Sept. 6, 1932. M. H. STRYKE 1,875,950

SEPARABLE FASTENING DEVICE

Filed March 26, 1932

Fig. 1.

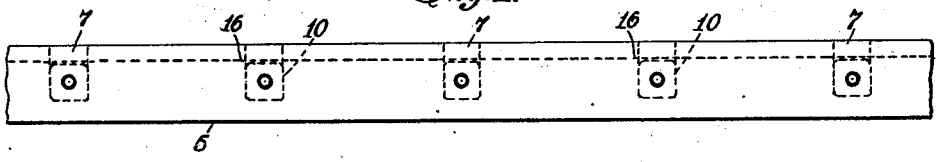


Fig. 2.

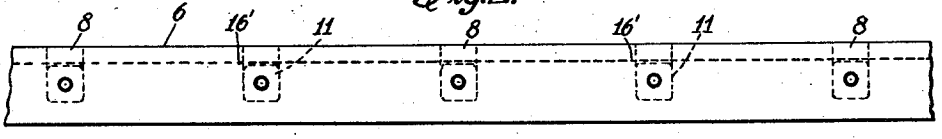


Fig. 3.

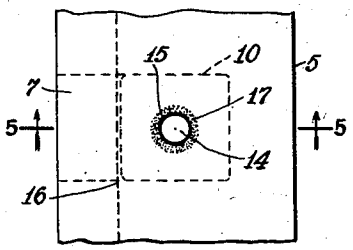


Fig. 4.

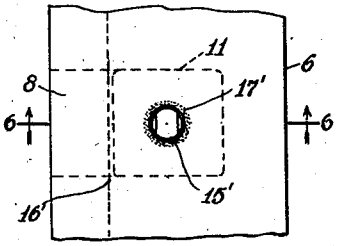


Fig. 5.

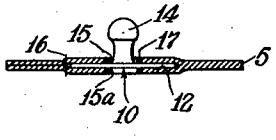
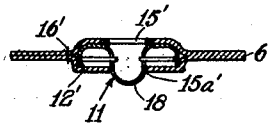


Fig. 6.



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UNITED STATES PATENT OFFICE

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SEPARABLE FASTENING DEVICE

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This invention relates to what is often called "snap tape", that is, to separable fastening devices of the type particularly adapted to be sewed on to the meeting portions of a garment that are to be detachably fastened together.

An object of the invention is to provide an improved fastening device of the character mentioned which lends itself to ready manufacture, particularly in so far as ease of proper assembling of the elements entering into the device is concerned, and which possesses certain other advantages as will hereinafter more clearly appear from the following description taken in connection with the accompanying drawing, in which—

Fig. 1 is a fragmental plan view of a tape of fabric, in which are incorporated a plurality of similar elements of a plurality of standard separable fasteners;

Fig. 2 is a view similar to Fig. 1, showing another tape of fabric in which are incorporated a plurality of fastener elements which are complementary to the fastener elements of Fig. 1;

Fig. 3 is an enlarged fragmental view, showing a portion of the tape of fabric of Fig. 1 in association with one of the fastener elements of that tape;

Fig. 4 is an enlarged fragmental view, showing a portion of the tape of fabric of Fig. 2 in association with one of the fastener elements of that tape;

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 3, the fastener element being shown in elevation, and

Fig 6 is a transverse sectional view taken on line 6—6 of Fig. 4, the fastener element being shown in section.

The improved separable fastening device embodying this invention preferably includes a pair of tapes of fabric 5 and 6, each of which is woven—according to well-known methods in the weaving art—to provide a plurality of pockets 7 and 8, access to which may be had from one edge of the respective tapes, as shown most clearly in Figs. 5 and 6, and each of which extends transversely of the tape in which it is formed to within a definite distance from the opposite edge of that tape. These pockets are equally spaced from one another in both tapes, and are of such dimensions, particularly in so far as the space afforded between their respective ends is concerned, that they snugly receive a series of snap-fastening elements 10 and 11, respectively, the fastening elements 10 and 11 of each pair of such being complementary and constituting a standard separable fastener. Of course, however, tape having pockets which are open at both ends might be used.

