

W. C. Law,
Steering Arms:
No. 102,559. Patented May 3, 1870

Fig. 1

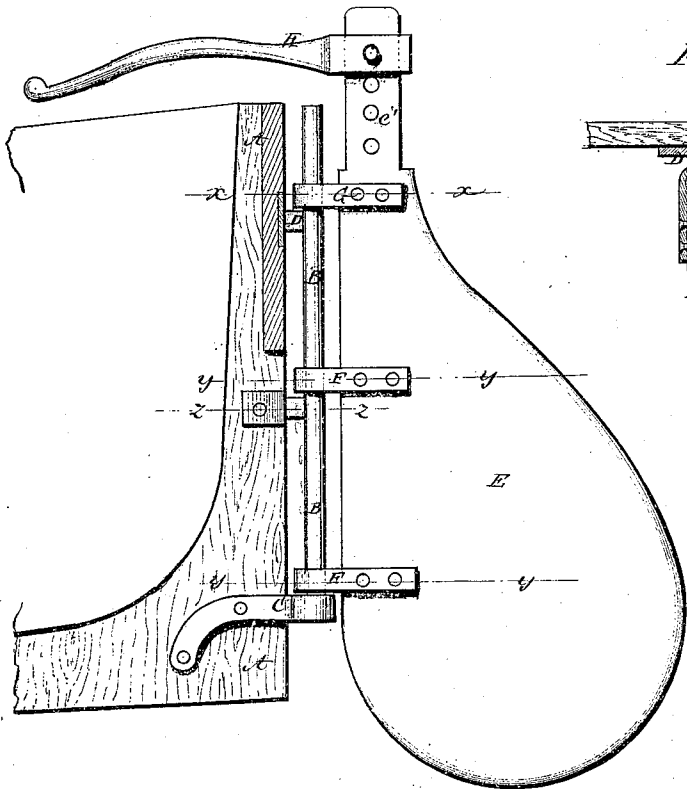


Fig. 2

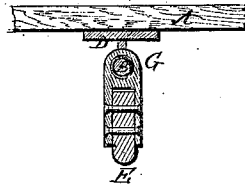


Fig. 4



Fig. 3



Witnesses:
A. W. Humphreys
Jacob Brooks

Inventor:
W. C. Law
 PER *Munn & Co.*
Attorneys.

United States Patent Office.

WILLIAM C. LAW, OF NEW YORK, N. Y.

Letters Patent No. 102,559, dated May 3, 1870.

IMPROVEMENT IN BOATS' RUDDERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM C. LAW, of the city, county, and State of New York, now temporarily residing at Ningpo, China, have invented a new and useful Improvement in "Rudders;" and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a side view of my improved rudder, as attached to a vessel.

Figure 2 is detail sectional view of the same, taken through the line *x x*, fig. 1.

Figure 3 is a detail sectional view of the same, taken through the lines *y y*, fig. 1.

Figure 4 is a detail sectional view, taken through the line *z z*, fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to improve the manner of hanging and the construction of rudders for ships, boats, and other vessels, so as to make them more easily shipped, less liable to be accidentally unshipped, and so that they will serve as a center-board for sail-boats; and

It consists in the manner of hanging the rudder and in the construction of the body of the rudder, as hereinafter more fully described.

A represents the stern of a boat or other vessel.

B is a rod, which is connected with the vessel A by two or more brackets, C D, formed solidly upon or firmly attached to said rod B.

The shank of the bracket C, at the lower end of the rod B, is made broad, and the shanks of the upper bracket or brackets D are made narrow or thin, as shown in figs. 2 and 4.

To the inner edge of the rudder E are attached two or more eyes or sockets, F G, which are formed with

straps passing along the sides of the rudder E, and securely riveted or bolted to said rudder.

The lower socket or sockets F are slotted in a line with the plane of the rudder E, as shown in fig. 3, and the upper socket G is made without a slot, as shown in fig. 2.

By this construction of the hanging device, the rudder can be readily shipped in the roughest sea, and it will be scarcely possible for it to become accidentally unshipped, as to unship the rudder it must be raised vertically while in a line with the line of the keel of the vessel.

For sail-boats and other small vessels, the body of the rudder may be extended so as to project below the vessel's keel, as shown in fig. 1, so that it may serve both as a rudder and as a center-board. In this case the tenon *e'* of the rudder, upon which the tiller H is placed, is made long, and with a series of holes to receive the pin by which the said tiller is secured to it, so that the rudder may be adjusted in any desired position.

By this construction, should the boat run aground, the rudder will rise above the keel without becoming unshipped.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The continuous rod B and brackets C D, combined with the slotted sockets F F and unslotted socket G, as and for the purpose described.

2. The elongated rudder E, extending below the keel, and having a long tenon, *e'*, perforated at intervals, as and for the purpose described.

The above specification of my invention signed by me this day of , 1869.

W. C. LAW.

Witnesses:

E. C. LORD,
CHAS. BERNARD.