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Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: AEROSOL JET® PRINTING SYSTEM FOR PHOTOVOLTAIC APPLICATIONS

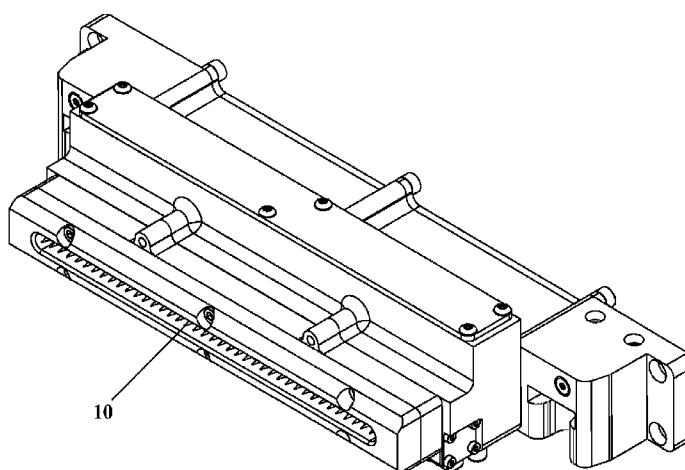


FIGURE 1

(57) Abstract: Method and apparatus for depositing multiple lines on an object, specifically contact and busbar metallization lines on a solar cell. The contact lines are preferably less than 100 microns wide, and all contact lines are preferably deposited in a single pass of the deposition head. There can be multiple rows of nozzles on the deposition head. Multiple materials can be deposited, on top of one another, forming layered structures on the object. Each layer can be less than five microns thick. Alignment of such layers is preferably accomplished without having to deposit oversized alignment features. Multiple atomizers can be used to deposit the multiple materials. The busbar apparatus preferably has multiple nozzles, each of which is sufficiently wide to deposit a busbar in a single pass.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/075038**A. CLASSIFICATION OF SUBJECT MATTER****B05D 5/12(2006.01)i, B05B 1/28(2006.01)i, B05B 1/14(2006.01)i, H05K 3/14(2006.01)i, H01L 21/44(2006.01)i, C23C 16/00(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 B05B 1/28, B05C 5/00, H01L 23/58, A61L 5/103

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)
eKIPASS(KIPO internal) "method, apparatus, maskless, noncontact, printing, depositing, parallel, busbar, nozzle, tip"**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2006/0175431 A1 (Optomec design company) 10 Aug. 2006 See abstract, pages 1~4, and claims 1~20.	1~4,6(page 16)~17 5,6(page15),18~22
Y	US 2006/0163570 A1 (Optomec design company) 27 Jul. 2006. 5,6(page15),18~22 Y See abstract, pages 1~6, and claims 1~20.	5,6(page15),18~22
A	US 06811805 B2 (Novatis AG) 02 Nov. 2004 1~22 A See abstract, columns 1~15, and claims 1~22.	1~22

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

* Special categories of cited documents:

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