

Description

The present invention relates to an automatically lockable slider for a slide fastener and more particularly a slider having a locking prong spring-biased to engage with a coupling head of a coupling element at an intermeshing region in its Y-shaped guide channel.

A typical automatic lock slider for a slide fastener includes a pull tab and a locking prong operatively associated therewith. The locking prong is normally urged downwardly into the path of coupling elements in the slider, and can be retracted out of the path by lifting the pull tab on the slider.

As is often the case with slide fasteners having such sliders and used on a rigid garment fabric, they are opened by grabbing the garment fabric and spreading the fastener stringers forcibly apart instead of manipulating the pull tab on the slider. A similar scene is commonly witnessed at the site of sewing slide fasteners to the rigid garment fabric, namely a denim.

Japanese Utility Model Laid-Open Publication No. 51-126703 discloses a lockable slider having lock and ratchet functions. To effect the ratchet function, a cavity is defined in the bottom surface of the guide channel in confrontation with the locking prong so as to allow the coupling element to tilt and sink therein to pass underneath the prong when the fastener stringers are forcibly spread apart.

With this type of slider, the maximum allowable lock strength of the locking prong is defined by a critical pressure at which the coupling elements begin to shift out of position on the fastener or otherwise sustain damage. This means that the coupling element does not initiate tilting until it is engaged by the locking prong with considerable force nearly reaching the critical pressure. Under the influence of such pressure, the locking prong is susceptible to abrasion, which in turn makes the slider malfunction or be unlockable. Another problem with this prior slider is that it is difficult to attain the necessary dimensional precision in the finish of its parts.

The present invention seeks to provide an improved lock slider which is capable of smooth lock and ratchet performance over extended service life without involving separated, displaced or damaged fastener elements which would otherwise result from repeated ratchet action.

The above object is achieved by the provision of a lock slider as characterized in claim 1.

An automatic lock slider according to the preamble of claim 1 is disclosed in principle in GB-A-602 543 and FR-A-2 213 747. In these conventional lock sliders, the locking member is arranged such that movement of the slider in the direction of

opening is reliably prevented when the stringer tapes are pulled apart from each other in transverse direction.

Many other advantages and features of the present invention will become manifest to those versed in the art upon making reference to the detailed description and the accompanying sheets of drawings in which preferred structural embodiments incorporating the principles of the present invention are shown by way of illustrative example.

Figure 1 is a horizontal cross-sectional view of a slider according to an embodiment of the present invention, with a locking prong in a locking mode;

Figure 2 is a vertical cross-sectional view taken along line II - II of Figure 1;

Figure 3 is similar to Figure 2, showing the locking prong in a ratchet mode;

Figure 4 is an explosive view of the slider of Figure 1;

Figures 5A, 5B and 5C are side elevational views of various lower ends of the locking prong according to embodiments of the invention;

Figure 6 is a perspective view of a lower wing of a slider body provided with a raised guide portion;

Figure 7 is a vertical cross-sectional view of the slider, showing a manner in which the coupling element is forced against the raised portion;

Figures 8 and 9 are vertical cross-sectional views, partly broken away, of modifications of the locking prong;

Figure 10 is an explosive view of a modified slider having a pair of locking prongs;

Figure 11 is a horizontal cross-sectional view of the slider of Figure 10;

Figure 12 is a vertical cross-sectional view taken along line XII - XII of Figure 11;

Figure 13 is a vertical cross-sectional view of a slider according to another embodiment of the invention;

Figure 14 is a horizontal cross-sectional view taken along line XIV - XIV of Figure 13;

Figure 15 is a side elevational view of a locking prong of the slider shown in Figure 13, showing a manner in which the locking prong locks the coupling element;

Figure 16 is a vertical cross-sectional view of the slider of Figure 13, showing the coupling element positioned on the raised portion;

Figure 17 is an explosive view of another modification of the slider fastener;

Figure 18 is a perspective view of modified parts of the slider shown in Figure 17; and

Figure 19 is a schematical plan view of a prior slider, showing a pull tab laterally angularly displaced relative to a slider body.

The invention will be better understood from the following detailed description taken in conjunc-

tion with the accompanying drawings, in which like numerals refer to like and corresponding parts throughout the several views.

Figures 1 - 4 show inclusively an automatic lock slider according to a first embodiment of the present invention. The slider includes a slider body 1, a locking member 3 mounted on the slider body and a pull tab 2 pivotably held by the locking member on the slider body.

