April 2, 1963 D. E. RICE 3,083,675

ANCHOR MANIPULATING DEVICE

Filed Jan. 30, 1959 3 Sheets-Sheet 1

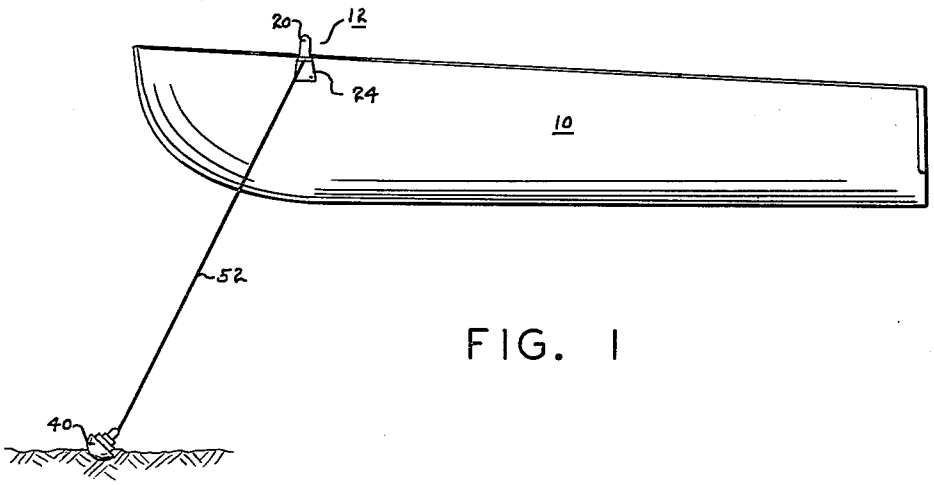

FIG. 1

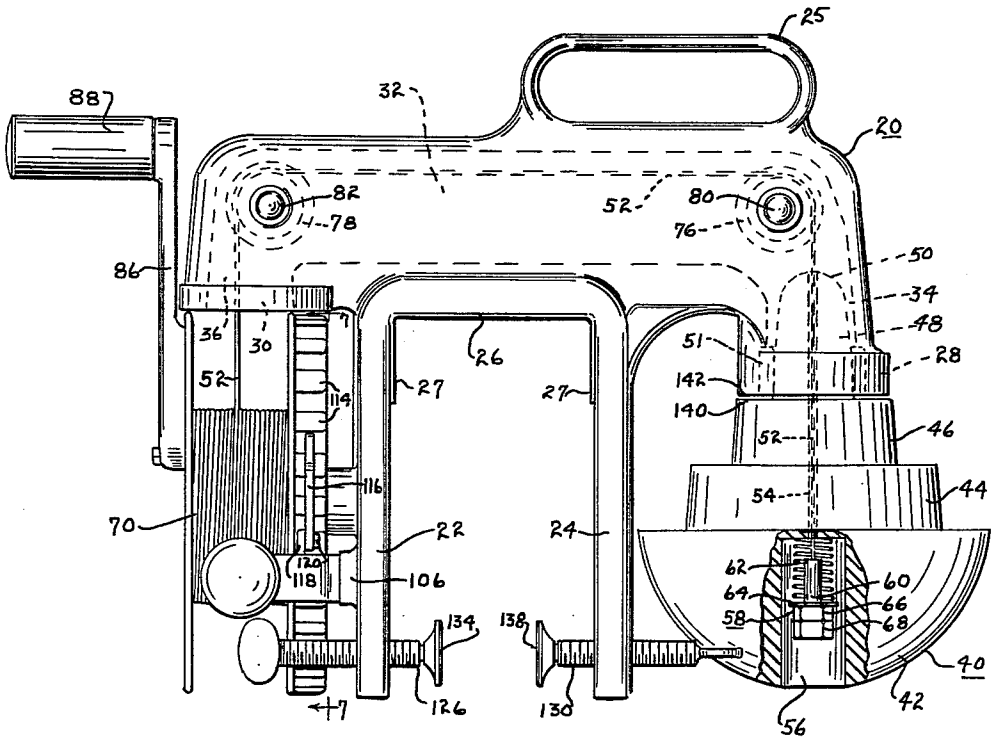

FIG. 2

INVENTOR.

