April 8, 1952 I. S. WELLS 2,592,498

PEDAL BOAT PROPULSION MEANS

Filed Jan. 5, 1950 2 SHEETS—SHEET 1

Fig. 1.

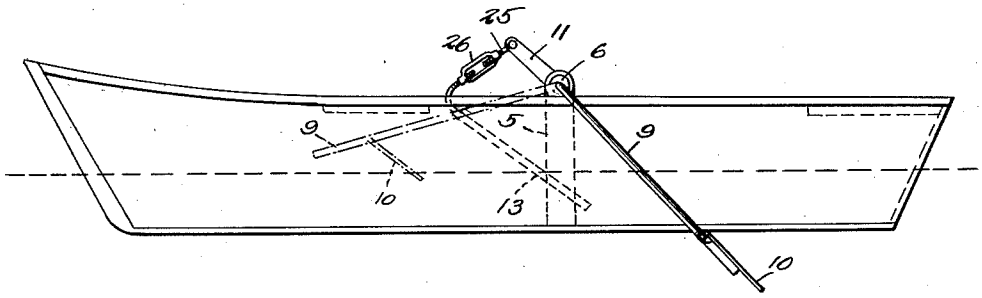
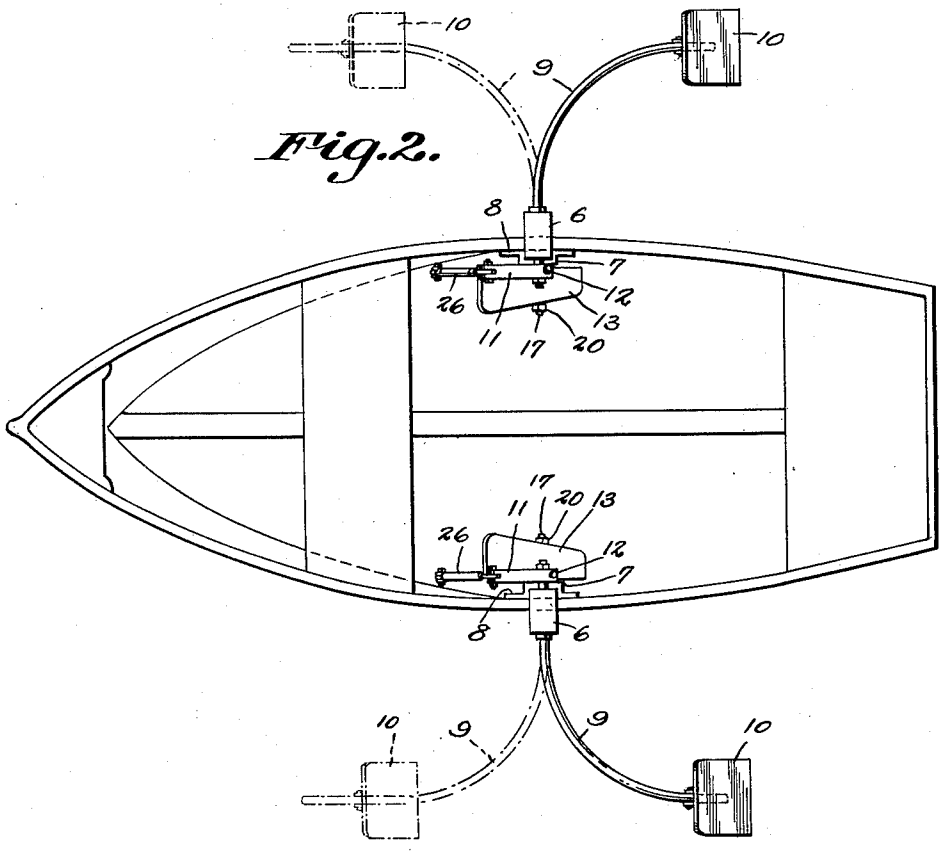


Fig. 2.



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Fig. 3.

