

(19) World Intellectual Property Organization
International Bureau



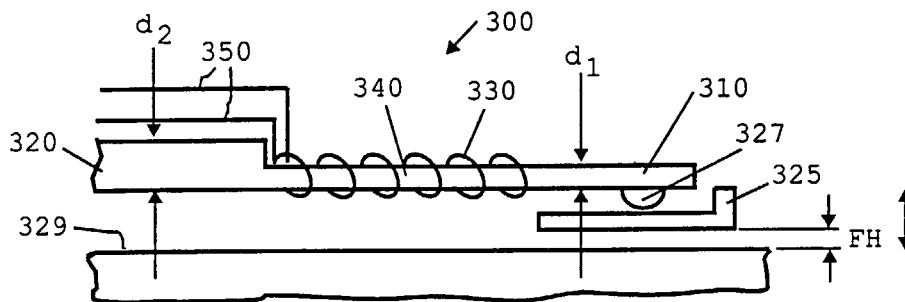
(43) International Publication Date
7 March 2002 (07.03.2002)

PCT

(10) International Publication Number
WO 02/19330 A1

- (51) International Patent Classification⁷: **G11B 21/21**, 5/60, 5/48, 7/12
- (74) Agent: **KAUFFMANN, Wolfgang**; IBM Deutschland GmbH, Intellectual Property, Pascalstr. 100, 70548 Stuttgart (DE).
- (21) International Application Number: PCT/EP01/09307
- (22) International Filing Date: 11 August 2001 (11.08.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
00118660.0 29 August 2000 (29.08.2000) EP
- (71) Applicant: **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, NY 10504 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for LU only*): **IBM DEUTSCHLAND GMBH** [DE/DE]; Pascalstrasse 100, 70569 Stuttgart (DE).
- (72) Inventors: **BERGER, Ruediger, Friedrich**; Budenheimerweg 37A, 55262 Heidesheim (DE). **DIETZEL, Andreas**; Auf der Benn 17A, 55578 Wallertheim (DE). **FLEISCHMANN, Friedrich**; Hindenburgstr. 54, 91054 Erlangen (DE).
- Published:**
— with international search report
- 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: METHOD AND APPARATUS FOR DYNAMICALLY CONTROLLING THE FLYING BEHAVIOUR AND HEIGHT OF A READ/WRITE HEAD IN A STORAGE DEVICE



(57) Abstract: A suspension arm (300) of a disk storage device has an elastic portion (310) with thickness d_1 and a rigid portion (320) with thickness d_2 . At the free end of the suspension arm, a slider (325) is mounted on the suspension arm. The bottom surface of the slider has a distance FH to a top surface of a hard disk (329). The suspension arm particularly comprises a heating element (330) disposed on the suspension arm. An electric current I_c flowing through electrical supply wires (350) causes the temperature of the suspension arm locally to rise and therefore its spring constant to decrease. Together with the force F_a resulting from the air cushion effect of the slider a new equilibrium flying height FH is stabilized.