DELL E. RICE

BY m a. Hobbs

ATTORNEY

April 2, 1963 D. E. RICE 3,083,675

ANCHOR MANIPULATING DEVICE

Filed Jan. 30, 1959 3 Sheets-Sheet 2

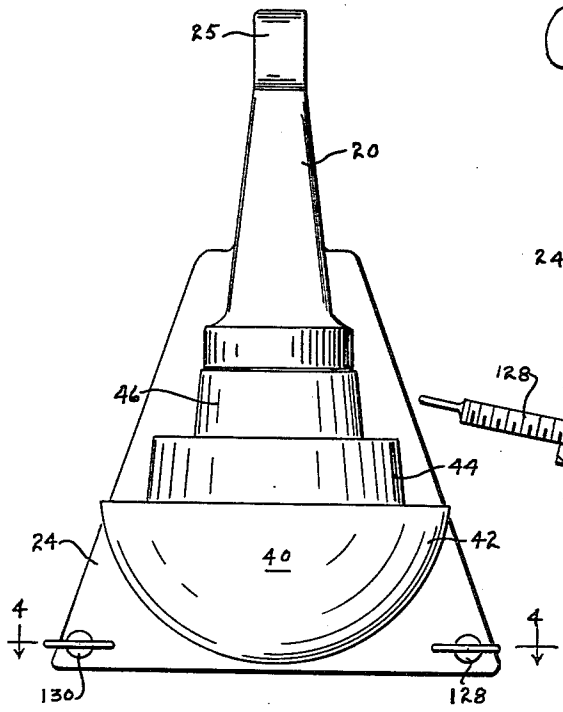

FIG. 3

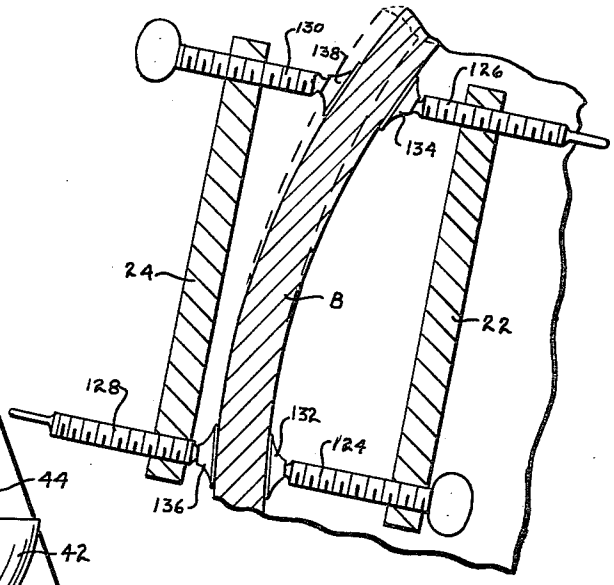

FIG. 4

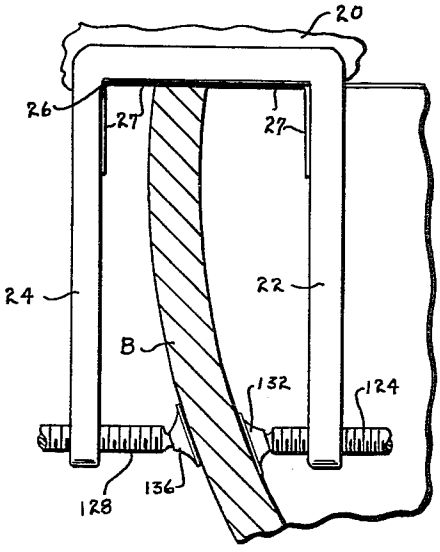

FIG. 5

INVENTOR.
DELL E. RICE
BY M. A. Hobbs
ATTORNEY

April 2, 1963 D. E. RICE 3,083,675

ANCHOR MANIPULATING DEVICE

Filed Jan. 30, 1959 3 Sheets-Sheet 3

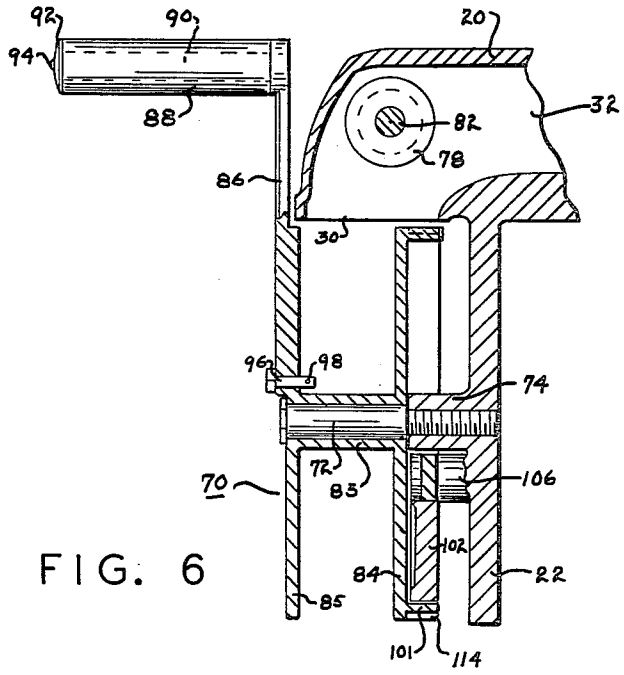

FIG. 6

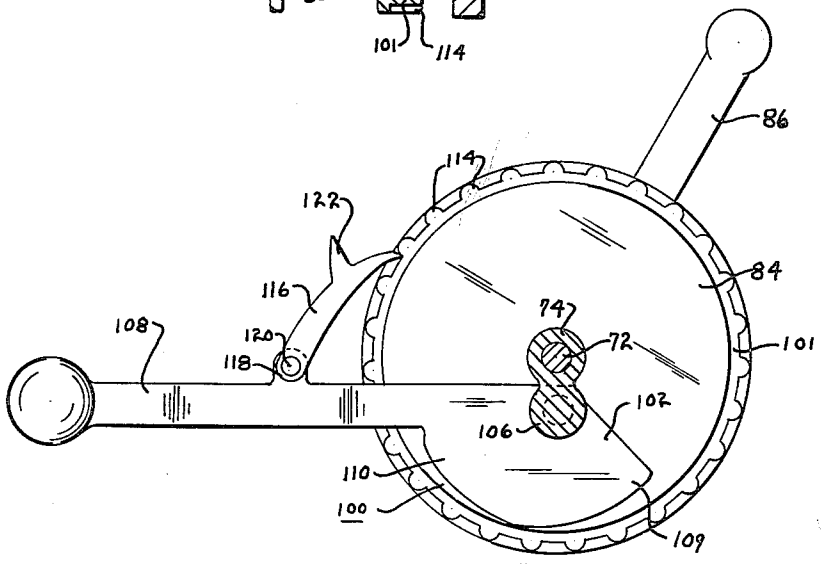

FIG. 7

INVENTOR.

DELL E. RICE

BY M. A. Hobbs

ATTORNEY

United States Patent Office 3,083,675 Patented Apr. 2, 1963

3,083,675

ANCHOR MANIPULATING DEVICE

Dell E. Rice, South Bend, Ind.

Filed Jan. 30, 1959, Ser. No. 790,212
8 Claims. (Cl. 114—210)

The present invention is a portable anchor manipulating device that is easily carried and stowed in a small space and that can be mounted and removed from the gunwale of a boat by turning four thumb screws. When mounted on the boat it provides the operator with means for lowering, raising and shipping the anchor with one hand.

