Feb. 19, 1946. V. CIZEK 2,395,370

SLIDE FASTENER

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Fig. 1

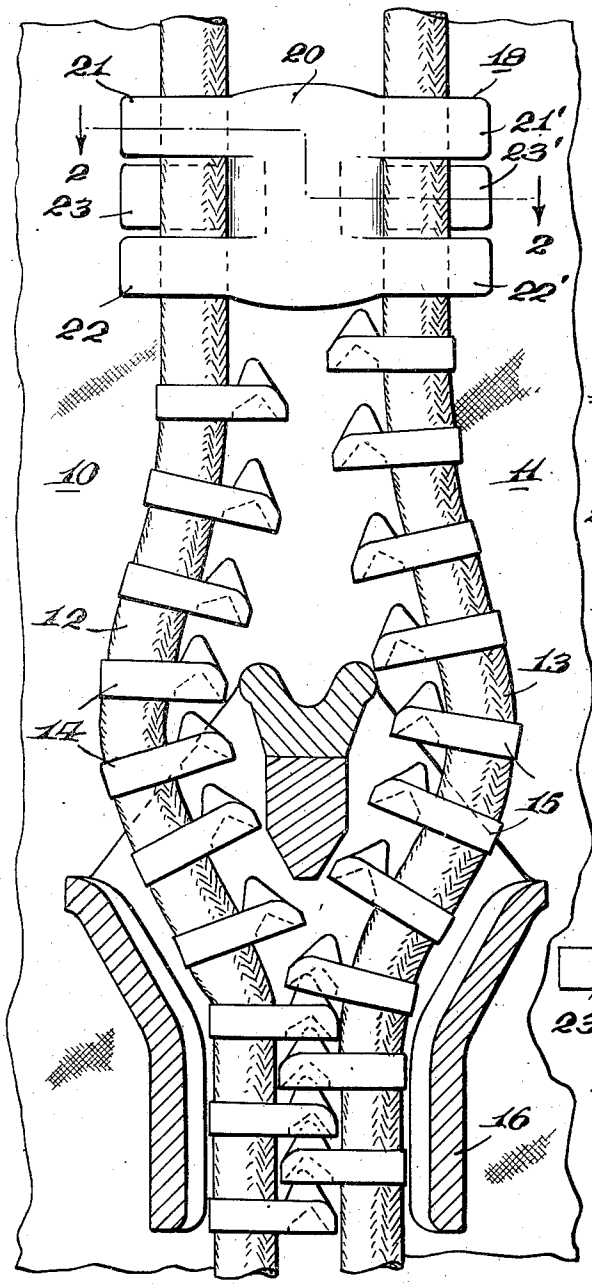


Fig. 2

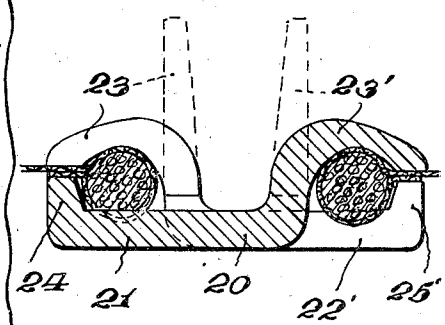
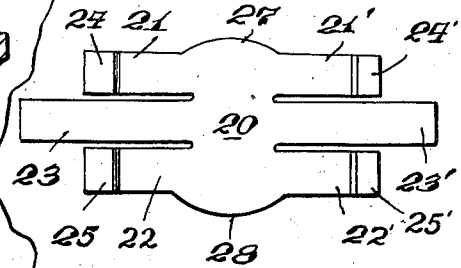


Fig. 3



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SLIDE FASTENER

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3 Claims. (Cl. 24—205)

This invention relates to improvements in slide fasteners, and more particularly to an improved top stop of the type which bridges the tapes at the closing end of the fastener and thus functions as an end stop for the fastener slider.

