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## SLIDE FASTENER SLIDER

The present invention relates to a slider for a slide fastener.

Figure 1 of the accompanying drawings is a fragmentary plan view of a known slide fastener slider;

5        Figure 2 is a schematic perspective view of the known slider of Figure 1;

Figure 3 is a fragmentary front elevational view of a garment to which are attached slide fasteners each having such slider as shown in Figure 1.

10        As shown in Figures 1 and 2, the conventional slide fastener slider S has a pull tab P pivotably mounted on a slider body B via an annular pull tab connector C pivotably connected to a lug L on an upper wing W of the slider body B. Although, in general, such slider

15        has performed satisfactorily, the slider has not been found to be entirely suitable for use in a slide fastener F attached to an article disposed substantially in or at an angle to a vertical line, for example, to opposite edges of a transversely

20        extending opening of a pocket on a garment G as shown in Figure 3. When released, the connector C pivots about the lug L by gravity until the pull tab P depends therefrom. During that time, the connector C is raised on the upper wing W as shown in Figure 2,

25        and hence the connector C tilts about its longitudinal axis with the result that the upper surface P1 of the

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pull tab P is directed forwardly of the slider S, the upper surface P1 usually having marks or an ornamental design. The pull tab P projects upwardly of the edges E,E (Figure 3) at an angle thereto. The slider S as  
5 attached to the garment G is defective from aesthetic view, liable to damage the user's body or another garment, and hinders smooth ironing of the garment G around the edges E,E.

According to the present invention, there is  
10 provided a slide fastener slider comprising: a slider body including a pair of parallel spaced wings joined at one end by a neck, and a lug on one of said wings, said lug having a through hole; a pull tab connector pivotably slidably connected to said lug; and a pull  
15 tab pivotably connected to said pull tab connector, said pull tab connector having a first portion supported by said lug and a second portion supporting said pull tab, characterized in that said through hole extends longitudinally of said slider body, and that said  
20 second portion or said connector is locatable outside of said one wing when said connector rests flatwise on said one wing and when said pull tab is at the same time disposed in alignment with said first and second  
25 portions of said connector at right angles to the axis of said through hole.

It is possible by means of the present invention to provide a slider particularly suitable for use in a slide

fastener attached to a transversely extending opening, in an article, disposed substantially in or at an angle to a vertical plane.

It is also possible by means of the present invention to provide a slide fastener slider in which when released, the pull tab depends from a connector attached to a slider body in a plane substantially parallel to the upper wing of the slider body.

It is also possible by means of the present invention to provide a slider in which the upper surface of a pull tab is kept to face in one direction when the pull tab is in its recumbent position.

It is also possible by means of the present invention to provide a slide fastener slider which allows smooth ironing of a garment around an area to which a slide fastener is attached.

The present invention will be described by way of examples with reference to Figures 4 to 10 of the accompanying drawings in which:-

Figure 4 is a perspective view of a slide fastener slider according to one embodiment of the present invention, the slider being in operating disposition;

Figure 5 is an enlarged front elevational view of the slider on a slide fastener attached to a garment, the slider being in released disposition;

Figure 6 is a cross-sectional view taken along line VI - VI of Figure 5;

Figure 7 is a front elevational view of a slider

according to another embodiment of the present invention, the slider being in released disposition;

Figure 8 is a right side view of the slider shown in Figure 7;

5        Figure 9 is a cross-sectional view taken along line IX - IX of Figure 8; and

Figure 10 is a view similar to Figure 7, showing the slider as in operating disposition.

As shown in Figure 4, a slide fastener slider 10 includes a slider body 11 having a pair of parallel spaced upper and lower wings 12, 13 joined at one end by a neck or guide post 14. A lug 15 is disposed substantially centrally on the upper wing 12 and has a through hole 16 extending in alignment with the longitudinal axis of the slider body 11. A pull tab 17 is connected to the slider body 11 via an annular pull tab connector 18 pivotably connected to the lug 15.

The connector 18 is in the form of a circular ring made of wire, and loosely received in the through hole 16 in the lug 15, the connector 18 having an inside diameter larger than half the width of the upper wing 12 of the slider body 11. Thus, the connector 18 is pivotably movable about the lug 15 through 180° across the longitudinal axis of the slider body 11, between two recumbent positions where the connector 18 rests flatwise on the upper wing 12 on opposite sides of the lug 15. The pull tab 17 has at one end portion thereof an opening 17a extending transversely therethrough and

loosely receiving therein the connector 18. The pull tab 17 is pivotably slidably movable on the connector 18.

