J. L. KNIGHT.

Rudder.

No. 201,927. Patented April 2, 1878.

Fig. 1.

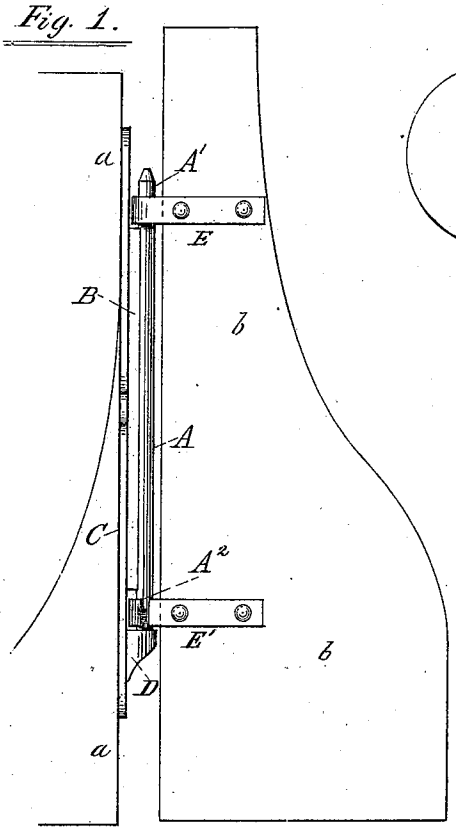


Fig. 2.

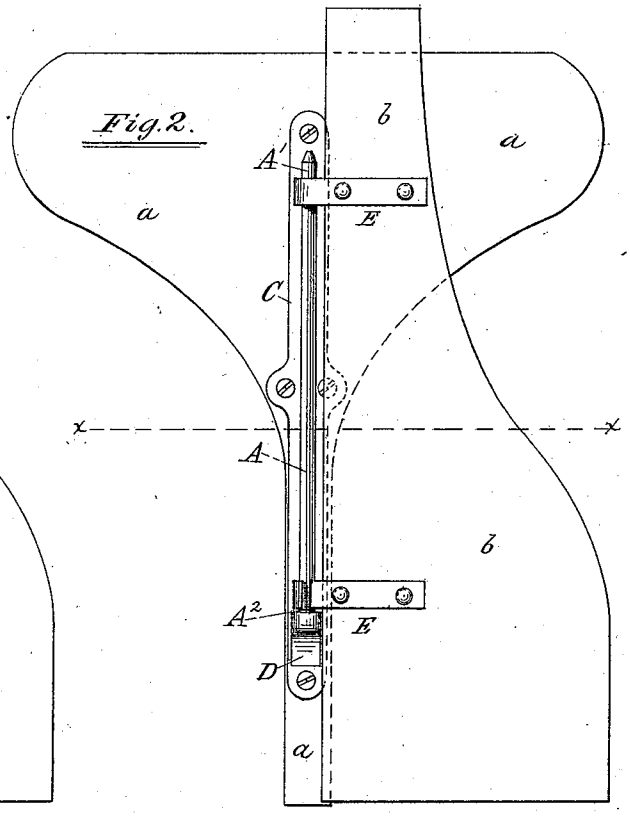
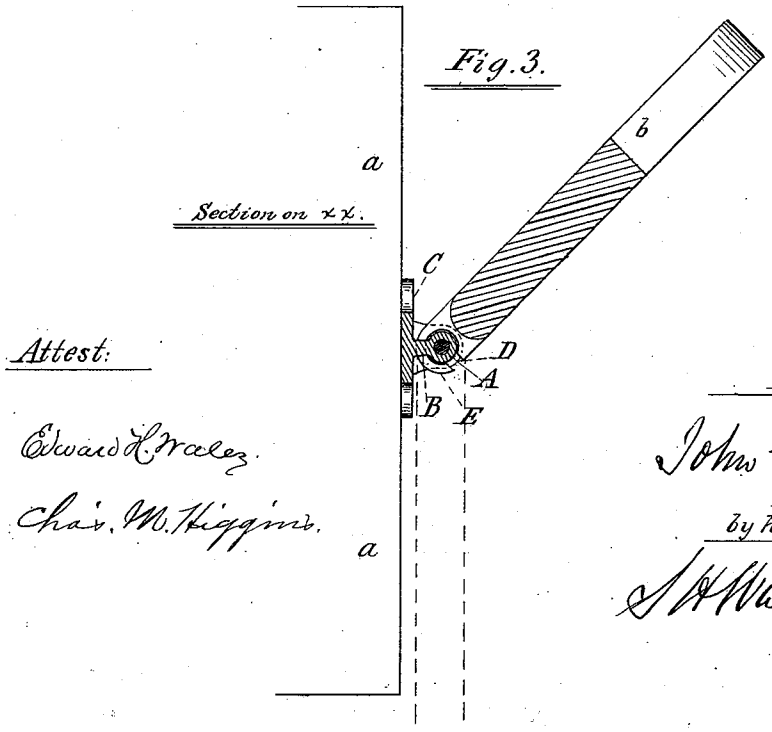


Fig. 3.



