Dec. 3, 1929. D. O. TAYLOR 1,737,899

BOAT PROPELLING MEANS

Filed Oct. 11, 1928 3 Sheets-Sheet 1

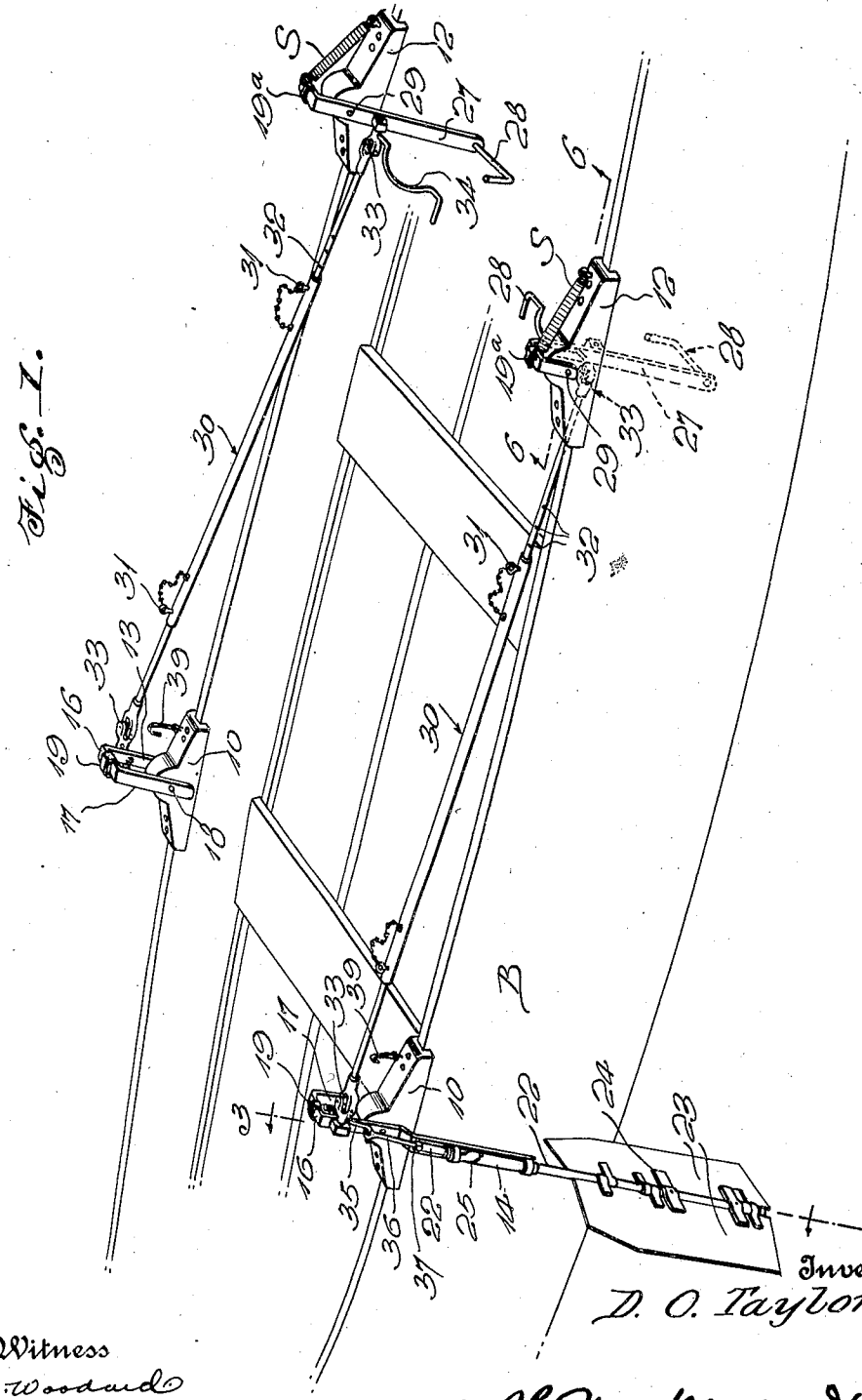


Fig. 1.

