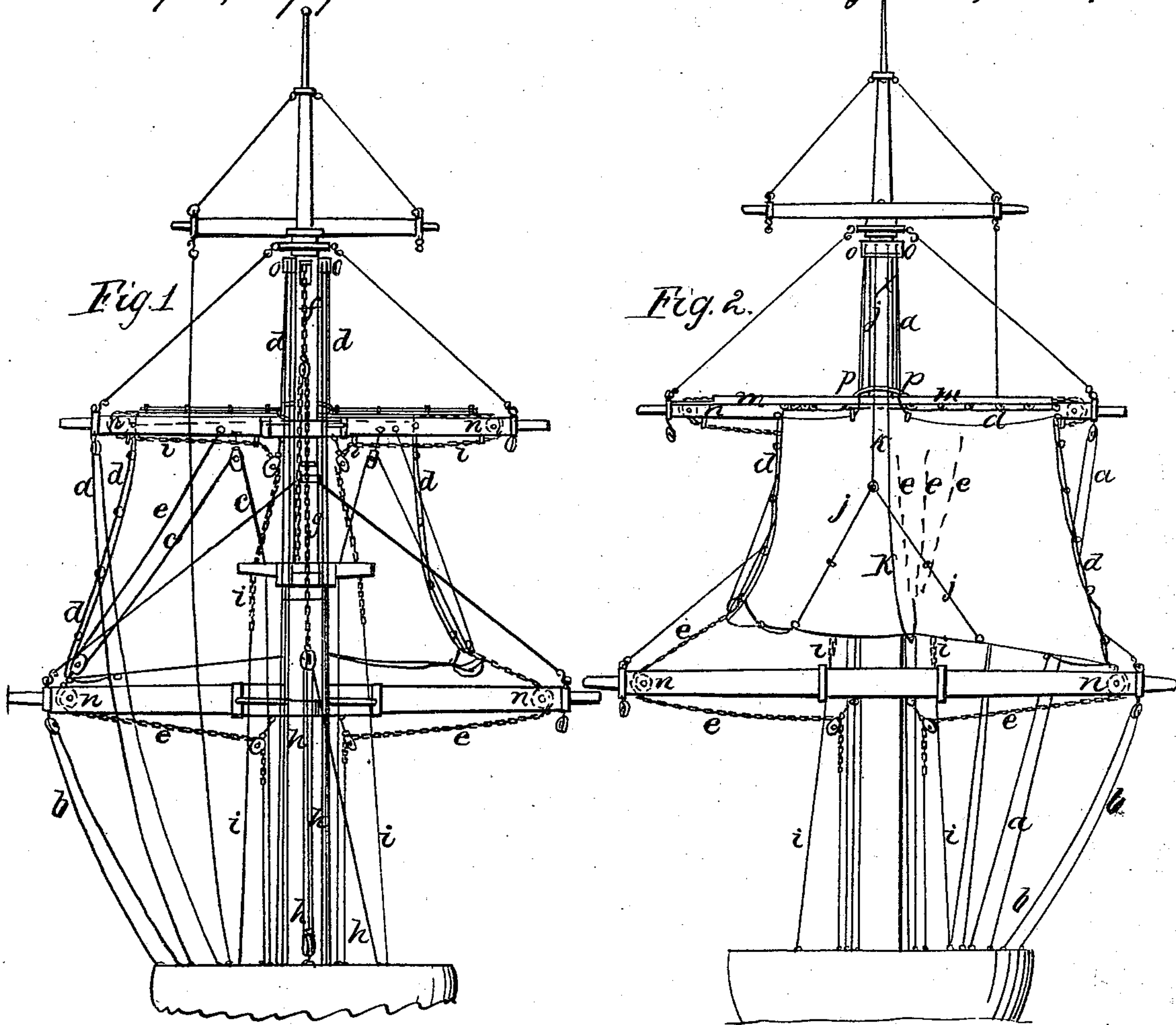


E. G. Gaillie. Sheet 1, 3 Sheets.

Sails & Rigging.

