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TOP STOPS FOR ZIPPER FASTENERS

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Fig. 1

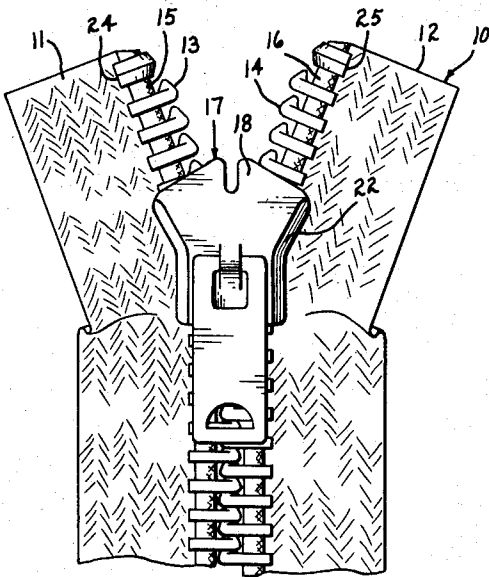


Fig. 2

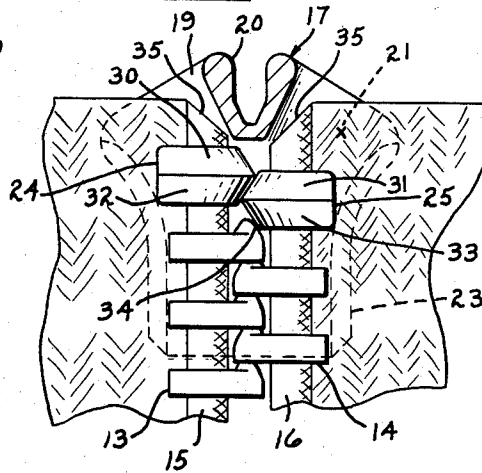


Fig. 3

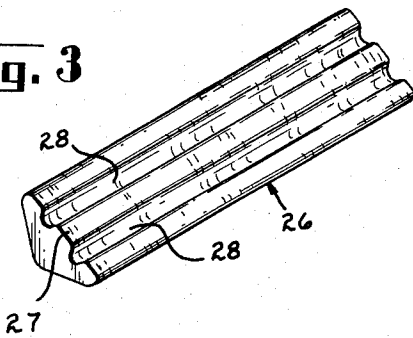
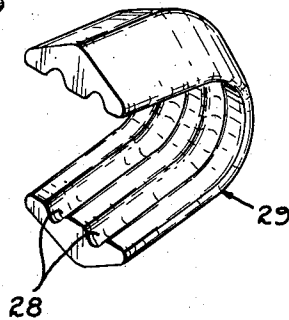


Fig. 4



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TOP STOPS FOR ZIPPER FASTENERS

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This invention relates to zipper fasteners and more particularly, to improved top stops for arresting the movement of the slider.

One of the objects of my invention is to provide an improved construction and arrangement of top stops which can enter into the slider to a position where both stops are well below the slider neck so that the stops will come to line up perpendicular to the center line of the fastener. One of the advantages thus derived is the prevention of the usual twisting or puckering of the tape ends caused by the angular setting of the stops in their limit position. Another advantage is that the thrust of the slider acts on the stops in a straight line direction parallel to the center line of the fastener rather than at an angle which would tend to twist the stops out of position.

Another object of the invention is to provide an improved construction and arrangement of top stops whereby one stop will wedge between the other stop and the endmost fastener element whereby the stops are mutually supported to resist both longitudinal and twisting forces.

Another object of the invention is to provide an improved top stop construction which while allowing the stops to pass beyond the slider neck, will nevertheless, prevent catching of the slider neck against the top stops when it is desired to open the fastener.

Other objects and advantages of my improved top stops will appear from a reading of the specification taken in connection with the accompanying drawing, in which:

FIG. 1 is a front view of a zipper fastener embodying the principles of my invention;

FIG. 2 is a sectional view of a slider on a larger scale showing its relation to the top stops when moved to the limit of its travel;

FIG. 3 is a perspective view of the blank from which the top stops are made; and,

FIG. 4 is a perspective view of a top stop as it appears when formed into U-shape before attachment to a stringer.

Referring now to the drawing and particularly to FIG. 1, there is shown a zipper fastener 10 comprising stringers 11 and 12 having rows of interlockable fastener elements 13 and 14 secured to the inner beaded edges 15 and 16 of said stringers. Also, there is the usual slider 17 that is movable along the stringers to engage and disengage the interlockable fastener elements 13 and 14.

The slider 17 is of conventional construction having a front wing 18, a back wing 19 and a generally V-shaped connecting neck 20—the wings and neck defining a Y-shaped channel 21 through which the fastener elements are adapted to pass. The front and back wings 18 and 19 are formed with the usual edge flanges 22 and 23 respectively that serve as guides for the fastener elements 13 and 14, said flanges having a space therebetween through which the stringer tapes pass.

