Nov. 24, 1942. A. E. CARLILE 2,302,741

METHOD OF MAKING PULLS FOR SLIDE FASTENERS

Filed May 15, 1940

Fig. 1.

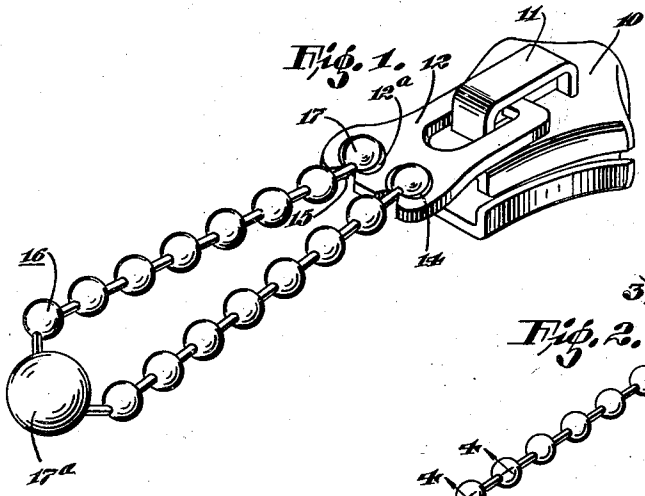


Fig. 2.

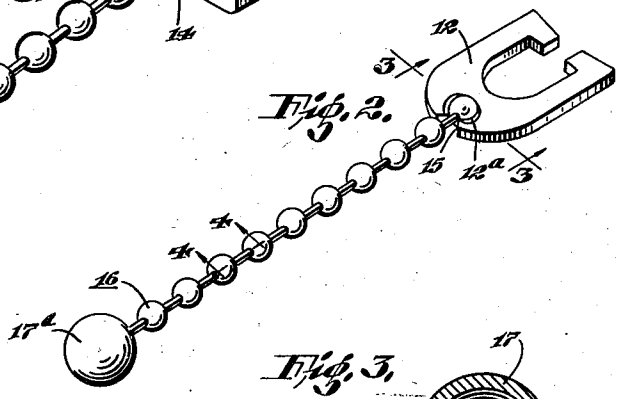


Fig. 3.

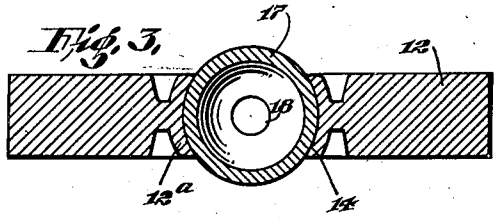


Fig. 4.

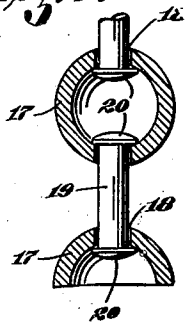


Fig. 6.

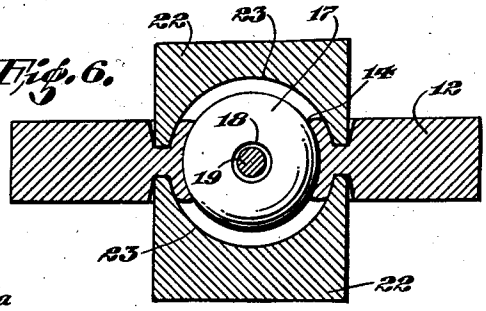
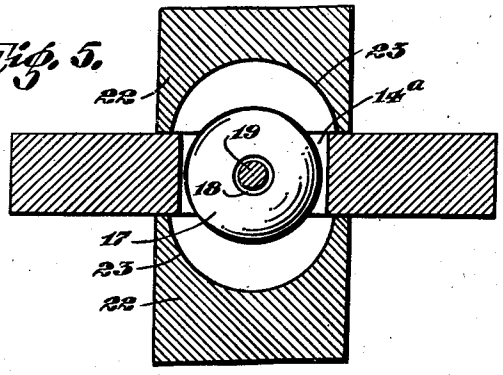


Fig. 5.



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METHOD OF MAKING PULLS FOR SLIDE FASTENERS

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Application May 15, 1940, Serial No. 335,272

1 Claim. (Cl. 29—148)

This invention relates to slide fasteners and in particular to a new and improved method of making pulls for the sliders thereof.

It is an object of this invention to provide a new and improved method of making pulls for slide fasteners embodying a manually engageable bead chain facilitating actuation of the slider, in opening and closing a slide fastener, by exertion of tension longitudinally upon the slider through the pull tab thereof.

This and other objects of the invention will appear from the following description taken in conjunction with the accompanying drawing which forms a part thereof, and will be pointed out in the appended claim.

