No. 843,822.

PATENTED FEB. 12, 1907.

D. C. JENNINGS.

REEFING GEAR.

APPLICATION FILED MAY 2, 1906.

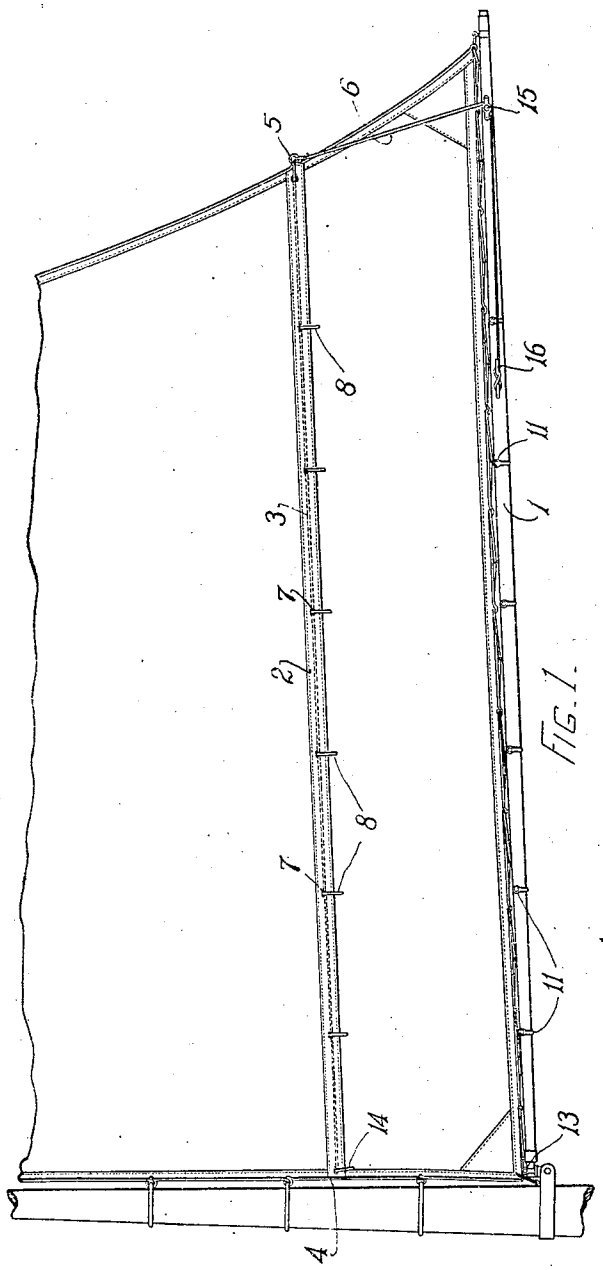


FIG. 1.

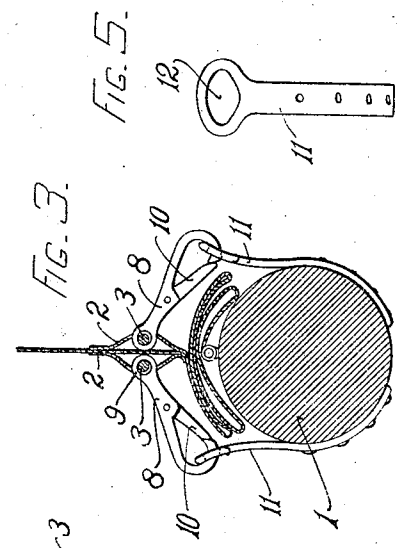


FIG. 3.

FIG. 5.

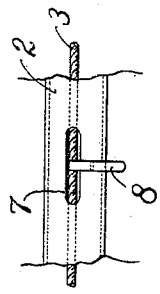


FIG. 4.

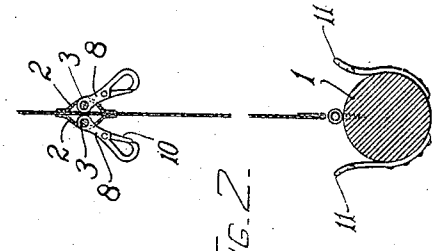


FIG. 2.

WITNESSES

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REEFING-GEAR.

No. 843,822. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed May 2, 1906. Serial No. 314,769.

To all whom it may concern:

Be it known that I, DANIEL C. JENNINGS, a citizen of the United States, residing at North Falmouth, in the county of Barnstable and State of Massachusetts, have invented certain new and useful Improvements in Reefing-Gears; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in reefing-gears for sailing vessels.

The object of the invention is to produce a reefing-gear with which the operation of reefing may be performed more quickly and easily than with the ordinary reefing devices, the invention being particularly designed for use in connection with fore-and-aft sails, though it may be adapted to sails of other forms.

The invention consists in the improved reefing-gear hereinafter described, as defined in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the lower portion of a sail in which the present invention is embodied. Fig. 2 is a vertical section of the sail and boom. Fig. 3 is a vertical section showing the sail reefed. Fig. 4 is an enlarged detail view of one of the hooks and its attachment to the sail, and Fig. 5 is an enlarged view of one of the reefing-eyes.

The invention is illustrated as embodied in a fore-and-aft sail of ordinary form secured to a boom 1 at its lower edge. The sail is provided with pockets 2, formed by stitching a band of canvas to each side of the body of the sail substantially parallel with the lower edge thereof, these pockets being located at the distance above the boom at which in an ordinary sail the reef-points are attached to the sail. A wire rope 3 is located in the pockets, its ends being secured at 4 to the luff of the sail while it passes continuously about the leach of the sail and through the ring 5, to which the earing 6 is secured, as shown in Fig. 1. The pockets are provided with elongated openings 7, through which snap-hooks 8 are secured to the wire rope, the latter being preferably passed through rings 9 on the shanks of the hooks. These hooks when not in use hang loosely on either side of the sail. The snap-hooks 8 are provided with spring-pressed tongues 10, which operate in the ordinary manner to close the hooks and prevent them from becoming disengaged when in use.

