United States Patent

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[54] **KICKUP RUDDER APPARATUS FOR BOATS**
7 Claims, 11 Drawing Figs.

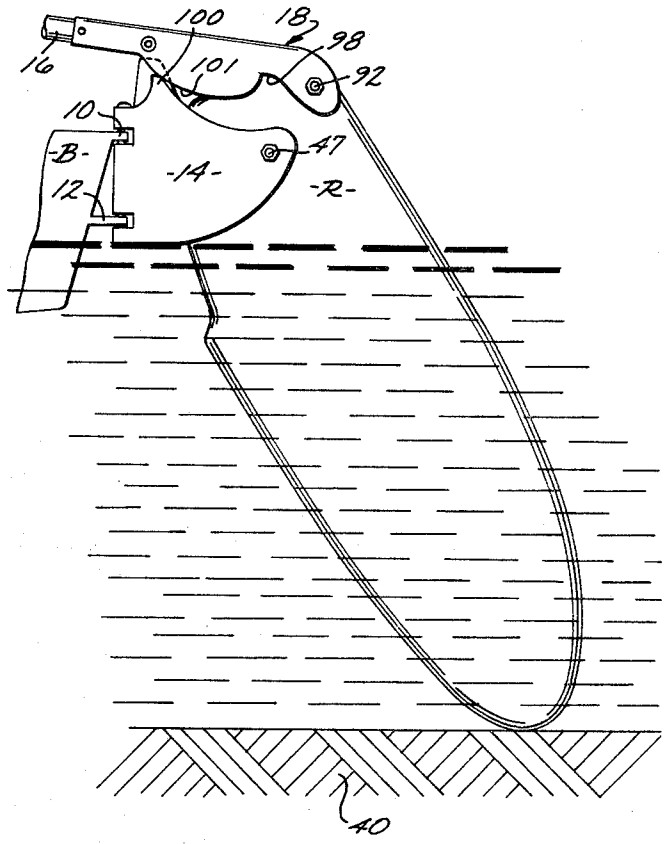
[52] **U.S. Cl.** **114/165**
[51] **Int. Cl.** **B63h 25/06,**
B63b 39/06
[50] **Field of Search** 114/165,
136

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Primary Examiner—Andrew H. Farrell
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ABSTRACT: A kickup rudder apparatus for a boat to be sailed off a beach. The rudder is movable between a lowered position, a dangling intermediate position, and a raised position. As a boat is sailed onto a beach the rudder automatically kicks up from its lowered position into its dangling position when the rudder engages the ground. As the boat is sailed away from a beach the rudder may be moved from its raised position through its intermediate position to its lowered position as it moves into deeper water. Control of rudder movement between the three positions is effected solely through manipulation of the tiller.



