

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 November 2010 (25.11.2010)

PCT

(10) International Publication Number
WO 2010/133688 A3

(51) International Patent Classification:

F24J 2/32 (2006.01) F24J 2/52 (2006.01)
F24J 2/34 (2006.01) F25B 27/00 (2006.01)
F24J 2/54 (2006.01) F25B 29/00 (2006.01)
F03G 6/06 (2006.01)

(21) International Application Number:

PCT/EP2010/057007

(22) International Filing Date:

20 May 2010 (20.05.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/179,859 20 May 2009 (20.05.2009) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

16 June 2011

(54) Title: MINI SOLAR ISLANDS FOR HOUSEHOLD NEEDS

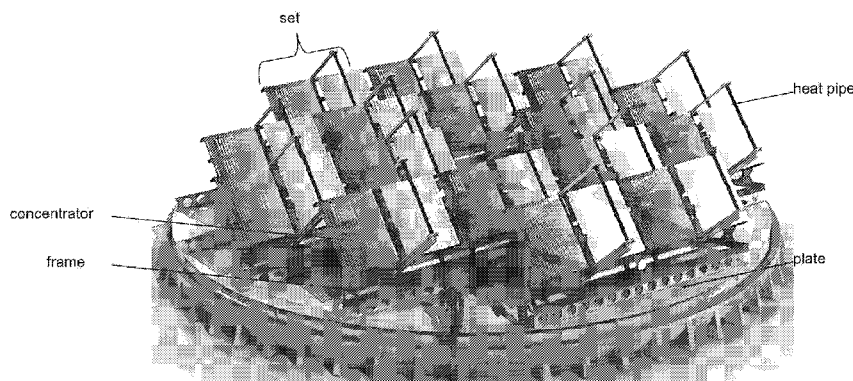


Fig. 1

(57) Abstract: The invention concerns an improved concentrated solar power collector, comprising - a frame intended to be mounted rotatable to a stand surface, according to a first axis perpendicular to the stand surface, - at least one solar concentrator fixed on the frame at a desired angle determined so that said solar concentrator is oriented at between 20 and 70° with reference to the stand surface and reflect or direct sunlight upwardly toward a heat pipe, connected to a steam network comprising a steam tank carried by said frame, wherein said frame is able to rotate automatically to provide an azimuth-tracking of the solar concentrator following the azimuth of the sun, wherein said steam tank works with a diffusion absorption cooling machine or a hot water heating arrangement, feeding a warm-water tank and an ice/cold-water tank, said warm-water and ice/cold-water tanks being directly connected to a house.



WO 2010/133688 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2010/057007

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.:

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.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2010/057007

A. CLASSIFICATION OF SUBJECT MATTER
 INV. F24J2/32 F24J2/34 F24J2/54 F03G6/06 F24J2/52
 F25B27/00 F25B29/00
 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)
 F24J F03G F25B

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)
 EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 252 107 A (HORTON RICHARD H) 24 February 1981 (1981-02-24) columns 3-8; figures 1-9 -----	1,2,4
Y	US 6 311 504 B1 (YAMAZAKI SHIGUMA [JP] ET AL) 6 November 2001 (2001-11-06) columns 3-4; figure 1 -----	1,3,4
Y	WO 2008/060167 A1 (LANWOOD IND LTD [NZ]; HOOK COLIN DAVID [NZ]) 22 May 2008 (2008-05-22) pages 6-9; figures 1-2,6 -----	2,4
Y	WO 2008/153892 A1 (GREEN VOLTS INC [US]) 18 December 2008 (2008-12-18) paragraphs [0062], [0091] - [0118]; figures 5a,6a,6g, -----	3,4
A	-/--	1

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 document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "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

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "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
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search 7 April 2011	Date of mailing of the international search report 15/04/2011
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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 Merkt, Andreas
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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2010/057007

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2009/001225 A2 (CT SUISSE D ELECTRONIQUE ET DE [CH]; HINDERLING THOMAS [CH]; ELSASSER) 31 December 2008 (2008-12-31) cited in the application pages 12-18; figures 1-10 -----	1,4
Y	WO 95/25934 A1 (CRYOTHERM ENGINEERING LIMITED [IE]; BESCHI ALESSANDRO [IT]) 28 September 1995 (1995-09-28) pages 1,4-5; figure 1 -----	1,4
A	US 2008/236569 A1 (TUCCIO ROCCO JOSEPH [US]) 2 October 2008 (2008-10-02) paragraphs [0021] - [0024]; figure 5 -----	1,4
A	US 2007/062799 A1 (LEE HSIN-HO [TW]) 22 March 2007 (2007-03-22) paragraphs [0011] - [0015]; figure 1 -----	1,4
A	GB 2 161 917 A (SHOWA ALUMINUM CORP SHOWA ALUMINUM CORP [JP]) 22 January 1986 (1986-01-22) pages 2-4; figures 1,8,12,15 -----	1,4
A	CN 200 961 960 Y (UNIV NANJING [CN]) 17 October 2007 (2007-10-17) abstract -----	1,4
A	WO 2008/135990 A2 (ARIEL UNIVERSITY RES AND DEV C [IL]; KRASNOPOLSKI ALEXANDER [IL]; ZINI) 13 November 2008 (2008-11-13) the whole document -----	1,4
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2010/057007

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US 3837174	A	24-09-1974	NONE

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(completely); 4(partially)

An improved concentrated solar power collector comprising a frame mounted rotatable to a stand surface according to a first axis perpendicular to said surface, at least one solar concentrator fixed on the frame at a desired angle and reflecting sunlight upwardly towards a heat pipe, connected to a steam network comprising a steam tank wherein said frame is able to rotate automatically to provide an sun-azimuth-tracking of said at least one concentrator and wherein said steam tank works with a diffusion absorption cooling machine or a hot water heating arrangement feeding a warm-water tank and an ice/cold-water tank.

2. claims: 2(completely); 4(partially)

An improved concentrated solar power collector comprising a frame mounted rotatable to a stand surface according to a first axis perpendicular to said surface, at least one solar concentrator fixed on the frame at a desired angle and reflecting sunlight upwardly towards a heat pipe, connected to a steam network comprising a steam tank wherein said frame is able to rotate automatically to provide an sun-azimuth-tracking of said at least one concentrator wherein a heat exchanger is directly mounted inside said steam tank.

3. claims: 3(completely); 4(partially)

An improved concentrated solar power collector comprising a plate able to rotate around a vertical axis perpendicular to said plate; several sets of solar concentrators arranged in rows; each set being arranged on a frame mounted rotatable according to a first axis parallel to said plate; wherein for each set, each of the concentrators is fixed at a desired angle on the frame so that they reflect sunlight upwardly towards a heat pipe connected to a steam network; wherein said steam network is connected to a diffusion absorption cooling machine or a hot water heating arrangement feeding a warm-water tank and an ice/cold-water tank.