In recent years owning an outboard motor and renting a boat on which the motor is used have become a rather extensive practice, the motor being removed often from day to day or from week to week and stored in the owner's garage or home. The boats rented from time to time often vary in size and construction, and in most instances these boats are poorly equipped for anchoring. In many cases a weight is attached to a length of rope which is allowed to lie in tangled coils or loops on the bottom of the boat, forming a real hazard to the occupant, who throws the weight overboard. It is not unusual to read of drownings caused by the entanglement of legs or arms in anchor ropes. It is therefore one of the principal objects of the present invention to provide an anchor manipulating device which can be easily carried to and from the boat and readily mounted on boats of various sizes and constructions and which can be easily operated to raise and lower the anchor.

Another object of the invention is to provide a winch and anchor combination which can be lifted and carried as a unit and in which the winch and anchor are locked or held securely in place while being moved and stored.

Still another object of the invention is to provide an anchor manipulating device which can be easily adjusted to fit most boats and adjusted accurately to proper operating position without any special tools or skill on the part of the operator.

A further object is to provide a compact balanced winch and anchor control mechanism which can be carried with one hand and mounted on and removed from the boat by simply turning four thumb screws.

Another object of the invention is to provide an anchor manipulating device of the aforesaid type which is effectively and safely retained in position while it is on a boat and which will remain firmly in place on the boat once it has been attached thereto without damaging, scratching or marring the parts of the boat with which it comes in contact.

Additional objects and advantages will become apparent from the following description and accompanying drawings, wherein:

FIGURE 1 is a side elevational view of a boat showing my anchor manipulating device mounted in operating position along one side thereof;

FIGURE 2 is a side elevational and partial cross sectional view of my anchor device, showing it removed from the boat;

FIGURE 3 is an end elevational view of the device shown in the preceding figures;

FIGURE 4 is a cross sectional view of a part of my anchor device, taken on line 4—4 of FIGURE 3, showing the manner in which the device is mounted on a boat;

FIGURE 5 is a fragmentary side view of the device, showing further the manner in which the device is mounted on a boat;

FIGURE 6 is a vertical cross sectional view of the winch and braking mechanism therefor; and

FIGURE 7 is a vertical cross sectional view of the device taken on line 7—7 of FIGURE 2.

Referring more specifically to the drawings, numeral 10 designates a conventional boat which, in the one shown, is substantially fully open at the top and the top of the sides form the upper edge of the boat. My anchor manipulating device 12 is shown mounted on one of the sides in the forward part of the boat, the anchor being shown in its lowered position resting on and partially embedded in the bottom of a lake or river.

The present anchor manipulating device as shown in detail in the drawings consists of a body 20 supported by two leg members 22 and 24 joined rigidly to the under side of the body and being spaced from one another to slip over and embrace the upper edge of the boat side B. A handle 25 located in position to evenly balance the device is integrally joined to the upper side of the device. The under side of the body between the two legs is flat and relatively smooth to provide a firm and substantial surface 26 for engaging the upper edge of the boat side when the device is mounted in operative position on the boat. In order to protect the part of the boat with which the device comes in contact, a pad 27 is secured to surface 26 and extends downwardly along the upper portion of legs 22 and 24 as shown in FIGURE 2. The body is hollow and is completely enclosed except for downwardly facing openings 28 and 30 at each end of the body, the hollow interior of the body forming a passage 32 with extensions 34 and 36 connecting opening 28 with opening 30.

An anchor 40 consists of a relatively large and heavy hemispherical portion 42, disc shaped terraced portions 44 and 46 and an extension 48, said hemispherical and disc shaped portions being in axial alignment with each other and with extension 48. Extension 48 is provided with a rounded or inwardly tapering upper end 50 which serves as a guide to facilitate alignment of extension 48 with opening 28 when the anchor is lifted to its fully raised position shown in FIGURES 2 and 3. A sleeve 51, for example of nylon, is secured in the body at opening 28. When the anchor has been fully raised, it is retained in a fixed position by extension 48 entering opening 28 and engaging sleeve 51. The anchor may be constructed of aluminum, cast iron or steel and may be of shapes other than the one illustrated in the drawings.

