July 30, 1963 O. J. HUELSTER 3,099,059

SPRING-LOCKING SLIDER FOR ZIPPER FASTENERS

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Fig. 1

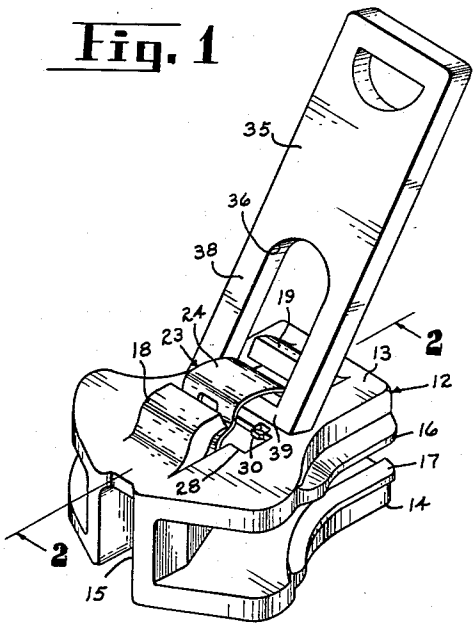


Fig. 2

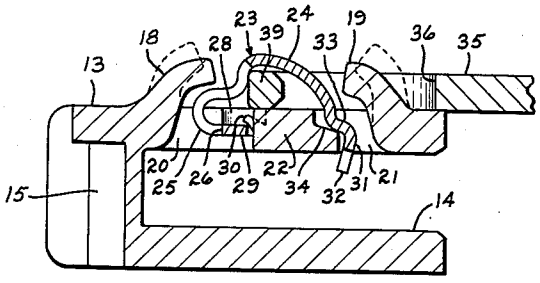


Fig. 3

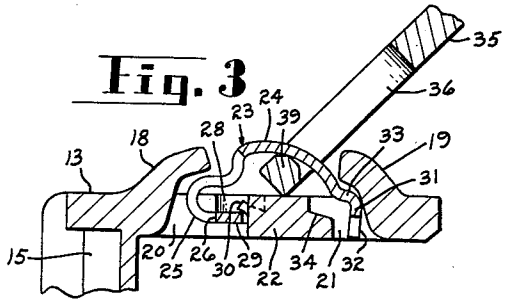


Fig. 4

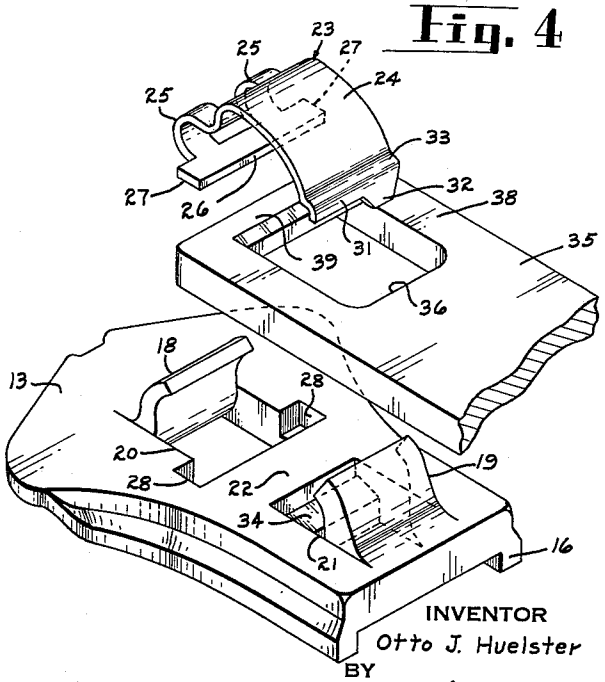
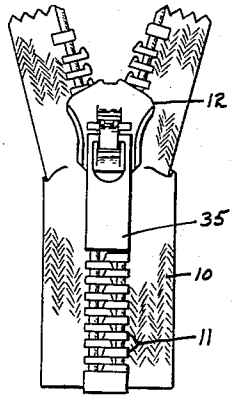


Fig. 5



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SPRING-LOCKING SLIDER FOR ZIPPER FASTENERS

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My invention is an improved spring-locking slider for zipper fasteners.

