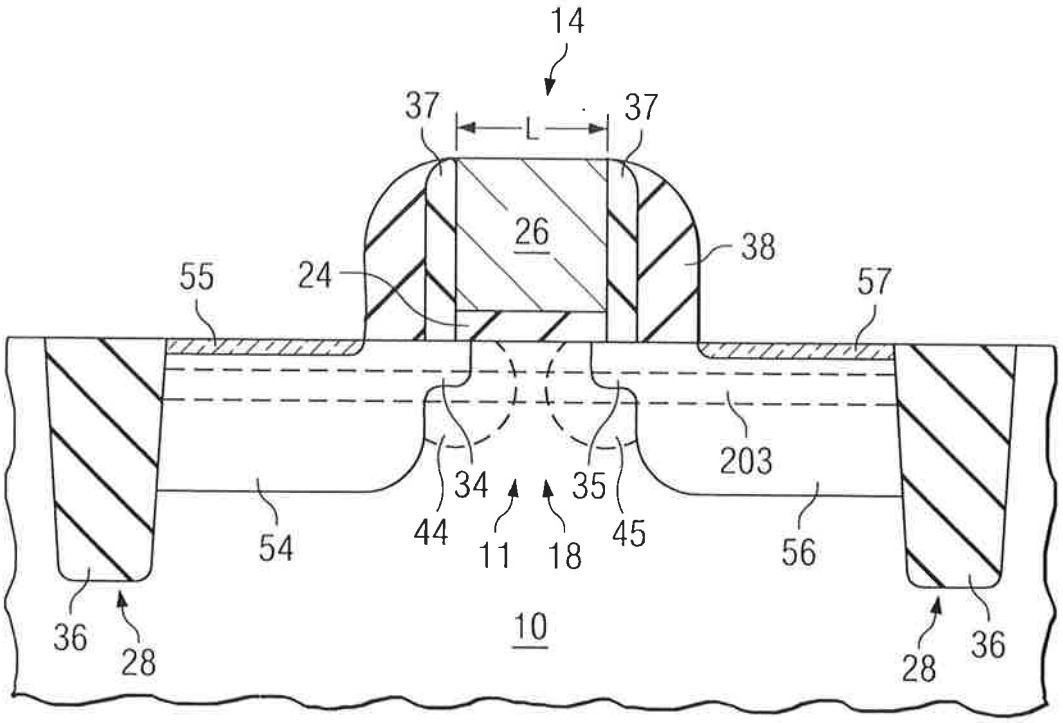

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FIG. 1A

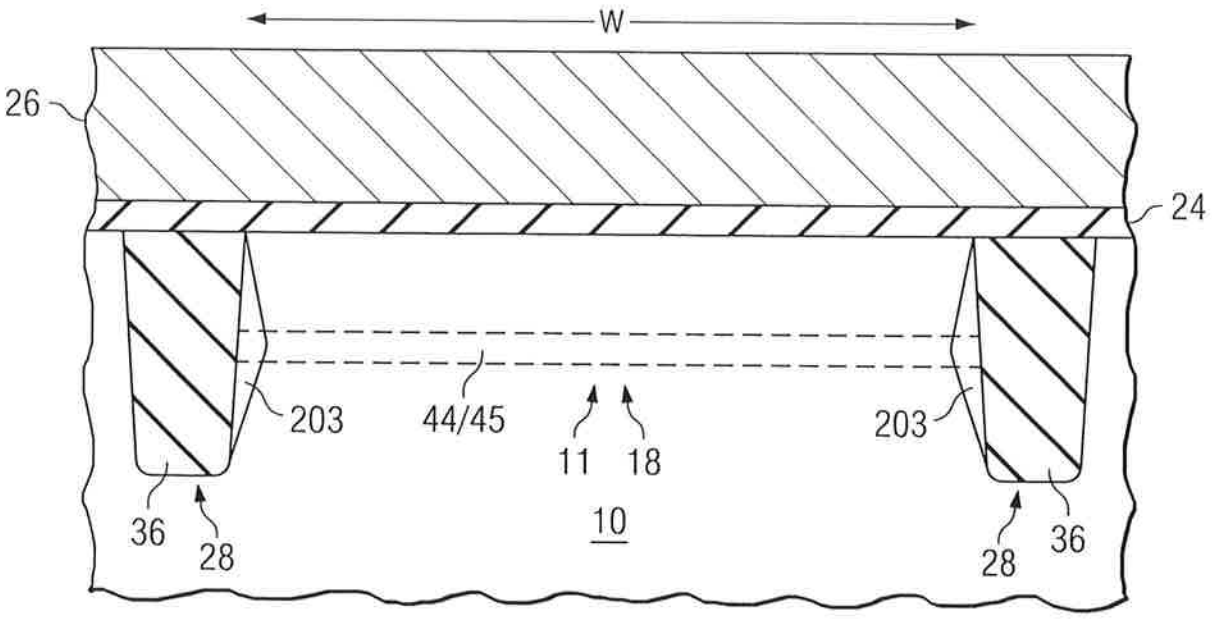

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FIG. 1B

