S. G. Martin,

Sails & Rigging.

No. 26,915. Patented Jan. 24, 1860.

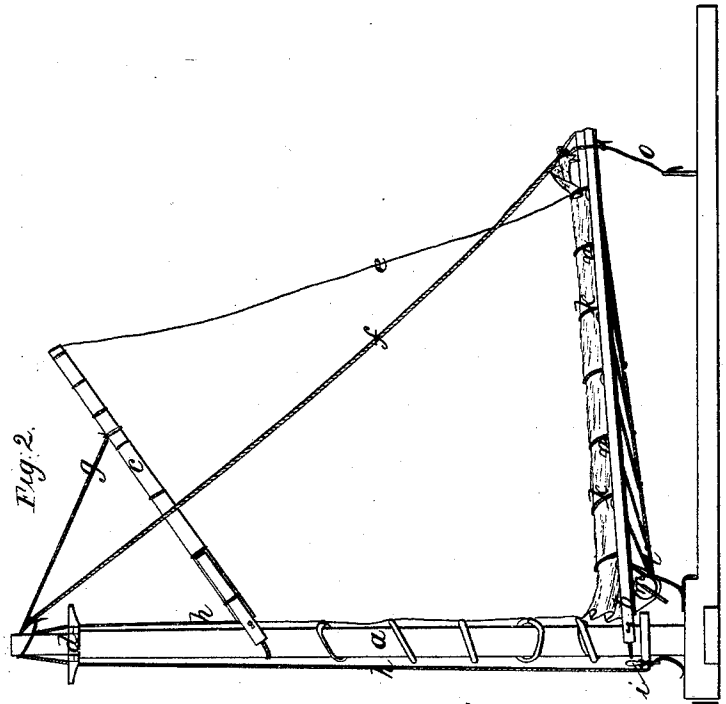


Fig. 2.



Fig. 3.

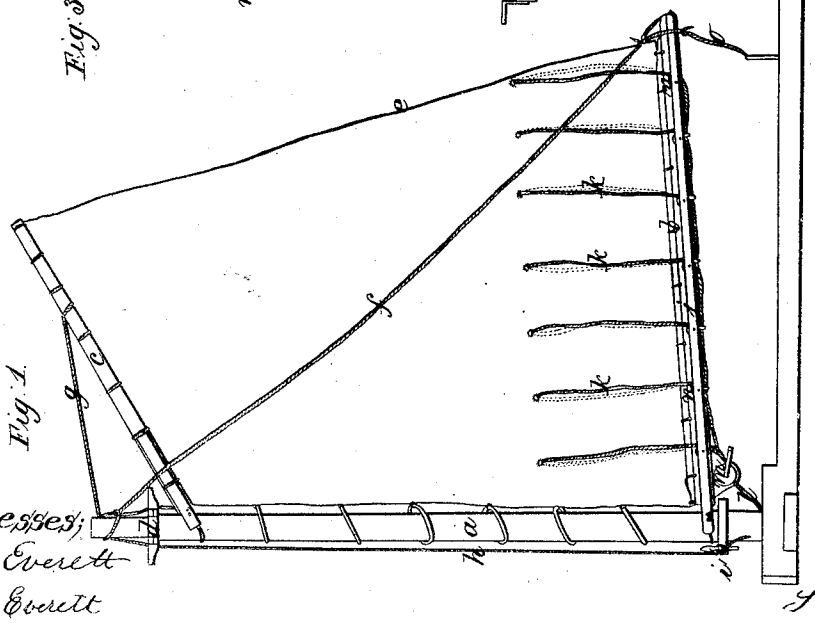


Fig. 1.

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UNITED STATES PATENT OFFICE.

SAMUEL G. MARTIN, OF SOUTH AMBOY, NEW JERSEY.

REEFING FORE-AND-AFT SAILS.

Specification of Letters Patent No. 26,915, dated January 24, 1860.

To all whom it may concern:

Be it known that I, SAMUEL G. MARTIN, of South Amboy, in the State of New Jersey, have invented a certain new and useful Improvement in Reefing Sails for Vessels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the marks and letters thereon.

My invention is more particularly designed for fore-and-aft rigged vessels, but under certain modifications of arrangement may be applied to the topsails of square rigged vessels, and especially to what is known as Forbes's rig.

