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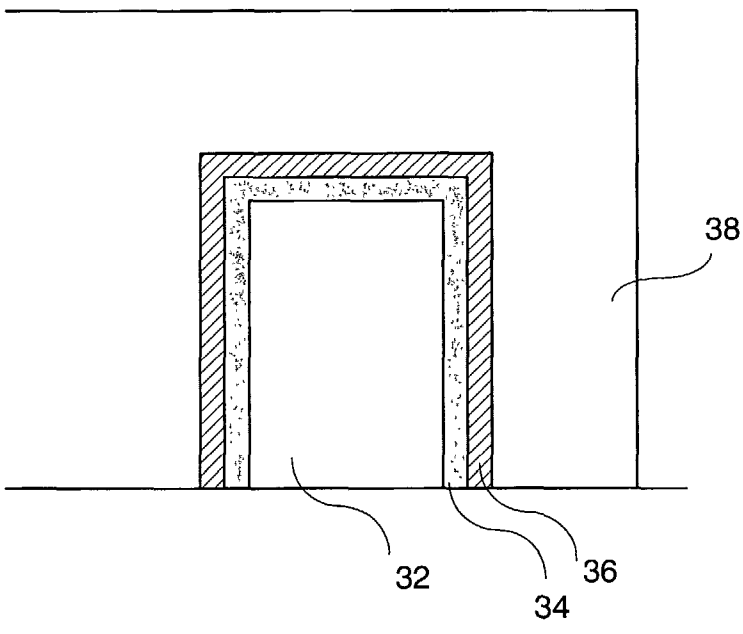
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(54) Title: FINFET HAVING IMPROVED CARRIER MOBILITY AND METHOD OF ITS FORMATION



(57) Abstract: A FinFET device employs strained silicon to enhance carrier mobility. In one method, a FinFET body (46) is patterned from a layer of silicon germanium (SiGe) (42) that overlies a dielectric layer (40). An epitaxial layer of silicon (34) is then formed on the silicon germanium FinFET body (46). A strain is induced in the epitaxial silicon as a result of the different dimensionalities of intrinsic silicon and of the silicon germanium crystal lattice that serves as the template on which the epitaxial silicon is grown. Strained silicon has an increased carrier mobility compared to relaxed silicon, and as a result the epitaxial strained silicon provides increased carrier mobility in the FinFET. A higher driving current can therefore be realized in a FinFET employing a strained silicon channel layer.

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