Referring to the fastener elements 10, each includes a base 12 which engages the ends and bottom of any one of the pockets 7 when it is introduced into the same, the base being provided with a protruding portion 14. The protruding portions 14 of the fastener elements 10 project through apertures 15 formed, as by a piercing operation, in a side wall of the respective pockets 7, incident to which piercing operation a similar aperture 15*a* may be formed in the adjacent side wall of the respective pockets. As to the aperture 15*a*, it is without utility; but, on the other hand, it is without objection, inasmuch as it will lie next to that part of the garment to which the tape 5 is sewed and will be concealed. As to the location of the aperture 15, it will be noted that they are so positioned, with respect to the ends and the bottom of the respective pockets 7 and with respect to the base portion 12 of the respective fastener elements 10, that they align with and, therefore, readily receive the protruding portions 14 of the fastener elements when such elements are introduced into the pockets far enough to engage the respective bottoms thereof. Because of the dimensional relation of the base 12 of the respective fastener elements 10 to the respective pockets 7, and because of the fact that the protruding portions 14 of these fastener elements project through the apertures 15, it follows that the fastener elements 10 so fit these pockets that they are held against shifting longitudinally of the tape 5 in either direction and transversely of such tape in a direction away from the entrance end of the pockets 7. In order positively to retain the fastener elements 10 against shifting transversely in an opposite direction, that is in a

direction toward the entrance end of the respective pockets, the side walls of such pockets 7 are preferably secured together as by paste or stitching adjacent the entrance ends thereof and immediately adjacent the base portion 12 of the respective fastening elements, such stitching being indicated as 16 and shown as extending throughout the length of the tape, although of course stitching limited in length to the respective pockets may be employed if desired.

From Figs. 2, 4 and 6, it will be evident that the fastener elements 11 each include a base portion 12′ and a socket portion 18, the entrances to which socket portions register a size substantially equal to the entrance to with apertures 15′, which are formed, respectively, in one wall of each pocket 8 of the tape 6 by a piercing operation, as described in connection with the apertures 15 in the tape 5 of Figs. 1, 3 and 5. The apertures 15′, are of a size substantially equal to the entrance to the socket portions of the fastener elements 11, so that the fastener elements 11 are substantially covered and concealed on that side of the tape, by the apertured walls of the pockets. Thus a neat and attractive appearance of the tape 6, with its associated fastener elements, is presented. The closed ends of the socket portions 18 form projections which extend rearwardly of the base portion 12′ and through the apertures 15*a*′ in the tape, as shown in Fig. 6. These projections thus serve to retain the fastener elements 11 against displacement. Also, it is to be noted that, since the apertures 15*a*′ accommodate the projections, the overall thickness of the tape 6 in the vicinities of the pockets 8 may be kept at a minimum, inasmuch as the side walls of the respective pockets 8 in which the apertures 15*a*′ are formed is not required to overlie the projection of the socket portions 18. From Figs. 4 and 6, it will be noted that the fastener elements 11 are held, (as are the fastener elements 10 in the tape 5) against shifting longitudinally of the tape 6 in either direction and transversely of such tape in a direction away from the entrance end of the pockets 8. In order positively to retain the fastener elements 11 against shifting transversely toward the entrance ends of the respective pockets 8, the side walls of such pockets are preferably secured together adjacent the base portion 12′ of the respective fastener elements, as by glue or the stitching indicated at 16′. The necessity for maintaining the fastener elements 11 against displacement will be appreciated from the fact that the aperture 15′ must be maintained at all times in registration with the entrance to the socket portion 18 of the fastener element so as to permit the reception of the protruding portion 14 of the complementary fastener element 10.

When the apertures 15 and 15′ are formed, as by a piercing operation, certain of the threads of the tape are, of necessity, broken or severed, thereby rendering the tape likely to ravel at or in the vicinity of the apertures. In order to obviate such raveling, a suitable sizing—such as shellac—is applied to the tape at and in the vicinity of the apertures, preferably at the time the piercing operation is carried out, such sizing being indicated by the numeral 17 and 17′. Although unnecessary, a similar sizing operation may be likewise carried out with respect to the apertures 15*a* and 15*a*′.

