

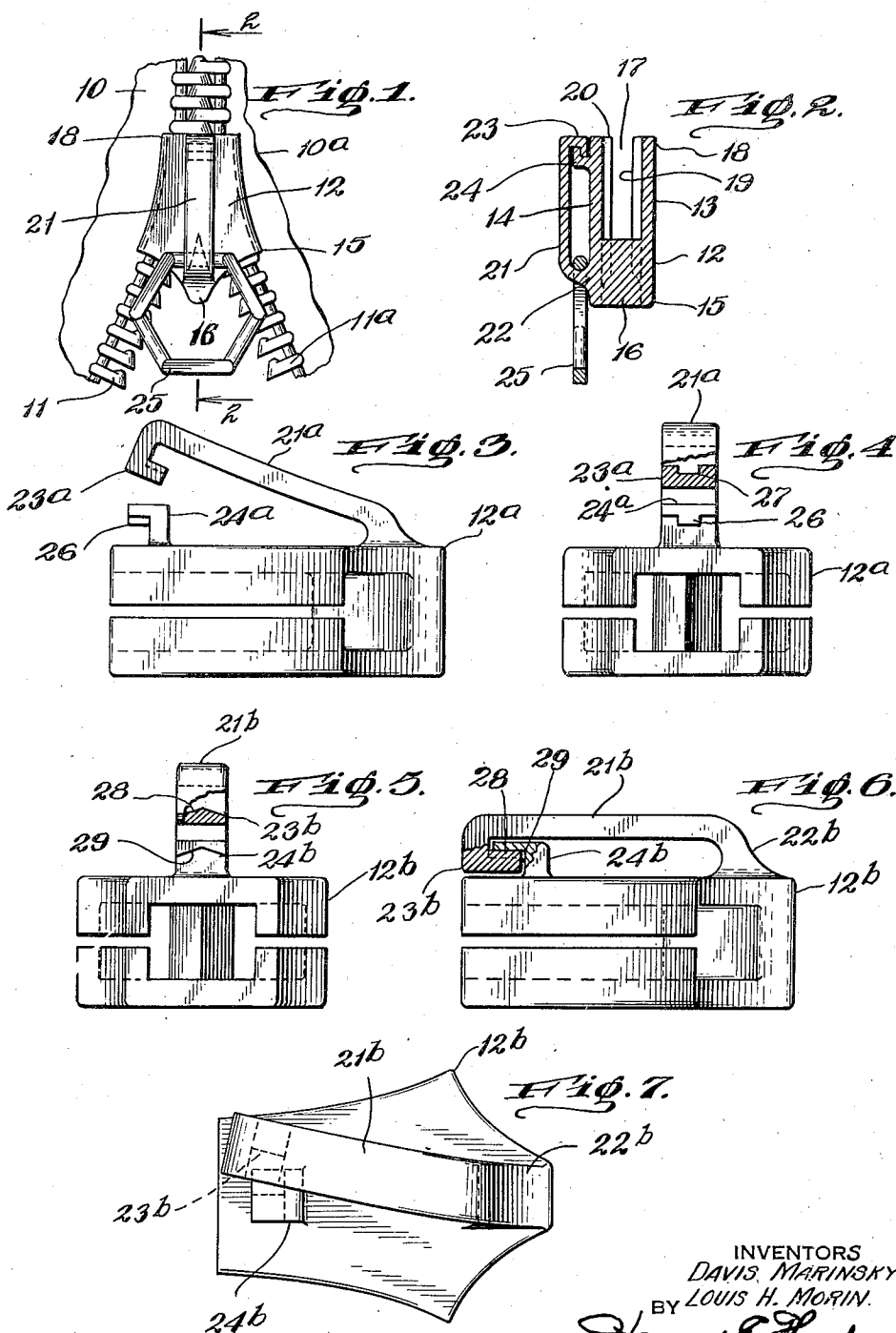
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SLIDER FOR SEPARABLE FASTENERS

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SLIDER FOR SEPARABLE FASTENERS

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This invention relates to separable fasteners employing stringers having coupling links adapted to be coupled and uncoupled, and particularly to sliders for devices of this kind employed in coupling and uncoupling said links, and the object of the invention is to provide one side wall, preferably the upper or outer wall of the slider, with means for attaching a finger-piece or pull therewith which is so constructed as to be normally opened to facilitate attachment of the finger-piece or pull and then closed to retain the slider one wall of which is provided with an integral arm, the free end portion of which is provided with means for engaging another part of the slider to form, of said arm, a closed ring or loop by means of which a finger-piece or pull may be attached to the slider, and still further to the provision of means for preventing the lateral displacement of the arm when in coupled position; and with these and other objects in view the invention consists in a device of the class and for the purpose specified which is simple in construction, efficient in use and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of our improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a plan view of a part of a fastener stringer showing one of the sliders arranged thereon.

Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1 showing the slider detached.

Fig. 3 is a side view of another form of slider which we employ.

Fig. 4 is an end view of the slider shown in Fig. 3 with part of the construction broken away and in section.

