

[54] **SLIDER FOR CONCEALED ZIP
FASTENERS**

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[51] Int. Cl.**A44b 19/30**
[58] Field of Search**24/205.14 K, 205.16,**
24/205.1

[56] **References Cited**

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[57] **ABSTRACT**

A slider assembly of the automatically locking type is provided for use with a concealed zip fastener and characterized by the provision of means for retaining a pull tab in the back of the slider body against unintentional movement so that the tab is normally concealed from external view.

3 Claims, 4 Drawing Figures

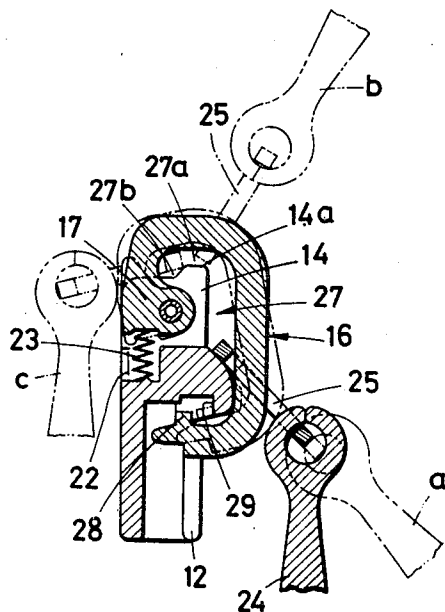


FIG. 1

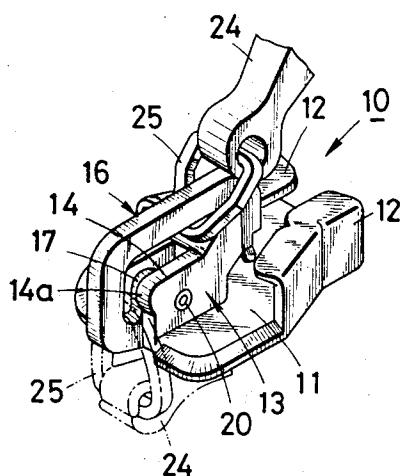


FIG. 3

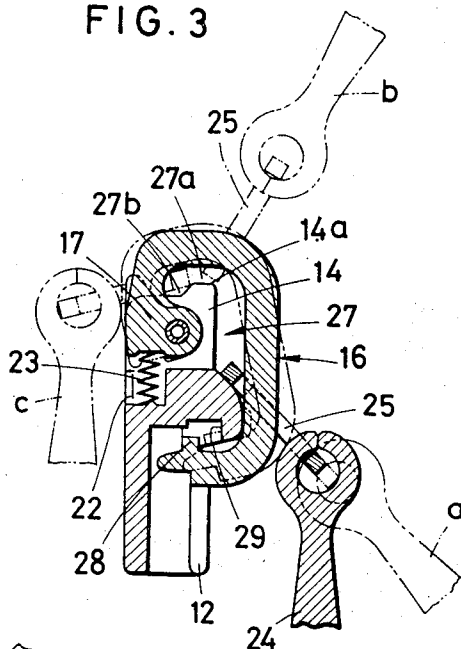


FIG. 2

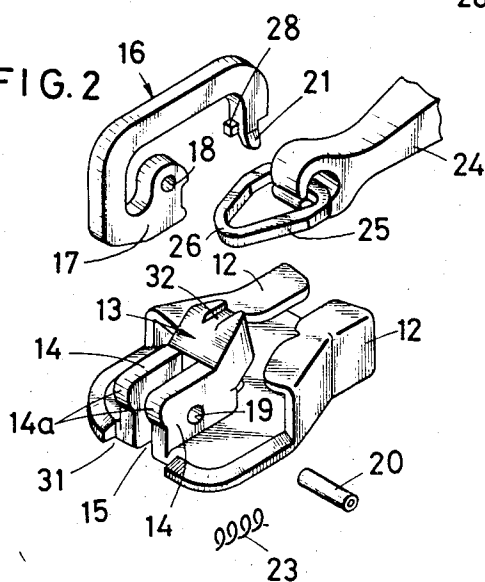
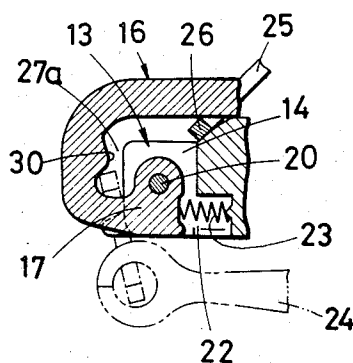


FIG. 4



SLIDER FOR CONCEALED ZIP FASTENERS

This invention relates to improvements in sliding members mounted on a zip faster for opening and closing the same, more particularly to a slider of the automatically locking type which is applicable specifically to a concealed zip fastener. The invention has for an object to provide an automatically locking slider having a pull tab rotatable around the slider body into a position wherein the tab is completely hidden from external view and securely retained in that position against unintentional displacement.

The advantages and features of the invention will appear clear from the following description taken in connection with a specific embodiment and with reference to the accompanying drawings in which:

FIG. 1 is a perspective view of a slider assembly embodying the invention;

FIG. 2 is an exploded perspective view of the assembly of FIG. 1;

FIG. 3 is a longitudinal cross-sectional view taken substantially centrally along the assembly of FIG. 1, utilized to explain its operating principles; and

FIG. 4 is a modification of the slider assembly according to the invention.

