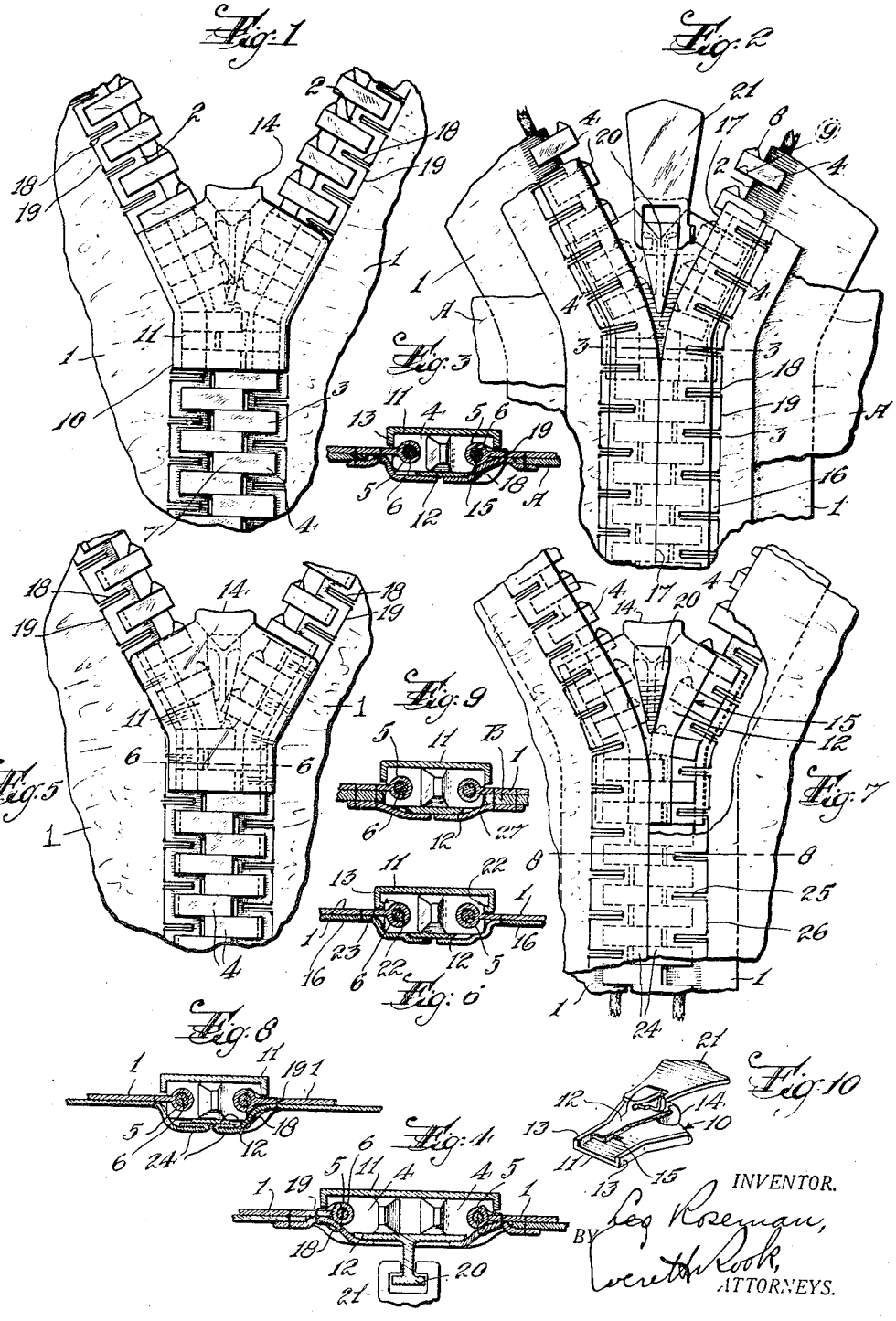
Jan. 12, 1937. L. ROSEMAN 2,067,737

SEPARABLE FASTENER

Filed March 3, 1932



Patented Jan. 12, 1937

2,067,737

UNITED STATES PATENT OFFICE

2,067,737

SEPARABLE FASTENER

Leo Roseman, Newark, N. J., assignor to Waldes Koh-I-Noor, Inc., Long Island City, N. Y., a corporation of New York