The slider body 1 includes upper and lower wings 4, 5 spaced in parallel to each other and a connecting neck 6 joining together the two wings at their front ends, thereby defining a Y-shaped guide channel 7 for the passage of a pair of coupling element rows 31 carried respectively on a pair of stringer tapes. The neck extends vertically and has a V-shaped horizontal cross section such that it defines a retention groove 8 for receiving one or distal end of the locking member 3 as described later on.

The upper wing has two apertures 10, 12 both communicating with the guide channel 7. One or front aperture 10 is disposed adjacent to the neck 6 and the other or rear aperture 12 is disposed adjacent to the rear end of the upper wing 4. The front aperture 10 is disposed at a position laterally displaced from a longitudinal axis of the slider body 1 for the purpose described later on. Formed between the two apertures 10, 12 is a retaining lug 11.

The locking member is made of a resilient material such as a metal plate and includes a downwardly curved front portion 14, an intermediate portion 17 extending rearwardly from an upper curved part 16 of the front portion and a bulged portion 18 contiguous to the intermediate portion.

The locking member 3 is retained at the distal end 15 of the front portion 14 received in the retention groove 8 such that the intermediate portion 17 and the bulged portion 18 are urged toward the upper wing 4. Specifically, a lower surface 17 a of the intermediate portion 17 is urged downwardly and facewise against the upper wing 4. The distal end 15 is engaged by a pair of stepped portions 9 formed at a lower end of the groove. The locking member extends rearwardly and terminates in a rear end 19 disposed in the rear aperture 12 of the upper wing. The locking member has a window 22 defined in a rear slanted wall of the bulged portion 18. The retaining lug 11 extends upwardly rearwardly through the window 22 and terminates above the rear end 19 of the locking member 3 such that the lug 11 restricts an excessive movement of the locking member in both lateral and upward directions.

A locking prong 20 extends downwardly forwardly from the intermediate portion 17 through the laterally displaced front aperture 10 into the guide

channel 7 as shown in Figure 2. The locking prong 20 has its lower end 21 normally positioned in an intermeshing region defined adjacent to a diverging or branched point of the Y-shaped guide channel 7, in which region a mating pair of coupling elements are brought into and out of intermeshing engagement by moving the slider relative to the coupling element rows.

More specifically, the intermeshing region is an area where the mating pair of coupling elements are on the verge of coupling together or on the verge of separating from each other.

The lower end 21 of the locking prong 20 has an abutment surface on its lower end at somewhat rear surface. The abutment surface is defined by a rounded or smooth surface at which the locking prong engages a tapered surface of the coupling head 32 of the coupling element 31.

The prong 20 and hence the lower end 21 are normally urged downwardly toward the lower wing 5 since the intermediate portion 17 supporting the same is urged downwardly.

Provision of the smooth abutment surface on the locking prong prevents the coupling elements from being damaged or displaced by the repeated manipulation of the slider in its ratchet mode.

In the illustrated embodiment, the coupling element is in a discrete form, and has the tapered coupling head projecting forwardly. However, coupling element is not limited to this type.

Figures 5A, 5B and 5C show exemplary forms of the lower end of the locking prong 20. In Figure 5A, the locking prong 20 has an upwardly curved end 21a providing the abutment surface in the form of a rounded lower surface. Figure 5B shows a lower bent end 21b having a lower surface engageable with a tapered surface of the coupling head 32 in a surface-contacting manner. Figure 5C shows a lower bent end 21c having a lower rounded corner defining the abutment surface.

As shown in Figure 4, the pull tab 2 has bifurcated support legs 23 and a cam shaft 24 extending between distal ends of the legs 23, thereby defining an opening 25. The cam shaft 24 is received in the bulged portion 18 and held against the upper wing 4 such that the pull tab is pivotally movable about the cam shaft 24 and also biased by the retention force of the bulged portion 18 to lie on the upper wing 4 of the slider body 1.

The locking prong 20 is normally spring-biased downwardly and is adapted to engage with a coupling head 32 of the coupling element 31 in the intermeshing region. When the locking prong 20 is in a locking position (Figure 2) where the locking prong 20 is positioned in engagement with the coupling element 31, the prong continues to push down the coupling element for thereby locking the slider.

In a normal unlocking operation, the pull tab is manually raised to retract the locking prong 20 out of the guide channel. More specifically, the pivotal movement of the pull tab 2 causes the cam shaft to rotate and to move the bulged portion 18 and hence the locking prong 20 upwardly. At this time, the lower end 21 of the prong 20 is retracted out of the guide channel 7. When the pull tab 2 is released, the cam shaft 24 is urged by the bulged portion 18 to rotate to cause the pull tab 2 to lie on the upper wing 4 of the slider body 2, whereupon the locking prong 20 is also urged down into the guide channel.

