

PROPULSION DEVICE USED ON WATER, LAND AND UNDER WATER

BACKGROUND OF THE INVENTION

5 a) Field of the Invention

The present invention relates to a propulsion device, and more particularly to a propulsion device that can be used on water, land and under water for advancing.

b) Description of the Prior Art

10 Conventionally, people will think that wheels used on land and blades used on water are independent propulsion units in transportation vehicles and are used independently. However, in some occasions, one will expect a transportation vehicle to be used on land, water or under water, for example, a gaming device in an amusement park or a
15 beach, a transportation vehicle in an aquaculture institute, and an auxiliary transportation vehicle used by a lifeguard. For this kind of multipurpose transportation vehicle used on water and land, the most needed is a propulsion unit that can be used on water and land.

The existing conventional wheels do not have a related design, and
20 even there is a design, it is mostly used on land and is unable to provide

for use on water or even under water effectively, not mentioning for use on water and under water.

Accordingly, the abovementioned conventional wheels are indeed provided with many shortcomings and need to be improved as they are
5 not a good design.

SUMMARY OF THE INVENTION

Accordingly, the primary object of the present invention is to provide a propulsion device that can be used on water, land and under water for advancing.

10 To achieve the abovementioned object, the present invention includes a wheel frame which is provided with plural positioning holes for connecting and fixing wheel blocks. The positioning holes are disposed alternately and the wheel frame is provided with a wheel shaft to be pivoted with a transportation vehicle. In addition, plural blades in a
15 shape of a curved screw propeller are disposed annularly between the wheel shaft and the wheel frame, and plural wheel blocks are arranged outside the wheel frame. The wheel block is a curved structure and is provided with plural through-holes corresponding to the positioning holes, so that the wheel block can be fixed on the wheel frame; whereas, a
20 groove is formed between two wheel blocks.

If the wheel frame and the wheel shaft are connected to a car axle for use as a car wheel, an advancing power is provided through friction between the wheel blocks and a ground surface when the car is advancing on land. If the ground surface is not smooth, then the curved
5 blades can provide a shock-proof buffering function and the grooves between the wheel blocks can provide a water draining function. On the other hand, when a transportation vehicle is used on water, the grooves between the wheel blocks will guide the water flow and the curved blades on the wheel frame will provide an advancing power. In
10 addition, when a transportation vehicle is used under water, a user can change the direction of a water pushing device, such that the water pushing device is about perpendicular to the vehicle body. Next, the wheels are rotated. At this time, as the blades are a curved structure, the advancing power under water can be enhanced. Therefore, the
15 present invention can be used on water, land and under water.

For the propulsion device disclosed by the present invention, the wheel frame and the blades are made of an elastic metal or a complex material.

For the propulsion device disclosed by the present invention, the
20 wheel block is provided with a recess, and an interior of the recess is

provided with through-holes corresponding to the positioning holes, so that the wheel block can be fixed on the wheel frame by a locking element.

To enable a further understanding of the said objectives and the technological methods of the invention herein, the brief description of the drawings below is followed by the detailed description of the preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a three-dimensional schematic view of a propulsion device used on water, land and under water, according to the present invention.

FIG. 2 shows a three-dimensional schematic view of the propulsion device used on water, land and under water, viewed along another angle, according to the present invention.

FIG. 3 shows a front view of implementation of the propulsion device used on water, land and under water, according to the present invention.

FIG. 4 shows a side view of implementation of the propulsion device used on water, land and under water, according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 to 4, the present invention comprises a wheel frame 1 which is provided with plural positioning holes 11 for connecting

and fixing wheel blocks 2 described below. The positioning holes 11 are disposed alternately, and a center position on the wheel frame 1 is provided with a wheel shaft 12 to be pivoted with a transportation vehicle. To be more specific, the wheel shaft 12 is interconnected with a driving motor or an engine in a transportation vehicle, and plural blades 13 in a shape of a curved screw propeller are annularly disposed between the wheel shaft 12 and the wheel frame 1. In the present embodiment, four blades 13 are evenly and annularly disposed on the wheel frame 1. Furthermore, the wheel frame 1 and blades 13 described above are made of an elastic material to achieve a better shock-proofing function.

In addition, the wheel block 2 is a curved structure and is provided with a recess 21. An interior of the recess 21 is provided with through-holes 22 corresponding to the positioning holes 11, so that the wheel block 2 can be fixed on the wheel frame 1 by a locking element (not shown on the drawings). Furthermore, a groove 3 is formed between two wheel blocks 2. As the wheel block 2 is a curved structure, the groove 3 is also a curve, allowing the groove 3 to be used for draining water or guiding the water flow.

Besides that, as the positioning holes 11 outside the wheel frame 1 are disposed alternately, the wheel blocks 2 can be installed clockwise

or counterclockwise, so that the wheel blocks 2 and the grooves 3 can be disposed clockwise or counterclockwise. This kind of structure can be installed on a left or right side of a transportation vehicle, so that the manufacturing and assembling cost can be reduced.

5 When the wheel frame 1 and the wheel shaft 12 are connected to a car axle (not shown on the drawings) to be used as a car wheel which is advancing on land, the advancing power is provided through friction between the wheel blocks 2 and a ground surface. If the land is not smooth, then the wheel frame 1 and the blades 13 in the shape of a
10 curved screw propeller can provide a shock-proof buffering function; whereas the grooves 3 between the wheel blocks 2 will provide a water draining function. When a transportation vehicle is used on water, the grooves 3 between the wheel blocks 2 will guide the water flow and the blades 13 in the shape of the curved screw propeller will provide the
15 advancing power. On the other hand, when a transportation vehicle is used under water, a user can turn the propulsion device of the present invention, allowing the propulsion device to be about perpendicular to the vehicle body. Next, the propulsion device is rotated. At this time, as the blades 13 are a curved structure, the advancing power under
20 water can be enhanced. On the contrary, if the propulsion device is

rotated counterclockwise, then a reversing power can be provided.

Accordingly, the present invention can provide for the advancement of a transportation vehicle on water, land and under water.

It is of course to be understood that the embodiments described
5 herein is merely illustrative of the principles of the invention and that a wide variety of modifications thereto may be effected by persons skilled in the art without departing from the spirit and scope of the invention as set forth in the following claims.

What is claimed is:

1. A propulsion device used on water, land and under water, comprising:

a wheel frame, a center position of which is provided with a wheel shaft to be pivoted with a transportation vehicle, with plural blades being annularly disposed between the wheel shaft and the wheel frame; and

plural wheel blocks, which are a curved structure and are disposed outside the wheel frame, with a groove being formed between two wheel blocks.

2. The propulsion device used on water, land and under water, according to claim 1, wherein the wheel frame is provided with plural positioning holes for installing the wheel blocks clockwise or counterclockwise, with the positioning holes being disposed alternately.

3. The propulsion device used on water, land and under water, according to claim 1, wherein the wheel shaft provides for interconnection with a driving motor or an engine in a transportation vehicle.

4. The propulsion device on water, land and under water, according to

claim 1, wherein the blades are in a shape of a curved screw propeller.

5. The propulsion device used on water, land and under water, according to claim 2, wherein the wheel block is provided with a recess, and an interior of the recess is provided with through-holes corresponding to the positioning holes, allowing the wheel block to be fixed on the wheel frame by a locking element.

6. The propulsion device used on water, land and under water, according to claim 1, wherein the groove is in a shape of a curve, allowing the groove to be used for draining water or guiding the water flow.