March 24, 1942. C. F. REYNOLDS 2,277,183

SNAP HOOK

Filed Nov. 22, 1940

Fig. 1.

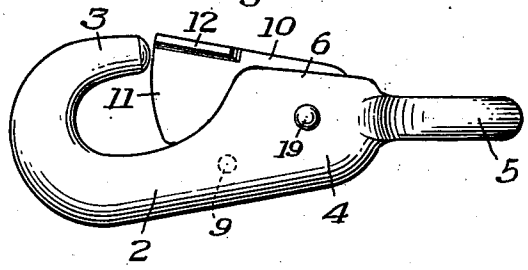


Fig. 2.

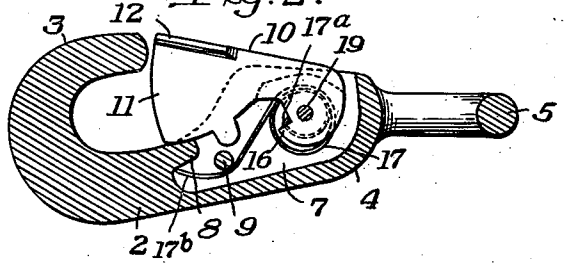


Fig. 3.

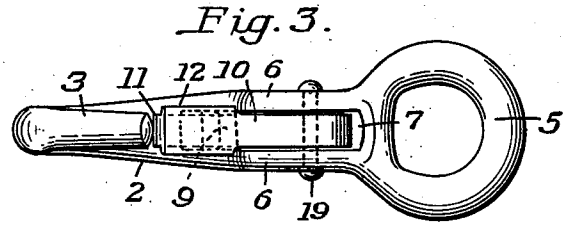


Fig. 4.

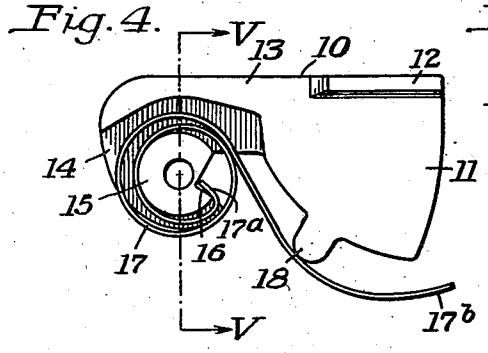
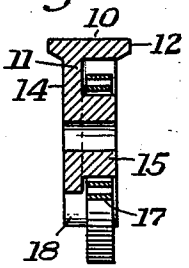


Fig. 5.



INVENTOR

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UNITED STATES PATENT OFFICE

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SNAP HOOK

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Application November 22, 1940, Serial No. 366,625

5 Claims. (Cl. 24—235)

This invention is for an improvement in snap hooks, and relates particularly to an improved construction tending to facilitate the manufacture and assembly of the snap hook as well as to provide a more satisfactory device.

More particularly this invention pertains to snap hooks of the type wherein there is a tongue which opens outwardly and which is urged inwardly to a closed position by means of a spring. Snap hooks of this general character are well-known in the art. As heretofore constructed, the spring has been formed of round wire. This wire spring is anchored at one end to the tongue of the snap hook and the other end engages a cross-bar integrally cast in the body of the hook. These constructions require skillful manipulation in order to quickly assemble them and it requires special manipulation to get the spring threaded under the cross-bar in the body.

The present invention provides a snap hook in which the tongue is operated by a flat or ribbon-like torsion spring, the construction being such that the spring can be quickly and easily applied to the tongue and the spring and the tongue in turn cooperate to hold the spring in a position such that the free end of the spring can be easily inserted under the cross-bar with which the spring cooperates.

The invention may be readily understood by reference to the accompanying drawing which shows a preferred embodiment of my invention and in which

Figure 1 is a side elevation of a snap hook embodying the invention;

Figure 2 is a longitudinal section through the snap hook shown in Figure 1;

Figure 3 is a top plan view of the snap hook;

Figure 4 is a side elevation of the tongue and spring assembly; and

Figure 5 is a transverse vertical section in the plane of line V—V of Figure 4.

In the drawing 2 designates the body of the snap hook. It is provided with a hook portion 3 and a bifurcated shank portion 4. It is provided with an eye 5 at the end of the portion 4. The shank portion 4 is bifurcated to provide two spaced apart side portions or cheeks 6. Between these two side portions 6 the body is hollowed out or recessed at 7. There is an overhanging lip 8 at the forward end of the recess, and the structure is provided with a transverse bar 9 which extends across the recess. The body as thus described is generally formed as an integral malleable casting with the cross-bar 9 being integrally cast with the rest of the structure.

According to the present invention the tongue, which is designated generally as 10, is also an integral structure. It is provided with a main body portion 11 having laterally projecting ribs 12 extending part way along the upper edges thereof to enable the tongue to be easily grasped. It is provided with an extension 13. Depending from the extension 13 is a thin metal web 14 which is positioned to one side of the central longitudinal plane of the tongue, as most clearly shown in Figure 5. The web 14 is provided with an offset hub portion 15. The hub 15 has a notch or shoulder 16 formed therein.

