May 25, 1948. D. E. RICE 2,442,211

ANCHOR CONTROL WINCH

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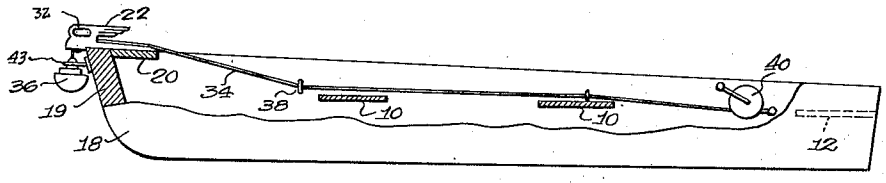


Fig. 1.

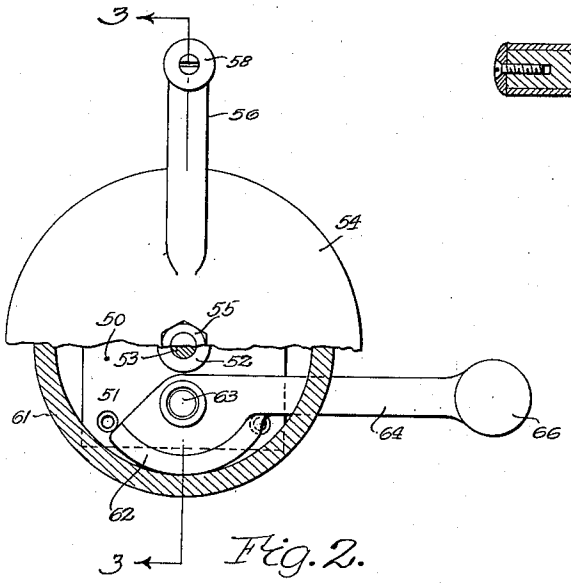


Fig. 2.

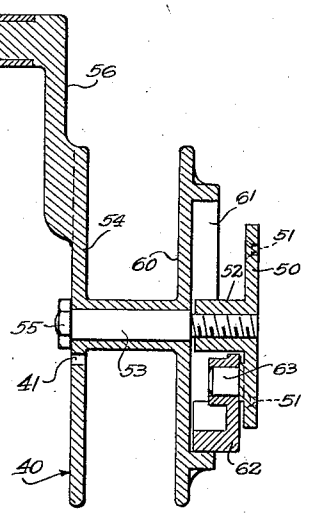


Fig. 3.

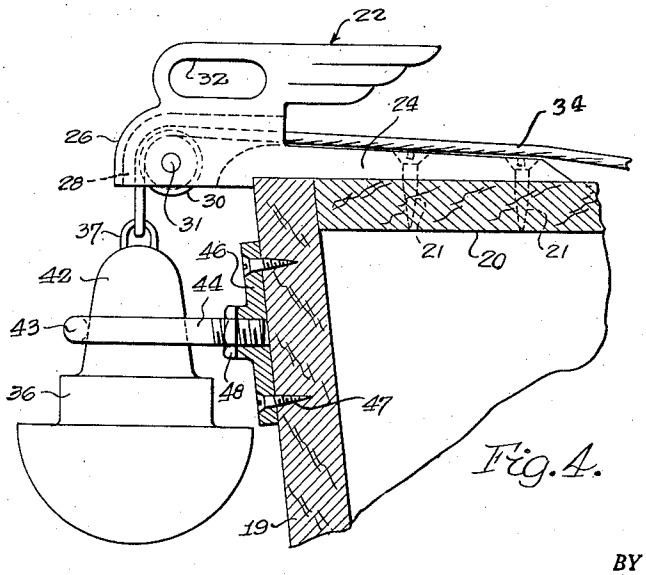


Fig. 4.

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ANCHOR CONTROL WINCH

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4 Claims. (Cl. 254—186)

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This invention relates to a mechanism for remote control of a boat anchor.

In boats commonly used for fishing and cruising, the anchor is attached to the bow by means of a rope or cable, and when not in use is stowed along with the rope or cable piled in disorderly coils or loops inside the boat near the bow.