In vessels of the rig here first named any improvement in the sails or rigging which will lessen the number of hands required to manage them is held to be of great importance, as is also any improvement which will increase the facilities for their easy and rapid management. Many of this class of vessels are coasters, and many are used on the lakes and larger inland waters, where they are more subject to sudden changes in the power and direction of the wind than on the ocean, and have frequently to increase or diminish the quantity of sail, at times with all the rapidity, as in flaws and when in dangerous positions, with which it is possible to make the change. Reefing of the sails in this class of vessels on some voyages, and at the more boisterous seasons of the year, has often to be done. The reefing of the main-sails of a large schooner as now generally practiced is a slow and tedious process, requiring the sail to be entirely lowered and several hands to accomplish it.

My invention has for its object the reefing of fore-and-aft sails with great rapidity and the perfect securing of the reefs, the reefing being performed at the same time that the sail is lowered and not following the lowering as is now generally practiced.

The drawings forming part of this specification show how I carry out my invention on the main sail of a sloop or schooner.

Of these drawings Figure 1, is a view of the sail as raised, with the leech-line and topping-lift rather slacker than when the sail is fully tightened up: Fig. 2 is a view of the same sail in a double reef—the rear end of the sail in this figure not being shown quite as tight or close down as it will be in practice: and Fig. 3, is a view of the boom on the under side, showing the additional pieces or strips used with the pulleys for the reefing lines, and the winch or windlass for the main reef out-hauler.

In each of these figures where the same parts are marked the same letters are used to designate them.

(*a*) indicates the mast; (*b*) the boom; (*c*) the gaff; (*d*) the cross-trees; (*e*) the leech-line; (*f*) the topping-lift; (*g*) the peak-halyard; (*h*) the throat-halyard; (*i*) belaying pins; (*j*) additional strips or pieces to and on both sides of the boom; (*k*) the reefing lines; (*l*) the reef out-hauler; (*m*) the winch or windlass; (*n*) the pulleys for the reefing lines; and (*o*) part of the main sheet. It will be perceived that the reef-lines, which are attached to the sail in the usual way, pass down on both sides of the sail, and on both sides of the boom, as shown by Fig. 1, of the drawings, where the reef-lines on one side are shown in full and those on the other side by dots only. These lines are all of the same length and are spliced to the out-hauler after they have been passed through the strips and over the pulleys so that their shrinking when wet or yielding when dry is uniform and their action on the sail true and perfect. The winch or windlass for drawing down the out-hauler, as is shown, is attached to the lower part of the boom near the mast and has cranks or handles on one or both sides as may be required.

The drawings show the halyards passed around belaying pins on the mast, but, as is evident, these pins can be placed in their usual or any other convenient position.

The facilities which the invention here recited gives in reefing and unreefing sails will readily be seen from this plain illustration. Suppose it is desirable quickly to double-reef the sail, it is only necessary to luff in the wind, or bring the vessel head-to the wind, and while the gaff is steadily lowered the required distance, the winch is rotated to the necessary extent to draw down the reefing lines and bring down with them that part of the sail being reefed. When down the reefed part of the sail is firmly and compactly secured and presents a much more uniform appearance than when reefed by hand in the usual way.

If a single reef only be required the sail can be as easily drawn down to the degree needed and the reefing lines will give a

steady and firm support to the sail. When it is desired to unreef, the change can be as rapidly brought about as the reefing was, it being only necessary to turn the winch to slack the reef out-hauler and to pull up the gaff and sail.

It is estimated that in heavy weather when it would require in the ordinary way of double reefing from three quarters of an hour to an hour for both of the sails of a schooner to be reefed, the same may be brought about by this invention in from five to ten minutes,—a great saving of time as well as greatly contributing to the safety of the vessel.

The facilities allowed by the use of this invention for rapidly varying the amount of sail used will enable the vessel to make better time by adapting the amount of sail to the force of the wind. Figs. 1 and 2 of these drawings represent the reef out-hauler as passing on the under side of the winch and then toward the mast, but in practice or use the out-hauler will pass over the top of the winch and then to belaying pins on the jaws of the boom.

Having thus fully set out the construction and operation of my invention what I claim as new and desire to secure by Letters Patent is—

Reefing the sails of fore and aft rigged vessels by the arrangement of reefing lines and the other operative means here named substantially as herein set forth.

S. G. MARTIN.

Witnesses:
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