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M. SAMBERG ETAL

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COIL TYPE SLIDE FASTENER WITH WINGLOCK SLIDER

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FIG. 1

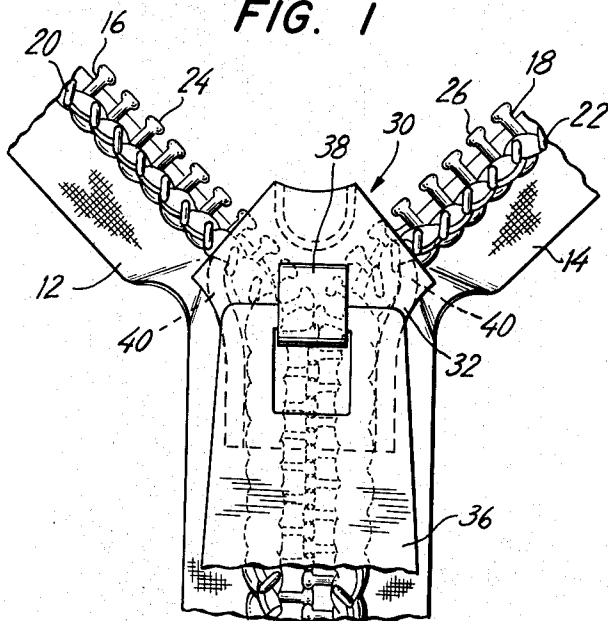


FIG. 2

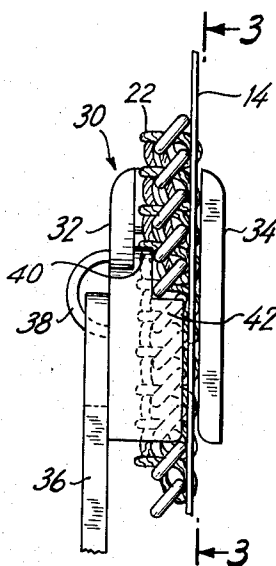
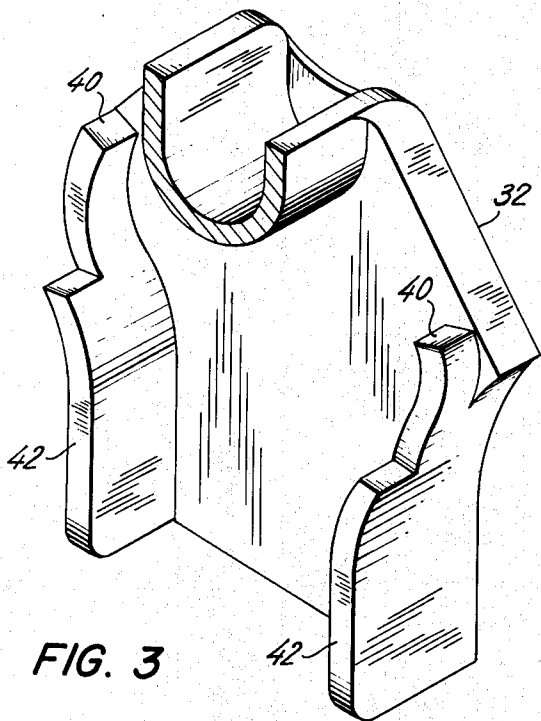


FIG. 3



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COIL TYPE SLIDE FASTENER WITH WINGLOCK SLIDER

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8 Claims. (Cl. 24-205.14)

This invention relates to slide fasteners, and more particularly to fasteners having continuous plastic coils secured to tapes by stitching.

Such coil type fasteners have become very popular, particularly for clothing, because of many advantages over earlier fasteners using individual metal fastener elements or so-called "scoops." However, it has been difficult to provide satisfactory locking means for the coil type fastener, and the general object of the present invention is to provide such a locking means.

One of the known locks for metal slide fasteners is the so-called "winglock," which employs fixed projections on the inside of the slider for engagement between scoops when the upper ends of the tapes are spread apart. Such a winglock has the advantages of being simple, inexpensive, and sturdy, because there are no moving parts. The lock functions when the pull has been turned upward as well as downward, and when the pull is turned upward there is no sharp prong or projection exposed, as is the case with prong or pin locks.

However, it has not been feasible heretofore to apply the winglock to a plastic coil fastener because the projections do not hook well between the coils. The usual material is nylon which is inherently slippery, and the coil has a rounded helical shape instead of presenting square edges as is the case with metal scoops.

