June 13, 1967 R. B. HOWELL 3,324,522

SEPARABLE CONCEALED SLIDE FASTENERS

Filed Aug. 31, 1965

3 Sheets-Sheet 1

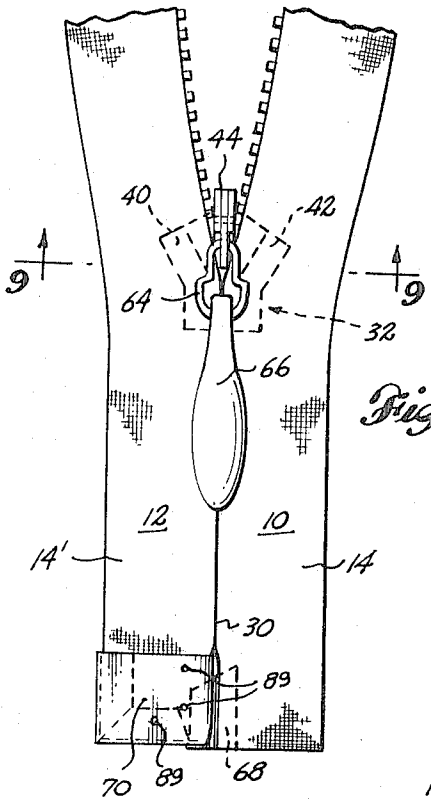


Fig. 1.

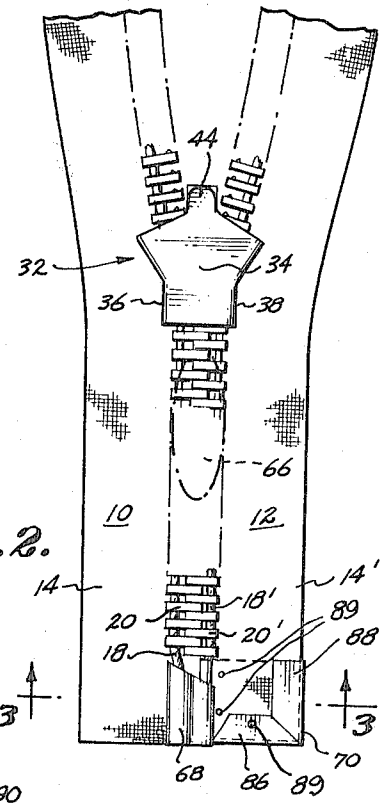


Fig. 2.

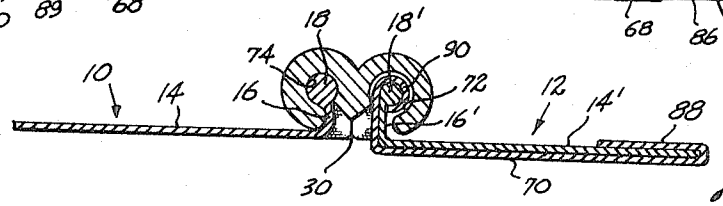


Fig. 3.

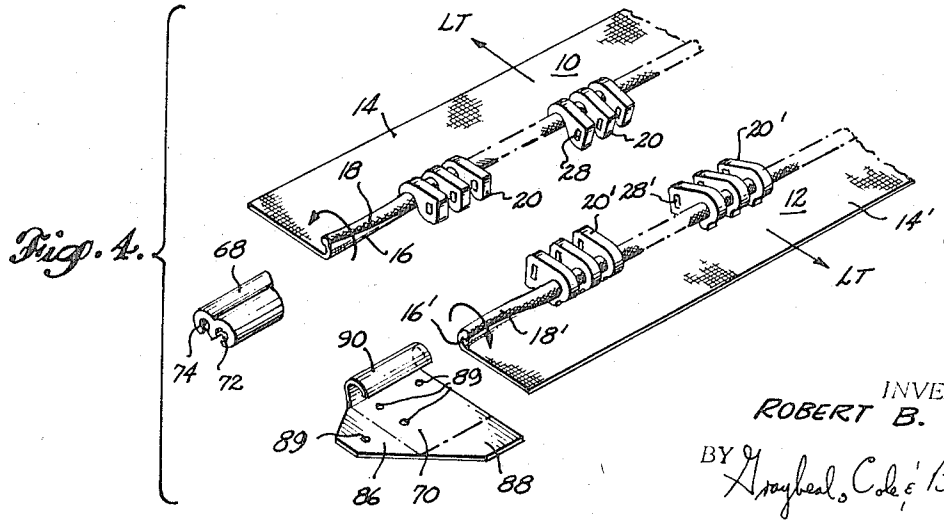


Fig. 4.

