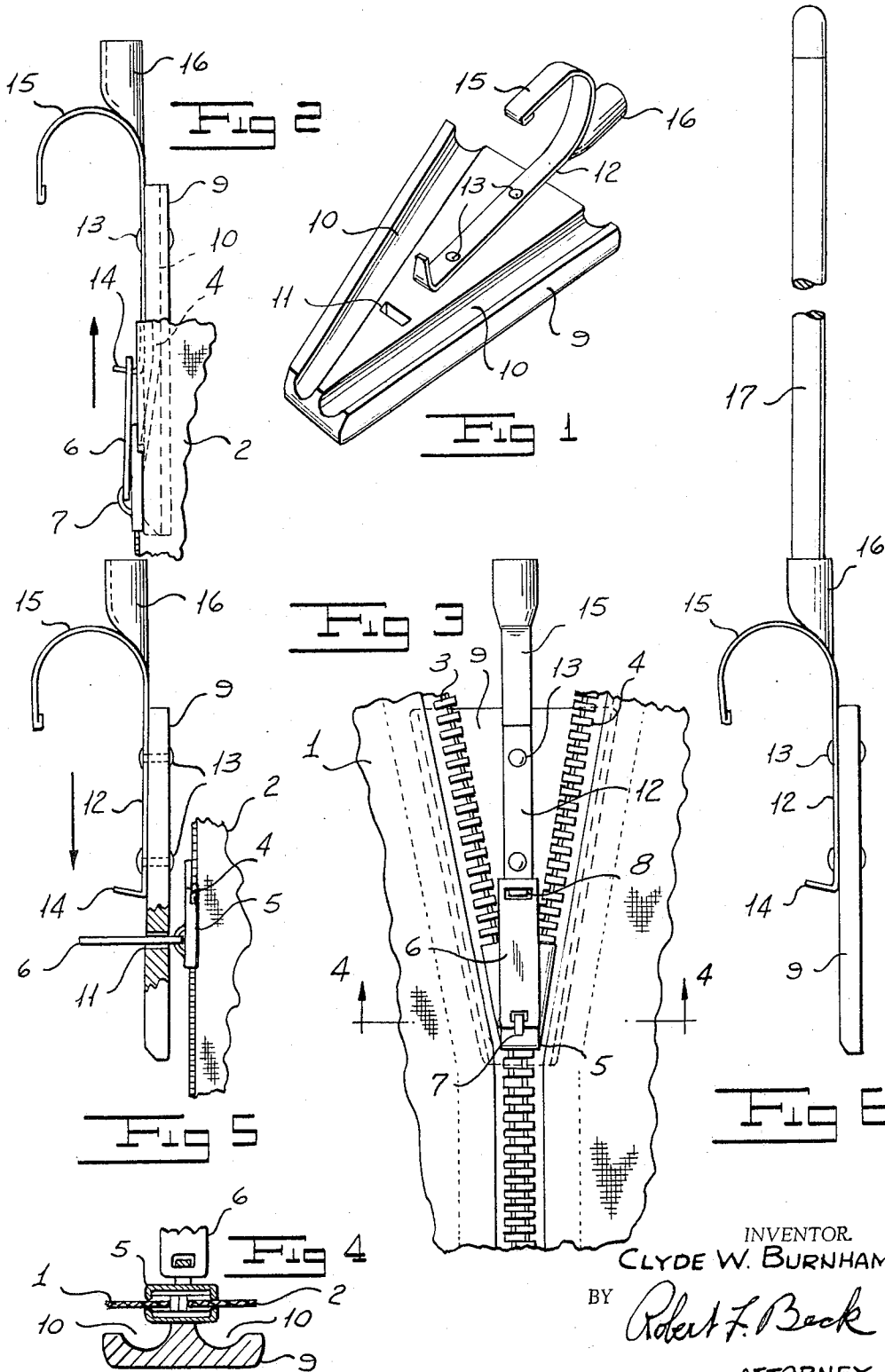


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SLIDE FASTENER ACTUATORS
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SLIDE FASTENER ACTUATORS

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This invention relates to improvements in slide fastener actuators and more particularly to tools for operating slide fasteners that cannot together complementary locking elements such as are used in clothing and many other articles.