In accordance with the present invention, a complementary pair of structurally similar top stops 24 and 25 are clamped to the beaded edges of the stringers 11 and 12. Each top stop is of generally triangular shape in cross-section with the wider base portion 27 having a pair of spaced longitudinal grooves 28 therein. The blank 26 is first formed into a generally U-shaped clip 29 by suitable tools as shown in FIG. 4 after which, it is attached to the beaded edge of a stringer.

Considering now some of the structural details and in-

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terfitted relationship of the parts as shown in FIG. 2, the left and right top stops 24 and 25 have upper sloping surfaces 30 and 31, and lower sloping surfaces 32 and 33 respectively, which extend from the apices along the center line of the stops toward the stringer edges. Each top stop 24 and 25 is attached to its respective stringer approximately half the width of the stop above the uppermost fastener elements 13 and 14. Also, the spacing of each stop from the endmost fastener element on its stringer is substantially the same as the spacing between the individual fastener elements on each stringer. This brings the apex line of the right-hand stop 25 substantially in line with the lower edge of the left top stop 24. It will thus be observed that the stops are dimensioned not only in length and thickness to enable them to pass freely into the slider channel, but also in width so that they can pass completely below the slider neck 20.

When the slider 17 is moved up the stringers its full limit, as determined by the top stops, it will be observed that the lower outer corners of said stops on both sides of the tapes will contact either or both the upper and lower flanges 22 and 23 of the slider. While the force on the right top stop would tend to twist said stop in a counterclockwise direction, such action is checked by the under sloping surface 33 thereof bearing against the inclined upper surface 34 of the uppermost adjacent fastener element 13 on left stringer 11. Also, the force applied by the slider flanges to the left top stop 24 would tend to twist it in a clockwise direction, but this is resisted by its lower sloping surface 32 resting upon the upper sloping surface 31 of the right stop 25, the latter as pointed out above, being supported by the fastener element 13 on the opposite stringer. Thus, it will be evident that due to the converging character of the Y-shaped channel 21, the greater the upward force on the slider tending to override the top stops, the more said top stops will wedge against each other and the endmost fastener element to maintain said top stops in parallel relationship perpendicular to the center line of the zipper.

It will be observed that my improved construction and arrangement of the top stops permits entry into the slider well below the slider neck so that there will be no twisting of the beaded edges of the tapes and, therefore, no twisting or wrinkling of the stringers out of their natural flat position outside the slider. This permits further enhancement of appearance by cutting the tapes 11 and 12 in line with, or even slightly below, the top of the slider neck, and preferably, the tapes are cut at an angle as indicated at 35 along their inner edges to avoid interference with the slider. There still will be left enough of the tape and cord above the stops for security means due to the position of the stops well below the slider neck.

What I claim is:

1. A zipper fastener having a pair of stringers with spaced fastener elements, a complementary pair of structurally similar top stops attached to said stringers in opposed offset relation each of which is spaced from the topmost fastener element on its stringer approximately half the width of the stop, each stop consisting of a generally U-shaped member clamped around the stringer edges and being of generally triangular cross-section to provide upper and lower sloping surfaces extending from the apex of the cross-section toward the stringer edge, and a slider having a front wing, a back wing, and a connecting neck defining a Y-shaped channel, said stops being so dimensioned in length and thickness that they may pass freely into the slider channel and also in width so that when the slider is moved to its top limit position they may enter said channel to a depth where both stops are well below the slider neck with the sloping surfaces of one stop abut-

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ting the endmost fastener element and the lower sloping surface of the stop on the opposing stringer.

2. A zipper fastener as defined in claim 1 wherein the spacing of each stop from the topmost fastener element on its stringer is approximately the same as the spacing between adjacent individual fastener elements.

3. A zipper fastener having a pair of stringers with spaced fastener elements, a complementary pair of structurally similar top stops attached to said stringers in opposed offset relation each of which is spaced from the topmost fastener element on its stringer approximately half the width of the stop, each stop consisting of a generally U-shaped member clamped around the stringer edge and being of generally triangular cross-section to provide upper and lower sloping surfaces extending from the apex of the cross-section toward the stringer edge, and a slider having a front wing, a back wing and a connecting neck defining a Y-shaped channel, said stops being so dimensioned that they may enter said channel to a depth where both stops are well below the slider neck, with the sloping surfaces of one stop abutting the endmost fastener element and the lower sloping surface of the stop on the opposing stringer, the length of the stop members in relation to

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the width of the slider channel being such that when the slider is moved to its top limit position, the sloping surface of the lower stop will wedge between the endmost fastener element and the upper stop on the opposite stringer, with the stops being in substantially perpendicular relation to the center line of the zipper whereby the end portions of the stringers will not be twisted out of their natural flat position by the stops.

4. A zipper fastener as defined in claim 3 wherein the stringers terminate sufficiently close to said stop that they do not project beyond the slider neck when the fastener is fully closed.

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