

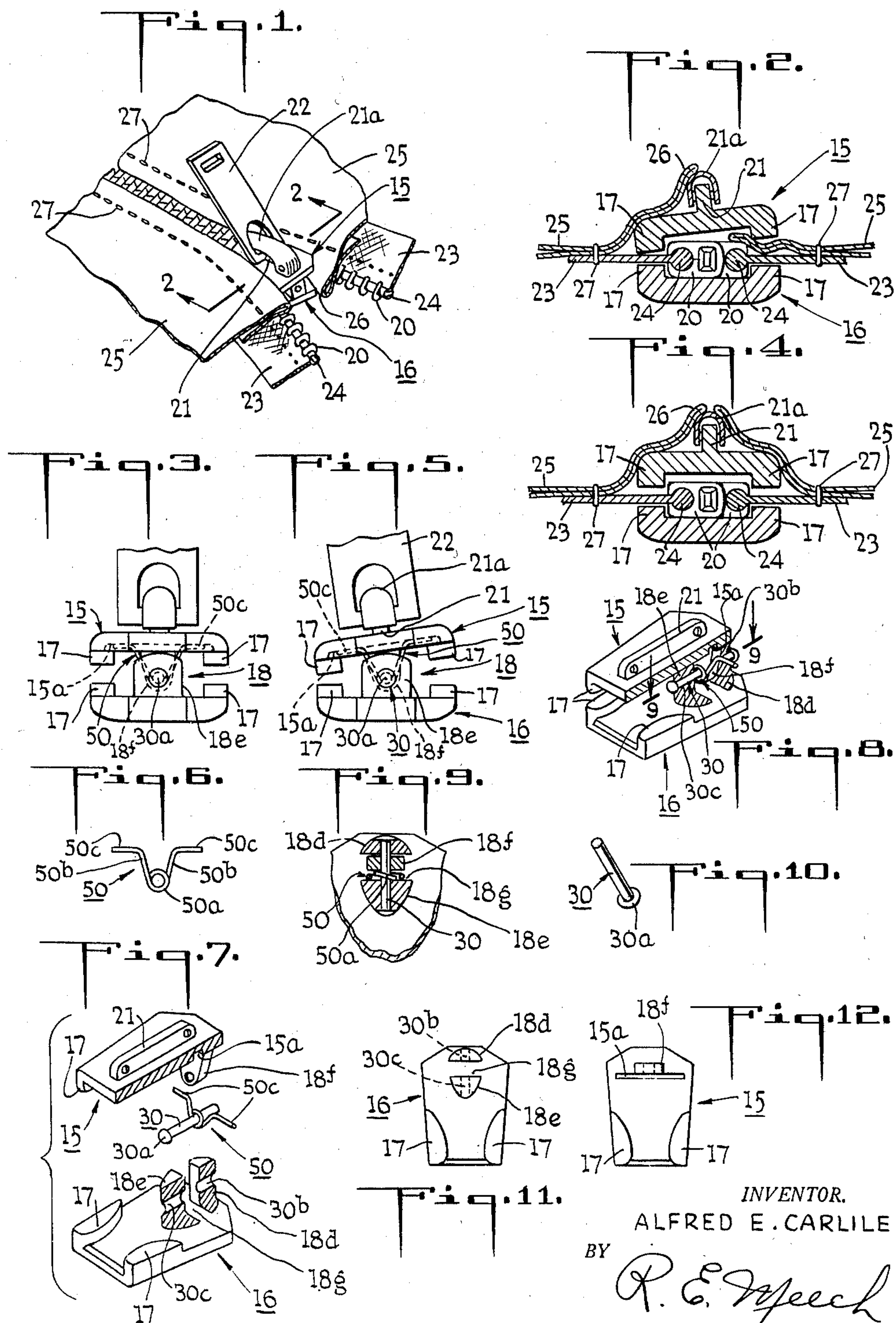
Jan. 27, 1953

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2,626,440

SLIDER FOR SLIDE FASTENERS

Filed Aug. 26, 1950



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UNITED STATES PATENT OFFICE

2,626,440

SLIDER FOR SLIDE FASTENERS

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Application August 26, 1950, Serial No. 181,625

4 Claims. (Cl. 24—205.15)

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This invention relates to slide fasteners and, in particular, to the provision of a new and improved slider for slide fasteners which will resist catching in overlying or adjacent folds, flaps, or other portions of garment closures in which slide fasteners are incorporated and which, when, and if such catching should inadvertently occur, may be readily freed or released for normal operation simply by manual operation of the slider in retrograde or reverse direction because of the yieldable and flexible connection provided between the front and back, or front and rear wings of the slider which are rigidly connected in parallelism in conventional slide fastener sliders.

