

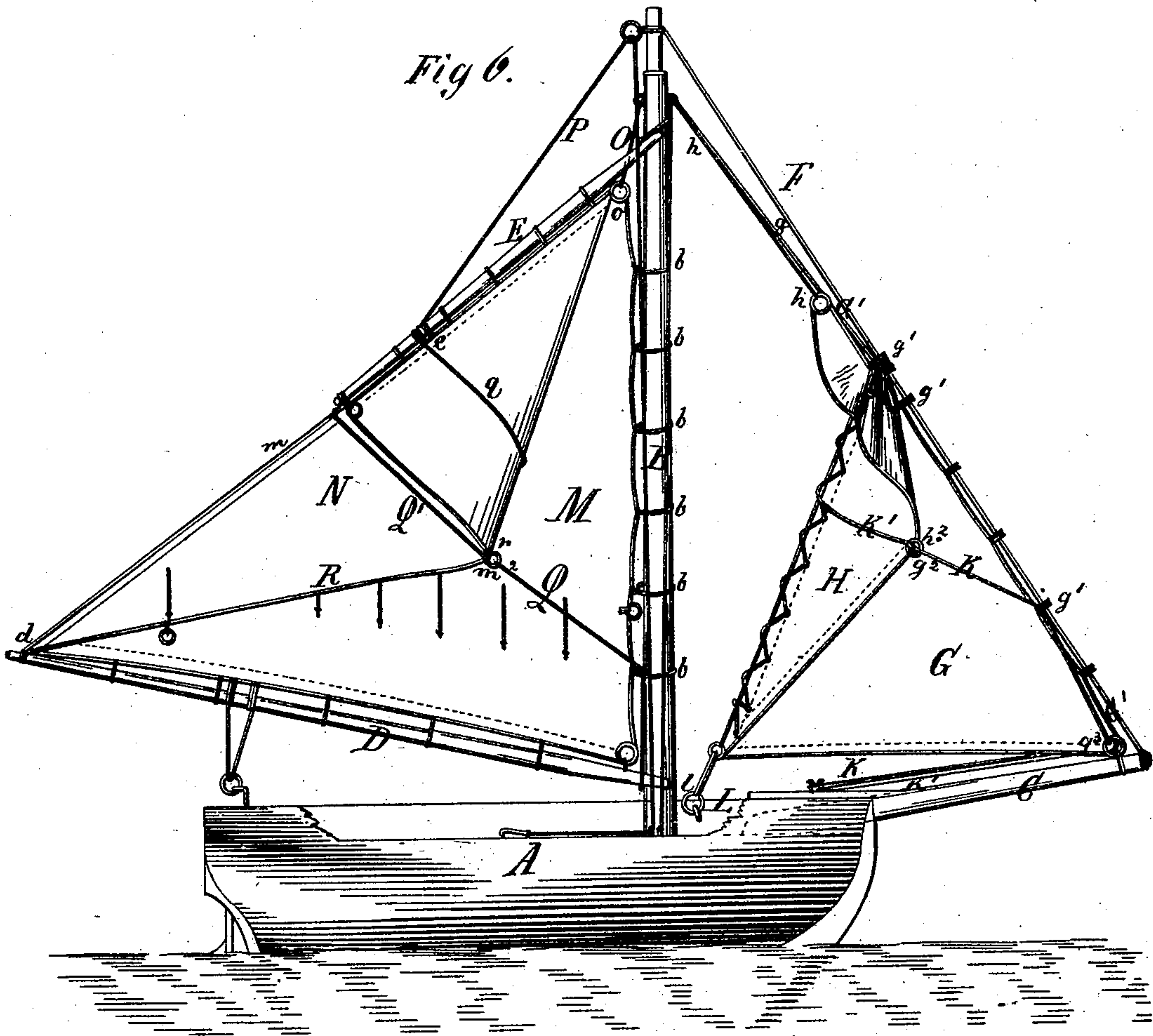


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by
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J. W. SHARRET.
REEFING SAILS.

No. 178,678.

Patented June 13, 1876.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN REEFING SAILS.

Specification forming part of Letters Patent No. **178,678**, dated June 13, 1876; application filed May 22, 1876.

To all whom it may concern:

Be it known that I, JOHN W. SHARRET, of Portsmouth, in the county of Norfolk and State of Virginia, have invented new and useful Improvements in Reefing Fore-and-Aft Sails of Vessels, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a vessel with fully-set sails, the sails being in accordance with my invention. Figs. 2, 3, 4, 5 are plan views of the ropes or brails used for furling, as will be hereafter sufficiently explained. Fig. 6 is a side elevation of the lee side of a vessel with reefed sails, the sails being constructed and operated in accordance with my invention.

The nature of my invention consists in certain constructions, combinations, and arrangements of parts, as hereinafter described and specifically claimed, whereby is provided an improved fore or jib-boom sail, and an improved method of reefing fore-and-aft sails, with a smaller number of brails, in less time, and with less labor, wear, and strain to the operating parts, than heretofore, thus making the reefing a very easy task, and one which can safely be performed in any kind of weather, and without interruption to the progress or course of the vessel.

To enable others skilled in the art to understand my invention, I will proceed to describe it.

