



(51) International Patent Classification:

H02K 1/27 (2006.01) *H02K 7/08* (2006.01)
H02K 7/00 (2006.01) *H02K 7/14* (2006.01)
B60K 7/00 (2006.01)

(21) International Application Number:

PCT/IB2014/062011

(22) International Filing Date:

6 June 2014 (06.06.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

1310385.8 11 June 2013 (11.06.2013) GB

(71) Applicant: **PROTEAN ELECTRIC LIMITED**

[GB/GB]; Protean Electric Limited, Silvertree, Unit 10b
Coxbridge Business Park, Alton Road, Farnham Surrey
GU10 5EH (GB).

(72) Inventor: **Roberts, Gareth**; C/O Protean Electric Limited,

Silvertree, Unit 10B Coxbridge Business Park, Alton Road,
Farnham Surrey GU10 5EH (GB).

(74) Agent: **HARRISON IP LIMITED**; Northminster Business

Park, York Yorkshire YO26 6QU (GB).

(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, BN, 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, IR, IS, JP, KE, KG, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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, 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, CL, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

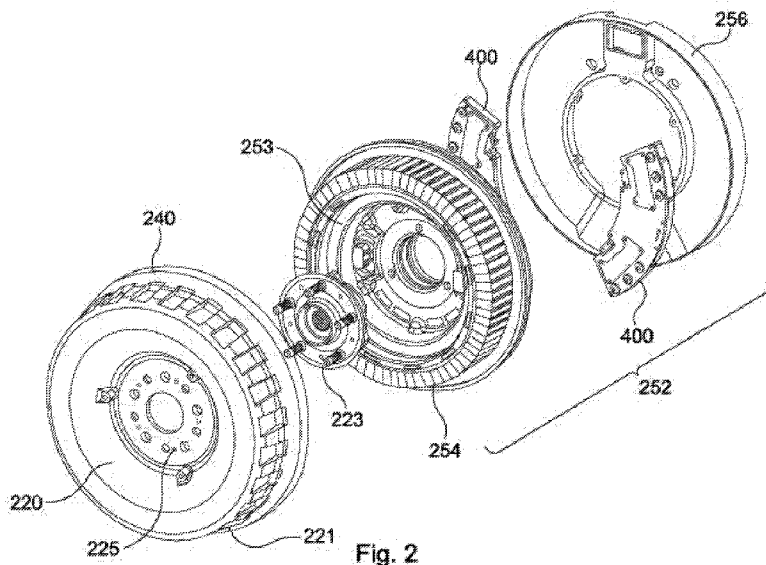
Published:

— with international search report (Art. 21(3))

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

6 August 2015

(54) Title: ELECTRIC MOTOR OR GENERATOR



(57) Abstract: An electric motor or generator having a stator (252) with stator teeth for mounting electrical coils and a rotor (240), wherein the stator (252) has a first surface that is substantially perpendicular to an axis of rotation of the rotor (240) and the rotor (240) has a second surface that is formed in substantially the same radial position as the stator's first surface, wherein upon the rotor (240) being pivoted perpendicular to the axis of rotation of the rotor (240) the first surface and the second surface are arranged to prevent the rotor (240) coming into contact with the stator teeth.



INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2014/062011

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H02K1/27 H02K7/00 B60K7/00 H02K7/08 H02K7/14
 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)
 H02K B60K

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 practicable, search terms used)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 472 279 A (PROTEAN HOLDINGS CORP [US] PROTEAN HOLDINGS CORP [US]; PROTEAN ELECTRI) 2 February 2011 (2011-02-02) abstract page 1, line 33 - page 4, line 13 page 5, line 22 - page 6, line 14 page 7, line 21 - page 10, line 11 figures 1-5	1-12
X	DE 32 13 172 A1 (BBC BROWN BOVERI & CIE [DE]) 13 October 1983 (1983-10-13) abstract page 5, line 27 - page 6, line 35 figure 4	1-12
	----- -/--	

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
---	---

Date of the actual completion of the international search 17 April 2015	Date of mailing of the international search report 29/04/2015
---	---

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 Törgyekes, Szabolcs
--	--

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2014/062011

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP S62 89450 A (MATSUSHITA ELECTRIC IND CO LTD) 23 April 1987 (1987-04-23) abstract figures 1-4 -----	1-12
X	EP 2 106 013 A2 (GEN ELECTRIC [US]) 30 September 2009 (2009-09-30) abstract paragraph [0023] - paragraph [0026] figures 1-6 -----	1-12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/IB2014/062011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2472279	A	02-02-2011	CN 102714447 A 03-10-2012 EP 2489114 A2 22-08-2012 GB 2472279 A 02-02-2011 US 2013069462 A1 21-03-2013 WO 2011045697 A2 21-04-2011

DE 3213172	A1	13-10-1983	NONE

JP S6289450	A	23-04-1987	JP H061963 B2 05-01-1994 JP S6289450 A 23-04-1987

EP 2106013	A2	30-09-2009	CN 101546929 A 30-09-2009 EP 2106013 A2 30-09-2009 US 2009243301 A1 01-10-2009