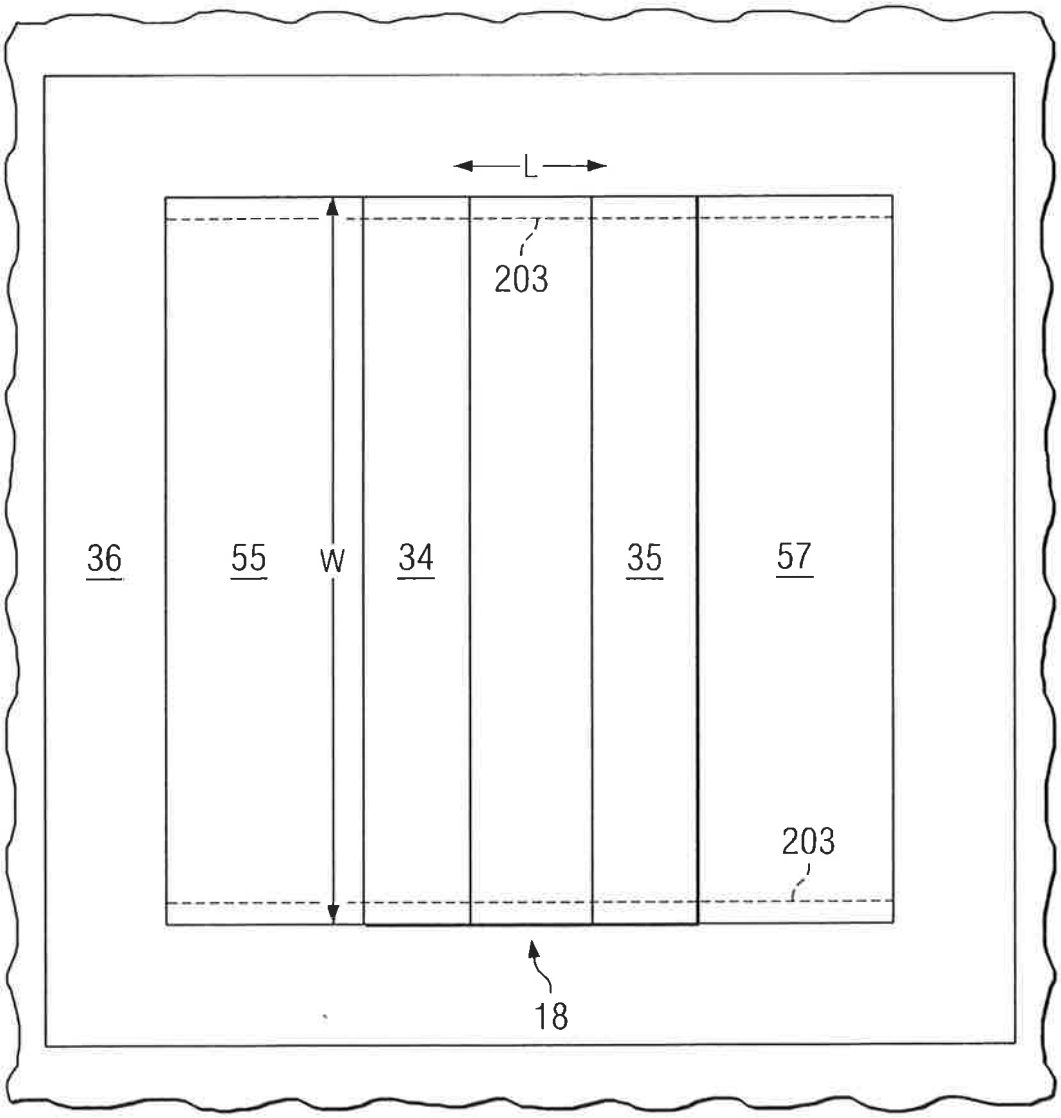


FIG. 1C

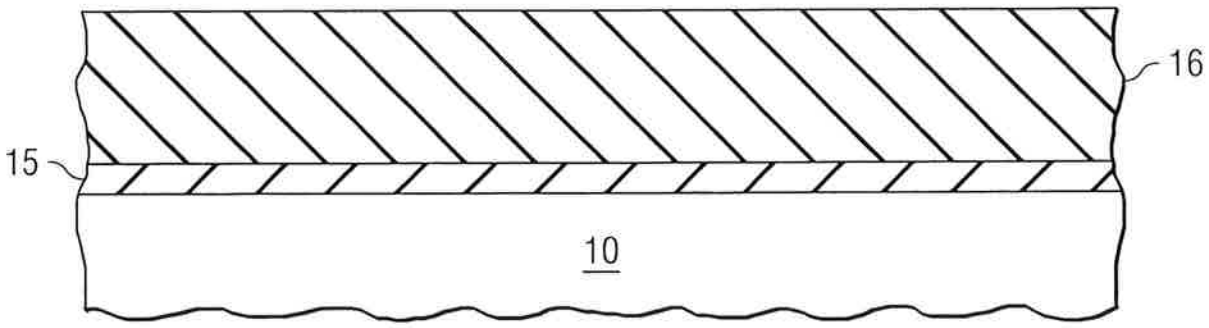


FIG. 2A

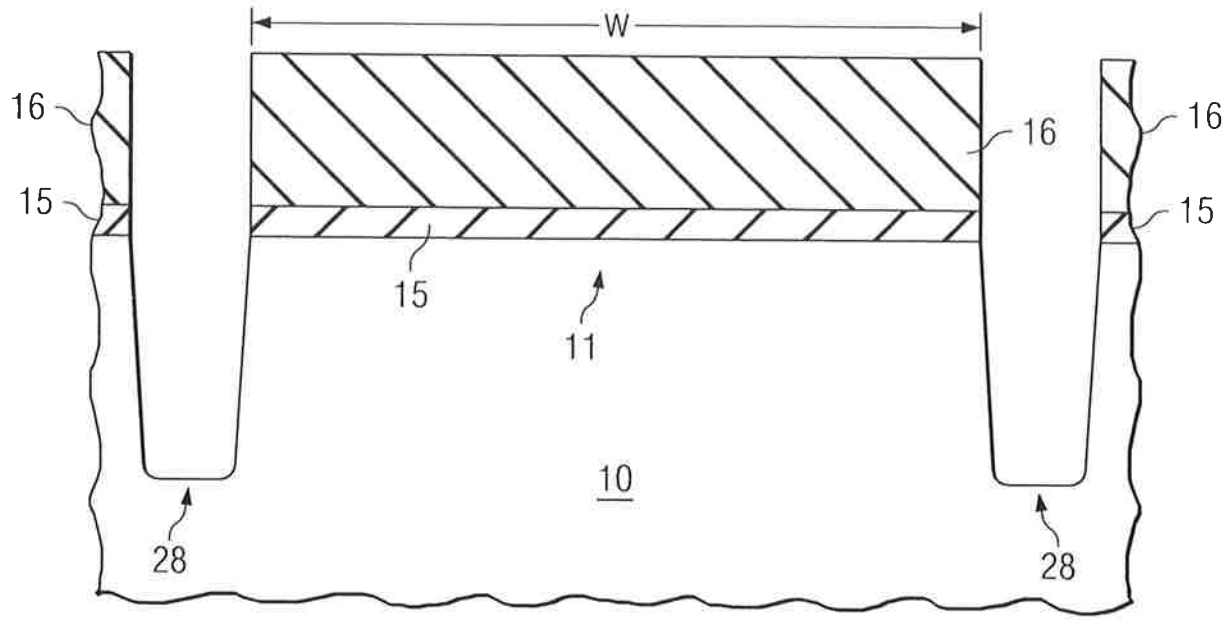

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FIG. 2B

