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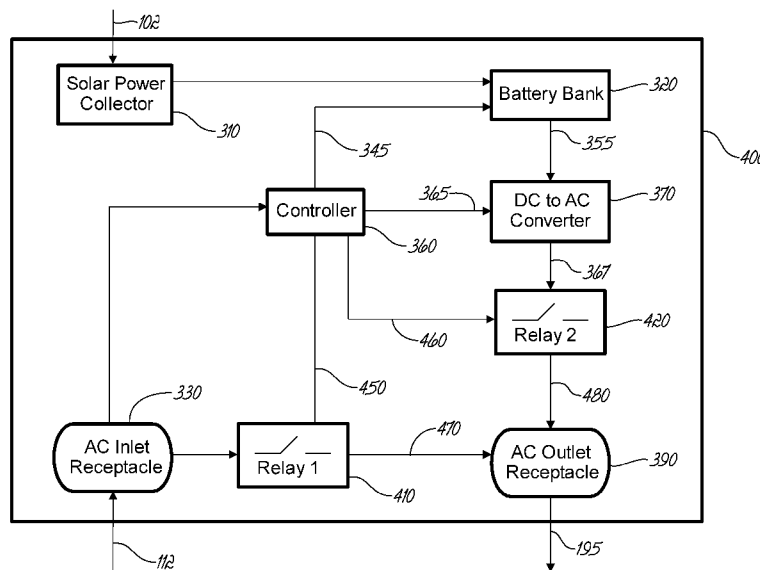


FIG. 4

(57) Abstract: A solar panel (400) is disclosed that can be daisy-chained with other solar panels (100a- n). The solar panel (400) automatically generates output alternative current (AC) power (195) that is in parallel with input AC power (112) coming into the solar panel (400) when the solar panel (400) senses the input AC power (112) so that the solar panel (400) operates as a slave in this state. The solar panel (400) automatically generates standalone AC output power (195) when the solar panel (400) fails to detect input AC power (112) coming into the solar panel (400) where the solar panel (400) operates as a master in this state. The solar panel (400) generates the standalone output AC power (195) without any reliance on input AC power (112) generated by a utility grid and/or other AC power sources external to the solar panel (400).

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INTERNATIONAL SEARCH REPORT

International application No  
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A. CLASSIFICATION OF SUBJECT MATTER  
INV. H01L31/042 H02J3/38 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 H02J

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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2008/124144 A1 (SUNOVIA ENERGY TECHNOLOGIES IN [US]; VANDERSLUIS DONALD [US]; SIPES DO) 16 October 2008 (2008-10-16) paragraphs [0006], [0010], [0013], [0017]; figure 3	1-20
Y	DE 40 32 569 A1 (FLACHGLAS SOLARTECHNIK GMBH [DE]) 16 April 1992 (1992-04-16) figures 1,5	1-14
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Y	US 5 977 659 A (TAKEHARA NOBUYOSHI [JP] ET AL) 2 November 1999 (1999-11-02) figures 2,3	1-14
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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

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"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

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search  23 June 2014	Date of mailing of the international search report  19/09/2014
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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  Roy, Christophe
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## INTERNATIONAL SEARCH REPORT

International application No  
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1 746 713 A1 (SHARP KK [JP]) 24 January 2007 (2007-01-24) paragraphs [0044] - [0048]; figure 1 -----	1-14
Y	JP H11 89096 A (NISSIN ELECTRIC CO LTD) 30 March 1999 (1999-03-30) paragraphs [0003], [0029] - [0031], [0038] - [0039], [0048]; figure 1 -----	15-20
A	US 2002/038667 A1 (KONDO HIROSHI [JP] ET AL) 4 April 2002 (2002-04-04) figures 1,2 -----	1,8,15
A	US 2004/031219 A1 (BANISTER MARK P [US]) 19 February 2004 (2004-02-19) paragraph [0038]; figures 2A,2B -----	1,8,15

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2014/028723

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-20

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-20

Solar panels and solar panel configuration with parallel AC power output with AC grid power and with capability of generating AC power when isolated from the grid or cut off from the AC power generated by the grid.

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2. claims: 21-34

Solar panel connector providing a DC output power outlet and a AC power output outlet.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No  
PCT/US2014/028723

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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