The primary object of the present invention is to devise a winglock fastener of the plastic coil type. This object is fulfilled generally by improving and strengthening the stitching which secures the coils to the tapes, in order to form a bead of stitching which is adapted to cooperate with the projections of the slider, and the latter are so dimensioned and located as to engage the bead of stitching rather than the coil.

To accomplish the foregoing general objects, and other more specific objects which will hereinafter appear, our invention resides in the slide fastener and winglock elements and their relation one to another, as are hereinafter more particularly described in the following specification. The specification is accompanied by a drawing in which:

FIG. 1 is a plan view of a fragment of a coil type slide fastener embodying features of the present invention;

FIG. 2 is a slide elevation; and

FIG. 3 is a perspective view of the locking wing of the slider, the other wing being removed approximately on the line 3-3 of FIG. 2.

Referring to the drawing, and more particularly to FIGS. 1 and 2, the slide fastener comprises tapes 12 and 14 each having a continuous coil 16 and 18 attached by stitching indicated at 20 and 22. In the slide fastener here shown, the coils overlie the tape edge, and are suitably formed at their adjacent edges, as indicated at 24 and 26, so that they can be interlocked.

The coils are interengaged or released by means of a slider generally designated 30. This has spaced wings 32 and 34 (FIG. 2) and a pull 36, the latter being secured to one of the wings, in this case the top wing 32, by means of a lug 38. The stitching 20 and 22 forms beads which, for convenience, may be referred to as being above the coils 16 and 18, but this is not to be taken too literally.

In practice, because of the curved or elliptical configura-

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tion of the coils, the beads tend to move outward and downward somewhat, and the top of the bead eventually is only slightly higher than the top or highest parts of the coil. Differently expressed, the spacing between the inner faces of the wings 32 and 34 of the slider is only a little greater than the combined thickness of the coil and tape. Nevertheless each bead of stitching does project well out from its coil.

Referring now to FIG. 3, the inside of the top wing 32 of the slider has inwardly directed locking projections 40 which are dimensioned to engage the beads of stitching 20 and 22 when the upper ends of the tapes are spread apart, as shown in FIG. 1. The projections 40, as here shown, form a continuation of the part of the flanges 42 adjacent the inner surface of the wing 32. When the material is coined the parts 40 are also integrally joined to the wing 32.

In accordance with a further feature of the slide fastener herein shown, the slider 30 is dimensioned to fit the tapes and coils and beads with a snug or frictional fit. This has the advantage of preventing undesired travel of the slider when the upper ends of the tapes are not spread apart, that is, when they are in parallel relation.

Considering the slide fastener in somewhat greater detail, the coils 16 and 18 here shown are preferably made of nylon. The stitching 20 and 22 is preferably a nylon thread, but Orlon or Dacron may be used. Expressed more generally, the thread is a synthetic thread such as an acrylic, a polyester, a polyamide, or other such plastic having good resistance to abrasion and which is reasonably strong. The thread is preferably made up of multiple monofilaments which are twisted, but it could also be made of parallel or laid threads which preferably are cemented together, and indeed ordinary spun nylon or other synthetic fibre may be employed. However, a textile thread such as cotton is considered unsatisfactory because it would be too quickly worn by the action of the winglock projections.

The coils 16 and 18 likewise may be made of a plastic other than a polyamide or nylon, for example, a polyester, although in current practice nylon is more commonly used and is preferred.

When the coil is mounted on one side of the tape, as here shown, the bottom wing 34 of the slider is preferably flangeless. The top wing 32 has the flanges 42. The top wing carries the lug 38 and pull 36, but in special cases the pull could be mounted on the opposite side of the slider. The terms "top," "bottom," "above," etc., are used in only a relative sense, because in practice the slide fastener may be used in different positions, for example, vertically at the back of a dress, in which case the pull is on the outer rather than on the upper wing.

The shape of the locking projections 40 must be such that they will lockingly engage or snag the sewn bead, but the projections must not be so sharp that they will cut or tear the bead. The illustrated projections are blunt but engage between successive thread loops, as sought to be illustrated in FIGS. 1 and 2 of the drawing.

It is believed that the construction, operation, and advantages of our improved slide fastener will be apparent from the foregoing detailed description. A wing lock is provided which is simple, inexpensive, sturdy, and dependable in operation. The locking action is independent of the position of the pull, which may be turned upward or downward. There is no sharp prong exposed when the pull is turned upward. The fastener has the advantages of a winglock as used on metal scoop fasteners, but without the disadvantage there experienced, namely, the possibility of the slider shifting position when the tapes are parallel, for the coiled nylon fastener is somewhat resilient, and the parts may be so relatively

dimensioned as to provide a snug fit, so that the slider is held frictionally against unintended travel.

