(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 July 2007 (19.07.2007)

PCT

(10) International Publication Number
WO 2007/079549 A1

(51) International Patent Classification:
G07D 7/12 (2006.01) *G02F 7/00* (2006.01)
B42D 15/10 (2006.01) *G06K 19/16* (2006.01)
B44F 1/12 (2006.01)

(21) International Application Number:
PCT/AU2007/000038

(22) International Filing Date: 16 January 2007 (16.01.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2006900204 16 January 2006 (16.01.2006) AU

(71) Applicant *(for all designated States except US)*: **SECURENCY PTY LIMITED** [AU/AU]; Hume Highway, Craigieburn, VIC 3064 (AU).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **NEMETH, Joshua, Robert** [AU/AU]; 17/129 Ormond Esplanade, Elwood, Victoria 3184 (AU). **POWER, Gary, Fairless** [GB/AU]; 46 Drummond Street, Greenvale, Victoria 3059 (AU). **STEWART, Robert** [GB/GB]; 32 Park Road, Wigton, Cumbria CA7 9RA (GB).

(74) Agent: **WATERMARK PATENT & TRADEMARK ATTORNEYS**; 302 Burwood Road, Hawthorn, VIC 3122 (AU).

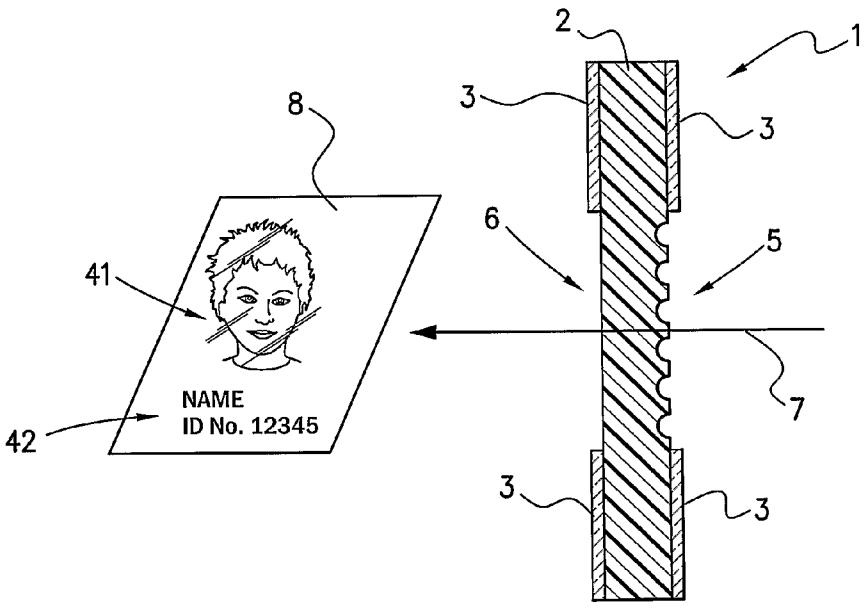
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search 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.

(54) **Title:** DATA STORAGE IN A DIFFRACTIVE OPTICAL ELEMENT



(57) **Abstract:** A diffractive optical element (DOE) and various methods of producing such a DOE are provided in which a diffractive optical microstructure (5) is formed with encrypted data on at least one side of a transparent substrate (2) or in a layer applied to the substrate (2). The diffractive optical microstructure (5) when illuminated with collimated light, generates a far field interference pattern corresponding to the encrypted data which may be decrypted with suitable optical detectors and processing equipment.

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