Jan. 20, 1942. D. B. GILMORE 2,270,782

SLIDER FOR SEPARABLE FASTENERS

Filed July 15, 1940

Fig. 1.

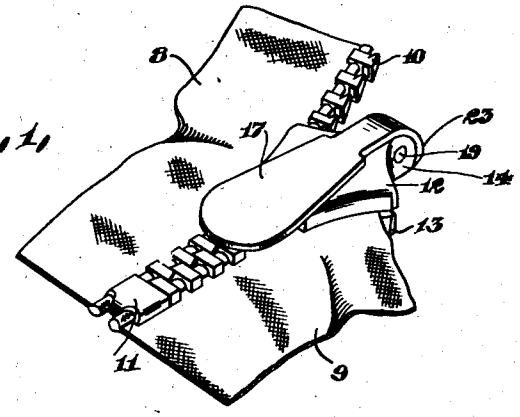


Fig. 2.

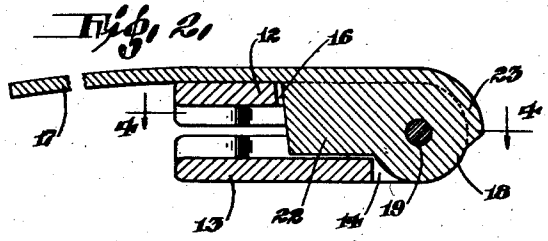


Fig. 3.

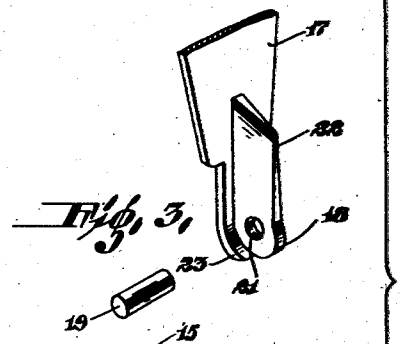


Fig. 5.

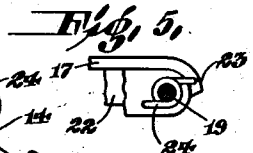
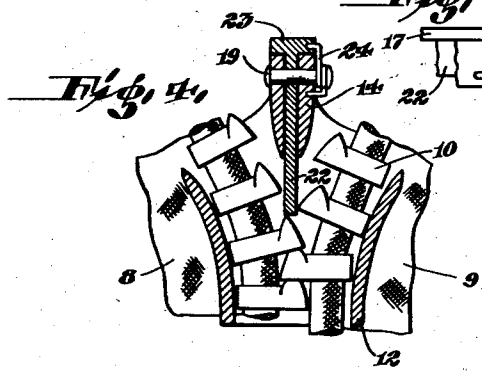


Fig. 4.



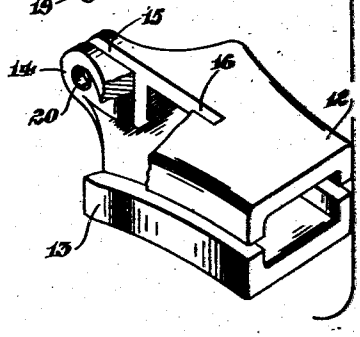


Fig. 6.

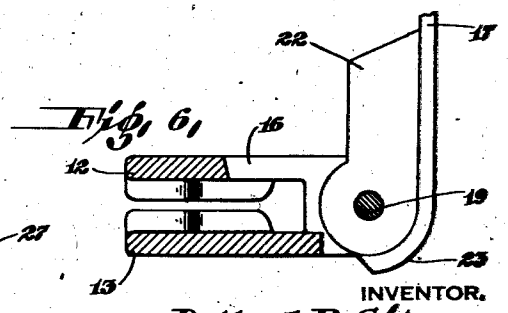
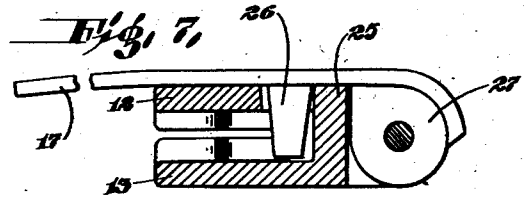


Fig. 7.



INVENTOR.
Delbert B. Gilmore,
BY R. S. Kelley.
ATTORNEY.

