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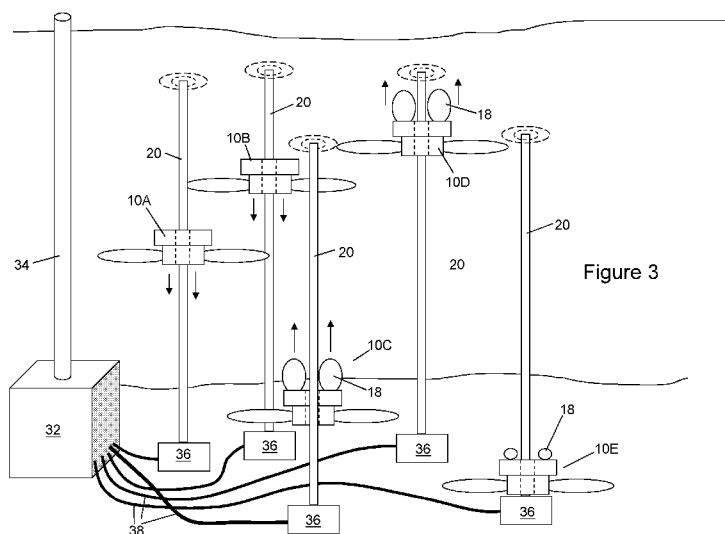
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Published:

- 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:
5 March 2015

(54) Title: WATER TURBINE WITH VARIABLE BUOYANCY



(57) Abstract: A floatable turbine (10) is described, which is movable on a substantially vertically oriented guide (20) so that the turbine (10) may move downwards along the guide (20) under gravitational force. The turbine equipment (10) is of negative buoyancy to facilitate it sinking, but is further provided with adjustable buoyancy means to allow the turbine arrangement to be imparted with a positive buoyancy when required. When imparted with a positive buoyancy the turbine equipment (10) floats back up the vertically oriented guide (20) under the buoyancy force. When moving down the guide (20) under gravity, and back up the guide (20) under buoyancy force an effective artificial current is generated by the movement through the turbine blades, turning the blades which in turn cause a generator to produce electricity, typically by suitable gearing.



INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2014/051966

A. CLASSIFICATION OF SUBJECT MATTER
INV. F03B13/00
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 F03G

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 | DE 20 2006 009953 U1 (TEPERT PETER [DE]) 24 August 2006 (2006-08-24) abstract paragraphs [0005] - [0017] figure 1 | 1-7, 36-39 |
| X | WO 2008/098003 A1 (PERIN JAMES C [US]) 14 August 2008 (2008-08-14) abstract paragraphs [0017] - [0023] figures 1-3 | 1 |

Further documents are listed in the continuation of Box C.

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

23 September 2014

Date of mailing of the international search report

08/01/2015

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INTERNATIONAL SEARCH REPORT

International application No.
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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

"see additional sheet(s)"

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-7(completely); 36-39(partially)

Guidance means for a submersible turbine

2. claims: 8-11(completely); 36-39(partially)

Air jet system

3. claims: 12-20(completely); 36-39(partially)

Turbine blade system

4. claims: 21-35, 40-43

Air tower

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2014/051966

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| DE 202006009953 U1 | 24-08-2006 | NONE | |
| ----- | | | |
| WO 2008098003 A1 | 14-08-2008 | US 2008246283 A1 | 09-10-2008 |
| | | WO 2008098003 A1 | 14-08-2008 |
| ----- | | | |