



(11) **EP 2 437 379 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
11.03.2015 Bulletin 2015/11

(51) Int Cl.:
H02K 3/47 (2006.01) H01F 41/06 (2006.01)

(43) Date of publication A2:
04.04.2012 Bulletin 2012/14

(21) Application number: **11182812.5**

(22) Date of filing: **26.09.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(72) Inventors:
• **Baudey, Julien**
74130 Ayze (FR)
• **Baud, Cyril**
25500 Les Fins (FR)
• **Montagnat-Rentier, Alexis**
38500 Saint Cassien (FR)

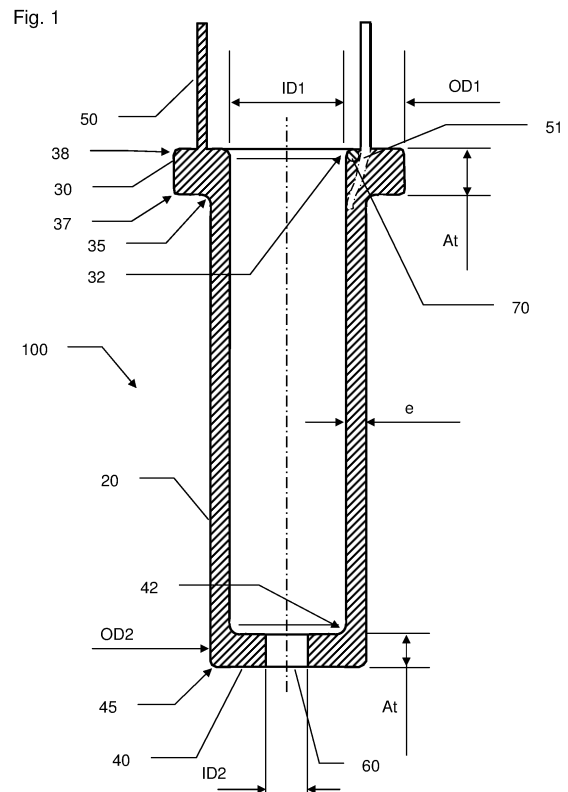
(30) Priority: **30.09.2010 CH 15952010**

(74) Representative: **Vigand, Philippe et al**
Novagraaf International SA
Chemin de l'Echo 3
1213 Onex (CH)

(71) Applicant: **Portescap SA**
2300 La Chaux de Fonds (CH)

(54) **Axial coil for a slotless electric motor**

(57) Axial self-supported coil (100) for a slotless rotating electric motor, comprising one coil body (20) formed by wound electrical conductors, with coil heads (30,40) at each end, the electrical conductors in the coil body (20) being substantially coplanar with the motor rotation axis, each coil head (30,40) having an axial thickness, the axial self-supported coil (100) having a conductor filling factor, wherein at least one of the electrical conductors is a multi-stranded conductor, a deformation arrangement of the multi-stranded conductors increases the filling factor and a bending arrangement of the multi-stranded conductors reduces the axial thickness (A_t) of each coil head (30,40).



EP 2 437 379 A3



EUROPEAN SEARCH REPORT

Application Number
EP 11 18 2812

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2008/119120 A1 (HYBRIDAUTO PTY LTD [AU]; GREAVES MATTHEW [AU]; GUYMER BEN [AU]; WALSH) 9 October 2008 (2008-10-09) * page 11, line 9 - page 13, line 24 * * page 15, line 24 - page 16, line 17; figures 1-3,7,8,9-16,20,22 *	1-6,8-12	INV. H02K3/47 H01F41/06
X	DE 10 2004 034611 A1 (BOBZIN JOERG [DE]) 9 February 2006 (2006-02-09) * paragraph [0002] - paragraph [0023]; figures 1-3,6-12,30-37,72-80,117-118 *	1,2,4-6, 8-12	
X	US 2006/038461 A1 (GABRYS CHRISTOPHER W [US]) 23 February 2006 (2006-02-23) * the whole document *	1,8,12	
A	JP 2005 168248 A (NAMIKI PRECISION JEWEL CO LTD) 23 June 2005 (2005-06-23) * abstract; figures 1-2 *	1,8	
			TECHNICAL FIELDS SEARCHED (IPC)
			H02K H01F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 30 January 2015	Examiner von Rauch, Marianne
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

1
EPO FORM 1503 03.82 (F04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 18 2812

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10

30-01-2015

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008119120 A1	09-10-2008	AU 2008234418 A1	09-10-2008
		EP 2168226 A1	31-03-2010
		US 2010117481 A1	13-05-2010
		US 2014333169 A1	13-11-2014
		WO 2008119120 A1	09-10-2008

DE 102004034611 A1	09-02-2006	NONE	

US 2006038461 A1	23-02-2006	NONE	

JP 2005168248 A	23-06-2005	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82