N^o 94,099.

Patented Aug. 24, 1869.



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E. G. Gaillie. Sheet 2, 3 Sheets.
Sails & Rigging.
Nº 94,099. Patented Aug 24, 1869.

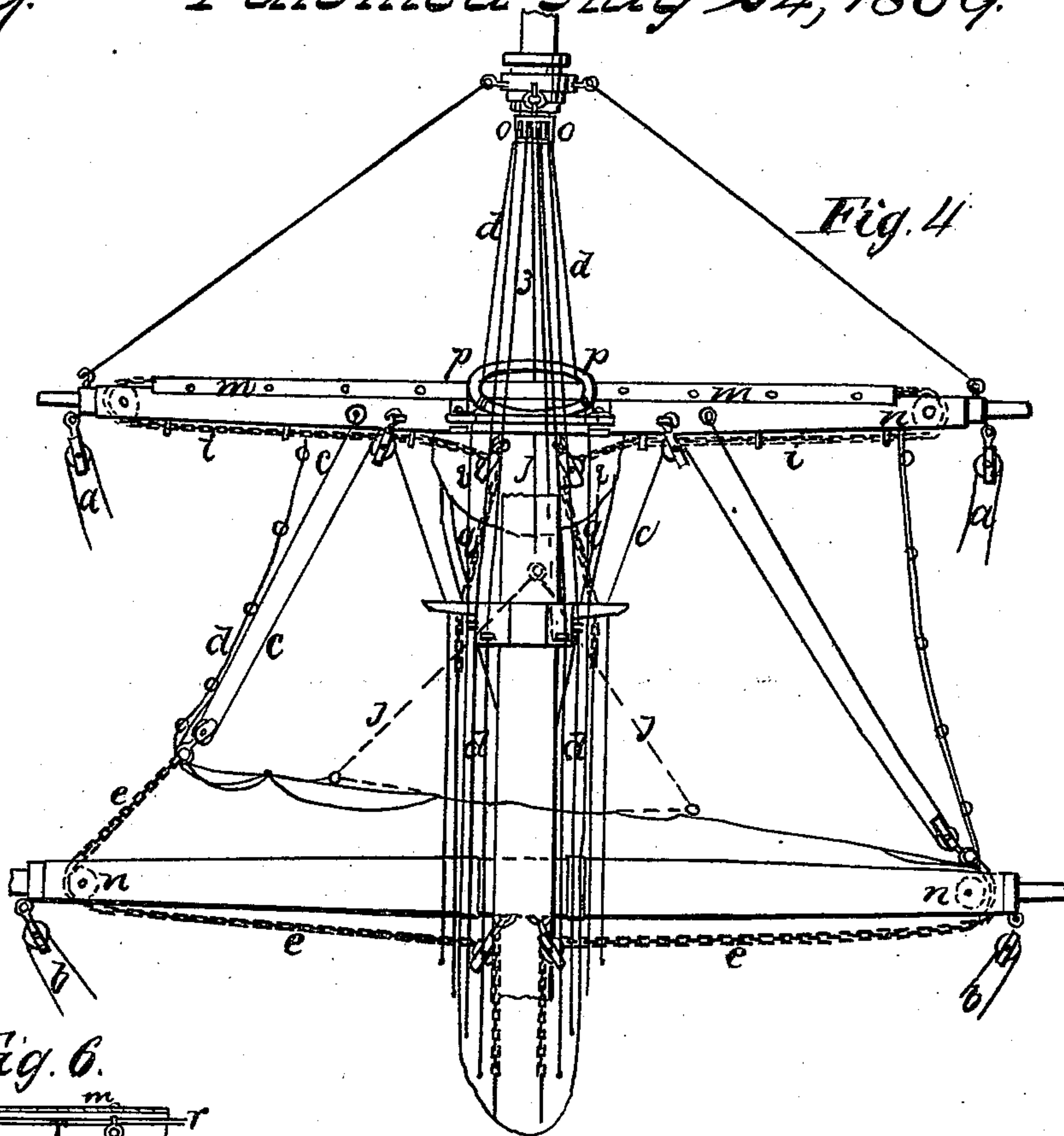


Fig. 4

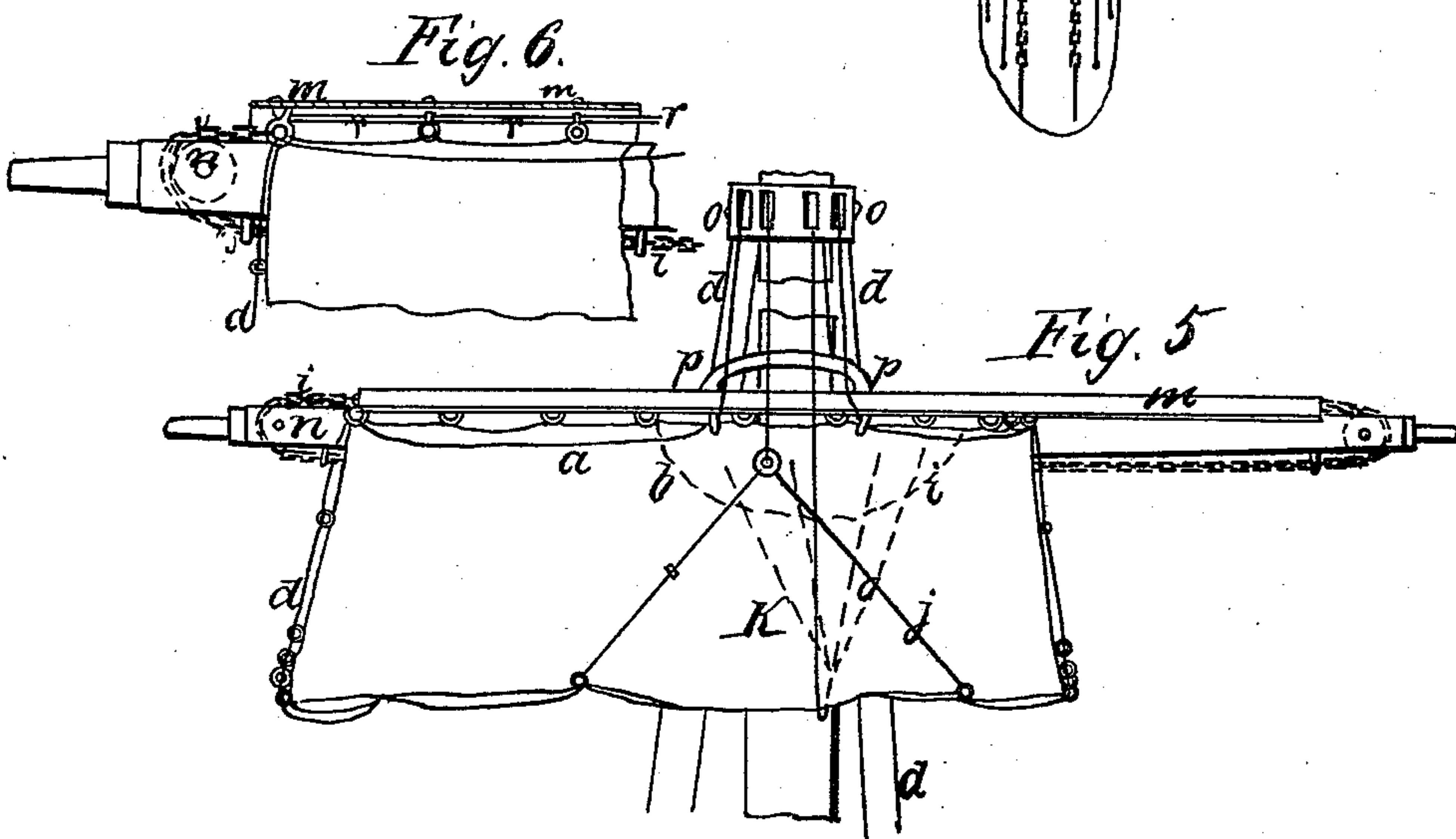


Fig. 6

Fig. 5