Witness
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BOAT PROPELLING MEANS

Filed Oct. 11, 1928 3 Sheets-Sheet 2

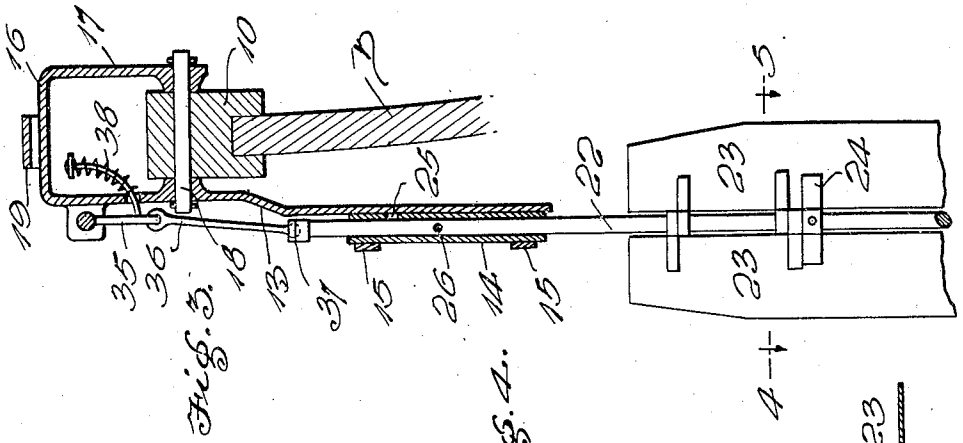


Fig. 3.

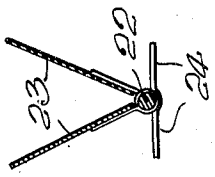


Fig. 4.

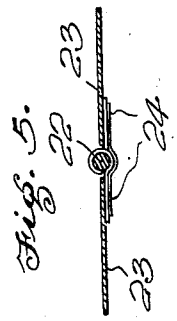


Fig. 5.

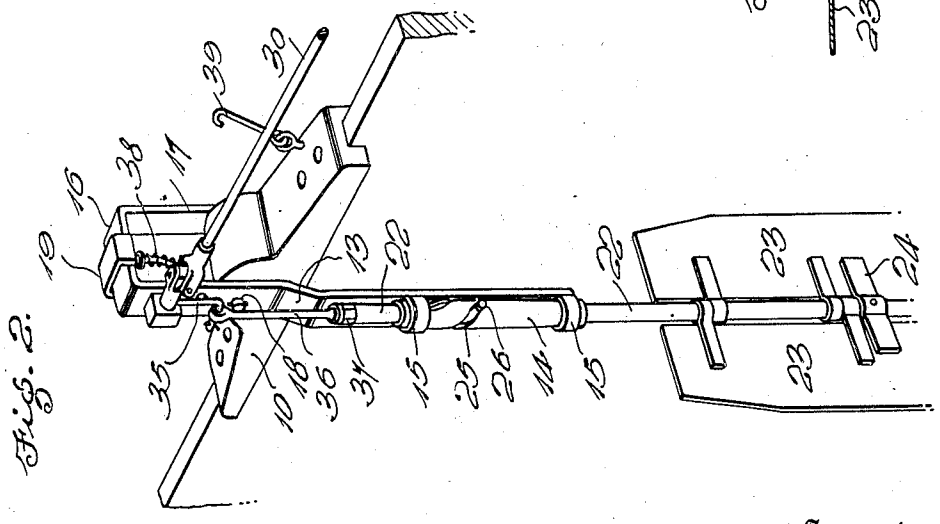


Fig. 2.