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FIG. 1

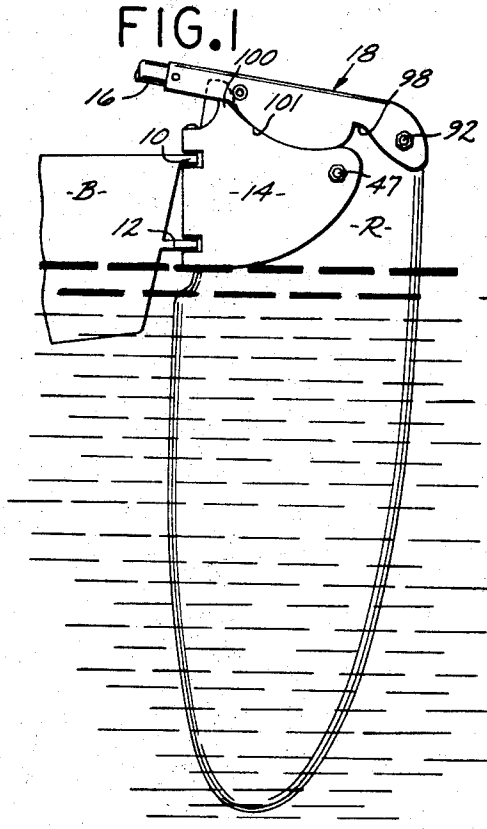


FIG. 2

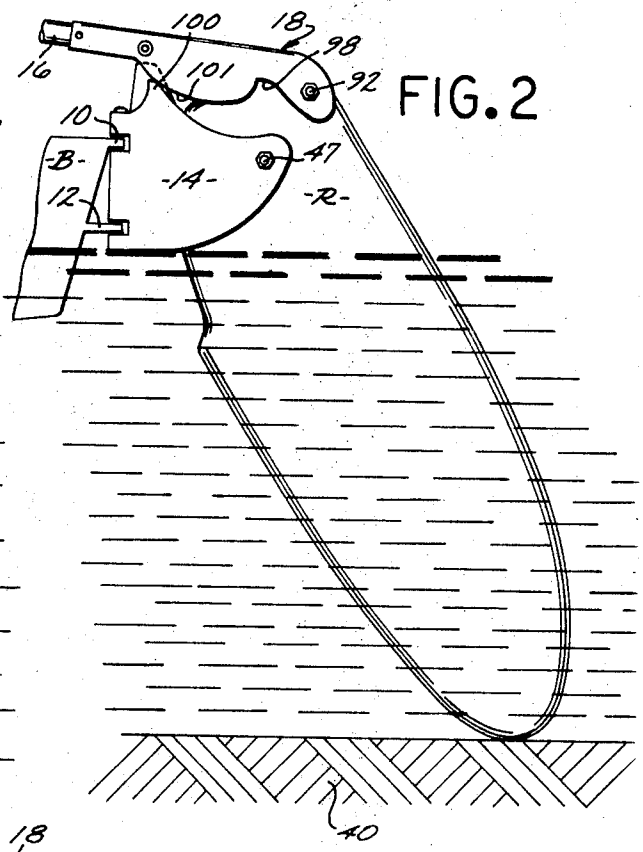


FIG. 3

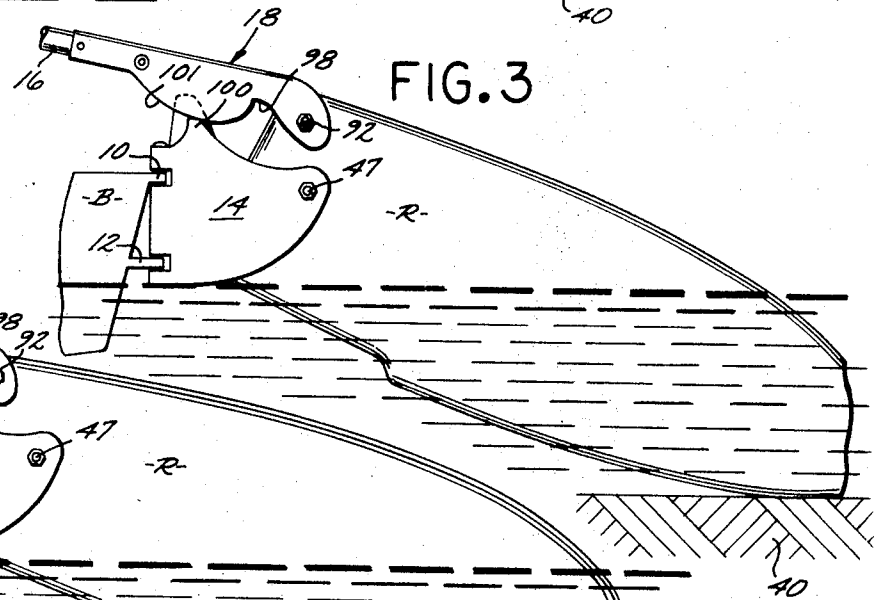


FIG. 4

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2 Sheets-Sheet 2

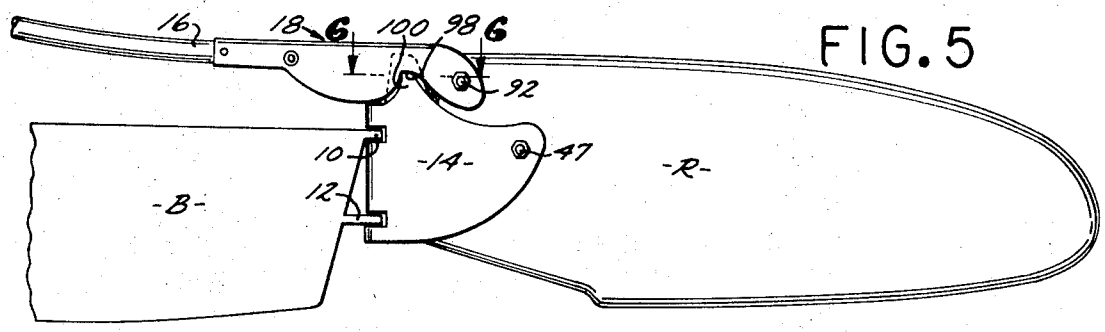


FIG. 5

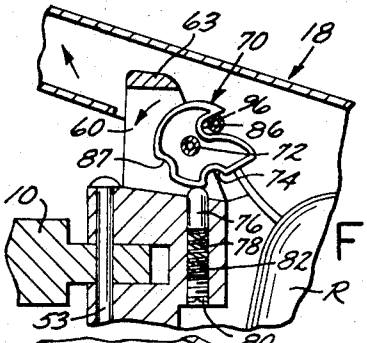


FIG. 8

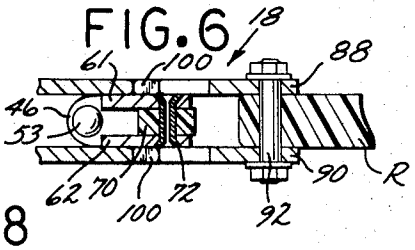


FIG. 6

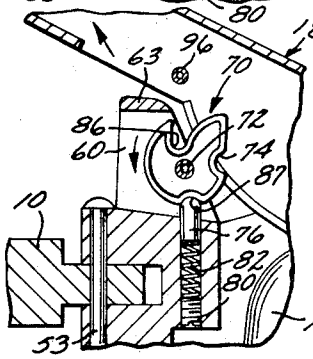


FIG. 9

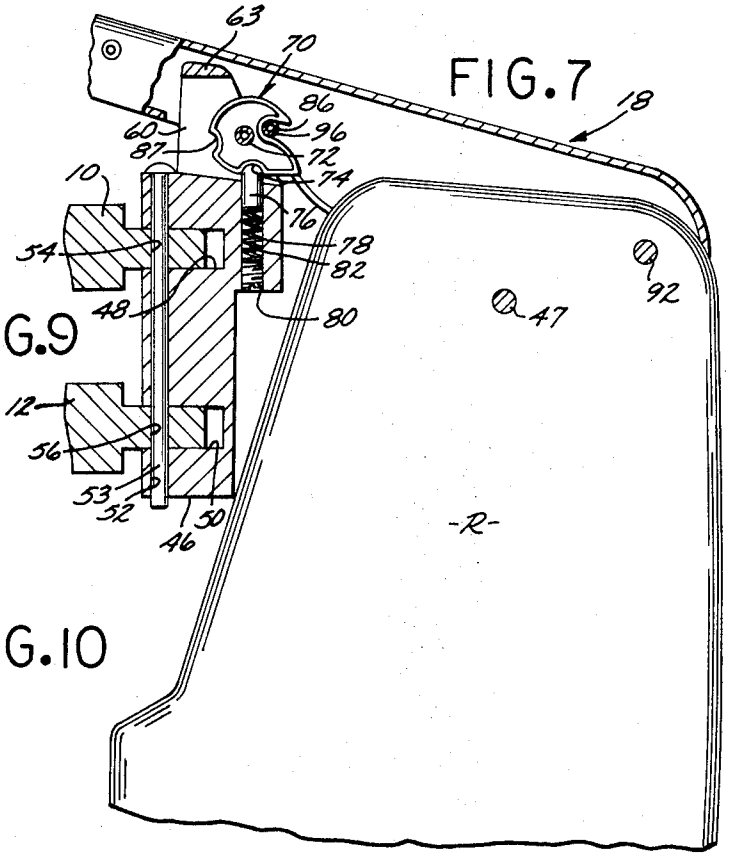


FIG. 7

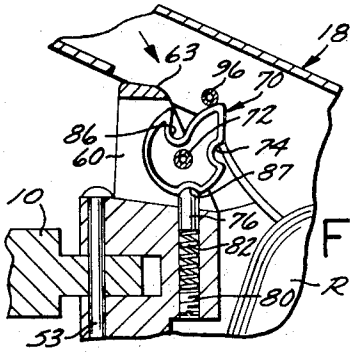


FIG. 10

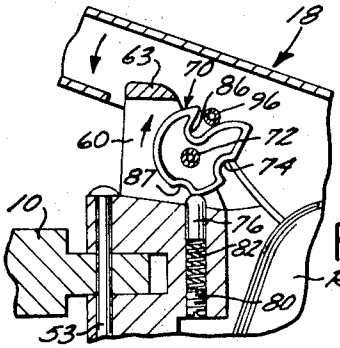


FIG. 11

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KICKUP RUDDER APPARATUS FOR BOATS

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to the art of sailing and more particularly to an improved kickup rudder apparatus which permits a boat to be sailed off a beach.

2. Description of the Prior Art

Known kickup rudders are movable between a lowered position and a completely raised position. Such rudders are lockable either in their lowered position or in their raised position. Once the rudder has been moved to its raised position it can only be moved to its lowered position manually or by means of a line running from the cockpit to the rudder. It is difficult to move the rudder to its lowered position either manually or by means of the line, particularly when sailing off a beach through breakers. Until the rudder has been moved from its raised to its lowered position it cannot steer the boat.

SUMMARY OF THE INVENTION

