June 10, 1952 J. BACKER 2,599,536

SLIDER FOR SLIDE FASTENERS

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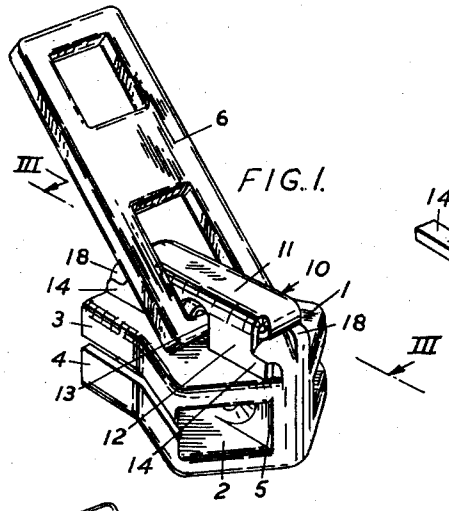


FIG. 1.

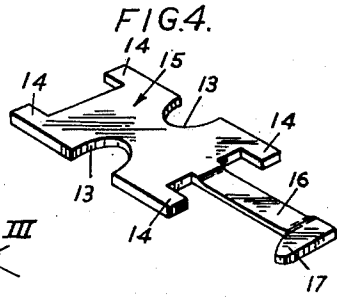
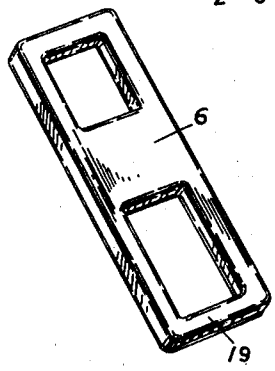


FIG. 4.



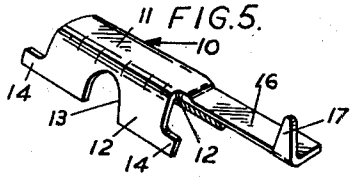


FIG. 5.

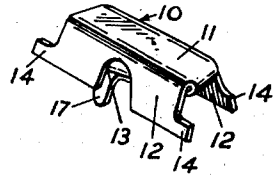
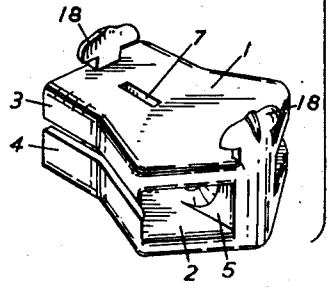


FIG. 2.



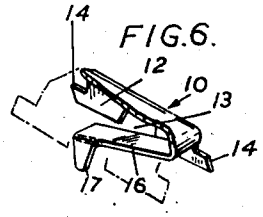


FIG. 6.

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FIG.3.

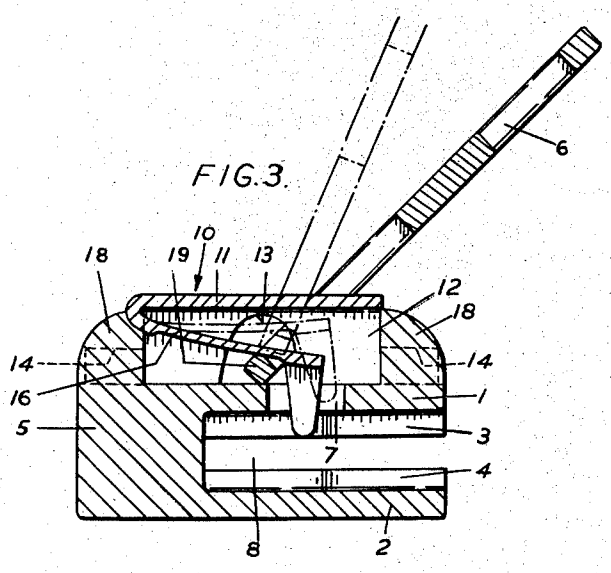
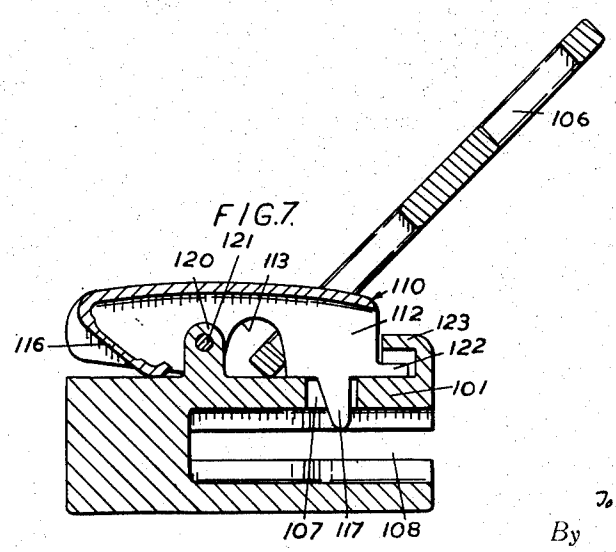


FIG.7.



