

(43) International Publication Date
30 January 2014 (30.01.2014)

- (51) International Patent Classification:
G02B 6/34 (2006.01) *F21V 8/00* (2006.01)
- (21) International Application Number:
PCT/EP2013/065631
- (22) International Filing Date:
24 July 2013 (24.07.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
PCT/EP2012/064634 25 July 2012 (25.07.2012) EP
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- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

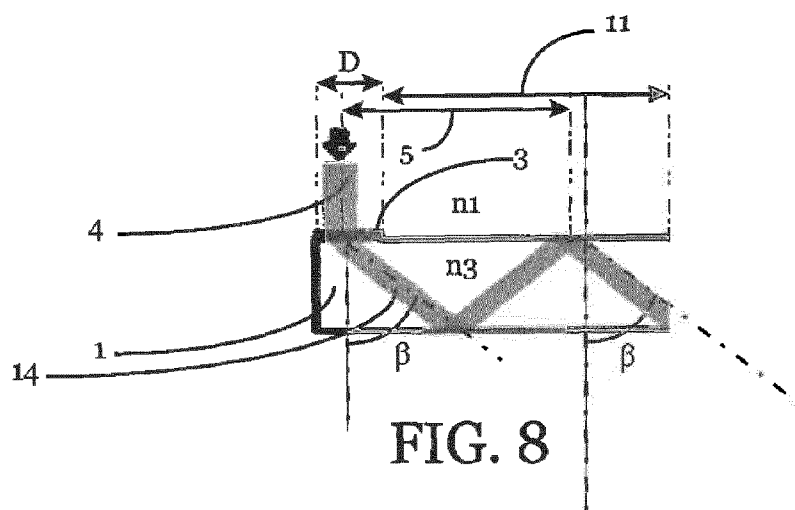
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

- (88) Date of publication of the international search report:
10 April 2014

(54) Title: METHOD TO OPTIMIZE A LIGHT COUPLING WAVEGUIDE

**FIG. 8**

(57) **Abstract:** The present invention concerns a method for constructing a light coupling system wherein a grating is manufactured on the surface of a multimode waveguide and defines the entrance of the waveguide for an incident light beam, said grating comprising a repetition of patterns. The grating is defined by a set of parameters comprising: • grating period (P), separating two adjacent patterns, • grating depth (d) between the highest and the lowest point of the pattern, • incident angle mean value (θ) of the incident light with respect to the waveguide. The method comprises a step of optimization of the set of parameters to obtain an optimized second set of parameters, in order to obtain a transmission efficiency (C_e) of the incident light into said waveguide for the first or the second diffractive order exceeding 35% for unpolarized light, or exceeding 50% for polarized light, at a given wavelength of the incident light.