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[Continued on next page]

(54) Title: OPPOSING ROW LINEAR CONCENTRATOR ARCHITECTURE

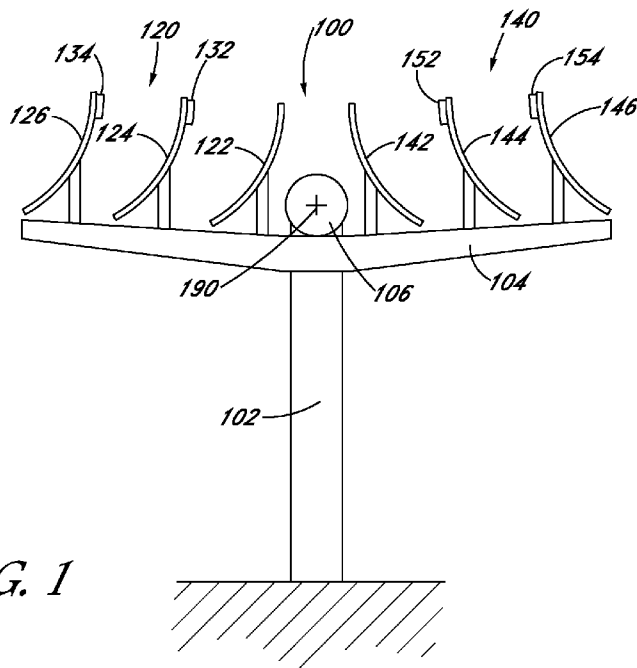


FIG. 1

(57) Abstract: A solar concentrator assembly is disclosed. The solar concentrator assembly comprises a first reflective device having a first reflective front side and a first rear side, a second reflective device having a second reflective front side and a second rear side, the second reflective device positioned such that the first reflective front side faces the second rear side, and a support assembly coupled to and supporting the first and second reflective devices, the second reflective device positioned to be vertically offset from the first reflective device.



WO 2012/018532 A3



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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

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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

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: solar, concentrator, reflector, reciver, crossbeam, torque tube

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002-0075579 A1 (VASLYEV, SERGIY VICTOROVICH et al.) 20 June 2002	1-17
X	See abstract, paragraphs 0033,0036,0038,0042,0050 and figure 1	18-20
Y	US 05180441 A (CORNWALL, MICKEY et al.) 19 January 1993 See abstract, columns 2-3 and figure 2	1-17
A	US 2009-0173375 A1 (FRAZIER, SCOTT et al.) 09 July 2009 See abstract, pages 3-9 and figure 1	1-20
A	US 6662801 B2 (HAYDEN, HERBERT T. et al.) 16 December 2003 See abstract, column 5-8 and figures 4-12	1-20

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

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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 2002-0075579 A1	20.06.2002	US 2003-0137754 A1 US 2007-0035864 A1 US 6971756 B2 US 7607429 B2	24.07.2003 15.02.2007 06.12.2005 27.10.2009
US 05180441 A	19.01.1993	None	
US 2009-0173375 A1	09.07.2009	WO 2009-002350 A1	31.12.2008
US 6662801 B2	16.12.2003	US 2003-062037 A1 WO 2004-044502 A1	03.04.2003 27.05.2004