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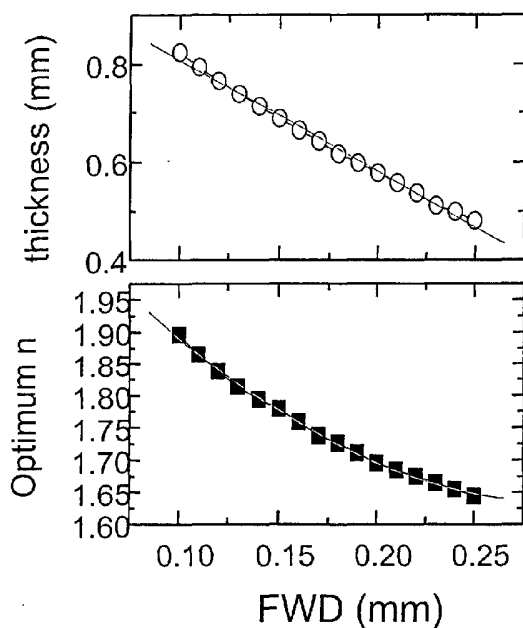
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[Continued on next page]

(54) Title: SCANNING DEVICE INCLUDING AN OBJECTIVE SYSTEM FORMED OF A SINGLE MATERIAL



$$0.8 < \frac{t}{1.18 - 2.28 \left[FWD + \frac{t_d}{n_d} \right]} < 1.2 \quad (I)$$

(57) Abstract: An optical scanning device (1) for scanning an information layer (4) of an optical record carrier (2), the device (1) comprising a radiation source (11) for generating a radiation beam (12, 15, 20) and an objective system (18) for converging the radiation beam on the information layer, the information layer being covered by a transparent layer (3) of thickness t_d and refractive index n_d . The objective system comprises a lens formed of a single material. The lens satisfies the condition: Formula (I), where t is the thickness of the lens, FWD is the free working distance between the lens (18) and the carrier (2), where t , t_d and FWD are expressed in millimetres, and where $FWD + t_d/n_d < 0.51$.



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, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, 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,

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International Application No.

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 081 692 A (KONISHIROKU PHOTO IND) 7 March 2001 (2001-03-07) the whole document	1-15
P, A	US 2003/035225 A1 (KIM DAE-SIK ET AL) 20 February 2003 (2003-02-20) paragraph '0012! paragraph '0029! paragraph '0047! - paragraph '0049!; figure 4	1-15
P, A	EP 1 298 652 A (VICTOR COMPANY OF JAPAN) 2 April 2003 (2003-04-02) paragraph '0115! paragraph '0137! - paragraph '0151! paragraph '0199!	1-15



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, A	WO 02 086875 A (HENDRIKS BERNARDUS H W ;KONINKL PHILIPS ELECTRONICS NV (NL)) 31 October 2002 (2002-10-31) the whole document -----	1-15

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