As presently constructed, bridge top stops are usually of one-piece construction, being provided either with pointed tongues at their side edges which prior to attachment extend substantially at right angles to the plane of the stop body and are caused by pressure to pierce the tapes behind the edge beads thereof, being thereupon folded over the beads, or they are provided at their side edges with securing jaws, similar to the securing jaws with which the fastener elements themselves are conventionally provided, which are clamped around the tape beads.

While the first type of bridge top stop referred to is simple in manufacture, it is open to the objection that the securing tongues in piercing the tapes cause weakening thereof, particularly in the case of heavy-duty slide fasteners of large dimensions, in which the impact forces exerted by the slider on the bridge top stop are relatively great. Bridge top stops of the second type present difficulties in manufacture, particularly as respects the jaw-like securing means with which they are provided. Furthermore, the gripping effect in the longitudinal direction of the slide fastener provided by such securing means may not be sufficiently great in relation to the impact forces to which bridge top stops of large slide fasteners are exposed, to enable such a top stop to withstand these forces.

The invention aims to provide an improved bridge top stop of rigid and sturdy construction which overcomes the noted objections to prior types of bridge top stops, which can be manufactured in a simple stamping operation, and which can be securely attached to the tape beads by simple pressure exerted on integral gripping tongues formed thereon and which extend at an angle from the body of the stop. The invention moreover provides an improved bridge top stop capable of gripping the tape beads with a force which in crosswise direction is at least as great as that exerted by bridge top stops provided with jaw-like securing means and whose gripping force in lengthwise direction is remarkably high, due to the wave-like bending of the tape beads which it effects on attachment thereto.

Other objects will be in part obvious and in part hereinafter pointed out in connection with the following analysis of this invention wherein is illustrated an embodiment of the invention in detail.

In the drawing:

Fig. 1 is a plan view of the upper or closing end of a slide fastener provided with a bridge top stop in accordance with the invention, the slider being shown as spaced relatively downwardly from the top stop;

Fig. 2 is a section taken along line 2—2 of Fig. 1;

Fig. 3 is a plan view of the metal blank from which the top stop illustrated in Fig. 1 is formed.

Referring to the drawing, wherein like reference characters designate like parts throughout the several views, the slide fastener illustrated in Fig. 1 is of conventional construction and comprises tapes or stringers 10, 11 of extended length having edge beads 12, 13, to which are secured rows or chains of oppositely disposed fastener elements 14, 15. As is well understood, the oppositely disposed fastener elements 14, 15 of the chains thereof are adapted to be meshed and unmeshed by a slider 16 which, as shown, is of the type having a Y-shaped race or channel adapted to dispose the disengaged elements fanwise upon their exit from the slider.

A bridge top stop 18 forming the subject-matter of the present invention is associated with the tapes 10, 11 adjacent the relatively upper ends thereof to provide a stop which limits movement of the slider 16 in closing direction. The bridge stop according to the invention comprises a rigid bridge-like body part 20 provided along both the sides thereof with outwardly projecting and vertically spaced prongs 21, 22, and 21', 22', respectively, which are disposed substantially in the plane of the body. Between the spaced prongs 21, 22, and 21', 22', and offset to the plane of said prongs are arranged tongues 23, 23' which function in the manner of movable clamping jaws to clamp the tape beads 12, 13, against the rigid prongs 21, 22, and 21', 22', respectively.

The blank from which the bridge top stop as generally described is formed is illustrated in plan view in Fig. 3, from which it will be observed that the tongues 23, 23' are separated from their related prongs 21, 22, and 21', 22', respectively, by parallel slots which are disposed symmetrically to the horizontal center line of the blank, and that the prongs and tongues, in extending from the sides of the blank body, are symmetrically disposed laterally of the longitudinal center line of the blank. Preferably, the length of the tongues 23, 23' is somewhat greater than the length of the prongs related thereto, thus to provide the extra-length required in the subsequent bending

thereof. At their free ends the prongs 21, 21' and 22, 22' may be provided with flanges 24, 24', 25, 25', respectively, (Fig. 3) which, by reference to Fig. 2, extend from the under face of the prongs and are of length to engage against the relatively upper face of the tapes, while gripping behind the tape beads 12, 13. As shown, the upper and lower edges of the blank may be struck on an arc of relatively long radius to provide symmetrically curved edge portions 27, 28.

