

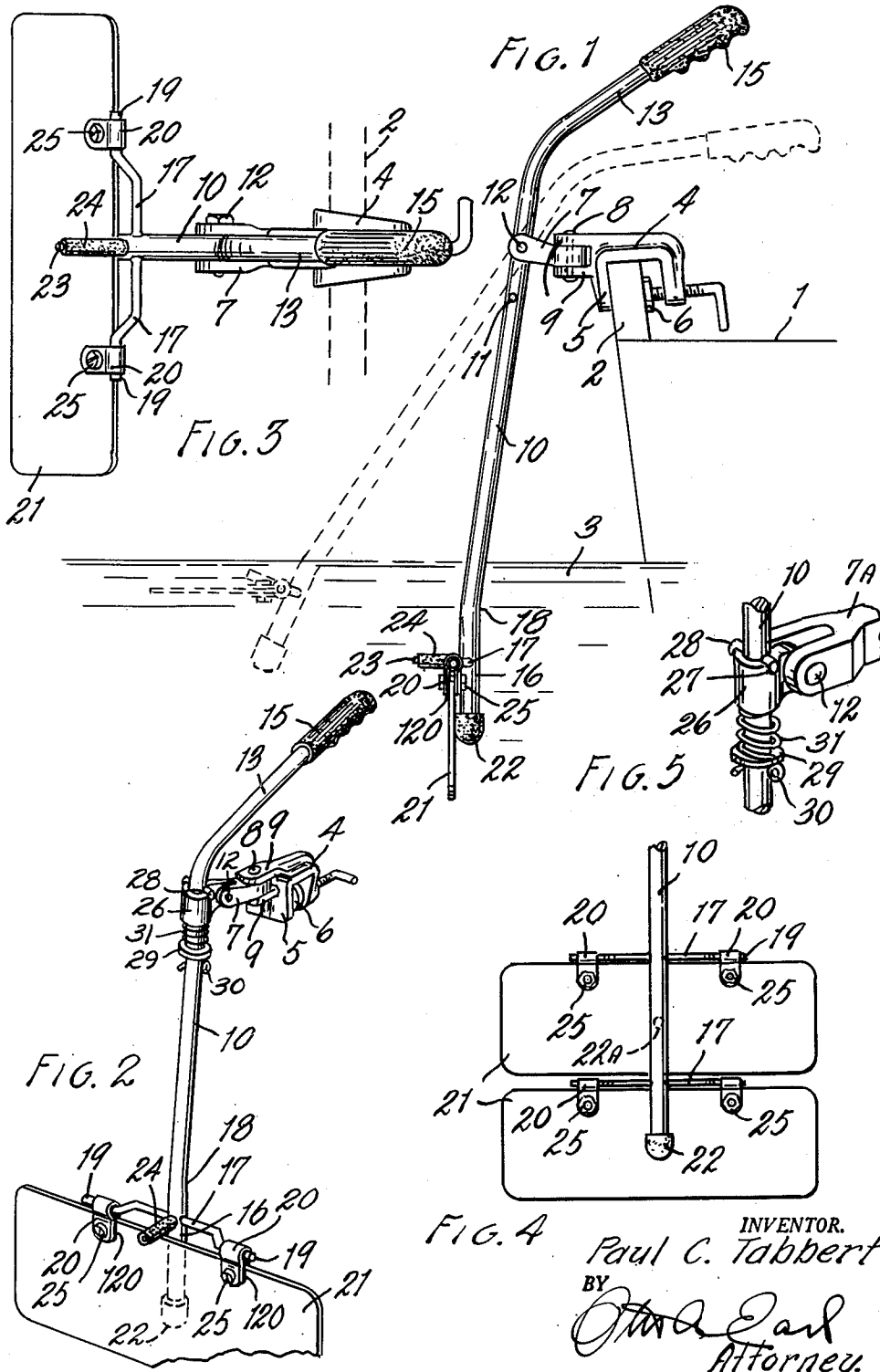
April 10, 1951

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2,548,407

ROWING AND STEERING DEVICE FOR BOATS

Filed Aug. 6, 1948



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UNITED STATES PATENT OFFICE

2,548,407

ROWING AND STEERING DEVICE FOR BOATS

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Application August 6, 1948, Serial No. 42,947

2 Claims. (Cl. 115—29)

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This invention relates to improvements in a rowing and steering device for boats.

