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

(54) **Title:** DEVICE ADAPTED TO TRANSFORM MECHANICAL ENERGY AND USE OF THE DEVICE

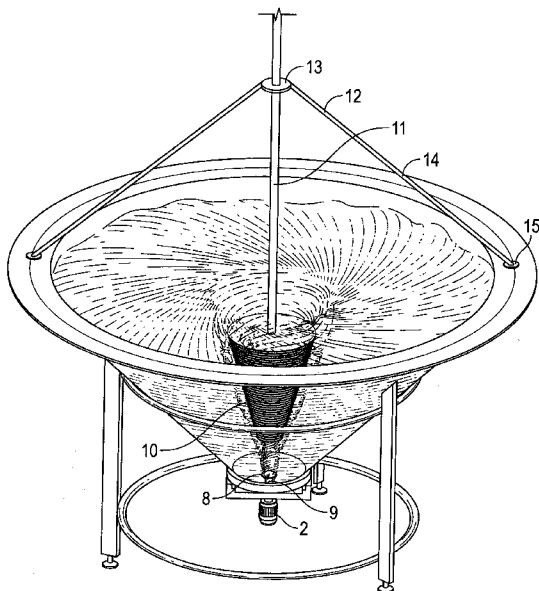


FIG. 2

(57) **Abstract:** A device adapted to transform mechanical energy from a motor that is connected to a shaft that hold a plurality of disks or a propeller or a conical shaped spiral or an egg shaped formed device, said bowl is filled with a fluid. The shaft is led through the bottom of a conical shaped bowl, such that the motor is placed outside the bowl and the shaft holding a conical shaped spiral or an egg shaped formed device that is mounted on a shaft is placed inside the bowl, said bowl is filled with water. When the motor is started, the shaft will rotate and rotate the water creating a vortex. Before the motor is started the plurality of disks or the propeller or the conical shaped spiral or the egg shaped formed device is submerged in the water leading to a rotation of the shaft. In this way a force is applied from the water to the shaft and the plurality of disks or the propeller or the conical shaped spiral or the egg shaped formed device.

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This invention relates to a device adapted to transform mechanical energy in a first form to mechanical energy in another form by setting the fluid in rotational motion in a bowl, said bowl has a wall, and is conical shaped having a bottom on which a through going shaft is mounted, said shaft has a disk mounted inside the bowl and a motor connected to the shaft outside the bowl, said motor rotates the disk thereby creating a vortex.

The invention also relates to a use of the device.

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Such a device is used to create a vortex by a mechanical rotation of a disk that is fixed to a shaft that is led through the bottom of the bowl, and outside the bowl, connected to a motor.

15 In order to use the created vortex, it is a purpose with the invention to realize a transformation of the vortex to mechanical power.

This purpose is achieved in a device defined in the introductory part of claim 1, that is characteristic in that the bowl accommodates a plurality of disks that is mounted on a shaft, such that the shaft with the disks, are submerged in the fluid before the motor is started or after the motor is started.

20 In this way a rotational movement of the vortex will be transferred to a motion of the shaft.

25 Test has shown that it is expedient if, as stated in claim 3, that the diameters of the disks are decreasing from the top disk to the bottom disk.

30 It is advantageous if, as stated in claim 3, that the bowl has a bottom angel in the range from 85° to 115°, and as stated in claim 4, that the disks are separated from each other by a gap.

In order to get use of the created energy it is expedient, if, as stated in claim 5, that the shaft holding the disks extends above the bowl.

As mentioned, the invention also relates to a use of the device.

5 This use is defined in claim 6.

The invention will now more detailed be explained with reference to the drawing in which

10 Fig. 1 illustrates a vortex generation unit and

Fig. 2 illustrates a vortex generation unit according to the invention.

On fig. 1, 1 denotes a device of the vortex type

15 This device consists of a bowl 4 that is conical shaped.

The bottom angle 3 of the bowl 4 is in the range from 85° to 115°.

On the bottom of the bowl 4, a through going shaft 9 is mounted.

On this shaft a motor 2 outside the bowl is mounted. On the opposite end of the shaft, a disk 8 inside the bowl is mounted.

20 The bowl is suspended in a frame 7.

When the motor 2 is started a rotation of water 5 will be initiated that creates a vortex 6. After a transient progress, the water will rotate steady, and potential energy from the motor will be stored in the water flow.

25 Now turning to fig. 2 from which it can be seen a plurality of disks 10 are mounted on a shaft 11 that is submerged in the vortex. These disk have diameters such that they touch the water surrounding the vortex. As can be seen, the upper disk has the largest diameter, whereas the lowest disk has the smallest diameter. A gap is provided between the disks.

Over the water level a bearing 13 is provided that is fixed to rods 14 that are removable from a fixing point 15.

It is noted that instead of disk it is possible to use a propeller or a conical shaped spiral or an egg shaped formed device.

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The function of the device is:

When the motor is started, a rotation of the water is initiated.

