



- (51) International Patent Classification:
F03D 1/06 (2006.01)
- (21) International Application Number:
PCT/DK2012/050027
- (22) International Filing Date:
23 January 2012 (23.01.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
PA 2011 70059 2 February 2011 (02.02.2011) DK
- (71) Applicant (for all designated States except US): **VESTAS WIND SYSTEMS A/S** [DK/DK]; Hedeager 44, DK-8200 Aarhus N (DK).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **DAYNES, Stephen** [GB/GB]; c/o IPR Department, Vestas Technology UK Ltd, West Medina Mills, Stag Lane, Newport PO30 5TR (GB). **WEAVER, Paul** [GB/GB]; c/o IPR Department, Vestas Technology UK Ltd, West Medina Mills, Stag Lane, Newport PO30 5TR (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, 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))

[Continued on next page]

(54) Title: A WIND TURBINE BLADE HAVING A FLAP

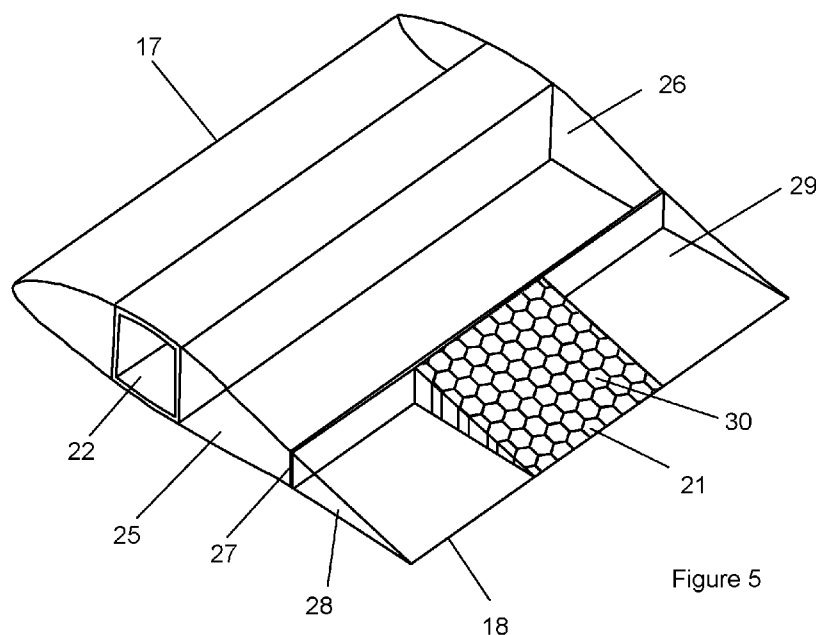


Figure 5

(57) Abstract: A wind turbine blade defining an aerodynamic airfoil cross-section between a leading edge and a trailing edge, the blade comprising a blade body; a flap moveable relative to the blade body, the flap comprising a pressure skin, a suction skin and a core disposed between the pressure skin and the suction skin; wherein the core comprises an anisotropic material.





— *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:
20 September 2012

INTERNATIONAL SEARCH REPORT

International application No
PCT/DK2012/050027

A. CLASSIFICATION OF SUBJECT MATTER
INV. F03D1/06
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)
F03D

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

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2010/151230 A2 (VESTAS WIND SYS AS [DK]; DELLA CHRISTIAN [SG]; LIM CHEE KANG [SG]; NAR) 29 December 2010 (2010-12-29)	1-4,6-9
Y	figure 2 paragraphs [0048] - [0049] -----	5,10,11
Y	WO 2004/088130 A1 (FORSKNINGSCT RISOE [DK]; BAK DAN CHRISTIAN [DK]; BUHL THOMAS [DK]; FUG) 14 October 2004 (2004-10-14)	5,10,11
A	figures 5-6 page 9, line 22 - page 10, line 20 -----	7
A	US 2 333 482 A (ZENO LITTMAN) 2 November 1943 (1943-11-02) abstract; figure 2 -----	7

Further documents are listed in the continuation of Box C. See patent family annex.

<p>* Special categories of cited documents :</p> <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 19 July 2012	Date of mailing of the international search report 30/07/2012
---	--

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 Cabrele, Silvio
--	---

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/DK2012/050027

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2010151230	A2	29-12-2010	NONE

WO 2004088130	A1	14-10-2004	AU 2004225883 A1 14-10-2004
			CA 2521045 A1 14-10-2004
			CN 1780983 A 31-05-2006
			EP 1613860 A1 11-01-2006
			US 2007036653 A1 15-02-2007
			WO 2004088130 A1 14-10-2004

US 2333482	A	02-11-1943	NONE