A cable 52 for raising and lowering anchor 40 extends downwardly through an axial hole 54 in the anchor into an enlarged cylindrical recess 56 in the bottom of the anchor and is secured to a terminal fitting 58 in which the lower end of the cable is firmly swaged or otherwise connected. A coil spring 62 is mounted around the terminal fitting and lower end of the cable and is held thereon by a washer 64 and a pair of nuts 66 and 68 threaded onto the lower end of fitting 60. The spring which fits loosely on fitting 60 and in recess 56 abuts against the washer and nuts and against the upper end of the recess to form a resilient connection between the cable and the anchor to facilitate firm seating of the anchor in opening 28, as will be more fully explained hereinafter. The cable passes from the anchor through passages 34, 32 and 36 to a reel 70 mounted on a shaft 72, one end of which is threaded into a boss 74 on leg 22. The cable is supported on and guided through the passages by a pair of pulleys 76 and 78 journaled on pins 80 and 82 supported by the sides of body 20. Pulley 76 is positioned above opening 28 with the bottom of the groove therein, on the right side as viewed in FIGURE 2, in substantial alignment with the center of said opening, and pulley 78 is positioned above opening 30 with the bottom of the groove therein on the left side in substantial alignment with the center of said opening 30 or directly above the center of the reel.

Reel 70 consists of a hub 83 rotatably mounted on shaft 72, flanges 84 and 85 joined to the ends of the hub,

and a handle 86 formed integrally with or otherwise secured to the outside surface of flange 85. The handle is provided with a rotatable grip 88 mounted on a laterally extending shaft 90 and secured thereon by a washer-like member 92 and screw 94 threaded into the end of shaft 90. A pin 96 extends through flange 85 near the hub and contains a hole 98 for receiving the end of the cable and securing said end to the reel.

The lowering of the anchor is controlled by a braking and overrunning clutch mechanism 100 consisting of a horizontally extending flange on the outside edge of flange 84 forming a brake drum 101 and an eccentric brake shoe and clutch 102, hereinafter referred to as a shoe, carried on a boss 106 on the side of leg 22 below boss 74. The position of the shoe is controlled by a lever 108 extending outwardly from the device to a point where it can be easily handled by the operator. The shoe is provided with a relatively long radius at its toe 109 and a relatively short radius at its heel 110, the radius of the shoe between the toe and heel being such that the shoe will not contact the drum at intermediate points. With this curvature on the periphery of the shoe, the toe is used by the operator to control the lowering speed of the anchor by lifting lever 108 until toe 109 engages the drum, and then controlling the pressure applied by the toe to the drum to govern the speed of the falling anchor. When the anchor has been lowered, the shoe will automatically lock the reel against further unwinding of the cable by the overrunning effect of the shorter diameter of the heel portion 110 wedging itself against the drum. The overrunning clutch effect of the heel also locks the reel when the anchor has been weighed to its fully raised position shown in FIGURES 2 and 3.

In order to positively lock the reel either with the anchor raised or lowered, a latching means is provided consisting of a series of notches 114 completely around the external periphery of brake drum 101 and a pawl 116 pivotally attached to lever 108 by a lug 118 and screw 120. A trigger 122 is provided to assist locking and unlocking the reel. It is seen from FIGURE 7 that the reel can be turned in the direction to wind the cable, i.e. in the clockwise direction as viewed in FIGURE 7, without interference from the latching means, but it will not turn in the direction to unwind the reel unless the pawl 116 has been intentionally lifted from notches 114.

One of the important features of the present anchor manipulating device is the means employed in securing and adjusting the device to a boat. Leg 22 is provided with spaced thumb screws 124 and 126 and leg 24 is provided with thumb screws 128 and 130, the thumb screws extending through and threadedly received in the respective legs. Screws 124, 126, 128 and 130 are provided with swivel mounted pressure buttons 132, 134, 136 and 138, respectively, for contacting and seating firmly on the side of the boat, each button adjusting its angular position to the particular surface engaged by it. Screws 124 and 128 and screws 126 and 130 are positioned directly opposite each other, and as pairs form effective clamps for securing the device to boat sides having a substantial variation in and between the internal and external surfaces. The ease with which the device can be adapated and secured to sides having marked curvature at the place where the device is mounted is illustrated in FIGURES 4 and 5. The type of adjustment permits the present device to be leveled after the legs are placed downwardly over the boat side, and simultaneously align the center of opening 28 with the cable hanging vertically down from roller 76 so that extension 48 will readily enter said opening when the anchor is weighed to its fully raised position. The pressure buttons are provided with pads of suitable material on the face coming in contact with the boat so that the boat surface will not be marred by the button while the device is being used or mounted on the boat.