In the drawing:

Fig. 1 is a view, in perspective, of a slide fastener slider having a pull tab provided with a bead chain according to the principles of this invention, the bead chain forming a loop by reason of attachment of both ends thereof to the slider pull tab;

Fig. 2 is a view similar to Fig. 1 of a modified pull tab construction wherein one end only of a bead chain is attached to the pull tab;

Fig. 3 is an enlarged transverse section taken substantially on the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary enlarged longitudinal section through the bead chain, taken substantially on the line 4—4 of Fig. 2, and illustrating the construction of the bead chain;

Fig. 5 is a fragmentary view, partly in section and partly in elevation, illustrating the first step of my method of attaching a bead chain to the pull tab of a slide fastener slider; and

Fig. 6 is a view similar to Fig. 5, but illustrating a subsequent step of the method illustrated in Fig. 5.

Referring to the drawing in detail, Figs. 1 and 2 show slider constructions of conventional form comprising slider bodies 10 with lugs 11, by means of which pull tabs 12 are supported on the bodies 10.

The pull tab 12 of the slider shown in Fig. 1 is provided with a pair of apertures 14 extending therethrough from side to side adjacent the free end thereof, and with a notch 15 leading from each aperture to the free end of the slider. Each end bead member 17 of a bead chain, generally designated 16, is secured, either rigidly or pivotally, in each aperture 14 in a manner hereinafter most clearly described and the link member 19, which connects each of these end bead members 17 to the adjacent bead member 17, is disposed in each notch 15 for free pivotal movement.

In the construction shown in Fig. 2, only one end bead member 17 of the bead chain 16 is secured in the single aperture 14 provided in the pull tab 12 and, consequently, only one notch 15 is provided for receiving the single member 19 attaching this end bead member 17 to the adjacent bead member 17 of the bead chain 16.

The construction of the bead chain is best illustrated in Fig. 4, wherein it will be seen that each bead member 17 is provided with aligned oppositely disposed apertures 18, through each of which apertures one end of a link member 19 extends. The link members 19 are provided at each end with enlarged heads 20 for maintaining the connection of adjacent bead members 17 by intermediate links 19, as shown in Fig. 4.

The bead chain illustrated in Fig. 1 is provided at its mid-portion with an enlarged bead member 17*a* for facilitating manual engagement of the bead chain 16, while a similar enlarged bead member 17*a* is provided at the free end of the bead chain 16 illustrated in Fig. 2.

A preferred method of securing an end bead member 17 in each aperture 14 of a pull tab 12 is shown in Figs. 3, 5 and 6. According to this method, an aperture 14*a* (Fig. 5) is formed, in suitable location, in the pull tab 12 with a suitably located notch 15 leading therefrom. An end bead member 17 of a bead chain 16 is then placed in the aperture 14*a* with its attached link 19 extending through the notch 15 and the assembly placed between opposed reciprocating setting punches 22, as shown in Fig. 5. These setting punches are provided with substantially hemispherical sockets 23 at their ends for permitting axial movement of the opposed setting punches 22 toward one another, without interference with the substantially spherical bead member 17 disposed therebetween in the aperture 14*a*.

After the parts are located as shown in Fig. 5, power is applied to the opposed setting punches 22 and they are thrust together substantially to the position shown in Fig. 6, whereby the portions of the pull tab 12 surrounding the aperture 14*a* are upset or compressed together to decrease the size of the aperture 14*a* to its final form 14, wherein the compressed or upset portion 12*a* closely engages the exterior surface of the end bead member 17 for attaching it rigidly to the pull tab 12.

The end bead member 17 of the bead chain 16 is thus rigidly attached to the pull tab 12 and, due to the freedom provided by the notch 15 for the link member 19 extending therefrom, the

flexibility of the bead chain 16 extending from the end bead member 17 is in nowise impaired.

By limitation of the power applied to the opposed setting punches 22, the tightness of fit between the aperture 14 and end bead member 17 may be limited, of course, in such manner that the end bead member 17 is pivotally supported in the pull tab 12.

It will thus be seen that I have produced a new and improved pull tab construction for the sliders of slide fasteners which construction embodies a flexible bead chain having its end bead members attached either rigidly or pivotally to the slider pull tab without impairment of the flexibility of the bead chain.

It will likewise appear that I have provided a method for accomplishing the above-described structure with the utmost ease, convenience, speed and economy.

It is, of course, to be understood that the above description is merely illustrative and in nowise limiting and that I desire to comprehend within my invention all modifications included within the scope of the appended claim.

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

A method of attaching a bead chain to a flat metal pull member for slide fasteners, which comprises providing said flat metal member with an aperture therethrough adjacent one end thereof of a size to receive loosely the terminal bead of the bead chain and a slot extending from said aperture to the adjacent free end of said pull member, placing a terminal bead of said bead chain in said aperture in a central location with respect to the flat sides of said pull member while the connected portions of said bead chain extend freely through said slot, and compressing the metal around the border of said aperture to move an annular band portion of such metal laterally into firm spherical gripping contact with the surfaces of said terminal bead and thereby decreasing the size of the aperture through said pull member and providing a socket in the pull member for the bead.

ALFRED E. CARLILE.