It is a major object of the present invention to provide a kickup rudder apparatus for a boat to be sailed off a beach which includes a rudder movable between a lowered position, a dangling intermediate position and a raised position wherein the boat may be sailed off the beach with the rudder in its dangling position thereby permitting the rudder to steer the boat until the rudder is moved to its lowered position in deeper water.

It is another object of the present invention to provide apparatus of the aforedescribed nature wherein the rudder may be urged between its various positions solely by movement of the tiller.

A further object of the present invention is to provide apparatus of the aforedescribed nature which includes a rudder support secured to the stern of the boat for pivotal movement about a vertically extending steering axis, a horizontal pivot pin interconnecting the upper portion of the rudder and the rudder support, a tiller support secured to the tiller, with the rear portion of the tiller support being pivotally attached to the upper portion of the rudder, first releasable lock means interposed between the rudder support and the tiller support that when engaged retain the rudder in its raised position, with such lock means being automatically engaged as the rudder moves into its raised position and the rudder falling into its intermediate position when the lock means is disengaged, and second releasable lock means interposed between the rudder support and the tiller support that when engaged resiliently retain the rudder in its lowered position, with the second lock means being automatically disengaged by rearward movement of the rudder away from its lowered position.

Yet another object of the present invention is to provide apparatus of the aforedescribed nature which is rugged in construction and is capable of providing a long and useful service life.

Other objects and advantages of the present invention will become apparent from the following detailed description, when taken in conjunction with the appended drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view showing a preferred form of rudder apparatus embodying the present invention, with the rudder thereof being disposed in its lowered position;

FIGS. 2, 3 and 4 are side elevational views similar to FIG. 1 showing how the rudder pivots upwardly and rearwardly relative to the beach as the boat is sailed onto the beach;

FIG. 5 is a side elevational view showing the rudder in its completely raised position;

FIG. 6 is a horizontal sectional view taken in enlarged scale along lines 6–6 of FIG. 5;

FIG. 7 is a broken side elevational view taken partly in section showing a locking arrangement utilized with said apparatus; and

FIGS. 8—11 are fragmentary views similar to FIG. 7 showing the operation of said locking arrangement.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, a preferred rudder apparatus embodying the present invention is shown mounted on the stern portion of a boat B, the transom of such boat being provided with upper and lower vertically aligned gudgeons 10 and 12. The rudder apparatus includes a rudder R, a rudder support generally designated 14, a tiller generally designated 16, and a tiller support generally designated 18.

