

the step of depositing said lift-off resist layer on the sensitive region of said multilayer film; and

exposing the underlayer beneath said protective layer by removing a portion of said protective layer which is not in direct contact with said lift-off resist layer.

85. A method for manufacturing a magnetoresistive-effect device according to claim 83, wherein the step of depositing said electrode layer sets, to be within a range of 20 degrees to 60 degrees, the angle made between the surface of said protective layer or the surface of said multilayer film with said protective layer removed therefrom and the end face of said electrode layer extending over said insensitive region of said multilayer film.

86. A method for manufacturing a magnetoresistive-effect device according to claim 85, wherein the step of depositing said electrode layer sets, to be within a range of 25 degrees to 45 degrees, the angle made between the surface of said protective layer or the surface of said multilayer film with said protective layer removed therefrom and the end face of said electrode layer extending over said insensitive region of said multilayer film.

87. A method for manufacturing a magnetoresistive-effect device according to claim 83, wherein said sensitive region of said multilayer film, measured through a micro track profile method, is defined as a region which results in an output equal to or greater than 50% of a maximum reproduction output while said insensitive regions of said multilayer film are defined as regions, formed on both sides of said sensitive region, which result in an output smaller than 50% of the maximum reproduction output, when a magnetoresistive-effect device having the electrode layers deposited on hard bias layers only and not extending over said multilayer film scans a micro track, having a signal recorded thereon, in the direction of a track width.

88. A method for manufacturing a magnetoresistive-effect device according to claim 83, wherein said bias layers are deposited on both sides of said multilayer film through at least one sputtering technique selected from an ion-beam sputtering method, a long-throw sputtering method, and a collimation sputtering method, with said substrate, having said multilayer film thereon, placed normal to a target made of a composition of said bias layer; and

said electrode layer is deposited on said bias layer into an undercut formed in the underside of said resist layer arranged on said multilayer film, through at least one sputtering technique selected from an ion beam sputtering method, a long-throw sputtering method, and a collimation sputtering method with said substrate, having said multilayer film thereon, placed slightly oblique to a target made of a composition of said electrode layer, or with the target placed slightly oblique to the substrate.

89. A method for manufacturing a magnetoresistive-effect device according to claim 83, wherein said multilayer film comprises an antiferromagnetic layer, a pinned magnetic layer, a nonmagnetic electrically conductive layer, and a free magnetic layer, or said multilayer film comprises a free magnetic layer, nonmagnetic electrically conductive layers respectively lying over and under said free magnetic layer, pinned magnetic layers respectively lying over said one nonmagnetic electrically conductive layer and under said other nonmagnetic electrically conductive layer, and antiferromagnetic layers respectively lying over said one pinned

magnetic layer and under said other pinned magnetic layer, or said multilayer film comprises a magnetoresistive-effect layer, a soft magnetic layer, and a nonmagnetic layer wherein said magnetoresistive-effect layer and said soft magnetic layer are laminated with said nonmagnetic layer interposed therebetween.

90. A method for manufacturing a magnetoresistive-effect device according to claim 83, wherein said multilayer film comprises at least one of each of an antiferromagnetic layer, a pinned magnetic layer, a nonmagnetic electrically conductive layer, and a free magnetic layer, or said multilayer film comprises a free magnetic layer, nonmagnetic electrically conductive layers respectively lying over and under said free magnetic layer, pinned magnetic layers respectively lying over said one nonmagnetic electrically conductive layer and under said other nonmagnetic electrically conductive layer, and antiferromagnetic layers respectively lying over said one pinned magnetic layer and under said other pinned magnetic layer, or said multilayer film comprises a magnetoresistive-effect layer, a soft magnetic layer, and a nonmagnetic layer wherein said magnetoresistive-effect layer and said soft magnetic layer are laminated with said nonmagnetic layer interposed therebetween.

91. A method for manufacturing a magnetoresistive-effect device according to claim 83, wherein said free magnetic layer comprises a plurality of soft magnetic thin films having different magnetic moments and nonmagnetic material layers, which are alternatively laminated with one soft magnetic thin film separated from another by one nonmagnetic material layer, and said free magnetic layer is in a ferrimagnetic state in which the magnetization directions of adjacent soft magnetic thin films, separated by the nonmagnetic material layer, are aligned antiparallel to each other.

92. A method for manufacturing a magnetoresistive-effect device according to claim 91, wherein, in the step of depositing said bias layers, the magnetic coupling junction between said multilayer film and said bias layer is fabricated of an interface with the end face of only one of the plurality of the soft magnetic thin films forming said free magnetic layer.

93. A method for manufacturing a magnetoresistive-effect device according to claim 83, wherein said pinned magnetic layer comprises a plurality of soft magnetic thin films having different magnetic moments and nonmagnetic material layers, which are alternately laminated with one soft magnetic thin film separated from another by one nonmagnetic material layer, and said pinned magnetic layer is in a ferrimagnetic state in which the magnetization directions of adjacent soft magnetic thin films, separated by the nonmagnetic material layer, are aligned antiparallel to each other.

94. A method for manufacturing a magnetoresistive-effect device according to claim 91, wherein said nonmagnetic material layer is made of a material selected from the group consisting of Ru, Rh, Ir, Cr, Re, Cu, and alloys thereof.

95. A method for manufacturing a magnetoresistive-effect device according to claim 83, wherein in the step of depositing said bias layers, the position of at least one of the top edge and the bottom edge of the magnetic coupling junction between said multilayer film and said bias layer in the direction of the movement of a medium is set to be at the same level as the position of at least one of the top surface and the bottom surface of said free magnetic layer or said magnetoresistive-effect layer in the direction of the movement of the medium.