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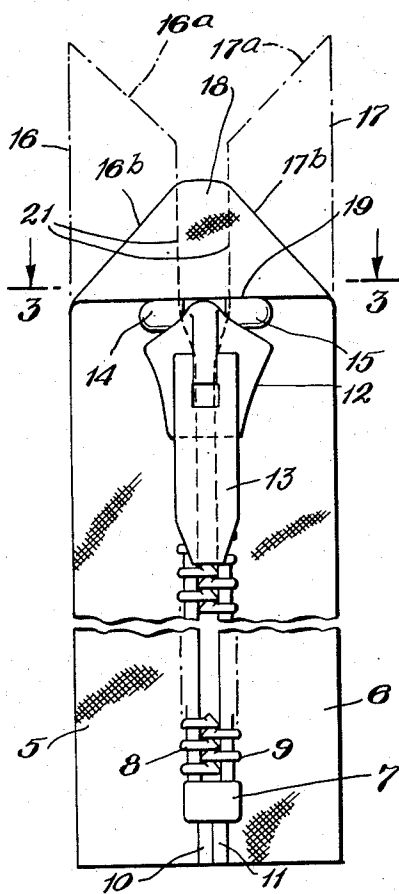
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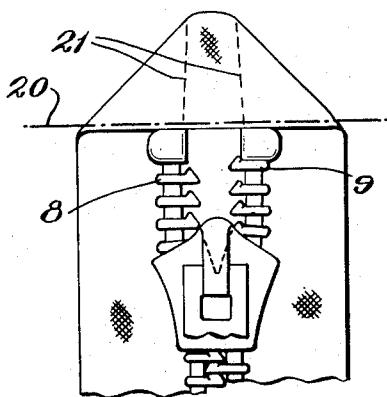
END TAPE COUPLING FOR SEPARABLE FASTENERS

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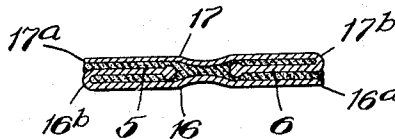
*Fig. 1.*



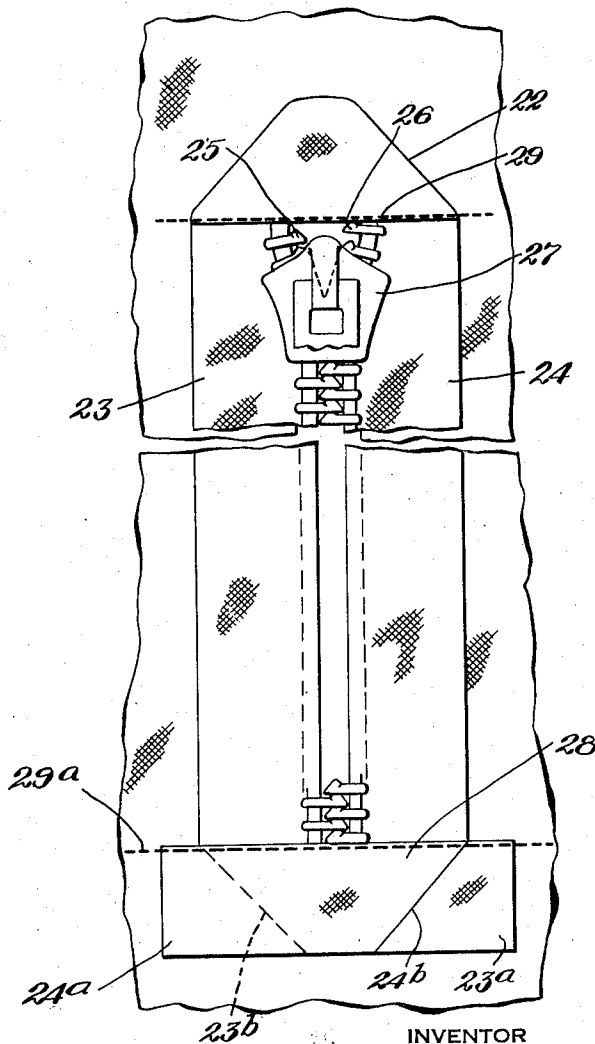
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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## UNITED STATES PATENT OFFICE

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END TAPE COUPLING FOR SEPARABLE  
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4 Claims. (Cl. 24—205)

