

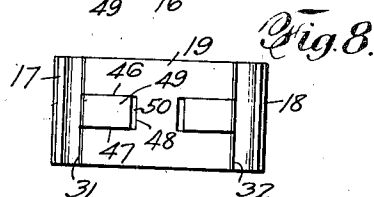
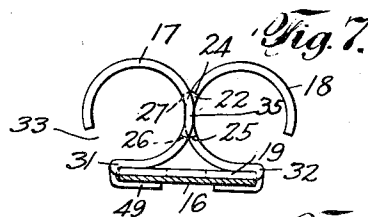
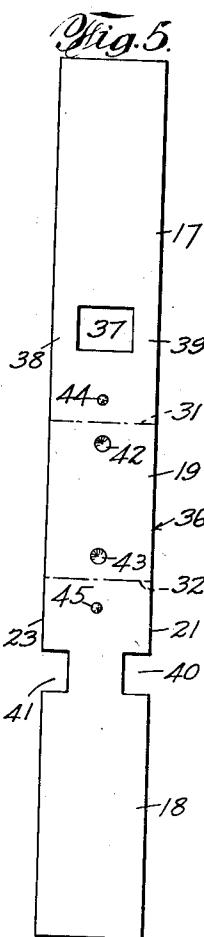
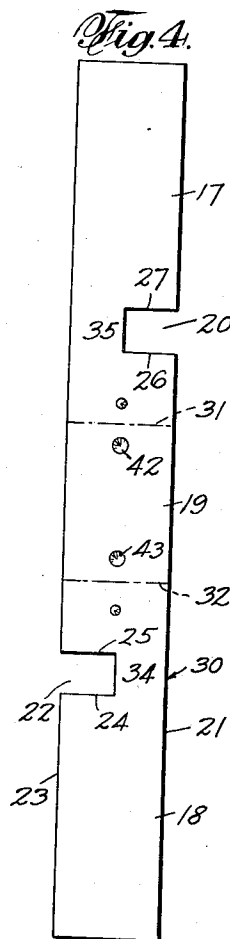
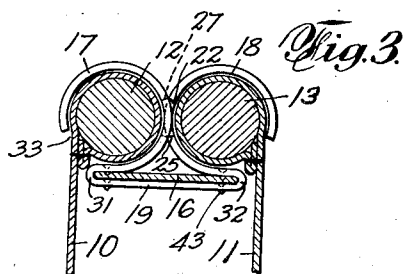
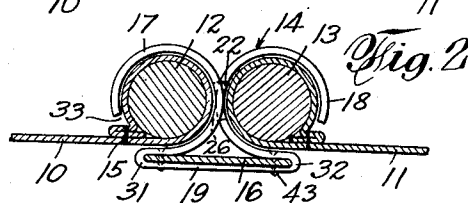
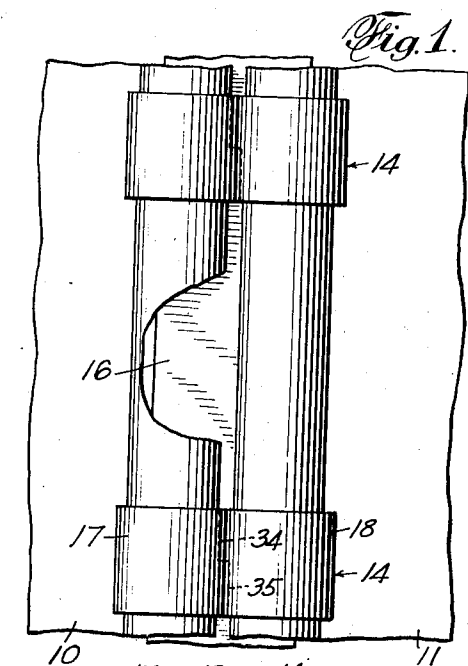
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2,192,017

SLIDE CLOSURE

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SLIDE CLOSURE

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5 Claims. (Cl. 24—207)

This invention relates to closures for elongated openings in articles such as garments, bags, pocketbooks, pouches and the like, and relates particularly to slide closures, such as are disclosed in my prior patent, No. 2,091,835, dated August 31, 1937, which may be separately manufactured and later suitably secured as by stitching to the edges of the opening in the article to form the completed closure.

While the disclosure disclosed in said prior patent is efficient, I have found that the two contacting thicknesses of the material of the fastener element there shown and arranged between the beaded edges of the closure, tend to keep said edges slightly apart at the points where the slide fasteners are arranged. I have therefore found it desirable to construe a fastener which reduces the effective thickness of the fastener at the adjacent bead-engaging parts thereof so that the beaded edges are brought closer together than is otherwise possible.

My invention therefore contemplates the provision of a slide fastener element wherein only a single effective thickness of fastener material is provided between the beads at the edges of the closure, though two adjacent thicknesses are provided on the element.

My invention further contemplates the provision of a slide fastener element having two adjacent cylindrical thicknesses of material, each of the thicknesses being cut away to receive the other thickness at the points of intersection of said thicknesses, whereby only a single effective thickness is provided on the fastener element and the closure edges are thereby separated by a maximum of only one thickness.