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SEPARABLE CONCEALED SLIDE FASTENERS

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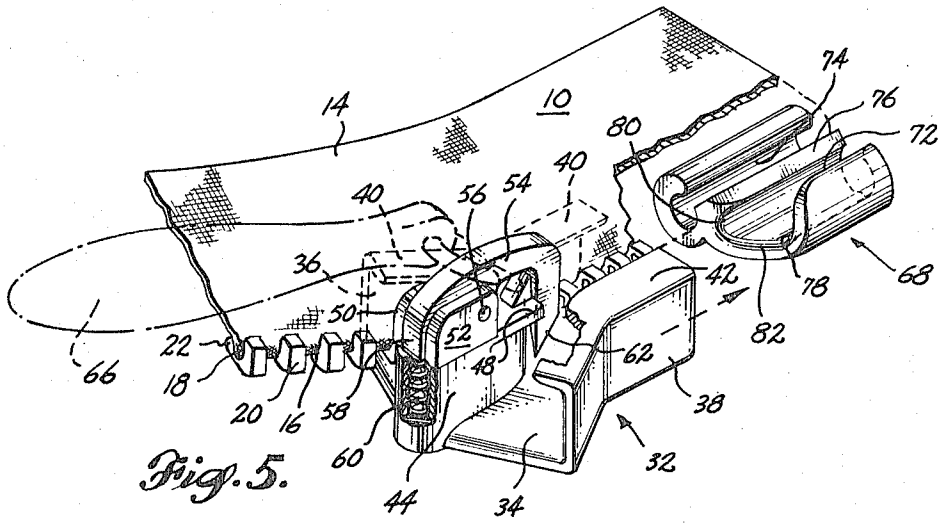


Fig. 5.

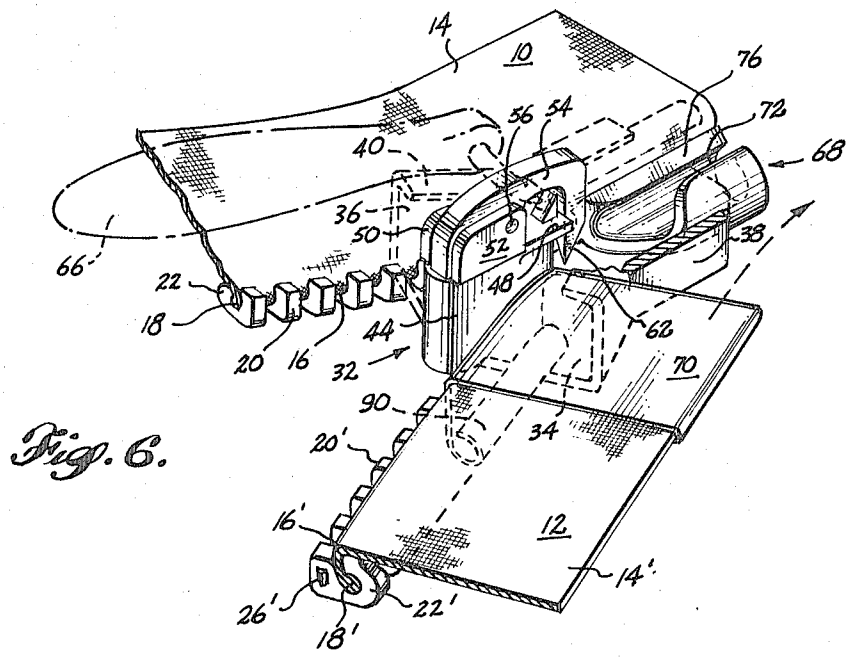


Fig. 6.

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SEPARABLE CONCEALED SLIDE FASTENERS

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Fig. 7.