Application March 3, 1932, Serial No. 596,431

3 Claims. (Cl. 24—205)

This invention relates in general to separable fasteners of the slide-operated type including two complemental series of locking members or fastener elements each spaced longitudinally of the edge of one of two pieces of material or tapes and in substantially the planes of said pieces of material or tapes, and an actuating member slidable over said locking members to cause the locking members of one series to engage and disengage the locking members of the other series. More particularly my invention contemplates a novel and improved construction of separable fastener of this character especially but not exclusively for use on garments, pocketbocks, garment bags, and so forth, wherein the locking members and portions of the actuating member shall be covered so as to be concealed from view and prevented from contacting with adjacent articles, for example another garment.

Certain known separable fasteners of this general character have the actuating member completely overlying the locking members and hooked over or engaging the root ends of the locking members, i. e., the ends secured to the tapes, at both sides of the pieces of material or tape, and a cover flap is secured to each tape beyond the root ends of the locking members and overlies the locking members and the major portion of said actuating member. This structure has many disadvantages in that the free portions of the flaps may fold so as to expose the locking members, and become ravelled or worn by contact with the actuating member.

In other types, a cover strip is applied over each series of locking members and is arranged beneath or enclosed by the actuating member. These types are objectionable in that the cover strips become worn by sliding of the actuating members thereover, and the cover strips do not cover the actuating members at all so that they are completely exposed to view and to contact with adjacent articles or garments.

Another object of my invention is to provide a separable fastener of the general character described embodying novel and improved features of construction, having the locking members secured at one end to the corresponding piece of material and their other ends projecting beyond the edge of said piece to engage the locking members on the other piece, an actuating member slidable over the locking members, and a cover upon one side of each of said pieces of material overlying said locking members and said actuating member, with one edge approximately coincident with said projecting ends of the locking members, said covers being fastened to the corresponding pieces of material intermediate the ends of said locking members so that there shall be a minimum tendency of the free edges of the covers to fold back in such a manner as to expose the locking members.

A further object is to provide a separable fastener of this character embodying a novel and improved actuating member which has two spaced and parallel portions overlying opposite sides of the locking members and slidable thereon, one of said portions having side flanges engaging behind the ends of the locking members secured to the pieces of material, and the side edges of the other portion of the actuating member lying between the ends of the locking members, whereby the actuating member shall be light in weight and of minimum bulk, in combination with the edge of a garment or other piece of material arranged in overlying relation to the locking members and the actuating member to serve as a cover therefor and be fastened to the tape closely adjacent the edge of the garment and between and closely adjacent the locking members, so that there shall be a minimum tendency for the free edges of the garment to flap or fold backwardly, and the edges of the garment shall not be disturbed, rubbed or worn by manipulation of the actuating member.

Other objects are to provide such a separable fastener including a cover to overlie the locking members and the second-mentioned portion of said actuating member upon one side of each of said pieces of material with one edge approximately coincident with the projecting end of said locking members, and stitching passing through said cover inwardly of said edge thereof and through the corresponding piece of material inwardly of the side edges of the second-mentioned portion of the actuating member; to provide a separable fastener of the general character described wherein the ends of the locking members that are secured to the pieces of material have undercut grooves, and the flanges on the first-mentioned portion of said actuating member have turned edges slidable in said grooves; and to obtain other advantages and results as will be brought out by the following description.

