

Description

This invention relates generally to sliders for slide fasteners, and more particularly to a slide fastener slider having a safe pull tab which is suitable for use on sportswear and infant's wear.

In general, pull tabs for slide fasteners are made of metal such as a zinc alloy, copper alloy, stainless steel and the like which is the same material as the slider bodies on which the pull tabs are pivotably mounted. However, there is a demand in the market for a slider having a pull tab which is made of a different material from the slider body to meet the user's desire.

To meet such demand, the present assignee has proposed a slider of this type, as disclosed in Japanese Utility Model Application No. 60-195055. The disclosed slider, as reillustrated here in Figure 4 of the accompanying drawings, includes a pull tab A made of rubber connected to a slider body via a connector ring B threaded through an arch-shaped lug C of the slider body. Since the connector ring B is made of metal, there is a possibility of injury when the user hits a part of its body against the metal connector ring. This slider is therefore not suitable for use on sportswear and infant's wear.

US-A-4 055 876 discloses a locking slider of the type described in the preamble of claim 1. The flexible pull tab of this conventional locking slider consists of two cords with which several crosspieces of plastic are molded, thereby forming a ladder-like structure. One of the two crosspieces at the end serves as a grasping piece for the user, and the other crosspiece extends through an opening of the pull tab supporting portion of the slider body. The latter crosspiece is cylindrical and of circular cross-section. Due to this circular cross-section, the angular position or the orientation of this crosspiece does not have an influence on whether the locking prong engages with the slide fastener chain or not.

US-A-2 840 877 discloses a clip that can be attached to a conventional slider body and is provided with means for flattening the creases of the cloth which could hinder the slider in moving. For this purpose, the clip comprises a tongue at both of its ends to which a rubber tip can be attached. Each of these has the task of pressing down and flattening folds or wrinkles of the cloth to which the slide fastener is fixed.

With the foregoing drawback in view, the present invention seeks to provide a locking slider having a safe pull tab which is free from a possibility of injury even when the user accidentally strikes a part of his body against the pull tab.

A locking slider satisfying this requirement and particularly suited for use on sportswear and in-

fant's wear is characterized in claim 1.

The invention will now be described in more detail with reference to the accompanying sheets of drawings in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

Figure 1 is a perspective view of a slide fastener slider embodying the present invention;

Figure 2 is an enlarged longitudinal cross-sectional view of the slider with parts in locking position;

Figure 3 is a view similar to Figure 3, but showing the slider with parts in unlocking position; and

Figure 4 is a perspective view, with part cut away for clarity, of a slider according to a related art.

The principles of the present invention are particularly useful when embodied in a slide fastener slider such as shown in Figure 1. The slider is of the semiautomatically lockable slider in which a slider pull tab is set in an upright position when the slider is operated to open and close a slide fastener, and hence there is a great possibility of injury when the user accidentally hits a part of its body onto the erected pull tab.

As shown in Figures 1 and 2, the slider includes a slider body 1 having on its upper surface a support lug 2 and a hook-shaped stopper 4 disposed adjacent to the front and rear ends, respectively, of the slider body 1. The slider body 1 has an aperture formed in an upper wing or plate thereof for the passage of a locking prong 7. The locking prong 7 is integrally formed on an inner surface of an arch-shaped cover 6 adjacent to the rear end thereof. The cover 6 has a front end pivoted by a pin 3 to the support lug 2 and extends longitudinally over the upper wing of the slider body 1 so as to conceal the support lug 2 and the stopper 4. A leaf spring 5 is disposed flatwise against the upper wing and is snugly received between the support lug 2 and the stopper 4. The leaf spring 5 has a rear end held in interlocking engagement with a locking projection 8 of the cover 6. Thus, the cover 6 is normally urged downwardly against the upper wall under the force of the leaf spring 5, as shown in Figure 1. In this instance, the locking prong 7 on the cover 6 projects through the aperture into a Y-shaped guide channel in the slider body 1, thereby locking the slider in position against displacement relative to a slide fastener chain (not shown). The cover 6 has a pair of spaced side walls recessed as at 9 so as to provide curved cam surfaces.