Fig. 5 is a view similar to Fig. 4 showing another form of slider.

Fig. 6 is a side view of the slider shown in Fig. 5 with part of the construction broken away and in section; and,

Fig. 7 is a plan view of the slider shown in Figs. 5 and 6 illustrating the manner of moving a part from the position shown in Fig. 5 to the position shown in Fig. 6.

The several forms of sliders shown in the accompanying drawing are in the form of die-castings or, in other words, are of unitary construction, and while these devices may be made of

metallic castings it is preferred that they be constructed of plastic material or compound and especially materials in the thermoplastic group, such for example as cellulose acetate. It is the principal object of the invention to provide devices of this kind with means facilitating the attachment of any kind or class of finger-piece or pull having a closed ring or loop adapted to be placed over a coupling ring or loop formed on the slider, the latter being constructed from what may be termed an arm, one end of which is normally unattached and adapted to be coupled with or secured to the slider, after the finger-piece or pull has been attached. The arm of the slider is capable of flexure in coupling the same with the slider or a coupling member thereon, and in some cases will have sufficient resiliency to engage the lug of the slider under a tension which will tend to hold the parts together independent of any other securing means.

To illustrate the general use of the invention, parts of two separable fastener stringers 10—10a are indicated in Fig. 1 of the drawing, one edge portion of the stringers having coupling links or scoops 11—11a secured thereto, the links or scoops of the opposed stringers being adapted to be coupled and uncoupled by a slider 12 as in other devices of this kind.

The slider 12, shown in Figs. 1 and 2 of the drawing, consists of a unitary molded or die-casted body having a bottom wall 13 and a top wall 14 joined at the wide end portion 15 of the slider, by a connecting web 16 which divides the channel 17 at the narrow end portion 18 of the slider into diverging channels at the wide end portion 15 of the slider in the conventional manner, the walls 13 and 14 having intumed side flanges 19 and 20.

In the construction shown, an arm 21 is formed integral with the wide end 15 of the slider as seen at 22, and this arm in originally molding or casting the slider will extend upwardly from the top wall 14 of the slider in the manner illustrated in Fig. 3 of the drawing. The free end of the arm 21 is provided with a downwardly and inwardly turned coupling hook 23, which is adapted to engage an upwardly and outwardly extending hoop-shaped lug 24 on the top wall 14 of the slider adjacent the contracted end 18 thereof.

In Figs. 1 and 2 of the drawing a hexagonal finger-piece or pull 25 is shown attached to the ring or loop formed by the arm 21 when coupled with the lug 24, as clearly seen in Fig. 2 of the drawing. It is understood that the finger-piece

25 is attached when the arm 21 is in its extended position or prior to engagement with the lug 24.

The finger-piece or pull 25 may be constructed of any desired material, but when plastic or thermoplastic material, such as cellulose acetate is employed in the slider, a similar material will be employed in the finger-piece or pull, the latter being also preferably formed by die-casting and may have any suitable ornamental appearance. In this connection, it will also be apparent that many kinds and classes of finger-pieces or pulls may be employed.

One of the distinctive purposes of the invention is to provide a slider for separable fasteners which may be sold to the merchant with the arm 21 unattached or uncoupled with the lug 24 so as to enable the merchant to attach a finger-piece or pull to the slider, which will suit or satisfy the desires of the purchaser. If desired, the merchant may apply a suitable adhesive, such as acetone, to secure the hook end 23 of the arm to the lug 24 or suitable means may be provided as illustrated in the structure shown in Figs. 3 to 7 inclusive for retaining the free end portion of the arm against lateral displacement.

In Figs. 3 and 4 of the drawing, one form of construction is shown for interlocking the hook-end 23a of the arm 21a with the hook-shaped lug 24a. The slider 12a of the same general construction as the structure shown in Figs. 1 and 2, with the exception that the lower surface of the outwardly projecting or horizontal portion of the lug 24a is provided centrally with a downwardly projecting rib or key 26 which is adapted to enter a recess 27 formed on the upper surface of the inwardly projecting part of the hook end 23a, as clearly seen in Fig. 4 of the drawing. The arm 21a is shown in the unattached position in Figs. 3 and 4 but will assume a position similar to that shown in Figs. 1 and 6 when attached.

It will be understood that in constructing a device of cellulose acetate, this material has considerable spring properties, and is capable of lateral flexure in the manner illustrated in Fig. 7, in placing the hook 23a under and beneath the lug 24a, and the normal tendency for the arm to spring upwardly will securely latch the arm with the lug and retain the rib or key 26 in the recess or channel 27. If desired, it will be understood that the parts 23a-24a may also be cemented together to form a permanent connection, in which case the rib or key structure simply serves to reinforce the coupling of the parts and to maintain proper alignment thereof while the cement or adhesive is hardening.