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SLIDER FOR SLIDE FASTENERS

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3 Claims. (Cl. 24—205.14)

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The present invention relates to sliders for slide fasteners of the automatically locking type, that is to say each slider comprises means for automatically locking it in position on the zip fastener to prevent unintentional movement of the slider, for example, when a lateral pull is exerted on the end of the tapes carrying the interlocking members of the zip fastener.

It is an object of the invention to provide an automatically locking slider which is simple, is easy to manufacture, and is yet reliable in use.

It is another object of the invention to provide an automatically locking slider which, as compared with known sliders, comprises a reduced number of separate parts that have to be assembled.

These and other objects and advantages of the invention will become apparent to those skilled in the art from the following detailed description of the invention when read in conjunction with the appended drawings, in which:

Fig. 1 is, on an enlarged scale, a perspective view of a slider of the invention;

Fig. 2 is an exploded view of the slider of Fig. 1;

Fig. 3 is a sectional view of the slider of Fig. 1, the section being taken along the line III—III and viewed in the direction of the arrows;

Figs. 4 and 5 illustrate various stages in the manufacture of a constructional unit of the slider;

Fig. 6 illustrates the said unit, some parts being broken away; and

Fig. 7 is a sectional view similar to Fig. 3 of another embodiment of the invention.

Referring first to Figs. 1 to 6, the slider comprises a first or upper shield 1 and a second or lower shield 2 having flanges 3 and 4 respectively and being joined in spaced relationship from each other by a neck portion 5 in the shape of a wedge or the like to form two inclined channels between the shields which channels merge into a single channel 8 (see Fig. 3), the upper shield 1 being provided with a yoke or similar attaching member generally denoted by reference numeral 10, to which a pull member 6 is attached for moving the slider along the rows of fastener members for closing and opening the slide fastener. In hitherto known automatically locking sliders, there is usually housed beneath the yoke or similar attaching member 10 a spring which normally urges a finger through an opening 7 in the upper shield 1 into the channel 8 to engage a space between two adjacent fastener members of the slide fastener whereby unintentional movement of the slider is prevented, the arrangement of the attaching member, the spring, the finger and the pull member being such that when a pull is exerted on the pull member for moving the slider along the slide fastener, the finger is retracted or lifted, against the action of the spring, out of the channel 8 and, thus, out of engagement with the said space whereby the slider is released and may follow the pull exerted on the pull member. In such known sliders, the attaching member, the spring, and the finger form three separate units which have to be assembled and brought into cooperative relationship.

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Contrary thereto, in an automatically locking slider for slide fasteners according to this invention, the yoke or similar attaching member, the spring, and the finger form a single constructional unit.

While the spring, or the finger, or both, may be fixed to the yoke or the like, for example by riveting or welding, to form the single constructional unit, it is preferred that the yoke or the like attaching member, the spring and the finger are parts of a single piece of material.

The spring has preferably the shape of a leaf-spring, and the unit is provided with means for facilitating connecting it to the upper shield of the slider which is provided with complementary connecting means. The yoke or the like has preferably the shape of an elongated hollow cap for housing the spring in the hollow cap.

In the embodiment of Figs. 1 to 6, the attaching member of the unit has the general shape of an elongated hollow cap forming the yoke 10. The cap-like yoke 10 (see also Fig. 6) has an upper portion 11 and two side walls 12 depending from the upper portion 11. Each side wall 12 has at or near its centre a recess 13 extending from the lower edge of the respective side wall upwards for hinging the pull member 6 to the yoke 10. Each side wall 12 is provided at each end with means for attaching the cap-like yoke 10 to the upper shield 1 of the slider. In Figs. 1 to 6, each side wall 12 is provided with two prongs 14 extending beyond the cap-like yoke in its longitudinal direction so as to be aligned with the respective side wall 12 and flush with its lower edge.

The cap-like yoke 10 is preferably made from suitably shaped blank metal from which a piece of the shape illustrated in Fig. 4 is punched out. This piece general denoted by reference numeral 15 comprises two recesses 13 at oppo-

site edges, four prongs or lugs 14, one at each corner, and an elongated extension 16 of reduced thickness so as to render the extension 16 resilient whereby it may act as a flat spring. At its free end, the extension or flat spring 16 is provided with a finger 17. Subsequently to, or simultaneously with, the punching operation, the piece 15 is bent so as to assume the shape illustrated in Fig. 5. In Fig. 5, the cap-like yoke 10 is already recognizable having the upper portion 11, depending side walls 12 with recesses 13 therein, and comprising the prongs or lugs 14. One end of the upper portion 11 of the cap-like yoke 10 is provided with the elongated extension or leaf-spring 16. The finger 17 is turned upwards through 90°. The said extension or flat spring 16 is subsequently bent back so as to lie finally beneath the upper portion 11 and between the side walls 12 of the cap-like yoke 10 as illustrated in the centre part of Fig. 2, Fig. 6 illustrating the same cap-like yoke 10 with its front side wall broken away. The finger 17 at the end of the extension or flat springs 16 now projects downwards therefrom. The dimensions of the various parts are such that the extension or flat spring 16 in its final position terminates beyond the recesses 13 in the side walls 12, and the finger 17 at the free end of the extension or flat spring 16 projects beyond the lower edges of the side walls 12.