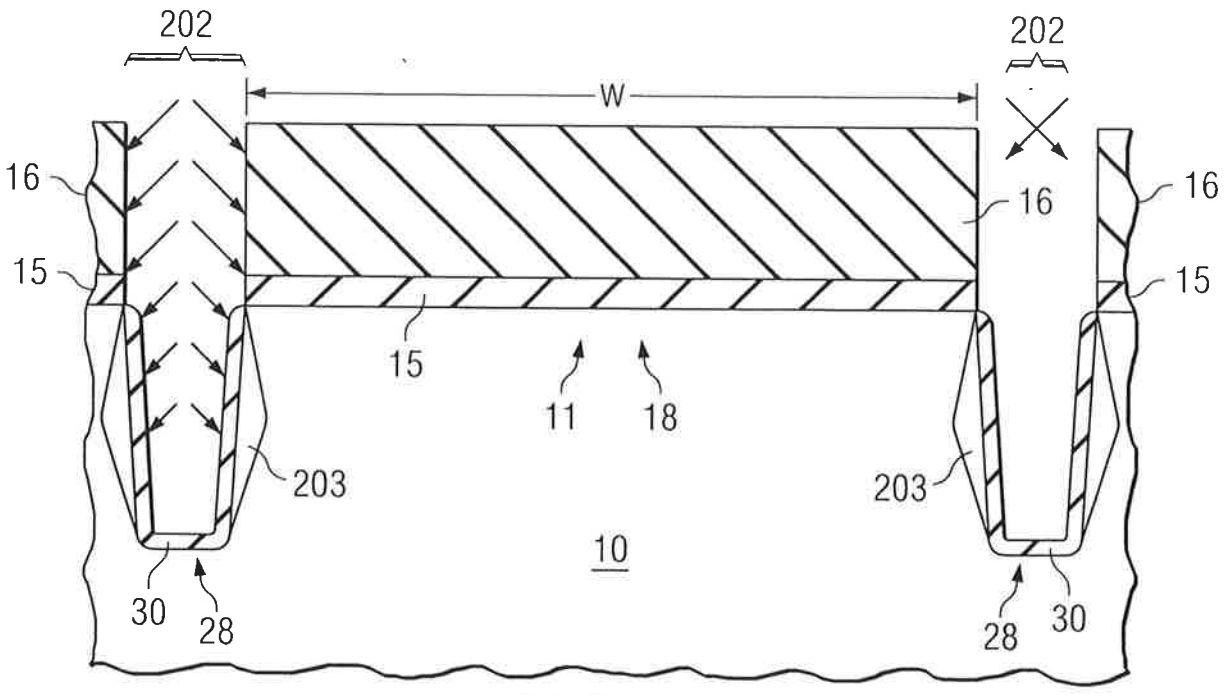

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FIG. 2C

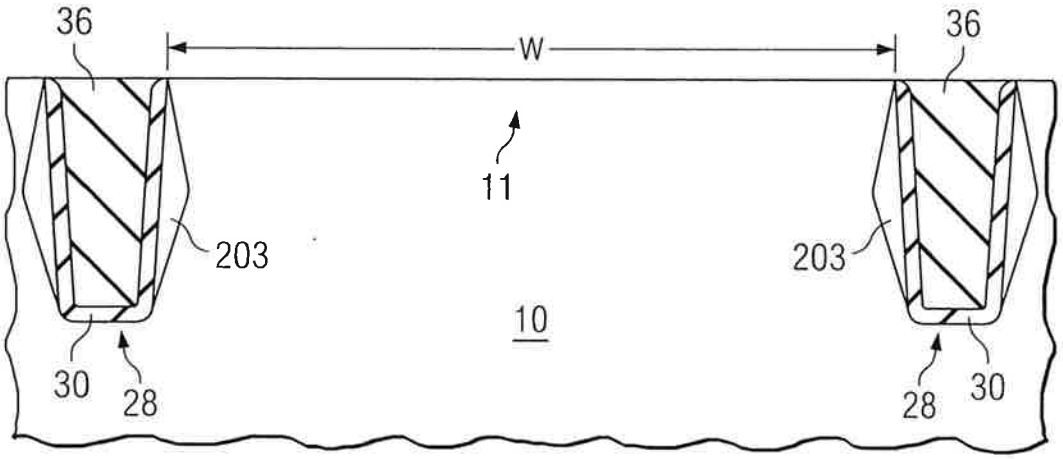


FIG. 2D

