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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification⁶ : G11B 7/26, 23/00, B29D 17/00, B29C 45/26	A1	(11) International Publication Number: WO 97/37348 (43) International Publication Date: 9 October 1997 (09.10.97)
(21) International Application Number: ✓ PCT/US97/05398 (22) International Filing Date: ✓ 1 April 1997 (01.04.97) (30) Priority Data: 08/625,820 ✓ 1 April 1996 (01.04.96) ✓ US (71)(72) Applicant and Inventor: BIFANO, Thomas G. [US/US]; 30 Nelson Way, Mansfield, MA 02048 (US). (74) Agents: ARPIN, James, B. et al.; Baker & Botts, L.L.P., The Warner, 1299 Pennsylvania Avenue, N.W., Washington, DC 20004 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, (SG) SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, 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 the receipt of amendments.

(54) Title: PROCESS FOR MANUFACTURING OPTICAL DATA STORAGE DISK STAMPER

(57) Abstract

A process for manufacturing an optical data storage disk stamper includes the steps of providing an amorphous electroless nickel substrate including phosphorous in the amount in a range of about 5 to 15 percent by weight having a toughness of about 100 MPa√m, a roughness in a range of about 1 to 50 nm, and a flatness of about 6 μm and depositing a negative photoresist on a surface of the substrate. The substrate has a diameter greater than about 120 mm and a thickness greater than about 300 μm. The negative photoresist then is exposed with a laser to form a negative, data pattern in the photoresist. The photoresist is developed, and the ceramic substrate is ion machined to form the data pattern, in the substrate, such that a spiral track of ridges and lands is formed wherein each ridge has a height of less than about 150 nm. After the data pattern has been ion machined into the substrate, the developed photoresist is stripped from the substrate.

