

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 May 2003 (08.05.2003)

PCT

(10) International Publication Number
WO 03/038815 A1

(51) International Patent Classification⁷: **G11B 5/48, 5/60**

Wee [—/SG]; ATS AnA Mechatronics Singapore Pte Ltd.,
38A Jalan Peminpin #04-01, Wisdom Industrial Building,
Singapore 577179 (SG).

(21) International Application Number: PCT/CA02/01673

(22) International Filing Date:
1 November 2002 (01.11.2002)

(74) Agents: **KINSMAN, Anne, L.** et al.; Borden Ladner Ger-
vais LLP, World Exchange Plaza, 100 Queen Street, Suite
1100, Ottawa, Ontario K1P 1J9 (CA).

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/330,893 2 November 2001 (02.11.2001) 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, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (*for all designated States except US*): **ATS
AUTOMATION TOOLING SYSTEMS INC.** [CA/CA];
250 Royal Oak Road, Cambridge, Ontario N3H 4R6 (CA).

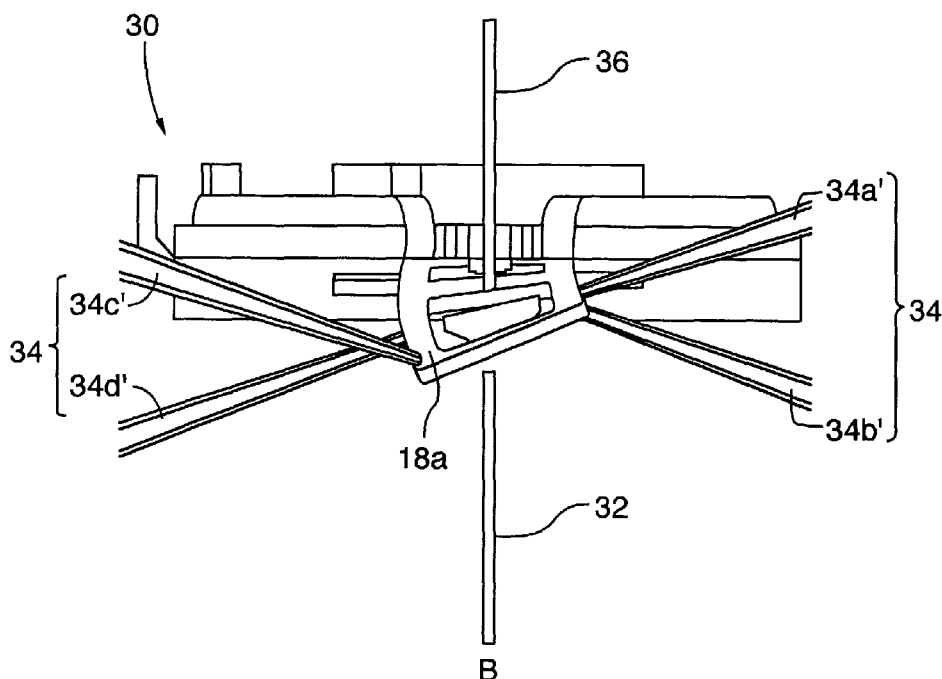
(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK,
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **LONG, Wong, Sow**
[MY/SG]; 290 C, #13-356, Bukit Batok East Avenue 3,
Singapore 650290 (SG). **QIANG, Yang, Yi** [CN/CN];
Guang-Yan Rd., Shanghai 200072 (CN). **HONG, Choong,**

[Continued on next page]

(54) Title: SYSTEM FOR MEASURING AND ADJUSTING PITCH AND ROLL IN A SUSPENSION



(57) Abstract: The invention relates to an apparatus and method for measuring and adjusting the pitch and roll angle in the sus-
pension head for magnetic readers for disk drives. The system includes a linear advancement system, a measurement system, an
adjustment and heat treatment system and control algorithms to measure, adjust and correct the roll and pitch in a suspension head.



WO 03/038815 A1

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.