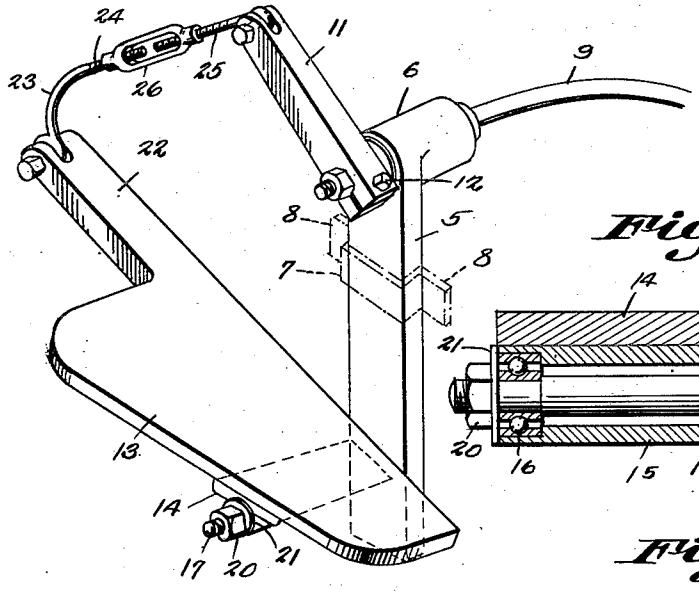
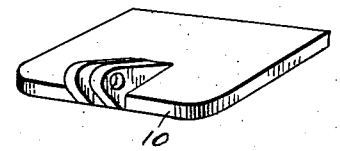


Fig. 4.

Fig. 5.



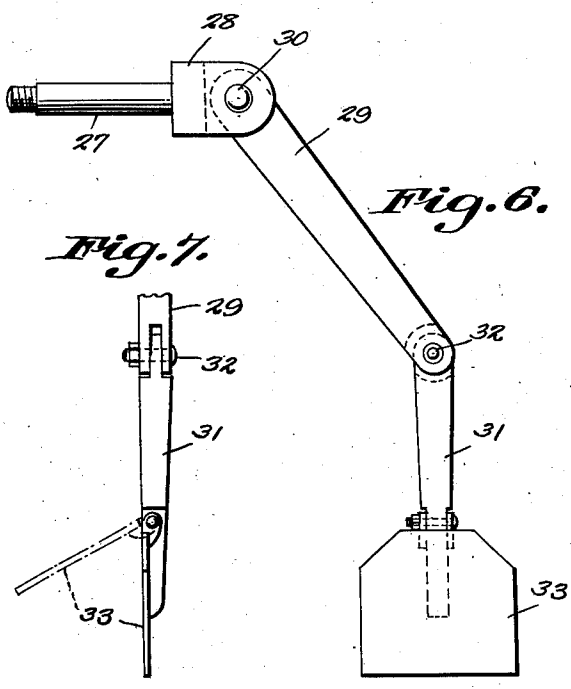


Fig. 6.

Fig. 7.

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Patented Apr. 8, 1952 2,592,498

UNITED STATES PATENT OFFICE

2,592,498

PEDAL BOAT PROPULSION MEANS

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Application January 5, 1950, Serial No. 136,874

1 Claim. (Cl. 115—25)

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This invention relates to means designed for propelling and steering small boats by pedal actuated propulsion means, leaving the boatman's hands free for handling fishing equipment or for other purposes, the mechanism being especially adapted for propelling a boat while trolling.

An important object of the invention is to provide a device of this character which may be readily and easily mounted on a rowboat, without the necessity of making alterations in the construction of the boat, to mount the propulsion device.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings

Figure 1 is a side elevational view illustrating a rowboat, equipped with a pedal actuated propulsion means in accordance with the invention.

Fig. 2 is a plan view thereof.

Fig. 3 is an enlarged perspective view illustrating the hanger on which the propulsion means is supported, together with the pedal for actuating the propulsion means.

Fig. 4 is a transverse sectional view through the bearing on which the pedal is supported.

Fig. 5 is a perspective view of the pivoted paddle used at one end of the paddle arm.

Fig. 6 is an elevational view of a modified form of paddle supporting arm.

Fig. 7 is an edge elevational view thereof.

Referring to the drawings in detail, the propulsion device forming the subject matter of the present invention, embodies a hanger 5 which hanger is provided with a horizontally disposed bearing 6 formed at the upper end thereof, the hanger being constructed so that it will lie flat against the inner surface of the side of the boat with which the device is used.

While it is of course necessary to use a pedal propulsion device at opposite sides of the boat, and since the propulsion devices are identical in construction, only one propulsion device will be described in detail.

A strap 7 is constructed to fit over the hanger 5, the laterally extended ends 8 thereof being

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provided with openings so that the hanger may be securely mounted on the boat.

