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RUDDER RELEASING MECHANISM FOR SMALL BOATS

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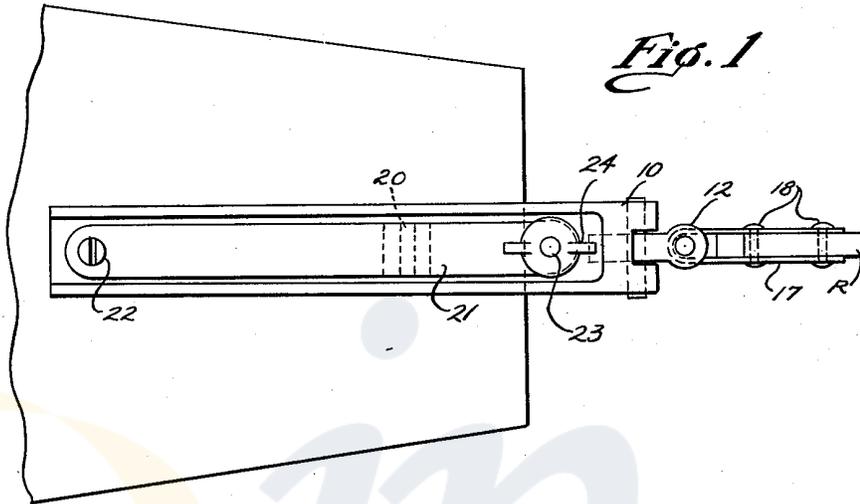


Fig. 1

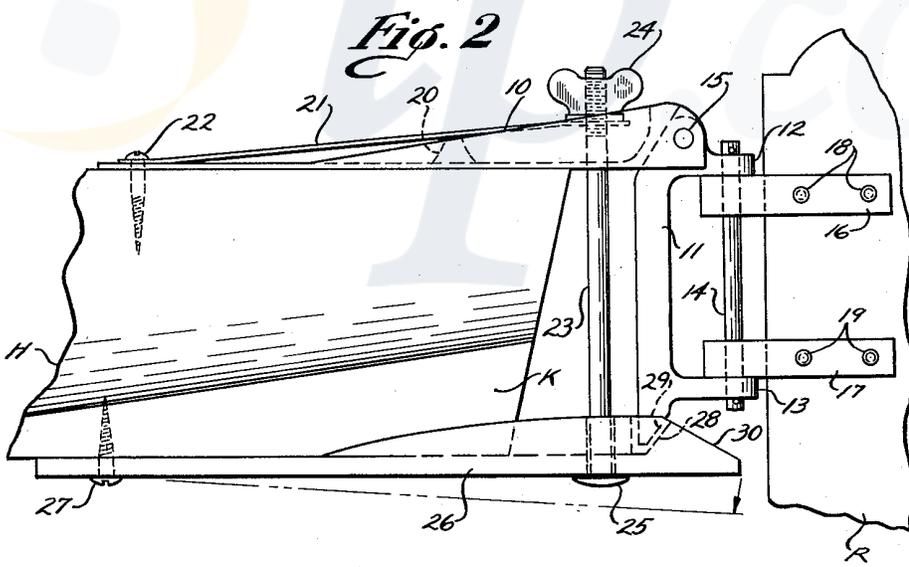


Fig. 2

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RUDDER RELEASING MECHANISM FOR SMALL BOATS

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4 Claims. (Cl. 114-165)

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This invention relates to a nautical steering apparatus and more particularly to a rudder releasing mechanism for sailboats and other small craft.

One object of the present invention is to provide a rudder release mechanism of the above nature, in which the rudder will automatically swing upwardly when striking an obstruction, and in which the said rudder may be easily restored manually to operating position.

A further object is to provide a device of the above nature which will be simple in construction, inexpensive to manufacture, easy to install and manipulate, compact, ornamental in appearance, and very efficient and durable in use.

In the drawing,

Fig. 1 represents a top plan view of the stern of a small boat, with the rudder releasing mechanism assembled thereto.

Fig. 2 is a side view of the same.

Referring now to the drawing, in which like reference numerals denote corresponding parts throughout the several views, the numeral 10 indicates a horizontal hinge plate, which is adapted to be screwed to the transom or stern of the hull H below which is a keel K.

Provision is also made of a vertical hinge plate 11 having a pair of rearwardly extending ears 12 and 13 which embrace a small diameter vertical rod 14 upon which the rudder R is hinged. The vertical hinge plate 11 is secured to the horizontal hinge plate 10 by a horizontal pivot pin 15.

The rudder R is adapted to be secured in place by means of a pair of U-shaped gudgeon straps 16 and 17 secured to the sides of the rudder by means of two pairs of rivets 18 and 19 and surrounding said rod 14, as clearly shown in Fig. 2 of the drawing.

