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PROPELLING AND STEERING MEANS FOR BOATS

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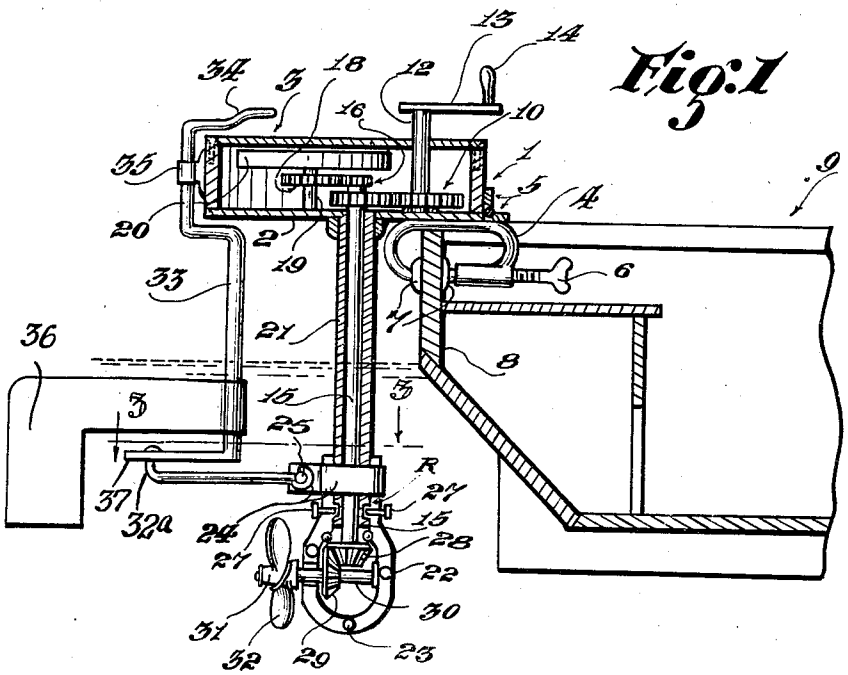


Fig: 1

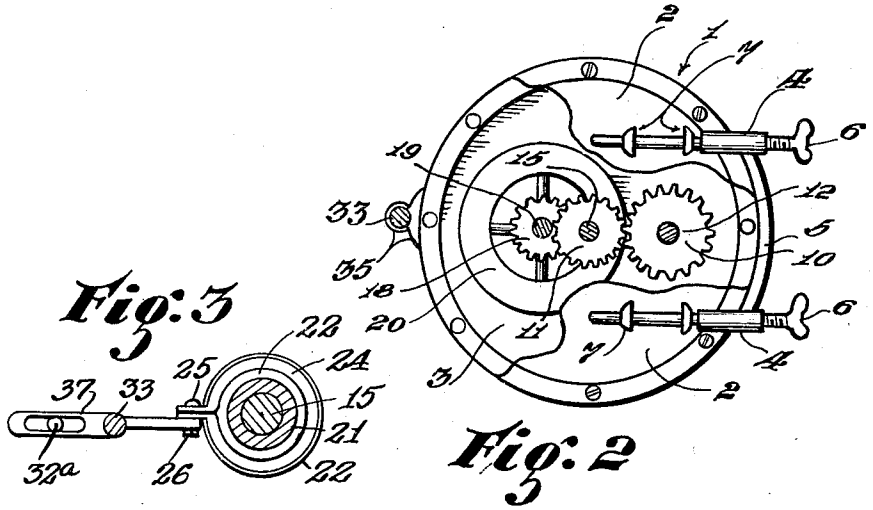


Fig: 2

Fig: 3

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PROPELLING AND STEERING MEANS FOR BOATS

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2 Claims. (Cl. 115—18)

This invention relates to hand-operated means for propelling and steering small boats.

An object is the provision of means for this purpose which may be readily attached to the stern of a row boat or similar small water craft and which carries a propeller that is revolved by a handle associated with a flywheel, means within easy reach of the propeller handle for operating a rudder, whereby the rudder and the propeller may both be shifted to positions for directing the movements of the boat.

A further object of the invention is the novel means for elevating the propeller in shallow water to facilitate the approach of the boat to land.

With the above and other objects in view the invention will be clearly understood from a perusal of the following detailed description, taken in connection with the accompanying drawing, and in the drawing:

Figure 1 is a vertical sectional view through a hand-operated boat propelling means embodying the invention, showing the same attached to the stern of a boat;

Figure 2 is a bottom view of the boat propelling means removed from the boat, partly in section and partly broken away; and

Figure 3 is a cross-sectional view of Figure 1, the view being had along the line 3—3 thereof.

