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**Fung et al.**

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(54) **SEMICONDUCTOR DEVICE STRUCTURE INCLUDING MULTIPLE FETS HAVING DIFFERENT SPACER WIDTHS**

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(51) Int. Cl.<sup>7</sup> ..... **H01L 27/088**

(52) U.S. Cl. .... **257/900; 257/368; 257/369**

(58) Field of Search ..... **257/900, 368, 257/369**

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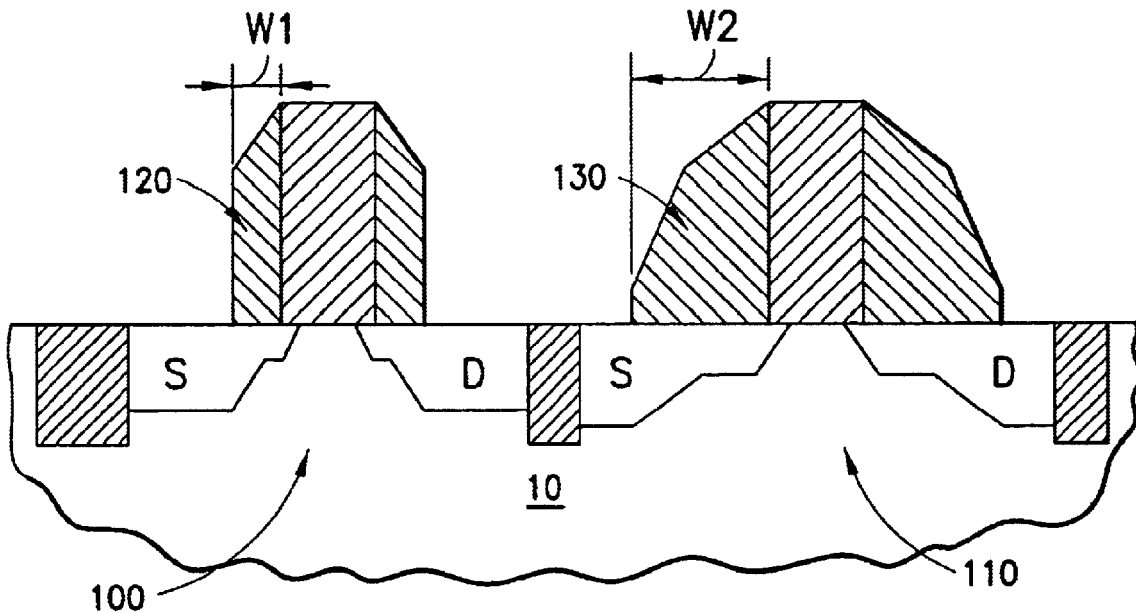
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(57) **ABSTRACT**

A semiconductor device structure includes at least two field effect transistors formed on same substrate, the first field effect transistor includes a spacer having a first width, the second field effect transistor includes a spacer having a second width, the first width being different than said second width. Preferably, the first width is narrower than the second width.