The various objects of the invention will be clear from the description which follows and from the drawing, in which,

Fig. 1 is a fragmentary top plan view of a closure to which my invention has been applied.

Fig. 2 is a vertical section of the same.

Fig. 3 is a similar section of a slightly modified form of the invention wherein the beaded closure tapes are arranged in spaced parallel relation instead of in substantially coplanar relation, as in Fig. 1.

Fig. 4 is a plan view of the blank from which the fastener element of Figs. 1, 2 and 3 is made.

Fig. 5 is a similar view of a modified form of the blank showing a different arrangement of the recesses or cut-away parts.

Fig. 6 is an enlarged view of a portion of the fastener element showing one form of the means

for securing the connecting ribbon to the element.

Fig. 7 is a front elevation of the fastener element showing a modified form of the means for securing the tape thereto.

Fig. 8 is a bottom plan view of the same.

In the practical embodiment of my invention which I have shown by way of example, my improved closure is intended to be applied to the opening of a suitable article such as a garment, bag, cosmetic pouch, pocketbook or the like, said closure being preferably preformed in advance of its attachment to the edges of the opening. As illustrated in Figs. 1 and 2, the closure tapes are adapted to be secured as by stitching to the adjacent coplanar marginal or edge portions of a garment at the opening thereof. As illustrated in Fig. 3, however, the closure tapes are intended to be secured to a pair of spaced parallel surfaces such as are provided at the opening of a bag or pouch. Both closures, however, are substantially identical in construction and differ only in the operative arrangement of the beaded securing tapes thereof.

As illustrated, the closure comprises the flexible, elongated and comparatively narrow tapes 10 and 11 which, when first preassembled with the respective beads 12, 13 and the fastener elements 14, may be respectively secured to the edge portions of the opening in a garment, pocketbook or the like article to complete the closure. It will be understood that the closure may be completely manufactured in advance in suitable lengths to be later cut up into the required lengths for attachment to the article. When the proper length has been cut from a continuous length, with the desired number of fastener elements 14 thereon, the tapes 10 and 11 may be readily secured to the edge of the opening in an article as by means of suitable continuous stitching.

Each of the tapes 10 and 11 is wrapped around its corresponding bead 12 or 13, and secured thereto by means of suitable stitching as 15. The fastener elements 14 are slidably mounted on the beads and are operated in the usual manner, being connected by a suitable ribbon, tape, cord, chain or the like 16 secured to said elements.

Each of the elements 14 is made, preferably, of a single length of sheet material, such as metal, and engages both of the beads 12 and 13. The element 14 comprises a pair of terminal preferably cylindrical bead-engaging portions 17 and 18 bent from the respective end parts of

the length of sheet material or blank 30. The beads 12 and 13 are slidably inserted into the respective portions 17 and 18, which project from the respective end edges of the horizontal connecting flange 19, being joined thereto by means of integral bends formed when the blank 30 is bent about the dash-dot lines 31, 32 indicating said bends.

It will be understood that the adjacent bead-engaging cylindrical portions 17 and 18 are not completely cylindrical, but that each has a side opening 33 therein for the passage of the tape, and that the adjacent inner parts would ordinarily be in contact, if unutilized, and would provide two thicknesses of material between the beads 12 and 13, thereby separating said beads by a distance equal to twice the thickness of the material of one of said portions. In order to reduce the amount by which said beads are separated, the effective thickness of the fastener element between the beads is reduced to one thickness of the material thereof instead of two, by cutting away or removing that area of each thickness which intersects or is adjacent to the otherwise contacting part of the other thickness.

As shown in Figs. 2 and 4, a recess, cut-out or opening 20 or 22 is made in each of the portions 17 and 18 at the proper areas thereof to permit part of one of the bead-engaging portions to enter or overlap the other at the recess or cut-out part. The recess 20 is, therefore, of substantially rectangular outline and extends from the side edge 21 of the blank inwardly to an extent equal to half the width of said blank. Similarly, the recess or cut-out 22 extends from the opposite side edge 23 of the blank half way through the width of said blank. The length of the cut-out between its two parallel edges 24, 25 is such that said edges 24 and 25 contact with the portion 17 along lines which are substantially continuations of the respective edges 26, 27 of the cut-out 20. Similarly, the edges 26, 27 of the cut-out 20 contact with the portion 18 along lines which are substantially continuations of the respective edges 24, 25 of the cut-out 22.

It will be seen, therefore, that the area 34 transversely adjacent the cut-out 22 in the portion 18 is reduced in width relatively to the remainder of the fastener element and enters the opening 20. Similarly, the area 35, transversely adjacent the cut-out 20 enters the cut-out 22 when the blank 30 has been bent into its final shape to form the fastener element 14 shown in Fig. 2. Since both portions 17 and 18 are made of the same piece of sheet material, the thicknesses thereof are identical so that each of the areas 34 and 35 does not project through the cut-out into which it is entered sufficiently to interfere with the beads 12 and 13 or with the sliding action of the fastener element on said beads. Nevertheless, the effective thickness of the fastener element at the overlapped parts thereof is not greater than that of the single thickness of the fastener material, as has been hereinbefore indicated. A further advantage of this construction is that by means of the cut-out areas and the consequent overlapping of the cylindrical portions at their intersections, said portions are firmly locked together against distortion.

