F. E. SCHARTOW.

SNAP HOOK AND METHOD OF ASSEMBLING THE SAME.

APPLICATION FILED MAR. 10, 1921.

1,406,419. Patented Feb. 14, 1922.

Fig. 1

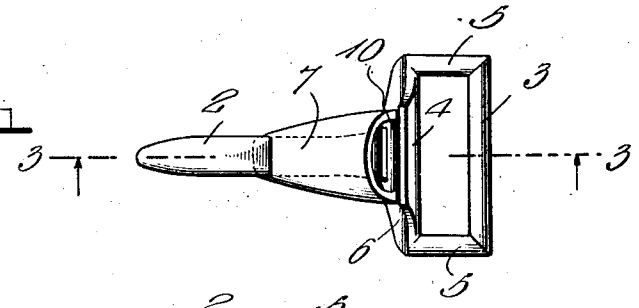


Fig. 2

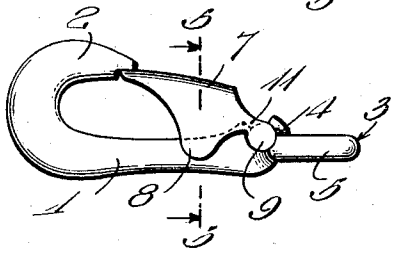


Fig. 6

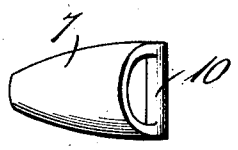


Fig. 3

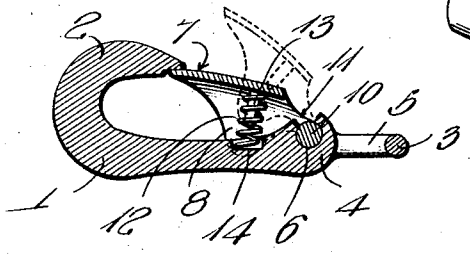


Fig. 4

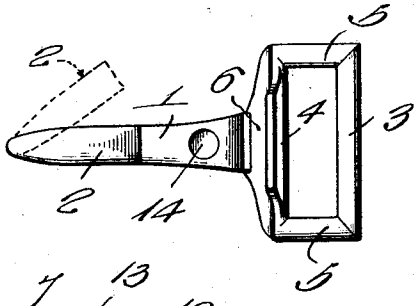
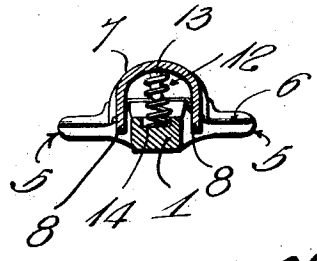


Fig. 5



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SNAP HOOK AND METHOD OF ASSEMBLING THE SAME.

1,406,419. Specification of Letters Patent. Patented Feb. 14, 1922.

Application filed March 10, 1921. Serial No. 451,132.

To all whom it may concern:

Be it known that I, FRANK E. SCHARTOW, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Snap Hooks and Methods of Assembling the Same; 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.

This invention relates to an improved snap-hook and has special reference to an improved method of assembling the latch portion with the hook portion thereof.

One object of the invention is to provide an improved method of assemblage whereby the latch may be placed in pivotal connection with the hook and then moved into position for engagement by the bill of the hook, the pivotal connection needing no adjustment after assemblage.

Another object of the invention is to produce an improved method of assemblage whereby the hook portion may be formed in a single piece and the latch portion also formed in a single piece which can be easily put in place but which will be held against removal after being put in place, and swung downwardly toward the shank of the hook so that the bill portion which has previously been turned to one side may be swung back into its normal position to engage the latch.

Another object of the invention is to so construct the snap-hook that it may be readily assembled in the improved manner and to further so construct it that when the latch and hook are assembled, the latch will be prevented from having transverse rocking movement and further be held against sliding movement transversely of the shank portion of the hook.

This invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of the improved hook.

Figure 2 is a side elevation of the hook shown in Fig. 1.

Figure 3 is a longitudinal sectional view taken along the line 3—3 of Fig. 1.

Figure 4 is a top plan view of the hook portion with the latch removed.

Figure 5 is a transverse sectional view taken along the line 5—5 of Fig. 2.

Figure 6 is a top plan view of the latch removed from the hook.

A snap-hook which may be assembled in the improved manner has been disclosed in the accompanying drawings and this hook is provided with a hook element and a latch element. The hook element is provided with a shank 1 having at its forward end a bill 2 and at its rear end provided with a cross-head in the form of an eye 3 which extends upon opposite sides of the shank 1. This eye 3 is rigid with the shank 1 and from an inspection of Fig. 3 it will be seen that the rear end portion 4 of the shank is thickened. From an inspection of Figs. 1 and 4, it will be further seen that from the shank to the side bars 5 of the eye, the cross-head tapers outwardly so that a bearing seat 6 may be formed with its intermediate portion in the form of a circular passage through the enlarged rear end portion 4 of the shank 1 and its end portions in the form of grooves or recesses in the side portions of the cross-head. It will be further noted that the shank is provided with a slot which extends transversely of the shank and communicates with the bearing seat 6. This slot is of less width than the diameter of the bearing seat so that when the latch is in place, it can only be removed by movement longitudinally of the seat which movement is prevented as will hereinafter be brought out.

