

PATENT SPECIFICATION (11)

1441678

1441673

- (21) Application No. 6500/74 (22) Filed 13 Feb. 1974 /
(31) Convention Application No. 19424/73 (32) Filed 13 Feb. 1973 in
(33) Japan (JA)
(44) Complete Specification published 7 Jul. 1976
(51) INT CL² A44B 19/30 // 19/10
(52) Index at acceptance E2S 1A2C 1A3A

(19)



(54) TWIN PULL TAB SLIDER

(71) WE, YOSHIDA KOGYO K. K., of No. 1, Kanda Izumi-cho, Chiyoda-ku, Tokyo, Japan; a corporation duly organised under the laws of Japan, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to slide fasteners. In particular it relates primarily to a slider which is suitable for mounting on and manipulating heavy duty slide fasteners which are applied to joints in partition members such as oil fence or seams in hoods for trains and automobiles. The slider is constructed such that it can be retained in locked relation with a slide fastener against severe stresses exerted to or around the slider, and can be manipulated conveniently from either side, at the upper or lower end to open and close a slide fastener.

Accordingly the invention provides a slider for a slide fastener having a pull tab suspended on each side thereof so as to be pivotable between a first position in which the slider is free to move and a second position in which a locking means on at least one pull tab engages the fastener to prevent movement and inter-engageable means holds the two tabs together in said second position.

Preferably the slider is provided with an upper wing and a lower wing constituting a slider body and connected together at one end, the pull tabs being pivotally carried at their one ends on said upper and lower wing respectively and the inter-engageable means provided with at their other ends.

The invention will appear clearly from the following detailed description taken in conjunction with the accompanying drawings which illustrate, by way of example only, a preferred embodiment of the invention and in which:

Figure 1 is a front plan view of a slider

embodying and constructed in accordance with the invention;

Figure 2 is a side elevation of the same shown in unlocked position;

Figure 3 is a view similar to Figure 2 but showing the slider as in locked position; and

Figure 4 is a perspective view showing the slider as applied to a slide fastener attached to an article.

Referring to the drawings and Figure 1 in particular, there is shown a slider 10 including a pull tab pivotally connected thereto in well known manner. More specifically, as shown in Figures 2 and 3, the slider 10 comprises an upper wing member 11 and a lower wing member 12 constituting a slider body and connected together at one end by a neck portion 13. Each wing member has inwardly directed side flanges 14. The wing members 11, 12 define with the neck portion 13 a substantially Y-shaped guide channel 15 through which a slide fastener F is allowed to pass in well known manner. A supporting lug 16 projects upwardly from the one or upper wing member 11 and is adapted to carry a pull tab 17 pivotally thereabout. A similar additional pull tab 18 is also provided in accordance with the invention, which pull tab 18 is pivotally connected to another lug 19 on the other or lower wing member 12.

There is provided a locking prong 20 secured to or formed integrally with at least one of the two pull tabs 17, 18 and adjacent at least either of opposite sides of the lug 16 (or 19). In the illustrated embodiment, the locking prong 20 is adapted to extend through an opening 21 in the upper wing 11 into the guide channel 15 so as to engage with fastener elements E thereby to lock the slider 10 against movement relative to the fastener F.

It will be seen that the two pull tabs 17, 18 are symmetric in shape, each having a flat stem portion 17a (18a) adapted to lie flat

against the corresponding wing member 11, (12) when the slider is held either in fully unlocked position as shown in Figure 2 or in fully locked position as shown in Figure 3, and a dog-leg engaging portion 17b, (18b) adapted to join the twin pull tabs releasably together thereat so as to retain the slider 10 in locked relation with the fastener F as shown in Figure 3. The engaging portions 17b, 18b extend longitudinally from the stem portions 17a, 18a for a length sufficient to permit them to be joined together beyond and forwardly of that end of the slider body at which the wings 11, 12 are connected together. In order thus to join the twin tabs 17, 18 together at their respective engaging portions 17b, 18b, there is provided a stud member 22 projecting outwardly from the one engaging portion 18b and adapted to engage snappingly with a socket receptacle 23 projecting inwardly from the other engaging portion 17b as viewed in Figure 2.

It will be also seen that the engaging portions 17b, 18b are dog-legged or symmetrically bent outwardly as indicated at 17c in Figure 2 such that the distance therebetween is smaller with the slider in fully locked position (see Figure 3) than the distance between opposed flat stem portions 17a, 18a. This arrangement is advantageous from the points of view of saving the material required to form the socket and receptacle parts 22 and 23 and of increasing the strength of linkage of the twin pull tabs 17, 18, as this will be appreciated from inspection of Figure 3. Another advantage is that the dog-legged engaging portions 17b, 18b are held apart from the surfaces of the fastener F when the latter is unlocked as seen in Figure 2 and can thus be readily manipulated with ease.