**8 Claims, 8 Drawing Sheets**



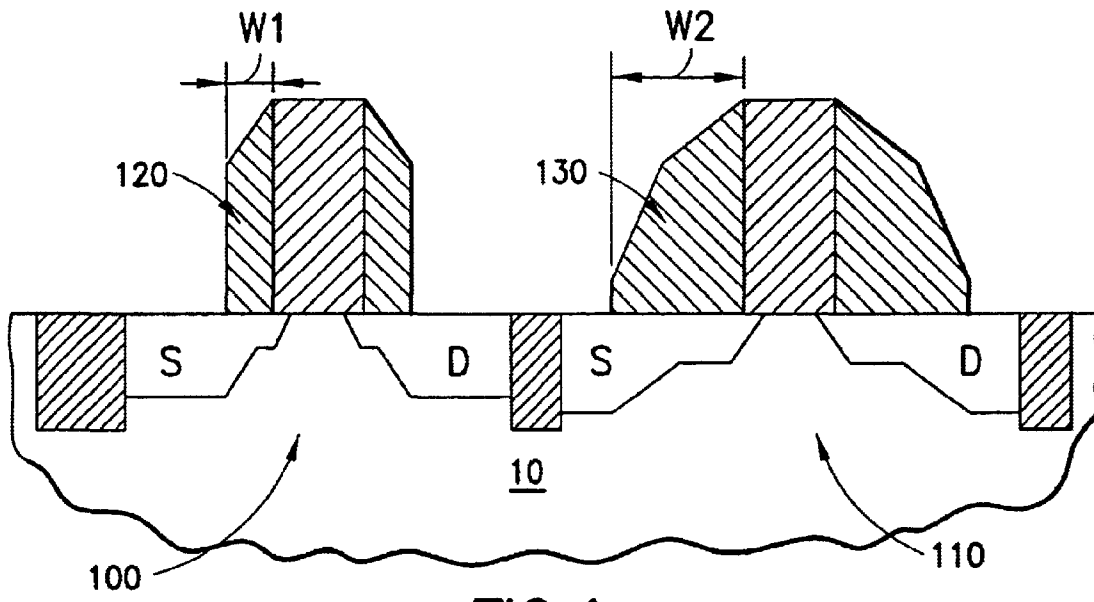


FIG. 1

INCREASE DRIVE  
CURRENT

DECREASE SHORT  
CHANNEL EFFECT

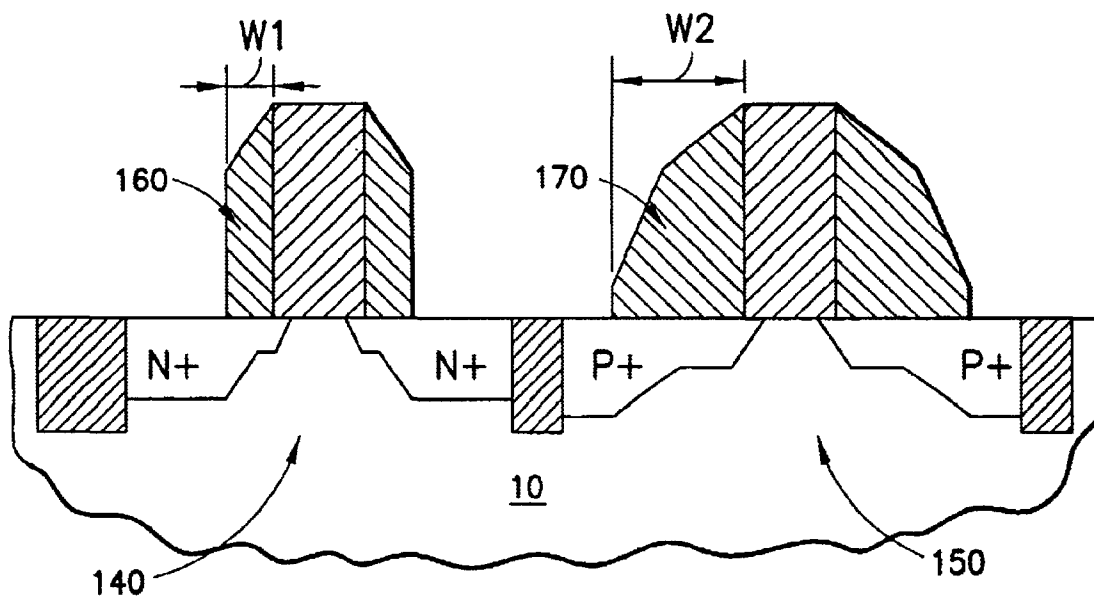