The main objects of this invention are:

First, to provide a combined rowing and steering propeller which is adapted for mounting at the stern of a boat and being manipulated for steering and propelling the boat with one hand, thus well adapting the propeller for the use of fishermen and hunters.

Second, to provide a propeller having these advantages which may be very easily manipulated for both the propelling and steering of the boat, and one which is substantially noiseless in operation, unless carelessly manipulated.

Third, to provide a propeller assembly which may be detachably mounted on the stern board of boats largely used for fishing and hunting.

Fourth, to provide a propeller having these advantages which is simple and economical in structure, light in weight, and at the same time efficient.

Further objects relating to details and economies of the invention will appear from the description to follow. The invention is defined in the claims.

The drawings, of which there is one sheet, illustrate a preferred form of my embodiment, in which:

Fig. 1 is a side elevational view illustrating the propeller of my invention as applied to a boat, the boat being conventionally illustrated as in water, the operation of the propeller being indicated by dotted lines.

Fig. 2 is a rear perspective view of a modified form of my propeller removed from the boat, parts of the blade being broken away.

Fig. 3 is an enlarged plan view.

Fig. 4 is a fragmentary front elevational view of a modified form of the propeller.

Fig. 5 is a fragmentary perspective view of the modified form of mounting for the propeller shown in Fig. 2.

In the accompanying drawing, 1 represents a boat and 2 the stern board thereof, water being indicated at 3. The propeller assembly of my invention comprises the clamp 4 having a fixed jaw 5 and an adjustable clamping jaw 6 adapted to be detachably engaged with the boat as shown in Fig. 1.

The arm 7 is pivotally mounted on the clamp by means of the vertical pivot 8, the clamp being provided with a pair of ears 9 between which the arm is disposed to receive the pivot 8. The shaft 10 is preferably formed of tubing and is provided with spaced holes 11 which may be

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selectively engaged by the pivot pin 12. The inner end of the shaft has an angularly disposed portion 13 provided with a grip 15. The outer end of the shaft has an end portion 16 disposed at a slight angle to the main body of the shaft, this portion 16 having the pivot rod 17 secured thereto adjacent the angle 18.

The pivot rod has rearwardly offset pintles 19 which are engaged by the strap-like knuckles 20 secured on the upper edge of the flat blade 21, thus pivotally supporting the blade at its upper edge. The knuckles 20 are preferably provided with a rubber lining or bushing 20 which minimizes noise. The shaft projects below the pivot rod to supportingly engage the blade centrally thereof, and is preferably provided with a rubber resilient buffer 22.

The stop pin 23 projects rearwardly from the shaft adjacent the pivot rod and is provided with a buffer sleeve 24. This stop limits the up swing of the blade on its pivots. The cushioned stops minimize noise which might result from the flapping of the blade from one position to another as the propeller is manipulated. In manipulating the propeller for propelling the boat, the angularly disposed end 13 of the shaft is given a pumping movement or up and down movement, whereby on the down or work stroke of the propeller, the outer end of the shaft is swung rearwardly with the blade in propelling position supported by the lower end of the shaft as shown in Fig. 1.

The dotted lines in Fig. 1 show the propeller on the return stroke in which the blade swings upwardly as shown by dotted lines in Fig. 1 until the end of the propeller is engaged by the stop 23; however, as soon as the work stroke begins the blade would swing down to the position shown by full lines shown in Fig. 1 or would swing by gravity toward that position if the work stroke did not begin immediately at the conclusion of the return stroke.

