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Yuzuriha et al.

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(54) **METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE AND FLASH MEMORY**

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(52) **U.S. Cl.** **438/257; 438/264; 438/266; 438/593; 438/594; 438/763; 438/689; 438/695; 438/706; 438/725**

(58) **Field of Search** **438/257, 266, 438/264, 593, 594, 763, 689, 695, 706, 725**

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(57) **ABSTRACT**

A semiconductor manufacturing method is mainly contemplated, improved to prevent an altered surface layer of a resist from being removed when a single patterned resist is used to provide dry-etch and wet-etch successively. On a semiconductor substrate an insulation film and a conductive layer are formed successively. On the conductive layer a patterned resist is formed. With the patterned resist used as a mask, the conductive layer is dry-etched. A surface layer of the patterned resist is partially removed. With the patterned resist used as a mask, the insulation film is wet-etched.

5 Claims, 12 Drawing Sheets

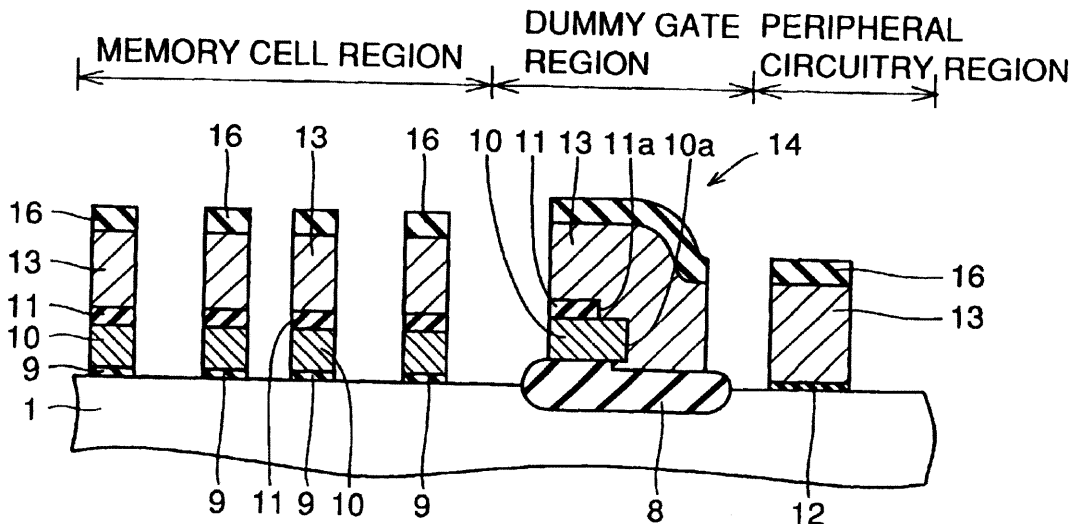


EXHIBIT 2003
SPANSION
9/23/14
IPR2014-00000

EXHIBIT
MACRONIX
MX027II-1003

FIG. 1

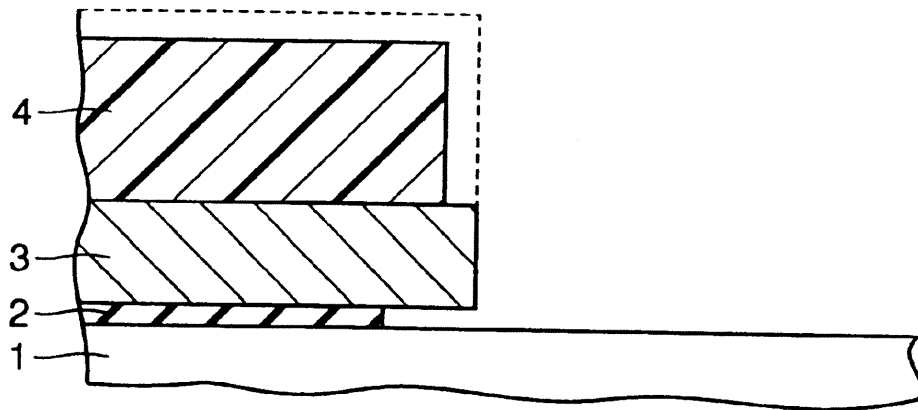


FIG. 2

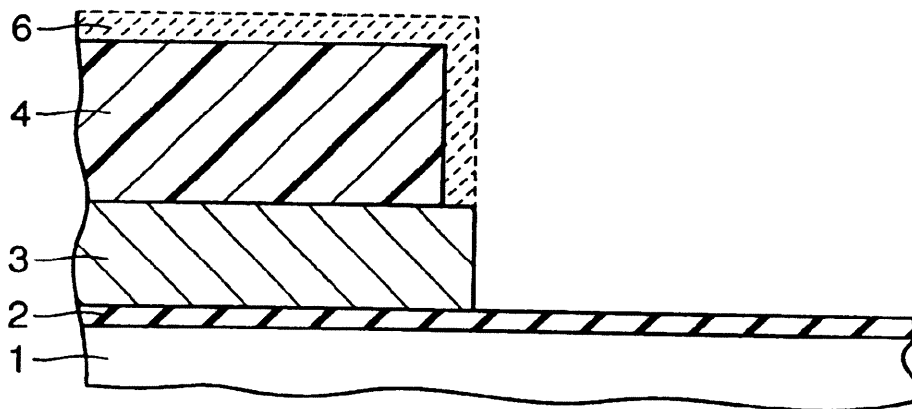


FIG. 3

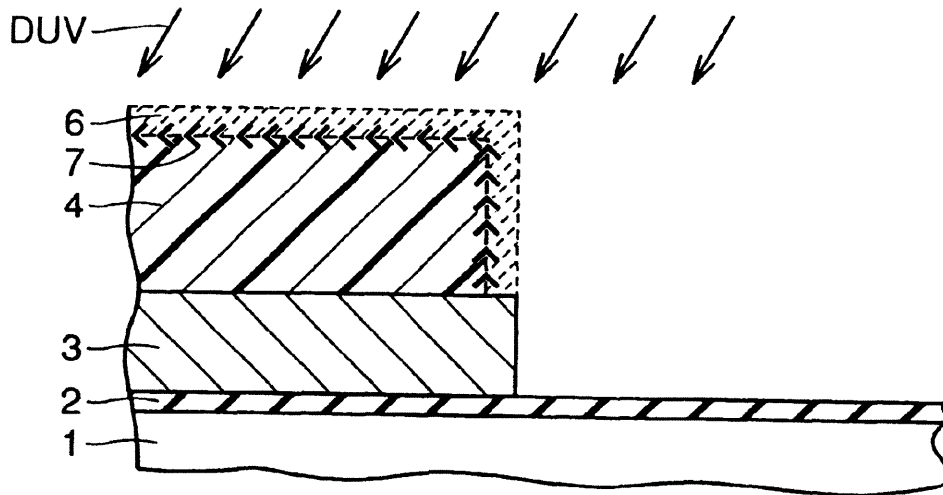


FIG. 4

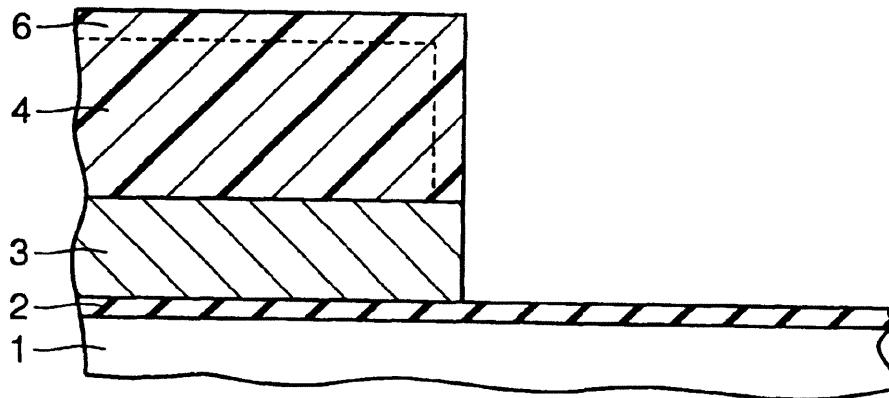


FIG. 5

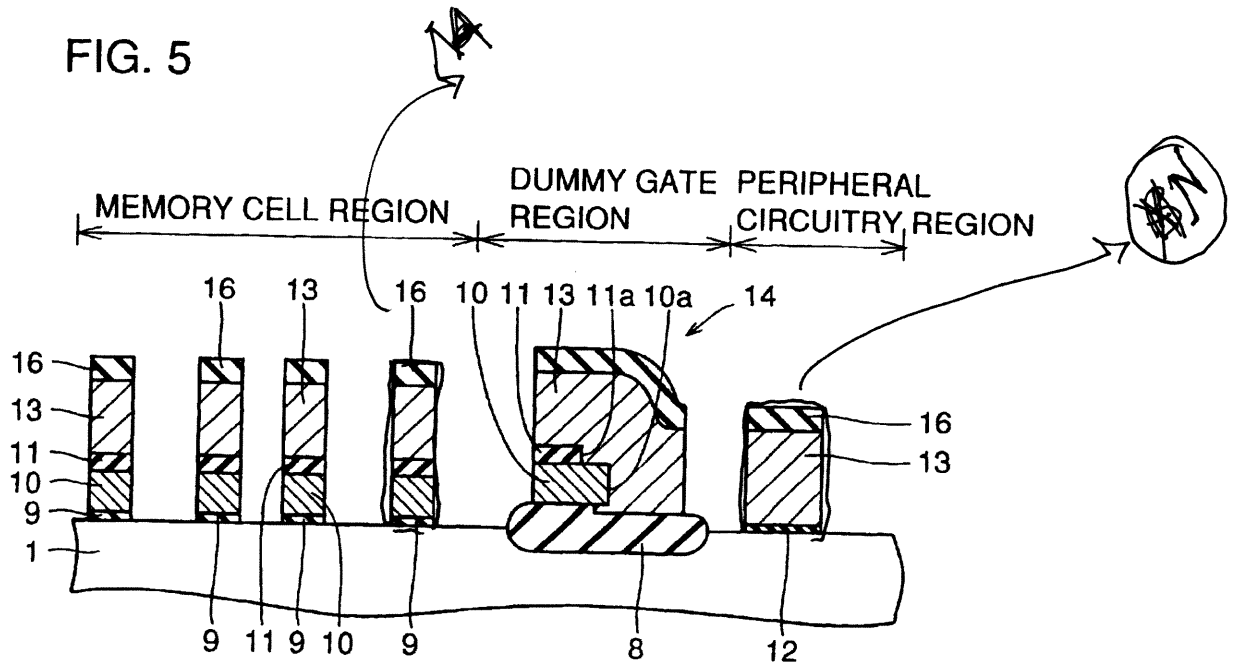


FIG. 6

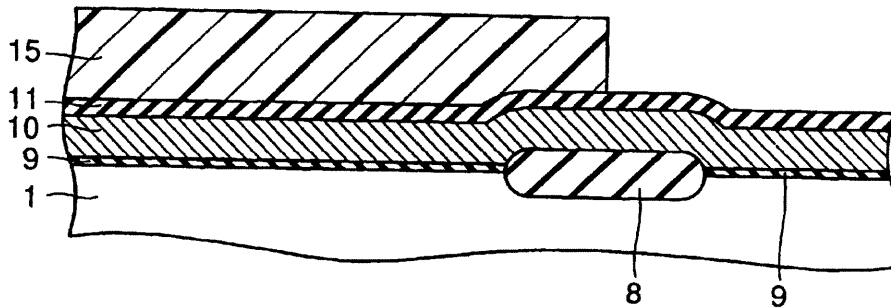


FIG. 7

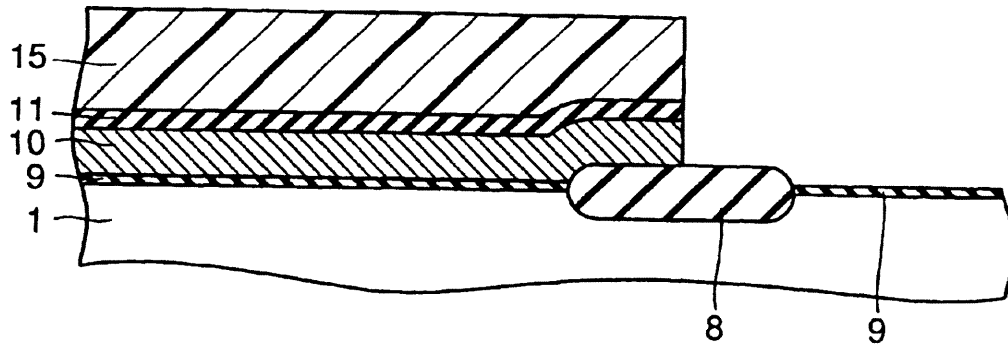
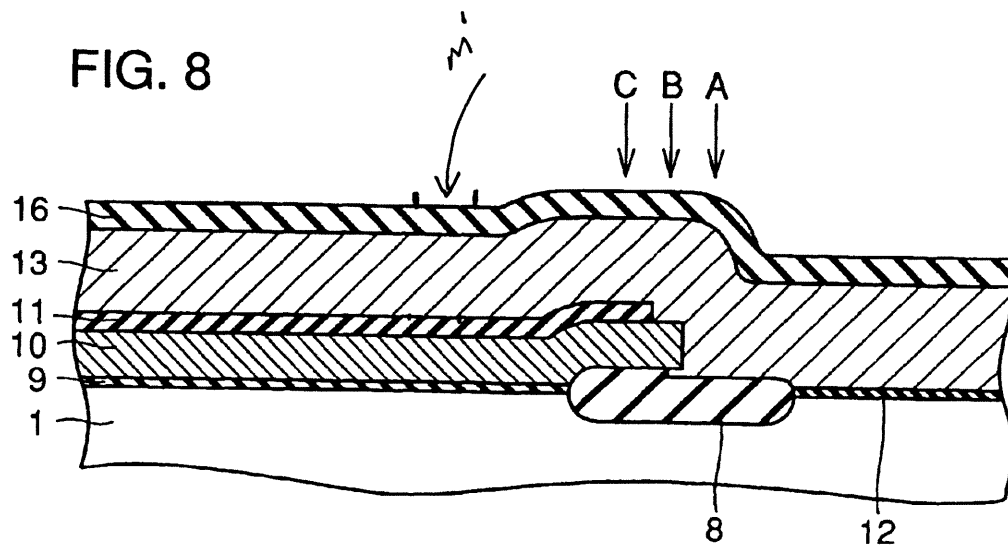


FIG. 8



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