March 14, 1961 I. E. GERRICK 2,974,991

SLIDE FASTENER OPERATING DEVICE

Filed Aug. 27, 1957

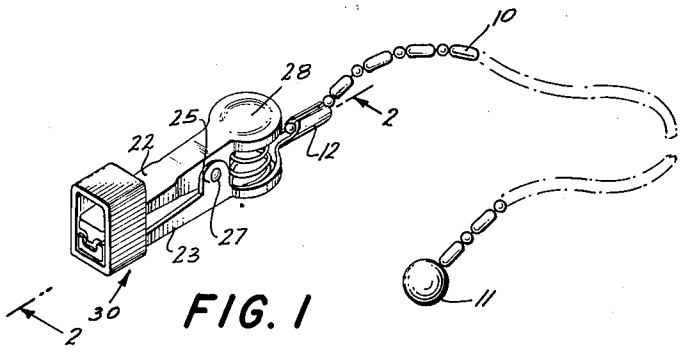


FIG. 1

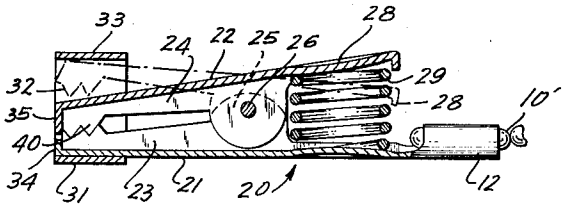


FIG. 2

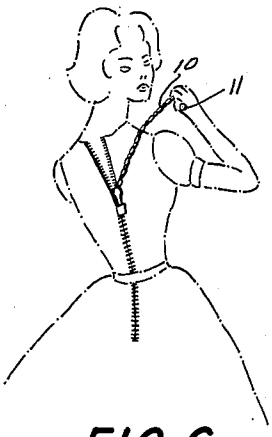


FIG. 6

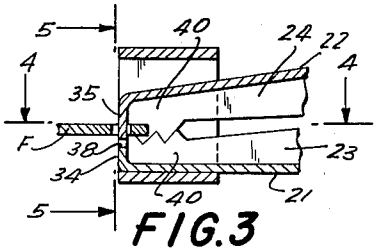


FIG. 3

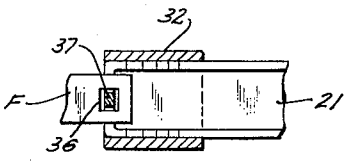


FIG. 4

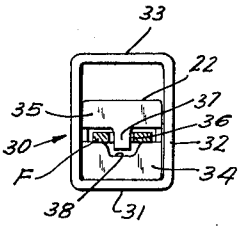


FIG. 5

INVENTOR

Isidore E. Gerrick.

BY

Dean Fairbank & Husch

ATTORNEYS

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SLIDE FASTENER OPERATING DEVICE

Isidore E. Gerrick, Mayflower Hotel, 61st St. and Central Park West, New York, N.Y.

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3 Claims. (Cl. 294—1)

The present invention relates to slide fastener operating means of the type designed more especially for closing and opening slide fasteners on women's wear such as girdles, dresses and bathing suits, where the slide fastener, ordinarily extending along most or the full length of the trunk, is relatively inaccessible for operation by the average wearer and its manipulation frequently requires the assistance of another person.

It is among the objects of the invention to provide a slide fastener operating means, which may releasably be clipped to the pull tab of the operating slide of such slide fastener and may so be clipped in place readily by the user, generally at the back of the neck or at the arm pit, by hand engagement and without visual aid.

Another object is to provide a slide fastener operating means of the above type which is of rugged yet relatively inexpensive construction, and which inherently affords engagement with respect to the pull tab of the slide, so secure as not to come loose under the tension or draft applied in closing or opening the slide fastener though the pull be directed obliquely and not along the slide fastener, and is useful even in garments such as girdles where rather substantial pull may be required for operation.

