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SLIDE FASTENER TOP STOP

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FIG.1.

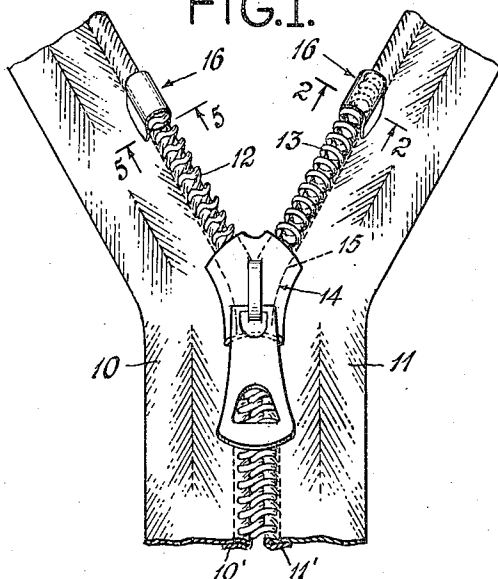


FIG.2.

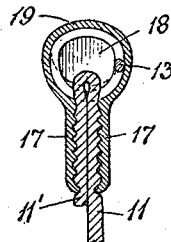


FIG.3.

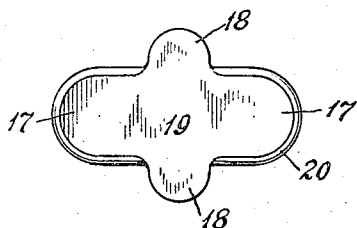


FIG.4.

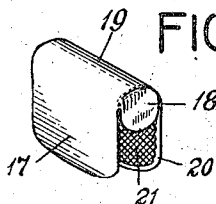
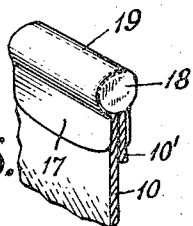


FIG.5.



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SLIDE FASTENER TOP STOP

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4 Claims. (Cl. 24—205.11)

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This invention relates to separable fasteners of the slide operated type and more particularly to top stops for fasteners in which the fastener elements are constituted of a pair of spiral springs whose coils are adapted to interlock with one another to close the fastener.

The principal object of the invention is to provide for fasteners of the indicated type, an improved top stop which may be manufactured quickly and economically and which when mounted on the fastener will cooperate with the coils of the fastener elements to reinforce them, thereby obviating the necessity of any additional reinforcing means.

A further object of the invention is to provide for fasteners of the indicated type, an improved top stop which will enable the slider to completely close the fastener and thereby conceal such top from view and which is so formed as to facilitate such complete closing of the slider.

Other objects and advantages of the top stop of this invention, as well as the novel features of construction thereof, will become apparent after a perusal of the following description when read in connection with the accompanying drawings in which Fig. 1 is a plan view of the upper portion of a fastener of the indicated type having my improved top stop; Fig. 2 is an enlarged sectional view taken along the line 2—2 of Fig. 1; Fig. 3 is a plan view of the blank, from which the top stop is made; Fig. 4 is a perspective view showing the top stop prior to its attachment to the fastener and Fig. 5 is a sectional view taken along the line 5—5 of Fig. 1.

In the drawings, the reference numerals 10 and 11 indicate the two flexible stringers of the fastener to the opposed edges of which are attached the spiral spring fastener elements 12 and 13. The stringers 10 and 11 are made of fabric tape and these tapes are folded along their opposed edges to provide the longitudinally extending fold portions 10' and 11' (note Figs. 5 and 2, respectively) along the rear of the fastener. The fastener elements 12 and 13 are attached to the opposed folded edge portions of the tapes and may be of any suitable spiral configuration. In the form of such elements illustrated, the fastener element 12 is a hooked spiral wire formed to provide a series of wave-like formations or hooks which are adapted to interlock with the coils of fastener element 13, the latter of which are of plain spiral shape. The interlocking of the fastener elements 12 and 13 is controlled by a slider 14 which is slidably mounted on such elements. The slider 14 is formed to provide the usual Y-shaped channel 15, whereby when the slider is operated upwardly, as viewed in Fig. 1 of the drawings, the coils of the fastener elements are progressively interlocked to close the fastener, while when the slider 14 is moved

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in the opposite direction or downwardly, the coils of such elements will be progressively disengaged to open the fastener.

At the upper ends of the stringers 10 and 11 are attached the top stop members which are indicated generally, by the reference numerals 16, 16. Each top stop member 16 is composed of an integral piece of sheet metal which in the blank form, as shown in Fig. 3 of the drawings, includes two portions 17, 17 from which are formed the sides of the stop, two portions 18, 18 from which are formed the ends of the stop, and a central body portion 19. The blank is shaped so that the outer edges of each of the side portions 17, 17 are turned inwardly to provide a rounded surface along such edges and to provide an inwardly extending substantially U-shaped edge 20 by means of which the stop is securely clamped to the edge of the stringer tapes. In other words, the two U-shaped edges 20, 20 formed on the side portions 17, 17 of the stop, form clamping jaws which grip the folded tape in the manner shown in Figs. 2 and 5 of the drawings; such grip being continuous and uninterrupted along the entire peripheral edge portions of the side portions 17, 17 which are in engagement with the tape. In order to increase the gripping action of the side portions 17, 17, the interior surfaces thereof may be provided with corrugations 21, or otherwise knurled or roughened. In order to prepare the blank for application to the fastener, it is brought to the shape shown in Fig. 4 of the drawings by bending the two side portions 17, 17 to bring them into substantially parallel relation, by bending the central body portion 19 to a convex shape with a curvature substantially conforming to the curvature of the coils of the locking elements, and by bending downwardly the end portions 18, 18. The blank is now in a form in which it may readily be inserted over a plurality of the coils of a fastener element. Preferably the length of the body portion is such that the stop is enabled to contain four coils of the fastener between the end portions 18, 18.

