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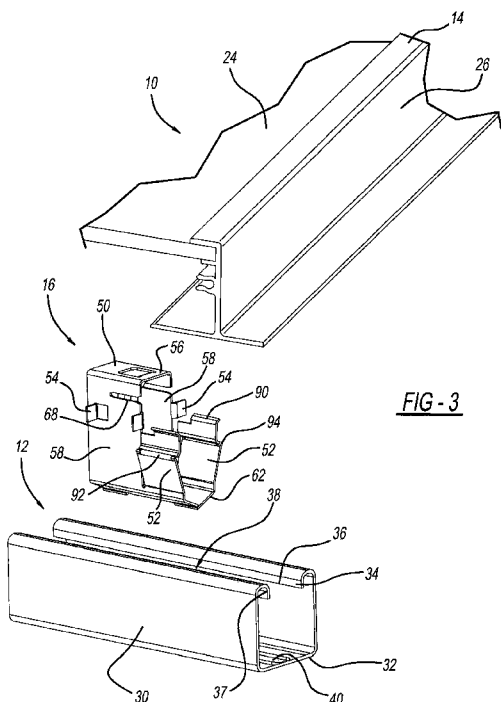
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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: PHOTOVOLTAIC FRAME FASTENER



(57) Abstract: A photovoltaic frame fastener is provided. In one aspect, a photovoltaic frame attachment apparatus includes a strut or rail defining a generally U-shaped channel and a snap-in clip or fastener. In another aspect, a single-piece fastener includes a strut-engaging surface, at least one flexible wing matable with an opening in a strut, a flexible tongue internally projecting in a central manner from a top wall of a body, and a slot adapted to receive a portion of a photovoltaic panel frame. Yet another aspect of a photovoltaic frame fastener includes laterally projecting tabs abutting against a top of a strut.





— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *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))*

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. F16B2/24
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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)
F24J F16B

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 practicable, search terms used)
EPO-Internal, PAJ, 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	DE 10 2007 042484 B3 (RAYMOND A & CIE [FR]) 8 January 2009 (2009-01-08) figures	1,2,12, 20,30
A	DE 20 2009 004746 U1 (KUMATEC SONDERMASCHB & KUNSTST [DE]) 23 July 2009 (2009-07-23) figures	1,12,20, 30
A	DE 10 2010 008158 A1 (VOLKSWAGEN AG [DE]) 18 August 2011 (2011-08-18) figures	1,12,20, 27,30
A	US 2004/265094 A1 (GORDON GARY G [US]) 30 December 2004 (2004-12-30) figures	12,20, 27,30

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2013/048131

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 102007042484 B3	08-01-2009	AT 536482 T	15-12-2011
		DE 102007042484 B3	08-01-2009
		EP 2193277 A1	09-06-2010
		US 2011097137 A1	28-04-2011
		WO 2009033531 A1	19-03-2009

DE 202009004746 U1	23-07-2009	DE 202009004746 U1	23-07-2009
		DE 202010000545 U1	22-07-2010

DE 102010008158 A1	18-08-2011	CN 102770311 A	07-11-2012
		DE 102010008158 A1	18-08-2011
		EP 2536596 A1	26-12-2012
		US 2012313355 A1	13-12-2012
		WO 2011101080 A1	25-08-2011

US 2004265094 A1	30-12-2004	DE 102004030583 A1	27-01-2005
		US 2004265094 A1	30-12-2004