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BOAT PROPELLING MEANS

Filed Oct. 11, 1928 3 Sheets-Sheet 3

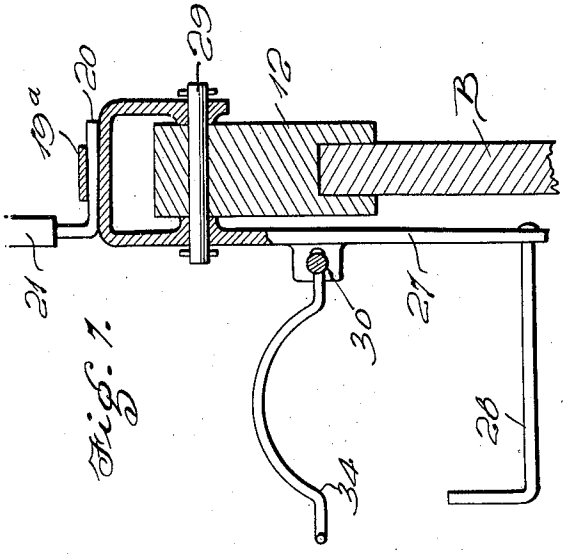


Fig. 1.

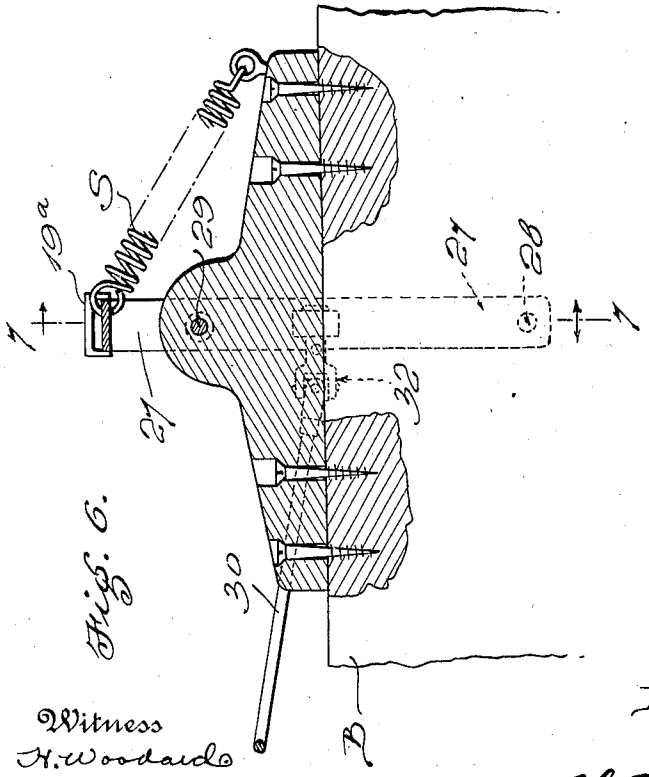


Fig. 6.

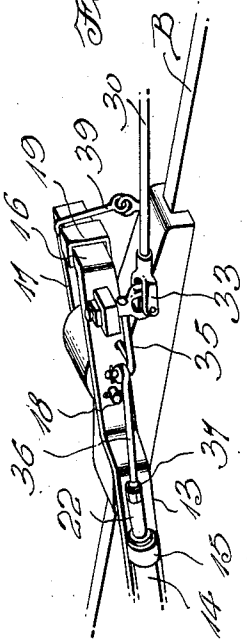


Fig. 6.

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UNITED STATES PATENT OFFICE

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BOAT-PROPELLING MEANS

Application filed October 11, 1928. Serial No. 311,792.

The invention aims to provide a new and improved propelling means for hunting or other small boats, of the general type in which two propelling paddles are operable in substantially vertical planes close to the sides of the boat.

The paddles are pivoted to their carrying members so that they operate when these members move in one direction and merely idle when they are moved in the other direction, and it is a further and important object to provide unique means for turning the paddle-carrying members one-half revolution whenever desired, so that the direction of travel of the boat may be reversed, or by reversing one paddle and not the other, or vice versa, the craft may be readily steered.

It is yet another aim to provide a construction which may be operated entirely by the occupant's seat if desired, leaving his hands entirely free to handle a gun, trolling rod, etc.

Yet another aim is to make provision whereby the propelling means may be operated by hand if desirable.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawings.

Fig. 1 is a perspective view of a boat equipped with the invention.

Fig. 2 is an enlarged perspective view of one of the paddles and associated parts.

Fig. 3 is an enlarged vertical section on line 3—3 of Fig. 1.

Figs. 4 and 5 are horizontal sectional views on the line 4—5 of Fig. 3 showing the paddle in idle and operative positions respectively.

