No. 641,016. Patented Jan. 9, 1900.

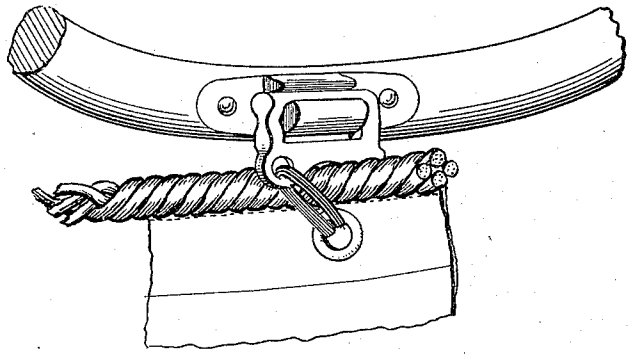
A. G. HUPFEL.

SAIL FASTENING DEVICE.

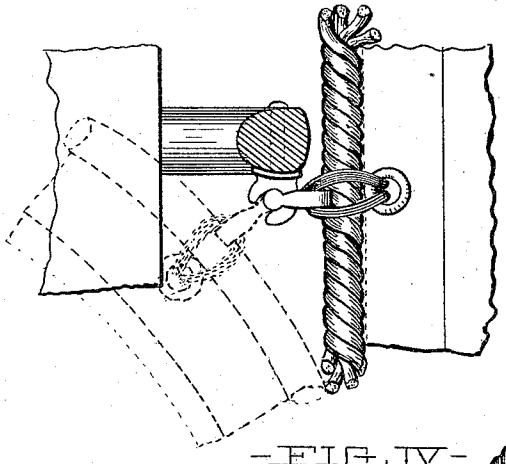
(Application filed Aug. 31, 1899.)

(No Model.)

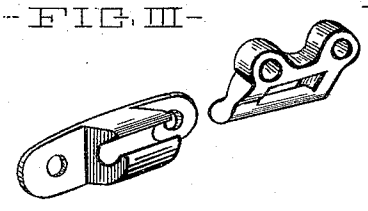
-FIG. I-



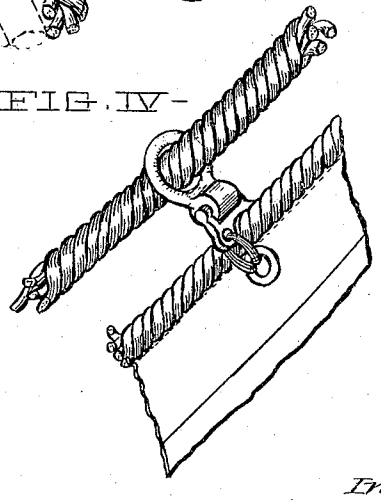
-FIG. II-



-FIG. III-



-FIG. IV-



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UNITED STATES PATENT OFFICE.

ADOLPH G. HUPFEL, OF NEW YORK, N. Y.

SAIL-FASTENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 641,016, dated January 9, 1900.

Application filed August 31, 1899. Serial No. 729,113. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH G. HUPFEL, a citizen of the United States, and a resident of New York, county of New York, and State of New York, have invented a new and useful Improvement in Sail-Fastening Devices, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

My invention relates to an improvement in means for fastening a sail to a mast-ring or other desired sail-support; and it consists of means hereinafter fully described.

The annexed drawings and following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

Figure I represents a perspective view of a part of a sail and mast-ring, showing my improved device attached thereto. Fig. II represents a side elevation of a part of a mast and sail, and a cross-section of a mast-ring, showing my improvement in side elevation secured to said ring and sail. Fig. III represents a perspective view of my improved fastening device disconnected from the mast and ring, showing the two members disconnected one from the other. Fig. IV represents a perspective view of a portion of a jib and the jib-stay, showing a modification of my invention as applied to a jib-hank.

