No. 827,206. PATENTED JULY 31, 1906.

C. H. BILLMAN.

SNAP HOOK.

APPLICATION FILED MAR. 13, 1905.

Fig. 1.

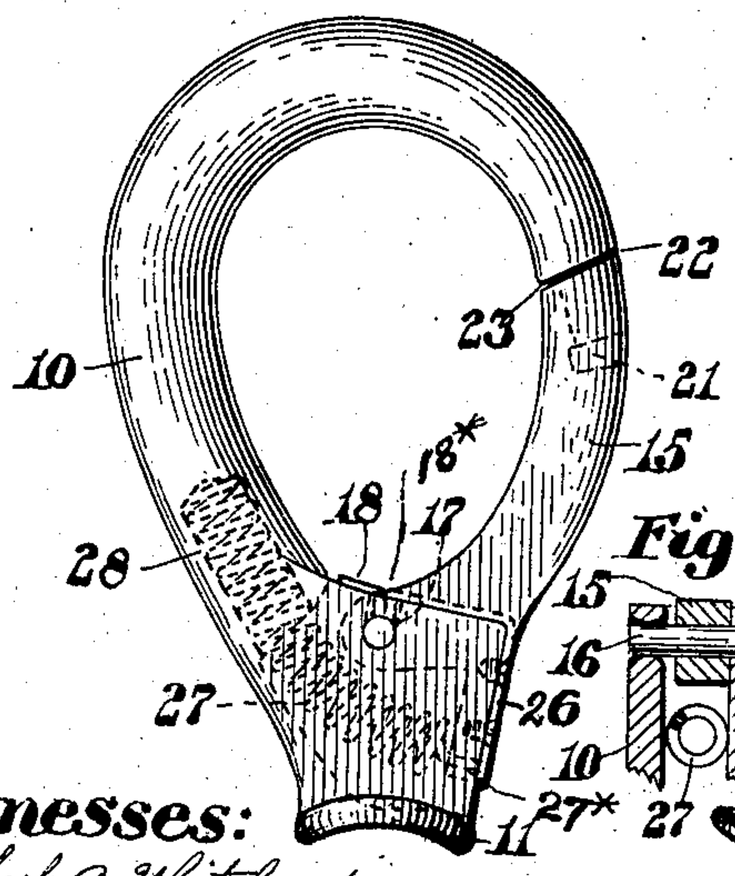

Fig. 2.

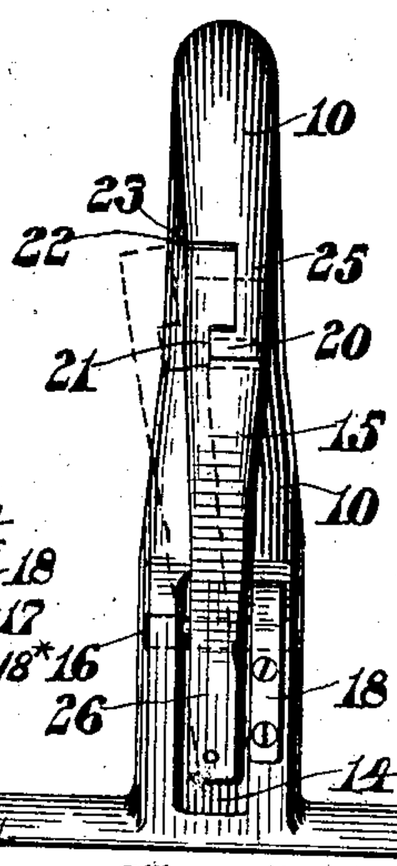

Fig. 3.

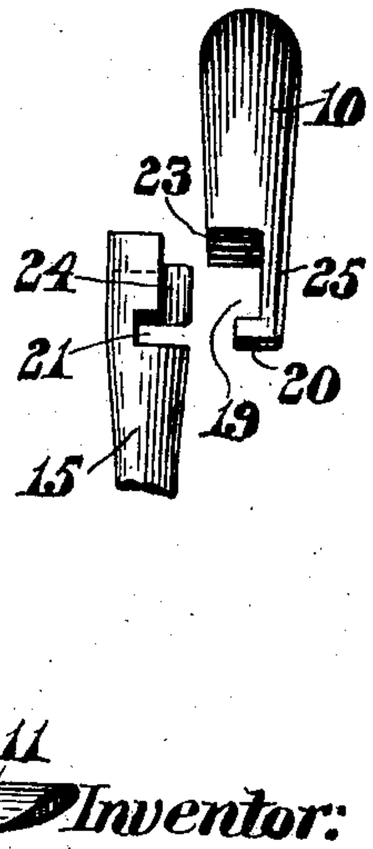

Fig. 4.