After the present anchor manipulating device has been mounted on the side of a boat and adjusted by screws 124, 126, 128 and 130 to its level position and secured in place in the adjusted position, the anchor is lowered by first releasing pawl 116 from notches 114 on the periphery of the brake drum and then lifting lever 108 sufficiently to release the heel and quickly apply pressure on the drum with toe 109. The rate at which the anchor is lowered is governed by the pressure applied to the drum by the toe when lever 108 is being held in its lifted position. When the anchor reaches the bottom, the operator releases lever 108 and it drops downwardly under its own weight to the position where heel 110 acts as an overruning clutch and locks the reel against any further unwinding.

When the anchor is to be weighed, the operator winds the reel and raises the anchor using handle 86, without interference from either the pawl or overrunning clutch. As the anchor reaches body 20, extension 48 enters opening 28 and land 140 seats on the lower end 142 of the body around hole 28. Pawl 116 is again placed in one of notches 114 to lock the reel in its fully wound position. The thumb screws can now be released and the anchor easily lifted from the boat and carried, using handle 25.

While only one embodiment of the present invention has been described in detail herein, various changes and modifications may be made without departing from the scope of the invention.

I claim:

1. An anchor manipulating device adapted to be mounted over the side of a boat, comprising two substantially vertical legs for extending downwardly from the upper edge of a boat side on opposite sides thereof, an elongated body portion secured to the upper ends of said legs and extending beyond said legs on the boat and water side thereof, said body having a longitudinal passage therethrough terminating at each end in downwardly extending portions having downwardly facing openings, pulleys mounted in said passage above said openings, a reel below the hole on the boat side of said body, a shaft mounting said reel on the adjacent leg, a handle for rotating said reel, an anchor on the water side of said body and having an extension for extending into the opening on the water side of said body, a hole extending vertically through said anchor and extension and having an enlarged lower end, a cable having one end attached to said reel and extending over said pulleys and downwardly through the opening on the water side of said body and through the hole in said anchor, a terminal fitting in said enlarged end of said hole secured to the other end of said cable, a spring around said cable and abutting against said fitting and anchor forming a spring loaded connection therebetween, a brake and overrunning clutch mechanism for controlling said reel, a means for locking said clutch mechanism in engaged position, two spaced sets of opposed thumb screws threadedly received in said legs, and pressure buttons adapted for swivel movement mounted on the ends of said screws for contacting the side of the boat.

2. An anchor manipulating device adapted to be mounted over the side of a boat, comprising two substantially vertical legs for extending downwardly from the upper edge of a boat side on opposite sides thereof, an elongated body portion secured to the upper ends of said legs and extending beyond said legs on the boat and water side thereof, said body having a longitudinal passage therethrough terminating at each end in downwardly extending portions having downwardly facing openings, pulleys mounted in said passage above said openings, a reel below the hole on the boat side of said body, a shaft mounting said reel on the adjacent leg, a handle for rotating said reel, an anchor on the water side of said body and having an extension for extending into the opening on the water side of said body, a cable having one end attached to said reel and extending over said pulleys and

downwardly through the opening on the water side of said body and connected to said anchor, a brake and overrunning clutch mechanism for controlling said reel, two spaced sets of opposed screws threadedly received in said legs, and pressure buttons adapted for swivel movement mounted on the ends of said screws for contacting the side of the boat.