This invention relates to separable fasteners employing stringers with coupling links spaced longitudinally of the stringers and a slider movable longitudinally of the stringers to couple and uncouple said links; and the object of the invention is to provide an end coupling for the tapes of stringers of the kind described formed by folding and overlapping extended ends of the stringer tapes adjacent the end links at one or both ends of the stringer and securing said overlapped folded tapes together to form a bridging or coupling portion which will facilitate the attachment or mounting of the stringer tapes in connection with predetermined garments or other articles of manufacture, especially in the operation of stitching the fastener to its support; a further object being to provide an end coupling or bridging portion wherein the free end of each tape is severed along the diagonal fold line of the opposed tape and wherein the overlapped and folded end portions are secured together by a suitable adhesive preferably of the type which will readily harden and which will penetrate into the interstices of the braid of the tape to form a secure adhesion between the parts, especially in the presence of pressure; a further object being to provide a stringer tape having flexible couplings at each end thereof formed from the material of the tapes to provide the couplings and end stops at each end of the links, thereby facilitating stitching of the ends of the tapes to the support or supports therefor in close proximity to the end links on the tapes and eliminating the inconvenience heretofore experienced in attaching fastener stringers of this kind to their supports and the breakage of needles caused by striking metallic parts or end stops at the stringer ends; and with these and other objects in view, the invention consists in a device of the class and for the purpose specified, which is simple in construction, efficient in use, and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a plan view diagrammatically illustrating a separable fastener with part of the construction broken away and showing the method of forming the end coupling at one end of the fastener stringers.

Fig. 2 is a view similar to Fig. 1 showing only a part of the construction, with parts in a different position.

Fig. 3 is a partial section on the line 3—3 of Fig. 1; and,

Fig. 4 is a view similar to Fig. 1 showing another form of construction.

In the formation of separable fastener stringers, it is customary to attach the coupling links or scoops to one edge of the stringer in a given length and to link projecting ends of the stringer tapes at each end of the end links thereof, which projecting ends are usually trimmed off in the attachment of the stringer or stringers to a suitable support.

It is the purpose of my invention to utilize these protruding ends to form coupling or bridging ends at one or both ends of the stringers to provide a flexible coupling or bridging section which retains the stringer ends in predetermined spaced relation to each other and provides a convenient means for attaching the fastener to its support at said end or ends.

In Figs. 1 to 3 inclusive, I have shown the invention applied to one end of a stringer, whereas in Fig. 4, the invention is applied to both ends of a stringer. In Fig. 1, 5 and 6 represent the stringer tapes which are coupled together by a suitable metallic or other coupling 7 adjacent the coupling links 8 and 9 at one end of the stringer, the links being preferably applied to enlarged or beaded edges 10 and 11 on said tapes. The coupling 7 forms an end stop for limiting the movement of a slider 12 in one direction on the stringers, the slider having a finger piece or pull 13 facilitating the operation thereof, as in other devices of this kind.

Secured to the beaded edges 10 and 11 of the tapes 5 and 6 adjacent the end links 8 and 9 at the other end of the stringer are other end stops 14 and 15 and the tapes 5 and 6 normally project as seen at 16 and 17 in dot and dash lines beyond the couplings 14 and 15. Inner adjacent surfaces of said projecting ends may be cut as seen at 16a, 17a to meet the fold line of opposed tapes, or these portions may be cut off after the folded tapes have been secured together. The projecting ends 16 and 17 of the tapes are folded on the lines 16b, 17b, and one upon the other to form a substantially triangular coupling end 18, and these overlapped folded ends are secured together by a suitable adhesive, preferably of the quick drying and cellulose type, providing a secure coupling or adhesion between said tapes, and the coupling or adhesion may be formed under pressure, and in the use of some adhesives, under heat.

In folding the projecting ends 16 and 17 one upon the other on the lines 16b, 17b, one side edge of each tape is brought into close proximity to the end stops 14 and 15 as indicated at 19 in Fig. 1 of the drawing, so as to permit the location of a line of stitching in close proximity to the edge 19 as indicated by the dot and dash line 20 in Fig. 2 of the drawing. By simply

employing the adhesive in securing the parts together, no difficulty is experienced in passing the stitches therethrough, and at the same time, the overlapped end portions of the tape will maintain their strength and rigidity without being weakened by other lines of stitchings, which would be the case if said overlapped portions were stitched together. It will be understood at this time, however, that in some instances, stitchings may be substituted for the adhesive where the question of strength is not an important factor.