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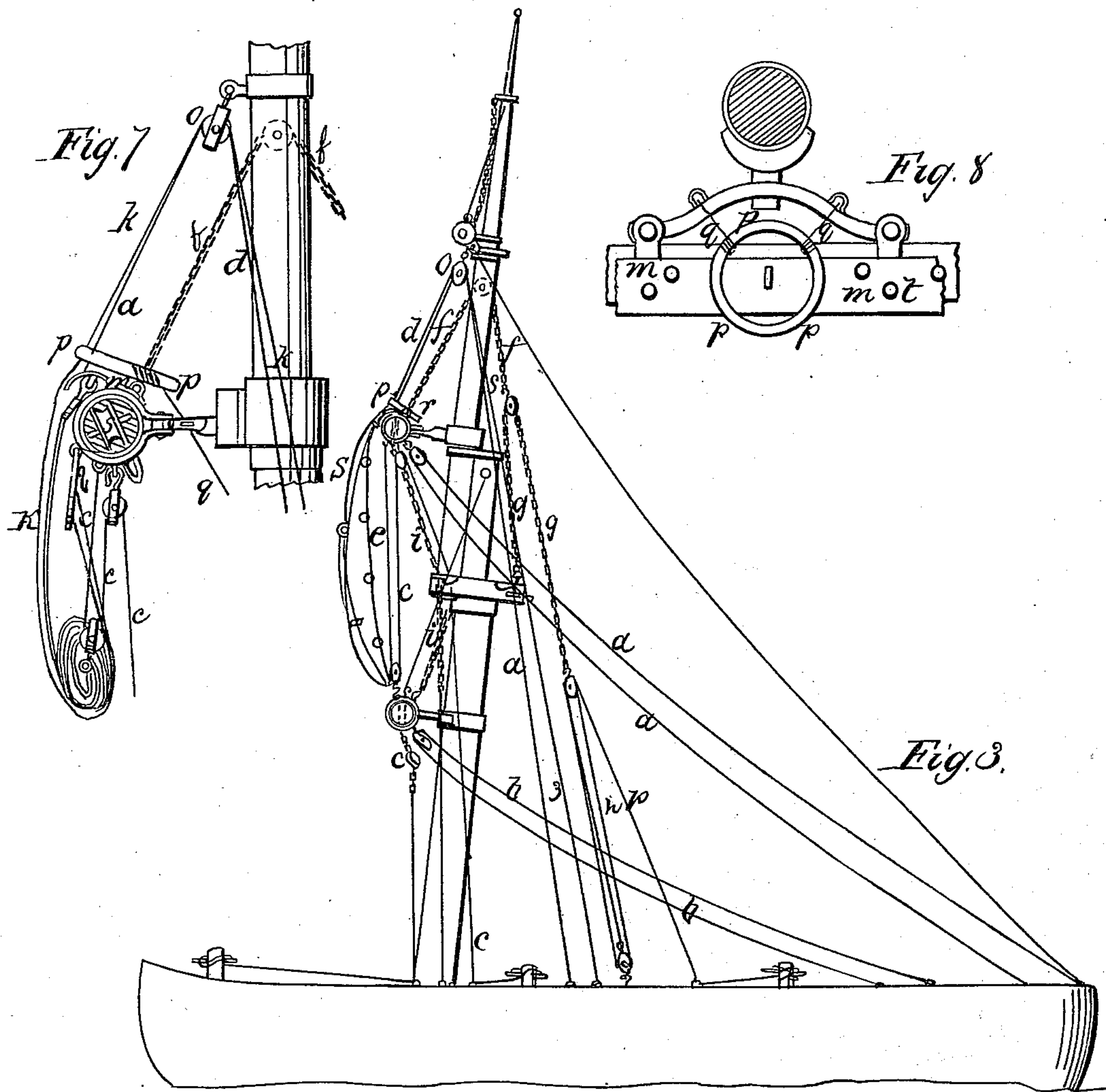
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Sails & Rigging

N^o 94,099.