Most importantly the slide fastener can be spread open also by pulling laterally the fastener stringers 30, 30 without manipulating the slider. Under the continued pull force applied to the stringers, the coupling element 31 is moved forwardly relative to the slider body 1 and hence the locking prong, whereupon the coupling head 32 slides on the smooth abutment surface of the prong 20 and advances pushing up the latter gradually as shown in Figure 3. Consequently, the coupling element 31 clears the prong 20 and thus effecting a ratchet function. The successive coupling elements repeat the same action for thereby making the slide fastener spread apart.

During this operation the coupling element 31 are engaged at their coupling heads 32 by the locking prong 20. Provision of the abutment surface of the prong 20 protects the coupling elements from mechanical damages such as a shifting or a wearing of the coupling elements which otherwise take place.

As best shown in Figure 6, a raised guide portion 27 is formed on the inner surface of the lower wing 5 of the slider body 1. The raised guide portion 27 is disposed in the intermeshing region of the guide channel 7 in a substantially vertical registry with the lower end 21 of the prong. The raised portion extends complementary in contour with a lower part of the coupling head 32 so as to occupy a gap between the coupling head 32 and the inner surface of the lower wing 5 i.e. the bottom surface of the guide channel 7, as shown in Figure 7.

The raised portion 27 guides the coupling elements 31 and prevents the same to roll about its longitudinal axis of the coupling element in the intermeshing region as the latter advance on and along the raised portion 27 with the coupling heads 32 engaged by the locking prong 20. The raised portion 27 assists the locking prong 20 in locking the element 31 in a more stable manner.

The locking prong 20 may extend down rearwardly from the intermediate portion 17 as shown in Figure 8. Figure 9 shows another modified locking prong 20 of a V-shape formed by punching the intermediate portion 17.

The slider may be provided with an additional locking prong 20' as shown in Figures 10, 11 and 12. The locking prong 20' extends through an aperture 10' of the upper wing 4 into the intermeshing region of the Y-shaped guide channel 7 in a similar manner to the locking prong 20 except that the additional prong 20' is offset rearwardly relative to the prong 20 such that the locking prong 20 engages one coupling element 31 and the locking prong 20' engages the mating coupling element 31 as best shown in Figure 11.

The cam shaft 24 has a recessed shaft portion 24a so as not to interfere with the rearwardly offset prong 20'. A retaining lug 11a of the upper wing 4 projects upwardly forwardly for the same purpose of the lug 11.

Figures 13 to 16 show an automatic lock slider according to another embodiment of the invention. This embodiment is similar to those described hereinabove, but a locking prong 40 extends vertically down into the guide channel 7 through the aperture 10. An upper part 16 of the front portion 14 and the intermediate portion 17 are spaced from the slider body 1 as shown in Figure 13. The prong 40 depends from a junction at which the intermediate portion 17 and the bulged portion 18 are connected to each other.

The locking member 3 is urged against the upper wing 4 and in contact with the latter at points m, n. The point m is disposed at the junction between the intermediate portion 17 and the bulged portion 18, and the point n is disposed on an inner surface of a rear slanted wall of the bulged portion 18. The locking member is spring-biased and pivotally movable about the distal end 15, for thereby projecting the locking prong 40 into the guide channel 7. A lower end 41 of the prong 40 is positioned in the intermeshing region in a similar manner as the prong 20. The lower end 41 has a rearwardly canted surface defining the abutment surface engageable with a forwardly tapered surface of the coupling head 32.

The locking prong 40 has a rectangular horizontal cross section and is twisted about its axis such that the rectangle is orientated in the same direction as the coupling head 32 of the coupling element 31 positioned in contact with the lower end 41 of the prong in the intermeshing region. In other words a rear side face of the rectangular prong 40 extends in parallel to a longitudinal axis of a leg 33 of the coupling element 31.

A raised guide portion 27 a is formed on the inner surface of the lower wing 7 in the intermeshing region. As best shown in Figure 16, the raised portion 27 a has a pair of laterally slanted surfaces having a ridge coaxial with the axis of the slider body 1. The raised portion 27 a makes the guide channel 7 receive and guide the coupling

elements 31 in a more snugly manner.

The downward movement of the locking prong 40 is restricted by the upper wing 4 which engages the prong at the points m, n, and the upward movement of the same by the retention lug 11 which engages the rear end 19 thereof.

