Aug. 13, 1929. W. R. CHAMBERLAIN 1,724,003

DETACHABLE FASTENER

Filed Dec. 21, 1928

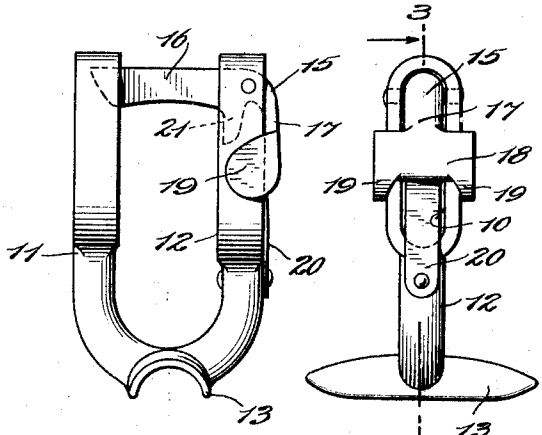



Fig. 1.




Fig. 2.

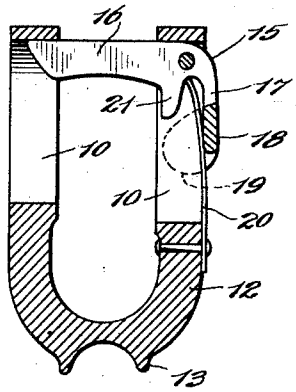



Fig. 3.

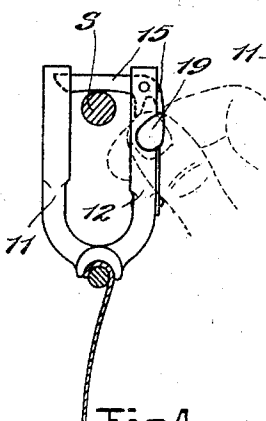



Fig. 4.

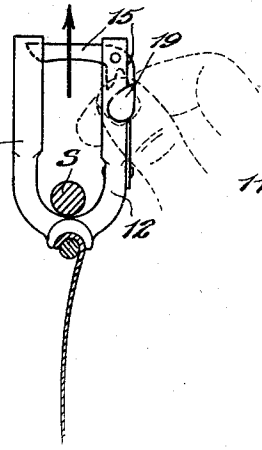



Fig. 5.

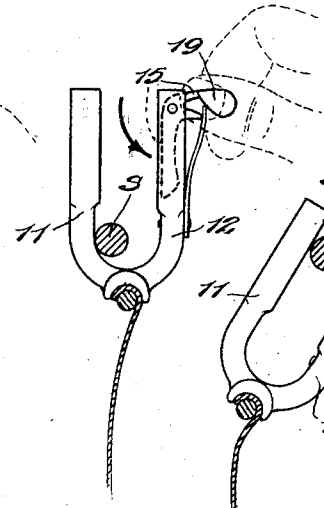



Fig. 6.

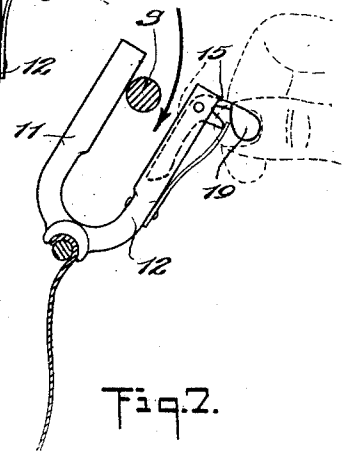



Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## DETACHABLE FASTENER.

Application filed December 21, 1928. Serial No. 327,517.

This invention relates to detachable fasteners of the type usually known as snap-hooks, although, as hereinafter pointed out, a resilient or spring element is not an essential feature of the new device as it has been with previous articles of this class.

A specific object of the invention is to provide reliable and convenient means for detachably securing the luff of a jib or other sail to a wire-stay. Many types of snap-hooks have heretofore been used for this purpose, but all of them, so far as I am aware, are subject to one or more of the following disadvantages:

A tendency to become released from the stay when the sail is flapping, which is particularly noticeable after the spring which such snap-hooks contain has become rusted or has lost some of its resiliency;

A tendency to foul down-hauls or other lines near the stay;

Difficulty of release, making it necessary to use both hands to unbend the sail from the stay, which is a serious disadvantage in rough weather, particularly in the case of a jib-stay running to the end of the bow-sprit.