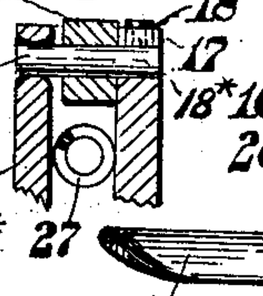

Fig. 5.

Fig. 6.

Fig. 7.

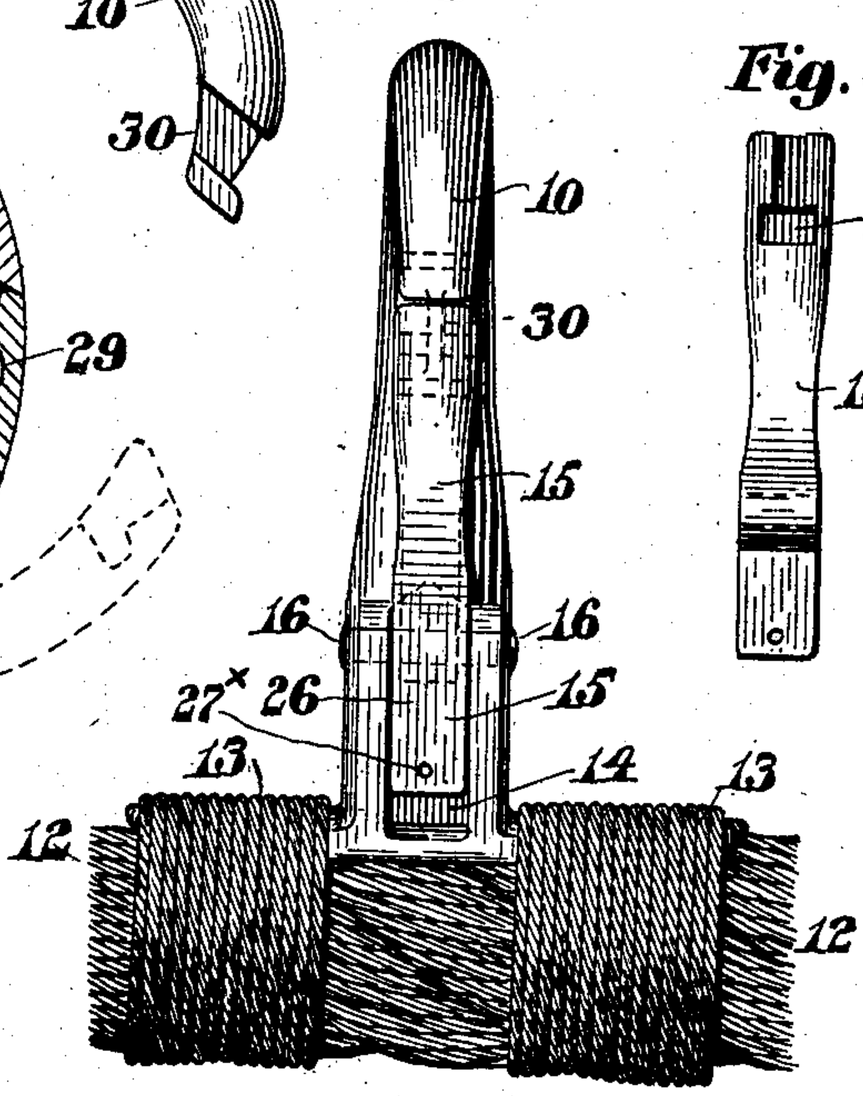

Fig. 8.

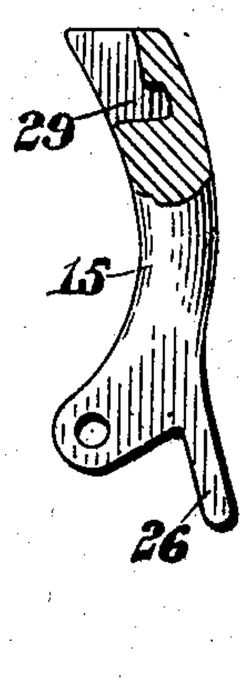

Fig. 9.

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UNITED STATES PATENT OFFICE.

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SNAP-HOOK.

No. 827,206. Specification of Letters Patent. Patented July 31, 1906.

Application filed March 13, 1905. Serial No. 249,731.

To all whom it may concern:

Be it known that I, CHARLES H. BILLMAN, a citizen of the United States of America, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Snap-Hooks, of which the following is a specification.