Wound about the hub portion 15 and lying entirely within the plane of the main body portion 11 of the tongue is a torsion spring 17 formed of a thin flat ribbon of metal. The inner terminal of this spring is bent to form a hook portion 17*a* which engages the shoulder 16 of the hub. The opposite end of the spring extends downwardly and forwardly, its extreme tip preferably projecting slightly beyond the vertical edge of the free end of the body of the tongue 10. The bottom edge of the tongue is shaped in such manner as to hold the extreme free end portion of the spring in spaced relation to the bottom tip of the body of the tongue. This is clearly shown in Figure 4, where the body 11 of the tongue is provided on its lower edge with a projection 18 against which the spring bears so that the tip 17*b* of the spring is spaced a predetermined distance from the bottom corner of the tongue.

In assembling the snap hook it is merely necessary to slip the spring which has been preformed onto the hub 15 with the terminal portion 17*a* of the spring engaging the shoulder 16 on the hub and with the free end portion of the spring passing under the projection 18 on the body of the tongue. With the spring thus assembled on the tongue, the tongue and spring assembly is then applied to the main body of the snap hook. The tongue is inclined with reference to the snap hook in such manner that the free end portion 17*b* of the spring may be readily slid under the cross-bar 9 in the body. The tongue is then pushed down into place between the two side portions 6 of the body and a pin or rivet 19 is passed through the body and through the hub 15 of the tongue to thereby pivotally secure the tongue in the body.

This completes the assembly of the snap hook. In use the free end of the tongue normally rests on that portion of the body 8 which overhangs the tip 17*b* of the spring. To open the snap the

tongue is pulled outwardly, swinging about the pivot 19. Rotation of the tongue in this direction causes the torsion spring to be wound about the hub 15. When the tongue is released the torsion spring of course serves to immediately restore the tongue to its normal position.

One advantage of the invention resides in the formation of the tongue with the web portion 14 and the hub portion 15 with the shoulder 16 formed on the hub so as to enable a ribbon-like flat spring to be used. The shoulder 16 provides an abutment with which the spring cooperates. The thin flat spring possesses greater resilience than the round wire springs heretofore provided and also has a longer life, especially when exposed to the elements. The shaping of the lower edge of the body portion 11 of the tongue in order to hold the tip 17*b* of the spring in spaced relation to the bottom corner of the body of the tongue substantially facilitates the application of the tongue and spring assembly to the body of the snap hook. It especially facilitates the passage of the end of the spring under the cross-bar 9.

While I have illustrated and described one particular embodiment of my invention, it will be understood that various changes and modifications may be made therein within the contemplation of my invention and under the scope of the following claims. It is particularly contemplated that instead of the lobe-like projection 18 being formed on the bottom edge of the body portion 11 of the tongue some other contour may be employed to secure the same result.

I claim:

1. A snap hook of the type having a body and a pivoted tongue which is pulled outwardly to open the snap and which is closed by spring action comprising a body having a recess therein, a tongue member received in part within the recess and pivotally secured to the body member, and a flat convolute torsion spring mounted on the tongue for resiliently resisting movement of the tongue in a direction to open the snap, said body having a transverse portion under which one end of the spring is engaged, the tongue having an abutment against which the other end of the spring acts.

2. A snap hook of the type having a body and a pivoted tongue which is pulled outwardly to open the snap and which is closed by spring action comprising a body having a hook portion and a shank portion, the shank portion having a recess therein, a tongue member received in part within the recess and pivotally secured to the body member, said tongue cooperating with the hook, and a flat convolute torsion spring mounted on the tongue and engaging the body for resiliently resisting movement of the tongue in a direction to open the snap, the tongue having a web portion of reduced thickness thereon with a hub portion formed on said web, the spring being coiled about the hub portion and having its inner end operatively engaging the hub portion, the shank portion of the body having an abutment under which the other end of the spring extends, the spring being positioned within the plane of the tongue.

3. A snap hook of the type having a body and a pivoted tongue which is pulled outwardly to open the snap and which is closed by spring action comprising a hook-shaped body having a recess therein, a cross-bar carried by the body extending across the recess, a tongue member positioned in part within the recess and pivotally secured to the body, said tongue member serving to close the hook, and a flat convolute torsion spring mounted on the tongue having an inner end portion which engages the tongue for rotating it in a direction to close the hook, said spring having an outer terminal portion which projects under said cross-bar, the bottom edge of the tongue having an offset formed therein for holding the free outer terminal of the spring in spaced relation to the bottom edge of the tongue.

4. A snap hook of the type having a body and a pivoted tongue which is pulled outwardly to open the snap and which is closed by spring action, comprising a body member, a tongue member pivotally supported in the body member, a hub element on the tongue having a shoulder formed thereon, and a ribbon-like flat torsion spring coiled about said hub having an inner hooked end portion which engages said shoulder and having its outer free end engaging a portion of the body member in such manner that rotation of the tongue in a direction to open the snap hook is resiliently resisted by said torsion spring.

5. A snap hook of the type having a body and a pivoted tongue which is pulled outwardly to open the snap and which is closed by spring action, comprising a body member with a hook thereon, a tongue member for cooperation with the hook received within the body member, said tongue member being provided with a web portion offset from the plane of the longitudinal center of the tongue, the web being provided with a hub portion, said hub portion having a shoulder thereon, a pin passing through the body and through said hub to pivotally secure said tongue in the body, and a flat torsion spring encircling the hub having an inner terminal portion which engages the shoulder on said hub and having an outer terminal portion cooperatively engaging a part of the body, the body having a transverse portion under which the said outer terminal portion of the spring is engaged, said torsion spring serving to resiliently hold the tongue in a position to close the hook.

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