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(54) MAGNETORESISTIVE SENSOR WITH A THIN ANTIFERROMAGNETIC LAYER FOR PINNING ANTIPARALLEL COUPLED TABS

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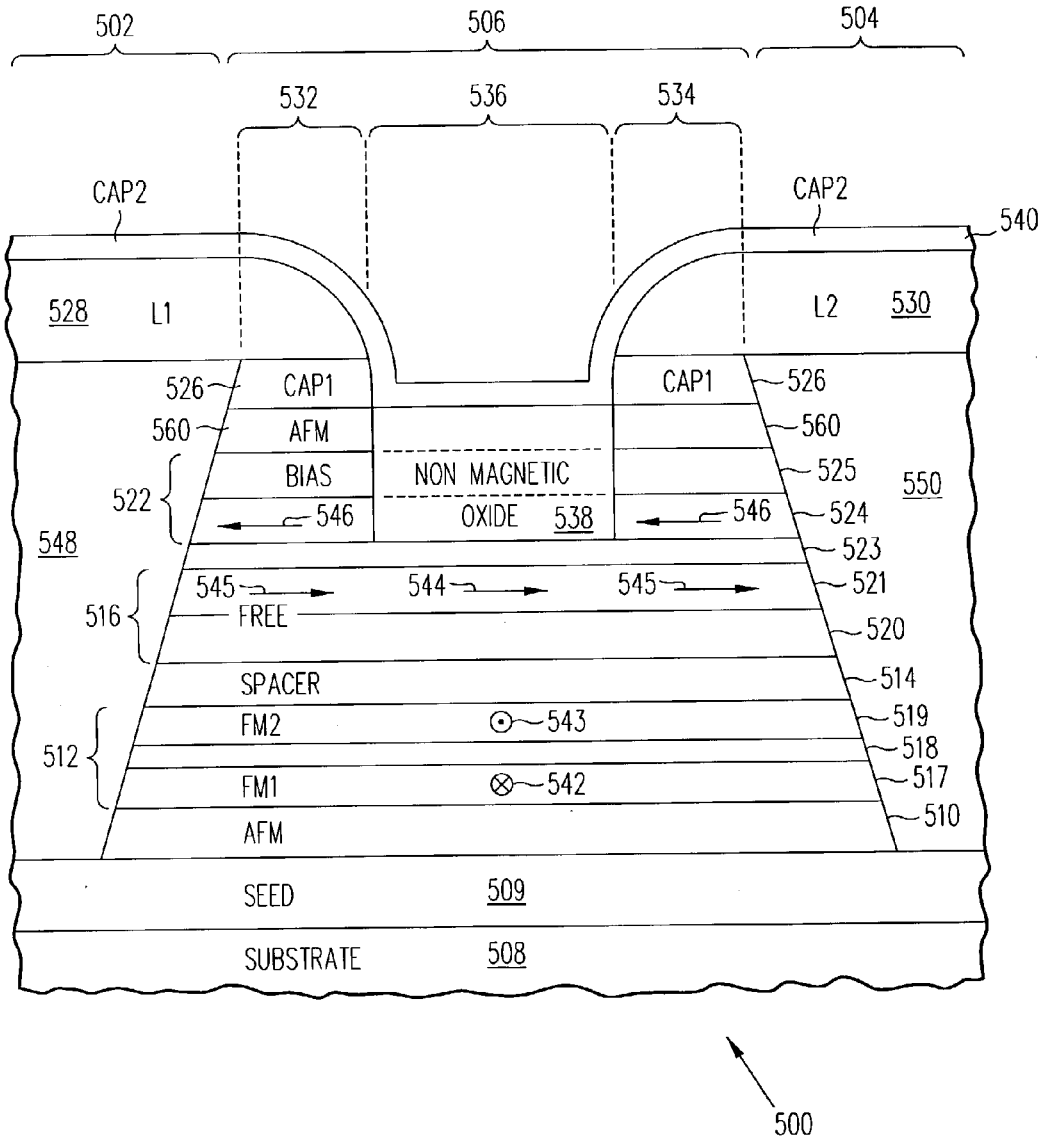
(57) **ABSTRACT**

A spin valve sensor with a thin antiferromagnetic (AFM) layer exchange coupled to a self-pinned antiparallel coupled bias layer in the lead overlap regions is provided. The spin valve sensor comprises a ferromagnetic bias layer antiparallel coupled to a free layer in first and second passive regions where first and second lead layers overlap the spin valve sensor layers and a thin AFM layer exchange coupled to the bias layer to provide a pinning field to the bias layer.