Fig. 6 is an enlarged longitudinal sectional view as indicated by line 6—6 of Fig. 1.

Fig. 7 is a vertical transverse sectional view on line 7—7 of Fig. 6.

Fig. 8 is a fragmentary perspective view showing the manner in which the propelling means may be held clear of the water when desired.

The form of construction herein disclosed will be rather specifically described, with the understanding that within the scope of the invention as claimed, variations may be made.

10 denotes a pair of bearings which may be secured by screws 11 or any other desired means to opposite sides of a boat B. 12 has reference to a similar pair of bearings secured in any desired way to the boat at points spaced longitudinally from the bearings 10. The propelling means are mounted upon the bearings and as the construction for each side of the boat is identical with that at the other side, only that at one side will be described in detail.

Disposed at the outer end of the bearing 10, is an upright lever 13 whose lower arm extends considerably below said bearing and is provided with a vertically elongated tubular bearing 14 secured thereto by any desired means such as the yokes denoted at 15. The upper arm of the lever 13 extends somewhat above the bearing 10, is bent laterally inward at 16 and is then extended downwardly at 17 at the inner end of the bearing. A fulcrum pin 18 passes through the bearing 10 and the lever portions at the opposite ends of said bearing. The lever portion 16 is provided with a rigid loop 19 adapted to receive the lateral lower end 20 of the handle 21 shown in Fig. 7, so that the lever may be oscillated by hand if desired. Ordinarily, however, this lever is operated by foot as hereinafter explained.

The upper end of the shaft 22 is rotatably and slidably received in the bearing 14 and the lower end of this shaft carries a paddle which preferably consists of two pivoted sections 23, stops 24 being secured to the shaft to limit the swinging of said paddle sections in one direction so that when the paddle is in this condition, it will function. Upon movement of the paddle in the opposite direction through the water however, the paddle sections 23 swing inwardly against each other and hence move idly and without resistance through the water. In order to reverse the travel of the boat, it is necessary to turn the shaft 22 and the paddle one-half revolution. To accomplish this, I provide means for sliding the shaft a predetermined distance in the bearing 14, and means brought into play by such sliding of the shaft, for turning it to the necessary extent. The

shaft-turning means preferably comprises a helical cam slot 25 in the bearing 14 and a co-acting stud or shoe 26 on the shaft 22. This provision effects smooth and easy turning of the shaft 22 a half revolution when it is slid to the proper extent in the necessary direction. Before describing the means for sliding the shaft, the foot-actuated means for swinging the lever 13 will be explained, as in the present disclosure one is dependent upon the other.

At the inner end of the bearing 12, is a foot lever 27 whose lower arm extends considerably below said bearing and is provided with a suitable pedal 28. The upper portion of lever 27 is shaped in the same manner as the upper portion of lever 13, and a fulcrum pin 29 passes through the portions of this lever 27 at opposite ends of the bearing 12. The transverse upper part of the lever is provided with a rigid loop 19ª which may receive the lateral lower end 20 of the handle 21 if desired.

Extending between the lever 27 and the lever 13 is a rod 30 which is preferably formed of telescopic sections removably and adjustably connected by pins 31 engageable with openings 32. At 33, universal connections are provided between the rod 30 and the levers 27—13, and the connections between rod and levers is also such that said rod may rotate. At the end of the rod adjacent the lever 27, said rod is provided with a foot-actuated crank 34 by means of which the rod may be turned. The other end of this rod is provided with a crank arm 35 to which the upper end of a link 36 is pivoted, and the lower end of this link has a ball and socket or other equivalent connection with the upper end of the shaft 22. By this construction, rotation of the rod 30 effects sliding of the shaft 22 in the bearing 14 and at this time the co-acting means 25—26 cause one-half rotation of said shaft, thereby conditioning the propelling means for driving the boat in the opposite direction.

An appropriate spring device 38 acts upon the crank arm 35 or other desired portion of the contrivance to normally hold the rod 30 with said crank arm 35 in its downward position.