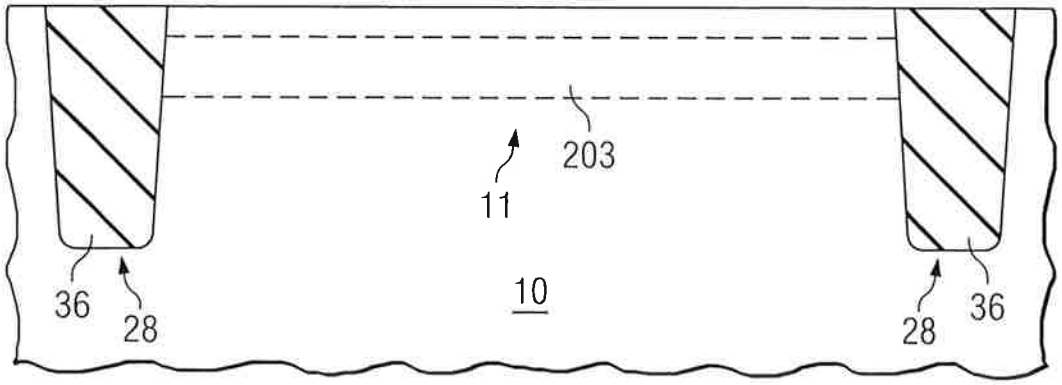


FIG. 3A

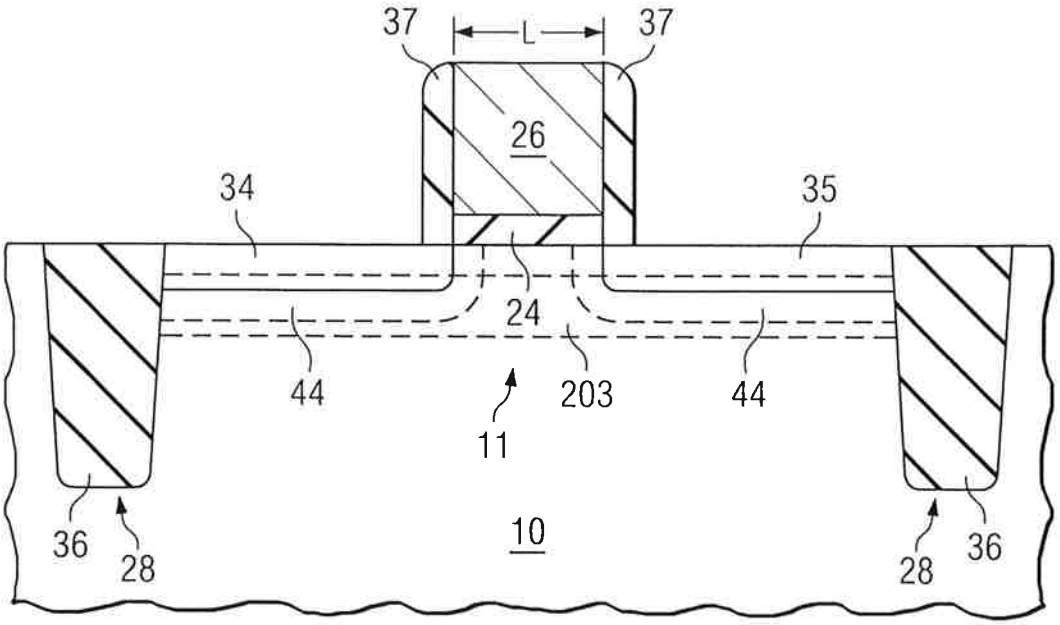


FIG. 3B

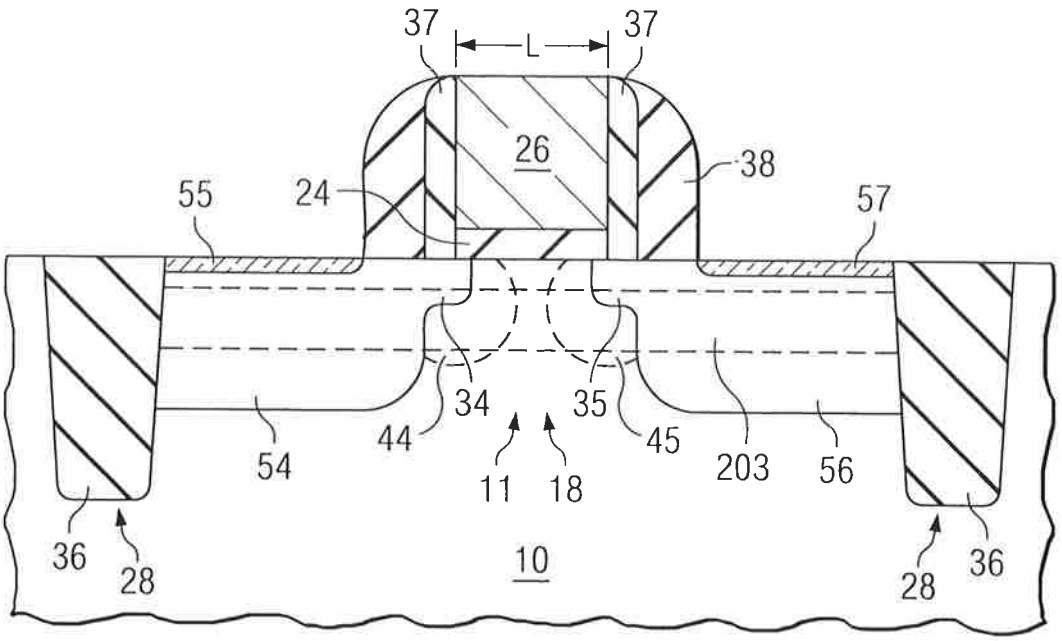

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FIG. 3C