In FIG. 1 the rudder R is shown in its lowered position. The rudder is normally maintained in this lowered position when the boat B is underway in water of sufficient depth that the lower end of the rudder does not engage the ground. When, as indicated in FIG. 2, however, the lower end of the rudder R engages the ground 40, the rudder will be pivoted rearwardly and upwardly out of its lowered position into an intermediate or dangling position. Referring now to FIG. 3, it will be noted that as the boat moves over upwardly rising ground towards the beach the rudder R will continue its upward and rearward pivotal movement until it reaches its position of FIG. 4.

More particularly, the rudder support 14 is preferably of metallic construction and is bifurcated to receive rudder R. The front end of rudder support 14 is defined by a vertically extending web 46. The upper portion of rudder R is pivotally secured to the rudder support 14 by a horizontal pivot pin 47. As indicated particularly in FIG. 7, the web 46 is formed with vertically spaced, forwardly facing recesses 48 and 50 which receive the gudgeons 10 and 12. The web 46 is also formed with a vertically extending bore 52 that receives a pintle 53, such pintle also extending through complementary bores 54 and 56 in the gudgeons 10 and 12 respectively.

The front portion of the rudder support 14 is also formed at its upper end with a latch-dog housing 60 having vertically extending sides 61 and 62 (FIG. 6) which are bridged at their upper ends by a crosspiece 63. Disposed between the sides of the latch-dog housing 60 is a latch dog, generally designated 70. The latch dog 70 is pivotally secured in place by means of a horizontal pin 72. The latch dog 70 is formed with a first notch 74 that is engaged by the upper end of a vertically extending plunger 76 slidably disposed within a vertical bore 78 formed in the upper part of the web 46. A plug 80 is threadedly secured within the lower end of the bore 78 and a compression spring 82 is interposed between the upper end of the plug 80 and the lower end of the plunger 76. The compressive force exerted by the spring 82 against the plunger 76 may be adjusted by rotation of the plug 80 within the lower end of the bore 78. The dog 70 is also formed with a second notch 86 which faces rearwardly when the dog is arranged in its position of FIG. 7, and a third notch 87 which faces forwardly when the dog is arranged in said position. It should be noted that the upper portion of the web 46 is formed with an upwardly extending hook 80 on both sides of the latch-dog housing 60. The function of this hook 80 is set forth hereinafter.

The tiller support 18 is preferably of hollow metallic construction and includes sidewalls 88 and 90. A horizontal pivot pin 92 extends between the rear portion of the sidewalls 88 and 90 so as to pivotally connect the upper end of the rudder R thereto at a point spaced rearwardly and upwardly relative to the first-mentioned pivot pin 47. The front end of the tiller support 18 is rigidly affixed to the rear end of the tiller 16. At the intermediate portion of the tiller support 18 there is arranged a horizontally extending latch bar 96. When the rudder R is disposed in its lowered position of FIGS. 1 and 7 the latch bar 96 is retained within the notch 86 of the latch dog 70, the latch dog being resiliently retained in its position of FIG. 7 by the upward force exerted by the plunger 76. As indicated particularly in FIG. 5, the sidewalls 88 and 90 at the intermediate portion of the tiller support 18 define an upwardly extending pointed recess 98. This recess 98 is adapted to be engaged with the complementary upwardly extending

hook 100 formed on the upper end of the rudder support 14 so as to retain the rudder R in its raised position of FIG. 5. The front edge of recess 98 is defined by the rear surface of a downwardly extending cheek 101.

In the operation of the aforedescribed apparatus, assuming the boat B is underway in water of sufficient depth that the lower end of the rudder R is above the ground, the rudder R will be retained in its lower position of FIGS. 1 and 7 by the interaction of the plunger 76, latch dog 70 and latch bar 96. Referring now to FIG. 2, if the boat B begins to approach a beach so that the lower end of the rudder R engages the ground 40, the rudder will pivot upwardly and rearwardly relative to its position of FIG. 1. Such movement is permitted by the forward or counterclockwise rotation of the latch dog 70 under the influence of the latch bar 96, as indicated in FIG. 8. Such movement of the latch dog is in turn permitted by downward movement of the plunger 76.