In carrying out the invention there is provided a housing, preferably circular in shape and indicated at 1, with a removable bottom plate 2 and a similarly arranged top or cover plate 3. Hingedly secured to the side wall of the housing are a pair of clamp elements 4, these clamp elements being spaced apart as indicated in Figure 2 and having one leaf or member of the hinge as at 5 welded or otherwise connected to the clamp members, the other leaf or member of this hinge being similarly fastened to the wall 1 of the housing. The clamp member is provided with screws 6 of a well known construction, the clamp member including the gripping elements 7 for fastening the device to the stern end 8 of a boat indicated generally at 9.

Inside the housing are arranged a gear 10 and a gear 11, the gear 10 being mounted on a hand operated shaft 12 having a crank handle 13 and hand piece 14, and the gear 11, which is in mesh with the gear 10, being mounted on the end of a drive shaft 15. The gear 10 is larger in diameter than the gear 11 to provide for speed increasing purposes. On the extreme end of the shaft 15 inside the housing is also mounted a small gear 16 which is in mesh with a gear 18, the gear 18 being mounted on a shaft 19. The purpose of the shaft 19 with its gear 18 is to provide a means for spinning a fly wheel 20, also mounted on the shaft 19 to augment the power generated by the rotation of the shaft 12.

The drive shaft 15 is mounted in a tube 21 the tube being threadedly engaged and connected to the bottom plate 2 of the housing and is held rigid and stationary. The lower end of this tube has an annular recess R, and arranged loosely around and embracing the lower portion of the tube 21 is a housing in two parts or halves 22, only one being shown. Holes or apertures 23 in connection with bolts, not shown, serve to hold the parts of the housing together. When the two parts of the housing 22 are in assembled position a collar 24 is placed around the upper end of the housing and held in rigid relation on the same by a bolt 25 and nut 26. Set screws 27 are threaded into the wall of the housing parts 22 and have their inner ends projecting into the annular recess R, previously referred to.

Inside the housing parts 22 are bevel gears 28 and 29, the gear 28 being mounted on the lower end of the drive shaft 15 and in mesh with the gear 29, mounted on a shaft 30. One end of the shaft 30 projects beyond the wall of the housing through an opening provided therefor and has mounted thereon a propeller 31 with two or more blades 32.

Fastened to the collar 24 by the bolt 25 is a pivot pin 32, this pin being for the purpose of shifting the collar 24 together with the housing carrying the propeller 31 to various positions to direct the boat. This pin is moved to the right or to the left by means of a rudder rod 33, having a handle 34 within easy reach of the operating handle 13, the shaft being loosely mounted to turn freely in a bracket 35 mounted on the wall of the housing 1. On the shaft 33 is also mounted a rudder blade 36. The lower end of the rudder shaft at 37 is flattened and provided with an aperture as shown for receiving the pivot pin 32.

Obviously, the turning of the handle 13 will rotate the drive shaft 15 and through the gears 28 and 29 will turn the propeller 31, the fly-wheel 20 serving to maintain momentum set up and provide for more easy rotation of the parts. In shallow water the housing, being hingedly connected to the clamp members 4, may be lifted and swung upwardly to clear the propeller in landing the craft. In steering the boat, the operation of the handle 34 of the rudder shaft 33 will kick or swing the collar 24 to the right or left, and the collar, being rigidly fastened to the upper end of the housing 22, will also move the housing

and hence the propeller to a position to direct the boat in the desired direction—aided by the simultaneous movement of the rudder blade **36**. The housing indicated by the parts **22** thus moves around on the set screws **27**.

While the disclosure reveals a practical working embodiment of the invention, it is to be understood that modifications and alterations are possible in the construction shown and in keeping with the intent thereof and such as would be within the scope and meaning of the appended claims.

What is claimed as new is:

1. A manually operated propelling and steering device for boats comprising in combination a housing having removable top and bottom plates, clamp members hingedly connected to the housing, said members adapted to secure the housing in position on a boat; a tubing connected to the bottom plate, a driven shaft in the tubing and projecting inside the housing; a hand rotated shaft inside the housing and projecting through the top plate thereof and having a crank arm thereon; a fly wheel and a plurality of gears in meshed relation inside the housing whereby the driven shaft is rotated by the hand shaft; said device including a propeller, a rudder, and means for simultaneously operating the rudder and shifting the position of the propeller.

2. A manually operated propelling and steering device for boats comprising in combination a housing, spaced clamp members hingedly connected to the housing for securing the housing in position on a boat and for permitting the housing to be swung from a horizontal position; a tubing connected to the bottom of the housing, a driven shaft in the tubing and projecting inside the housing; a hand shaft inside the housing and projecting outside thereof and carrying a crank arm; a fly wheel and a plurality of gears in meshed relation inside the housing whereby the driven shaft is rotated by the hand shaft; a propeller, a propeller shaft in geared relation with the driven shaft, a housing for the propeller shaft, means for mounting said propeller housing on said tubing to permit rotation of the propeller housing and a shifting of the propeller and its shaft; a rudder, a rudder shaft, and means for pivotally connecting the rudder shaft to the propeller housing in effecting said rotation and shifting of the propeller housing and said propeller.

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