As shown in Fig. 5, the cut-out areas may be variously arranged and variously shaped to provide the desired overlapping or transverse arrangement of the bead-engaging portions. In this form of the invention, the blank 36 is pro-

vided with an opening 37 constituting a cut-out area from which the material is completely removed, the area being desirably of the same size as that of the cut-outs 20 and 22 and of about the same length and width, namely, about half the width of the blank, but instead of being arranged to extend inwardly from one edge of the blank, said opening is arranged centrally of the blank to provide the adjacent unutilized areas 38, 39 of about one-quarter of the width of the blank. Correspondingly, the cut-out 40 to receive the area 39, extends from the side edge 21 across the width of the blank for about one-quarter of said width. The cut-out 41 receiving the area 38 similarly extends from the opposite edge 23.

It will be noted that in either of the forms of the cut-outs above described, the distance between the axes of the cylindrical portions 17 and 18 is less than the diameter of the outermost cylindrical surfaces of said portions, being less than said diameter by an amount equal to the thickness of the material of the fastener element. Consequently, the beads are separated only by a maximum amount equal to said thickness and such separation occurs only at the points where the fastener elements are located along the beads.

Cooperating means are provided on the bases of the bead-engaging portions and on the connecting flange 19 thereof for securing the ribbon 16 to the fastener element. As best shown in Figs. 4, 5 and 6, said means comprises the spaced recesses as 42, 43 made in the upper surface of the flange by depressing the material thereof preferably into conical form and along circular areas. Corresponding preferably conical projections as 44, 45 are made respectively in the portions 17 and 18 at the same distance from the bends 31, 32 as are the recesses 42, 43, but in the other direction. It will be seen that when the blanks 30 and 36 are bent to form the fastener element, after the ribbon has been positioned at right angles to the blank and on the flange 19, the projection 44 is pressed into the recess 42 carrying part of the ribbon 16 with it to secure the ribbon to the element. Similarly, the projection 45 is pressed with a part of the ribbon into the recess 43.

As shown in Figs. 7 and 8, the ribbon may be otherwise held to the fastener element. In this form of the fastening means, part of the flange 19 is removed from the remainder of the flange and from between the parallel cuts 46, 47 and the end cut 48 to provide a lug 49 first bent into parallel spaced relation to the remainder of the flange 19 and then pressed toward said flange to press a part of the ribbon into the resulting opening 50 and thereby to hold the ribbon to the element.

It will be seen that I have provided an efficient fastener element permitting a minimum spacing of the closure beads engaged by the element in a simple and economical manner by the provision of properly arranged reduced areas on the element, and that said element is well designed to carry out the purposes of the invention.

While I have shown and described certain specific embodiments of my invention, I do not wish to be understood as limiting myself thereto, but intend to claim the invention as broadly as may be permitted by the state of the prior art and the scope of the appended claims.

I claim:

1. A one-piece slide fastener element having a

pair of adjacent cylindrical bead-engaging portions, each of said portions being cut away along an area adjacent to the nearest part of the other portion, said cut away area receiving said nearest part to provide a single thickness of material at the adjacent parts of said portions, and a ribbon-holding flange connecting said portions.

2. A one-piece sheet-metal slide fastener element comprising a flange, ribbon-holding means on and forming part of the flange, a pair of adjacent closure-bead-engaging portions each of a single width and thickness of material outstanding from the flange and each having an opening therein extending from a side edge thereof half-way across the width of the element toward the other side edge thereof to leave an unmutilated area on said portion transversely adjacent the opening and of half the width of the element, said unmutilated area of each of the portions entering the opening of the other portion to overlap said portions.

3. A one-piece sheet-metal slide fastener element including a pair of overlapped cylindrical portions, said portions having cut-outs extending across half the width of the element and leaving a transversely adjacent unmutilated area at the other half of the width of the element, the unmutilated area of one portion entering the cut-out of the other portion.

4. A one-piece slide fastener element of sheet material including a pair of bead-engaging portions each having a cylindrical area, the cylindrical area of one portion having an opening therein of half the width of the element and arranged midway between the side edges of said portion to leave unmutilated areas on each side of said opening, and the cylindrical area of the other portion having a pair of openings therein each extending inwardly from a different side edge of the element a distance equal to one quarter of the width of the element to leave a central unmutilated area in said other portion having a width substantially equal to that of the opening in said one portion, the unmutilated areas of the respective portions being inserted into the corresponding openings of the respective portions.

5. A one-piece slide fastener element of a strip of sheet metal of uniform thickness comprising a pair of adjacent bead-engaging portions, each of said portions being cut away at an area thereof adjacent the nearest unmutilated part of the other portion, said area being of less width than that of the strip, and the cut-away area of each portion receiving therein the nearest unmutilated part of the other portion.

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