The vertical locking prong 40 is lifted by the horizontal or forward pushing force of the coupling element 31 in more efficient and more responsive manner than the slanted locking prong 20. This is because the prong 40 is pivotable about a point, i.e. the distal end of the locking member 15, which is disposed relatively remotely from the prong. The more remotely the distal end or pivot portion of the locking member is disposed from the prong or action point, the more responsively the prong is moved by the force caused thereon by the coupling element when the latter is forced to move through the guide channel.

Figures 17 and 18 show modifications of the pull tab 2. When the pull tab 2 is released from the operator's fingers in a vertical unlocking position, the pull tab is forced to lie down under the bias force of the locking member 3 through the cam effect of the cam shaft 24. On such occasion the pull tab is apt to fall down into a laterally displaced position as shown in Figure 19, and the distal end portions of the legs 23 are often clinched between the locking member 2 and the upper wing of the slider body 1. As a result, the locking prong is blocked and kept retracted from the guide channel 7 as indicated by a phantom line in Figure 19, although the pull tab is in the horizontal locking position. This is because the cam shaft 24 is disposed offset downwardly relative to the upper surface of the legs 23 and hence of the pull tab 2.

To avoid such an objectionable interference of the legs 23, the pull tab 2 of Figure 17 is provided with a pair of stepped guide recesses 26, 26 at respective inside corners of the distal ends of the legs 23. The guide recess may be in the form of a canted corner recess 26a as shown in Figure 18.

Claims

1. An automatic lock slider for a slide fastener comprising: a slider body (1) including upper and lower wings (4,5) spaced from each other and joined together at their front ends by a neck (6) so as to define therebetween a Y-shaped guide channel (7) for the passage of the coupling elements (31), said Y-shaped guide channel (7) including a branched point in which branched point a mating pair of coupling elements (31) are brought into and out of intermeshing engagement as they pass through

said guide channel (7); a locking member (3) of resilient material supported on said slider body (1) and including a locking prong (20;40) movable through an aperture (10) in said upper wing (4) into and out of said guide channel (7); said locking prong (20;40) having a lower end (21;41) normally disposed in said guide channel (7) immediately upstream of said branched point and urged downwardly to move toward said lower wing (5), under the resiliency of said locking member (3), for abutment on a coupling head (32) of one of two mating coupling elements (31) which are about to come in intermeshing engagement with each other; a pull tab (2) pivotally mounted on said slider body (1) and being operatively connected with said locking member (3) for moving said locking prong (20;40) upwardly against the resiliency of said locking member (3), said locking prong (20;40) having a rounded surface on that its lower end (21,41) at somewhat rear surface, characterized in that said lower wing (5) has a guide portion (27;27a) disposed on its inner surface in said intermeshing region for guiding the coupling element (31) to prevent the latter from rolling about its axis.

2. An automatic lock slider according to claim 1, said locking prong having a smooth abutment surface disposed at its lower end (20; 40) and normally urged against said coupling head (32).
3. An automatic lock slider according to claim 1 or 2 said locking prong (20) extending in a downwardly slanted fashion.
4. An automatic lock slider according to claim 1 or 2, said locking prong (40) extending vertically downwardly.
5. An automatic lock slider according to one of the claims 1 to 4, said locking member (3) including a front portion (14) having its distal end (15) retained at the neck (6) of said slider body, and an intermediate portion (17) extending integrally from an upper curved part (16) of said front portion and supporting said locking prong (20; 40), said upper part (16) being spaced from said slider body, said intermediate portion (17) having its lower surface (17a) being normally urged facewise against said upper wing (4).
6. An automatic lock slider according to one of the claims 1 to 4 said locking member (3) including a downwardly curved front portion (14) having its distal end (15) retained at the

elements 31 in a more snugly manner.

The downward movement of the locking prong 40 is restricted by the upper wing 4 which engages the prong at the points m, n, and the upward movement of the same by the retention lug 11 which engages the rear end 19 thereof.

The vertical locking prong 40 is lifted by the horizontal or forward pushing force of the coupling element 31 in more efficient and more responsive manner than the slanted locking prong 20. This is because the prong 40 is pivotable about a point, i.e. the distal end of the locking member 15, which is disposed relatively remotely from the prong. The more remotely the distal end or pivot portion of the locking member is disposed from the prong or action point, the more responsively the prong is moved by the force caused thereon by the coupling element when the latter is forced to move through the guide channel.

