



(51) International Patent Classification:
H01F 7/02 (2006.01)

(21) International Application Number:
PCT/FI2011/050603

(22) International Filing Date:
22 June 2011 (22.06.2011)

(25) Filing Language: Finnish

(26) Publication Language: English

(30) Priority Data:
20105724 23 June 2010 (23.06.2010) FI

(71) Applicant (for all designated States except US): **ABB OY** [FI/FI]; Strömbergintie 1, FI-00380 Helsinki (FI).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **LAMBERG, Mikael** [FI/FI]; Strömbergintie 12 B 56, FI-00380 Helsinki (FI).

(74) Agent: **KORPELAINEN, Seppo**; ABB OY, Legal Affairs/Patents, P.O. Box 210, FI-00381 Helsinki (FI).

(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, 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:
16 February 2012

(54) Title: ARRANGEMENT AND METHOD FOR PROTECTING A PERMANENT MAGNET

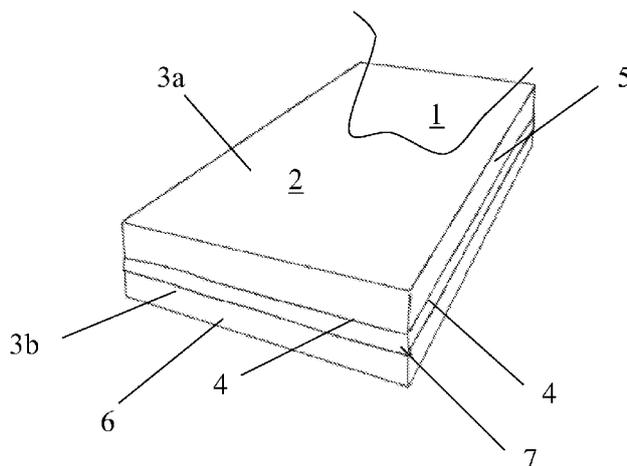


Figure 1

(57) Abstract: An arrangement for protecting a permanent magnet according to the invention comprises a fixed permanent magnet (1). The permanent magnet (1) is surrounded by a gas-tight and airtight shell (2), with vacuum inside the shell (1).

INTERNATIONAL SEARCH REPORT

International application No
PCT/FI2011/050603

A. CLASSIFICATION OF SUBJECT MATTER INV. H01F7/02 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) H01F		
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.
A	DE 10 2008 033616 A1 (SCHAEFFLER KG [DE]) 21 January 2010 (2010-01-21) paragraphs [0037], [0080] -----	1,3-5,9, 11
A	EP 1 990 811 A1 (SIEMENS AG [DE]) 12 November 2008 (2008-11-12) paragraphs [0001], [0002], [0005], [0007], [0010], [0014], [0016], [0027] -----	1,6,7,9, 11
A	WO 2007/116118 A1 (NEOREM MAGNETS OY [FI]; SANTALA PAULI [FI]) 18 October 2007 (2007-10-18) page 1, line 11 - page 2, line 16 page 2, line 31 - page 3, line 14 ----- -/--	1,7-9,11
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 16 December 2011		Date of mailing of the international search report 22/12/2011
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 Van den Berg, G

INTERNATIONAL SEARCH REPORT

International application No PCT/FI2011/050603

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 569 251 A2 (SHINETSU CHEMICAL CO [JP]) 31 August 2005 (2005-08-31) paragraphs [0001], [0008], [0016], [0022], [0027], [0031] -----	1,9,11
A	EP 2 017 859 A1 (SIEMENS AG [DE]) 21 January 2009 (2009-01-21) paragraphs [0003], [0004], [0011], [0012], [0017], [0021] -----	1,9,11

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/FI2011/050603

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 102008033616 A1	21-01-2010	DE 102008033616 A1	21-01-2010
		EP 2310701 A2	20-04-2011
		WO 2010006573 A2	21-01-2010

EP 1990811 A1	12-11-2008	CA 2630659 A1	09-11-2008
		DK 1990811 T3	10-01-2011
		EP 1990811 A1	12-11-2008
		ES 2353910 T3	08-03-2011
		US 2008276449 A1	13-11-2008

WO 2007116118 A1	18-10-2007	CN 101415616 A	22-04-2009
		EP 2004508 A1	24-12-2008
		FI 119264 B1	15-09-2008
		US 2010155287 A1	24-06-2010
		WO 2007116118 A1	18-10-2007

EP 1569251 A2	31-08-2005	EP 1569251 A2	31-08-2005
		JP 4583048 B2	17-11-2010
		JP 2005243882 A	08-09-2005
		US 2005190031 A1	01-09-2005
		US 2008218298 A1	11-09-2008

EP 2017859 A1	21-01-2009	CN 101388286 A	18-03-2009
		EP 2017859 A1	21-01-2009
		US 2009021088 A1	22-01-2009