To drop or weigh anchor requires that the operator be at the bow, which is particularly inconvenient when the boat has but one occupant, who will normally be seated near the stern if the boat is propelled by motor, and in the case of a row boat will be seated amidships operating the oars.

For convenience and in the interest of safety, it is desirable that fore and aft movement of the occupants in the boat be kept at a minimum; and that the rope or cable means of attaching the anchor to the boat be arranged in an orderly manner within the boat to prevent accidents that occur when dropping anchor through the entanglement of hands, feet or legs in loose coils or loops being pulled rapidly overside by the weight of the falling anchor.

In a boat used for fishing, it is particularly desirable that the boat be provided with means for dropping the anchor slowly, and therefore quietly. To avoid damage which frequently occurs when the anchor strikes the side or gunwale of a boat in dropping and weighing anchor in the usual manner, a device which retains the anchor in weighed position outside the boat is very desirable.

An object of the invention is to provide improved means for accomplishing the purposes above indicated.

A further object of this invention is to make possible the dropping and weighing of an anchor quietly, using only one hand and minimum effort, along with the further advantages obtained through the elimination of the hazards and undesirable inconveniences above indicated.

A further object of this invention is to accomplish the objects outlined above, with mechanisms so designed that they will improve rather than detract from the appearance of the boat.

Further objects and advantages of this invention will be apparent from the following description taken in connection with the appended drawings, in which:

Fig. 1 is a view in elevation, with parts broken away, of a boat equipped with devices embodying the invention;

Fig. 2 is a view in elevation, with parts broken away, of the winch which forms part of the invention;

Fig. 3 is a sectional view of the winch, taken on the line 3—3 of Fig. 2; and

Fig. 4 is an enlarged view of the bowplate and associated mechanism, showing the anchor in shipped position.

The boat shown in Fig. 1 may be of any type propelled by oars, or by outboard or inboard motor. As shown, it is provided with one or more seats 10 amidships; if propelled by an outboard motor the same will be operated by an operator seated on the after seat 12. The bow 18 of the boat is provided with the usual stem 19 and with a cross-piece 20 upon which is mounted, as by screws 21, a bowplate 22, which includes a supporting plate 24, resting upon the piece 20, and a forwardly extending portion 26 provided with a channel 28 within which is mounted a pulley 30 on a transverse spindle 31. The upper portion of member 22 may be ornamented, as shown, and is preferably provided with a handhold aperture 32, which may also serve as a securing means for a painter or towline.

The channel 28 is designed to receive a cable 34 to which is secured the anchor 36 by means of a loop 37. The cable 34 may be a rope or other type of flexible cable. From the anchor, it extends over the pulley 30 and thence aft through slip-eyes or pulleys 38 to a reel 40 to which it is secured by means of an aperture 41, shown in Fig. 3. The anchor may be of the mushroom type shown, and comprises a tapered shank 42 which when the anchor is in the weighed position shown in the drawing enters into and is held stationary by a keeper ring 43 directly under the pulley 30. Ring 43 is provided with a shank 44 which is threaded into a threaded aperture in a stem-plate 46, secured to the stem 19 by means of screws 47 and secured against rotation by means of a lock nut 48.

The reel assembly 40 comprises a mounting plate 50 which, in the illustrated embodiment, is mounted on the inner surface of the side of the boat in such position as to be readily accessible from the after seat 12, or from whatever location in the boat is chosen in making the installation. Screw or bolt holes 51 are provided for securing the plate 50 to the side, and the plate is provided with a central boss 52 which is internally threaded to receive the threaded end of a spindle 53. The spindle 53 has rotatably mounted thereon the rotary reel member 54 which is held in place by a head 55.

A crank 56 is formed integral with the outer flange of member 54, and is provided with a handle 58 of any suitable type.

The inner flange 60 of member 54 is provided with a brake drum 61, which may be formed integral therewith, as shown, and which is designed to cooperate with a brake shoe 62 to form a brake for restraining or preventing rotation of the reel. Shoe 62 is rotatably mounted on a stud 63 on plate 50, and the curvature of the shoe is eccentric relative to the stud, so that rotation of the shoe in the clockwise direction as viewed in Figs. 1 and 2 moves the shoe into contact with drum 61. For actuating the shoe, a control lever 64 is provided which extends rearwardly from stud 63, then inclines inwardly, and terminates in a knob 66, the lever and knob being sufficiently heavy to retain the shoe and drum in contact with each other and prevent rotation of the reel by the weight of the anchor.