By my invention all these disadvantages are eliminated.

A snap-hook embodying the invention in an approved form is provided with two side-bars which are secured together at their inner ends where the device may be attached to the bolt rope of a sail. To the outer end of one of the side-bars is pivoted an inwardly opening cross-bar, having a handle which lies close against one of the side-bars when the cross-bar is extended to close the opening between the outer ends of the bars.

A specific embodiment of the invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a side view;

Fig. 2 is an edge view;

Fig. 3 is a section on the line 3—3 of Fig. 1; and

Figs. 4, 5, 6, and 7 are diagrammatic views indicating the manner in which the snap-hook may be detached from a stay by the use of one hand only.

The snap-hook illustrated has a U-shaped frame consisting of two side-bars 11 and 12 containing aligned transverse slots 10. At the inner end of the frame is a cross-piece 13 which is grooved on its inner side to fit over a bolt rope to which it may be moused.

A bell-crank lever 15 is pivoted on a pin extending across the slot in the bar 12 near its outer end. One arm 16 of this lever normally extends across the space between the outer ends of the cross-bars 11 and 12 and enters the slot in the bar 11. This arm 16 is no longer than the slot in the bar 12, so that it may be swung inwardly until it lies entirely within this slot. It is prevented from swinging further by engagement of the inner part of the arm 17 of the bell-crank lever with the outer end of the slot in the bar 12. This arm 17 has at its end a handle consisting of a cross-piece 18 which normally lies close against the outer side of the bar 12 and two ears 19 which normally embrace the bar 12.

A flat spring 20, having its inner end secured to the bar 12 and its outer end bearing against a fixed detent 21 on the bell-crank lever, may be provided to urge the bell-crank lever into its normal position.

The snap-hook is attached to a stay by merely pushing the arm 16 against the stay, which turns this arm inward and then allows it to return to its normal position. The pull of the sail away from the stay holds the inner side of the arm 16 firmly against the stay and prevents it from swinging inwardly. Consequently, the snap-hook cannot become detached from the stay, even though the spring 20 is rusted or otherwise weakened, and there is no danger that down-hauls or other lines may become fouled in the snap-hook.

The snap-hook may be released from the stay with one hand in the manner illustrated in Figs. 4, 5, 6 and 7. In doing this, the ears 19 of the handle are firmly grasped. The snap-hook is first pushed forward to the position shown in Fig. 5 to bring the stays into the rear part of the U-shaped frame. The bell-crank lever is then turned, as shown in Fig. 6, while the engagement of the inner end of the bar 11 with the stay prevents the frame from turning. With the bell-crank lever held in open position, the snap-hook is pushed back, as shown in Fig. 7, to free it from the stay.

What I claim is:

1. At detachable fastener, comprising two side-bars connected at their inner ends, an inwardly opening cross-bar pivoted to one of the side-bars near its outer end, and a handle rigidly connected to the cross-bar and lying close against one of the side-bars when the cross-bar is in closed position.

2. A detachable fastener, comprising two side-bars secured together at their inner ends, one of said side-bars containing a slot, a bell-crank lever pivoted in the outer end of said slot having one of its arms adapted to extend between the outer ends of the side-bars and having at the end of its other arm a handle lying close against and embracing the side-bar on which the lever is pivoted.

3. A detachable fastener, comprising two side-bars attached together at their inner ends and containing aligned transverse slots, a bell-crank lever pivoted in the outer end of one of said slots and having one of its arms adapted to extend across into the slot of the other side-bar and also to lie wholly within the slot in the side-bar on which it is pivoted, a cross-piece on the other arm of the lever adapted to lie against the outer side of one of the side-bars, and two ears at the ends of said cross-piece adapted to embrace said side-bar.

4. A detachable fastener, comprising a U-shaped frame having a grooved cross-piece at its inner end and containing aligned transverse slots in its outer portion, a bell-crank lever pivoted in one of said slots near its outer end, a handle on one arm of said lever, and a spring urging said lever to turn into a position in which its other arm closes the outer end of said U-shaped frame.

In testimony whereof I have hereunto set my hand.

WILLIAM R. CHAMBERLAIN.