To steer the boat, the propeller shaft is manipulated to swing the pivot support 7 in the desired direction which presents the blade so that on the work stroke the desired steering action results. The propeller may be manipulated to keep the blade entirely submerged throughout the stroke. Thus, with a little care the manipulation of the propeller is substantially noiseless.

The knuckles or pintle sockets 20 are preferably secured by means of screws 25 so that the blade can be assembled or removed by freeing one knuckle or socket. By providing the shaft

with vertically spaced holes 11 adapted to receive the pivot 12, the propeller may be adjusted for boats of different heights or drafts or for very shallow water, or to adjust the grip end of the propeller to the convenience of the operator.

The modified form of the propeller shown in Fig. 4 is identical to the propeller shown in Figs. 1 to 3 except that duplicate blades and blade mountings are provided. A second buffer 22A is also added for engagement with the upper blade. The effect of the double blade is to provide a working area that is twice the area of a single blade without losing the desirable features of a relatively long and narrow blade. A wide blade having a height or depth equal to the depth of two narrow blades would swing back to its working position much more slowly than the duplicate narrow blades because the returning action of the blades is similar to that of a pendulum and a short pendulum naturally has a shorter period than a longer one. The narrow blade also offers less resistance to motion through the water due to motion of the boat and while the propeller is held stationary.

Fig. 5 illustrates a modified form of mounting for the shaft 10. In this form of mounting the arm 7 and pin 12 carry a bushing 26 through which the shaft 10 extends. The upper end of the bushing is notched at diametrically opposed points as at 27 and the shaft 10 has a pin 28 extending therethrough to be received in the notches. The shaft also carries a washer 29 and cotter pin 30 below the bushing which form an abutment for the coil spring 31. The upper end of the spring 31 bears against the underside of the bushing 26 and serves to urge the shaft downwardly and retain the pin 28 in the notches 27 and by lifting up on the shaft 10 against the compression of the spring 31, the pin can be disengaged from the bushing and the shaft and propeller then reversed to back up the boat.

I have illustrated and described my invention in several highly practical commercial embodiments thereof. It will be appreciated that the several features of single or double blade and fixed or reversible shaft can be variously combined as desired. I have not attempted to illustrate or describe other embodiments or adaptations, as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a propelling device for boats, the combination of a support adapted to be secured to

a boat at the stern thereof, a supporting arm mounted on said support for horizontal swinging movement, a generally vertical bushing pivotally mounted on said arm for vertical swinging movement and having upwardly opening notches in the upper end thereof, a lever shaft slidably mounted in said bushing and having an inwardly extending angularly disposed upper portion provided with a grip, a pin projecting from said shaft and engageable in said notches, a spring compressed between the bottom of said bushing and a portion of said shaft to urge said pin into said notches, a pivot rod disposed transversely of said shaft in spaced relation to its outer end and having rearwardly offset pintles, a blade having pivot engaging knuckles on its upper edge coacting with said pintles to swingably support the blade at the rear of the shaft, a bumper mounted on the outer end of said shaft acting to limit the forward swing of said blade and engaging the blade centrally thereof on the work stroke of the oar, and a rearwardly projecting stop mounted on said shaft adjacent said pivot rod to limit the up swing of the blade.

2. In a propelling device for boats, the combination of a support adapted to be secured to a boat at the stern thereof, a supporting arm mounted on said support for horizontal swinging movement, a generally vertical bushing pivotally mounted on said arm for vertical swinging movement and having an upwardly opening notch in the top thereof, a lever shaft slidably received in said bushing and having a projecting pin engageable in said notch, a spring compressed between the bottom of said bushing and a portion of said shaft to urge said pin into said notch, and a blade having a horizontal pivotal connection on its upper edge to said shaft above the bottom thereof to swingably support the blade at the rear of the shaft, the outer end of said shaft acting to limit the forward swing of said blade.

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