Patented Jan. 20, 1942

2,270,782

UNITED STATES PATENT OFFICE

2,270,782

SLIDER FOR SEPARABLE FASTENERS

Delbert B. Gilmore, Erie, Pa., assignor to Talon, Inc., Meadville, Pa., a corporation of Pennsylvania

Application July 15, 1940, Serial No. 345,470

3 Claims. (Cl. 24—205.5)

My invention relates to slide fasteners of the type wherein rows of fastener elements are mounted on a pair of tapes and a slider embraces the rows of fastener members and slides along them for engaging and disengaging the fastener members.

More particularly my invention relates to an improved slider construction for such fasteners wherein the slider may be locked in place at the desired position on the rows of fastener members.

It is an object of my invention to provide an improved lock slider construction which shall be as thin as possible and substantially devoid of any projections on its outer surfaces such as lugs or loops which are often provided for attaching pull tabs and locking devices.

My invention provides a slider which can be very securely locked in any desired position in which the locking device is not likely to become accidentally disengaged. At the same time, there are no projecting lugs or other projections above the top surface of the slider and all objectionable long pins on the pull tab have been avoided.

In addition to the advantages of appearance, compactness, durability and reliability in operation, other objects and advantages of my invention will hereinafter more fully appear.

In the accompanying drawing I have shown for purposes of illustration one embodiment and two modifications thereof which my invention may assume in practice. In the drawing:

Fig. 1 is a perspective view of a small section of slide fastener equipped with my improved slider;

Fig. 2 is a longitudinal central cross-section through the slider detached from the fastener;

Fig. 3 is a perspective view showing three parts of the slider disconnected;

Fig. 4 is a cross-section on line 3—3 of Fig. 2 showing the fastener members in position in the slider and showing a modification;

Fig. 5 is a side view of a portion of Fig. 4;

Fig. 6 is a central vertical section through the slider with the locking member in unlocked position;

Fig. 7 is a similar sectional view showing a modified form and with the locking member in locked position.

The slide fastener with which I have shown my invention is of a familiar type involving a pair of fabric tapes 8, 9 having attached to their adjacent edges the rows of fastener members 10. The tapes have attached thereto suitable stop members including a bottom stop 11 and they are engaged and disengaged by movement of a slider along them in a familiar manner. The slider comprises upper and lower wings 12, 13 respectively, which are flanged at the sides and which are connected at the wide end by a narrow neck construction 14. The two parallel wings with the outwardly flaring flanges and the neck 14 form an interior channel of generally Y-shape and the fastener elements of the separated fastener feed through the diverging branches of the slider channel and come together at about the central or crotch portion of the Y, interengage and feed out through the narrow or bottom end of the slider. The neck 14 is herein shown as projecting above the slider somewhat more than is usual and has a central vertical slot 15 extending therethrough and as a continuation of this slot there is an opening or slot 16 in the upper wing of the slider which extends a substantial distance beyond the neck, that is, to the crotch of the Y-shaped channel. A pull tab 17 has a lug or web 18 adapted to fit into the slot 15 and a pivot pin 19 extends through suitable aligned openings 20 in the slider neck 14 and in the pull tab to furnish a pivotal connection of the pull tab to the slider. It will be observed that the pivotal axis is between the planes of the outer surfaces of the slider wings and that the wings are flat because they are devoid of any upstanding projections, loops, etc., which are found in sliders now on the market. The slider body, and if desired, also the pull tab, are of such shape as to lend themselves to easy manufacture by a die casting or molding process.

The locking projection or web 22 on the pull tab may be formed as an integral connection of the lug 18 and is located centrally with respect to the sides of the slider. This portion of the projection is preferably tapered and is sufficiently long as will be observed in Fig. 2, to extend substantially entirely across the depth of the slider channel. This projection extends a substantial distance toward the narrow end of the slider from the neck 14 thus entering between the rows of fastener members 10 as best seen in Fig. 4, and because it extends to the crotch of the Y-shaped channel it will block the passage of the fastener members through the diverging branches of the slider channel and thus cause the slider to be locked in any position where the pull tab is swung flat against the slider, as shown in Fig. 2. It will be noted that the location of the pivotal axis of the pull tab at the rear end of the wings or neck and between the planes of the wings, as distinguished from its usual location on a lug which projects from one wing, facilitates movement of the relatively longer locking projection through the opening in the slider and between the fastener members. This is due to the fact that the arc movement of the forward end of the locking projection is more nearly vertical with respect to the slider as it moves into and out of locking position.

The exact place of the locking projection lengthwise with respect to the slider body may be determined by experiment and will vary to

some extent depending upon the particular configuration of the slider and the shape of the fastener elements. It may be said to be substantially at the crotch of the Y-shaped channel where locking occurs or in other words, where the fastener elements start to spread out fanwise.