It is desirable to make automatic or spring-locking sliders of the minimum number of pieces and a three-piece locking slider generally means the slider body, the locking member and the pull tab.

Several attempts have been made along this line but the results have been only partially successful. A long spring member is objectionable because of the amount of material required and the unsightly appearance caused by a long section of the spring material which is usually of stainless steel, contrasting with the metal of the slider body. Furthermore, there is more likelihood of damage to a long spring, or in fact, any spring which is not sufficiently protected. Some short partially concealed springs have been proposed but the resulting product was difficult to make and expensive to assemble because it was necessary to attach the spring to the inner surface of the slider wing before the slider body was bent to final shape.

The object of my invention, therefore, is to provide an improved three-piece spring-locking slider overcoming the above drawbacks and having in combination all of the desirable features of such a slider. The spring itself is short and economical to manufacture; it is concealed except for an arched bridge engaged by the pull tab; it has comparative easy action, yet reliable to accomplish its purpose. The spring is well-protected against outside blows or pressure and finally, it is easy and therefore, economical to assemble.

The spring is held or anchored in position by means of laterally extending ears which fit into outwardly opening recesses in the slider wing. It can thus be assembled from the outside after the slider body has been bent up to shape, whereupon it is only necessary to skive metal from one or more sides of such recesses and force it into engagement with such laterally extending ears.

In the accompanying drawing, I have shown for purpose of illustration, one embodiment which my invention may assume in practice. In the drawings:

FIG. 1 is a perspective view of my improved lock slider;

FIG. 2 is a central longitudinal sectional view showing the pull tab and locking member in slider-locked position;

FIG. 3 is a similar view of the upper portion of the slider showing the parts in unlocked position;

FIG. 4 is an exploded perspective view of the three parts of the slider before assembly; and,

FIG. 5 is a plan view of a slider as it appears attached to a zipper fastener.

In FIG. 5, my improved slider is shown attached to a zipper fastener which may be of any well-known type having a pair of fabric tapes 10 carrying rows of complemental fastener elements or scoops 11.

The slider body, generally indicated by the numeral 12, is preferably of the type that can be made of sheet metal and consists of a front wing 13, a back wing 14, connected together by a hollow neck portion 15. Each wing has inwardly directed flanges 16 and 17 which together with the neck 15 define a Y-shaped channel through which the fastener elements 11 pass during opening or closing of the zipper.

In describing the detailed features of the slider and in the use of terms "upper" and "lower," it is to be understood that the term "upper" applies to that end having the neck portion of the slider, and the term "lower" will apply to the opposite or open end of the slider.

Struck outwardly from the front wing 13 of the slider are the upper and lower lugs 18 and 19 thereby providing transversely extending upper and lower spaced openings 20 and 21 with a bridge 22 of wing material therebetween. The lugs 18 and 19 which extend toward each other may be generally S-shaped in contour and are adapted to overlie the openings 20 and 21, respectively to some extent. The lugs 18 and 19 in their initial state extend at a more upright angle as indicated in dotted line in FIG. 2 for reasons that will appear later.

A locking member 23 is provided, a preferably made of a strip of flat spring metal and formed with a central arched portion 24 and a U-shaped loop section 25 extending under the upper lug 18. Part of the width of the loop section 25 is preferably cut away or bifurcated as shown in FIG. 4 to enhance the resiliency of the locking member. The inner ends of the bifurcated arm of said loop extend into the upper opening 20 and are joined to a cross bar 26 that extends beyond the width of the spring-locking member to provide laterally extending ears 27. The ears 27 are adapted to fit into lateral recesses 28 extending outwardly from the upper opening 20 and part way through the wing material and rest against shoulders 29 forming the bottoms or bases of said recesses. The cross bar 26 of the locking member 23 is made secure to the front wing 13 by means of a pair of nibs 30 skived out of the upper wing material and laid against the upper surface of the laterally extending ears 27.