It will be apparent that while we have shown and described our invention in a preferred form, changes may be made without departing from the scope of the invention, as sought to be defined in the following claims. In the claims the terms "top," "above," etc. are used in a relative sense, as previously explained.

We claim:

1. A winglock slide fastener comprising tapes each having a continuous coil attached by stitching at one edge, said coils being interengaged or released by means of a slider, said slider having spaced wings and a pull, the said stitching forming beads above the coils, the inside of the top wing of said slider having inwardly directed locking projections dimensioned to engage the beads of stitching when the upper ends of the tapes are spread apart.

2. A winglock slide fastener comprising tapes each having a continuous coil attached by stitching at one edge, said coils being interengaged or released by means of a slider, said slider having spaced wings and a pull, the said stitching forming beads over the coils, the inside of the top wing of said slider having inwardly directed locking projections dimensioned to engage the beads of stitching when the upper ends of the tapes are spread apart, said locking projections forming a continuation of the part of the flanges adjacent the inner surface of the top wing, said slider fitting said tapes and coils and beads with a snug fit in order to prevent undesired travel when the upper ends of the tapes are not spread apart.

3. A winglock slide fastener comprising tapes each having a continuous plastic coil attached by stitching at one edge, said coils being interengaged or released by means of a slider, said slider having a flangeless bottom wing and a flanged top wing, one of said wings carrying a lug and pull, the said stitching forming beads over the coils, the inside of the flanged wing of each slider having inwardly directed locking projections dimensioned to engage the beads of stitching when the upper ends of the tapes are spread apart.

4. A winglock slide fastener comprising tapes each having a continuous plastic coil attached by stitching at one edge, said coils being interengaged or released by means of a slider, said slider having a flangeless bottom wing and a flanged top wing, one of said wings carrying a lug and pull, the said stitching forming beads over the coils, the inside of the flanged wing of each slider having inwardly directed locking projections dimensioned to engage the beads of stitching when the upper ends of the tapes are spread apart, said locking projections forming a continuation of the part of the flanges adjacent the inner surface of the wing, said slider fitting said tapes and coils and beads with a snug fit in order to prevent undesired travel when the upper ends of the tapes are not spread apart.

5. A winglock slide fastener comprising tapes each having a continuous nylon coil attached by stitching at one edge, said coils being interengaged or released by

means of a metal slider, said slider having a flangeless bottom wing and a flanged top wing carrying a lug and pull, the said stitching being made of a synthetic fibre thread and forming beads above the coils, the inside of the top wing of said slider having blunt inwardly directed locking projections dimensioned to engage the beads of stitching when the upper ends of the tapes are spread apart.

6. A winglock slide fastener comprising tapes each having a continuous nylon coil attached by stitching at one edge, said coils being interengaged or released by means of a metal slider, said slider having a flangeless bottom wing and a flanged top wing carrying a lug and pull, the said stitching being made of a synthetic fibre thread and forming beads above the coils, the inside of the top wing of said slider having blunt inwardly directed locking projections dimensioned to engage the beads of stitching when the upper ends of the tapes are spread apart, said locking projections forming a continuation of the part of the flanges adjacent the inner surface of the wing.

7. A winglock slide fastener comprising tapes each having a continuous nylon coil attached by stitching at one edge, said coils being interengaged or released by means of a metal slider, said slider having a flangeless bottom wing and a flanged top wing carrying a lug and pull, the said stitching being made of a synthetic fibre thread and forming beads above the coils, the inside of the top wing of said slider having blunt inwardly directed locking projections dimensioned to engage the beads of stitching when the upper ends of the tapes are spread apart, said slider fitting said tapes and coils and beads with a snug fit in order to prevent undesired travel when the upper ends of the tapes are not spread apart.

8. A winglock slide fastener comprising tapes each having a continuous nylon coil attached by stitching at one edge, said coils being interengaged or released by means of a metal slider, said slider having a flangeless bottom wing and a flanged top wing carrying a lug and pull, the said stitching being made of a synthetic fibre thread and forming beads over the coils, the inside of the top wing of said slider having blunt inwardly directed locking projections dimensioned to engage the beads of stitching when the upper ends of the tapes are spread apart, said locking projections forming a continuation of the part of the flanges adjacent the inner surface of the wing, said slider fitting said tapes and coils and beads with a snug fit in order to prevent undesired travel when the upper ends of the tapes are not spread apart.

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B. A. GELAK, *Assistant Examiner*.