Following the blanking-out operation the tongues 23, 23', of the blank are offset rearwardly from the plane of the stop body 20, as indicated in dotted lines, Fig. 2, wherein the tongues are shown as bent substantially at right angles to the stop body. Accordingly, the tape beads may be readily inserted in the angular corner provided between the under faces of the prongs 21, 22, and 21', 22', and the relatively outer faces of the offset tongues. To attach the top stop to the tapes, the tongues are bent relatively forwardly over the tape beads so that in final assembly they curve over the beads generally as shown in Fig. 2 and their ends terminate substantially in the plane of the prong-end flanges 24, 25. Accordingly, not only are the tape beads clamped between the prongs 21, 22, and 21', 22', from the one side, and the tongues from the opposite side, but they are also gripped from behind by the prong flanges and the intermediate tongue ends. By exerting such bending pressure on the tongues as to cause the tape beads engaged thereby to move into the space between their related prongs, the tongues not only function to clamp the tape beads against the prongs, but also cause the engaged portions of the beads to bend to a wave-like formation, as indicated generally in Fig. 2. Accordingly, the gripping force exerted by the top stop as aforesaid on the tape beads in lengthwise direction of the slider is remarkably high, and is measurably greater than the gripping force exerted by prior top stops. Hence, a top stop according to the invention is capable of withstanding the impact forces exerted thereon by the slider as the latter is moved to fastener closing position, which is of particular advantage in the case of heavy-duty slide fasteners of large dimensions. Moreover, due to the bending of the tongues as described over the tape beads, taken with the action of the prong flanges 24, 25, the crosswise gripping force exerted by the top stop on the tape beads is at least as great as that provided by top stops of prior construction.

From the above analysis, it will be appreciated that a top stop according to the invention can be readily manufactured by a simple stamping process and that it can be securely attached to the slide fastener tapes in a simple pressing or bending operation without piercing the tapes or the tape beads thereof. The improved top stop moreover achieves the desirable objective that when attached to the tape beads, it is capable of withstanding the high impact forces exerted by the slider thereon as the latter is moved to its fastener closing position, while at the same time it grips the tape beads with sufficient gripping force required to withstand lateral or crosswise stresses to which it is subjected.

As many changes could be made in carrying out the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A bridge top stop for a slide fastener assembly comprising a bridging body portion provided at each side thereof with spaced outwardly projecting and rigid prongs contained in the plane of the body portion and with an outwardly projecting tongue disposed intermediate said prongs, said tongues being offset along their lengths from the plane of the body portion and prongs and being operative to provide movable clamp jaws coacting with said rigid prongs.

2. A bridge top stop for a slide fastener assembly comprising a bridging body portion provided at each side thereof with spaced outwardly projecting and rigid prongs contained in the plane of the body portion and with an outwardly projecting tongue disposed intermediate said prongs, said tongues being offset along their lengths from the plane of the body portion and terminating in ends which are disposed substantially in the plane of the prong ends.

3. A bridge top stop for a slide fastener assembly comprising a bridging body portion provided at each side thereof with spaced outwardly projecting and rigid prongs contained in the plane of the body portion and with an outwardly projecting tongue disposed intermediate said prongs, said prongs terminating in flanges extending in the same direction out of the plane of the prongs, and said tongues being offset from the plane of the body portion and prongs and having curvature along their lengths such that their ends terminate substantially in the plane of the prong-end flanges.

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