It is, therefore, an object of this invention to provide a new and improved catch-resistant and readily-releasable slide fastener slider wherein the fastener element guide channel forming wings are hingedly or pivotally connected about a longitudinal axis disposed therebetween and preferably yieldingly urged or biased toward normal parallel relation for the accomplishment of the above advantages in operation.

It is a further object of this invention to provide such a slider which is of inexpensive, simple, and sturdy construction, reliable in operation, and requiring no particular skill or knowledge on the part of users capable of operating slide fasteners with conventional sliders.

Various other objects and advantages of this invention will be more apparent in the course of the following specification, and will be particularly pointed out in the appended claims.

In the accompanying drawings, there is shown for the purpose of illustration, an embodiment which my invention may assume in practice.

In these drawings:

Fig. 1 is a fragmentary isometric view illustrating a slide fastener garment application wherein a slide fastener with a slider formed according to this invention is incorporated in a box plait closure, and illustrating the jamming of the slider in the material of one of the box plait flaps which should normally overlie the slider;

Fig. 2 is an enlarged section taken on line 2—2 of Fig. 1;

Fig. 3 is an end view of the slider of Fig. 1, in its normal position, as seen from its upper end;

Fig. 4 is a view similar to Fig. 2, but showing the plait and slider parts in their normal operative position;

Fig. 5 is a view similar to Fig. 3, but showing the slider parts in the position of Fig. 2;

Fig. 6 is an isometric view of the biasing spring which yieldingly urges the wings of the slider

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from positions, such as that of Figs. 1, 2, and 5, toward parallelism, as shown in Figs. 3 and 4;

Fig. 7 is an exploded view illustrating the component parts of the slider of Figs. 1 to 5, with the front wing and major part of the neck or wedge shown in section;

Fig. 8 is a view similar to Fig. 7, but showing the component parts of the slider assembled;

Fig. 9 is a fragmentary section taken on line 9—9 of Fig. 8, illustrating details of the neck or wedge providing connection between the wings of the slider;

Fig. 10 is an isometric view of the pivot or hinge pin connecting the portions of the neck or wedge, as shown in Figs. 3, 5, 7, and 8;

Fig. 11 is a top plan view of the back or rear wing of the slider; and

Fig. 12 is a bottom plan view of the front wing of the slider.

In Fig. 1, I have shown a slide fastener equipped with a slider according to this invention as applied to a garment of sheer material having a box plait, the flaps of which overlie the fastener stringers and the slider supported thereon for sliding movement progressively to open and close the fastener. As is well known to those in the clothing art, and particularly to users or wearers, the limpness or flimsiness of the flaps when made of sheer material renders the likelihood of catching in and jamming of the sliders of fasteners, as shown in Fig. 1.

Various attempts have been made to cure this situation, such as the provision of intricate, expensive slider structures of the "clamshell" type which can be released (upon jamming) to allow the front and back wings of the slider to swing apart for release about a transverse axis. The provision of stiffening for the box plait flaps has also been attempted.

Now, I have obviated the necessity for such expensive structures, and for manipulations of intricate structures by users or wearers by the provision of a new and improved slider structure which can be released by retrograde movement when jammed, which movement is instinctive with wearers or users who are not mechanically inclined or possessed of mechanical education.

The slide fastener slider shown in Figs. 1 to 12 comprises front wing 15 and rear or back wing 16 provided with side flanges 17 which form with the connecting neck or wedge, generally designated 18, an upwardly diverging channel substantially Y-shaped for guiding the fastener elements 20 progressively into and out of engagement for closing and opening the fastener. A lug

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21 formed integral with front wing 15 has the pull tab 22 secured thereto in a well-known manner by cap 21a for the conventional purpose.