The device as applied in securing a sail to a mast-ring consists of two members secured, respectively, to the mast-ring and to the sail, said two members comprising, first, a hook A, secured to the lower surface of the mast-ring by any suitable means, such as rivets or screws, as shown in Fig. II, the opening or mouth of said hook being located toward the mast, as shown in said figure, and the recess beyond the mouth of the hook being enlarged, as shown in Fig. III; second, an eye B, secured to the luff of the sail by lashings passing through suitably-located apertures b and through the gromet formed in the tabling of the sail. A depression is formed between the two apertures b, which receives the luff, as shown. Said eye is formed with two lateral arms b' b^2, cast on the body of the eye and joined at their outer ends by an engaging portion or transverse bar b^3 of a diameter substantially equal to the diameter of the recess in the hook A, and hence greater than the width of the opening or mouth in said hook. The arm b' is reduced in width near its junction with the bar b^3, so as to permit said arm to be passed between the said opening, arm b^2 being of greater width, and hence unable to enter said opening. The distance between the inner surfaces of the said arms b' b^2 is greater than the width of the hook, so that the latter may be placed between the two arms, as shown in Fig. I. The eye being secured horizontally to the plane of the sail, as shown, the above construction permits the two members to have a pivotal movement relatively to each other in said plane and to be separable in a direction transverse to said plane, as is readily seen. Such separation, however, can only occur at a given point in the pivotal movement of the two members, such point depending upon the position of the mouth or opening in the hook. This mouth or opening being located, as shown, toward the mast, it is seen that the two members may only be separated when the eye is rotated into the position shown in dotted lines in Fig. II, the two members being transversely fixed at all other points in such movement. It is thus seen that the sail may be detached from the mast-rings without severing the lashings, and hence may also be resecured upon the mast-rings without renewed lashing, at the same time increasing greatly the facility of bending and unbending the sails.

By causing the hook to project below the lower surface of the mast-ring, as by securing it to such surface, the mouth of the hook may be located at the farthest possible point inwardly toward the mast, thereby making it impossible for the sail while hoisted and while flapping to become loosened from its fastening. The hook may be secured to either of the plane surfaces of the ring—the upper as well as the lower—it being preferable, however, to secure it to the lower, as such position makes the sail easier of detachment, inasmuch as said sail need not be lifted during the process of detachment to so great an extent. The

formation of the depressed portion between the two apertures gives the eye a larger bearing upon the luff of the sail, and hence may be very securely and rigidly fastened.

Where it is desired to apply my invention to a sail, such as a jib secured to or supported by a stay, the eye is secured to the luff, as before described, and the hook formed with a ring, through which is passed the supporting-stay, as shown in Fig. III, the opening or mouth of the hook being in each case toward the sail-support, whereby the sail remains securely fixed when in its operative or working position.

Other means of applying the principle of my invention may be employed instead of the one herein explained, change being made as regards the mechanism herein disclosed, provided the means covered by any one of the following claims be employed.

I therefore particularly point out and distinctly claim as my invention—

1. The combination of a sail, a sail-support, and means for securing the sail to said support, said means consisting of two members secured respectively to said sail and sail-support, and comprising a hook and eye having pivotal movement in the plane of the sail and separable in a direction transverse to said plane, substantially as set forth.

2. The combination of a sail, a sail-support, and means for securing the sail to said support, said means consisting of two members secured respectively to said sail and sail-support, and comprising a hook and eye having pivotal movement in the plane of the sail but fixed in a direction transverse with respect to the direction of said movement, said two members being separable in said transverse direction at a given point in said pivotal movement, substantially as set forth.

3. The combination of a sail, a mast-ring, and means for securing the sail to said support, said means consisting of two members secured respectively to said sail and said ring and comprising a hook extending below the lower surface of said ring and an eye engaging said hook, said hook and eye having pivotal movement in the plane of the sail and separable from each other in a direction transverse with respect to the direction of said movement, substantially as set forth.

4. The combination with a hook secured to one of the plane surfaces of a mast-ring, of an eye secured to the luff of a sail and having pivotal engagement with said hook in the plane of the sail and separable from said hook in a direction transverse with respect to said plane, substantially as set forth.

Signed by me this 16th day of August, 1899.

ADOLPH G. HUPFEL.

Witnesses:

CHRIS G. HUPFEL,

H. P. W. CLAUSEN.