



- (51) International Patent Classification:  
*H01L 31/048* (2006.01) *H01L 31/02* (2006.01)
- (21) International Application Number:  
PCT/US2011/000363
- (22) International Filing Date:  
28 February 2011 (28.02.2011)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
12/715,186 1 March 2010 (01.03.2010) US
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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, 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, 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).

[Continued on next page]

(54) Title: CONNECTOR ASSEMBLY FOR SOLAR SHINGLES

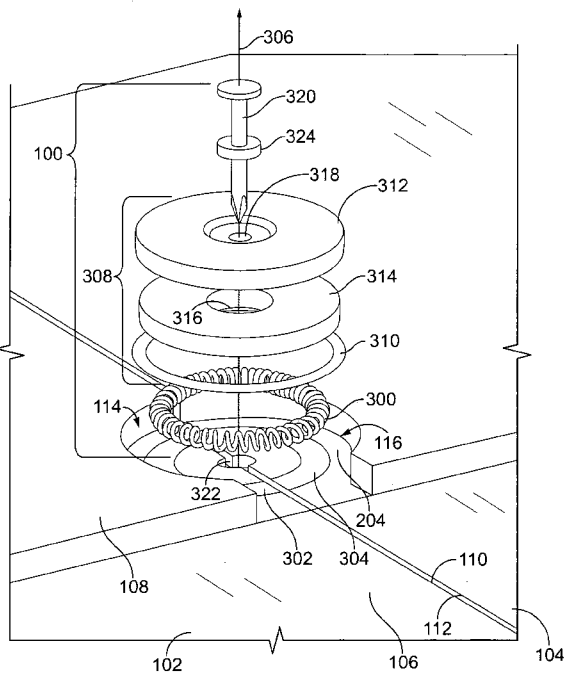


FIG. 3

(57) Abstract: A connector assembly (100) for electrically coupling solar shingles (102, 104) is provided. The solar shingles (102, 104) include photovoltaic sections (106) that convert light into electricity and supporting sections (108) having upper surfaces to which additional solar shingles are mounted. The connector assembly (100) includes a contact (300) and a protective cover (308). The contact (300) electrically couples the photovoltaic sections (106) of adjacent solar shingles (102, 104) by engaging conductive members (302, 304) disposed in recesses (114, 116) of the supporting sections (108) of the solar shingles (102, 104). The protective cover (308) is disposed in the recesses (114, 116) of the solar shingles (102, 104). The protective cover (308) encloses the contact (300) between the protective cover (308) and the conductive members (302, 304).





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**Published:**

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

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

12 July 2012

INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2011/000363

A. CLASSIFICATION OF SUBJECT MATTER  
INV. H01L31/048 H01L31/05  
ADD.  
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)  
H01L  
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

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/035677 A2 (SOLAR ROOFING SYSTEMS INC [US]; BRESSLER PETER [US]; FEINSTEIN ABBY NE) 29 March 2007 (2007-03-29) paragraph [0032] - paragraph [0046]; figures 1-6	1-12
A	WO 2009/121062 A1 (WATTMAN GEORGE G [US]; DONALDSON JOHN K [US]; JACOBS GREGORY F [US]; S) 1 October 2009 (2009-10-01) paragraph [0038] - paragraph [0040]; figure 5	1-12
A	GB 2 448 920 A (SPECIAL INNOVATIONS GROUP LTD [GB]) 5 November 2008 (2008-11-05) page 2, line 20 - page 8, line 12; figures 4,5	1-12

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

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Date of the actual completion of the international search <b>12 March 2012</b>	Date of mailing of the international search report <b>22/03/2012</b>
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer <b>Stirn, Jean-Pierre</b>
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2011/000363

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2007035677	A2	29-03-2007	NONE
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WO 2009121062	A1	01-10-2009	CA 2719341 A1 01-10-2009
		US 2009242015 A1	01-10-2009
		WO 2009121062 A1	01-10-2009
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GB 2448920	A	05-11-2008	NONE
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