By providing a coupling of the kind described, the normally free ends of a fastener stringer will be disposed with the end links in properly spaced relationship with respect to each other so as to avoid the difficulty in improper attachment of the fastener to a garment. In some instances, the coupling may be used primarily for this purpose and the coupling severed between the inner beaded edges of the stringers after the fastener has been attached to a suitable support, which requires the separation of the stringer ends where the coupling tape is employed. In this case, the tapes will be trimmed along edges substantially defined by the dotted lines 21 of Figs. 1 and 2 of the drawing, thus producing neat and finished edges. The importance of the foregoing is to facilitate bringing opposed surfaces of two supports to which the stringers are attached in proper relationship to each other when the fastener is in closed position and to prevent buckling or jamming of the links with the slider by improperly attached stringer ends.

However, the primary purpose of my invention is to provide a coupling which remains permanent, especially in the use of fasteners on supports having closed ends, such for example as on pockets, pocketbooks, various types and kinds of luggage, etc.

In Fig. 4 of the drawing, I have shown a slight modification wherein the end coupling 22 at one end of stringer tapes 23 and 24 is the same as the end coupling shown in Figs. 1 to 3 inclusive except that the end stops 14 and 15 are removed and the coupling 22 is arranged in close proximity to the end links 25 and 26 and thus forms the end stop for the slider 27 employed for coupling and uncoupling the links 25 and 26. With this construction, I also preferably remove the end stop 7 and employ another tape coupling 28 formed by folding the ends 23a and 24a of the tapes 23 and 24 one upon the other on diagonal lines 23b and 24b, the same as in folding the tape ends 16 and 17, except that the ends of the tape are not cut along the lines 16a, 17a, but are allowed to extend as clearly shown, to provide an added mounting of tapes upon the article or support to which the stringer is attached. It will be understood in this connection, however, that the extension of the strap ends 23a, 24a is not essential and both ends may be of the triangular form shown at the top of Fig. 4 of the drawing, depending entirely upon the use to which the invention is applied. For example, in attachment to a sprocket or to the opening of a tobacco pouch, the two triangular ends would be sufficient in most cases.

In overlapping and securing the tape ends together in the manner described and by the use

of an adhesive, the ends remain flexible and yet provide sufficient reinforcement to withstand the thrust of the slider, and thereby act as a stop. With this construction, the lines of stitching 29, 29a may be brought into close proximity to the end links at each end of the stringers, thus forming a neat and finished appearance and providing a more complete closure for an opening than is possible with conventional forms of devices of this kind employing the metallic or other couplings as at 7, 14 and 15 in Fig. 1 of the drawing.

Having fully described my invention, what I claim and desire to secure by Letters Patent, is:

1. An end coupling for the tapes of separable fastener stringers employing links and a slider movable longitudinally of the stringers for coupling said links, said coupling being formed from parts of the stringer tapes projecting beyond the end links thereon, said parts of the tapes at one end of the fastener being folded one upon the other and upon the adjacent portions of the tape of the opposed stringer in close proximity to the end links of the stringers, and said overlapped parts being secured together to form said coupling.

2. In stringers for separable fasteners of the character described, means for providing a flexible coupling at one end portion of the stringers adjacent end links thereon, said means comprising projecting ends on each stringer tape, said projecting ends of the tapes at one end of the stringers folded upon each other with the end of one tape extending onto the end of the opposed tape to form overlapped portions, said overlapped portions being secured together to provide a flexible coupling for at least one end of said stringers, said overlapped portions forming a substantially triangular coupling body, and the tape ends projecting laterally at opposite sides of said triangular body to form a transversely large mounting area of the fastener stringer upon a support to which it is attached.

3. An end coupling for the tapes of separable fastener stringers employing links and a slider movable longitudinally of the stringers for coupling said links, said coupling being formed from parts of the stringer tapes projecting beyond the end links thereon, said parts of the tape at one end of the fastener being folded one upon the other and upon the adjacent portions of the tape of the opposed stringer in close proximity to the end links of the stringers, said overlapped parts being secured together to form said coupling, said overlapped parts forming a triangular coupling proper of at least two-ply thickness of said tapes, and said tape ends projecting beyond said triangular coupling.

4. In stringers for separable fasteners of the character described, means forming flexible coupling and end stops at both end portions of the stringers adjacent end links thereon, said means comprising tape parts transversing the stringers adjacent the end links thereon, said parts being arranged one upon the other and portions of which are disposed upon the adjacent end portions of the tapes of opposed stringers to form coupling bodies joining said stringers, and means securing the tape parts together and to the adjacent end portions of said tapes.

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