Figures 17 and 18 show modifications of the pull tab 2. When the pull tab 2 is released from the operator's fingers in a vertical unlocking position, the pull tab is forced to lie down under the bias force of the locking member 3 through the cam effect of the cam shaft 24. On such occasion the pull tab is apt to fall down into a laterally displaced position as shown in Figure 19, and the distal end portions of the legs 23 are often clinched between the locking member 2 and the upper wing of the slider body 1. As a result, the locking prong is blocked and kept retracted from the guide channel 7 as indicated by a phantom line in Figure 19, although the pull tab is in the horizontal locking position. This is because the cam shaft 24 is disposed offset downwardly relative to the upper surface of the legs 23 and hence of the pull tab 2.

To avoid such an objectionable interference of the legs 23, the pull tab 2 of Figure 17 is provided with a pair of stepped guide recesses 26, 26 at respective inside corners of the distal ends of the legs 23. The guide recess may be in the form of a canted corner recess 26 as shown in Figure 18.

Claims

1. An automatic lock slider for a slide fastener comprising: a slider body (1) including upper and lower wings (4,5) spaced from each other and joined together at their front ends by a neck (6) so as to define therebetween a Y-shaped guide channel (7) for the passage of the coupling elements (31), said Y-shaped guide channel (7) including a branched point in which branched point a mating pair of coupling elements (31) are brought into and out of intermeshing engagement as they pass through

said guide channel (7); a locking member (3) of resilient material supported on said slider body (1) and including a locking prong (20;40) movable through an aperture (10) in said upper wing (4) into and out of said guide channel (7); said locking prong (20;40) having a lower end (21;41) normally disposed in said guide channel (7) immediately upstream of said branched point and urged downwardly to move toward said lower wing (5), under the resiliency of said locking member (3), for abutment on a coupling head (32) of one of two mating coupling elements (31) which are about to come in intermeshing engagement with each other; a pull tab (2) pivotally mounted on said slider body (1) and being operatively connected with said locking member (3) for moving said locking prong (20;40) upwardly against the resiliency of said locking member (3), said locking prong (20;40) having a rounded surface on that its lower end (21;41) at somewhat rear surface, characterized in that said lower wing (5) has a guide portion (27;27a) disposed on its inner surface in said intermeshing region for guiding the coupling element (31) to prevent the latter from rolling about its axis.

2. An automatic lock slider according to claim 1, said locking prong having a smooth abutment surface disposed at its lower end (20; 40) and normally urged against said coupling head (32).
3. An automatic lock slider according to claim 1 or 2 said locking prong (20) extending in a downwardly slanted fashion.
4. An automatic lock slider according to claim 1 or 2, said locking prong (40) extending vertically downwardly.
5. An automatic lock slider according to one of the claims 1 to 4, said locking member (3) including a front portion (14) having its distal end (15) retained at the neck (6) of said slider body, and an intermediate portion (17) extending integrally from an upper curved part (16) of said front portion and supporting said locking prong (20; 40), said upper part (16) being spaced from said slider body, said intermediate portion (17) having its lower surface (17a) being normally urged facewise against said upper wing (4).
6. An automatic lock slider according to one of the claims 1 to 4 said locking member (3) including a downwardly curved front portion (14) having its distal end (15) retained at the





neck (6) of said slider body, and an intermediate portion (17) extending integrally from an upper curved part (16) of said front portion and supporting said locking prong, said upper curved part (16) of said front portion and a major part of said intermediate portion being spaced from said slider body (1) such that said locking member (20; 40) is pivotally movable about said distal end thereof.

7. An automatic lock slider according to one of the claims 1 to 4 said locking member (3) including an intermediate portion (17) supporting said locking prong (20; 40), said intermediate portion (17) having an abutment point (m) disposed adjacent to said locking prong and normally engaged by said upper wing (4) for restricting a downward movement of said locking prong (20; 40),
8. An automatic lock slider according to one of the pre-said lower end (21; 41) of said locking prong (20; 40) having a rectangular horizontal cross section, a rear side of which cross section being in parallel to an axis of said one coupling element (31) in said intermeshing region.
9. An automatic lock slider according to one of the preceding claims, said locking member (3) further including additional locking prong (20') being movable into and out of said guide channel (7), said additional locking prong (20') being offset with respect to the first-named locking prong (20) in an axial direction of said guide channel such that, in said intermeshing region, said first-named locking prong (20) engages one coupling element of one coupling element row while said additional locking prong (20') engages a mating coupling element of the other coupling element row.
10. An automatic lock slider according to one of the preceding claims, said pull tab (2) having a cam shaft (24) sandwiched between said locking member (3) and said slider body (1) and biased downwardly by said locking member (3) to rotate so that the pull tab (2) rests on said slider body; and said pull tab (2) including bifurcated support legs having their end portions connected respectively to opposite ends of said cam shaft (24), said cam shaft being disposed at a level downwardly offset relative to upper surfaces of said support legs (23), said end portions of said support legs each having a guide recess (26; 26 a) disposed at its inside corner.