The slider having such characteristic twin pull tab structure according to the invention may be effectively applied to slide fasteners used to separably close seams or openings in various heavy-duty articles exposed to severe external pressure and requiring the fastener to be operated from either side as exemplified in Figure 4 wherein the slider 10 is mounted on a slide fastener F secured as by stitches S to a schematically presented article C. The slider 10 is shown in Figure 4 as in fully locked position, which position corresponds to that of Figure 3.

Now to explain the operation of the slider 10 of the invention, reference is first made to Figure 2, wherein the slider is held in a first or unlocked position in which the two pull tabs 17, 18 are separated and the locking prong 20 lifted apart from the fastener elements E. To bring the slider 10 now to a

second or locked position in which the two tabs 17, 18 are joined together and the locking prong 20 engaged with the fastener elements E as shown in Figure 3, the tabs 17, 18 are flipped or rotated substantially 180° about the respective lugs 16, 19 in opposite directions as indicated by the arrows. This locked position is retained by snapping the stud 22 on one tab into engagement with the receptacle 23 on the other tab. The operation may be simply reversed so as to bring the slider 10 back to fully unlocked position.

Free ends of the pull tabs 17, 18 are bent inwardly as viewed in Figure 2, and as indicated at 24 but flare away from each other when the pull tabs are snapped together as seen in Figure 3, the arrangement being that such flared ends can be conveniently grabbed with fingers to facilitate the separation of the two pull tabs.

It will be apparent that various changes and modifications may be made in the structures disclosed, without departing from the scope of the appended claims.

WHAT WE CLAIM IS:

1. A slider for a slide fastener having a pull tab suspended on each side thereof so as to be pivotable between a first position in which a locking means on at least one pull tab engages the fastener to prevent movement and inter-engageable means holds the two tabs together in said second position.
2. A slider as claimed in claim 1, wherein the slider is provided with an upper wing and a lower wing constituting a slider body and connected together at one end, the pull tabs being pivotally carried at their one ends on said upper and lower wing respectively and being provided with the inter-engageable means at their other ends.
3. A slider as claimed in claim 2 wherein the pull tabs have flat stem portions adapted to lie flat against the slider body and engaging portions adapted to be joined together by the inter-engageable means, the engaging portions being dog-legged such that the distance therebetween is greater with the slider in said first position but smaller with the slider in said second position than the distance between the flat stem portions.
4. A slider as claimed in claim 1, 2 or 3 wherein the inter-engageable means comprises a stud projecting in one direction from one of said pull tabs and a socket receptacle engageable therewith and projecting in the opposite direction from the other pull tab.
5. A slider substantially as described herein with reference to the drawings.
6. A slide fastener comprising a slider as claimed in any of Claims 1 to 5.

against the corresponding wing member 11, (12) when the slider is held either in fully unlocked position as shown in Figure 2 or in fully locked position as shown in Figure 3, and a dog-leg engaging portion 17b, (18b) adapted to join the twin pull tabs releasably together thereat so as to retain the slider 10 in locked relation with the fastener F as shown in Figure 3. The engaging portions 17b, 18b extend longitudinally from the stem portions 17a, 18a for a length sufficient to permit them to be joined together beyond and forwardly of that end of the slider body at which the wings 11, 12 are connected together. In order thus to join the twin tabs 17, 18 together at their respective engaging portions 17b, 18b, there is provided a stud member 22 projecting outwardly from the one engaging portion 18b and adapted to engage snappingly with a socket receptacle 23 projecting inwardly from the other engaging portion 17b as viewed in Figure 2.

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3. A slider as claimed in claim 2 wherein the pull tabs have flat stem portions adapted to lie flat against the slider body and engaging portions adapted to be joined together by the inter-engageable means, the engaging portions being dog-legged such that the distance therebetween is greater with the slider in said first position but smaller with the slider in said second position than the distance between the flat stem portions.
4. A slider as claimed in claim 1, 2 or 3 wherein the inter-engageable means comprises a stud projecting in one direction from one of said pull tabs and a socket receptacle engageable therewith and projecting in the opposite direction from the other pull tab.
5. A slider substantially as described herein with reference to the drawings.
6. A slide fastener comprising a slider as claimed in any of Claims 1 to 5.



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1,441,678

FOR THE APPLICANTS

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Printed for Her Majesty's Stationery Office, by Croydon Printing Company Limited, Croydon, Surrey, 1976.
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from
which copies may be obtained.