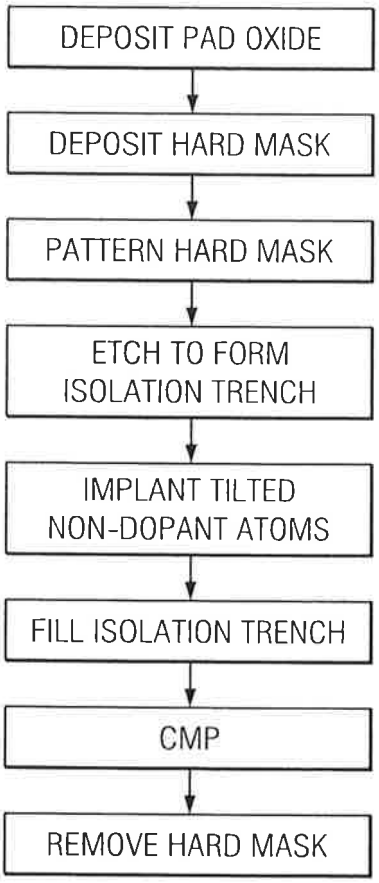

DEPOSIT PAD OXIDE
DEPOSIT HARD MASK
PATTERN HARD MASK
ETCH TO FORM ISOLATION TRENCH
IMPLANT TILTED NON-DOPANT ATOMS
FILL ISOLATION TRENCH
CMP
REMOVE HARD MASK