3. An anchor manipulating device adapted to be mounted over the side of a boat, comprising two legs for extending downwardly from the upper edge of a boat side on opposite sides thereof, an elongated body portion secured to the upper ends of said legs and extending beyond said legs on the boat and water side thereof, said body having a longitudinal passage therethrough terminating at each end in downwardly extending portions having downwardly facing openings, pulleys mounted in said passage above said openings, a reel below the hole on the boat side of said body, a shaft mounting said reel on the adjacent leg, a handle for rotating said reel, an anchor on the water side of said body and having an extension for extending into the opening on the water side of said body, a cable having one end attached to said reel and extendng over said pulleys and downwardly through the opening on the water side of said body and connected to said anchor, a brake and overrunning clutch mechanism for controlling said reel, two spaced sets of opposed screws threadedly received in said legs, and pressure buttons adapted for swivel movement mounted on the ends of said screws for contacting the side of the boat.

4. An anchor manipulating device adapted to be mounted over the side of a boat, comprising two legs for extending downwardly from the upper edge of a boat side on opposite sides thereof, an elongated body portion secured to the upper ends of said legs and extending beyond said legs on the boat and water side thereof, said body having a longitudinal passage therethrough, a reel on the boat side of said body, a handle for rotating said reel, an anchor on the water side of said body, pulleys mounted in said body above said reel and anchor, a cable having one end attached to said reel and extending over said pulleys and connected to said anchor, a brake and overrunning clutch mechanism for controlling said reel, two spaced sets of opposed screws threadedly received in said legs, and pressure buttons adapted for swivel movement mounted on the ends of said screws for contacting the side of the boat.

5. An anchor manipulating device adapted to be mounted over the side of a boat, comprising two legs for extending downwardly from the upper edge of a boat side on opposite sides thereof, an elongated body portion secured to the upper ends of said legs and extending beyond said legs on the boat and water side thereof, a reel on the boat side of said body, means for rotating said reel, an anchor on the water side of said body, pulleys mounted in said body above said reel and anchor, a cable having one end attached to said reel and extending over said pulleys and connected to said anchor, means connected to the leg adjacent said reel for preventing rotation of said reel, two spaced sets of opposed screws threadedly received in said legs, and pressure buttons for swivel movement mounted on the ends of said screws for contacting the side of the boat.

6. An anchor controlling device, comprising two legs for embracing the upper edge of the side of a boat, an elongated body portion secured to the upper ends of said legs and extending beyond said legs on the boat and water side thereof, a reel on the boat side of said body positioned beneath the adjacent end thereof, means connected to said reel for rotating the reel, an anchor on the water side of said body, a cable having one end attached to said reel and connected to said anchor, means connected to the leg adjacent said reel for preventing rotation of said reel, and two spaced sets of opposed screws threadedly received in said legs.

7. An anchor controlling device, comprising two legs for embracing the upper edge of a boat member, a body portion secured to the upper ends of said legs and extending beyond said legs on the boat and water side thereof, a reel on the boat side of said body positioned beneath the adjacent end thereof, means for rotating said reel, an anchor on the water side of said body, a cable having one end attached to said reel and connected to said anchor, two spaced sets of opposed screws threadedly received in said legs, and pressure buttons adapted for swivel movement mounted on the ends of said screws for contacting the side of the boat.

8. An anchor controlling device, comprising two legs for embracing the upper edge of a boat member, a body portion secured to the upper ends of said legs and extending beyond said legs on the boat and water side thereof, a reel on the boat side of said body positioned beneath the adjacent end thereof, an anchor on the water side of said body, a cable having one end attached to said reel and connected to said anchor, and two spaced sets of opposed screws threadedly received in said legs.

References Cited in the file of this patent

UNITED STATES PATENTS

1,422,272	Jaskowiak	July 11, 1922
1,625,871	Robertson et al.	Apr. 26, 1927
2,083,489	Benson	June 8, 1937
2,354,805	Fey	Aug. 1, 1944
2,442,211	Rice	May 25, 1948
2,526,953	Kruse	Oct. 24, 1950
2,536,224	Rice	Jan. 2, 1951
2,605,082	Alderson et al.	July 29, 1952
2,734,475	Fyock	Feb. 14, 1956

FOREIGN PATENTS

177,402	Switzerland	Aug. 1, 1935