

(19) World Intellectual Property Organization
International Bureau



162162



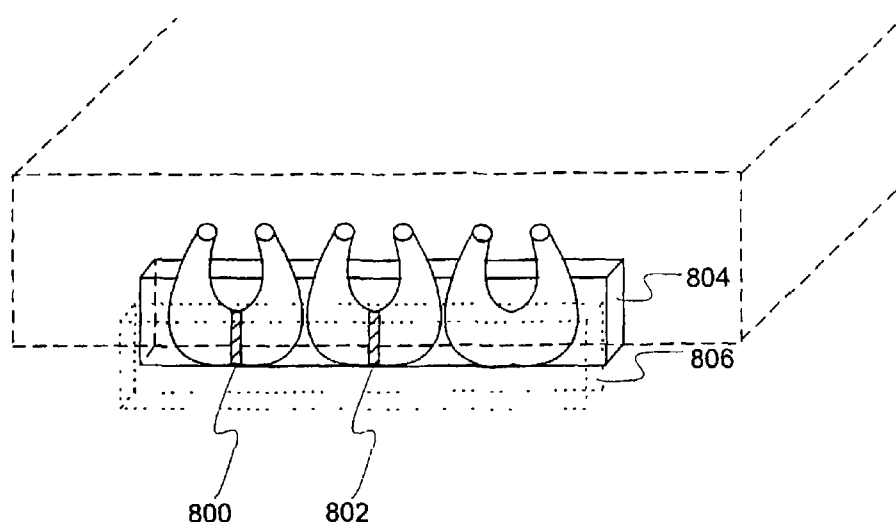
(43) International Publication Date
29 November 2001 (29.11.2001)

PCT

(10) International Publication Number
WO 01/91115 A2

- (51) International Patent Classification⁷: **G11B 5/00** (72) Inventors: **BOUTAGHOU, Zine-Eddine**, 307 Lily Pond Lane, Vadnais Heights, MN 55127 (US) **MURDOCK, Edward, Stephens**, 5115 Arden Avenue, Edina, MN 55424 (US)
- (21) International Application Number: PCT/US01/17222
- (22) International Filing Date: 25 May 2001 (25.05.2001) (74) Agent: **BRUESS, Steven, C.**, Merchant & Gould P.C., P.O. Box 2903, Minneapolis, MN 55402-0903 (US).
- (25) Filing Language: English (81) Designated States (national): CN, DE, GB, JP, KR, SG
- (26) Publication Language: English
- (30) Priority Data: 60/207,465 25 May 2000 (25.05.2000) US
- (71) Applicant: **SEAGATE TECHNOLOGY LLC** [US/US], 920 Disc Drive Building 15, Scotts Valley, CA 95066 (US)
- Published:**
— without international search report and to be republished upon receipt of that 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*

4) Title: IMPROVED LAPPING SENSOR FOR RECORDING HEADS



WO 01/91115 A2

(57) **Abstract:** Herein is disclosed a method and apparatus for controlling a lapping process, so as to create a read/write head that contains a primary magnetoresistive read element with a desired stripe height. An improved lapping guide is achieved by incorporating a secondary magnetoresistive element into a read/write head. By virtue of its location on the same read/write head as a primary magnetoresistive element (used for reading data during operation of the disc drive), the secondary element is located in close proximity to the primary element, resulting in smaller tolerances in aligning or relating the top edges of the primary and secondary elements. Accordingly, the secondary magnetoresistive element more reliably serves as a proxy for the primary element. Optionally, the secondary magnetoresistive element may be fashioned with identical dimensions as the primary element, so as to render the secondary element equivalent to the primary element with regard to magnetic sensitivity. During lapping, the magnetic sensitivity of the secondary magnetoresistive element is monitored and used as a proxy measurement of the magnetic sensitivity of the primary magnetoresistive read element.