FIG. 2

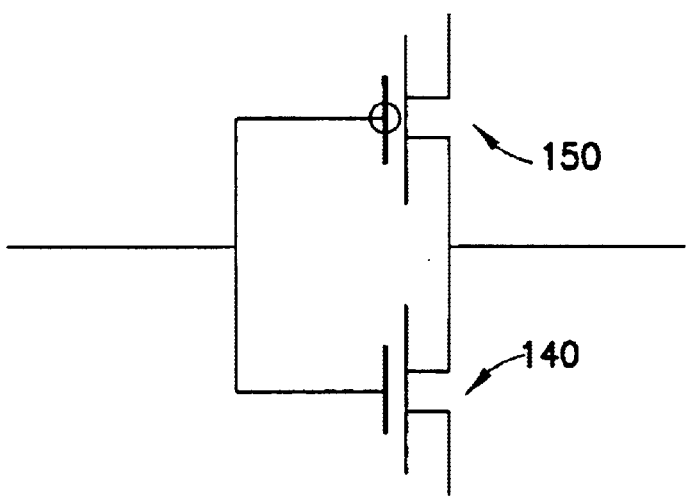


FIG. 3a

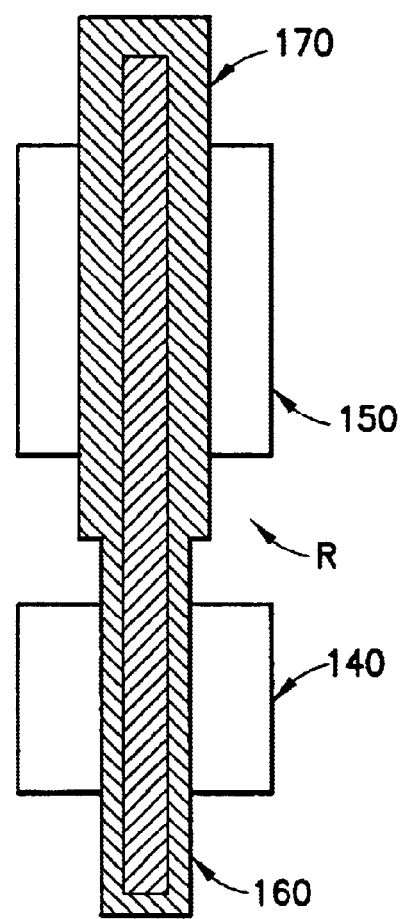


FIG. 3b

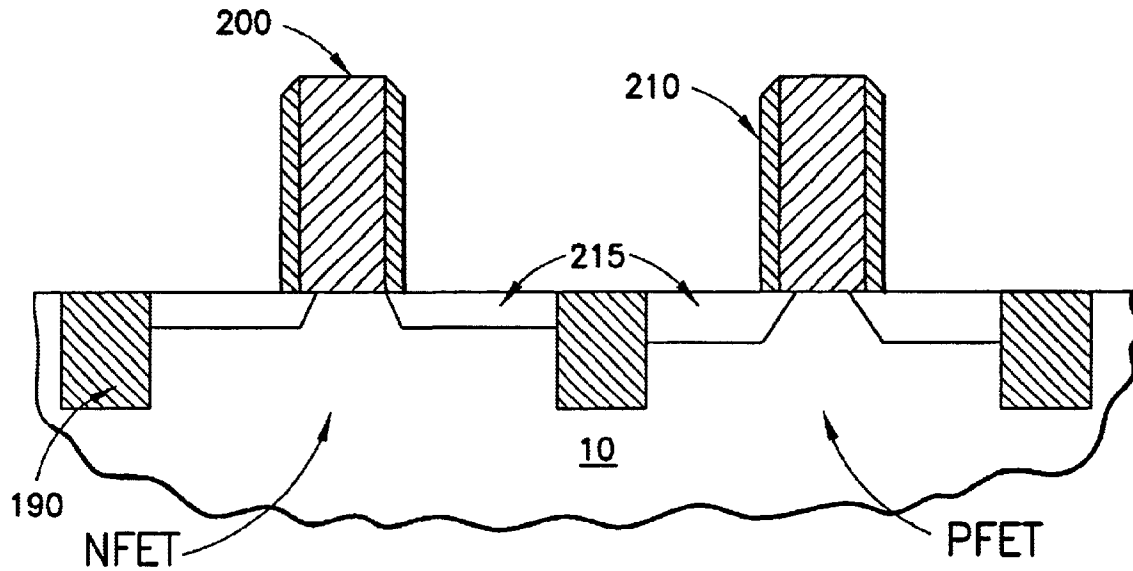


FIG. 4