FIG. 4

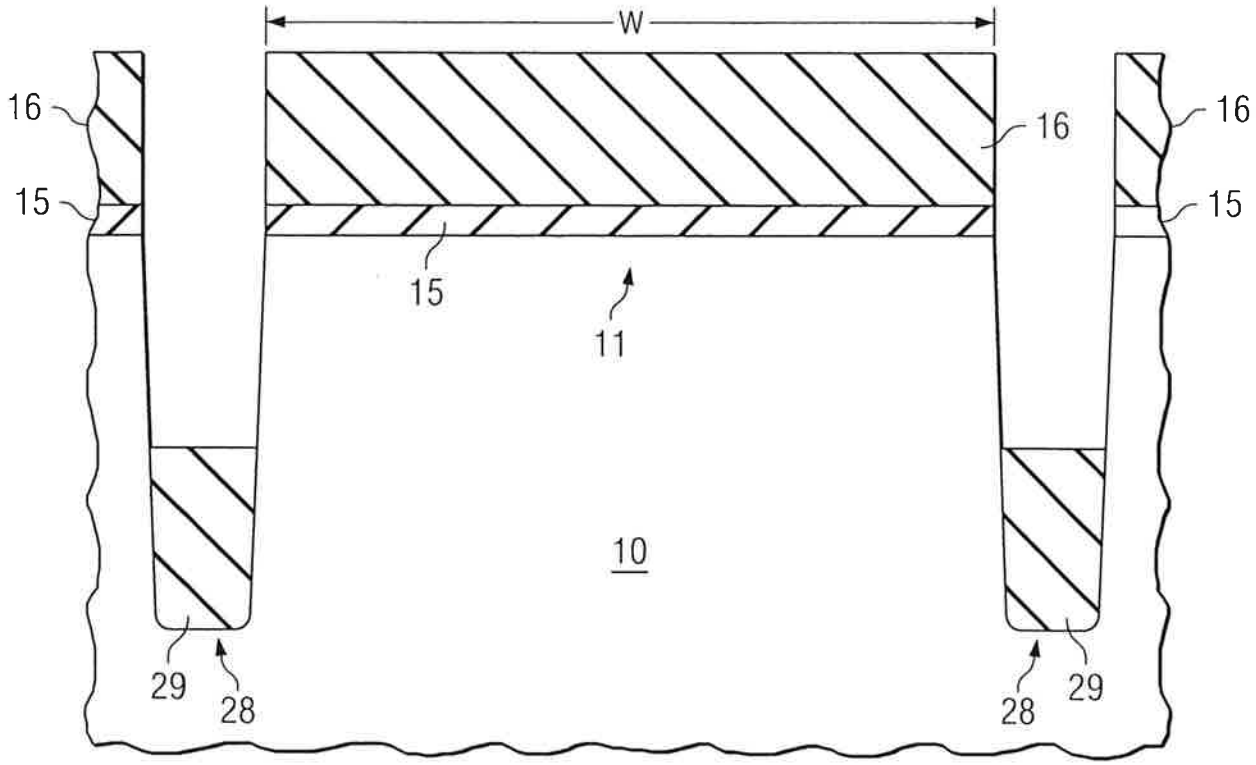

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FIG. 5A

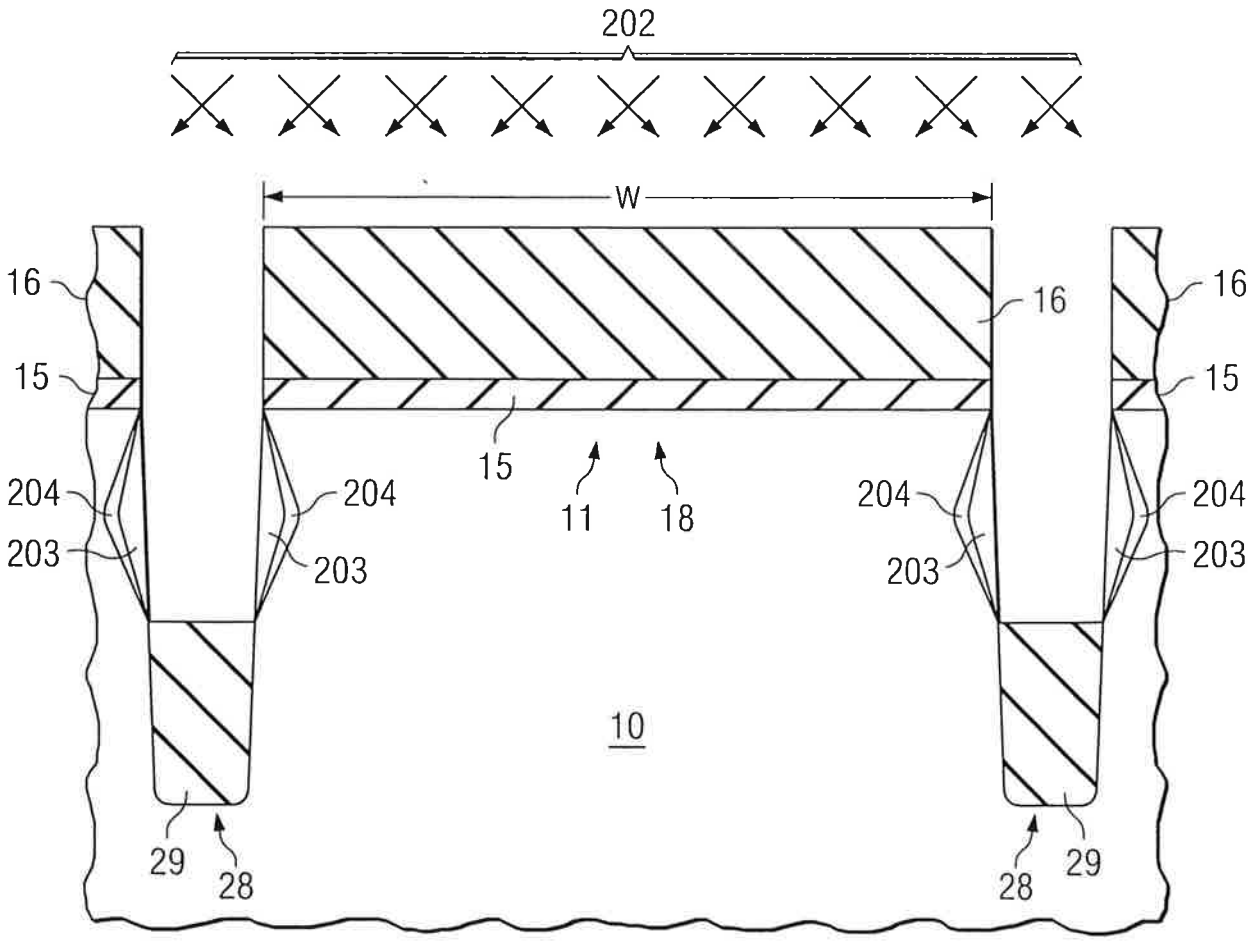

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FIG. 5B

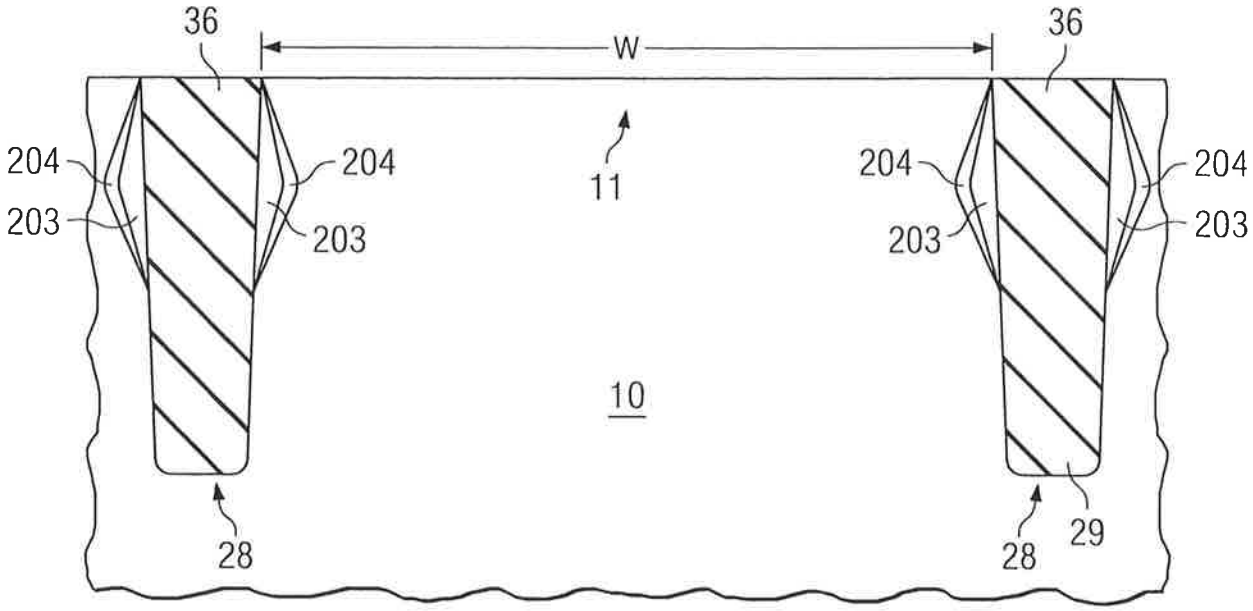

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FIG. 5C