Detachable fastenings of the type commonly referred to as "zippers" usually employ a slide member having a tab hingedly connected thereto, with the slide member in embracing relation and connecting together respective series of complementary locking elements. The opening and closing of the locking elements requires a sliding movement of said member. When the slide member is moved in one direction along the respective series of complementary locking elements, the latter are spread apart or separated. When the slide member is moved in the opposite direction, the locking elements are interengaged in secure fashion. The tab is provided on the slide member for grasping engagement to move said member in the proper direction for manipulation.

Such slide fasteners are used frequently in garments in locations where they are relatively inaccessible, as for example, in the backs of women's dresses. Various attempts have been made heretofore to provide a tool for manipulating the slide member when the fastener is located in an inaccessible position, but such tools as have been proposed have not proven to be entirely satisfactory for manipulation.

One object of the invention is to improve the construction of tools for this purpose and to provide for the simple and inexpensive manufacture thereof and effective operation of the slide member.

Another object of the invention is to provide for the positive movement of the slide member in either an opening or closing direction by proper interengagement of the tool with the tab on the slide member.

Still another object of the invention is to so construct the tool that it will facilitate the sliding action by disposing the respective series of complementary locking elements in positions for movement of the slide member relative thereto.

These objects may be accomplished, according to one embodiment of the invention, by constructing a relatively flat body so as to be disposed beneath or behind the locking elements and with suitable means for holding the locking elements during sliding movement of the member relative thereto, as well as interengagement of the slide member with the body. This interengagement may be provided by a prong that extends forwardly from the outer face of the body to be engaged in the aperture of the tab on the slide member for pulling the latter or an orifice may be provided in the body adjacent the prong so as to provide for insertion of the tab into the orifice to push the slide member for opening movement. A handle is provided on the body member end for engagement by the finger of the operator or for attachment of a rod or other suitable connecting means therewith to manipulate said member.

This embodiment of the invention is illustrated in the accompanying drawings, in which:

FIG. 1 is a perspective view of the actuator;

FIG. 2 is a side elevation illustrating the actuator in position while closing the zipper;

FIG. 3 is a plan view thereof;

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FIG. 4 is a sectional view taken on the line 4—4 of FIG. 3;

FIG. 5 is a side view showing the zipper lever disposed in a slot in the actuator for opening the zipper; and

FIG. 6 is a slightly modified form wherein an elongated handle may be connected to the actuator for convenience.

The tool constructed in accordance with this invention is illustrated in FIGS. 2 to 5 in its relation to a slide fastener used to join opposed portions 1 and 2 of a garment or other desired article. The slide fastener is of well known construction and usually is formed with a pair of elongated complementary locking elements 3 and 4 secured to adjacent edges of the garment sections 1 and 2 in respective series. These locking elements 3 and 4 are usually formed so as to be interengaged in complementary relation upon manipulation of a slide member, generally indicated at 5, and which is moved lengthwise of the respective series of locking elements 3 and 4.

These parts are so constructed that the respective series of complementary locking elements 3 and 4 should be disposed at an acute angle to each other, converging to the point where they are interengaged, as will be apparent from FIG. 3. The interengagement occurs at or within the slide member 5 as this moves the locking elements together. These are brought together and closed as the slide member 5 is moved upward according to the illustration in FIG. 3 or opened when the slide member is moved downward relative thereto.

The manipulative means for the slide member 5 includes a tab 6 hinged at 7 to the slide 5. An aperture 8 is usually formed in the free end of the tab 6 and may receive in this aperture any suitable means to facilitate handling thereof.

The tool according to this invention comprises an elongated body 9 which is relatively flat and of sufficient lateral area to extend across beneath the locking elements in open position. This body may be formed of any suitable material, such as metal, plastic or the like, and preferably is in one piece. It is shown as made somewhat V-shaped.

Formed in the upper face of the body 9 are grooves 10 that extend throughout the length of the body from end-to-end thereof, but converge toward the extreme lower end of the body in its manipulative position, as illustrated in FIG. 3.