This invention relates to snap-hooks, and has for its object the production of a hook to be used on sails and in connection with the rigging of vessels which will be effective in operation, easily operable, and free from the defects found in snap-hooks now in general use.

The invention consists in certain novel features of construction and arrangement of parts, which will be readily understood by reference to the description of the drawings and to the claims, to be hereinafter given.

Of the drawings, Figure 1 represents a side elevation of a snap-hook embodying the features of this invention. Fig. 2 represents a front elevation of the same. Fig. 3 represents a front elevation of the interlocking ends of the hook and latch disconnected. Fig. 4 represents a section showing the mounting of the latch-pivot. Fig. 5 represents a modified form of a snap-hook, shown partly in section and as applied to a rope. Fig. 6 represents a front elevation of the same. Fig. 7 represents an elevation of the end of the hook; and Figs. 8 and 9 represent, respectively, an elevation broken in section and a front elevation of the pivoted latch.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 represents a hook provided with lateral projections 11, by which said hook may be lashed to a rope 12, as at 13. The base of the hook 10 is provided with a central recess 14, in which is mounted a latch 15, pivoted to said hook by means of the pivot 16. The width of the latch 15 is somewhat less than the width of the recess 14, and the pivot 16 is loosely mounted in one of its bearings in the base of the hook 10, while the opposite end of said pivot is mounted in a slot 17, in which it is held in position by means of a lug 18* upon the spring 18. Normally the spring 18 retains said pivotal pin 16 in the bottom of said recess 17; but when desired this may be tipped at an angle against the tension of the spring 18 to permit the end of the latch 15 to be disconnected from the end of the hook 10. This hook 10 is cut away at 19 and has at its extreme end a lateral projection 20, which extends into a slot 21, cut in the end of the latch 15, said slot and projection being at such an angle that when coöperating the latch 15 is prevented from moving outwardly about its pivot 16. The extreme end 22 of the latch 15 is cut at such an angle as to coöperate with the face 23 to form a stop and prevent any inward movement of said latch 15. The latch 15 is also provided with a projection 24, which coöperates with the portion 25 of the hook 10 to lock the latch 15 and prevent accidental outward movement thereof. The latch 15 is provided with a downwardly-projecting lug 26, moving about the pivot 16 in a path concentric thereto, to which is secured at 27* a spring 27, extending into a recess 28 in the base of the hook 10, this spring serving to keep the latch 15 normally in closed position, as indicated in Fig. 1. The recess 28 extends along the axis of the hook portion 10 toward the end thereof. It is obvious that when the latch 15 is opened it will be automatically closed by said spring when pressure is removed therefrom. This interlocking of the latch and hook avoids any projection which is liable to catch in the rigging and prevents the accidental unlocking of the hook, while at the same time by a slight lateral pressure on the latch 15 it may be unlocked, so as to permit the movement of said latch about its pivot to permit of the operation of the hook. When the latch 15 is unlocked, it may be moved about its pivot outwardly away from the hook portion 10 and in the same plane therewith.

Sometimes where a quicker-acting hook is desired the side movement of the latch 15 may be dispensed with, as shown in Figs. 5 to 9. In this form the latch 15 is provided with a T-shaped socket 29, which in closed position engages the end 30, adapted to fit therein.

In the operation of the hook the latch 15 is normally held in locked position, as shown in Figs. 1 and 2. When it is desired to unlock the hook, lateral pressure is brought to bear upon the latch 15 to move it into the position shown in dotted lines in Fig. 2, the pivot 16 rocking in its bearing against the tension of the spring 18 to permit this movement. When in such dotted position, the shoulders upon the latch and hook will become disengaged and will permit the latch to

be moved outwardly about the pivot 16 into substantially the position shown in Fig. 5. In moving outward about the pivot 16 the lug 26 compresses the spring 27, which again reacts to move the latch into its normal or locked position when pressure is removed from said latch portion 15. The movement of the latch portion outwardly in the same plane as the hook portion 10 leaves the opening of the hook entirely free and capable of coöperating with a larger member than is the case where the latch members of snap-hooks move inwardly, thereby greatly restricting the opening of the hook. In the modified form of the hook shown in Figs. 5 to 9 the pivot-pin 16, which extends across the longitudinal recess in the base of the hook, is rigid therein and has no tilting movement, as in this form it is unnecessary to provide for lateral movement of the latch 15 to unlock said latch from engagement with the end of the hook 10, as in this form the movement of the latch 15 is only limited in one direction and that inwardly. To open this form of hook, the latch may be moved outwardly in the same plane as the hook portion 10 into the position shown in dotted lines in Fig. 5 without first providing for any lateral movement thereof.

