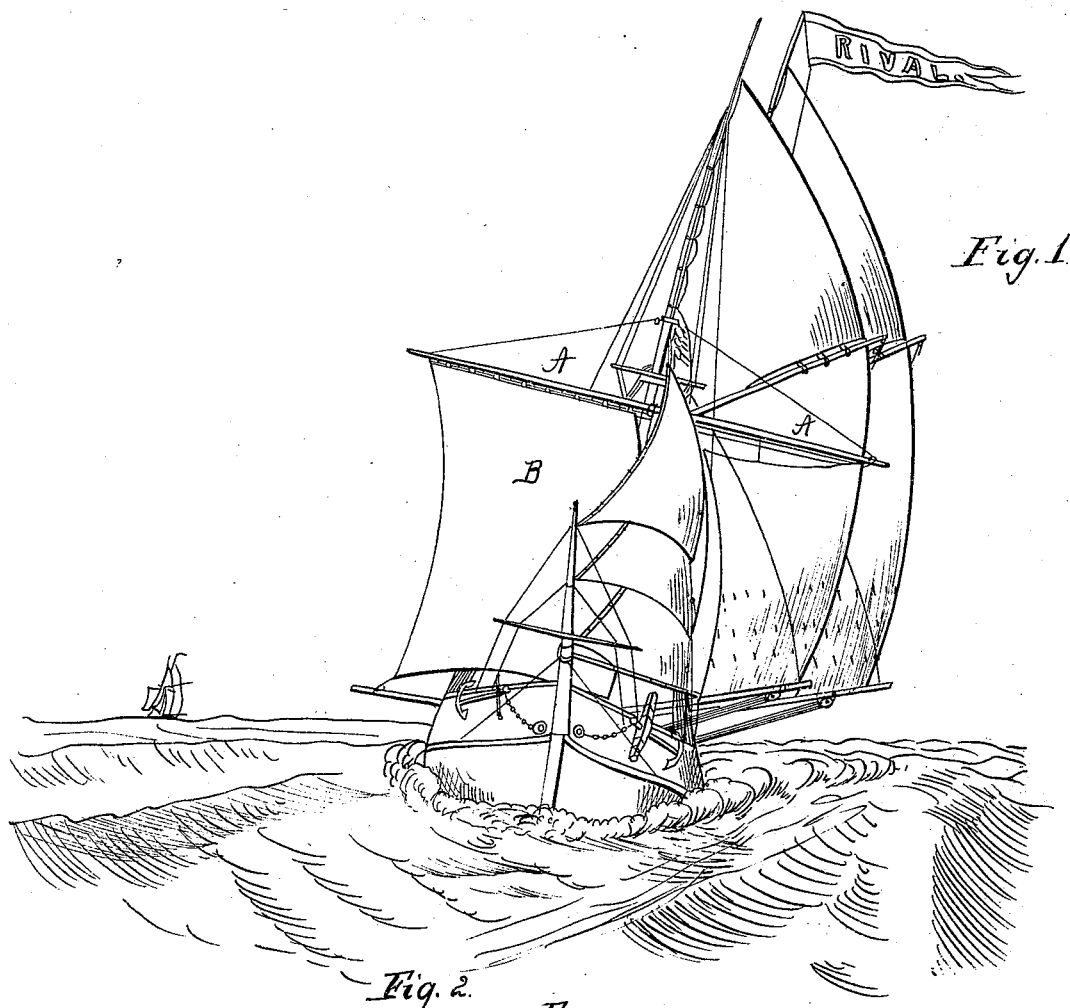
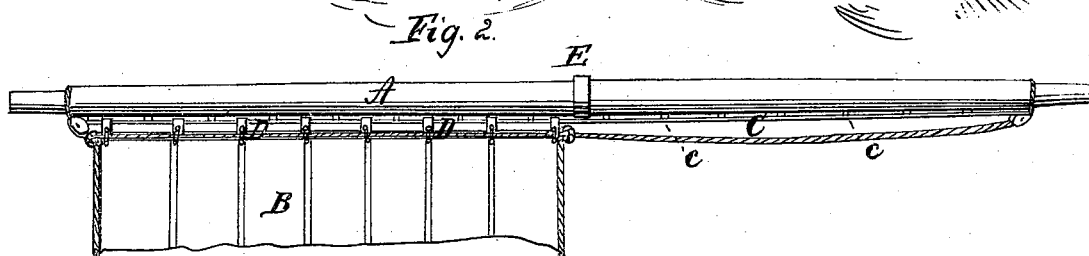