The slider also includes a pull tab 10 pivotably connected to the cover 6 of the slider body 1 (in the illustrated embodiment, the cover 6 constitutes a pull-tab supporting portion). The pull tab 10 is

rectangular in shape and made of elastic synthetic resin such as polyester elastomer, for example. The pull tab 10 has a pintle portion or spindle 11 at an end thereof and a rectangular opening 12 partly defined by the spindle 11. The spindle 11 is threaded through a space defined between the cam surfaces 9 and the upper wing so that the pull tab 10 is pivotable about the spindle 11 in a plane perpendicular to the general plane of the upper wing. The spindle 11 has a non-circular cross sectional shape and engageable with the cam surfaces 9 of the cover 6 to pivot the cover 6 as described later. The pull tab 10 is reduced in thickness at a portion 14 disposed centrally between the opening 12 and the free end 13 of the pull tab 10. With the thin portion 14 thus provided, the pull tab 10 is easily bendable about the thin portion 14 when subjected to a severe pressure or force.

In use, when the slider is to be moved to open and close the slide fastener, the pull tab 10 is uplifted by the user's fingers from the locking position shown in Figure 2 to the unlocking position shown in Figure 3. During that time, due to camming action between the spindle 11 and the cam surfaces 9, the cover 6 is pivoted upwardly about the pin 3 against the force of the leaf spring 5 to cause the locking prong 7 to be retracted from the guide channel into the aperture in the upper wing, thereby releasing the slider from the slide fastener chain. Upward movement of the cover 6 is limited by the stopper 4 engageable with the locking projection 8 of the cover 6. When the pull tab 10 is held in this erected position, there is a great possibility of accidental engagement with the user's body. At the time of this accidental engagement, the pull tab 10 of the present invention never injures the user's body as it is made of elastic synthetic rubber and also is easily bendable about the thin portion 14.

When the pull tab 10 is turned in either direction (i.e. forwardly or rearwardly of the slider body 1), the cover 6 is automatically returned to its normal locking position under the force of the leaf spring 5, thereby bringing the locking prong 7 into locking engagement with the slide fastener chain. The slider is thus locked in position against displacement with respect to the slide fastener chain.

As described above, the pull tab 10 solely made of elastic synthetic resin is easily bendable when subjected to a severe external force or pressure hence is unlikely to injure the user's body even when the user accidentally hits a part of its body against the pull tab 10.

The pull tab 10 of the present invention is also applicable to other types of sliders which include a general slider having no locking function, an automatically lockable slider, a bi-directionally openable slide fastener slider having two pull tabs. Further-

more, the pull tab 10 may be formed into various shapes including an oval and a fan-shape.

Claims

1. A locking slider for slide fasteners, comprising: a slider body (1) having an upper wing provided with an aperture; an arch-shaped cover (6) pivoted to said slider body (1) and urged by spring action downwardly against said upper wing; and a flexible pull tab (10) pivotally connected to said cover (6) by a spindle (11) extending through a space defined between a recess of said cover (6) and the upper wing of said slider body (1); said cover (6) being provided with a locking prong (7) normally projecting through said aperture provided in said upper wing to engage with a slide fastener chain; characterized in that said cover (6) has a recessed cam surface (9) and that said flexible pull tab (10) is a one-piece member made of elastic synthetic resin and has a cross-sectionally non-circular spindle (11) engageable with the cam surface (9) of said cover (6) by turning of said pull tab (10) in the erected position thereof to pivot the cover (6) upwardly away from the upper wing of said slider body (1).
2. A slide fastener slider according to claim 1, said elastic pull tab (10) having an opening (12) adjacent to said one end and a thin portion (14) disposed centrally between said opening (12) and an opposite end (13) of said pull tab (10).
3. A slide fastener slider according to claim 1, said elastic synthetic resin comprising a polyester elastomer.

Patentansprüche

1. Selbsttätig sperrender Schieber für Reißverschlüsse, umfassend: einen Schieberkörper (1), der einen mit einer Öffnung versehenen Oberschild aufweist; eine bogenförmige Kappe (6), die mit dem Schieberkörper (1) schwenkbar verbunden und mit Federkraft nach unten gegen den Oberschild vorgespannt ist; und einen flexiblen Griff (10), der mit der Kappe (6) über einen Drehbolzen (11) schwenkbar verbunden ist, der sich durch einen zwischen einer Aussparung der Kappe (6) und dem Oberschild des Schieberkörpers (1) bergetzten Zwischenraum erstreckt; wobei die Kappe (6) mit einer Sperrklau (7) versehen ist, die normalerweise zum Eingriff mit einer Reißverschlussschleife durch die im Oberschild angeord-



