(No Model.) 2 Sheets—Sheet 1.

A. C. CRANDALL.

SPINNAKER BOOM FOR YACHTS, &c.

No. 383,172. Patented May 22, 1888.

Fig. 1.

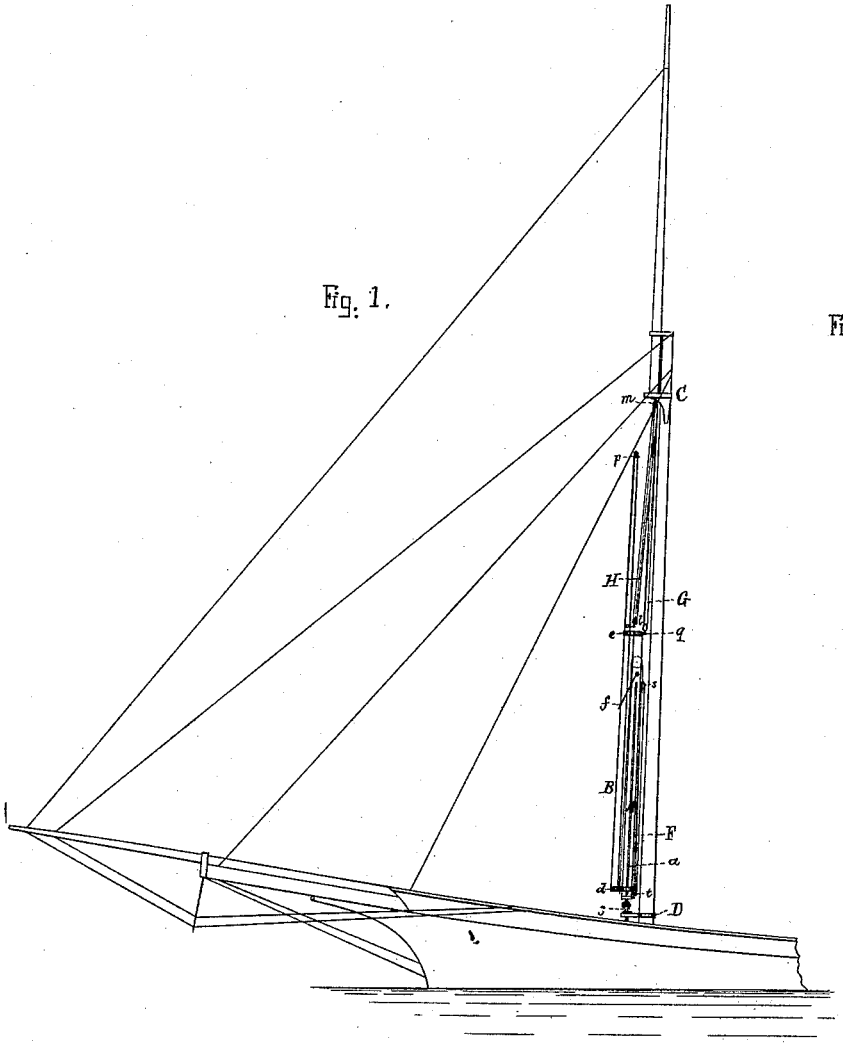


Fig. 3.

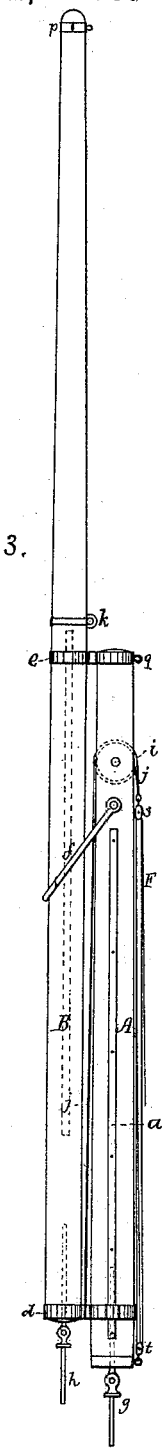
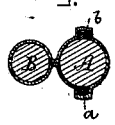


Fig. 4.



Witnesses.
H. C. Fox
H. G. Preston.

Inventor.
Albert C. Crandall,
by Singleton & Piper, attys.

(No Model.)

2 Sheets—Sheet 2.

A. C. CRANDALL.

SPINNAKER BOOM FOR YACHTS, &c.