The latch 7 has a channel construction as shown in Fig. 5 and is provided with side wings or extensions 8 for extending down and engaging the sides of the shank 1 to prevent the latch from having movement transversely of the hook a sufficient distance to permit the free end of the latch to pass from beneath the bill of the hook. This latch is also provided with rearwardly extending heels 9 between which extend a pivot bar 10 of the proper size to fit easily in the bearing seat. This bearing bar 10 and the heels 9 have a diameter which will not permit them to be drawn out through the slot which communicates with the passage in the shank of the hook but the neck portions 11 of these heels 9 are reduced enough to permit of their passage through the slot.

When assembling the hook and latch, the bill 2 will first be turned so that it will extend to one side as shown in dotted lines in Fig. 4, the hook being of course seated to permit of this turning and the latch will then be held in the position indicated by dotted lines in Fig. 3. When in this position, the bearing bar may be slid longitudinally of

the seat until the latch is in position to straddle the shank of the hook when swung down toward the shank. As soon as the latch reaches the position above the shank, it will be swung down towards the shank and the side wings or extensions 8 will extend upon opposite sides of the shank. The spring 12 will first have been placed upon the pin 13 and when the latch is swung down, the spring will extend into the spring seat 14 formed in the shank. The latch will be held in a lowered position with the spring somewhat compressed and the bill of the hook can now be turned back to the normal position so that its free end will extend as shown in Figs. 2 and 3 and engage the free end of the latch thus limiting the swinging movement of the latch in a direction away from the shank. When in this position, the side wings prevent the latch from having movement transversely of the shank or in other words longitudinally of the bearing seat 6 and therefore the latch will be securely held in engagement with the hook but at the same time will be permitted to have the proper pivotal movement customary in the latch of a snap-hook. It should be noted that by having the latch and hook constructed as shown, the side portions of the latch extend upon opposite sides of the shank and since the bearing bar 10 extends between the side portions of the latch, a relatively long bearing bar has been provided which has a snug fit in the bearing seat and therefore will serve not only to pivotally mount the latch but will also serve to prevent the latch from having transverse play or rocking movement.

It will be seen that the method of assembling the hook and latch element consists briefly in moving one with respect to the other, preferably by a transverse sliding movement, into an interlocked pivoted engagement, then moving one part relative to the other in a different direction or motion, as by the swinging movement of the latch, into a further or double interlocked pivoted relation so that the pivot cannot slide out of its bearing seat, and then bending one part, preferably the bill of the hook, to retain the parts in their double interlocked pivoted connection.

By this method there will be provided a hook in which the pivot bar of the latch will be rotatably mounted in the seat of the hook and there will be no danger of breakage as the pivot bar is not gripped by a tongue which is rolled into engagement with it. Where a tongue is rolled into operative engagement with a pivot bar the tongue is necessarily weakened and further cannot have as good a grip upon the pivot bar as in the structure shown or be of the relatively heavy and rigid construction shown. It will be further noted that by this construction there can be provided a bearing which will be relatively long and prevent transverse rocking of the latch and also that a hook will be produced, the elements of which can be made by casting and do not require machine work when being assembled.

I claim:

1. A method of assembling a hook element having a shank provided at one end with a bill and at its other end with a bearing seat extending transversely of the shank and having a slot extension through the upper face of the shank of less width than the diameter of the seat, and a latch element having a pivot portion for fitting into the seat, means being carried by one element for holding the latch against sliding movement transversely of the other when assembled, said method comprising sliding the pivot portion of the latch transversely of the shank into the seat with the latch raised away from the shank and the bill of the hook extending to one side of the shank, then swinging the latch down toward the shank to bring said means into position for holding the latch against sliding movement, and then bending the bill to its normal position above the shank to engage the latch and limit pivotal movement of the latch away from the shank.

2. A snap hook comprising a hook portion having a shank provided with a bill and in spaced relation to the bill provided with a transversely extending passage forming a pivot seat open at one side of the shank, the shank being further provided with a slot extending longitudinally of and communicating with the seat and of less width than the diameter of the seat, and a latch having side arms and a pivot rod extending between and carried by said side arms the pivot rod being of a diameter to fit into said seat and the arms adjacent the rod being of a width to pass through the slot and permit sliding of the rod longitudinally into the seat to pivotally mount the latch with the shank positioned between the side arms, means for holding the latch against sliding movement longitudinally of the pivot rod when swung down into position for engagement by the bill of the hook, and resilient means yieldably holding the latch in engagement with said bill.

3. A snap hook comprising a hook portion having a shank and a cross head at the rear end of the shank, the shank having a transversely extending passage at its junction with the cross head, the passage being open at one side of the shank and having a reduced slot extension through the upper face of the cross head, a latch having a pivot bar passed longitudinally into the passage to pivotally connect the latch with the shank of the hook and having side arms carrying said pivot bar and extending upon opposite

sides of the shank and provided with extensions for engaging the shank and holding the latch against sliding movement transversely of the shank when pivotally connected therewith and engaged by the bill of the hook, and resilient means yieldably holding the latch in engagement with the bill of the hook.

4. A snap hook comprising a hook portion provided with a shank, an article-engaging eye including a forward bar carried by and extending beyond the sides of said shank, said forward bar having a bearing seat provided in its front face and extending transversely through the shank and having one end portion extending to the end of the forward bar, a latch portion having a channel structure to straddle the shank and hold the latch against sliding movement transversely of the shank when in place, and also having a transversely extending pivot bar positioned in the nearing seat and pivotally mounting the latch and holding the latch against transverse rocking movement, and spring means for normally holding the free end of the latch against the bill of the hook.

In testimony whereof I have hereunto set my hand.

FRANK E SCHARTOW.