As the rudder R continues to pivot upwardly and rearwardly the latch dog 70 will be rotated to its position of FIG. 9. In this position the third notch 87 of the latch dog will be engaged by the plunger 76 whereby such plunger will resiliently retain the dog in its position of FIG. 9. The pivotal movement of the rudder will effect initial upward and forward movement of the tiller support 18, as indicated in FIG. 9. The tiller support will then move downwardly to its position of FIG. 10 wherein the latch bar 96 rests upon a cam surface 102 forming a continuation of the notch 86 of the latch dog.

Assuming the boat B is now on the beach, the hook 100 will be engaged with the recess 98 so as to lock the rudder R in its raised position of FIG. 5. Retention of the rudder R in this raised position facilitates transportation of the boat B on a trailer, sand dolly, or the like. When it is desired to sail the boat B off a beach the tiller 16 will be raised so as to withdraw the recess 98 from the hook 100. The rudder R will then be free to pivot downwardly and forwardly into its intermediate dangling position. It is a particular advantage of the rudder apparatus embodying the present invention that as the boat B moves off the beach it is possible to utilize the rudder R for steering. This will be made clear by reference to FIGS. 2, 3 and 4. When the boat has reached water of sufficient depth that the lower end of the rudder R clears the ground, the rudder may be readily urged into its locked position by merely exerting a rearward force on the tiller 16. As indicated in FIG. 11, the exertion of such rearward force will cause the latch bar 96 to force the latch dog 70 in a rearward or clockwise direction until the second notch 74 of such dog is received by the upper end of the plunger 76. As indicated hereinbefore, the degree of resistance of the latch dog 70 to rotation may be controlled by rotation of the plug 80, such rotation in turn controlling the compressive force exerted by the spring 82 against the plunger 76.

From the foregoing description it will be seen that the hook 100 and recess 98 define a first releasable lock means that when engaged retain the rudder R in its raised position, and the latch dog 70 and plunger 76 define a second releasable locking means that retain the rudder in its lower position. It should also be noted that during pivotal movement of the rudder between its lowered and raised positions the cheek 101 rides on the top of hook 100 so as to maintain the tiller 16 always spaced above the deck of boat B. In this manner the tiller will always remain clear of the deck and any fittings positioned thereon.

Various modifications and changes may be made with respect to the foregoing detailed description without departing from the spirit of the present invention.

I claim:

1. A kickup rudder apparatus for a boat to be sailed off a beach, said apparatus, comprising:
   - a rudder movable between a lower position; an intermediate position and a raised position;
   - a rudder support secured to the stern of said boat for pivotal movement about a vertically extending axis;
   - a horizontal pivot pin interconnecting the upper portion of said rudder and said rudder support;
   - a tiller;
   - a tiller support secured to said tiller, the rear portion of said tiller support being pivotally attached to the upper portion of said rudder;
   - first releasable lock means interposed between said rudder support and said tiller support that when engaged retain said rudder in its raised position, and said rudder falling into its intermediate position when said lock means is disengaged; and
   - second releasable lock means interposed between said rudder support and said tiller support that when engaged retain said rudder in its lower position, said second lock means being automatically disengaged by rearward movement of said rudder away from its lower position.

2. Apparatus as set forth in claim 1 wherein said first lock means is disengaged by upward movement of said tiller.

3. Apparatus as set forth in claim 1 wherein said second lock means is engaged by manual movement of said tiller.

4. Apparatus as set forth in claim 1 wherein said first lock means includes a hook formed on said rudder support that is received by a recess formed on said tiller support.

5. Apparatus as set forth in claim 1 wherein said second lock means includes a spring-urged plunger carried by one of said supports engageable with a notched latch dog carried by the other of said supports.

6. Apparatus as set forth in claim 2 wherein said first lock means includes a hook formed on said rudder support that is received by a recess formed on said tiller support.

7. Apparatus as set forth in claim 3 wherein said second lock means includes a spring-urged plunger carried by one of said supports engageable with a notched latch dog carried by the other of said supports.