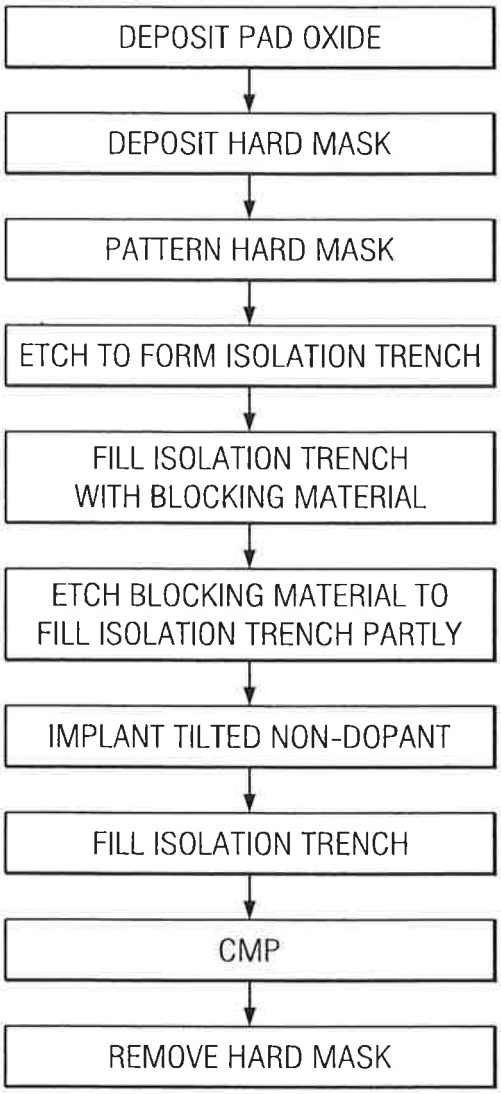

DEPOSIT PAD OXIDE
DEPOSIT HARD MASK
PATTERN HARD MASK
ETCH TO FORM ISOLATION TRENCH
FILL ISOLATION TRENCH WITH BLOCKING MATERIAL
ETCH BLOCKING MATERIAL TO FILL ISOLATION TRENCH PARTLY
IMPLANT TILTED NON-DOPANT
FILL ISOLATION TRENCH
CMP
REMOVE HARD MASK

