

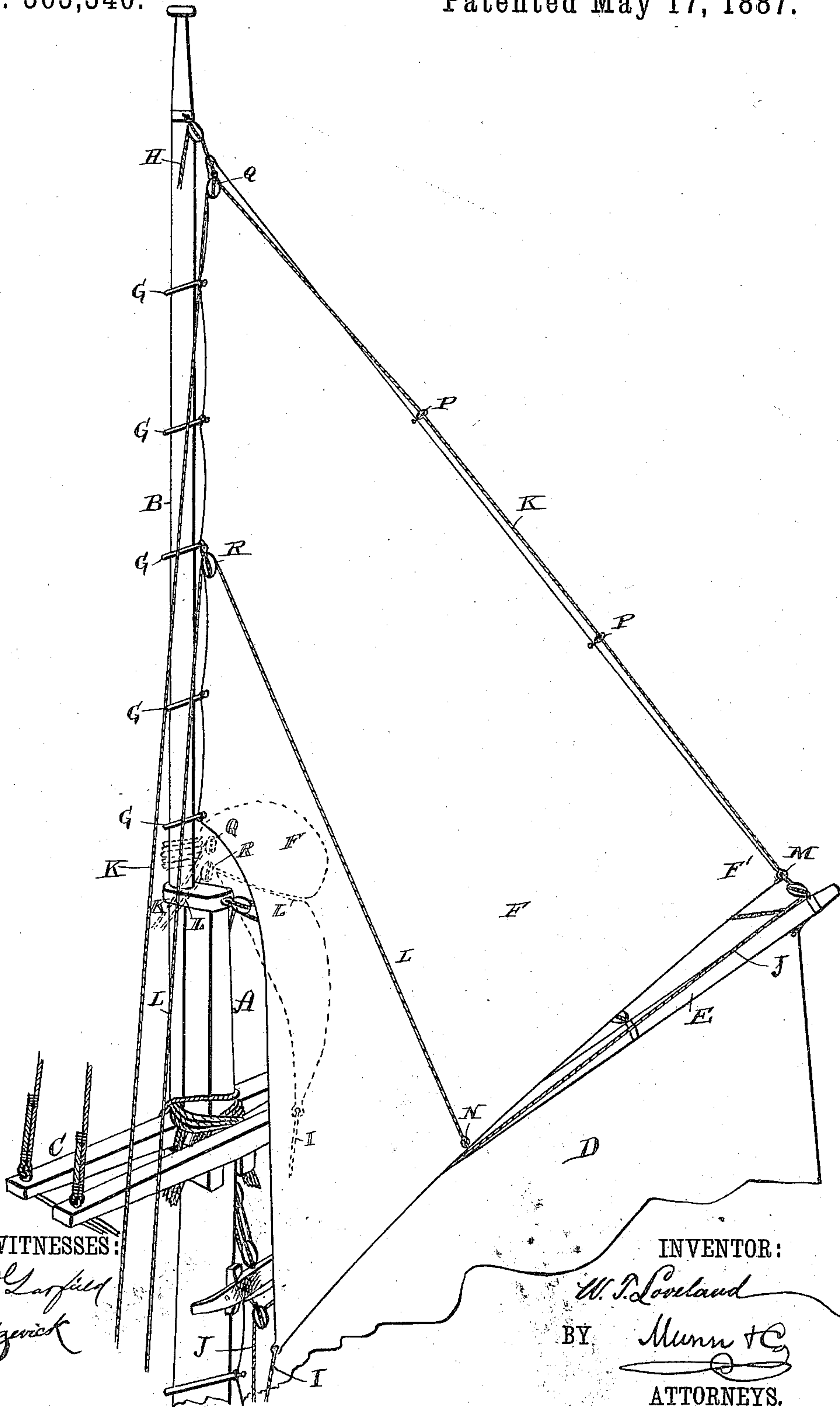
(No Model.)

W. T. LOVELAND.

FURLING TOP SAILS.

No. 363,340.

Patented May 17, 1887.