It is believed that the advantages and the operation of the invention will be thoroughly understood without any further description.

I claim—

1. In a snap-hook, the combination of a hook portion provided with a longitudinal slot in the base thereof, a pin in said base extending across said slot, a latch mounted upon said pin and adapted to move outwardly thereon to open the hook, automatic means for moving said latch portion about said pin its free end moving inwardly toward said hook portion to its normal closed position, and means secured to the end of said hook portion to prevent movement of said latch in either direction in a plane therewith until released.

2. In a snap-hook, the combination of a hook portion provided with a longitudinal slot in the base thereof, a pin in said base extending across said slot, a latch mounted upon said pin and adapted to move outwardly thereon to open the hook, automatic means for moving said latch portion about said pin its free end moving inwardly toward said hook portion to its normal closed position, means secured to the end of said hook portion to prevent movement of said latch in either direction in a plane therewith until released, and means for retaining said latch and hook in said locked position but adapted to permit said latch to be released when opening is desired.

3. In a snap-hook, the combination of a hook portion provided with a longitudinal slot in the base thereof, a pin in said base extending across said slot, a latch mounted upon said pin and adapted to move outwardly thereon to open the hook, means for moving said latch portion about said pin its free end moving inwardly toward said hook portion to its normal closed position, means secured to the end of said hook portion to prevent movement of said latch in either direction in a plane therewith until released, and means for retaining said latch and hook in said locked position but adapted to permit said latch to be released when opening is desired, said latch being adapted to tilt sidewise to unlock it from said hook portion.

4. In a snap-hook, the combination of a hook portion provided with a longitudinal slot in the base thereof, a pin in said base normally extending across said slot and having bearings adapted to permit said pin to be tilted out of normal position, a latch mounted upon said pin and adapted to move outwardly thereon to open the hook, automatic means for moving said latch portion about said pin its free end moving inwardly toward said hook portion to its normal closed position, and means for locking said latch and hook together when in said closed position.

5. In a snap-hook, the combination of a hook portion provided with a longitudinal slot in the base thereof, a pin in said base normally extending across said slot and having bearings adapted to permit said pin to be tilted out of normal position, a spring coöperating with said pin to retain it in its normal position, a latch mounted upon said pin and adapted to move outwardly thereon to open the hook, means for moving said latch portion inwardly toward said hook portion to its normal closed position, and means for locking said latch and hook together when in said closed position.

6. In a snap-hook, the combination of a hook portion provided with a longitudinal slot in the base thereof and a recess extending from said slot along the axis of said hook portion toward the end thereof, a pin in said base extending across said slot, a latch thereon provided with a lug movable in a path concentric to the pivot of said latch, and a spring in said recess coöperating with said lug.

7. In a snap-hook, the combination of a hook portion provided with a transverse pivot, means permitting a longitudinal tilting of said pivot, a latch portion mounted on said pivot and provided with a lug, said latch portion being adapted in opening to move outwardly about said pivot, a spring secured to said lug and entering into a recess extending lengthwise of said hook portion and toward the free end thereof, and interlocking members on said latch and hook portions adapted to engage when in closed position.

8. In a snap-hook, the combination of a hook portion provided with a transverse pivot, a latch portion mounted upon said

pivot and adapted in opening to move outwardly about said pivot in the same plane as said hook, the latch portion having a lug, a spring secured at one end thereto and entering a recess extending along the axis of said hook portion and toward the free end thereof and adapted to expand and contract lengthwise of said recess, and interlocking members on said latch and hook portions adapted to engage when said portions are in closed position.

9. In a snap-hook, the combination of a hook portion provided with a longitudinal slot in the base thereof, a pin in said base extending across said slot, means permitting said pin to tilt in its bearings, a spring for normally retaining said pin in position at right angles to said slot, a latch on said pin, coöperating members on said latch and hook adapted to engage and lock when said latch is in closed position, and means for normally retaining said latch in closed position.

10. In a snap-hook, the combination of a hook portion provided with a longitudinal slot in the base thereof, a pin in said base extending across said slot, means permitting said pin to tilt in its bearings, a latch on said pin, coöperating members on said latch and hook adapted to engage and lock when said latch is in closed position, and means for normally retaining said latch in closed position.

Signed by me at Boston, Massachusetts, this 11th day of March, 1905.

CHARLES H. BILLMAN.

Witnesses:
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