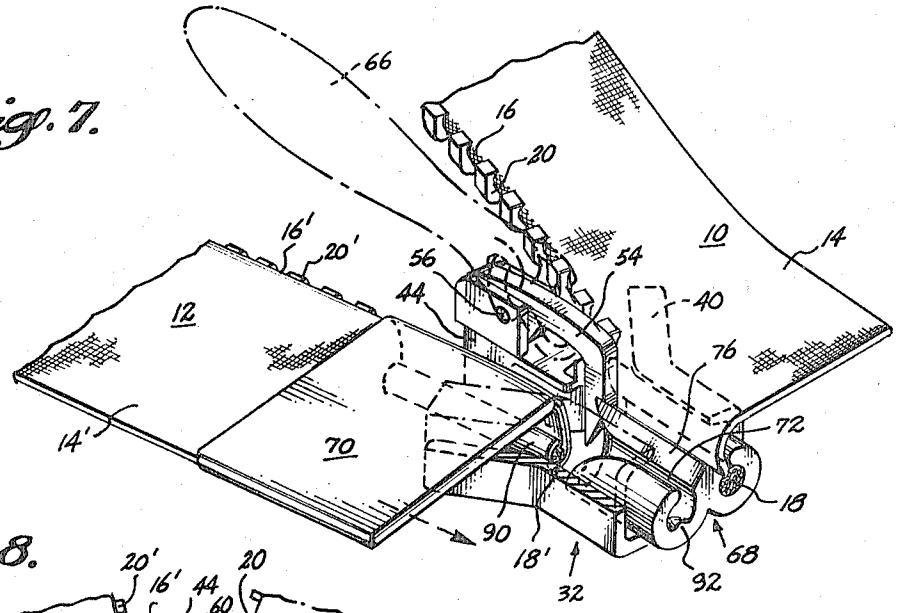
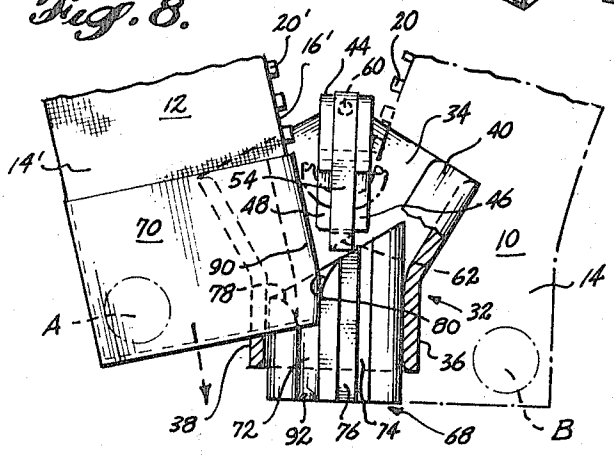


Fig. 8.



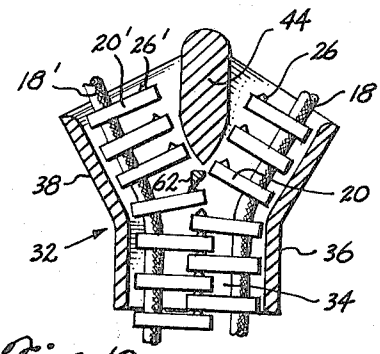


Fig. 10.

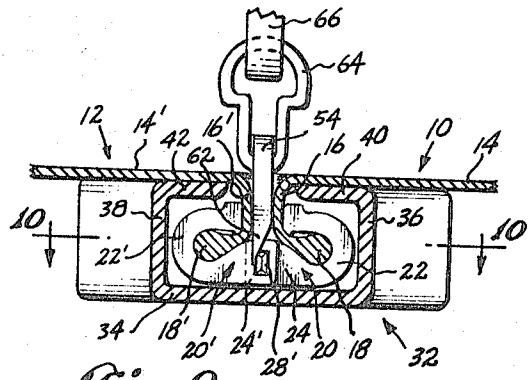


Fig. 9.

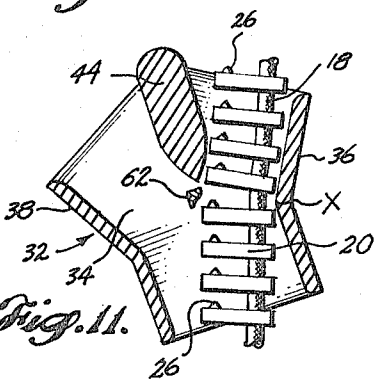


Fig. 11.

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United States Patent Office 3,324,522
Patented June 13, 1967

3,324,522

SEPARABLE CONCEALED SLIDE FASTENERS

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Filed Aug. 31, 1965, Ser. No. 484,025
9 Claims. (Cl. 24—205.1)

The present invention relates to slide fasteners, and more particularly to the provision of a separable slide fastener or zipper of the concealed type. Concealed zippers are also popularly termed "invisible," "hidden," or "seam" zippers.

As the name implies, a separable slide fastener is a slide fastener which can be separated into two parts. This is in contrast to a blind slide fastener in which the two chains of fastener elements are inseparably secured together at one end of the fastener.