FIG. 6

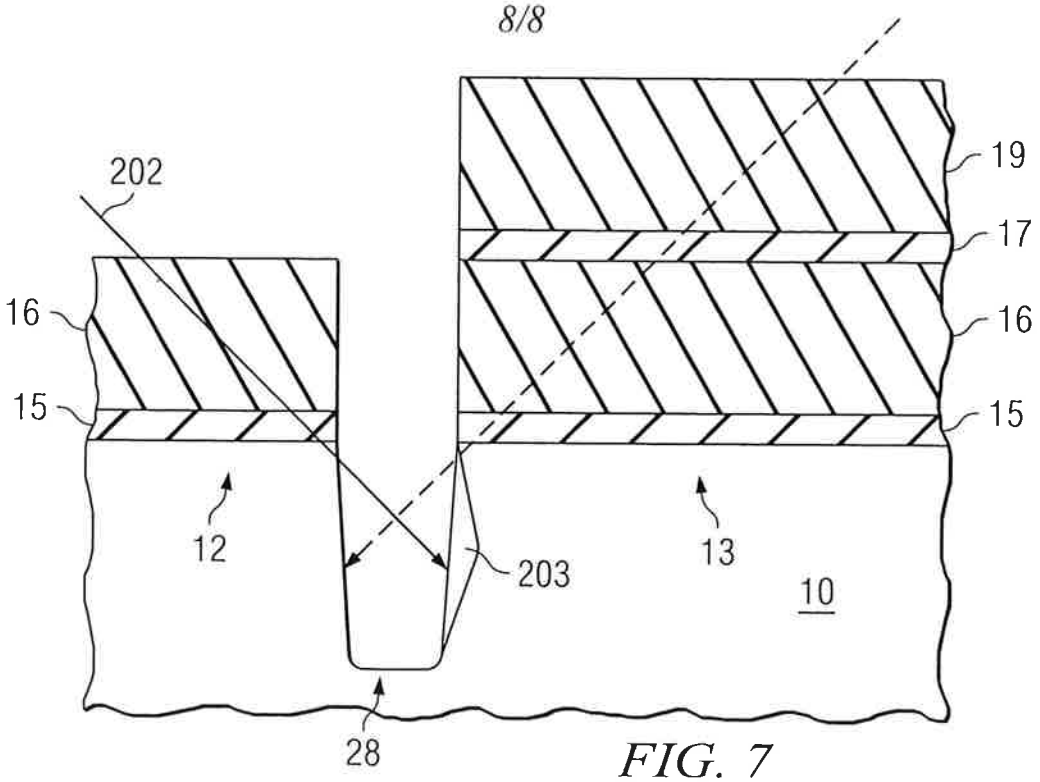

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FIG. 7

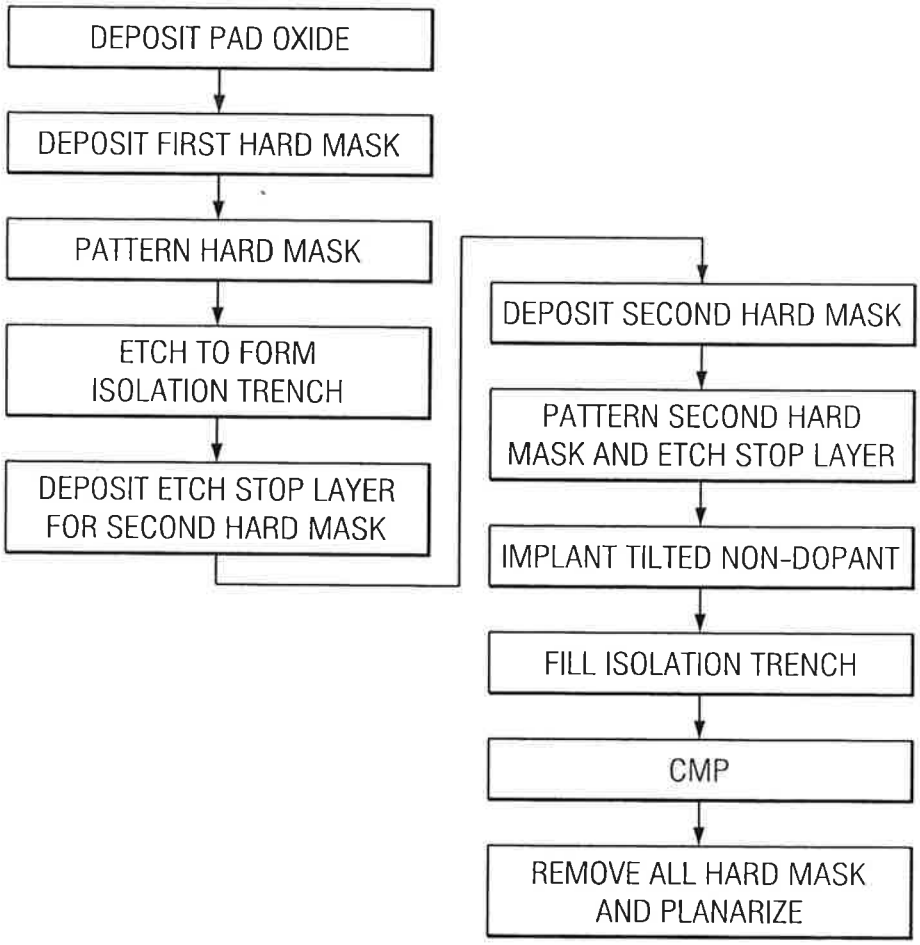

DEPOSIT PAD OXIDE
DEPOSIT FIRST HARD MASK
PATTERN HARD MASK
ETCH TO FORM ISOLATION TRENCH
DEPOSIT ETCH STOP LAYER FOR SECOND HARD MASK
DEPOSIT SECOND HARD MASK
PATTERN SECOND HARD MASK AND ETCH STOP LAYER
IMPLANT TILTED NON-DOPANT
FILL ISOLATION TRENCH
CMP
REMOVE ALL HARD MASK AND PLANARIZE

FIG. 8