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[Continued on next page]

(54) **Title**: PROCESS FOR LOCALLY DISSOLVING THE OXIDE LAYER IN A SEMICONDUCTOR-ON-INSULATOR TYPE STRUCTURE

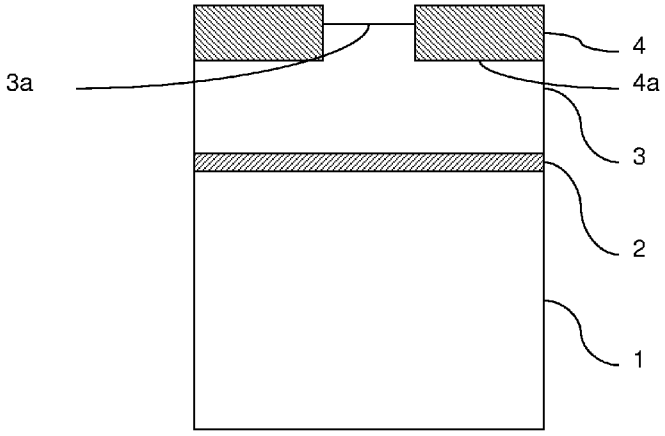


FIG. 2C

(57) **Abstract**: The invention relates to a process for treating a semiconductor-on- insulator type structure, successively comprising a support substrate (1), an oxide layer (2) and a thin semiconductor layer (3), said process comprising the following steps: (a) formation of a silicon nitride or silicon oxinitride mask (4) on the thin semiconductor layer (3), so as to define so-called exposed areas (3a) at the surface of said layer (3), which are not covered by the mask (40, and which are arranged in a desired pattern, (b) application of a heat treatment in a neutral or controlled reducing atmosphere, and under controlled conditions of temperature and time, so as to induce at least a portion of the oxygen of the oxide layer (2) to diffuse through the thin semiconductor layer (3), thereby resulting in the controlled reduction in the oxide thickness in the areas (2a) of the oxide layer corresponding to said desired pattern. In step (a), the mask (4) is formed so as to be at least partially buried in the thickness of the thin semiconductor layer (3).

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