In the accompanying drawings, A represents a vessel; B, a mast; C, a jib-boom; D, a boom, and E a gaff. The forestay F connects the mast-head with the front end of the jib-boom, and serves to support the jib, which is composed of parts G and H, fastened together by diagonal lacing I, so that it consists of two independent triangular sails, each with a halyard, and both with one down-haul. The upper halyard h is fastened to the highest point of the bonnet portion H, and passed through a block, h^1 , on the mast, down to its usual fastenings on the deck. The lower halyard g is fastened to the highest point of the part G' of the jib, and is passed through the hanks g^1 of the bonnet H; thence through the block h^1 , and down to its usual fastenings on

the deck. The jib-bonnet brails K K' are fastened on either side to the leech of the sail at h^2 , whence they pass through the eye g^2 in the part G of the jib, thereby crossing each other and reversing their positions, and finally passing through the opposite hank g^1 , down through the eye g^3 of the sail G, and to the jib-boom, from which it is guided, in the usual manner, to the fastenings on the foredeck of the vessel. The points for the fastening h^3 and the eye g^2 are at the same distance from the traveler L and from the lacing I, to permit the bonnet to be nicely doubled or folded up upon the jib G. The jib is fastened to the jib-boom C, in the usual manner, at c , and to the traveler guide or rail L by means of the traveler l , also in the usual manner. Between the boom D and the gaff E the aft-sail is fastened in the usual manner. It consists of the mainsail M and the mainsail-reef N. To strengthen the aft-sail when reefed, it is provided with a ridge-band, m , which serves as a leech when the reef N is furled up, as seen in Fig. 6.

The mainsail M is fastened to the boom D in the usual manner, and to the mast B by means of travelers b . The gaff E, to which the mainsail-reef N is attached in the usual manner, is, near the mast, supported by the throat-halyard O, which is fastened to the eye o of the said sail. The other end of the gaff is supported by the peak-halyard P, in the usual manner. The brails Q Q' of the aft-sail are constructed with switches q and q' , which are attached to the gaff E at e , from where they pass down at both sides of the sail N to the eye m' of the mainsail M, where they cross each other and run down at both sides of the said sail and unite with the main-brails. Thus the switch q is seen in Figs. 1 and 6 uniting near the eye m^1 with the brail Q, and in Figs. 2 and 3 both brails are separately shown in plan view with their switches as arranged on the sails.

The main-brails run from the eye m^1 , along both sides of the sail N, to the leech R, to which they are fastened at r , a point equidistant from the boom-fastening d , with an eye, m^2 , in the sail M, in which the said brails cross each other before they finally pass through one of the hanks b and down to the deck, where they are

fastened in a suitable manner, when the sail is reefed.

As long as the vessel proceeds with full sail the jib-bonnet brails and the mainsail-reef brails are fastened to the deck in a tight manner, to prevent them from getting entangled with other ropes or from being blown out of reach. When the jib-bonnet is to be reefed the halyard *h* is unfastened and the bonnet *H* allowed to come down along the forestay *F*.

To prevent the wind from bagging the sail it is brought down by the down-haul *G'*. At the same time the brail *K'*, which furls the bonnet to the lee side, is drawn tight and fastened, whereby the bonnet becomes furled, as seen in Fig. 6.

To reef the aft-sail the peak-halyard *P* is unfastened, and the brail *Q*, which reefs the said sails at the lee side, is drawn upon. The fastening *r* on the leech *R* is thereby drawn to the eye *m*², and the gaff *E* is drawn down until the point *e* (where the switch *q* is fastened) arrives at the eye *m*¹. The mainsail-reef is thus doubled up and fastened upon the sail *M*, and the gaff *E* is fastened close to the leech *R*. The peak-halyard *P* and the brail *Q* are now properly fastened, and the operation of reefing is completed.

To unfurl the sails again, the brails and the down-haul are loosened and the halyards drawn on and finally fastened.

It is obvious that by drawing on the brails *K* and *Q'* the sails will be reefed on the opposite side to that represented.

The described operation is so simple, and the labor required for it is so little, that one man can reef and set sail in considerably less time than four men could possibly do the same work according to any other known method.

I am aware that mainsails of the above description are diagonally reefed; but I do this diagonal reefing with differently-arranged brails, and thereby enable the operator to fasten the gaff and reef the sail by means of only one brail, and that with less exertion and in less time, thus reducing time, labor, wear, and cost of construction.

The jib could heretofore only be reefed by taking it down and removing the bonnet by hand, and then putting the so-reduced sail up again in its proper place. The vessel, being during that operation without its main guide, (the jib,) will naturally fall off its course and the aft-sail give the helmsman a great deal of annoyance by its variable sway. This reefing requires the skill and main strength of several hands and a good deal of time, thus greatly endangering the vessel in stormy weather.

With my improved construction the main part of the jib remains intact under all circumstances, and the reefing is done by one man with the aid of one brail in almost a moment, and with very little exertion, while the course of the vessel is not in the slightest degree interfered with.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The mainsail of a vessel provided with a diagonal ridge-band, upon which the gaff is secured in the act of reefing by a branch of the brail which reefs the said sail, operated substantially as described.

2. The mainsail *M* and the reef *N*, having eyes *m*¹ *m*² in them, through which the brails cross each other, substantially as and for the purpose set forth.

3. The brails *Q* and *Q'*, having branches *q* and *q'*, constructed and operating substantially as set forth.

4. The combination of the main portion *G* of the jib, the bonnet *H*, the halyards *g* and *h*, down-haul *G'*, and the brails *K* *K'*, constructed and operating substantially as set forth.

5. The jib made of two triangular sections, said sections being united together by lacing, and both operated together, or the upper one independently of the lower one, by means substantially as described.

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Witnesses:

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