

D. HIGGINS & J. W. IRONS.
STEERING APPARATUS FOR BOATS.
APPLICATION FILED JULY 8, 1910.

983,715.

Patented Feb. 7, 1911.

Fig. 1.

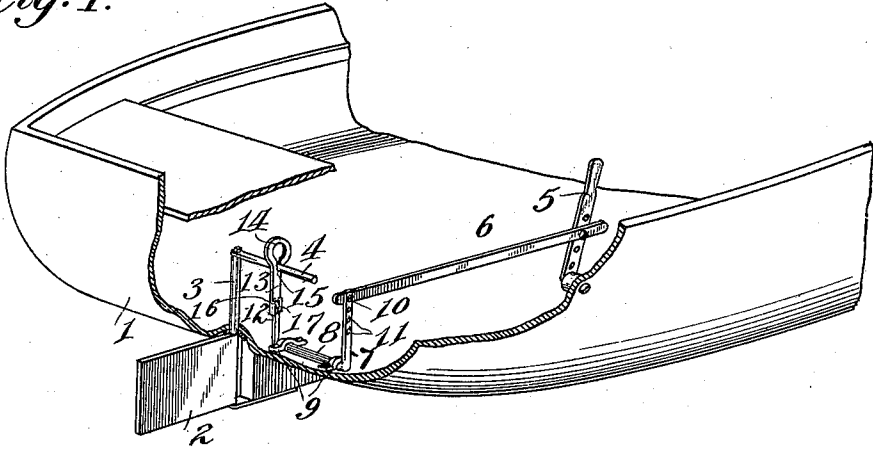


Fig. 2.

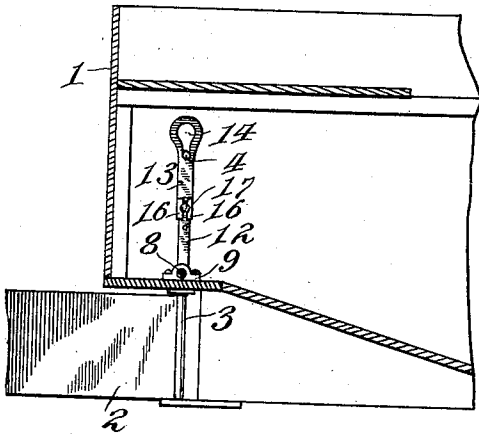


Fig. 3.

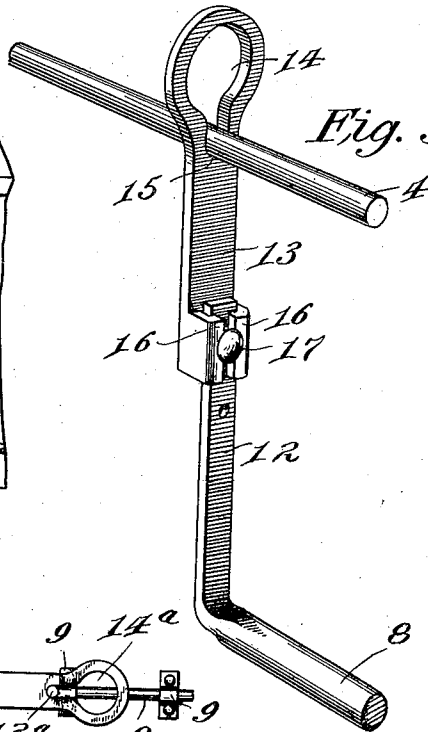
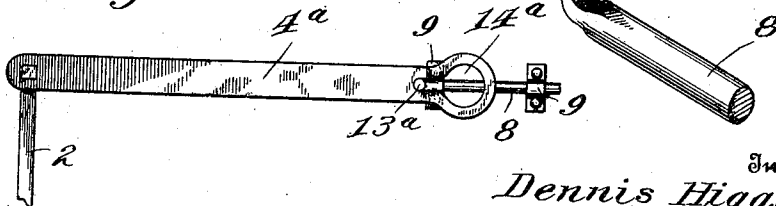


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

DENNIS HIGGINS AND JOHN W. IRONS, OF NEW ALBIN, IOWA.

STEERING APPARATUS FOR BOATS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, DENNIS HIGGINS and JOHN W. IRONS, citizens of the United States, residing at New Albin, in the county of Allamakee and State of Iowa, have invented new and useful Improvements in Steering Apparatus for Boats, of which the following is a specification.

This invention relates to a steering apparatus for boats, the object of the invention being to provide a simple, reliable and quick-acting means for adjusting the rudder in either direction, which means may be arranged to be operated from either side of the boat without liability of binding or leaving the rudder in a loose position at any point of movement.

The invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:—

Figure 1 is a perspective view, showing the application of the invention. Fig. 2 is a section taken longitudinally through the boat and transversely through the rock shaft, showing the rudder arm and slotted crank in elevation. Fig. 3 is a detail view of the slotted crank, with the arm of the rock shaft connected therewith. Fig. 4 is a top plan view, showing a modified construction of the rudder operating mechanism.

Referring to the drawing, 1 designates a boat of any preferred type to which the invention may be applied; 2 the rudder; 3 the vertically arranged rudder post or stem journaled upon the boat to permit the rudder to swing laterally in either direction and 4 the rudder-operating arm projecting at right angles from the upper end of the post.

Mounted upon either side of the boat to swing in a direction longitudinally thereof is an operating lever 5, which is connected by a link 6 with a crank arm 7 on a transversely arranged rock shaft 8 journaled in suitable bearings 9. A bolt or pin 10 pivotally connects the link 6 with the arm 7 and is adapted to be passed through any one of a series of openings 11 in said arm, whereby the link may be adjusted to regulate the throw of the shaft as circumstances require.

At the inner or opposite end of the shaft from the arm 7 is a second shorter arm 12 to which is connected a crank member 13, said member being vertically arranged and

provided in its upper end with a tapering or substantially pear-shaped slot 14 made of round iron and having at its lower end a partially circular seat portion 15 beveled on both inside edges. The slot 14 receives the free end of the rudder arm 4, which, when the rudder is arranged in a neutral position, lies within the seat 15, said arm being adapted to play within the slot 14 as the crank member is rocked forwardly or rearwardly, so that it will accommodate itself to the different angular positions of said crank member without binding or leaving the arm 4 loose so as to permit independent movements of the rudder.

It will be understood from the foregoing description that upon swinging the lever 5 backward or forward from its normal or neutral position the rudder 2 may be swung to any desired angle in either direction from its normal position to steering the boat. In this operation the arm 4 is free to play in the slot 14, as above described, so that a free and quick movement and adjustment of the parts may be obtained, obviating all liability of the parts binding upon one another or permitting the rudder to have independent play. The crank member 13 is preferably adjustably connected with the arm 12 so that the movement of the rudder arm 4 in the slot 14 may be regulated to accord with any variations in the throw of said arm through the adjustable connection between the link 6 and crank arm 7. To this end the crank member is formed upon one of its faces with flanges 16 providing a guideway to receive the arm 12, which is connected with the crank member by a bolt 17 adapted to engage any one of a series of openings in the crank member, whereby the described range of adjustability is secured.

In the modified form of our invention shown in Fig. 4, the construction of the connecting members between the rudder and rudder-operating mechanism is reversed, that is to say, the arm 4^a is provided with a slot 14^a conforming in structure to the slot 14, while the member 13^a extends forwardly in the form of an extension from the arm 12 and extends through the slot, enabling the same operation to be obtained. It will be understood that the invention contemplates broadly an operating connection between the rudder and actuating means embodying a rod or arm associated with one and engaging a slotted member associated

with the other, and that the elements mentioned may be arranged in either of the ways specified.

It will be apparent from the foregoing description that the operating mechanism may be arranged on either side of the boat and that it will be in convenient position to be adjusted to swing the rudder. Also that it enables a quick adjustment of the rudder to be secured and the rudder to be held firmly in any of its positions of adjustment.

Having thus described the invention, we claim:—

1. The combination of a rudder having a post or stem, an operating mechanism including a rock shaft, and connections between the post or stem and rock shaft embodying an engaging member on one part and a slotted member on the other part receiving said engaging member.

2. The combination of a rudder having a post or stem, an arm carried by said post or stem, an operating mechanism including a rock shaft, and an arm carried by said rock shaft, one of said arms being formed with a slot receiving the other arm.

3. The combination of a rudder having a post or stem, an arm connected with said

post or stem, a rock shaft, means for actuating said shaft, and a crank member carried by the shaft and having a slot receiving said arm.

4. The combination of a rudder having a post or stem, an arm carried by said post or stem, an operating mechanism including a rock shaft, and a crank member adjustably connected with said shaft and having a slot receiving said arm.

5. The combination of a rudder having a post or stem, a crank shaft provided with arms at the opposite ends thereof, an arm upon the rudder stem, an operating lever, a link adjustably connecting said lever with one of the arms of the rock shaft, and a crank member adjustably connected with the other arm of the rock shaft and having a slotted portion receiving the arm on the rudder stem.

In testimony whereof we affix our signatures in presence of two witnesses.

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Witnesses:

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