The horizontal hinge plate 10 is provided at an intermediate point on its upper edge with an upstanding tapered lug 20 which is adapted to form a fulcrum for an elongated leaf spring 21, the forward edge of which is secured to the hull H by means of a wood screw 22.

The rear of the hinge plate 10 is provided with a bolt 23 which passes downwardly therethrough and through said leaf spring, and is engaged at the top by an adjustable thumb nut 24 screwed on said bolt.

The bolt 23 is provided at its lower end with a rounded head 25 located under an elongated yieldable latch plate 26, the forward end of which is secured to the keel K by a wood screw 27.

The rear end of the latch plate 26 is provided with an upwardly beveled surface 28 which is

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adapted to cooperate with a downwardly beveled surface 29 formed on the lower end of the vertical hinge plate 11. Behind the beveled surface 28, the latch plate is provided with a downwardly extending bevel 30 (Fig. 2).

Operation

In operation, when the rudder R strikes an obstruction, such as a submerged rock, the cooperating beveled surfaces 28 and 29 will cause the latch plate 26 to be depressed against the action of the leaf spring 21, permitting said rudder and the vertical hinge plate 11 to swing aft about the horizontal pin 15 as an axis, thus raising said rudder and preventing injury thereto. The rudder, may of course, be readily restored to its original position by manually forcing the lower end of the vertical hinge plate 11 over the beveled rear surface 30 of the latch plate 26 into the original position shown in Fig. 2 of the drawing, this ordinarily being done by pushing backward on the tiller, not shown.

The invention provides the following advantages:

1. It affords a simple means of lowering the rudder into operating position from a boat after launching it from a beach, or in shallow water.

2. It permits a small craft to be driven or sailed upon a beach without injury, as the rudder will disengage itself automatically upon contact with the beach or submerged obstruction.

3. The rudder can be easily restored to operating position manually by swinging it downwardly to cause the lower end of the vertical hinge plate to engage against the rear beveled surface of the latch plate, without replacement of a shear pin or any other part.

4. The release mechanism may be adjusted to release the rudder more or less readily, as conditions demand, by varying the compression of the leaf spring, by means of the thumb nut 24.

5. The rudder R may be locked positively in its operating down position, if desired, merely by tightening the thumb nut 24 as far as it will go.

6. The rudder may be used to steer a boat even when it is in the unlatched or raised position in shallow water, and will afford a fair amount of maneuverability under such conditions, as contrasted to conventional detachable rudders, which had to be fully attached in order to operate.

While there has been disclosed in this specification one form in which the invention may be embodied, it is to be understood that this form is shown for the purpose of illustration only and

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that the invention is not to be limited to the specific disclosure, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications, and embodiments coming within the scope of the following claims.

Having thus fully described the invention what is claimed as new, and for which it is desired to secure Letters Patent is:

1. In a mechanism for automatically releasing a rudder which is hinged to the stern of a boat and permitting easy manual restoring of said rudder to operating position, a first horizontal hinge plate secured to said boat, a second vertical hinge plate connected by a horizontal pivot pin to the rear of said first hinge plate, a vertical rod secured to the rear of said vertical hinge plate and upon which said rudder is hinged, a horizontal yieldable latch plate connected at its forward end to the keel of said boat, the bottom of said vertical hinge plate and the rear portion of said latch plate having cooperating beveled surfaces to cause said latch plate to yield downwardly and release said rudder when a predetermined upward force is exerted upon said rudder, a vertical bolt passing through said latch plate and said first hinge plate, said bolt having a head engaging the undersurface of said latch plate, spring means for pressing said bolt upwardly, and a thumb nut secured on the upper end of said bolt for permitting the tension of said spring to be adjusted, and selectively permitting said rudder to be locked in operating position.

2. The invention as defined in claim 1, in which said latch plate is provided with a downwardly extending beveled face at its rear end for cooperating with the lower end of the vertical hinge plate, to permit restoring of said rudder manually to its normal operating position.

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3. In a mechanism for automatically releasing a rudder which is hinged to the stern of a boat and permitting easy manual restoring of said rudder to operating position, a horizontal top hinge plate and an overlying leaf spring secured at their forward ends to said boat, a vertical hinge plate connected at its upper end by a horizontal pivot pin to the rear of said horizontal hinge plate, a vertical rod secured to the rear of said vertical hinge plate and forming a hinge pin for said rudder, a horizontal bottom yieldable latch plate connected at its forward end to the keel of said boat, a vertical bolt connecting said leaf spring and said horizontal hinge plate with said latch plate, the bottom of said vertical hinge plate and the rear of said latch plate having cooperating downwardly beveled surfaces to cause the rear portion of said latch plate to yield downwardly and release said rudder when the latter strikes the beach or an obstruction.

4. The invention as defined in claim 3, in which said horizontal hinge plate is provided with an upstanding tapered lug intermediate its ends for continuously engaging said leaf spring and to serve as a fulcrum for the rear of said spring for normally maintaining said spring in elevated position with respect to said horizontal hinge plate.

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