It will be seen from the foregoing that by either hand or foot power, the propelling means may be easily operated and that the direction of travel of the boat may be reversed with ease whenever desired. Moreover, one paddle may be reversed without the other or vice versa to effect steering. While the paddles normally project considerably below the boat, they are free to swing sufficiently to clear any obstruction over which the boat will pass, and if it should be desirable to hold the paddles in elevated positions, this may be done by hooks 39 engageable with the upper ends of the levers 13, as shown in Fig. 8.

The invention may be easily and inexpensively constructed of light weight and its sectional nature permits it to be readily disassembled, packed in small space and readily carried for instance on a fishing or hunting trip. When the destination is reached, it may be easily fastened in position upon the boat and it will be observed that the construction is such as to permit adjustment according to the length of the craft, the arrangements of the seats and the desires of the person or persons who are to occupy the craft.

The details herein disclosed may be followed if desired but attention is again invited to the fact that within the scope of the invention as claimed, variations may be made.

Springs S are preferably used to return the movable parts after each thrust by the foot.

I claim:—

1. In a boat propelling means, an arm and means for mounting it on a boat for swinging longitudinally thereof, a bearing carried by the lower portion of said arm, a shaft whose upper end is slidably and rotatably received in said bearing, a paddle pivoted to the lower end of said shaft to operate upon swinging of the arm and shaft in one direction and to idle upon swinging of said arm and shaft in the other direction, means for sliding said shaft a predetermined distance in said bearing, and means for turning said shaft a half revolution when so slid.

2. In a boat propelling means, an arm and means for mounting it on a boat for swinging longitudinally thereof, a bearing carried by the lower portion of said arm, a shaft whose upper end is slidably and rotatably received in said bearing, a paddle pivoted to the lower end of said shaft to operate upon swinging of the arm and shaft in one direction and to idle upon swinging of said arm and shaft in the other direction, means for sliding said shaft a predetermined distance in said bearing, and a cam and shoe on the bearing and shaft respectively, for turning said shaft a half revolution when slid a predetermined amount.

3. In a boat propelling means, an arm and means for mounting it on a boat for swinging longitudinally thereof, a bearing carried by the lower portion of said arm, a shaft whose upper end is slidably and rotatably received in said bearing, a paddle pivoted to the lower end of said shaft to operate upon swinging of the arm and shaft in one direction and to idle upon swinging of said arm and shaft in the other direction, an operating lever spaced from said arm, a rotatable rod having universal connections with said lever and arm for swinging the latter when the lever is oscillated, means for rotating said rod, connecting means between said rod and

said shaft for sliding the latter a predetermined distance in said bearing, and means for turning said shaft a half revolution when so slid.

4. In a boat propelling means, an arm and means for mounting it on a boat for swinging longitudinally thereof, a bearing carried by the lower portion of said arm, a shaft whose upper end is slidably and rotatably received in said bearing, a paddle pivoted to the lower end of said shaft to operate upon swinging of the arm and shaft in one direction and to idle upon swinging of said arm and shaft in the other direction, an operating lever spaced from said arm, a rotatable rod having universal connections with said lever and arm for swinging the latter when the lever is oscillated, means for rotating said rod, a crank arm on said rod, a link connecting said crank arm with the upper end of said shaft for sliding the latter a predetermined distance in said bearing, and means for turning said shaft a half revolution when so slid.

5. In a boat propelling means, an arm and means for mounting it on a boat for swinging longitudinally thereof, a bearing carried by the lower portion of said arm, a shaft whose upper end is slidably and rotatably received in said bearing, a paddle pivoted to the lower end of said shaft to operate upon swinging of the arm and shaft in one direction and to idle upon swinging of said arm and shaft in the other direction, a foot-actuated lever spaced from said arm, a rotatable rod having universal connections with said lever and said arm for swinging the latter when the lever is oscillated, a foot-operated crank on said rod for turning it, connecting means between said rod and said shaft for sliding the latter a predetermined distance in said bearing, and means for turning said shaft a half revolution when so slid.

6. In a boat propelling means, a bearing and means for mounting it on the side of a boat, a paddle-operating lever at one end of said bearing extended above the latter and having its upper end bent laterally over said bearing and then downwardly at the other end thereof, and a fulcrum pin passing through said bearing and the portions of the lever at opposite ends thereof.

In testimony whereof I have hereunto affixed my signature.

DAVID O. TAYLOR.