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EUGENE G. GAILLIC, OF EASTPORT, MAINE.

Letters Patent No. 94,099, dated August 24, 1869.

IMPROVEMENT IN APPARATUS FOR FURLING SAILS.

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, EUGENE G. GAILLIC, of Eastport, in the county of Washington, and State of Maine, have invented a new and valuable Improvement in the Method of Furling Sails from the Deck; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1, of the drawings, is a representation of the sail set, looking at it from abaft the mast.

Figure 2 represents sail set, looking from forward of the mast.

Figure 3 represents side view of sail set.

Figure 4 is a representation of sail as seen from either fore or aft the mast.

Figure 5 represents sail partially reefed.

Figures 6 and 7 are representations of ropes and sails.

Figure 8 represents top truck, ring, and downhaul, also shoulder-bolt which secures top truck to the yard.

My invention relates to seamanship; and

It consists, mainly, in a novel arrangement of devices by which a ship's sails may be furled and unfurled from the deck.

The rigging of a ship is shown upon the drawings, and such parts of which as are essential to specify my invention, are named, respectively, as follows:

On fig. 1, the letter *a* represents the top-sail brace; *b*, lower brace; *c*, clew-lines; *d*, (red,) reef-tackle; *e*, chain top-sail sheet; *f*, top-sail tie; *g*, top-sail runner; *h*, top-sail halyard; *i*, (rope and chain,) earing-outhaul; *n*, sheaves through which the outhaul runs.

On fig. 2, the parts marked as above represent the same devices. Letter *j*, (blue,) represents the buntline; *k*, bunting-gasket line; *l*, bunting-gasket; *m*, track in which the rings run on rollers, to which the sail is bent; *o*, buntline-block; *p*, ring which secures sail when furled and clewed up.

On fig. 3, a portion of the devices mentioned above is indicated by corresponding letters of reference.

Fig. 4 shows most of the devices mentioned above marked with corresponding letters of reference, and an additional reference, marked *q*, which letter represents the downhaul-ring.

On fig. 5, the letters above mentioned refer to parts corresponding with those already specified.

The letters of reference above named, that appear on fig. 6, indicate corresponding devices, and the letter *r*, on said figure, represents a lower or inner track, constructed as shown.

The letter *s*, on fig. 7, represents a roller running in track. The other letters on said figure are shown and described on the figures above mentioned.

The letter *t*, on fig. 8, represents a shoulder-bolt. The other letters on said figure are seen in the other figures upon the drawings, and represent corresponding parts.

To operate my device from the deck of the vessel, I proceed as follows:

When the sail is to be set, I let go the bunting-gasket line *k*, the buntline *j*, reef-tackle *d*, top-sail brace *a*, and downhaul connected with the ring *q*. I pull on top-sail sheets *c*, and when they are hauled taut on both sides, make them fast to cleat. I then pull on top-sail halyards *h* till the halyards bring the sail taut. If the earing-outhauls *i* are not then perfectly even, I even them from the deck by pulling. These movements set the sail completely.

To furl the sail, I let go top-sail halyards *h* and top-sail sheet *c*, one at a time. I then pull on clew-line *c* and on both sides of reef-tackle *d*. I then pull on buntline *j*, bunting-gasket line *k*, and on downhaul attached to securing-ring *q*. These movements furl the sail completely.

Any square sail may be furled from the deck by the means above mentioned.

To reef the sail in a common breeze, I slack the top-sail halyard *h*, haul in on the top-sail brace *a*, on buntline *j*, and on reef-tackle gently. These movements will bring the earing-outhauls *i* near the centre of the yard, and hook the hooks that lie on the end of the reef-band into the bail in the yard that connects with the earing-outhauls. I then knot the points from aft part of sail through the rings that lie in the track. These rings are attached to the roller *s*, on fig. 7. I then haul in the slack of the earing-outhaul *i*, but do not make the outhauls fast until the yard is hoisted up.