The grooves 10 are so disposed that they receive and guide the respective series of complementary locking elements 3 and 4 and thus hold these parts in proper relation to each other for freedom of sliding movement of the slide member 5. Thus, the body facilitates the sliding action and the opening and closing actions of the slide fastener.

The body 9 is provided intermediate its length and between the respective grooves 10, with an opening 11 throughout so disposed as to permit the tab 6 to be inserted through this opening 11, as illustrated in FIG. 5, for positive connection between the tool and the sliding member, to effect opening movement of the latter.

The body 9 is provided also with an elongated bracket 12 which extends lengthwise thereof and is secured by fastenings 13 in the form of rivets extending through the body 9 and through the bracket 12. At one end, the bracket 12 is provided with an outturned prong 14, while the opposite end of the bracket 12 is shaped to form a handle 15 projecting from the upper end of the body 9 and outwardly thereof.

The handle 15 may be formed with a socket 16, if desired, to receive an elongated holder, shown at 17 in FIG. 6.

It will be noted that the prong 14 is turned backward somewhat at an acute angle to the length of the bracket

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12. This enables the prong 14 to be engaged in the aperture 8, as shown in FIGS. 2 and 3, and thereby to impart a pulling action to the slide member 5 for closing the slide fastener.

In use, the tool is inserted beneath the respective series of open locking elements 3 and 4, with the out-turned prong 14 engaged in the aperture 8 of the tab 6. Then, upon imparting a pulling action to the tool end by the handle 15, or the elongated member 17 or the like, the slide member 5 can be moved along the series of locking elements to close the slide fastener. The respective series of locking elements are guided into the slide member by the converging grooves 10, as will be apparent from FIG. 2. In this way the slide fastener can be closed even though used in an inaccessible place.

The tool may be used also for opening the slide fastener. As shown in FIG. 5, the tab is inserted in the opening 11 which connects these parts together securely, so as to impart a leverage through the tab to the slide member 5 and thereby forcibly move it along the respective series of interengaged complementary locking elements 3 and 4.

The tool is simple and inexpensive to construct and very effective, not only for positive opening and closing movements of the slide fastener, but also to facilitate the guiding of the locking elements with respect to the slide member, thus improving the action of the slide fastener.

While the invention has been illustrated and described in certain embodiments, it is recognized that other variations and changes may be made therein without departing from the invention as set forth in the claims.

I claim:

1. A tool for operating a slide fastener of the type having a slide member with an apertured tab hinged connected thereto and connecting together series of complementary locking elements, said tool comprising an elongated body adapted to be disposed beneath the complementary locking elements, said body having converging grooves in the upper face thereof in positions to receive therein the respective series of complementary locking elements, and a rigid prong fixed on the body and spaced from the converging ends of the grooves for engaging in the apertured tab to move the slide member while the locking elements are disposed in the grooves.

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2. A tool in combination with a slide fastener having a slide member with an apertured tab hinged connected thereto and connecting together series of complementary locking elements, said tool comprising an elongated body disposed beneath the complementary locking elements, said body having converging grooves in the upper face thereof in positions to receive therein the respective series of complementary locking elements, a rigid prong on the body between the grooves and spaced from the converging ends thereof for engaging in the apertured tab to move the slide member while the locking elements are disposed in the grooves, and a handle connected with the body to move the latter.

3. A tool for operating a slide fastener of the type having a slide member with an apertured tab hinged connected thereto and connecting together series of complementary locking elements, said tool comprising an elongated relatively wide flat body adapted to be disposed beneath the complementary locking elements, said body having converging grooves in the upper face thereof in position to receive therein the respective series of complementary locking elements, a bracket mounted on the body and having a handle portion at one end thereof and an outturned prong at the opposite end of said bracket in position to engage in the apertured tab to move the slide member.

4. A tool for operating a slide fastener according to claim 3, wherein the body has an opening therein to receive the tab when projecting at right angles away from the slide member to impart a pushing movement to the slide member for opening the locking elements.

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