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(71) Applicant (for all designated States except US): APPLIED MATERIALS, INC. [US/US]; 3050 Bowers Avenue, Santa Clara, California 95054 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LU, Danny Cam Toan [US/US]; 1521 Felton Street, San Francisco, California 94134 (US). SULLIVAN, Jeffrey S. [US/US]; 3467 Remco Street, Castro Valley, California 94546 (US). TANNER, David [US/US]; 184 Cleaves Avenue, San Jose, California 95126 (US). ELGAR, Yacov [IL/US]; 1600 Villa Street, # 190, Mountain View, California 94041 (US).

(74) Agents: PATTERSON, Todd, B. et al.; Patterson & Sheridan, L.L.P., 3040 Post Oak Blvd., Suite 1500, Houston, Texas 77056-6582 (US).

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(54) Title: AUTOMATED SOLAR CELL ELECTRICAL CONNECTION APPARATUS

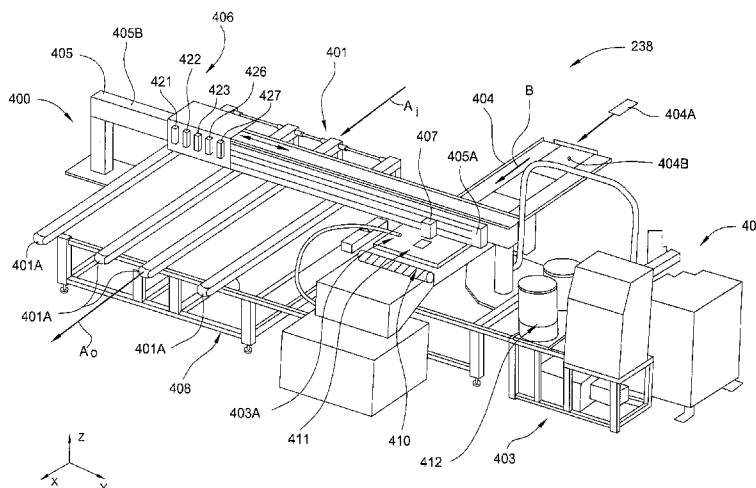


FIG. 4A

(57) Abstract: The present invention generally relates to an automated solar cell electrical connection device that is positioned within an automated solar cell fabrication system. The automated solar cell electrical connection device includes a module and process for automatically attaching a junction box to a composite solar cell structure during the fabrication of a completed solar cell device. The automated solar cell electrical connection module may include a composite solar cell structure conveyor for positioning the composite solar cell structure, an adhesive dispense module for applying adhesive to the junction box, a flux dispenser for applying flux to electrical connection tabs in the junction box, a vision system for locating features on the composite solar cell structure, a robot for positioning the junction box onto the composite solar cell structure, a heating element to make electrical connections between the junction box and the solar cell device, a potting material dispensing assembly for dispensing potting material into the junction box, and a system controller for controlling the functions of the module.



## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2009/031843****A. CLASSIFICATION OF SUBJECT MATTER****H01L 31/042(2006.01)i**

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)

IPC : H01L 31

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 since 1975.  
Japanese utility models and applications for utility models since 1975.

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

eKOMPASS( KIPO internal )

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2001-223382 A( KANEGAFUCHI CHEM IND CO., LTD. ) 17 August 2001 See abstract and claims 1~3.	1-15
A	US 6841728 B2( BERNARD D. JONES et al. ) 11 January 2005 See abstract and columns 11~12.	1-15
A	US 4534502 A1( WALTER J. PIUREK ) 13 August 1985 See abstract and claims 1,6 and 12.	1-15
A	US 6476314 B2( JOHN SCOTT BAUMAN et al. ) 05 November 2002 See abstract and column 7.	1-15

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

\* Special categories of cited documents:

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Korean Intellectual Property Office  
Government Complex-Daejeon, 139 Seonsa-ro, Seo-  
gu, Daejeon 302-701, Republic of Korea

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Authorized officer

KOH, JAE HYUN

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2001-223382 A	17.08.2001	None	
US 6841728 B2	11.01.2005	None	
US 4534502 A1	13.08.1985	None	
US 6476314 B2	05.11.2002	US 2002-134422 A1 US 2002-166580 A1	26.09.2002 14.11.2002