The shaft 11 with disks 10 can then be rotated due to the presence of the disks in the water that are influenced by the rotation of the water.

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Even that the invention is explained in connection with a bowl accommodating disks the invention could also be used, within the scope of the claims, in connection with a propeller, a conical shaped spiral or an egg shaped formed device.

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CLAIMS

1. Device adapted to transform mechanical energy in a first form to mechanical energy in another form by setting the fluid in rotational motion in a bowl, said bowl has a wall, and is conical shaped having a bottom on which a through going shaft is mounted, said shaft has a disk mounted inside the bowl and a motor connected to the shaft outside the bowl, said motor rotates the disk thereby creating a vortex, **characterized in**, that the bowl accommodates a plurality of disks that is mounted on the shaft, such that the shaft with the disks are submerged in the fluid before the motor is started or after the motor is started.
2. Device according to claim 1 , **characterized in**, that the diameters of the disks are decreasing from the top disk to the bottom disk.
3. Device according to claim 1 - 2, **characterized in**, that the bowl has a bottom angel in the range from 85° to 115°.
4. Device according to claim 1 - 3, **characterized in**, that the disks are separated from each other by a gap.
5. Device according to claim 1 - 4, **characterized in**, that the shaft holding the disks extends above the bowl.
6. Use of the device according to claims 1 - 5 as a vortex turbine.

