

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 March 2003 (27.03.2003)

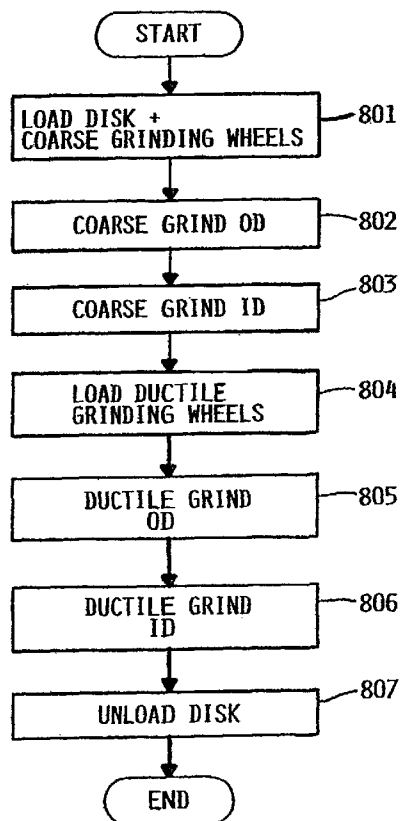
PCT

(10) International Publication Number
WO 03/024664 A3

- (51) International Patent Classification⁷: **B24B 9/06**, C03C 19/00
- (21) International Application Number: PCT/GB02/04160
- (22) International Filing Date:
11 September 2002 (11.09.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/954,812 17 September 2001 (17.09.2001) US
- (71) Applicant: **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, NY 10504 (US).
- (71) Applicant (for MG only): **IBM UNITED KINGDOM LIMITED** [GB/GB]; PO Box 41, North Harbour, Portsmouth, Hampshire PO6 3AU (GB).
- (72) Inventors: **HAGAN, James**; 4021 17th Avenue NW, Rochester, MN 55901 (US). **KRUGER, Bruce, Peter**; 309 13th Lane SW, Oronoco, MN 55960 (US). **PAURUS, David**; 302 NE 4th Avenue, Byron, MN 55920 (US). **PRIEBE, Thomas**; 918 24th Street SE, Rochester, MN 55904 (US).
- (74) Agent: **BURT, Roger, James**; IBM United Kingdom Limited, Intellectual Property Law, Hursley Park, Winchester, Hampshire SO21 2JN (GB).
- (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,

[Continued on next page]

(54) Title: EDGE FINISHING PROCESS FOR GLASS OR CERAMIC DISKS USED IN DISK DRIVE DATA STORAGE DEVICES



(57) Abstract: The circumferential edges of glass or ceramic disks used in disk drive data storage devices are preferably finished by ductile grinding to produce an essentially fracture-free surface, which is not chemically strengthened. Preferably, the material is glass, and both the inner and outer edges of the disk are finished. Edge finishing is preferably achieved in a two-stage process, involving a coarse grind and a ductile grind, using air bearing spindles rotated at high speed for grinding wheels and workpiece. Preferably, the grinding wheels are shaped to provide a radius at the juncture of the circumferential edges and flat disk surfaces.

WO 03/024664 A3



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, UZ, VC, VN, YU, ZA, ZM, ZW.

(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).

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

(88) Date of publication of the international search report:

30 May 2003

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.