The present invention relates to a cloth article and the process for making the same, and more particularly to a cloth article comprising a concealed slide fastener which closely simulates a seam when the slide fastener is in closed disposition and the process for sewing concealed slide fasteners.

In articles of wearing apparel where fashion is important, it has long been desirable to conceal slide fasteners, so that the same are not revealed when the garment is worn with the slide fastener in its closed disposition. For example, in women's blouses, dresses, skirts, and the like, the fly of men's trousers, the appearance of the exposed metal fastener elements is both unsightly and undesirable. In fact, it is almost universal practice to conceal the slide fastener used as a closure by a cloth flap. In particular, it has long been desirable to provide garments, such as dresses, with concealed slide fasteners which in their closed disposition closely simulate a seam, and which may be collinear with a true seam in the garment and appear to be a portion of such seam when the slide fastener is in its closed disposition.

This invention has as an object the provision of a cloth article employing a concealed slide fastener. Shown in United States Letters Patent 2,528,302 issued to Ambrose J. McNamara wherein is another object the provision of a cloth article employing a concealed slide fastener in which the appearance of a genuine seam is closely simulated when the concealed slide fastener is in its closed disposition.

This invention has as yet another object the provision of a cloth article employing a concealed slide fastener which substantially conceals the pull tab of the slide fastener.

This invention has as still another object the provision of a process for sewing concealed slide fasteners to cloth.

Other objects will appear hereinafter.

By "Cloth Article" as used herein is meant to include all varieties of garments made from cloth including blouses, shirts, dresses, skirts, trousers, jackets, coats, robes, etc. and the numerous other articles made from cloth or fabrics in which slide fasteners are employed, such as blankets, tents, slip covers, article covers, fabric luggage, etc.

For the purpose of illustrating the invention there is shown in the drawings forms which are presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIGURE 1 is a view demonstrating the appearance of a concealed slide fastener when the same is in its closed disposition attached to cloth in accordance with the present invention, said view demonstrating the seam-like appearance of such slide fastener.

FIGURE 2 is a sectional view taken on line 2—2 of FIGURE 1, showing one embodiment of the present invention.

FIGURE 3 is a fragmentary perspective view of the embodiment of the present invention shown in FIGURE 2 revealing the manner in which a tape bearing slide fastener elements is stitched to cloth in accordance with the process of the present invention.

FIGURE 4 is a view similar to FIGURE 3 showing the other side of the cloth article.

FIGURE 5 is a sectional view similar to FIGURE 2 showing another embodiment of the present invention.

FIGURE 6 is a sectional view taken on line 6—6 of FIGURE 1.

Referring to the drawings and initially to FIGURES 1 and 2 the cloth article shown therein is designated generally as 10. Such cloth article comprises the cloth panels 12 and 14 which may be formed of any conventional fabric including natural, synthetic, and combination natural and synthetic fabrics. Each of the cloth panels 12 and 14 comprises a front ply 12a and 14a respectively and a rear ply 12b and 14b respectively. As seen from FIGURE 1 and FIGURE 2 the rear plies 12b and 14b of each of the panels 12 and 14 need be of relatively small size, sufficient to provide a basis for the securing of theslide fastener 16. Front ply 12c and rear ply 12d of panel 12 and front ply 14c and rear ply 14d of panel 14 are defined by fold lines 18 and 20 respectively, the two fold lines 18 and 20 being parallel to each other and closely adjacent when the slide fastener 16 is closed.

Slide fastener 16 is disposed in a slit or gap 22 intermediate seam 24 and seam 26, such as the gap at the side of a woman's dress, with the portions of fold lines 18 and 20 along the gap 22 defining the lips of the gap 22.

The slide fastener 16 comprises a pair of element-supporting tapes 28 and 30 on which the elements 32 and slider 34 are carried. The slider, tapes, and elements of the slide fastener of the present invention may be substantially of conventional construction such as that shown in United States Letters Patent 2,738,560 issued March 20, 1956 to Jacques Hug entitled "Concealed Slide-Fasteners."

