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(54) **Title:** STATIONARY SOLAR SPECTRUM-SPLITTING SYSTEM AND METHOD FOR STIMULATING A BROAD-BAND PHOTOVOLTAIC CELL ARRAY

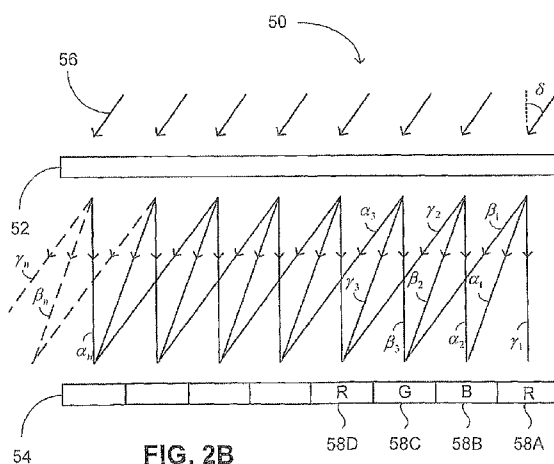


FIG. 2B

(57) **Abstract:** Solar system for converting solar radiation into electric energy, the system comprising: a refraction array and a converting array, the refracting array including at least one refraction sub array, each of the refraction sub arrays including a plurality of refraction sites, each of the refraction sites refracting variable approach angle collimated solar radiation into a plurality of solar rays, each of the solar rays being of a different waveband, each of the refraction sites directing each of the solar rays, refracted thereby, in a different direction, the different direction being at least dependent on the approach angle of the solar radiation, the converting array including a plurality of broadband converting cells, positioned such that light refracted by the refraction array impinges on the converting array, wherein at any given moment, each of the converting cells receives solar rays of a specific waveband originating from different refraction sites and arriving from different directions thereto.



INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. H01L31/052

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)
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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 204 881 A (MCGREW STEPHEN P [US]) 27 May 1980 (1980-05-27) columns 3-5; figures 1-3,5	1,13,14
X	WO 2007/127103 A (INTEMATIX CORP [US]; SHAN WEI [US]; WANG GANG [US]; XIANG XIAO DONG [U] 8 November 2007 (2007-11-08) paragraphs [0027], [0068] - [0073], [0079], [0080], [0083], [0095]; figures 2,4,6c,7,8,10,13	1-14
A	WO 2007/143517 A (SOLBEAM INC [US]; ROBISON JOHN HENRY [US]; COLBERT DANIEL T [US]; PEND) 13 December 2007 (2007-12-13) abstract; figures 3,4a,4b	1,14
A	US 6 958 868 B1 (PENDER JOHN GEORGE [US]) 25 October 2005 (2005-10-25) abstract; figures 9a,9b	1,14

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 4204881	A	27-05-1980		NONE	
WO 2007127103	A	08-11-2007	US	2007277869 A1	06-12-2007
WO 2007143517	A	13-12-2007	AU	2007256854 A1	13-12-2007
			CA	2653983 A1	13-12-2007
			EP	2038703 A2	25-03-2009
			US	2009250094 A1	08-10-2009
US 6958868	B1	25-10-2005		NONE	