

C. E. KELLY.
SNAP HOOK.
APPLICATION FILED NOV. 24, 1911.

1,093,630.

Patented Apr. 21, 1914.

Fig. 1.

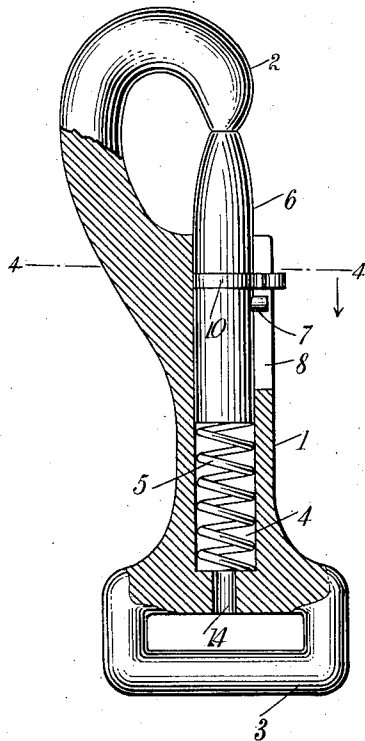


Fig. 2.

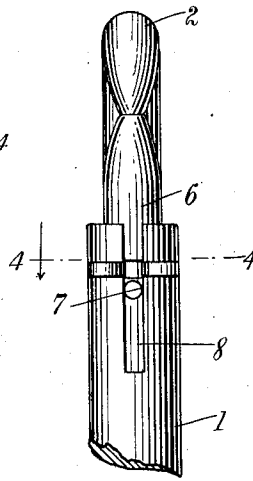


Fig. 3.

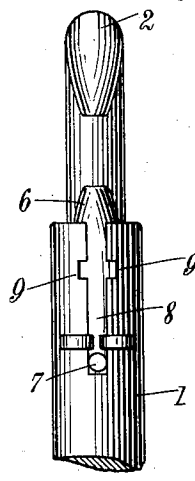


Fig. 4.

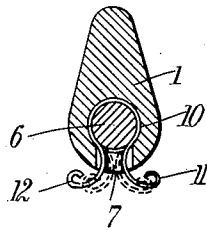
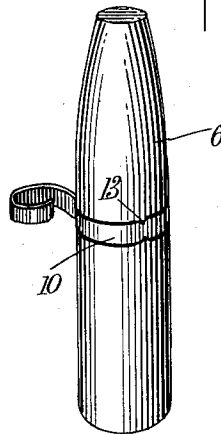


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

CROSBY E. KELLY, OF GRIFFIN CORNERS, NEW YORK.

SNAP-HOOK.

1,093,630.

Specification of Letters Patent.

Patented Apr. 21, 1914.

Application filed November 24, 1911. Serial No. 662,081.

To all whom it may concern:

Be it known that I, CROSBY E. KELLY, a citizen of the United States, and a resident of Griffin Corners, in the county of Delaware and State of New York, have invented a new and Improved Snap-Hook, of which the following is a full, clear, and exact description.

My invention relates to snap hooks of the kind shown and described in my co-pending application for a patent on a safety hook, Serial No. 646,610, filed August 29, 1911; and it comprises certain improvements over the form of hook shown and described in my co-pending application aforesaid.

In the invention set forth in my above-mentioned co-pending application I employ a hook having a longitudinally-movable catch held by a spring in closed position, the catch being encircled by the spring, which fits in a groove therein and has its ends projecting outward from the body of the hook in position to be grasped by the fingers, to move the catch into and out of locking position.

With my present invention I provide the catch with guiding means to control the same when it is moved into and out of locking position, and I secure the spring in fixed relation to the catch, so as to make the hook more easily operable.

Reference is to be had to the accompanying drawings forming a part of this specification, in which the same characters of reference indicate the same parts in all the views.

Figure 1 is a longitudinal section of my improved snap or safety hook; Fig. 2 is a front elevation of the upper part thereof, with the catch in closed position; Fig. 3 is a similar view with the catch in open position; Fig. 4 is a horizontal sectional view on the line 4-4 of Fig. 1; and Fig. 5 is a perspective view of the catch with the spring secured thereto.

