



- (51) **International Patent Classification:**
H02K 1/27 (2006.01)
- (21) **International Application Number:**
PCT/US2012/026897
- (22) **International Filing Date:**
28 February 2012 (28.02.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/447,280 28 February 2011 (28.02.2011) US
- (71) **Applicant (for all designated States except US):** **UQM TECHNOLOGIES INC.** [US/US]; 4120 Specialty Place, Longmont, Colorado 80504 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** **LUTZ, Jon** [US/US]; 9408 W. 104th Way, Westminster, Colorado 80021 (US). **LEY, Josh** [US/US]; 2228 Alpine Drive, Erie, Colorado 80516 (US).
- (74) **Agents:** **ROWLAND, William C.** et al.; Buchanan Ingersoll & Rooney Pc, (Customer No. 21839), P. O. Box 1404, Alexandria, Virginia 22313-1404 (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).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

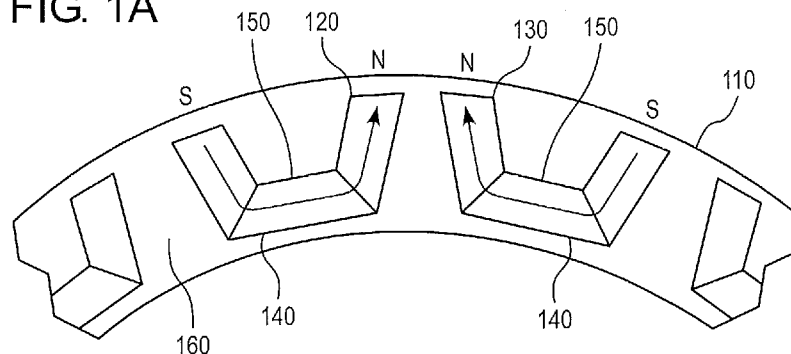
Published:

- 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:**
22 November 2012

(54) **Title:** BRUSHLESS PM MACHINE CONSTRUCTION ENABLING LOW COERCIVITY MAGNETS

FIG. 1A



(57) **Abstract:** The present disclosure provides a brushless permanent magnet machine which includes an essentially circular shaped rotor, and a pair of magnets arranged in the rotor. The magnets are each U-shaped and have a thickness direction extending along a contour of the corresponding magnet between the opposite poles of the corresponding magnet, respectively. The magnets are each composed of a non-rare earth material having a lower coercivity than a rare earth material. A direction of magnetization of each of the pair of magnets is parallel to the thickness direction of the corresponding magnet. The present disclosure also provides a method of manufacturing such a brushless permanent magnet machine.

A. CLASSIFICATION OF SUBJECT MATTER**H02K 1/27(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)

H02K 1/27; H01F 7/02; H02K 21/16; H02K 15/03

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: brushless machine, U-shaped magnets, lower coercivity

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2005-304286 A (MINEBEA CO., LTD.) 27 October 2005 See paragraphs 23-51, claims 1-18 and figs. 3-5.	1-2, 4-6, 9-10, 14-17 , 19, 21
Y		3, 18
A		7-8, 11-13, 20, 22
Y	JP 2006-280195 A (TOSHIBA CORP.) 12 October 2006	3, 18
A	See paragraphs 14-18, claims 1-3 and figs. 1-2.	1-2, 4-17, 19-22
A	JP 2003-124019 A (YASKAWA ELECTRIC CORP.) 25 April 2003 See the abstract, paragraph 5, claim 1 and fig. 5.	1-22
A	JP 2005-304292 A (MINEBEA CO., LTD.) 27 October 2005 See the abstract, paragraphs 22-34, claim 1 and figs. 3-5.	1-22
A	US 2010-0253169 A1 (EL-REFAIE AYMAN MOHAMED FAWZI et al.) 07 October 2010 See the abstract, paragraphs 39, 42, claims 1, 11 and fig. 4.	1-22



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

21 SEPTEMBER 2012 (21.09.2012)

Date of mailing of the international search report

24 SEPTEMBER 2012 (24.09.2012)

Name and mailing address of the ISA/KR

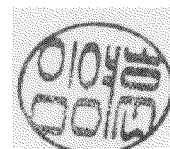
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Facsimile No. 82-42-472-7140

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Telephone No. 82-42-481-8690



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/026897

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