



(51) International Patent Classification:

F03B 17/06 (2006.01) *F03G 7/08* (2006.01)
F03D 5/00 (2006.01)

(21) International Application Number:

PCT/US2011/055684

(22) International Filing Date:

11 October 2011 (11.10.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/902,308 12 October 2010 (12.10.2010) US

(71) Applicant (for all designated States except US): **SHEER WIND, INC.** [US/US]; 143 Jonathan Blvd. North, Suite 200, Chaska, Minnesota 55318 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **ALLAEI, Daryoush** [US/US]; 3223 Fairchild Avenue, Minnetonka, Minnesota 55391 (US).

(74) Agent: **MYRUM, Tod A.**; Leffert Jay & Polglaze, P.A., P.O. Box 2230, Minneapolis, Minnesota 55402-0230 (US).

(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, QA, RO, RS, RU, RW, 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, RW, 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, RS, 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:

28 June 2012

(54) Title: FLUID POWER GENERATION SYSTEM HAVING A GENERATOR WITH AN ELECTRICAL-CHARGE-PRODUCING MATERIAL

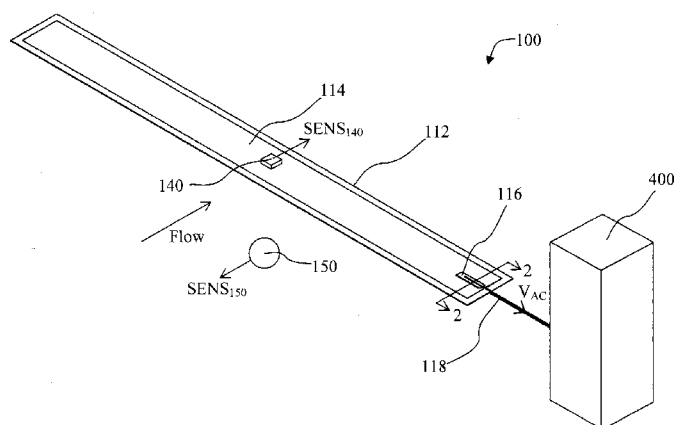


FIG. 1

(57) Abstract: An embodiment of a fluid power generation system has a generator comprising an electrical-charge-producing material and a pair of end boundary constraints. One of the end boundary constraints of the pair of end boundary constraints is physically coupled to the electrical-charge-producing material adjacent to an end of the electrical-charge-producing material and the other one of the pair of end boundary constraints is physically coupled to the electrical charge-producing material adjacent to an opposite end of the electrical-charge-producing material. For some embodiments, the end boundary constraints may be active or passive. For other embodiments, at least one of the end boundary constraints may be electrically coupled to a controller for adjusting vibration characteristics of the generator.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/055684**A. CLASSIFICATION OF SUBJECT MATTER*****F03B 17/06(2006.01)i, F03D 5/00(2006.01)i, F03G 7/08(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)

F03B 17/06; H02P 9/04; F03D 9/00; H01L 41/113; F03B 13/00

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) & Keywords: generator, boundary constraint, piezoelectric

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	WO 2009-058759 A2 (HUMDINGER WIND ENERGY LLC) 07 May 2009 See abstract, paragraphs 0022,0024,0025,0026,0042 and figure 1a	1,2,4,5,8,11,17-19 3,9,10,12,16,22,23 ,25-27 6,7,13-15,20-21,24 ,28-31
Y A	US 2008-0129254 A1 (FRAYNE SHAWN M.) 05 June 2008 See abstract, paragraphs 0033, 0035 and figures 1,4	3,9,10,12,16,22,23 ,25-27 1-2,4-8,11,13-15 ,17-21,24,28-31
A	US 2009-0295163 A1 (FRAYNE SHAWN MICHAEL) 03 December 2009 See abstract, paragraphs 0032,0034,0035 and figure 1a	1-31
A	US 2007-0176430 A1 (MARK D. HAMMIG) 02 August 2007 See abstract, paragraph 0034 and figure 5	1-31



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 application or patent 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 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

10 MAY 2012 (10.05.2012)

Date of mailing of the international search report

10 MAY 2012 (10.05.2012)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 189 Cheongsa-ro,
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KYONG Chon Su

Telephone No. 82-42-481-8431



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2011/055684

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009-058759 A2	07.05.2009	EP 2218120 A2 US 2010-0308592 A1 WO 2009-058759 A3 WO 2009-058759 A3	18.08.2010 09.12.2010 06.08.2009 07.05.2009
US 2008-0129254 A1	05.06.2008	TW 200836457 A US 2009-0309362 A1 US 2010-0207395 A1 US 7573143 B2 US 7821144 B2 US 8026619 B2	01.09.2008 17.12.2009 19.08.2010 11.08.2009 26.10.2010 27.09.2011
US 2009-0295163 A1	03.12.2009	TW 200907171 A TW 200911391 A US 2008-0297119 A1 US 7772712 B2 US 7986051 B2 WO 2008-151008 A1 WO 2009-011979 A2 WO 2009-011979 A3	16.02.2009 16.03.2009 04.12.2008 10.08.2010 26.07.2011 11.12.2008 22.01.2009 22.01.2009
US 2007-0176430 A1	02.08.2007	None	