Preferably, unlike the slider of the Hug patent, the slider 34 of the slide fastener 16 of the present invention should be heavily lacquered on the surfaces juxtaposed to the fold lines 18 and 20 or should be formed of a low friction material on such surfaces to minimize the possibility of abrasion to the fold lines 18 and 20. The tapes 28 and 30 are provided with a Welt 36 at their innermost free ends onto which the slider fastener elements 32 are frictionally secured.

A flexible cord 38, which in the embodiment of the present invention shown in FIGURE 2 is circular in cross-section, is between front ply 12a and rear ply 12b of panel 12 and against the fold line 18, and extends the full length of gap 22. A second cord 40 is similarly between front ply 14a and rear ply 14b of panel 14 and against fold line 20, and extends the full length of gap 22. Cords 38 and 40 may be formed of any flexible natural and/or synthetic fiber or fibers, and are preferably of the order of about fifteen to forty thousandths of an inch in diameter.

The tapes 28 and 30 and cords 38 and 40 are joined to their respective rear plies 12b and 14b of panels 12 and 14 by respective lines of stitching 42 and 44 which lines of stitching 42 and 44 are parallel to each other when the elements 32 of the slide fastener 16 are disposed in their closed disposition. As seen in FIGURE 1 the lines of stitching 42 and 44 extend the full length of the respective tapes 28 and 30. Thus, line of stitching 42 joins the tape 28 and cord 38 to the rear ply 12b of panel 12, and line of stitching 44 joins the tape 30 and the cord 40 to the rear ply 14b of panel 14. The lines of stitching 42 and 44 should be as close to the fastener elements 32 as is feasible. As shown in FIGURE 2 and as indicated in FIGURE 1 when the slide fastener elements 32 in closed disposition the lines of stitching 42 and 44 are concealed from the front by the front plies 12a and 14a of panels 12 and 14 and are obscured beneath the closed slide fastener elements 32. In order to observe the lines
of stitching 42 and 44 on viewing the cloth article 10 from the rear, it is necessary to open the slide fastener 16 and pivot the slide fastener elements 32 upwardly.

With the slide fastener 16 in its closed disposition, the cords 38 and 40 urge the portions of the fold lines 18 and 20 which form the lips of the gap 22 together so that the gap 22 resembles a seam when viewed from the front as shown in FIGURE 1. The cords 38 and 40 pull up the lips on the front faces of the front plies 12a and 14a to facilitate concealment of the pull tab 46 of the slider 34, so that the only noticeable indication of the presence of a slide fastener is the narrow top surface of the pull tab 46. The pull tab 46 and slider 34 is preferably the type of pull tab and slider shown by my application Serial No. 771,494 filed November 3, 1958 entitled, "Concealed Slide Fastener and Cloth Article Containing the Same."

It is noted from FIGURE 2 that the closer the lines of stitching 42 and 44 are to the fastener elements 32 the less possibility therefor for a line on the part of the front plies 12a and 14a to conceal the slide fastener 16. The need for positioning the lines of stitching 42 and 44 as close to the elements 32 increases as the weight of the fabric forming the panels 12 and 14 decreases. Thus, for very lightweight or sheer fabrics, such as are used in women's silk blouses, no maximum pitch effect it is necessary that the lines of stitching 42 and 44 be as close as possible to the wefts 36 of the tapes 28 and 30.

The manner in which the sewing of a concealed slide fastener to cloth is effected in accordance with the present invention is shown particularly in FIGURES 3 and 4.

Referring to the right-hand side of FIGURE 3, the panel 14 is partially folded to form the fold line 20. The cord 40 is placed along the fold line 20 and under the portion of panel 14 forming rear ply 14b. The tape 30 of slide fastener 16 is placed over rear ply 14b with the portion of tape 30 which is under the slide fastener elements 32 and slide 34 as close as possible to the fold line 20 and over the cord 40. The slide fastener elements 32 are pivoted upwardly to expose the portion of the tape 30 under the elements 32, and a line of stitching 44 is sewn, such as by a sewing machine (not shown), through the tape 30, rear ply 14b, and cord 40 (FIGURE 4). The line of stitching 44 is placed as close as possible to the slide fastener elements 32. Thus, by a single line of stitching both the slide fastener tape 30 and the cord 40 are sewn to the rear ply 14b. The slide fastener elements 32 are then pivoted back to their normal position, and the portion of panel 14 forming front ply 14a is folded under rear ply 14b to complete the operation.