On the drawings the numeral 1 indicates the body of my improved snap hook, which has a bent portion 2 at one end and an eye 3 at the other, to enable the hook to be secured to a harness strap, rope or the like. The body of the hook 1 has a longitudinal bore 4 formed therein, and in the bottom of this bore is placed a spiral spring 5.

6 is a catch in the form of a plunger having a flat end which engages the flat end of

the part 2; and normally the spring 5 will force the catch outward to close the bent portion 2. The catch 6 has a lug 7 projecting from one side, and this lug slides in a groove or slot 8 formed in the side of the body 1. The slot has recesses 9 in its opposite sides near the upper end thereof, to be engaged by the ends of a spring 10. This spring 10 is carried by the shank of the catch 6, fitting into a circumferential groove in the catch; and when the catch 6 is in position to close the hook, the ends of the spring 10 will be opposite the recesses 9, to enter the same and lock the catch in closed position. I prefer to secure the spring to the catch 6, so as to prevent the spring from rotating around the catch in the groove in which it is placed. I may rivet the spring to the catch, but I prefer to hammer or upset the outer edges of the groove in which the spring 10 is placed, over the edges of the spring at the back thereof, as shown at 13 in Fig. 5. The outer ends of the spring are bent outward, as shown at 11 and 12, and turned over. These ends are normally sprung apart so that they will enter the recesses 9 when released, and hold the catch in locking position; and when it is desired to open the hook, the ends 11 and 12 of the spring 10 are pressed together to withdraw them from the recesses 9 and allow the two arms of the spring to be moved down in the slot 8, until the catch 6 comes to the position shown in Fig. 3.

I preferably form an opening in the bottom of the bore 4, as shown at 14' in Fig. 1, this opening communicating with the eye 3, so that if any moisture or dirt should be trapped in the bore it will fall out through the opening.

From the above description it will be seen that the shank 6 will be positively guided when moved in either direction, and that the spring 10 is secured in rigid relation to the catch 6, both as regards movement around the shank and longitudinally thereof. This spring will always be held in proper position to move easily into and out of the recesses 9. When the ends of the spring 10 are in the recesses 9, the shank is locked in position to close the bent end 2, and it can be readily released therefrom to open the bent portion 2, merely by pressing the projecting ends of the spring 10 together. With the shank 6 positively held

against rotation by the lug 7, and the spring 10 positively held against rotation around the shank 6, by hammering down the edges of the groove at 13, the shank can always be released when the ends 11 and 12 of the spring are pressed together with the fingers of one hand. If the spring 10 were loose, so that it could slip around the shank 6, it would often happen that when the ends 11 are caught by the fingers to move the shank to open the hook portion 2, only one of the ends of the spring 10 would be moved out of its recess when these ends are pressed together, and it would be necessary to manipulate the spring so as to bring the pressed-together ends 11 and 12 into central position with respect to the groove 8, before the shank 6 would be moved at all. By securing the spring rigidly to the shank 6, and providing guiding means on the shank to engage the slot 8, I avoid this objectionable mode of operation, and provide a construction in which the shank 6 can be moved away from the hook portion 2 with the greatest ease at any time when it is desired to release the hook from the member with which it is in engagement.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a fastening device, the combination of a body having a hook-shaped end, a slidable locking member carried by said body to engage said end, resilient means carried by said locking member and secured thereto to be held against bodily movement with respect to said locking member, said resilient means having projecting portions which are normally sprung apart, and means carried by said body to be engaged by the projecting portions of said resilient means to hold said slidable locking member in engaging position.

2. A fastening device comprising a body portion having a bore therein, a locking member mounted in said bore, said body having a slot therein extending longitudinally of said bore and forming an opening leading from the outside of the body to the inside of the bore, and resilient means carried by said member and rigidly secured thereto to prevent the said resilient means from moving bodily with respect to said member, said resilient means having projecting portions which extend through said slot and are normally sprung apart, said slot having oppositely-located recesses in its sides to receive the projecting portions of the spring and hold the locking member in closed position.

3. A safety hook comprising a body portion having a bent portion at one end and having a bore therein in line with the extremity of the bent portion, a catch mounted in said bore, and a U-shaped spring en-

circling said catch, rigidly secured thereto, said body having a slot therein adjacent one end of the bore to receive the arms of said spring, said slot having oppositely-located recesses in its sides to receive the arms of the spring and lock the catch in position to close the bent portion, the ends of said spring when pressed toward each other being withdrawn from the recesses in the sides of the slot to permit the catch to move down into the bore of the body to open the bent portion.