As seen in Fig. 6 the pull tab extends over the pivot lug and ends in flanges 23 which abut against the slider body as shown in Fig. 6, to limit swinging movement of the pull tab to a substantially vertical position. This facilitates operation of the slider especially when being pushed downwardly. In sliders of this type the fastener is opened by a pushing or shovel force applied to the pull tab as distinguished from a tension applied to the narrow end as in some sliders.

In some cases it is desirable to provide a locking device which will spring automatically into operation without pushing by the user. To accomplish this purpose any convenient spring may be employed such as a coil spring 24 around the pivot pin 19.

It will be observed that the neck 14 extends a substantial distance into the wings and thus the strength of the slider is not for many purposes too greatly affected by cutting the central slot, as shown in Figs. 2, 3 and 4. In cases, however, where it is desired to have greater strength as shown in Fig. 7, there may be a break in this slot so as to provide a central portion 25 of the neck integral with the upper wing as well as the lower wing. In this case the locking projection 26 instead of being formed as an integral extension of the pivot lug 27, is formed as a separate projection extending through a centrally aligned opening. The locking principle is substantially the same.

The principle of locking employed which, so far as I am aware, is new, comprises means which in effect extend the length of the wedge or neck structure to a point where the fastener members cannot move by. It is believed that this type of locking member will be especially advantageous in very small size fasteners or fasteners of plastic material where it is difficult to get a proper locking engagement between the fastener members themselves. It is, of course, to be understood that the interlocking portions of the fastener members are quite short in any commercially acceptable fastener and for that reason there is no room for any locking projection between the heads of the fastener members and the opposite tape. In very small fasteners, the locking pin in accordance with former lock slider constructions must be relatively short and the locking effect is therefore not so reliable. Furthermore, in the case of light weight pull tabs as in small fasteners, my invention obviates all tendency for the locking pull to kick out of place because the long locking projection extending across the depth of the slider channel provides a very secure locking engagement.

Another advantage which may be mentioned is that a relatively thinner pull tab may be made which will lie thin and flat against the slider without any obstruction thus producing a streamline effect. If desired, the pull tab can be extended to cover the slider thus further enhancing the appearance, and various decorative designs are also possible. The web on the pull tab in the preferred embodiment provides an excellent straightening element for such pull tabs when made of thin material.

While I have shown and described one preferred embodiment and two modifications thereof which my invention may assume in practice, it will be understood that this embodiment and the modifications are for the purposes of illustration and various other forms may be devised within the scope of my invention as set forth in the appended claims.

What I claim as my invention is:

1. A slide fastener of the class described comprising two rows of fastener members, a slider movable along said rows of fastener members for engaging and disengaging the same, said slider comprising wings on opposite sides of the fastener member, a neck uniting said wings at one end, said slider defining a Y-shaped channel with diverging branches on opposite sides of said neck, a pull tab pivoted to the slider adjacent the neck which may be positioned flat against the outer surface of one wing or swung upwardly toward a vertical position with respect to the slider, such wing having a centrally disposed opening therethrough at the crotch of the Y and a centrally located lug on said pull tab which, when the pull tab is flat against the slider, extends through said opening substantially across the depth of the slider channel at the crotch of the Y and between two rows of fastener members therein to prevent engagement of the fastener members and thus cause locking of the slider, said locking lug being movable out of locking position when the pull tab is lifted to move the slider, the pivotal connecting means for the pull tab being located between the planes of the outer surfaces of said slider wings.

2. A slider for slide fasteners of the class described comprising parallel overlying wings connected by a neck at one end and defining a substantially Y-shaped channel between the wings, said neck and adjacent portions of the wing being provided with a longitudinally extending slot extending a substantial distance beyond the neck, a locking member pivotally mounted on the slider neck and having an inwardly projecting lug which extends through said slot beyond the neck to block the slider channel where the diverging branches of the Y-shaped channel meet, the pivotal connecting means for the locking member being located between the planes of the outer surfaces of said wings.

3. A slider for slide fasteners of the class described comprising parallel overlying wings connected by a neck at one end and defining a substantially Y-shaped channel between the wings, said neck having a vertically extending central slot therethrough, the adjacent portion of the wing being also slotted to form a continuation of the slot in the neck, a pull tab having a central depending pivot lug fitting in the slotted neck, and means for pivotally connecting the same thereto, and a projection formed as an integral continuation of said lug and movable through the slot in the wing into position between two rows of fastener members in the crotch portion of the slider channel to block their movement in the slider at the point where the fastener elements intermesh.

DELBERT B. GILMORE.