*A.A. Holling*  
*Sails and Rigging*  
*N<sup>o</sup> 108,706. Patented Oct 25, 1870.*



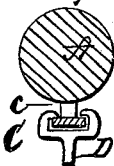
*Fig. 1.*



*Fig. 2.*

*Witnesses*  
*Jm Deane*  
*Jm B. Goodhead*

*Fig. 3.*



*Fig. 4.*



*Inventor.*  
*A.A. Holling*  
*per H.A. Morley & Co.*  
*attys.*

# United States Patent Office.

ARMINE A. HOLLING, OF PULTNEYVILLE, NEW YORK.

Letters Patent No. 108,706, dated October 25, 1870.

## IMPROVEMENT IN SQUARE-SAILS FOR FORE-AND-AFT VESSELS.

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, ARMINE A. HOLLING, of Pultneyville, in the county of Wayne and State of New York, have invented a new and improved Square-sail Rig; and I do hereby declare that the following is a clear, full, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a perspective view, showing my improvement in use.

Figure 2 is a view of the square-sail yard with a part of the sail;

Figure 3 is a cross-section of the yard; and

Figure 4 is a like view, showing a modification.

Similar letters of reference indicate like parts in the several figures:

This invention relates to an improved method of attaching a square-sail to its yard, whereby a half square-sail can be used and changed to either side with the greatest facility, and the full strength of the yard be retained, as hereinafter explained.

Square-sails are used which run out and in with hoops running on the yard; but as the hoops cannot pass the slings or truss of the yard, a half sail with yard-hoops cannot be used, as it cannot be changed over from side to side, and if an iron rod or rope jackstay is used under the yard, without support in the center, all the strain from the head of the sail is brought upon the ends of the yard, and it is easily broken.

I attach a flat iron bar, C, to the lower side of the yard along its entire length or spread, by means of butments or studs c, (figs. 2 and 3,) with wood screws passing through the bar and studs, the studs being of such length as to support the bar at about half an inch from the yard, and being narrower than the face of the bar, as shown in fig. 3.

Metallic hanks, D, are placed on the bar C, and the head of the square-sail is secured to said hanks by robands, passing through eyes in the shanks or hanging ends of the hanks, as shown in fig. 2.

These metallic hanks are made to embrace the bar C by claws passing over the opposite sides or edges of the bar, as seen in fig. 3, and slide longitudinally on the bar C, in place of hoops running on the yard, when the sail is set or taken in, and as the bar extends the whole length of the yard, the half sail B can be run across from one side to the other, with the changes of wind, without interfering with the truss E, and, by this means, the leeward or idle half of the sail is not necessary, and the square-sail is lighter to handle, and is more snug when furled.

Fig. 4 shows a modification, in which the claws are continuous in the bar that is fastened to the yard, while T-headed hanks D are used, with roband eyes in their hanging parts, as before; but this construction is less simple than the bar and hanks, as shown in fig. 3.

I do not claim the stationary guides or ways, and the carriages or jaws sliding thereon, as new in themselves, as they were discovered prior to my invention; but

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

The combination of the yard A with the traversing half sail B, when the latter is bent thereto by the means described, for the purpose specified.

The above specification of my invention signed by me this 9th day of June, 1870.

A. A. HOLLING.

Witnesses:

WM. S. MOORHEAD,

F. A. MORLEY.