In the operation of the device, the operator, when he wishes to drop anchor, raises lever 64, whereupon the anchor falls by gravity, drawing cable from reel 40, the speed of the operation being controlled by the amount by which the control lever is raised. When sufficient length of cable has been payed out, the operator releases lever 64, which by its own weight sets the brake and locks the reel against further rotation. To weigh anchor, the operator turns crank 56 in the counterclockwise direction as viewed in Fig. 1, reeling the cable in until anchor shank 42 seats snugly within the keeper 43, which prevents it from swinging and damaging the boat.

It is not necessary to raise lever 64 while reeling in the cable, since the friction between drum 61 and shoe 62 moves the shoe toward the released position, so that the friction is slight. On the other hand, when cable is being payed out, the friction between the drum and shoe moves the shoe toward brake engaging position, thus constituting a servo brake which will hold the reel firmly against movement when the lever 64 is allowed to bear downwardly under its own weight. As wear occurs on the friction surfaces of the drum and shoe, a portion of the shoe to the right of the point of contact shown in Fig. 2 will engage the drum.

The operation of dropping and weighing anchor, as above described, never requires the operator to leave the seat 12, and never requires the use of more than one hand.

The parts constituting the device may be made of cast metal, as shown, but various plastic substances may be used in forming the winch, bowplate, stem-plate and keeper ring, and will have material advantage in decreased weight and freedom from rust or corrosion.

Although the invention has been described with reference to a particular embodiment thereof, it is not limited to such embodiment, but may be varied within the skill of artisans. The scope of the invention is therefore limited only by the terms of the following claims.

I claim:

1. In anchor manipulating apparatus, a support adapted to be secured to a rowboat, a reel rotatably mounted on said support to receive an anchor-supporting cable, manual means for rotating the reel to wind the cable thereon, and servo-brake means pivotally mounted on said support and rendered operative by gravity to prevent rotation of the reel by the weight of the anchor but offering little resistance to rotation of the reel in a direction to weigh the anchor, said servo-brake means comprising a circular brake drum formed integral with the reel, and a brake shoe having a friction surface in the form of an arc of smaller radius than the drum pivotally mounted eccentrically with respect to the brake drum and to said arc.

2. In anchor manipulating apparatus, a support designed to be secured to a boat, a reel rotatably mounted on said support to receive a cable, manual means for rotating the reel to wind the cable thereon, and servo-brake mechanism for said reel comprising a circular brake drum secured to the reel, a brake shoe having an arcuate friction surface of greater curvature than the drum pivotally mounted eccentrically with respect to the brake drum, and a substantially horizontal arm fixed to the shoe and operative by its weight to move the shoe into locking engagement with the drum.

3. In anchor manipulating apparatus, a support adapted to be secured to a boat, a reel rotatably mounted on said support to receive an anchor-supporting cable, means for rotating the reel to wind the cable thereon, and servo-brake mechanism for said reel comprising a circular brake drum secured to the reel, a brake shoe having an arcuate surface of greater curvature than the drum pivotally mounted on the support eccentrically with respect to the drum, and an arm secured to the shoe and operative by its weight to urge the brake shoe into frictional contact with the drum to prevent rotation of the reel by the weight of the anchor.

4. Anchor manipulating apparatus comprising a support adapted to be secured to a boat, a reel rotatively mounted on said support to receive an anchor supporting cable, means for rotating the reel to wind the cable thereon, and servo-brake means for said reel comprising a circular brake drum fixed to the reel, a brake shoe having a curved surface of greater curvature than the drum pivotally mounted on the support within the drum and eccentrically with respect thereto, and a substantially horizontal arm secured to the shoe and operative by its weight to urge the brake shoe into frictional contact with the drum to prevent rotation of the reel by the weight of the anchor, said brake shoe being movable by said arm to a position wherein it is wholly released, and to another position where it retards but does not prevent rotation of the reel by the cable.

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