In Figs. 5, 6 and 7 another slight modification of the structure shown in Figs. 3 and 4 is illustrated, and this consists simply in providing a slight upwardly projecting conical portion 28 on the part 23b of the arm 21b instead of the recess 27, and in providing a corresponding formed recess 29 in the part 24b instead of the member 26. With this construction, the arm 21b may be more readily coupled with the lug 24b in the lateral movement of the part as diagrammatically illustrated in Fig. 7 of the drawing, in which figure the arm 21b is shown in a partial assembled position simply to illustrate the lateral flexure of the arm with respect to the end portion 23b thereof where it joins the wall of the slider 12b.

The devices herein described merely illustrate a few methods of carrying the invention into effect, and it will be apparent that other means may be provided for retaining and securing the free end portion of the arm in connection with the slider

after the pull or finger-piece has been attached.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. A slider for fasteners of the class described, said slider comprising a unitary body of die-cast thermoplastic material, consisting of spaced side walls joined at one end by a connecting web, an arm integral with one wall of said body adjacent one end thereof and projecting in the direction of the other end of said body, the free end portion of said arm being normally arranged in spaced relation to said wall, the other end portion of said wall of the slider having an upwardly and outwardly projecting hook-shaped lug, and the free end portion of said arm having a downwardly and inwardly projecting hook-shaped part adapted to engage said lug.

2. In a thermoplastic slider for separable fasteners, means for coupling a finger-piece with the slider, said means comprising a hook-shaped coupling element on one wall of the slider, and an elongated freely flexing hook-shaped part extending upwardly from said wall of the slider and adapted to be flexed into position to engage said hook-shaped element and tensionally support it in connection with said element to prevent displacement therefrom.

3. In a slider for separable fasteners, means for detachably coupling a finger-piece with the slider, said means comprising an elongated arm having a hook-shaped element at the free end thereof, and attached to one wall of the slider at its opposite end, a hook-shaped coupling part on said wall of the slider, said arm having resilient properties permitting flexure thereof to tensionally engage the hook-shaped element with said hook-shaped part, and said element and part having means for keying the same against accidental displacement when coupled together.

4. A die cast slider for separable fasteners of the class described, said slider comprising a channeled thermoplastic body consisting of spaced side walls joined at one end by a connecting web, one side wall of the slider having an integral arm extending from the upper surface of said wall at one end thereof in the direction of the other end thereof, said arm having a free end normally arranged in spaced relation to said wall of the slider to facilitate the coupling of a finger-piece therewith, and interengaging cooperating means on the free end portion of said arm and on said wall for readily coupling and uncoupling the free end of the arm therewith to form a closed loop preventing detachment of the finger-piece from said slider.

5. A die cast slider for separable fasteners of the class described, said slider comprising a channeled body consisting of spaced side walls joined at one end by a connecting web, one side wall of the slider having an integral arm extending from the upper surface of said wall at one end thereof in the direction of the other end thereof, said arm having a free end normally arranged in spaced relation to said wall of the slider to facilitate the coupling of a finger-piece therewith, interengaging cooperating means on the free end portion of said arm and on said wall for readily coupling and uncoupling the free end of the arm therewith to form a closed loop preventing detachment of the finger-piece from said slider, said last named means comprising a hook-shaped member projecting from the lower surface of said arm, and a hook-shaped lug on said wall of the slider.

6. A die cast slider for separable fasteners of the class described, said slider comprising a channeled body consisting of spaced side walls joined at one end by a connecting web, one side wall of the slider having an integral arm extending from the upper surface of said wall at one end thereof in the direction of the other end thereof, said arm having a free end normally arranged in spaced relation to said wall of the slider to facilitate the coupling of a finger-piece therewith, interengaging means on the free end portion of said arm and on said wall for coupling the free end of the arm therewith to form a closed loop preventing detachment of the finger-piece from said slider, said last named means comprising a hook-shaped member projecting from the lower surface of said arm, a hook-shaped lug on said wall of the slider, and said lug and member being provided one with a rib and the other with a recess in connection with which the rib operates to prevent lateral displacement of said arm.

7. The combination with a thermoplastic slider for separable fasteners of the class described, of an elongated bar integrally attached to one end portion of the slider and normally extending in an angular position with respect to one wall of the slider with the free end of said bar in spaced relation to said wall, coupling means on the free

end portion of said bar, cooperating means on said wall of the slider for attaching the first named means therewith to support the free end portion of said bar against displacement from said wall, and said first named means being readily engageable and disengageable with respect to said cooperating means on the slider wall.

8. The combination with a thermoplastic slider for separable fasteners of the class described, of an elongated bar integrally attached to one end portion of the slider and normally extending in an angular position with respect to one wall of the slider with the free end of said bar in spaced relation to said wall, coupling means on the free end portion of said bar, cooperating means on said wall of the slider for attaching the first named means therewith to support the free end portion of said bar against displacement from said wall, said first named means being readily engageable and disengageable with respect to said cooperating means on the slider wall, the free end portion of said bar being capable of lateral and vertical flexure, and said bar when coupled with the slider wall forming on the slider a closed loop between said bar and the adjacent wall of the slider.

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