Referring to the accompanying drawing, in which corresponding and like parts are designated throughout the several views by the same reference characters,

Figure 1 is a plan view of a separable fastener embodying my invention;

Figure 2 is a plan view of the opposite side of the separable fastener shown in Figure 1;

Figure 3 is a transverse sectional view, on the line 3—3 of Figure 2;

Figure 4 is a similar view, on the line 4—4 of Figure 2;

Figure 5 is a plan view of a modified form of the fastener;

Figure 6 is a transverse sectional view, on the line 6—6 of Figure 5;

Figure 7 is a plan view of another modification of the fastener, viewing the same from the side having the cover for the locking members;

Figure 8 is a transverse sectional view, on the line 8—8 of Figure 7,

Figure 9 is a similar view showing a modification of the invention, and

Figure 10 is a detached perspective view of the actuating member.

Specifically describing the embodiment of the invention illustrated in Figures 1 to 3, inclusive, the fastener is shown as including two strips or base portions 1 of suitable material, for example fabric tape, which have their edges 2 in opposed relation in substantially the same plane. Along the edge 2 of each tape 1 is attached a series of locking members or fastener elements 3 to cooperate or interlock with the series of locking members or fastener elements on the other tape. Each series of locking members includes a plurality of members or fastener elements 4 arranged in spaced relation longitudinally of the corresponding edge 2 and each having one end, hereinafter called the root or attaching end, bifurcated and embracing the edge 2, as at 5. Preferably the edge 2 is reenforced to provide a longitudinal rib or protuberance 6 for ensuring a secure grip of the root ends of the locking members upon the tape. The other or interlocking ends 7 of the locking members project beyond the corresponding edges 2 and each have at one edge a protuberance 8 and at the opposite edge a correspondingly shaped socket 9. The locking members 4 of one series are arranged in alternate relation to the locking members of the other series, so that the protuberances 8 of one series of locking members may enter the sockets 9 of the other series. The construction so far described is old and well known, and no claim to novelty is made thereon.

For actuating the locking members of one series toward and from the locking members of the other series to cause engagement and disengagement of the locking members, an actuating member 10 is slidably mounted over the locking members. This actuating member includes two spaced and parallel portions 11 and 12 which overlie the locking members at opposite sides of the tapes 1 and form part of the diverging channels which serve to guide the fastener elements into and out of interlocking engagement in progressive order as the slider moves along the tapes or stringers and the single channel into which the diverging channels merge and in which the fastener elements are in interlocked condition, as clearly shown in Figure 3 of the drawing. One portion, in the present instance the portion 11, has side flanges 13 engaging the root ends of the locking members for influencing the two series of locking members toward each other. The portions 11 and 12 are connected at one end by a tie portion 14 which is located between the outer ends of the diverging channels and between which and the side flanges 13 the locking members may pass, so that the slide may actuate the two series of locking members apart from each other. The actuating member so far generally described is also old and well known.

In accordance with the invention, the portion or wing 12 of the actuating member has a flat under surface and is composed of a substantially triangularly-shaped section which forms part of the diverging channels and a substantially rectangular section of reduced width which forms part of the single channel within which the fastener elements are interlocked, the area of the triangularly-shaped section being substantially smaller than the combined area of the diverging channels between the side flanges 13 and the width of the rectangular section being substantially smaller than the width of the single channel so that the side edges 15 of the portion 12 of the actuating member lie between the ends of the locking members 4, as shown in Figures 2 and 3, and do not hook over or engage the root extremities of the locking members.

This construction of the actuating member enables the accomplishment of another object of my invention, which is to provide an improved cover for the locking members at one side of the tapes 1. As shown in Figures 2 and 3, this cover comprises strips 16 of suitable material, for example fabric, each of which is applied to one side of one tape 1 in overlying relation to the corresponding locking members and with one edge 17 disposed approximately coincident with the projecting ends of the locking members 4. This cover strip is fastened to the corresponding tape 1 closely adjacent the edge of the tape and at points intermediate the ends of the locking members so that fastening means shall be disposed as nearly as possible to the free edge of the cover strip to prevent the strip from folding backwardly in such a manner as to expose the locking members and to ensure that the edge of the cover strip shall neatly meet or contact with the edge of the cover strip on the other tape when the locking members are engaged, as shown in the lower portion of Figure 2. As shown on the drawing, this fastening means includes stitching which comprises stitches 18 disposed between each two adjacent locking members and connected by stitches 19 extending longitudinally of the tape, said stitches passing through both the cover strip and the corresponding tape close to the root ends of the locking members. The stitches 18 and 19 are preferably continuous.