From the foregoing, it will be understood that the "snap tape" herein shown and described possesses the important advantage, among others, of being easily and economically manufactured. When the fastener elements are introduced into the pockets, they are easily so positioned that the protruding portions 14 of the fastener elements 10 enter the apertures 15; and so that the projections of the fastener elements 11 enter the apertures 15*a*′. Thus a great saving in time is effected in the assembling operations, over the time that would be required were it necessary to exercise any great amount of care in properly inserting and positioning the fastener elements preparatory to permanently securing them in the respective pockets. Furthermore, when it is thought advisable to positively secure the fastener elements in place by closing the openings in the pockets as above described, the fastener elements are restrained from movement transversely of the tape during the pasting or stitching operation.

What is claimed is:

1. In a separable fastening device, a tape having therein a plurality of pockets extending transversely thereof, both of the opposite walls of each pocket being provided with aligned apertures, a fastener element of a separable fastener arranged within each of said pockets, each of said fastener elements having a socket and opposite that a projection, the entrance of each of said sockets being in registration with the aperture in one wall of the respective pocket and each of said projections extending through the aperture in the other wall of the respective pocket.

2. In a separable fastening device, a tape having therein a plurality of pockets extending transversely thereof, both of the opposite walls of each pocket being provided with aligned apertures, a fastener element of a separable fastener arranged within each of said pockets, each of said fastener elements having a socket and opposite that a projection, the entrance of each of said sockets being in registration with the apparatus in one wall of the respective pocket and each of said projections extending through the aperture in the other wall of the respective pocket, and means for positively securing said fastener

elements against displacement in said pockets transversely of the tape.

3. In a separable fastening device, a tape having therein a plurality of pockets extending transversely thereof, both of the opposite walls of each pocket being provided with aligned apertures, a fastener element of a separable fastener arranged within each of said pockets, each of said fastener elements having a socket and opposite that a projection, the entrance of each of said sockets being in registration with the aperture in one wall of the respective pocket and each of said projections extending through the aperture in the other wall of the respective pocket, the opposite walls of each pocket being stitched together, whereby said pockets are closed and said fastener elements are retained against displacement in said pockets transversely of the tape.

4. In a separable fastening device, a tape having therein a plurality of pockets extending transversely thereof, both of the opposite walls of each pocket being provided with aligned apertures, a fastener element of a separable fastener arranged within each of said pockets, each of said fastener elements having a socket and opposite that a projection, the entrance of each of said sockets being in registration with the aperture in one wall of the respective pocket and each of said projections extending through the aperture in the other wall of the respective pocket, the opposite walls of each pocket being pasted together, whereby said pockets are closed and said fastener elements are retained against displacement in said pockets transversely of the tape.

5. In a separable fastening device, a tape having therein a plurality of pockets extending transversely thereof, both of the opposite walls of each pocket being provided with aligned apertures, a fastener element of a separable fastener arranged within each of said pockets, each of said fastener elements having a socket and opposite that a projection, the entrance of each of said sockets being in registration with the aperture in one wall of the respective pocket and each of said projections extending through the aperture in the other wall of the respective pocket, each of said apertures being of a size substantially equal to the entrance to the respective socket so that the fastener elements are substantially covered and concealed by the apertured walls of the respective pockets.

6. A separable fastening device comprising a pair of tapes each having therein a plurality of transversely extending pockets, both walls of which are provided with apertures, complementary snap-fastener elements arranged one kind within the pockets of one tape and the other kind within the pockets of the other tape, one kind of fastener element having a protruding portion extending through one of the pocket apertures and the other kind of fastener element having on one side a socket adapted to receive the protruding portion of the complementary fastener element and on its other side having a projection adapted to enter the adjacent pocket aperture, and means for positively retaining said fastener elements against displacement in said pockets.

7. A separable fastening device comprising a pair of tapes each having a plurality of woven pockets therein extending from that edge transversely of the tape to within a definite distance from the opposite edge thereof, both walls of said pockets being provided with apertures, complementary fastener elements all having projections arranged one kind within the pockets of one tape and the other kind within the pockets of the other tape, said complementary fastener elements having base portions of such lateral proportions as to engage the bottoms and ends of the pockets whereby such elements are retained against shifting longitudinally of the tapes and transversely thereof in one direction, the side walls of the pockets being secured together immediately adjacent the base portions of the fastening elements on the sides toward the pocket openings whereby such elements are positively held against displacement transversely of the tapes in a direction toward the pocket openings.

In testimony whereof, I have signed this specification.

MARK H. STRYKE.