When the thus formed top stop 16 is to be placed on the stringer of a fastener, it is inserted over the last four coils of the fastener element thereof, so that such coils are contained within the body portion 19 and between the end portions 18, 18 of such stop and the side portions 17, 17 thereof. The stop 16 is then secured in position on the enclosed coils of the fastener by bending the upper or outer ends of the side portions 17, 17 about such coils, by clamping the lower or inner ends of such side portions to the doubled thickness of material provided along the fastener edge of the tape and by bending the end portions 18, 18 inwardly and downwardly against the end coils enclosed by the stop member (note

Fig. 5). It will thus be seen that the body portion 19, the outer ends of the side portions 17, 17 and the end portions 18, 18 of such stop member will be formed into a cylindrically-shaped container which wholly encloses the upper coils of the fastener and whose inner surfaces are in tight engagement with the peripheries of such coils; the exterior diameter of such container being substantially the same as the outside diameter of the remaining coils of the fastener. As a result of the reduction of the diameter of the coils contained within the stop member, such portions of the fastener element will be expanded longitudinally to bring the end coils thereof snugly against the end portions 18, 18 of the stop member. It will also be noted that the inner ends of the side portions 17, 17 which are clamped to the doubled thickness of the tape, will, by reason of their clamping action, firmly secure the stop member to the tape. The member therefore will be affixed to the stringer by two locking actions, namely, the locking of the body of such member on the coils of the fastener element and the clamping action of the side portions 17, 17 on the tape. Thus, the stop member is firmly and permanently secured in position on the stringer against forces tending to pull it off the stringer and against forces tending to shift it on the tape. This locking of the stop member on to the stringer is made more secure by the fact that the portions of the U-shaped edges 20 in the outer ends of the side portions 17, 17 which have been bent around the fastener coils, form additional end stops to confine such coils within the stop member. This construction also rigidifies the upper ends of the fastener elements, thus making it unnecessary to provide additional reinforcing means at the ends of such elements. By reason of the dimensions of the container portion of such stop member, the fact that the clamping ends of the side portions 17, 17 are substantially embedded in the two layers of the tape and the fact that smooth, rounded or beveled surfaces are provided along the exterior edges of such member, it will not catch on articles while in use and will readily enter the upper ends of the arms of the Y-shaped channel in the slider, thereby permitting the slider to be operated so as to cause all of the coils on the fastener members to be interlocked. This result also improves the appearance of the fastener in its closed condition.

While I have herein disclosed a preferred form of my invention, it will be evident to those skilled in the art that modifications may be made therein, without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A slide fastener stringer comprising a flexible tape, fastener means mounted on a longitudinal edge of said tape and consisting of a spirally-coiled wire, and a stop member at the upper end of said fastener means for limiting the movement of a slider on the stringer, said stop member having a central body portion and two side portions, said body portion and the upper ends of said side portions being bent about a plurality of the coils of said spiral wire and forming a cylindrically-shaped housing tightly enclosing such coils, the lower ends of said side portions being disposed in substantially parallel relation and clamping the material of the tape therebetween, and said stop member having two

end portions attached to the ends of said body portion and closing the ends of such cylindrically-shaped housing.

2. A slide fastener stringer comprising a flexible tape, fastener means mounted on a longitudinal edge of said tape and consisting of a spirally-coiled wire, and a stop member at the upper end of said fastener means for limiting the movement of a slider on the stringer, said stop member having a central longitudinally extending body portion and two side portions integral with the side edges of said central portion, said side portions each having a length substantially greater than the width of said body portion and having an inturned substantially U-shaped free edge, said body portion and the upper ends of said side portions being bent about a plurality of the coils of said spiral wire and forming a cylindrically-shaped housing tightly enclosing such coils, the lower ends of said side portions being disposed in substantially parallel relation and clamping the material of the tape therebetween with the U-shaped inturned edge thereof embedded in such material, and said stop member having two end portions integrally attached to the ends of said body portion and closing the ends of such cylindrically-shaped housing.

3. A slide fastener stringer comprising a fabric tape folded along one longitudinal edge thereof to provide a folded edge portion having two thicknesses of the fabric material, fastener means mounted on the folded edge of said tape and consisting of a spirally-coiled wire, and a stop member at the upper end of said fastener means for limiting the movement of a slider on the stringer, said stop member having a central longitudinally extending body portion and two side portions integral with the side edges of said central portion, said side portions each having a length substantially greater than the width of said body portion and having an inturned substantially U-shaped free edge, said body portion and the outer ends of said side portions being bent about a plurality of the terminal coils of said spiral wire and forming a cylindrically-shaped housing tightly enclosing said coils, the inner ends of said side portions being disposed in substantially parallel relation and clamping the two thicknesses of tape material therebetween with the exterior surfaces of such inner ends substantially flush with the exterior surfaces of such folded tape material and with the U-shaped inturned edges thereof embedded in such material, and said stop member having two end portions integrally attached to the ends of said body portion and closing the ends of such cylindrically-shaped housing to entirely enclose therein the terminal coils of said fastener means.

4. A slide fastener stringer such as defined in claim 3 in which the housing formed by said body portion and said side portions has an external diameter substantially the same as the outside diameter of the coils of said fastener means, and in which the interior surface of said side portions is roughened to enhance the gripping action of such portions on the material of the tape, and in which said end portions have rounded, beveled edges and are of such length as to engage with the folded edge of said tape.

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No references cited.