The side edges 15 of the portion 12 of the actuating member lie between the switches 18 and the projecting ends of the locking members and beneath the cover strips, as shown in Figures 2 and 3. For sliding the actuating member, the portion 12 thereof may have a substantially triangular stud or projection 20 extending outwardly from the portion 12 between the edges 17 of the cover strips, and a suitable finger-piece 21 may be secured to said stud so that by gripping said finger-piece, the actuating member may be slid in either direction over the locking members. As shown in Figs. 1, 2, 5, 7 and 10, the stud 20 is located on that section of the portion or wing 12 of the actuating member which forms part of the diverging channels and within the area defined by the V-shaped spread between the edges 17 of those portions of the cover strips which overlie the wing 12. As is seen more clearly in Figs. 2 and 7, the cross-sectional area of the stud 12 is substantially smaller than the area of such V-shaped spread, the narrowest part or apex of the stud being disposed adjacently to the apex of the V-shaped spread.

With this construction, it will be observed that the cover strips 16 entirely cover the locking

members when said members are engaged, and the edges 17 of the cover strips neatly and tightly contact with each other. There is little possibility of the edge portions of the cover strips folding backwardly due to the fastening means 18, 19 being located close to said edges of the strips. Furthermore, the portion 12 of the actuating member except the stud 20 and finger-piece 21 is concealed by the cover strips. The triangular shape of the stud 20 prevents the stud from rubbing against the edges 17 of the cover strips, and the portion 12 being beneath the cover strips does not tend to wear or discolor the cover strips, as is the case with known types of fasteners where the actuating member encloses or slides over the cover strips. Also, by terminating the side edges 15 of the portion 12 of the actuating member intermediate the ends of the locking members, it is possible to stitch or otherwise fasten the cover strips close to the root ends of the locking members so that the edges A of a garment may be secured to the tapes close to the locking members.

A modification of the invention is shown in Figures 5 and 6 of the drawing, where the root ends of the locking members are provided with undercut grooves 22 and the edges of the flanges 13 have turned in portions 23 slidable in said grooves 22. This provides a more secure hold of the actuating member upon the locking members.

Another modification of the invention is shown in Figures 7 and 8 of the drawing, where the cover for the locking members is provided by the edges 24 of a garment. The edges of the garment may be secured to the tapes 1 by stitches 25 and 26 corresponding respectively to the stitches 18 and 19 hereinbefore described. This construction is particularly advantageous in that only one line of stitching is necessary for securing the garment to the tape and to form a cover strip by the edge of the garment, and the edges of the garment are brought close together so as to entirely conceal the tape and thereby avoid the difficulty of matching the tape with the garment as where the tape is interposed between the edges of the garment, as shown in Figures 1 to 3, inclusive.

Another modification of the invention is shown in Figure 9 of the drawing, where the edge of a garment B is secured between the cover strip 27 and the tape 1 by the same line of stitches corresponding to the stitches 18 and 19 of Figure 2. This enables the edge of the garment to be located against the root ends of the locking members, and the surface of the fastener and the garment are in substantially the same plane so as to avoid the formation of ridges and grooves between the edge of the garment and the root ends of the locking members, such as shown in Figure 3.

It will be observed that in all forms of the invention, the actuating member is light in weight and small, so as to provide a minimum of bulk and weight in the fastener, and the outer side of the actuating member is practically entirely covered and concealed by the cover strips. As shown, preferably the edge portions of the portion 12 of the actuating member are beveled at 28 so as to prevent raising of the cover strip from the locking members during manipulation of the actuating member, the portion 12 operating somewhat as a plow.

