

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
9 June 2011 (09.06.2011)

(10) International Publication Number  
**WO 2011/069012 A3**

- (51) International Patent Classification:  
*F21S 8/10* (2006.01) *F21W 101/10* (2006.01)  
*F21V 15/01* (2006.01)
- (21) International Application Number:  
PCT/US2010/058792
- (22) International Filing Date:  
2 December 2010 (02.12.2010)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
61/283,307 2 December 2009 (02.12.2009) US
- (71) Applicant (for all designated States except US): **MATERIALWERKS, LLC** [US/US]; 1813 Manatee Lane, Oxford, MI 48371 (US).
- (72) Inventor; and  
(75) Inventor/Applicant (for US only): **PICKHOLZ, Michael, F.** [US/US]; 1813 Manatee Lane, Oxford, MI 48371 (US).
- (74) Agent: **MITCHELL, Christopher, A.**; Butzel Long, 350 S. Main Street, Ste. 300, Ann Arbor, MI 48104 (US).
- (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, 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, KM, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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, SD, SL, SZ, TZ, UG,

[Continued on next page]

(54) Title: STRUCTURAL HEADLAMP ASSEMBLIES FOR VEHICULAR APPLICATIONS

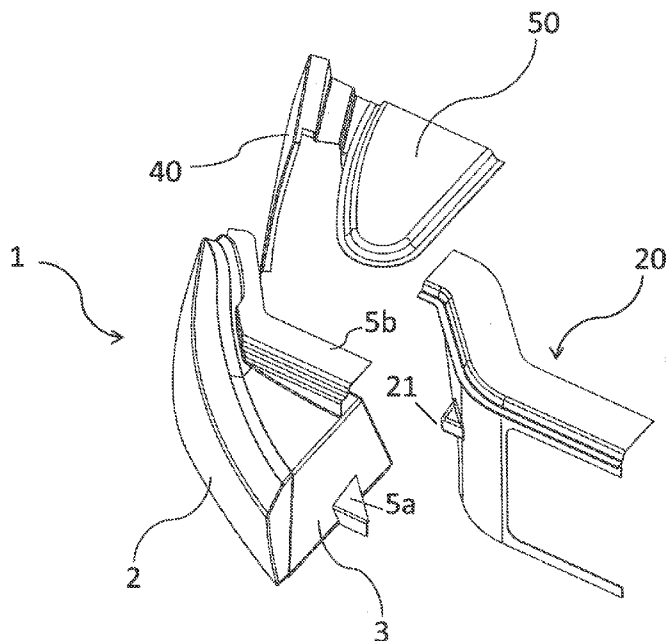


FIG. 1A

(57) Abstract: A vehicle headlamp assembly, comprising a lens, a lamp housing cooperating with the lens to at least partially define a lamp chamber that is generally fluidly isolated from an ambient atmosphere outside the lamp chamber, and at least one lamp provided in the lamp chamber. The lamp housing includes at least one structural member adapted to connect to and bear structural loads applied by one or more adjacent components of a vehicle in which the vehicle headlamp assembly is installed. The assembly may further comprise at least one vehicle component connected to the lamp housing, whereby the lamp housing is capable of bearing structural loads applied by the at least one component.

WO 2011/069012 A3

ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, ML, MR, NE, SN, TD, TG).

**Published:**

— *with international search report (Art. 21(3))*

**(88) Date of publication of the international search report:**  
3 November 2011

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2010/058792****A. CLASSIFICATION OF SUBJECT MATTER***F21S 8/10(2006.01)i, F21V 15/01(2006.01)i, F21W 101/10(2006.01)n*

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)

F21S 8/10; F21V 11/00; B60Q 1/04; F21V 21/14

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

Korean utility models and applications for utility models  
Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: headlamp, housing, lens

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2001-0046139 A1 (KAZUYA HASHIGAYA) 29 November 2001 See paragraph [0031] - paragraph [0052]; abstract and figure 1-7.	1-31
A	US 2005-0190572 A1 (MOTOHIRO KOMATSU et al.) 01 September 2005 See paragraph [0040] - paragraph [0100]; abstract and figure 1-8d.	1-31
A	US 2007-0058387 A1 (KENICHI TAKADA) 15 March 2007 See abstract and figure 1-8d.	1-31

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

28 JULY 2011 (28.07.2011)

Date of mailing of the international search report

**28 JULY 2011 (28.07.2011)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
Government Complex-Daejeon, 189 Cheongsu-ro,  
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

PARK, TAE WOOK

Telephone No. 82-42-481-8420



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/058792**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2001-0046139 A1	29.11.2001	DE 10124806 A1	06.12.2001
		DE 10124806 B4	17.01.2008
		FR 2809358 A1	30.11.2001
		FR 2809358 B1	15.07.2005
		JP 03-964101 B2	22.08.2007
		JP 2001-332105 A	30.11.2001
		US 6511215 B2	28.01.2003
		US 2005-0190572 A1	01.09.2005
CN 1661275 A	31.08.2005		
CN 1661275 C0	31.08.2005		
JP 04-205048 B2	07.01.2009		
JP 2005-276806 A	06.10.2005		
US 7168832 B2	30.01.2007		
US 2007-0058387 A1	15.03.2007		
		DE 102006043396 B4	22.07.2010
		FR 2890722 A1	16.03.2007
		JP 04-531665 B2	18.06.2010
		JP 2007-080714 A	29.03.2007
		JP 4531665 B2	25.08.2010
		US 7404657 B2	29.07.2008