Extending through the bearing 6 and mounted for operation therein, is the paddle arm 9 which is curved rearwardly as clearly shown by Fig. 2 of the drawings, the paddle arm providing a support for the pivoted paddle 10 which is so constructed and arranged that with the rearward movement of the paddle arm, the paddle 10 will be held rigid to cause the boat on which the device is mounted, to move forwardly.

When the paddle arm 9 is moved forwardly in making the next stroke, to the position as shown by Fig. 2 in dotted lines, the paddle 10 will swing upwardly, offering no resistance as it is being moved forwardly to a position to make the next stroke.

It is contemplated to provide a bearing 6 of the ball or roller bearing structure to permit of free movement of the paddle arm.

Secured to the inner end of the paddle arm 9, is the crank arm 11 which is provided with an opening of a diameter to accommodate the threaded end of the paddle arm 9, the arm 11 being formed with a slot extending inwardly from one end thereof, terminating at the opening. The split sides of the arm are now held together by means of the bolt 12, thereby providing a structure which will permit of adjustment of the arm 11 with respect to the paddle arm 9, to regulate the length of the stroke of the paddle arm 9.

The reference character 13 indicates the pedal of the device which is provided with a plate 14 to which the tubular bearing sleeve 15 is secured, the bearing sleeve being formed with recessed ends, in which the bearings 16 are mounted, the bearings being positioned on the shaft 17 that is provided with the threaded end 18 that is extended through an opening formed in the hanger 5, adjacent to the lower end thereof, there being provided nuts 19 positioned on the threaded portion 18, at opposite sides of the hanger 5, holding the shaft in position. At the outer end of the shaft 17 is the nut 20 which bears against the washer 21 holding the ball bearings in position on the shaft 17.

The pedal 13 is formed with a narrow extension 22 to which the rod 23 is pivotally connected, the rod 23 having a threaded end 24. Pivotally connected with the arm 11, is the rod 25 which is formed with a threaded portion on which the turnbuckle 26 is mounted. This turnbuckle not only connects the rods 23 and 25, but provides means for adjusting the rods with respect to

each other, which results in the adjustment of the arm 11, to regulate the stroke of the pedal arm 9.

In the modified form of the invention as shown by Figs. 6 and 7 of the drawings, the reference character 27 indicates the paddle arm shaft which is formed with the bearing head 28 formed with spaced ears, between which one end of the paddle arm 29 is pivotally connected. The bolt 30 provides the pivot between the head 28 and paddle arm 29, the bolt being provided with a nut whereby the paddle arm may be secured in various angular positions with respect to the paddle arm shaft 27.

Pivotally connected with the paddle arm 29, is the arm 31 which is also secured by means of a nut mounted on one end of the bolt 32, so that the arm 31 may be also secured in its positions of adjustment with respect to the paddle arm 29. This adjustment is desired at times when it would be to an advantage for the operator of the boat to operate the paddles in closer relation with respect to the sides of the boat, as for example in maneuvering in restricted areas.

The reference character 33 indicates the pivoted paddle which is mounted on the free end of the arm 31, the paddle being so mounted that upon the return movement of the paddle arm to make a stroke, the paddle 33 will pivot upwardly offering the minimum resistance, while upon the movement of the paddle in the opposite direction, the paddle will move against the extended end of the arm 31 and propel the boat forwardly.

In operation a person seated on the rear seat of the boat as shown in Figs. 1 and 2, with his feet resting on the pedals 13, may by pivoting the pedals 13 on their shafts 17, cause the paddle arms 9 to move in the water to operate the paddles 10 in propelling the boat.

From the foregoing it will be seen that due to the construction shown and described, I have provided a pedal operated propulsion means for small boats, wherein the boat may be propelled

and guided without the use of the hands of the boatman, leaving the hands free to manipulate a fishing pole.

It is also to be noted that this type of propulsion will be especially useful in trolling.

Having thus described the invention, what is claimed is:

In combination with a boat, a propulsion device comprising a vertical hanger secured to the inner surface of the side of the boat, a horizontal bearing at the upper end of the hanger, a paddle arm mounted for pivotal movement within the bearing, a crank arm secured to the paddle arm at a point within the boat, a horizontal shaft secured to the vertical hanger adjacent to the lower end thereof, said horizontal shaft extending into the boat, a pedal pivotally mounted on said shaft, connecting means between the pedal and crank arm, said connecting means embodying rods connected to the pedal and crank arm, and a turnbuckle connecting the rods whereby the stroke of the paddle is adjusted, and said pedal operating to operate the paddle arm and paddle mounted thereon.

ISAAC SIDNEY WELLS.

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