While I have shown and described my invention as embodied in several forms, it should be understood that this is primarily for the purpose of illustrating the principles of the invention and that the details of construction of the parts may be modified and changed by those skilled in the art without departing from the spirit or scope of the invention.

Having thus described the invention, what I claim is:

1. A fastener structure of the slide-operated type comprising two stringers, each including a base portion having a series of fastener elements attached thereto, said elements having anchoring portions secured to said base portion and locking portions projecting beyond said base portion and adapted to interlock with the locking portions of the elements in the series attached to the other stringer, a cover portion overlying said fastener elements and extending far enough towards the projecting ends of the elements so that when the series of fastener elements are in interlocked engagement with the series of fastener elements on the other stringer the outer edge of such cover portion meets with the outer edge of the cover portion on the other stringer to completely conceal the fastener elements, attaching means for positively securing that section of said cover portion covering the anchoring portions of the elements against such portions of the elements and for holding that section of the cover portion covering the locking portions of the elements in yieldable condition against such portions of the elements, an actuating member having two differently dimensioned spaced wings overlying opposite sides of said locking members and slidable thereon, an angular element between the two wings and providing divergent channels within the actuating member to cause a V-shaped spread of the fastener elements and their associated cover portions on separation of the fastener elements from each other, the larger one of said wings having side flanges engaging behind the anchoring portions of said fastener elements so that the two series of fastener elements will be moved into and out of engagement with each other upon sliding of said actuating member the smaller one of said wings being disposed between said fastener elements and those parts of the cover portions which yieldably cover the locking portions of the elements, a stud provided on said smaller wing and rising between said cover portions, said stud being located on said smaller wing within the area defined by the V-shaped spread between the edges of those parts of the cover portions overlying such wing and having a cross-sectional area, in the region defined by such spread parts of the cover portions, less than the area of such V-shaped spread, whereby the edges of the cover portions are maintained out of contact with said stud during the movement of the actuating member and a finger piece pivotally attached to said stud for moving said actuating member.

2. A fastener structure of the slide-operated type comprising two stringers, each including a base portion, a row of fastener elements attached thereto, said interlocking elements including anchoring portions secured to said base portion and interlocking portions projecting beyond said base portion, a cover portion overlying said fastener elements, attaching means for positively securing that section of said cover portion covering the anchoring portions of the elements against such portions of the elements and for holding that section of the cover portion overlying the interlocking portions of the elements in yieldable condition against such portions of the ele-

ments, an actuating member having two differently dimensioned spaced wings overlying opposite sides of said locking members and slidable thereon, an angular element between the two wings and providing divergent channels within the actuating member to cause a V-shaped spread of the fastener elements and their associated cover portions on separation of the fastener elements from each other, the larger one of said wings having side flanges engaging behind the anchoring portions of said fastener elements so that the two rows of fastener elements will be moved into and out of engagement with each other upon sliding of said actuating member and the smaller one of said wings being disposed beneath those parts of the cover portions which yieldably cover the interlocking portions of the elements and on said elements, said wing being constructed so that it overlies the interlocking portions only of the locked and unlocked elements positioned within said actuating member, a stud narrower near the interlocked fastener elements than at its other end, provided on said other wing and rising between said cover portions, said stud being located on said smaller wing within the area defined by the V-shaped spread between the edges of those parts of the cover portions overlying such wing and disposed so that its narrower end is adjacent to the apex of the V-shaped spread, the cross-sectional area of such stud, in the region defined by such spread parts of the cover portions, being less than the area of such V-shaped spread, whereby the edges of the cover portions are maintained out of contact with said stud during the movement of the actuating member and a finger piece pivotally attached to said stud for moving said actuating member.

3. A fastener structure such as set forth in claim 1, in which the attaching means comprises sewing extending as a whole longitudinally of the stringer and penetrating said base and cover portions, said sewing including stitches longitudinally of the stringer and transverse stitches between each two adjacent fastener elements penetrating the cover portions intermediate the ends of said elements.

LEO ROSEMAN.