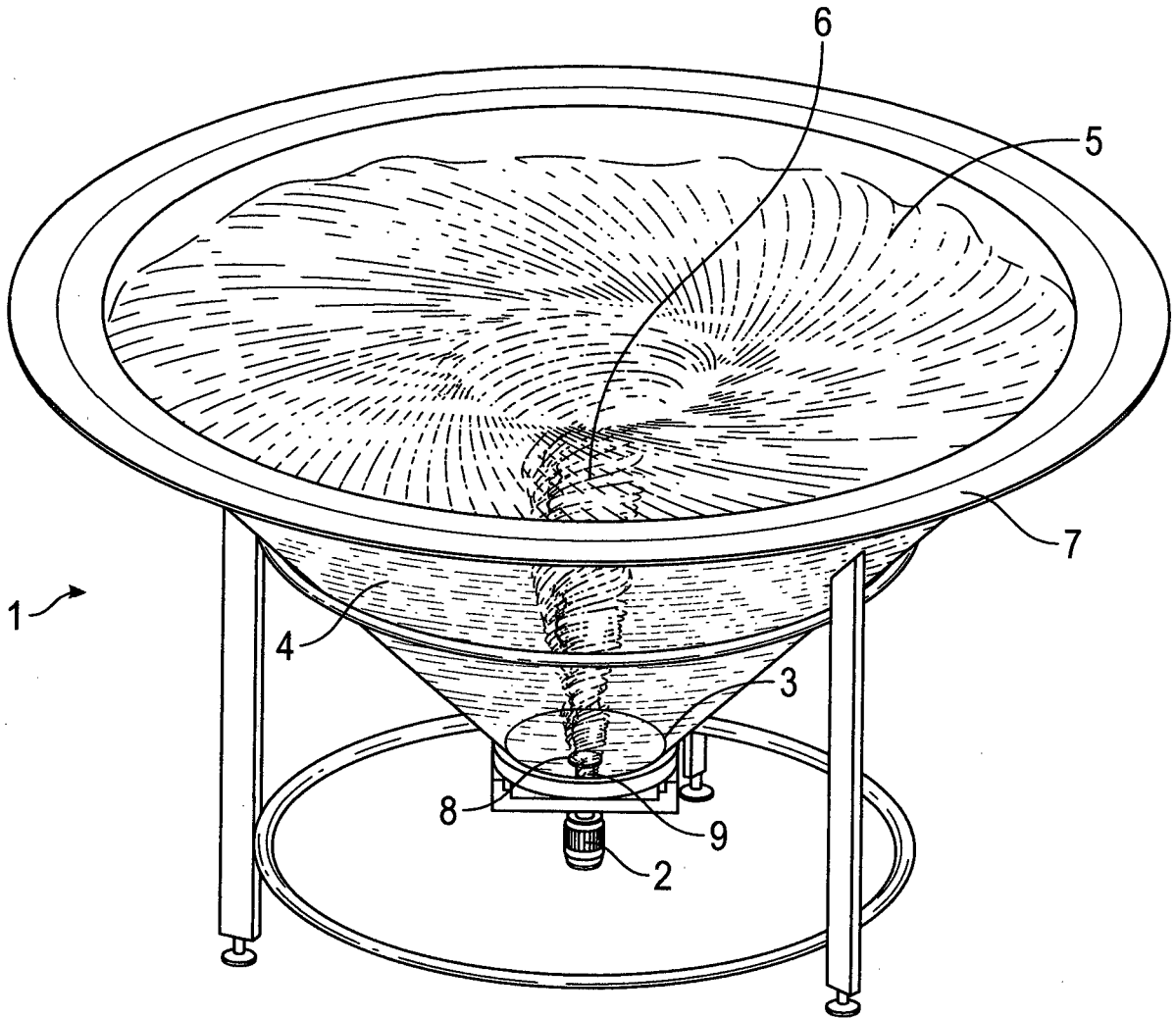


FIG. 1

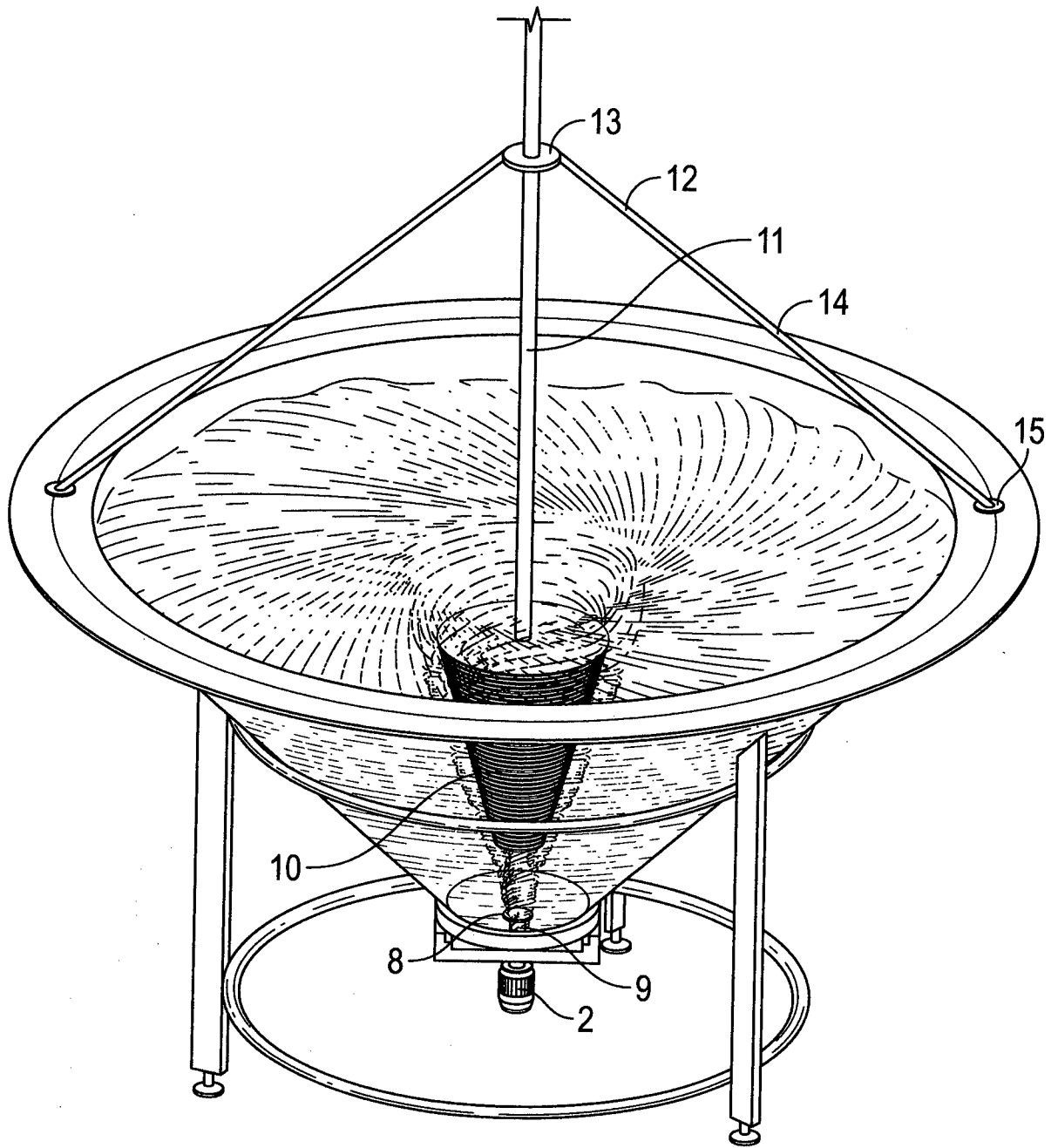


FIG. 2

INTERNATIONAL SEARCH REPORT

International application No PCT/DK2014/000044

A. CLASSIFICATION OF SUBJECT MATTER
 INV. F16H41/04
 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)
 F16H F16D

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 466 431 A (JENDRESEN CARL J) 5 April 1949 (1949-04-05) the whole document	1-6
X	FR 1 349 186 A (BIRCK JEAN) 17 January 1964 (1964-01-17) the whole document	1-6

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>
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Date of the actual completion of the international search 2 December 2014	Date of mailing of the international search report 10/12/2014
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/DK2014/000044

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2466431	A	05-04-1949	NONE

FR 1349186	A	17-01-1964	NONE