Revendications

1. Curseur à blocage automatique destiné à une fermeture à glissière, comprenant: un corps (1) de curseur comportant des ailes supérieure et inférieure (4,5) espacées l'une de l'autre et réunies l'une à l'autre à leurs extrémités avant par un col (6) de façon à définir entre elles un canal de guidage (7) en forme de Y pour le passage des éléments d'accouplement (31), ledit canal de guidage (7) en forme de Y comprenant un point de bifurcation où une paire d'éléments d'accouplement complémentaires (31) sont mis en état de prise mutuelle, ou hors de cet état de prise mutuelle lorsqu'ils passent dans ledit canal de guidage (7); un élément de blocage (3) en matériau élastique supporté par ledit corps (1) de curseur et comprenant une saillie de blocage (20 ; 40) susceptible d'être déplacée en traversant une ouverture (10) pratiquée dans ladite aile supérieure (4) jusque dans ledit canal de guidage (7) et hors de celui-ci; ladite saillie de blocage (20 ; 40), dont l'extrémité inférieure (21; 41) est normalement disposée dans ledit canal de guidage (7) immédiatement en amont dudit point de bifurcation, étant poussée vers le bas afin de se déplacer en direction de ladite aile inférieure (5), sous l'effet de la résilience dudit élément de blocage (3), en vue de venir en butée sur une tête d'accouplement (32) de l'un des deux éléments d'accouplement (31) complémentaires qui sont sur le point de venir s'engrèner mutuellement; une tirette (2) montée de façon pivotante sur ledit corps (1) de curseur et reliée fonctionnellement audit élément de blocage (3) pour déplacer ladite saillie de blocage (20;40) vers le haut à l'encontre de la résilience dudit élément de blocage (3), ladite saillie de blocage (20 ; 40) ayant une surface arrondie à son extrémité inférieure (21; 41) sur une surface située légèrement en arrière, caractérisé en ce que ladite aile inférieure (5) comporte une partie de guidage (27; 27a) disposée sur sa surface intérieure, dans ladite zone d'engrènement mutuel, destinée à guider les éléments d'accouplement (31) pour empêcher ceux-ci de rouler sur leur axe.
2. Curseur à blocage automatique selon la revendication 1, ladite saillie de verrouillage comportant une surface de butée lisse disposée à son extrémité inférieure (20; 40) et normalement poussée contre ladite surface d'accouplement (32).
3. Curseur à blocage automatique selon la revendication 1 ou 2, ladite saillie de blocage (20)



s'étendant de façon inclinée vers le bas.

4. Curseur à blocage automatique selon la revendication 1 ou 2, ladite saillie de blocage (40) s'étendant verticalement vers le bas. 5
5. Curseur à blocage automatique selon l'une des revendications 1 à 4, ledit élément de blocage (3) comprenant une partie avant (14) dont l'extrémité distale (15) est maintenue dans le col (6) dudit corps de curseur, et une partie intermédiaire (17) s'étendant en formant une seule pièce à partir de la partie supérieure courbe (16) de ladite partie avant et supportant ladite saillie de blocage (20; 40), ladite partie supérieure (16) étant espacée par rapport audit corps de curseur, la surface inférieure (17a) de ladite partie intermédiaire (17) étant normalement poussée de face contre ladite aile supérieure (4). 10 15 20
6. Curseur à blocage automatique selon l'une des revendications 1 à 4, ledit élément de blocage (3) comprenant une partie avant (14) courbe vers le bas dont l'extrémité distale (15) est maintenue à l'endroit du col (6) dudit corps de curseur, et une partie intermédiaire (17) qui s'étend en formant une seule pièce à partir d'une partie supérieure courbe (16) de ladite partie avant et portant ladite saillie de blocage, ladite partie supérieure courbe (16) de ladite partie avant et la majeure partie de ladite partie intermédiaire étant espacées par rapport audit corps (1) de curseur, de façon telle que ledit élément de blocage (20;40) peut être déplacé par pivotement autour de son extrémité distale. 25 30 35
7. Curseur à blocage automatique selon l'une des revendications 1 à 4, ledit élément de blocage (3) comportant une partie intermédiaire (17) supportant ladite saillie de blocage (20; 40), ladite partie intermédiaire (17) comportant un point de butée (m) disposé à proximité de ladite saillie de blocage et étant normalement en prise avec ladite aile supérieure (4) en vue d'empêcher un déplacement vers le bas de ladite saillie de verrouillage (20; 40). 40 45
8. Curseur à blocage automatique selon l'une des revendications précédentes, ladite extrémité inférieure (21; 41) de ladite saillie de blocage (20; 40) ayant une section transversale rectangulaire horizontale, le côté arrière de cette section transversale étant parallèle à l'axe dudit élément d'accouplement (31) dans ladite zone d'engrenage mutuel. 50 55

