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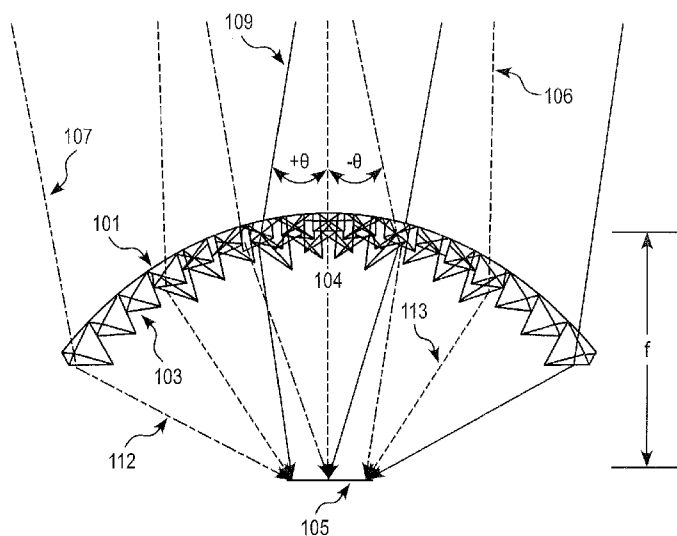
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(54) Title: SOLAR CONCENTRATOR AND COSINE FACTOR CORRECTION DEVICE

FIG. 2



(57) Abstract: A compound polyhedral concentrator (CPOC) lens is disclosed with one smooth curved surface facing the sun and an inner surface comprised of a 3D pattern of interpenetrating minimum deviation prisms with a common origin facing the absorber. This new type of stationary solar concentrator is used to extend the acceptance angles by minimizing blocking and tip optical losses that are common with radial Fresnel design forms. Moreover, when considering the extended time period for non-tracking of the sun's movement commensurate with the increased acceptance angles the total energy collected using a combination of a CPOC lens and a photovoltaic device will be greater than the total energy collected using the photovoltaic device by itself.



**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US14/15984

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(8) - H01L 31/052, 31/054, 31/055 (2014.01)

USPC - 136/246, 247, 248

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(8) Classification(s): H01L 31/052, 31/054, 31/055 (2014.01)

USPC Classification(s): 136/246, 247, 248, 259

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)

MicroPatent (US Granted, US Applications, EP-A, EP-B, WO, JP, DE-G, DE-A, DE-T, DE-U, GB-A, FR-A); ProQuest (Derwent, INSPEC, NTIS, PASCAL, Current Contents Search, Dissertation Abstracts Online, Inside Conferences); IP.com; Google Scholar; KEYWORDS: solar\* concentrator\*, prism input\*, output\*, diffuse\*, direct\*, sunlight\*, inciden\*, angle\*, degree, cosine, correct, ray tracer

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2012/0211647 A1 (FORRESTER, T et al.) August 23, 2012; abstract; figures 3A-B; paragraphs [0021, 0029, 0030, 0033]	1-7
A	US 2012/0312351 A1 (KNOX, R) December 13, 2012; entire document	1-7
A	US 4,230,094 A (SZULMAYER, W) October 28, 1980; entire document	1-7
A	US 7,946,287 B2 (PAPADOPOULOS, A) May 24, 2011; entire document	1-7

Further documents are listed in the continuation of Box C.

\* Special categories of cited documents:

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"&" document member of the same patent family

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