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[54] **CANTILEVER TRACKING TYPE SCANNING PROBE MICROSCOPE**

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[57] ABSTRACT

[30] Foreign Application Priority Data

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A scanning probe microscope including a scanner having a moving end movable in three-dimensional directions, a cantilever removably attached to the moving end, a displacement sensor including a light emitting element capable of applying a light beam to the cantilever and a light receiving element capable of receiving reflected light from the cantilever, and a position adjusting mechanism capable of adjusting the position of the displacement sensor so that the light beam from the light emitting element can always be applied at a constant angle of incidence to a constant position on the cantilever while the moving end of the scanner is being moved. The position adjusting mechanism includes a stationary system having a guide surface in a specific shape, a movable system movable along the guide surface in a manner such that the movable system supports the displacement sensor, and a drive system for causing the movable system to move along the guide surface, thereby translating and rotating the displacement sensor for given distances in given directions.

[51] **Int. Cl.⁷** **G01B 7/34**
[52] **U.S. Cl.** **73/105**
[58] **Field of Search** **73/105; 250/306**

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17 Claims, 7 Drawing Sheets