Attest:

Edward L. Wales.

Chas. M. Higgins.

Inventor:

John L. Knight.

by his Attorneys:

S. H. Wales & Son.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN L. KNIGHT, OF NEW YORK, N. Y.

IMPROVEMENT IN RUDDERS.

Specification forming part of Letters Patent No. **201,927**, dated April 2, 1878; application filed February 12, 1878.

To all whom it may concern:

Be it known that I, JOHN L. KNIGHT, of New York city, have invented certain new and useful Improvements in Rudders, of which the following is a specification:

My invention is designed more especially for small yachts and boats, where the rudder is made removable and capable of being shipped or unshipped, as required.

It is well known that, as usually hung—by means of two hooks or pintles—it is often quite difficult to cause both hooks to simultaneously engage with the rudder-eyes, especially in a rough sea, and when engaged the attachment is so insecure that the rudder is liable to become accidentally unshipped.

The object of my invention is therefore to so improve the mode of hanging the rudder as to enable it to be shipped with ease and precision, and, when in place, incapable of being unshipped except by intention.

My invention relates to that class of rudders which have slotted eyes to allow of being readily shipped or unshipped when desired.

It consists in an improved rudder iron or hanger, formed of a pintle joined to its base by a continuous web, forming a guide and stop for the lower eye of the rudder, the extreme ends of the pintle being free from the web, to form journals for the rudder-eyes, one of which is slotted at right angles to the rudder.

In the drawings, Figure 1 shows a side elevation, Fig. 2 an end elevation, and Fig. 3 a fragmentary sectional plan, of my invention.

a a represent the stern of the boat; *b*, the rudder, and A B C the improved rudder-iron on which the rudder is hung.

As shown in Fig. 3, the sectional shape of the hanger is similar to an **I**-rail.

A is the pintle on which the rudder-eyes swing, which is single and continuous, as shown, and is joined to the base C by a web, B, which extends between the position of the rudder-eyes, as shown in Figs. 1 and 2, each end of the pintle projecting beyond the web to form journals A^1 A^2, on which the rudder-eyes may freely turn. The lower end of the pintle terminates on a step, D, which forms the bearing for the lower eye and supports the rudder.

The base-plate C may be flat, and be screwed to the stern, as shown, or it may be formed with flanges to clasp the stern-post, or in any other suitable manner. Thus formed, the improved hanger is cast in one piece, preferably in brass, or other non-corrodible metal, a wrought-iron core being preferably inserted in the center of the pintle A to increase the strength, as indicated in Fig. 3.

The rudder-eyes E E′ are formed in the usual way, except that the lower eye, E′, is slotted lengthwise, as shown, to enable it to slide upon and over the web and pintle. This slot is cut in such a position, as shown in the drawings, that the eye will slide upon the web and pintle only when the rudder is placed parallel with the stern in one direction, as shown by dotted lines in Fig. 3. In this position the rudder is shipped with great ease and precision. The lower eye, sliding upon the web, guides the movement of the rudder, and insures the proper journaling of the eyes without particular care or attention.

When the lower eye strikes the step D the eyes become socketed on their journals, and a turn of the rudder then brings the unslit portion of the lower eye under the web, which thus locks the rudder in place, and effectually prevents its being unshipped while in action.

By this construction, while the rudder can be instantly shipped in a rough sea, and be as readily unshipped when desired, yet, when in place and in action, it cannot become unshipped except in a position in which it is never liable to be placed except by intention.

By extending the web downward, in the manner shown in Figs. 1 and 2, the lower end of the web forms a stop for the top of the lower eye, so that the latter cannot rise, by which arrangement the upper eye can be left uncut, which is a great advantage, as the weight of the rudder hangs on the back of this eye. If the upper eye is cut like the lower one, it is so weakened as to be liable to open or break, especially when partly worn, unless made so strong as to be unnecessarily heavy and cumbersome.

The construction of the hanger is also such that great strength is secured, so that it is not capable of being injured by forces to which it

is liable to be exposed, unlike the usual hooks, which are often bent and broken by the backing of the stern against a fixed object.

The simple construction of the hanger enables it to be furnished at no greater cost than the hangers now used, and these advantages render it an important improvement.

I am aware that a long pintle, in combination with slotted rudder-eyes which slide upon the pintle at one position, has been used before my invention, and this I do not claim.

What I claim as my invention is—

An improved rudder-hanger, consisting of the continuous pintle A, joined to its base by the guiding-web B, the latter being so constructed as to allow the pintle to receive at its upper end an uncut eye, E, and at its lower end an eye, E′, which is slotted at right angles to the rudder, so as to readily slide down the web, and yet allow of the latter acting as a stop when the rudder is turned in its working position, all constructed and arranged substantially as specified, and for the purpose set forth.

JOHN L. KNIGHT.

Witnesses:
EDWARD H. WALES,
CHAS. M. HIGGINS.