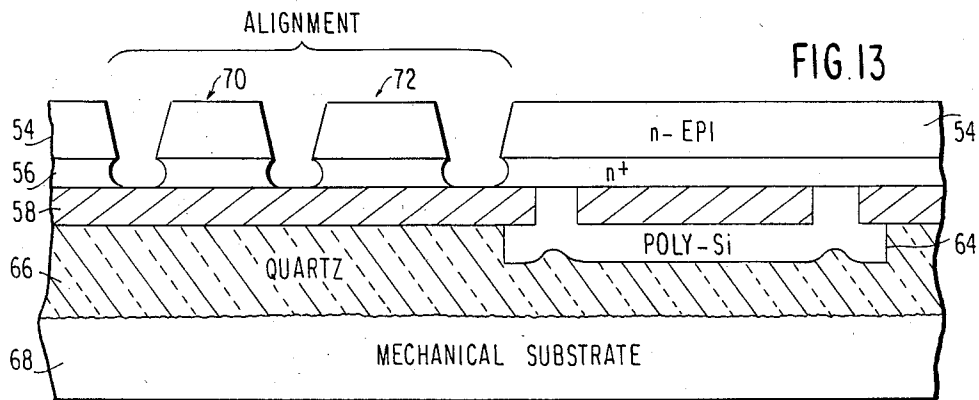
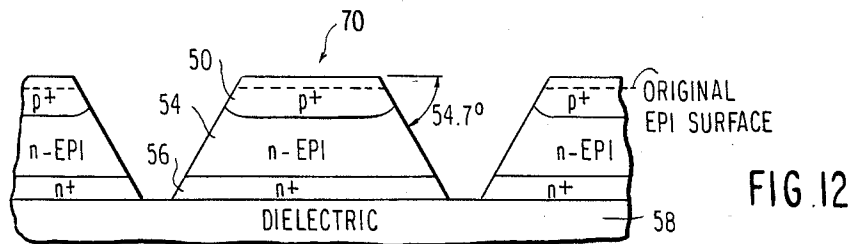
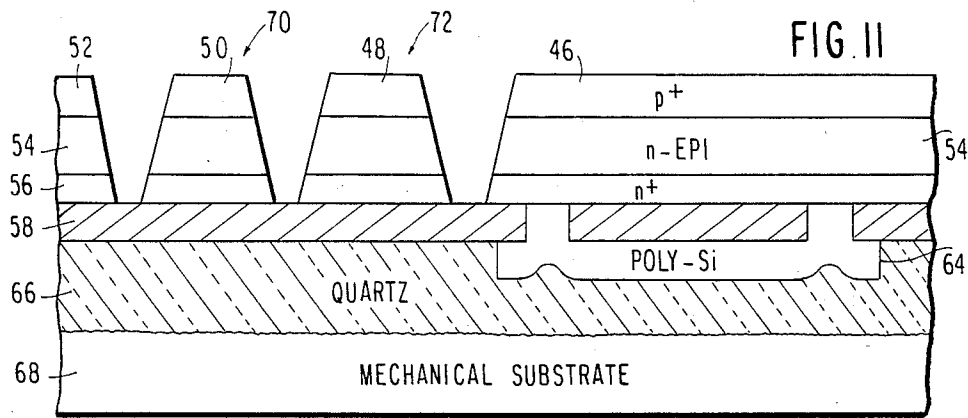
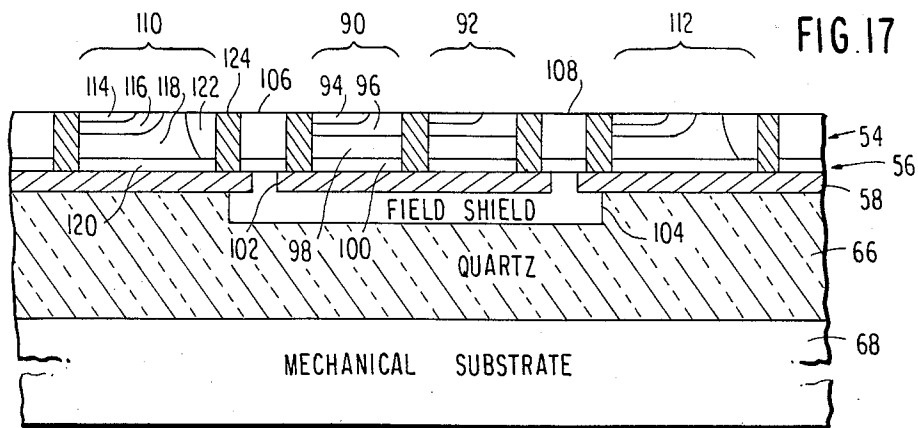