# UNITED STATES PATENT OFFICE.

WILLIAM T. LOVELAND, OF NEW GRETN, NEW JERSEY.

## FURLING TOP-SAILS.

SPECIFICATION forming part of Letters Patent No. 363,340, dated May 17, 1887.

Application filed February 16, 1887. Serial No. 227,793. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM T. LOVELAND, of New Gretna, in the county of Burlington and State of New Jersey, have invented new and useful Improvements in Furling Top-Sails, of which the following is a full, clear, and exact description.

My invention relates to the arrangement and attachment of the top-sail brails or clew-lines by which a vessel's top-sail is clewed up from deck, as in furling the sail; and the invention has for its object to so connect the brails to the top-sail that it can be easily and quickly clewed up without danger of fouling.

The invention consists in a novel method of connecting the brails and their carrying-blocks to the top-sail, as hereinafter clearly described, and particularly pointed out in the claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure illustrates the application of my improvement to the gaff-top-sail of a vessel.

A represents the head of the mainmast; B, the top-mast; C, the cross-trees; D, the head of the mainsail; E, the gaff; F, the gaff-top-sail; G, the top-mast hoops; H, the top-sail halyard; I, the top-sail tack, and J its sheet, all arranged and operating in the usual way in setting the top-sail.

For clewing up the top-sail I employ two brails, K L, the brail or clew-line K being made fast directly to the clew F' of the sail, preferably by means of the grommet M, to which the sheet J is attached, while the brail L is made fast to a grommet, N, secured in the foot of the top-sail about one-third distance from the tack to the clew. The after brail or clew-line K runs up along the leech of the top-sail through grommets or thimbles P, secured at intervals thereto, passes over a block, Q, suitably secured to the head of the sail, and then down at one side of the mast through the rigging to the deck. The brail L runs up over a block, R, secured in any suitable manner to the luff of the top-sail about a third of its length from the bottom, as shown, and runs down to the deck with the clew-line K at the

same side of the mast. In clewing up the top-sail tack I, sheet J and halyard H are loosened in the usual way and the brails L hauled in. The brails serve to draw in the clew and foot of the top-sail to the blocks Q and R, respectively, and at the same time act as down-hauls to draw down the luff of the sail by means of the hoops G, running on the top-mast, so that when the brails are hauled taut the top-sail is clewed up, as indicated in dotted lines in the figure, the blocks Q R, together with the clew F' and the point N of the foot, being bunched together at the foot of the top-mast, the sail bellying out in a ball and the tack alone being free.

In the ordinary arrangement the top-sail clew-line is made fast to the foot of the sail at or near the tack, or to the body of the sail, runs thence through a block secured to the clew of the sail, and up over a second block fastened to the head, to the deck; but when the tack and sheet are loosened and the sail is thrashing the sheet is very apt to foul the block at the clew, as well as the clew-line rove therein, thereby preventing the hauling in of the clew-line. In my arrangement the block is removed from the clew to the luff, so that it cannot be fouled by the tack or sheet, and, further, in making this change no alterations in the sail or new running-gear are necessary, other than the extra brail L, thereby making the application of the improvement to sails in use a very simple operation.

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

1. The combination, with the top-sail and its setting-rigging, of a brail or clew-line made fast to the top-sail, a block fastened to the head of the top-sail, through which the brail or clew-line is rove, a second brail made fast to the foot of the top-sail, and a block fastened to the top-sail luff, through which the second brail is rove, substantially as shown and described.

2. The combination, with the top-sail and its setting-rigging, of a brail or clew-line made fast to the clew of the top-sail, grommets or thimbles attached to the leech, through which



the clew-line is passed, and a block fastened to the head of the said sail, through which the brail or clew-line is rove, substantially as shown and described.

- 5 3. The combination, with the top-sail and its setting-rigging, of blocks fastened to the head of the top-sail and to its luff at a point between the head and foot, and brails rove

through the blocks and made fast to the clew and foot of the top-sail, substantially as shown 10 and described.

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Witnesses:

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