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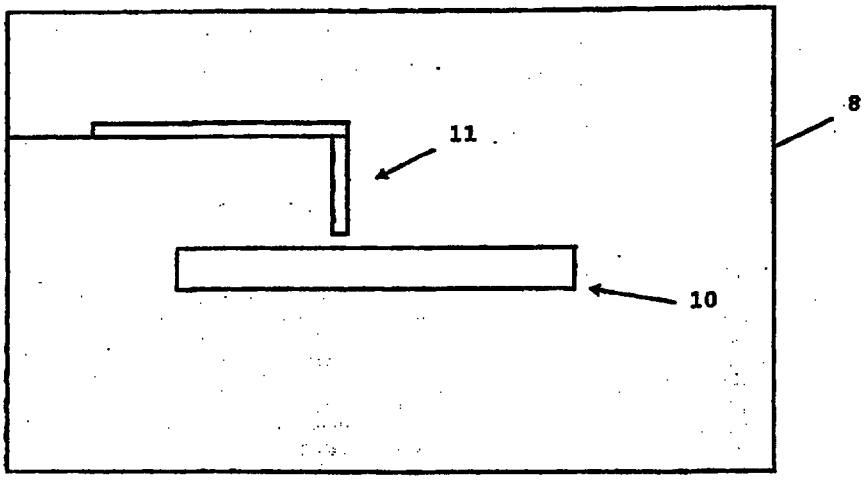
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(54) Title: HIGHLY ORIENTED MAGNETIC THIN FILMS, RECORDING MEDIA, TRANSDUCERS, DEVICES MADE THEREFROM AND METHODS OF MAKING



(57) Abstract

The present invention provides for magnetic and magneto–optic recording media, transducers and data storage devices constructed therefrom that have highly oriented films having long range order in the crystal structure of the film. The recording medium includes a magnetic recording layer comprised of Co–based material, such as Co or one or more Co alloys having a (1010) crystal texture, a substrate, a first underlayer having an fcc structure and a (110) crystal texture disposed between the substrate and the magnetic recording layer. A second underlayer having a bcc structure and a (112) crystal texture is also disposed between the magnetic recording layer and the first underlayer. In particular, if a (110) Si single crystal substrate is non–oxidized certain metals having fcc structures, such as Ag, Cu, Al, and Au and fcc derivative structures, such $L1_0$ and $L1_2$ structures, can be epitaxially grown on the Si surface.