The opposite or lower end of the locking member is provided with an extension 31 projecting through the lower opening 21 and terminating in a locking pin 32 with a shoulder 33 between said pin and arched portion 24. The spring-locking member 23, when fastened to the upper wing as described above, is stressed so that the shoulder 33 is normally tensioned downwardly to rest against a ledge 34 formed as a part of the bridge 22 and extending into the lower opening 21.

A pull tab 35 is provided that may be of any desired shape, but usually is a rectangular piece of heavy sheet metal having a piercing 36 adjacent one end, resulting in bifurcations 38 connected together at one end of the tab by a through-and-through pintle 39 extending under the locking member arch 24 and confined thereby in the space between the arch 24 and bridge 22.

In the assembly of my three-piece locking slider, the lugs 18 and 19 are initially disposed in the dotted line position of FIG. 2. The pull tab will first be laid against the upper surface of the front wing 13 with the pintle 39 resting on the bridge 22. The locking member 23 will then be dropped into position from above and with suitable tools, the lugs 18 and 19 will be forced downwardly to the full line position and then the nibs 30 will be skived out of the wing stock to firmly anchor said locking member to the upper wing.

It is to be noted that the upper surfaces of the lugs 18 and 19 are substantially in a common plane with the spring central arched portion 24 which is for the purpose of protecting said locking member against any crushing forces from above, such as might occur during ironing. Furthermore, the upper lug 18 is slightly spaced from the upper arms of the bifurcated loops 25 so as not to interfere with the normal spring action of said loops, but close enough to protect them from being stressed beyond their elastic limits in case any abnormal strains are imparted thereto by an upward pull on the pull tab 35. Also, the position and shape of the lower lug 19 is such

as to overlie the spring member shoulder 33 and serve as a stop when the spring is pulled to its unlocked position, such as shown in FIG. 3.

While I have shown and described one embodiment which my invention may assume in practice, it will be understood that this embodiment is merely for the purpose of illustration and description, and that various other forms may be devised within the scope of my invention as defined in the appended claims.

What I claim is:

1. A three-piece spring-locking slider for zipper fasteners comprising:

(*a*) a slider body having front and back wings joined together at one end by a neck so as to provide a Y-shaped channel between them, said front wing having transversely extending upper and lower spaced openings with a bridge of wing material between them, and front opening recesses extending laterally into the wing material from said upper opening;

(*b*) upstanding upper and lower lugs struck up from the material of said front wing, one on the side of each opening opposite said bridge, said lugs extending also over said openings toward each other;

(*c*) a locking member of spring metal positioned over said bridge and having a central arched portion between said lugs, a U-shaped loop extending under the upper lug with the inner arm of said loop extending into said upper opening, an extension at the lower end of said arched portion projecting through the lower opening and providing a locking pin movable into and out of the slider channel with a shoulder between said pin and arch, said lower lug extending over said shoulder to limit outward movement of said locking member;

(*d*) laterally extending ears on the inner arm of said U-shaped loop fitting in said lateral recesses;

(*e*) means for anchoring said ears in said lateral recesses; and,

(*f*) a pull tab having a pintle extending under said arch and confined thereby in the space between said arch and said bridge, whereby outward force exerted on the pull tab will move the locking pin out of the slider channel against the spring action of said U-shaped loop.

2. A three-piece spring-locking slider as defined in claim 1 wherein said locking member consists generally of a thin strip of metal wherein a portion of its width is cut away in the U-shaped loop to produce an easier spring action.

3. A three-piece spring-locking slider as defined in claim 1, wherein said front opening lateral recesses are large enough to permit entry of said laterally extending ears of the locking member from the outer front face of the slider until seated at the bottoms of such recesses, and wherein said means for anchoring said ears consists of metal struck inwardly from the sidewalls of the recesses into binding engagement with said ears.

References Cited in the file of this patent

UNITED STATES PATENTS

2,622,297	Erdmann	Dec. 23, 1952
2,913,795	Brown	Nov. 24, 1959