FIGS. 5 and 6 show the slider 10 as mounted on a slide fastener 19 secured by sewing to a garment 20 along opposite edges 20a, 20b of an opening, which edges 20a, 20b are similar to the one E, E shown in Figure 3. The slider 10 is shown as in released disposition where the pull tab 17 depends from the connector 18 at right angles to the longitudinal axis of the slider body 11 and hence to the axis of the through hole 16 in the lug 15. In this state, the connector 18 has a first portion 18a supported by the lug 15 and a second portion 18b diametrically opposite to the first portion 18a and supporting the pull tab 17, the second portion 18b, being located outside a side edge of the upper wing 12.

When the slide fastener 19 is to be opened or closed, the pull tab 17 is pulled by the user's fingers (not shown) whereupon the connector 18 is raised on the upper wing 12 as shown in Figure 4. When released, the pull tab 17 slides on the connector 18 by gravity until it depends from the same. At the same time, the connector 18 pivots about the lug 15 approximately through 90° into its recumbent position shown in Figure 5. With the second portion 18b of the connector 18 located outside of the upper wing 12, the pull tab 17 depends from the connector 18 substantially at right angles to

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the axis of the through hole 16 and lies flatwise over the garment 20. With this arrangement, the slider 10 as attached to the garment 20 is good in appearance, avoids damaging user's body or another garment, and  
5 does not hinder smooth ironing of the garment around the edges 20a, 20b.

The connector 18 may be an oval ring of which the major axis has a length larger than half the width of the upper wing 12.

10 FIGS. 7 to 10 show a slider 21 according to another embodiment of the present invention. The slider 21 is structurally similar to the slider 10 shown in FIGS. 4 - 6 with the exception that a "8-shaped"  
connector 22 has an annular first portion 23 in the  
15 shape of an oval ring pivotably connected to a lug 24 on the upper wing 25 of a slider body 26, and a second portion 27 in the shape of a U joined at opposite ends with the annular first portion 23 and pivotably supporting thereon a pull tab 28. The connector 22 has a length  
20 larger than half the width of the upper wing 25. The annular first portion 23 is loosely received in a through hole 29 extending in the lug 24 longitudinally of the slider body 26, and the second portion 27 passes through an opening 28a, extending transversely through the pull  
25 tab 28 at one end portion thereof.

When a slide fastener (not shown) similar to the one 19 shown in FIGS. 5 and 6 is to be opened, the pull tab 28 is placed in the position shown in Figure 10

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where it extends longitudinally over the slider body 11,  
and is pulled by user's fingers (not shown) in the  
longitudinal direction of the slider body 11. When  
released, the connector 22 pivots by gravity about the  
5 lug 24 through  $90^{\circ}$  from the position shown in Figure 10  
to the position shown in Figure 7 in which the pull tab 28  
connected to the connector 22 depends therefrom at right  
angles to the axis of the through hole 29. Since the  
pull tab 28 is supported on the second portion 27 of the  
10 connector 22, the annular first portion 23 smoothly slides  
in the through hole 29 without interference with the  
pull tab 28. In both positions shown in FIGS. 7 and 10,  
the upper surface 28<sub>b</sub> of the pull tab 28 face upwards  
of the slider body 26. With the second portion 27  
15 projecting laterally beyond the upper wing 25, the pull  
tab 28 extends in a plane substantially parallel to  
the upper wing 25.

Claims:-

1. A slide fastener slider comprising:

(a) a slider body including a pair of parallel spaced wings joined at one end by a neck, and a lug on one of said wings, said lug having a through hole extending  
5 longitudinally of said slider body;

(b) a pull tab connector pivotably slidably connected to said lug; and

(c) a pull tab pivotably connected to said pull tab connector, said pull tab connector having a first portion  
10 supported by said lug and a second portion supporting said pull tab, said second portion being locatable outside of said one wing when said connector rests flatwise on said one wing and when said pull tab is at the same time disposed in alignment with said first and  
15 second portions of said connector at right angles to the axis of said through hole.

2. A slide fastener slider according to claim 1, said connector having an annular shape.

3. A slide fastener slider according to claim 2,  
20 said lug being disposed substantially centrally on said one wing, said annular connector being a circular ring passing through said through hole in said lug and pivotably supporting thereon said pull tab, said circular ring having an inside diameter larger than half the width  
25 of said one wing.

4. A slide fastener slider according to claim 3, said pull tab having at one end portion an opening loosely



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receiving therein said circular ring for sliding movement on said ring.

5. A slide fastener slider according to claim 1, said first portion of said connector having an annular shape passing through said through hole in said lug, and said second portion of said connector having a U shape joined at opposite ends with said annular first portion and pivotably supporting thereon said pull tab.

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