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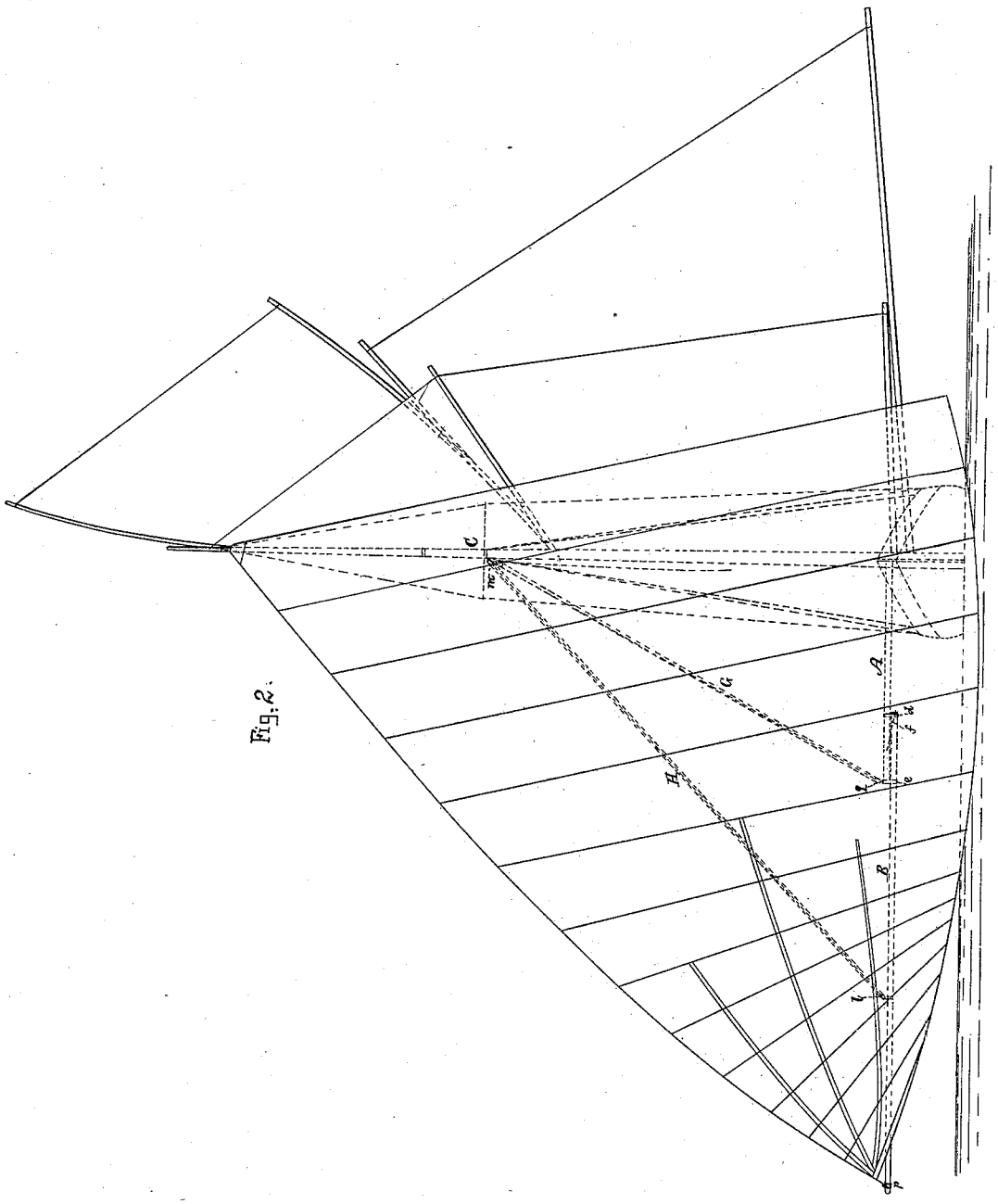

Fig. 2.

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UNITED STATES PATENT OFFICE.

ALBERT C. CRANDALL, OF WEST DENNIS, MASSACHUSETTS.

SPINNAKER-BOOM FOR YACHTS, &c.

SPECIFICATION forming part of Letters Patent No. 383,172, dated May 22, 1888.

Application filed March 6, 1888. Serial No. 266,341. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. CRANDALL, a citizen of the United States, residing at West Dennis, in the county of Barnstable and State of Massachusetts, have invented certain new and useful Improvements in Sliding Extension Spinnaker-Booms for Yachts; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a side view of the fore-body of a yacht with my invention applied thereto. Fig. 2 is a front view of a yacht, showing my extension-boom in the position it occupies when the spinnaker is set for use. Fig. 3 is a side view of the boom on an enlarged scale. Fig. 4 is a cross section of the same taken through the heel-band.

The nature of my invention is defined in the claims hereinafter presented.