The upper shield 1 of the slider is provided at its outer surface with two T-shaped uprights 18 which are so arranged and dimensioned that, after the lower or pivotal portion 19 of the pull member 6 has been located in the recesses 13 of the yoke 10, the cap-like yoke 10 may be positioned between the two uprights 18 with the prongs 14 of the yoke 10 extending below the horizontal heads of the uprights 18. The two uprights 18 are then pressed downwards so that their heads firmly grip the prongs 14 of the yoke 10 and thereby secure it in its position on the upper shield 1 in which the finger 17 extends through the opening 7 in the upper shield 1 into the channel 8 to engage, in use, a space between two adjacent fastener members of the slide fastener, the pull member 6 being hinged to the yoke 10, the lower portion 19 of the pull member 6 lying between the extension or flat spring 16 and the upper shield 1 as can best be seen from Fig. 3. When a pull is exerted on the pull member 6 for operating the slider, the lower portion 19 of the pull member 6 lifts the flat spring 16 carrying the finger 17 whereby the finger 17 is lifted out of the channel 8 as shown in broken lines in Fig. 3, whereby the slider is released so as to be able to follow the pull exerted on the pull member.

It will be recognized that the flat spring 16, the finger 17 and the cap-like yoke 10 form a single structural unit which is easy to make and to attach to the slider, whereby it is avoided to assemble the yoke, the spring and the finger individually.

Instead of providing the finger on the leaf-spring, the finger may be provided on the side wall of the yoke. Such an arrangement is shown in Fig. 7, which will now be described. In Fig. 7, the cap-like yoke generally denoted by reference numeral 110 is pivotally connected to a lug 120 on the upper shield 101 of a slider by means of a pivot 121. Near one end of the cap-like yoke 110, one of the side walls 112 is provided with a depending projection forming a finger 117 which normally extends through an opening 107 in the upper shield 101 to engage a space between two adjacent fastener members. At the other end, the cap-like yoke is provided with an elongated extension of reduced thickness which is bent back so as to form a flat spring 116, the free end of which extends below the lower edges of the side walls and bears against the upper shield 101 of the slider and urges the end of the yoke carrying the extension or flat-spring 116 away from the upper shield 101 and the end carrying the projection or finger 117 towards the upper shield 101. A pull member 106 is hinged to a recess 113 in each side wall 112 (only one of the recesses being shown) of the yoke at a point between the pivot 121 of the yoke 110 and the projection or finger 117 so that when a pull is exerted on the pull member 106 the projection or finger 117 is lifted against the action of the spring 116 out of the channel 108. Co-operating abutments 122 and 123 may be provided on the cap-like yoke 110 on the upper shield 101 for limiting the pivotal movement of the cap when a pull is exerted on the pull member.

As will be readily understood from above, a slider according to this invention comprises only three units engaged with each other, i. e. the first unit or "slider body" including the upper shield, the lower shield and the neck portion joining same, the second unit including the attaching member in the shape of a cap-like yoke, the spring and the locking finger, and the third unit or "pull member."

It should be clearly understood that the terms "upper," "lower" and the like have been used merely for the purpose of facilitating the description of the invention. The slider may, of course, be used in any suitable position.

It should further be understood that the embodiments described and illustrated are given by way of example only, and that many modifications, omissions, and additions are possible without departing from the spirit of this invention.

I claim:

1. An automatically locking slider for a sliding fastener, comprising a slider body, a pull member for operating the slider, and a one-piece locking unit, the said slider body having opposing shields at least one of which is apertured, connected in spaced parallel relationship to each other to form a Y-shaped channel for the passage of opposing scoop carrying stringers of a slide fastener, and an upstanding lug intermediate said one shield of said slider body for pivotally connecting said locking unit to said slider body, the said locking unit comprising an open ended channel shaped attaching member for linking said pull member to said slider body, a flat spring, and a locking finger, said attaching member extending along the one shield and comprising two sidewalls extending in the longitudinal direction of said slider body, and a transverse wall connecting said sidewalls, said locking finger being integral with one of said sidewalls and extending therefrom beyond said one shield toward said other shield, said flat spring being integral with, and projecting from an end of, said transverse wall and being bent to extend into the space between said sidewalls to bear against said one shield, the said flat spring normally biasing said locking unit about its pivot and thereby urging the free end of said locking finger toward said other shield, means operatively connecting said pull member with said attaching member and actuatable, upon exertion of

a pull on said pull member, to move the free end of said locking finger away from said other shield against the biasing action of said spring.

2. An automatic slider in accordance with claim 1, wherein the upstanding lug is disposed nearer to one end than the other of said one shield of said slider body.

3. An automatic slider in accordance with claim 1, wherein the attaching member envelops said lug, wherein the free end of the bent over portion of said spring terminates at one side of and in spaced relationship to said lug, and wherein said pull member is operatively connected to a portion of said attaching member lying at the other side of said lug.

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