In a heavy wind, I clew up the top-sails altogether, as mentioned above, then, being supported by buntline *j*, clew-line *c*, reef-tackle *d*, and bunting-gasket *l*, the sail is brought entirely out of the wind, and two men can easily reef it.

Let it be understood that only those sails that reef are bent to the rings attached to the roller. The other sails are bent without the rings.

To bend the sail, I bend the rollers to the sail while it lies on deck, and make fast the buntlines to the middle of the sail, in any convenient manner. I then hoist up the sail by the buntlines. When the sail is up to the yard, I open the clews. Then two men, one on each side of the mast, can place the rollers, with sail attached, into the track. I then close the clews, and make fast the middle of the sail to the ring in the clasp. I then attach the buntlines, clew-lines, outhauls, and necessary gear, and the sail is bent.

In unbending the sail, I reverse the process described in the preceding paragraph.

For a more explicit description of the operation of

some portions of my device, I will state that the bunting-gasket line *k* is rove through the four-sheaved block on the mast-head, marked *o*, and comes down through the ring *p*, running under the foot, and connects with bunting-gasket *l*. This I concede to be a new method of reefing.

The reef-tackle *d* operates by passing through the rings or lizards on the outer edge of the sail, being made fast to the foot of the sail, close to the clew, and running up to the four-sheaved block *o*. This reef-tackle being pulled, plaits the sail as a man would do, if placed on the yard.

The buntline *j* reeves the rings or lizards on the sail, fastened at the foot thereof, and clews the sail to the yard. This line also runs through the four-sheaved block *o*, and inside the ring *p*.

The earing-outhaul *i* is fastened to the head of the sail, runs through the sheaves *n* in the yard-arm, then through a quarter-block in the centre of the yard, and thence to the deck, where it is made fast. This line hauls out the earing when the top-sail halyard *h* is pulled.

The tracks on yard, marked *m* and *r*, are those upon which the rollers run. The upper track, *m*, is formed by the edge of the overlying plate which covers and protects the same from bad weather.

The ring, marked *p*, is operated by the ring downhaul *q*, and when the sail is furled and clewed, the downhaul, being pulled, brings the ring *p* down on the sail, thereby giving security to said sail.

There are clews affixed to the centre of the yard, which serve to confine and keep in place the working-apparatus of the track. There is a ring in the centre of these clews, to which the centre of the sail is fastened, and which serves to keep the earings even.

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

1. The combination and arrangement of the buntlines, rollers, ring, and track, herein described, when operated to haul a sail, substantially as specified.

2. The combination and arrangement of the top-sail halyards *h*, top-sail braces *a*, buntline *j*, earing-outhauls *i*, and rings and track, as described, when operated, as specified, to reef a sail, substantially as set forth.

3. The combination and arrangement of the bunting-gasket line *k*, buntline *j*, reef-tackle *d*, top-sail braces, *a*, ring *q*, with its downhaul, top-sail sheet *c*, top-sail halyards *h*, and earing-outhauls *i*, when the same are operated to set a sail, substantially as described.

4. The combination and arrangement of the top-sail halyards *h*, top-sail sheet *c*, clew-line *c*, buntline *j*, bunting-gasket line *k*, and ring *q*, when operated to furl a sail, substantially as specified.

5. The sheaves *o* and *n*, and the ring *p*, when combined and operating substantially as and for the purposes described.

6. In combination with the sail-furling and tautening-apparatus herein specified, the clews attached to the centre of the yard, that hold the sail and roller to the track, and to which the middle of the sail is bent, substantially as and for the purposes specified.

In testimony that I claim the above, I have hereunto subscribed my name, in the presence of two witnesses.

EUGENE G. GAILLIC.

Witnesses:

A. McNICHOL,
NICK FESSENDEN.