In the accompanying drawings in which is shown one of various possible embodiments of the several features of the invention:

Fig. 1 is a perspective view of the slide fastener operating device,

Fig. 2 is a view on a larger scale in longitudinal cross section, taken on line 2—2 of Fig. 1,

Fig. 3 is a fragmentary view on a still larger scale of the forward end of the view shown in Fig. 2, indicating the engagement of the clip of the operating device with the conventional slide pull-tab of a slide fastener,

Fig. 4 is a view in longitudinal cross-section, taken on line 4—4 of Fig. 3,

Fig. 5 is a view in transverse section, taken on line 5—5 of Fig. 4, and

Fig. 6 is a perspective view illustrating the mode of use of the device in closing a relatively inaccessible slide fastener.

Referring now to the drawings, the slide fastener comprises a flexible draft member, illustratively a chain 10, of familiar type, which per se has no novelty. The outer end of the chain may have a ball or other finger grip portion 11 by which it may be grasped for pulling.

While the flexible draft or pull member or chain may be anchored to the clip member 20 by any suitable means, by which in turn releasable connection is made to the slide fastener, its extremity is illustratively shown accommodated in a sleeve 12 rolled over from an extension integral with and extending rearwardly of the clip 20, and crimped inward at its ends to block escape of an element such as a ball element 10' of the chain 10.

The clip member preferably comprises a pair of coacting arms 21 and 22 of stamped metal. These arms are preferably of channel form, the lateral flanges 23 and 24 of which may be of greatest width near the middle of their lengths, one of said arms, preferably arm 21 to which the draft member is connected, having widened extensions 25 (which may be semi-circular), near their middles, which overlap the side flanges 24 of the companion arm 22. The two arms are hinged together at said widened extensions of the flanges by a suitable hinge pin, desirably a rivet 26 clenched over at one or both ends as at 27. Near the rear ends, the arms 21 and 22 are slightly cupped, as at 28, with their convexities facing each other, for accommodating a coil spring 29 therebetween, which urges the rear portions of the arms 21 and 22 outward, to urge the forward holder ends of the clip toward each other.

According to one feature of the invention, a guide and guard sleeve 30 is brazed or welded at its bottom 31, as shown in Fig. 2, against the under face of the forward end of the arm 21 and its sides 32 flank the sides of the arms 21 and 22 and the top 33 of the guide and guard sleeve 30 extends well beyond the arm 22 to afford clearance for opening the clip by finger pressure against the cupped ends 28.

The major part of the width of the guide and guard sleeve 30 encompasses the forward ends of the clip arms 21 and 22. Preferably, as shown, the forward ends of the clip arms 21 and 22 are bent substantially at right angles to the lengths thereof to form holder jaws 34 and 35, respectively, which desirably do not protrude beyond the guard sleeve and preferably extend substantially flush with and in the plane of the outer end of the guide and guard sleeve 30, as shown.

According to one feature of the invention, the clip is made to coact with the conventional rectangular opening 36 in the pull tab F of the usual slide of a slide fastener. To this end the edge of the inturned holder jaw 35 has a median tongue 37, extending outward in the plane thereof and coacting with a corresponding median notch 38 in the edge of the other holder jaw 34, as shown. By this arrangement the tongue may extend through the rectangular opening 36 in the pull tab F of the slide and enter the notch 38 in the holder jaw 34, all as shown in Figs. 3, 4 and 5.

The clip thus effects a secure interlock with the slide pull tab F at the rectangular opening 36 in manner to permit a slight hinging movement of the clip relative to the pull tab in applying draft for closing or opening the slide fastener. To this end, stop means are desirably provided, to limit the closing movement of the clip 20 and to preclude clamping of the edges of the holder jaws 34 and 35 with each other. Desirably this result is achieved by forming the flanges 23 and 24 near the forward ends of the arms 21 and 22, each with a pair of teeth 40 integral therewith and in the plane thereof and thus extending at right angles to the clip arms. Said teeth intermesh in closed position of the clip to afford the desired spacing of the jaws 34 and 35 in closed position.

By the construction set forth, the clip may easily be applied to the pull-tab of the slide by pressing the clip 20 open, passing it over the pull tab F, for the median tongue 37 directly to pass through the aperture 36 in the pull tab, or alternatively the pull tab handle may be pushed for a substantial distance inwardly between the open jaws 34 and 35, the same may be closed about the pull tab and the clip be pulled outward until the median tongue 37 snaps through the aperture 36, as shown in Figs. 3, 4 and 5, and enters into notch 38.