9. Curseur à blocage automatique selon l'une des revendications précédentes, ledit élément de blocage (3) comportant en outre une saillie de blocage supplémentaire (20') susceptible d'être déplacée dans ledit canal de guidage (7) et hors de celui-ci, ladite saillie de blocage supplémentaire (20') étant décalée par rapport à la première saillie de blocage citée (20) dans le sens axial dudit canal de guidage, de façon telle que, dans ladite zone d'engrenage mutuel, ladite première saillie de blocage citée (20) se met en prise avec un des éléments d'accouplement, de l'une des rangées d'éléments d'accouplement, tandis que ladite saillie supplémentaire (20') se met en prise avec l'élément d'accouplement complémentaire de l'autre rangée d'éléments d'accouplement.
10. Curseur à blocage automatique selon l'une des revendications précédentes, ladite tirette (2) comportant un axe de came (24) qui est pris en sandwich entre ledit élément de blocage (3) et ledit corps (1) de curseur et qui est poussé vers le bas par ledit élément de blocage (3) afin de tourner de façon telle que la tirette (2) repose sur ledit corps de curseur; et ladite tirette (2) comportant des jambes de support formant une fourche dont les parties d'extrémité sont reliées respectivement aux extrémités opposées dudit axe de came (24), ledit axe de came étant disposé à un niveau décalé vers le bas par rapport aux surfaces supérieures desdites jambes de support (23), lesdites parties d'extrémité desdites jambes de support comportant chacune une échancrure de guidage (26; 26 a) disposée sur son angle intérieur.

Ansprüche

1. Selbstsperrender Reißverschlußschieber, umfassend einen Schieberkörper (1) mit einem Oberschild und einem Unterschild (4,5), die im Abstand voneinander angeordnet und an ihren vorderen Enden durch einen Schieberkeil (6) miteinander verbunden sind, um dazwischen einen Y-förmigen Führungskanal (7) für den Durchgang der Kuppelglieder (31) zu begrenzen, wobei der Y-förmige Führungskanal (7) einen Verzweigungspunkt aufweist, in dem zwei entsprechende Kuppelglieder (31) miteinander in und außer Eingriff gebracht werden, wenn sie sich durch den Führungskanal (7) bewegen, ein Sperrglied (3) aus elastischem Material, das auf dem Schieberkörper (1) abgestützt ist und eine Sperrklaue (20;40) aufweist, die durch eine Öffnung (10) im Oberschild (4) hindurch in den Führungskanal (7)