In accordance with the invention, there is provided a slider assembly of the automatically locking type adapted for concealed zip fasteners which comprises a slider body, a diamond member integral therewith for guiding rows of fastener elements and having a protuberance at the forward end thereof, a locking member pivotally connected at one end with said diamond member and provided at the other end with a locking pin engageable with the fastener elements, a spring resiliently connecting between said locking member and said diamond member, a pull tab and a link associated therewith, said protuberance defining with an inner periphery of said locking member a reduced space for restricted passage of said link against the tension of said spring into and out of the position in which said pull tab is retained in the back of the slider body and concealed from external view.

The automatically locking slider generally designated at 10 for use with a concealed type of zip fastener comprises a slider body 11 having flanges 12 and a diamond member 13 cooperating therewith for guiding the passage of interengaging rows of fastener elements (not shown) through the slider. The diamond member 13 is formed integral with the slider body 11 and has two upright arms 14 defining therebetween a space 15 for receiving an end of a locking member 16.

As better seen in FIG. 2, the locking member 16 is provided at one end with a U-turn portion 17 having a hole 18 which registers with a hole 19 in each arm 14 of the diamond member. There is provided a support pin 20, which is inserted through the holes 18, 19, for supporting the locking member 16 pivotally thereon between the arms 14. At the other end of the locking member, there is provided integrally therewith a locking pin 21 for engagement with the fastener elements to prevent the movement of the slider 10 relative to the zip fastener (not shown).

The diamond member 13 is provided internally with a recess 22 for accommodating a spring 23 which resiliently connects between the diamond 13 and the locking member 16 and normally urges the locking member 16 to rotate slightly clockwise as viewed in the

drawings so that the locking pin 21 is held in locking engagement with the fastener elements.

There is provided a pull tab 24 with which to move the slider 10 reciprocally along the rows of fastener elements to open and close the fastener. The pull tab 24 has pivotally connected at one end thereof an annular link 25 having a tapered free end 26 disposed for engagement in a space 27 generally defined between the locking member 16 and diamond member 13.

The operation of the slider assembly 10 will now be described by way of reference to the three representative positions which the pull tab 24 assumes as indicated by the chain-dot line in FIG. 3. The pull tab 24 assumes the position (a) in which it is flipped towards one end of the locking member 16 with the tapered end 26 of the link 25 held in abutting relation to the inner face of the locking member 16. As the pull tab 24 is pulled in this position, the locking member 16 rotates counter-clockwise about the pin 20 against the tension of the spring 23, releasing the locking pin 21 from the fastener elements so that the slider 10 is allowed to move with the pull tab 24 in a direction to open the fastener.

To prevent excess movement of the locking member 16 in such instance, there is provided a protuberance 28 extending from the locking member 16 close at the locking pin 21 for abutting engagement with a recessed portion 29 of the diamond member 13 thereby restricting the counter-clockwise movement of the locking member 16.

When closing the fastener, the pull tab 24 assumes the position (b) in which it is brought towards the other end of the locking member 16 with the tapered free end 26 of the link 25 passed through the space 27 and held in abutment with the inner face of the locking member 16, and the pull tab 24 is thus pulled with the subsequent movements of the relevant parts that have been already described.

After the fastener has been closed, the pull tab 24 is now brought around into the position (c) which underlies the back of the slider body 11 and in which the pull tab 24 is completely concealed from external view. More specifically, the pull tab 24 is moved with its associated link 25 passing through a reduced space 27a defined between the inner periphery of the locking member 16 and projections 14a of the diamond arms 14, in which instance the tapered end 26 of the link 25 abuts against the projections 14a and pulls the locking member 16 against tension of the spring 22 just enough to move through the reduced space 27a and lift the locking pin 21 apart from the fastener elements. The link 25 is thus placed into a terminal space 27b defined by the U-turn portion 17 of the locking member 16. In this position, the reduced space 27a resumes its normal narrow width by the return action of the spring 22 so that the link 25 is prevented from escaping through the space 27a when accidental or unintentional force is applied to the pull tab 24. Thus, the pull tab 24 is held stably in the concealed position (c) against unintentional movement.

When opening the fastener, the pull tab 24 is moved clockwise into the position (a) with its associated link 25 forcing the reduced space 27a open wide enough to allow the link to pass therethrough against the tension of the spring 23.

Reference to FIG. 4 shows a modification of the slider assembly 10 which is characterized by the provision of a ridge 30 projecting inwardly from the locking member 16 in opposition to the forward ends of the diamond arms 14 which are devoid of projections 14a, said ridge 30 defining with the forward ends of the arms 14 a reduced space 27a for restricted passage of the link 25.

Designated at 31 is a recess formed at the forward end of the slider body 11 for accommodating the link 25 and holding the same in position against lateral displacement when the pull tab 24 is retained in the concealed position (c).

To prevent lateral displacement of the locking member 16, there is provided a recess 32 in the upper surface of the diamond member 13 for receiving the straight portion of the locking member 16.

Having thus described the invention, it will be understood that various changes and modifications may be made in the specific form and construction herein advanced, without departing from the scope of the appended claims.

What is claimed is:

1. A slider assembly of the automatically locking type adapted for concealed zip fasteners which com-

prises a slider body, a diamond member integral therewith for guiding rows of fastener elements and having a protuberance at the forward end thereof, a locking member pivotally connected at one end with said diamond member and provided at the other end with a locking pin engageable with the fastener elements, a spring resiliently connecting between said locking member and said diamond member, a pull tab and a link associated therewith, said protuberance defining with an inner periphery of said locking member a reduced space for restricted passage of said link against the tension of said spring into and out of the position in which said pull tab is retained in the back of the slider body and concealed from external view.

2. A slider assembly as defined in claim 1 wherein said locking member is provided with an inwardly projecting ridge defining with the forward end of said diamond member a reduced space for restricted passage of said link.

3. A slider assembly according to Claim 1; where in said restriction-defining means comprises a protuberance on said locking member.

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