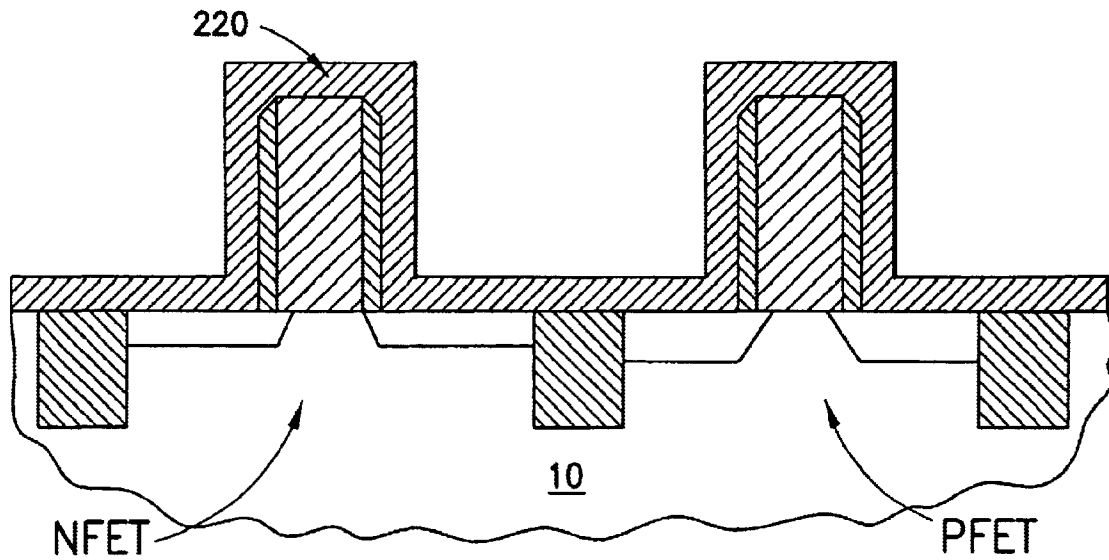


FIG. 5

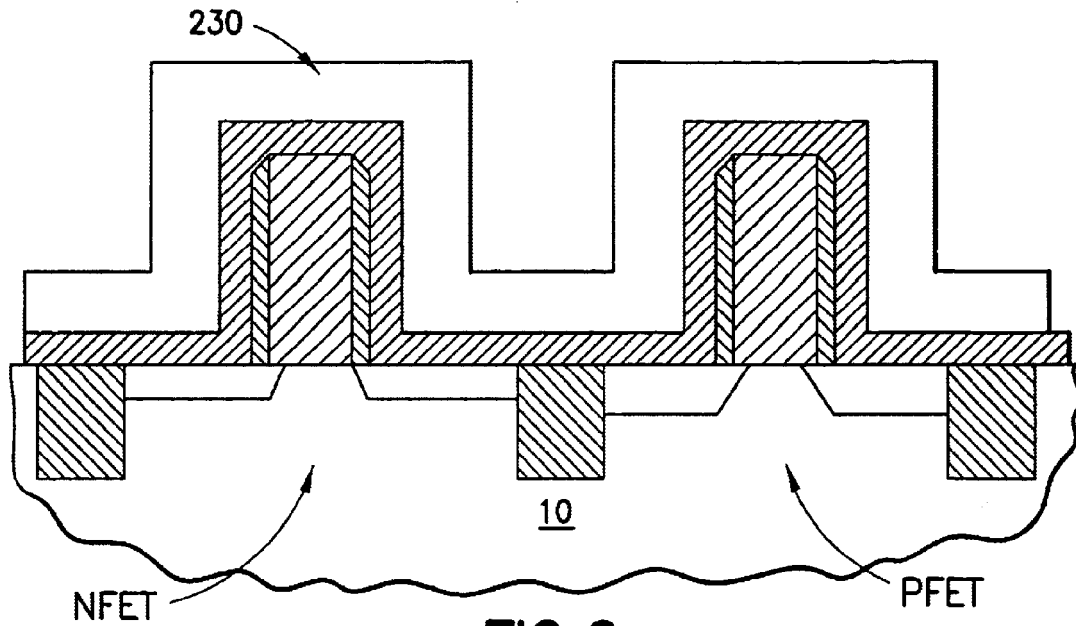


FIG. 6

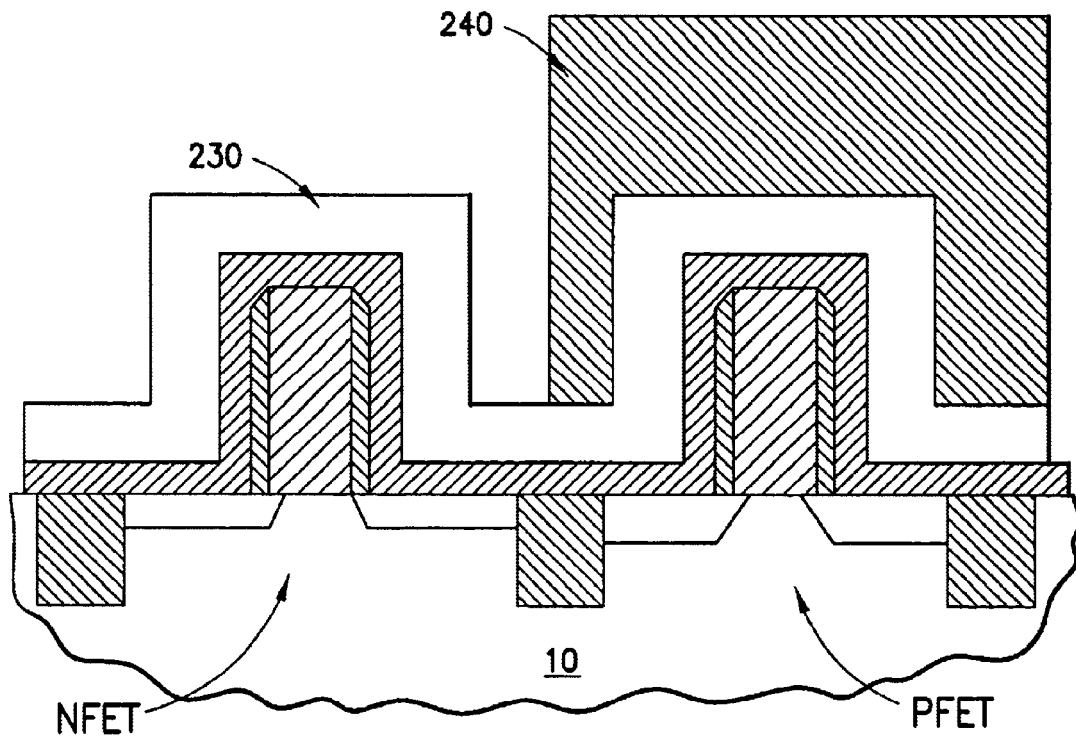


FIG. 7

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