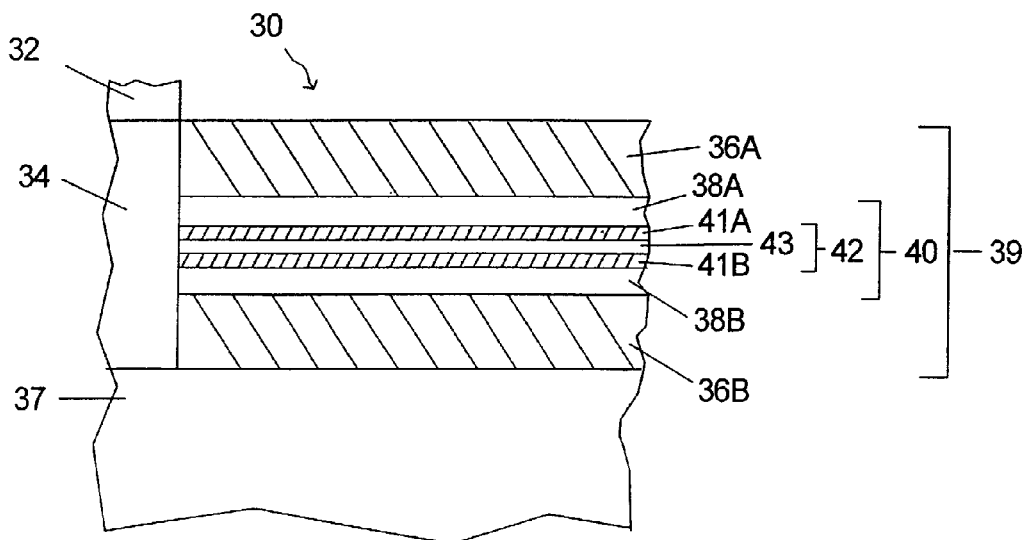




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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: GMR MAGNETIC TRANSDUCER WITH NANO-OXIDE EXCHANGE COUPLED FREE LAYERS



(57) Abstract: A magnetic transducer (head) according to the invention includes a free layer structure comprising two free layers exchange coupled across a thin spacer structure of comprising two spacer layers of nonmagnetic material separated by a ferromagnetic nano-oxide layer (NOL). The spacer layers prevent the NOL from unnecessarily hardening the free layer(s). The spacer layers are preferably copper or copper oxide. The spacer layers preserve the NOL's property of specular scattering of conduction electrons which tends to increase the magnetoresistive response. A free layer structure including the exchange coupling spacer structure of the invention can be used in a dual spin valve configuration, but is also useful in a single spin valve configuration. The free layer of the invention is useful in conduction in-plane (CIP), as well as, conduction perpendicular to the plane (CPP) devices.

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