- hinein- und herausbewegbar ist, wobei die Sperrklaue (20;40) ein unteres Ende (21;41) hat, das normalerweise in dem Führungskanal (7) unmittelbar stromaufwärts von dem Verzweigungspunkt angeordnet und unter der Federkraft des Sperrglieds (3) nach unten zum Unterschild (5) hin belastet ist zur Anlage an einem Kupplungskopf (32) eines der beiden zusammengehörigen Kuppelglieder (31), die gerade miteinander in Kupplungseingriff kommen, einen Griff (2), der am Schieberkörper (1) angelenkt und mit dem Sperrglied (3) gekuppelt ist, um die Sperrklaue (20;40) gegen die Federkraft des Sperrglieds (3) nach oben zu bewegen, wobei die Sperrklaue (20;40) an ihrem unteren Ende (21;41) etwa an der Rückseite eine abgerundete Fläche hat, dadurch gekennzeichnet, daß der Unterschild (5) an seiner Innenfläche im Kupplungsbereich einen Führungsbereich (27;27a) zum Führen der Kuppelglieder (31) hat, um diese an einer Rollbewegung um ihre Achse zu hindern.
2. Selbstsperrender Reißverschlußschieber nach Anspruch 1, wobei die Sperrklaue eine stetige Anschlagfläche hat, die an ihrem unteren Ende (20;40) angeordnet und normalerweise gegen den Kupplungskopf (32) belastet ist.
 3. Selbstsperrender Reißverschlußschieber nach Anspruch 1 oder 2, wobei sich die Sperrklaue (20) schräg nach unten erstreckt.
 4. Selbstsperrender Reißverschlußschieber nach Anspruch 1 oder 2, wobei sich die Sperrklaue (40) vertikal nach unten erstreckt.
 5. Selbstsperrender Reißverschlußschieber nach einem der Ansprüche 1 bis 4, wobei das Sperrglied (3) einen vorderen Bereich (14) umfaßt, dessen abliegendes Ende (15) am Schieberkeil (6) des Schieberkörpers festgelegt ist, und einen mittleren Bereich (17) umfaßt, der einstückig von einem oberen gekrümmten Teil (16) des vorderen Bereichs ausgeht und die Sperrklaue (20;40) abstützt, wobei der obere Teil (16) im Abstand vom Schieberkörper angeordnet ist, wobei der mittlere Bereich (17) mit seiner Unterseite (17a) normalerweise zur Anlage am Oberschild (4) belastet ist.
 6. Selbstsperrender Reißverschlußschieber nach einem der Ansprüche 1 bis 4, wobei das Sperrglied (3) einen nach unten gekrümmten vorderen Bereich (14) umfaßt, dessen abliegendes Ende (15) am Schieberkeil (6) des Schieberkörpers festgelegt ist, und einen mittleren Bereich (17) umfaßt, der einstückig von einem oberen gekrümmten Teil (16) des vorderen Bereichs ausgeht und die Sperrklaue abstützt, wobei der obere gekrümmte Teil (16) des vorderen Bereichs und ein Hauptteil des mittleren Bereichs im Abstand vom Schieberkörper (1) angeordnet sind, so daß das Sperrglied (20;40) um dieses abliegende Ende desselben verschwenkbar ist.
 7. Selbstsperrender Reißverschlußschieber nach einem der Ansprüche 1 bis 4, wobei das Sperrglied (3) einen die Sperrklaue (20;40) abstützenden mittleren Bereich (17) umfaßt, wobei dieser mittlere Bereich (17) einen Anlagepunkt (m) hat, der nahe der Sperrklaue angeordnet ist und normalerweise mit dem Oberschild (4) in Eingriff steht, um die Abwärtsbewegung der Sperrklaue (20;40) zu begrenzen.
 8. Selbstsperrender Reißverschlußschieber nach einem der vorhergehenden Ansprüche, wobei das untere Ende (21;41) der Sperrklaue (20;40) einen rechteckigen horizontalen Querschnitt hat, wobei eine Rückseite des Querschnitts zu einer Achse des einen Kuppelglieds (31) in dem besagten Kupplungsbereich parallel ist.
 9. Selbstsperrender Reißverschlußschieber nach einem der vorhergehenden Ansprüche, wobei das Sperrglied (3) ferner eine zusätzliche Sperrklaue (20') umfaßt, die in den Führungskanal (7) hinein- und aus diesem herausbewegbar ist, wobei diese zusätzliche Sperrklaue (20') gegenüber der erstgenannten Sperrklaue (20) in axialer Richtung des Führungskanals versetzt ist, so daß in dem besagten Kupplungsbereich die erstgenannte Sperrklaue (20) ein Kuppelglied einer Kuppelgliederreihe erfaßt, während die zusätzliche Sperrklaue (20') ein zugehöriges Kuppelglied der anderen Kuppelgliederreihe erfaßt.
 10. Selbstsperrender Reißverschlußschieber nach einem der vorhergehenden Ansprüche, wobei der Griff (2) eine Nockenwelle (24) aufweist, die zwischen dem Sperrglied (3) und dem Schieberkörper (1) angeordnet und durch das Sperrglied (3) nach unten belastet ist, um sich so zu verdrehen, daß der Griff (2) auf dem Schieberkörper aufliegt, und wobei der Griff (2) zwei gegabelte Stützschenkel aufweist, deren Endbereiche mit den gegenüberliegenden Enden der Steuerwelle (24) verbunden sind, wobei die Steuerwelle gegenüber den Oberseiten dieser Stützschenkel (23) nach unten versetzt ist, wobei die Endbereiche der Stützschenkel jeweils eine Führungsausnehmung (26;26a) aufweisen, die an ihrer inneren Ecke angeord-

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