The boom 1 is provided at each side with a series of eyes 11, corresponding in position with the hooks 8. These eyes, as shown in Fig. 5, are provided with elongated openings 12 in their upper extremities.

A ring 13 is secured to each side of the swivel at the forward end of the boom, and corresponding snap-hooks 14 are secured to the luff of the sail at the forward ends of the pockets 2. The earing 6 is of ordinary form and passes about a pulley 15 on the boom and forward to a cleat 16, to which it is secured.

The sail is reefed with the above-described devices in the following manner: The halyards of the sail are let off to give sufficient slack for the reefing, and the hooks 14 are secured to the rings 13. The earing 6 is then tightened until the pull upon the wire rope causes the snap-hooks 8 to be drawn down close to the boom. The snap-hooks are then secured to the eyes 11, and the reefing operation is completed, the parts being then in the position shown in Fig. 3.

To shake out the reef, it is necessary only to disengage the snap-hooks, slack off the earing, and hoist the sail.

Since the snap-hooks can be secured to the eyes in much less time than is required to tie the ordinary reef-points, especially in winter, when the reef-points are frozen stiff, the operation of reefing can be performed with the present device in a fraction of the time required for reefing in the ordinary manner, and the operation is further facilitated owing to the fact that the number of hooks required is much less than the number of reef-points ordinarily required, owing to the use of wire rope in the pockets, which holds the sail down close between the points of attachment to the boom, so that these points need not be as close together as the ordinary reef-points. The operation is further facilitated by the tension imparted to the wire rope by the earing, which tends to draw the slack of the sail close to the boom, so that the sailor is relieved for the most part from the labor of drawing the sail into position to secure it to the boom.

Another valuable feature of the present invention resides in the fact that the reefing devices secure the sail directly to the boom, whereas the ordinary reef-points are passed between the boom and the lower edge of the sail and tend to pull the sail away from the boom and stretch the edge of the sail and the line by which it is laced to the boom. As shown in Figs. 2 and 3, the eyes 11 afford sufficient space between them to permit the slack to be neatly folded upon the top of the boom, and the elongated form of the openings 7 and of the eye-openings 12 permit the hooks to move slightly laterally to accommodate themselves to any shrinking or stretching of the sail or relative displacement of the sail or boom through any cause.

The earing 6 on vessels of great size may be operated by a steam winch in the ordinary manner, and the invention is particularly useful in such a connection, as the labor of gathering in the slack of the sail in reefing when performed wholly by hand is difficult.

If desired, two or more reefs may be provided for, the sets of eyes being in such a case duplicated or provided with openings of sufficient length to admit two or more snap-hooks.

Although the invention has been shown and described in connection with a fore-and-aft sail, it is capable of being adapted to square sails or sails of other types.

Where the term "spar" is used in the claims, this is intended to designate a spar of any character, whether a boom, as in the illustrated embodiment of the invention, or a yard, as used with a square sail, or whatever form of spar may be used in connection with the sail on which the reefing-gear is used.

The invention is not limited in general to the details of construction and operation of the illustrated embodiment, but may be embodied in other forms broadly defined in the claims.

Having now described the invention, what is claimed is—

1. A reefing-gear for sailing vessels having, in combination with a sail and its spar, a set of eyes and a coöperating set of hooks, one of said sets being attached fixedly to the sides of the spar and the other being attached loosely to the sail above its margin, substantially as described.

2. A reefing-gear for sailing vessels having, in combination with a sail and its spar, a set of eyes attached fixedly to each side of the spar, and a set of coöperating fastening devices loosely attached to each side of the sail above its margin, substantially as described.

3. A reefing-gear for sailing vessels having, in combination with a sail and its spar, a set of eyes attached to each side of the spar, and a coöperating set of hooks loosely attached to each side of the sail above its margin, substantially as described.

4. A reefing-gear for sailing vessels having, in combination with a sail and its spar, a line secured to the sail above its margin, a set of hooks loosely secured to the line, and a coöperating set of eyes on the spar, substantially as described.

5. A reefing-gear for sailing vessels having, in combination with a sail and its spar, a pocket on the sail above its margin, a line in the pocket, fastening devices secured to the line, and coöperating fastening devices on the spar, substantially as described.

6. A reefing-gear for sailing vessels having, in combination with a sail and its spar, a pocket with elongated openings on the sail above its margin, a line in the pocket, fastening devices secured to and longitudinally movable on the line and passing through said openings, and coöperating fastening devices on the spar, substantially as described.

7. A reefing-gear for sailing vessels having, in combination with a sail and its spar, two pockets on opposite sides of the sail, lines in the pockets, fastening devices secured to the lines, and coöperating fastening devices on each side of the spar, substantially as described.

8. A reefing-gear for sailing vessels having, in combination with a sail and a boom, a pocket on the sail above its lower margin, a line secured to the luff of the sail and passing through the pocket, an earing secured to the other end of the line and to the leech of the sail, fastening devices secured to the line at intervals, and coöperating fastening devices on the boom, substantially as described.

9. A reefing-gear for sailing vessels having, in combination with a sail and its spar, a line secured to the sail, at a distance from the spar, and substantially parallel thereto, means for removably connecting one end of the line with the spar in reefing the sail, an earing for drawing the other end of the line to the spar to gather the slack of the sail against the spar, and a set of fastening devices to secure the sail in reefed position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL C. JENNINGS.

Witnesses:

GEO. W. JONES,

A. L. CARR.