In carrying out my invention I form the boom in two parts or spars, A B, A being the inner or shorter spar, and B the outer or longer one. The inner spar is provided on its sides with battens *a b*, as shown, and encompassing the said spars are two bands, *d e*, the lower one, *d*, being termed the "heel-band," and the upper one, *e*, the "head-band." The heel-band is secured to the inner or lower end of the outer spar, B, and is provided with bearings to slide on the battens *a b* on the inner spar, A. The head-band *e* is fastened to the top or outer end of the said spar A and encompasses and slides on the outer spar, as shown.

Pivoted to the inner spar, A, is a bail, *f*, which can be turned over the end of the spar B, so as to bear against its inner or lower end when it is extended or run out and hold it against the strain to which it is subjected when the spinnaker is filled with wind, and thus prevent it from sliding inward.

Near the outer or upper end of the spar A, and within a chamber therein, a sheave, *i*, is pivoted, over which a line or pennant, *j*, secured to the heel-band, as shown, is carried. Said line is to have an eye to admit of the connection of it to a tackle, F, one block, *s*, of which is hooked into the eye in the pennant, and the other, *t*, into an eye secured to the lower or inner end of the spar A. Said tackle can be used to assist in elevating or running out the spar B and in holding or preventing the same from sliding inboard. When the above device is used as described, the bail *f* can be dispensed with.

Encompassing and fastened to the outer spar, B, just beyond the head-band *e*, is a band, *k*, provided with an eye to receive a block, *l*, through which halyards H extend to another block, *m*, attached to the mast-head C. The head-band *e* also has an eye, *q*, to which is connected a tackle, G, secured to the mast-head, which is to assist in supporting the boom when extended or run out.

Secured to the lower portion of the mast is the usual saddle, D, for supporting the lower end of the boom, and through which the goose-neck *g* of the boom A extends and rests in a socket in the deck. When the boom B only is used, the goose-neck *h* is extended through the saddle and into the socket in the deck.

Fixed on the upper or outer end of the spar B is a band, *p*, provided with three eyes, one being to receive the forward brace and one the after brace, and one the block of the spinnaker-sheet, by which the spinnaker is to be drawn out to the end of the spar B.

The operation of setting the boom may be thus described: When it is in the position shown in Fig. 1, the spar B is to be raised on the required side of the head-stays by means of the lift or tackle H to the necessary height, and at the same time haul taut the halyards attached to the pennant *j*. When the spar B has reached the proper height, the bail *f* falls down under the heel-band *e* and securely holds it. Next, slack away on the lift H and allow the boom to fall outwardly to or about to a horizontal position, and at right angles, or about so, to the longitudinal axis of the yacht. The boom is now in readiness to receive the spinnaker, which is set by hauling on the spinnaker-sheet, to which it is secured and which passes through the block attached to the band *p* on the outer end of the spar B. The spinnaker is a sail used in yachts, and is

supported at the foretop-mast head, from which it extends to the outer end of the spinnaker-boom, and from thence inboard, as shown, making a sail triangular in shape, to be used when sailing before the wind on the opposite side of the yacht to the mainsail and the foresail.

The advantage my extension spinnaker-boom possesses over others in use, which heretofore have consisted of a single spar, is that the area of the spinnaker can be very much increased over one that is used on a single spar, and, owing to the construction of the boom, it can be handled as readily as a single spar and made to swing under the head-stays when required without removing it from its bearing in the saddle, so that it can be used on either side of the yacht when sailing before the wind.

Sometimes I secure the battens *a b* to the spar B instead of to the spar A, and provide the head-band *e* with bearings to slide thereon; but I prefer to use them, as represented in the drawings, as secured to the spar A.

Having described my invention, what I claim is—

1. In a yacht, a sliding extension spinnaker-boom consisting of two parts, A and B, the main part pivotally secured to the vessel or mast at any suitable part, and the part B adapted to slide on the part A, as and for the purpose set forth.

2. In a yacht, a sliding extension spinnaker-boom, substantially as shown and described, it consisting of the two spars A B, connected to each other by the head and heel bands, the heel-band having bearings to receive and slide on battens fixed to the shorter spar, A, as shown, and each spar having tackle connected to it and to the mast-head, a line or pennant, *j*, secured to the heel-band passing through the spar A, and being connected thereto by means of a tackle, F, all as shown, and for the purpose set forth, the boom being supported at its foot, as represented.

3. In a yacht, a sliding extension spinnaker-boom, substantially as shown and described, it consisting of the spars A B, connected to each other by the head and heel bands *d e* in such manner that the heel-band can slide on one spar and the head-band on the other, or on battens secured to said spars, the spar A having a bail, *f*, and each spar having a tackle connected to it and to the mast-head, all as shown and set forth, the boom being supported at its foot, as represented.

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

ALBERT C. CRANDALL.

Witnesses:
S. N. PIPER,
C. F. DANIELS.