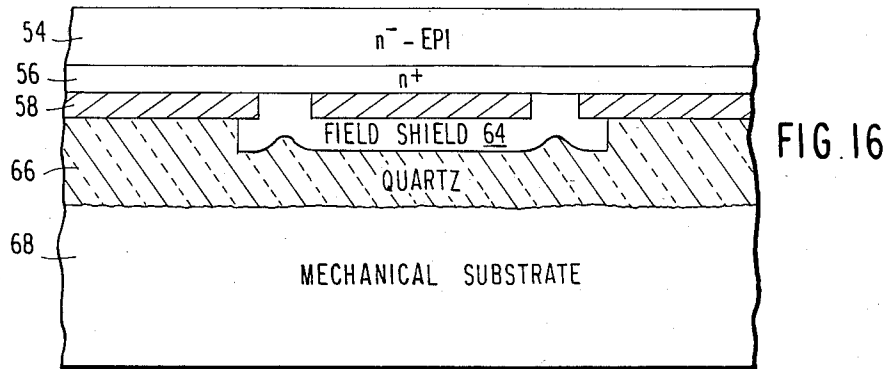
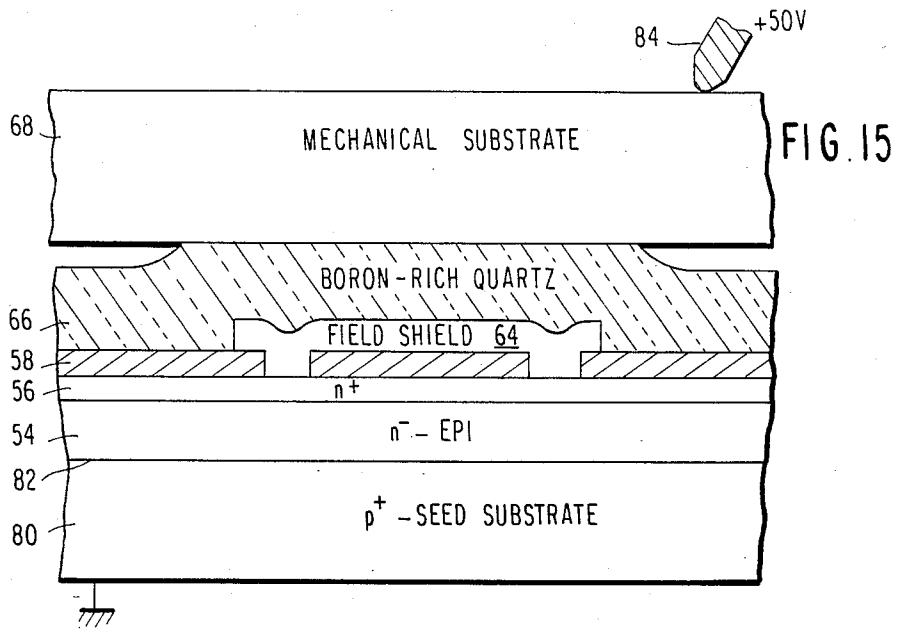


FIG. 6









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