rectangular in shape and made of elastic synthetic resin such as polyester elastomer, for example. The pull tab 10 has a pintle portion or spindle 11 at an end thereof and a rectangular opening 12 partly defined by the spindle 11. The spindle 11 is threaded through a space defined between the cam surfaces 9 and the upper wing so that the pull tab 10 is pivotable about the spindle 11 in a plane perpendicular to the general plane of the upper wing. The spindle 11 has a non-circular cross sectional shape and engageable with the cam surfaces 9 of the cover 6 to pivot the cover 6 as described later. The pull tab 10 is reduced in thickness at a portion 14 disposed centrally between the opening 12 and the free end 13 of the pull tab 10. With the thin portion 14 thus provided, the pull tab 10 is easily bendable about the thin portion 14 when subjected to a severe pressure or force.

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When the pull tab 10 is turned in either direction (i.e. forwardly or rearwardly of the slider body 1), the cover 6 is automatically returned to its normal locking position under the force of the leaf spring 5, thereby bringing the locking prong 7 into locking engagement with the slide fastener chain. The slider is thus locked in position against displacement with respect to the slide fastener chain.

As described above, the pull tab 10 solely made of elastic synthetic resin is easily bendable when subjected to a severe external force or pressure hence is unlikely to injure the user's body even when the user accidentally hits a part of its body against the pull tab 10.

The pull tab 10 of the present invention is also applicable to other types of sliders which include a general slider having no locking function, an automatically lockable slider, a bi-directionally openable slide fastener slider having two pull tabs. Further-

more, the pull tab 10 may be formed into various shapes including an oval and a fan-shape.

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nete Öffnung hindurchragt; dadurch **gekennzeichnet**, daß die Kappe (6) eine ausgesparte Steuerkurve (9) aufweist und daß der flexible Griff (10) ein einstückiges Bauteil aus elastischem Kunststoff ist und einen Drehbolzen (11) mit unrundem Querschnitt hat, der mit der Steuerkurve (9) der Kappe (6) in Eingriff bringbar ist, indem der Griff (10) in eine aufrechte Stellung verdreht wird, um die Kappe (6) von dem Oberschild des Schieberkörpers (1) weg nach oben zu verschwenken.

2. Schieber nach Anspruch 1, wobei der elastische Griff (10) nahe dem besagten einen Ende eine Öffnung (12) und in der Mitte zwischen dieser Öffnung (12) und dem gegenüberliegenden Ende (13) des Griffs (10) einen dünnen Bereich (14) hat.

3. Schieber nach Anspruch 1, wobei der elastische Kunststoff ein Polyesterelastomer ist.

Revendications

1. Curseur à verrouillage pour fermeture à glissière, comprenant : un corps (1) de curseur comportant une aile supérieure pourvue d'une ouverture ; un couvercle (6) de forme arquée articulé sur le corps (1) de curseur et poussé par la force d'un ressort vers le bas contre l'aile supérieure ; et une tirette souple (10) articulée sur le couvercle (6) par une partie formant axe (11) s'étendant à travers un espace défini entre un évidement du couvercle (6) et l'aile supérieure du corps (1) de curseur ; le couvercle (6) étant pourvu d'une dent de verrouillage (7) faisant saillie normalement à travers l'ouverture formée dans l'aile supérieure pour venir en prise avec une chaîne de fermeture à glissière ; **caractérisé** en ce que le couvercle (6) comporte une surface de poussée évidée (9) et en ce que la tirette souple (10) est formée par un élément d'une seule pièce en résine synthétique élastique et comporte une partie formant axe (11) qui est non circulaire en section droite et que l'on peut faire venir contre la surface de poussée (9) du couvercle (6) en amenant par pivotement la tirette (10) dans sa position dressée pour faire pivoter le couvercle (6) vers le haut dans un sens l'éloignant de l'aile supérieure du corps (1) du curseur.

2. Curseur de fermeture à glissière selon la revendication 1, la tirette élastique (10) comportant une ouverture (12) adjacente à son extrémité et une partie mince (14) disposée centralement entre l'ouverture (12) et une extrémité

opposée (13) de la tirette (10).

3. Curseur de fermeture à glissière selon la revendication 1, ladite résine synthétique élastique comprenant un élastomère polyester.