The fastener elements 20 are secured to the reinforced edge portions 24 of the stringer tapes 23 in predetermined spaced relation, the stringer tapes being connected at their upper ends and their lower ends respectively by conventional top and bottom stops, not shown.

In the box plait application shown, the material 25 is overlapped upon itself to form abutting flap portions 26 which are secured by stitching 27 to the stringer tapes.

While, in conventional sliders, the neck or wedge maintains the wings (such as 15 and 16) rigidly in parallelism, the neck or wedge 18 of my slider comprises articulated lug portions 18f integral with the front wing 15 and 18d and 18e integral or rigid with the rear wing 16 and connected by the connecting pin or pivot pin 30, preferably provided with a head 30a at one end cooperating with the other end when upset after application to prevent endwise movement of the pin 30.

This articulation or hinge provided by the wedge 18 permits sufficient freedom of the wings to permit their withdrawal when jammed by reverse movement of the slider without cutting or tearing the material in which they are caught or jammed in operation since they can tilt or pivot about the longitudinal axis of the pin 30 and its supporting coaxial bores 30b and 30c.

Optionally, and preferably, means is provided for yieldingly urging or biasing the wings 15 and 16 toward parallelism and, as shown, this means may comprise a spring 50 having a central loop 50a and with its arms 50b (Fig. 6) adapted to lie within the slot provided in the inner wall of the lug portion 18e (Fig. 9). The arms terminate in fingers 50c (Fig. 11) adapted to lie in the slot 15a provided in the inner wall of the front wing 15 (Fig. 12).

When the pin 30 passes through the aligned or concentric bores 30b and 30c and the loop 50a, the arms 50b are retained in the slot 18g by the lug portion 18f so that the spring 50 is retained against rotation about the axis of the pin 30. In this manner, the fingers 50c always urge the wings 15 and 16 toward parallelism.

Thus, when the slider becomes caught or jammed, as in Figs. 1, 2, and 5, it will return to its normal operative position (Figs. 3 and 4) merely by retrograde movement requiring no skill or unusual manipulation by the user.

From the above description, it will clearly appear that I have provided a new and improved catch-resistant and self-releasing slider for slide fasteners which is of inexpensive, simple construction and readily and conveniently operable by users possessed of no particular or unusual skill.

While I have shown and described an embodiment which my invention may assume in practice, it will be understood that this embodiment is merely for the purpose of illustration and description, and that other forms may be devised within the scope of my invention as defined in the appended claims.

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What I claim as my invention is:

1. A slider for slide fasteners of the class described comprising a pair of spaced-apart wings having marginal side flanges, a neck portion arranged between said wings at one end thereof maintaining them in spaced relation, said neck portion having means arranged therewith for hingedly connecting said wings together at said neck portion so as to form an axis about which said wings are relatively tiltable whereby one of said wings is tiltable in its entirety relative to the other of said wings along a longitudinal axis substantially centrally of said slider.

2. A slider for slide fasteners of the class described comprising a pair of spaced-apart wings having marginal side flanges, a neck portion arranged between said wings at one end thereof maintaining them in spaced relation, said neck portion including an inwardly extending lug portion carried by at least one of said wings and hinge means carried by said lug portion connecting said wings together at said neck portion whereby one of said wings is tiltable in its entirety relative to the other wing along a longitudinal axis substantially centrally of said slider.

3. A slider for slide fasteners, as defined in claim 1, wherein the means for hingedly connecting the wings together at the neck portion, consists of an inwardly extending lug portion carried by one of said wings centrally at one end thereof and a pair of inwardly extending spaced-apart lug portions carried by the other of said wings centrally thereof between which said first lug portion is disposed, and a longitudinally extending hinge pin arranged through said lug portions connecting said wings together at said neck portion whereby one of said wings is tiltable in its entirety relative to the other of said wings along a longitudinal axis substantially centrally of said slider.

4. A slider for slide fasteners, as defined in claim 1, including spring biasing means arranged with said neck portion for normally maintaining the wings parallel to one another.

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