With the slide fastener operator thus attached and pending from pull tab F, the garment may be put on by the wearer, the chain or pull member 10 may be readily grasped near its outer end and pulled upwardly, completely to close the slide fastener. Thereupon the wearer

may readily grip the handle end of the clip and press the jaws apart by finger pressure against cups **28**, so that the pull tab F becomes disengaged and the instrument is removed.

To open the slide fastener, the wearer may readily grasp the pull tab F, either at the back of the neck or at the arm pit, as the case may be, and readily introduce it between the jaws **34** and **35** of the clip, which the wearer presses open in doing so. The guide and guard sleeve **30** aids in readily positioning the slide pull tab by touch, since there is no visual guidance. She then releases the pressure on the clip and upon pulling thereon slightly, or if desired on the draft member, the clip will reliably snap in place for its median tongue **37** to pass through the slot **36** in the pull tab F for secure intermesh with notch **38**. Thereupon a pull downward on the free end of the draft member or chain will cause the slide to be moved downward for opening the slide fastener.

In the operation of closing and opening the slide fastener, the security of connection with respect to the pull tab is thoroughly reliable, so that the clip will not become loose even though the slide fastener (as for instance in the case of many girdles), can be operated only under rather substantial pulling force. For the pull tab is not clamped by the clip, but rests at its aperture **36** freely between the jaws of the clip **20** and the clip may pivot slightly in the course of tension by movement of the median tongue **37** in the slot **36**. By this arrangement the pull will be effectively applied even though the direction of pull on the draft member or chain is not exactly aligned with the length of the slide fastener or its pull tab.

While the invention has been designed especially for operating slide fasteners in inaccessible positions on ladies' garments such as dresses, girdles and bathing suits, it is by no means limited to such application but may be used for operation of slide fasteners on luggage, garment bags, sleeping car curtains or in any relation where a slide fastener is difficult to operate, either by reason of inaccessibility or of great length.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description, or shown in the accompanying drawings, shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a slide fastener operating device of the type comprising an elongated draft member having a clip secured at one end thereof for releasable pull-engagement with the conventional slide pull tab of a slide fastener with a slot therethrough, spaced from the entire periphery of the pull tab; the combination in which the clip comprises a pair of coacting arm members, hinging means therefor extending transversely therebetween and spaced from the ends of said arms, spring means between the rear parts of said arm members, urging said rear parts outwardly about the hinging means, one of said arms having one end of the draft member connected to one end thereof, said arm having a guard sleeve rigidly affixed to the forward end portion thereof, said guard member being a generally rectangular sleeve, rigidly attached to the forward end portion of the arm and encompassing the forward ends of both arms, and of height greater than the clip when open, the forward ends of said arms having inturned coacting holder means integral therewith and encompassed by said sleeve, said coacting holder means having two coacting elements, one with a small median tongue integral therewith to pass through the slot in the pull tab, the other with a notch to accommodate said tongue.

2. The combination recited in claim 1 in which the coacting holder means are inturned substantially at right angles to the length of the arms and extend substantially flush with the outer end of the guard sleeve and in which a small median tongue integral with the inturned portion of one of the holder means extends outward in substantially the plane thereof and in registry with a corresponding median notch in the companion holder means, and in which means integral with the side edges of said arms extend at right angles thereto near the sides of said guard frame and intermesh to space the holder means from each other under the pressure of said spring means, thereby substantially to avoid gripping pressure against and to afford a releasable pivot hold at the small median tongue through the conventional aperture of the slide pull tab of a slide fastener.

3. A clip of the character described, comprising clip arm members having lateral flanges, a pivot pin extending transversely substantially midway between the lengths of and through said lateral flanges, each of said arms having an integral cup conformation near the rear end thereof, a coil spring between said cup conformations and urging the rear ends of said arms apart about said pivot pin, the forward ends of said arms being inturned toward each other, one of said inturned ends having a median tongue substantially in the plane thereof, the other of said inturned ends having a notch to accommodate said tongue, said flanges having intermeshing lateral teeth near said forward ends to limit the closing movement of said forward inturned ends, one of said arms having a guard member mounted thereon, said guard member being a generally rectangular sleeve, rigidly attached to the forward end portion of the arms and encompassing the forward ends of both arms and of height greater than the clip when open.

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