4. An improved safety hook comprising a body having a hook or bent portion at one end thereof and having a bore therein in line with the extremity of the bent portion, a catch fitting in said bore, a guiding lug carried by said catch and fitting into a slot in the side of the body portion, to hold said catch against rotation in the bore, and a U-shaped spring bent around the body of the catch and rigidly secured thereto, the ends of said U-shaped spring passing outward through the slot, said slot having recesses in its opposite sides to receive the ends of the spring and lock the catch in closed position.

5. In a fastening device, the combination of a body having a hook-shaped end, a locking member movably carried by said body to engage said end, resilient means carried by said locking member and rigidly secured to the same to prevent bodily movement of said resilient means with respect to the said member, said resilient means having projecting portions which are normally sprung apart, means carried by said body to be engaged by said projecting portions to hold said locking member in engaging position, and guiding means carried by the fastening device to control the movement of the locking member with respect to the body.

6. A fastening device comprising a body carrying a hook member, said body having a longitudinal bore therein, said body having a slot in one of its sides, with a pair of notches formed in the opposite edges of said slot, a locking bar received in said bore, said bar having a circumferential groove, and a spring consisting of a strip of metal bent around said bar and fitting in said groove and having its outer ends bent away from each other and passing through said slot, said outwardly-bent ends tending to move away from each other to engage the notches and hold the bar against accidental displacement from the hook member, whereby said locking bar can be released only by pressing both the outwardly-bent ends of the spring at the same time toward each other.

7. In a fastening device, the combination of a base or body having a hook member and having a longitudinal bore formed therein, said bore having a slot in one side, a locking bar received in said bore, and spring

means encircling said bar and secured thereto, so as to be held against movement longitudinally of said bar, and having its ends projecting through the slot in the side of said body, said slot having notches formed in its opposite edges and the ends of said spring means projecting through said slot, to engage said notches and hold the bar in locking position with respect to the hook member, the ends of said spring means, when pressed together, being disengaged from the notches to permit the bar to be moved out of locking position.

8. In a fastening device, the combination of a base or body carrying a hook member, a locking bar slidably carried by said body to engage the end of said hook member, spring means encircling said bar and secured thereto so as to be held against movement longitudinally of said bar, and having its ends normally sprung apart, and means carried by said body to be engaged by the ends of said spring means to hold the bar in contact with the hook member and close the fastening device, said spring means being disengageable to move the bar away from the hook member by pressing the ends thereof together.

9. In a fastening device, the combination of a base or body having a hook member and having a longitudinal bore formed therein, said bore having a slot in one side, a locking bar received in said bore, and spring means encircling said bar and engaging the same, and having its ends projecting through the slot in the side of said body, said slot having notches formed in its opposite edges and the ends of said spring means projecting through said slot, to engage said notches and hold the bar in locking position with respect to the hook member, the ends of said spring means, when pressed together, being

disengaged from the notches to permit the bar to be moved out of locking position.

10. In a fastening device, the combination of a base or body carrying a hook member, a locking bar slidably carried by said body to engage the end of said hook member, spring means encircling said bar and having its ends normally sprung apart, and means carried by said body to be engaged by the ends of said spring means to hold the bar in contact with the hook member and close the fastening device, said spring means being disengageable to move the bar away from the hook member by pressing the ends thereof together.

11. In a fastening device, the combination of a body, a locking member, slidably carried by said body, resilient means encircling said locking member and having projecting portions which are normally sprung apart, and means formed upon said body to be engaged by the projecting portions of said resilient means to hold said locking member in locking position.

12. In a fastening device, the combination of a body, a locking member slidably carried by said body, resilient means encircling said locking member and having projecting portions which are normally sprung apart, said member being shaped to engage said resilient means so as to prevent movement along said member, and means formed upon said body to be engaged by the projecting portions of said resilient means to hold said locking member in locking position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CROSBY E. KELLY.

Witnesses:

FRANK HANNAY,
GEO. A. SPEENBURGH.