(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 January 2014 (03.01.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/001929 A3

(51) **International Patent Classification**:
F03B 17/06 (2006.01)

(21) **International Application Number**:
PCT/IB2013/054663

(22) **International Filing Date**:
6 June 2013 (06.06.2013)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
1211441.9 27 June 2012 (27.06.2012) GB

(72) **Inventors; and**
(71) **Applicants** : **GLYNN, Anthony** [IL/IE]; 35 Larkfield Way, Lucan, Dublin, 22 (IE). **SHERLOCK, James** [IE/IE]; 35 Larkfield Way, Lucan, Dublin, 22 (IE).

(74) **Agent**: **BAYVIEW IP**; 8 Bayview Court, Killiney, County Dublin (IE).

(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, 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, 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, CI, CM, GA, GN, GQ, GW, KM, 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**:
27 February 2014

(54) **Title**: A WATER TURBINE UNIT

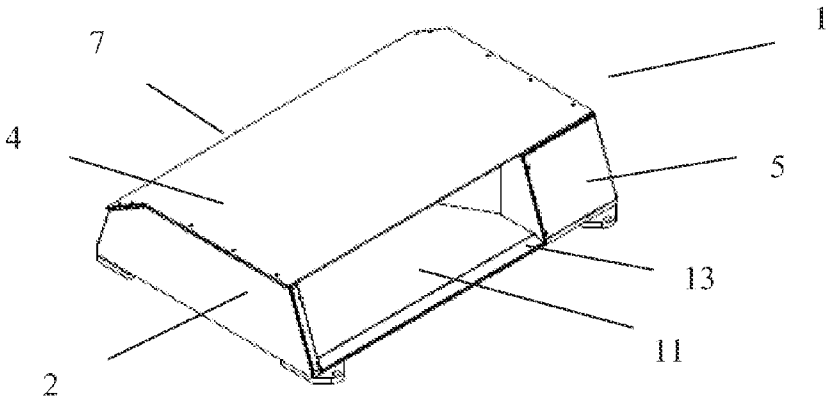


Fig. 1

(57) **Abstract**: A water turbine unit (1) comprising a base section (2) comprising an elongated water channel, a main body section (3) comprising a helical blade turbine (19) and a cover section (4), and wherein the unit is a low profile unit allowing water to flow over the unit and create downward pressure on the unit. The turbine comprises a staged helical blade turbine,

WO 2014/001929 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/054663

A. CLASSIFICATION OF SUBJECT MATTER
INV. F03B17/06
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)
F03B

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	US 4 258 271 A (CHAPPELL WALTER L ET AL) 24 March 1981 (1981-03-24) figures 3,4,5 column 1, line 18 - line 51 column 5, line 41 - line 60 -----	1-29
X	US 2010/084862 A1 (UNNO YUJI [JP]) 8 April 2010 (2010-04-08) paragraphs [0001], [0039], [0063], [0064] figures 1,16-18 -----	1-6,9-29
A	US 6 109 863 A (MILLIKEN LARRY D [US]) 29 August 2000 (2000-08-29) column 1, line 1 - line 13 figure 1 -----	1-29
	-/--	

[X] Further documents are listed in the continuation of Box C.

[X] 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 application or patent 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	Date of mailing of the international search report
20 November 2013	13/12/2013

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Lux, Ralph

2

Form PCT/ISA/210 (second sheet) (April 2005)

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 246 125 B1 (AXTELL ROBERT C [US]) 12 June 2001 (2001-06-12) column 2, line 47 - column 3, line 23 figures 1,5	1-29
A	US 3 687 567 A (LININGER WILLIAM W) 29 August 1972 (1972-08-29) column 1 figure 1	1-29
A	US 6 472 768 B1 (SALLS DARWIN ALDIS [US]) 29 October 2002 (2002-10-29) column 1, line 1 - column 2, line 33 figure 1	1-29

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2013/054663

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4258271 A	24-03-1981	FR 2434280 A1	21-03-1980
		US 4258271 A	24-03-1981
		WO 8000473 A1	20-03-1980
US 2010084862 A1	08-04-2010	AU 2008239143 A1	23-10-2008
		CA 2683450 A1	23-10-2008
		CN 101542112 A	23-09-2009
		EP 2136072 A1	23-12-2009
		JP 4022244 B2	12-12-2007
		JP 2007177797 A	12-07-2007
		KR 20090045225 A	07-05-2009
		US 2010084862 A1	08-04-2010
		WO 2008126786 A1	23-10-2008
US 6109863 A	29-08-2000	NONE	
US 6246125 B1	12-06-2001	NONE	
US 3687567 A	29-08-1972	NONE	
US 6472768 B1	29-10-2002	NONE	