

F. NORWOOD.
BOOM AND SAIL ATTACHMENT.

No. 186,603.

Patented Jan. 23, 1877.

Fig 1.

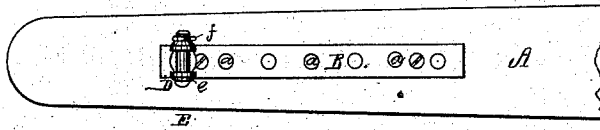


Fig 2.

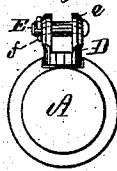


Fig 3.

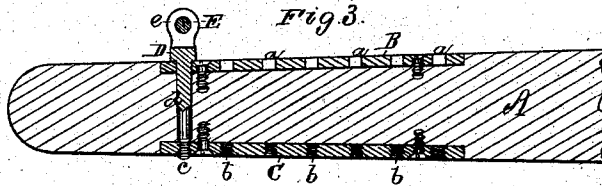


Fig 4.

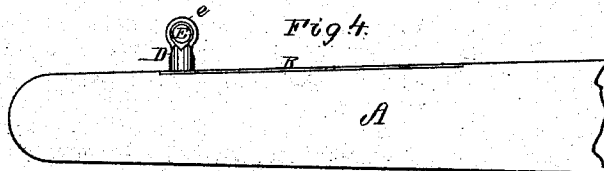
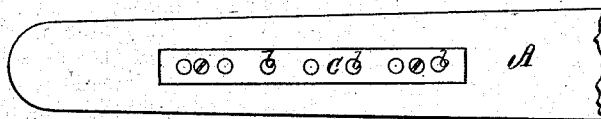


Fig 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

FREDERICK NORWOOD, OF GLOUCESTER, MASSACHUSETTS.

IMPROVEMENT IN BOOM AND SAIL ATTACHMENTS.

Specification forming part of Letters Patent No. **186,603**, dated January 23, 1877; application filed December 18, 1876.

To all whom it may concern:

Be it known that I, FREDERICK NORWOOD, of Gloucester, of the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Boom and Sail Attachments; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 an end elevation, Fig. 3 a longitudinal section, Fig. 4 a side view, and Fig. 5 a bottom view, of the end portion of a schooner's boom with my improved sail-connection applied thereto.

My invention is to prevent the accidents which occasionally result from the common "pot-bail" as generally applied to a boom—that is to say, as extended from the side thereof. When so arranged it is very liable, when the boom is over the rail and the vessel is sailing by and in close proximity to another vessel, to become caught in the rigging of the latter, and thereby to do injury thereto, or to the masts or other part or parts of such vessel.

With my invention the sail-connection extends up from the upper surface of the boom, and in no respect projects from the side of the boom.

In carrying out my said invention, as shown in the aforementioned drawings, I provide the boom A, near its outer end, with two long metallic plates, B C, let into and fastened to it, one of them being arranged in the upper and the other in the lower side of the boom, and both being secured to it by screws or other suitable appliances. Vertically through these plates and the boom I make a series of holes, *a a a a*, at equal distances apart, and in each hole of the lower plate I form a female

screw, *b*, to receive a male screw, *c*, cut on the lower part of the shank *d* of a forked bolt, D, formed and provided with a connection-pin, E, as shown. The pin E, furnished with a head, goes horizontally through the prongs of the furcated head *e* of the bolt, and is held in place therein by a cross-pin, *f*, driven diametrically through such pin E, and arranged as shown.

The "clew" of the sail, on being inserted in the forked head of the bolt D, is to receive the pin E, which, to connect the clew to the bolt, is to be passed through the clew and the two prongs.

Instead of the bolt being screwed into the lower plate, it may be extended through and beyond it, and receive a nut screwed on it and against such plate, or a washer previously placed on the bolt-shank, in which case there will be no need of female screws in the holes of the plate. This sail and boom attachment affords ready means of adjusting the bolt nearer to or farther from the end of the boom or the sail, as occasion may require. It also insures a firm support to the furcated bolt, and prevents it from splitting the boom under sudden drafts of the sail. It also presents other advantages, which to a mariner will be easily apparent.

I claim—

The furcated screw-bolt D, its connection-pin E, and the perforated plates B C, arranged and combined together, and with the boom A, substantially as and for the purpose as set forth.

FREDERICK NORWOOD.

Witnesses:

JAMES S. JEWETT,
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