Although the manner of sewing the slide fasteners and cords to the cloth panel was described with regard to slide fastener tape 30, cord 40, and panel 14, it should be understood that the slide fastener tape 28 and cord 38 were sewn to panel 12 in the same manner.

FIGURE 5 shows another embodiment of the present invention which is identical to the embodiment shown in FIGURE 2 except that the cords 42a and 44a are elliptical in cross-section. Cords 42a and 44a are between the plies 12a and 12b, and 14a and 14b respectively of panels 12 and 14 respectively, and are against the fold lines 18 and 20. The slide fastener tapes 28 and 30 are joined to the rear plies 12b and 14b of panels 12 and 14 by the respective lines of stitching 42a and 44a which also extend through cords 38a and 40a. Thus, line of stitching 42a joins the tape 28 and cord 38a to the rear ply 12b of panel 12, and line of stitching 44a joins the tape 30 and cord 40a to the rear ply 14b of panel 14. As in the embodiment of the present invention shown in FIGURE 2, the lines of stitching 42a and 44a should be as close to the fastener elements 32 as is feasible.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. A cloth article comprising a pair of cloth members, each cloth member being folded along a straight fold line to form a large ply and a smaller overlapping ply, said fold lines being parallel to each other, a separate cord positioned between the large and small ply against the fold line of each cloth member, a slide fastener comprising a pair of tapes carrying fastener elements along juxtaposed edges and a slider for engaging and disengaging the fastener elements, a straight line of stitching joining one tape and one cord to only the small ply on one cloth member, a second line of stitching joining the other cord and the other tape to only the small ply on the other cloth member, said lines of stitching being parallel to each other and adjacent the elements carried by said tapes, a thin pull tab on said slider, said pull tab being disposed between the fold lines with only an edge surface of said pull tab being visible, said cords urging the fold lines into abutting contact to conceal the lines of stitching and the slide fastener elements and thereby simulate a sewn seam, said large and small plies having a portion extending longitudinally beyond one end of the tapes, a sewn concealed seam interconnecting the fold lines of said longitudinally extending portions adjacent to and colinear with the end of the simulated sewn seam.

2. A cloth article in accordance with claim 1 in which the cords extend the full length of the tapes, said cords being elliptical in transverse cross-section, the major axis of said elliptical cords lying in parallel planes.

3. A cloth article comprising a pair of cloth members, each cloth member being folded along a straight fold line to form a large ply and a smaller overlapping ply, said fold lines being parallel to each other, a separate cord positioned between the large and small ply against the fold line of each cloth member, a slide fastener comprising a pair of tapes carrying fastener elements along juxtaposed edges and a slider for engaging and disengaging the fastener elements, a straight line of stitching joining one tape and one cord to only the small ply on one cloth member, a second line of stitching joining the other cord and the other tape to only the small ply on the other cloth member, said lines of stitching being parallel to each other and adjacent the elements carried by said tapes, a thin pull tab on said slider, said pull tab being disposed between the fold lines with only an edge surface of said pull tab being visible, said cords urging the fold lines into abutting contact to conceal the lines of stitching and the slide fastener elements and thereby simulate a sewn seam, said large and small plies having portions extending longitudinally beyond the ends of each of the tapes, a sewn concealed seam interconnecting the fold lines of said longitudinally extending portions adjacent to and colinear with the end of the simulated sewn seam.

References Cited in the file of this patent

UNITED STATES PATENTS

1,734,434 Nov. 5, 1929
1,823,913 Sept. 22, 1911
2,000,795 May 7, 1935
2,089,922 Aug. 10, 1937
2,155,795 Apr. 25, 1935
2,219,624 Jan. 14, 1941
2,316,767 Aug. 21, 1943
2,623,214 Dec. 30, 1952
2,738,560 Mar. 20, 1956
2,775,012 Dec. 25, 1956

FOREIGN PATENTS

201,777 Australia May 10, 1955
489,657 Great Britain Aug. 2, 1938

Hutchins
Pletsch
Sweeney
Grant
Markin
Frank
Gould
Yaffe
Hug
Mukla