In a concealed slide fastener the fastener elements are completely concealed by cloth and such fastener is adapted to closely simulate a sewn seam when in a closed disposition on a cloth article. The slider of a concealed slide fastener is formed to include separate branch channels at one end thereof through which the respective chains of fastener elements pass separately, and a single stem channel at the opposite end through which the chains of such fastener elements pass coupled together. The slider is partially open at the front to provide an entry space for the fabric to which the fastener elements are secured, and it is closed at both sides and at the back.

Typical examples of blind concealed slide fasteners are disclosed by McNamara U.S. Patent No. 2,997,766 and McNamara U.S. Patent No. 3,011,459. A separable concealed slide fastener is disclosed by Morin U.S. Patent No. 3,046,627. The slide fastener of the present invention is an improvement on the slide fastener disclosed by the Morin patent.

Blind slide fasteners are used in trousers, dresses, skirts, for example, and separable slide fasteners are used in jackets and similar types of garments.

A principal object of the present invention is to provide connect-disconnect terminal structure for a separable concealed slide fastener which is uniquely related to the slider of the fastener in such a manner that the terminal elements can be connected by a simple sliding movement of one into the other without it being necessary for the person making the connection to actually watch what his hands are doing. One of the terminal components, herein termed the "box" component, is formed to include an upwardly and forwardly opened pin socket. The other component, herein termed the "pin" component, includes an elongated pin portion sized to be relatively snugly received in said socket when slid endwise into it. The slider and box component are so constructed that when the slider occupies its lowermost position, and further downward movement of the slider is prevented because an internal part thereof has come to rest against the upper end of the box component, at least a greater portion of the box component is snugly engaged in the stem channel at the lower end of the slider. Owing to this snug fit, essentially no relative rotation can occur between the slider and the box component. Also, the pin socket in the box component is maintained in proper alignment with the pin channel in the slider.

Another principal object of the present invention is to provide a separable concealed slide fastener of the character described in which the pin component comprises a metal plate that extends entirely across the lower end portion of the stitching tape to which it and the fastener elements related thereto are secured. Such plate is crimped onto or otherwise firmly secured to said tape. The pin is in the form of an edge bead formed by curling the

inner edge portion of said plate about the welt at the inner edge of the stitching tape. The welt is twisted in a manner causing the lowermost fastener elements on such tape to assume when uncoupled substantially the same attitude relative to the stitching tape that they assume when properly coupled, and then the pin plate is curled about the welt and crimped onto the tape proper to hold such twist. As a result of the twisting of the welt, the lowermost fastener elements are automatically aligned for proper entry into the slider and for proper coupling by the slider. The box component is preferably also crimped onto the welt of the stitching tape on its side of the slide fastener, and such welt is also preferably twisted for the purpose of establishing a correct attitude of the lowermost fastener elements on such tape before the box component is installed.

Another object of the present invention is to provide a separable concealed slide fastener having a pull tab releasable lock mechanism operable to lock the slider against movement when it is riding on both chains of fastener elements and there is no pull on the pull tab, and adapted to be inoperable when the slide fastener is separated and the slider is riding on only one chain of fastener elements, so as to permit free movement of the slider in either direction relatively along such chain.

These and other objects, features, advantages and characteristics of my separable invisible slide fastener will be apparent from the following detailed description of a typical form thereof, in which reference is made to the accompanying drawing, wherein like reference characters refer to like parts, and wherein:

FIG. 1 is a front view of the lower portion of such typical form of separable invisible slide fastener, showing the separable terminal elements joined and the two chains of fastener elements partially coupled;

FIG. 2. is a rear side view of the assembly shown by FIG. 1;

FIG. 3 is a transverse sectional view taken through the terminal elements, substantially along line 3—3 of FIG. 2, such view indicating the relationship of the pin plate to the end portion of the fabric tape onto which it is secured;

FIG. 4 is a perspective view of the lower end portion of said slide fastener, looking toward the rear thereof, with the two tape assemblies in spaced relation, with the box and pin plate component shown spaced endwise from their installed positions on the tapes, and showing the inward twist that is put in the lower end portion of each welt before the terminal elements are installed;

FIG. 5 is a fragmentary perspective view, on an enlarged scale, taken from above and toward the front, the upper end and the inner side of the box component, with the slider shown approaching the box component, with the edge portion of the fabric tape onto which the box component is secured shown in reference for clarity of illustration of the box component, with a lip portion of the slider being cut away so as to expose the point end of the slider-lock mechanism, and with the pull tab shown in reference;

FIG. 6 is a view similar to FIG. 5, but showing the slider moved down into a position wherein its lower portion surrounds the box component and retains it against relative rotation, with a portion of the inner wall of the slider and the inwardly turned lip formed integral therewith being cut away for clarity of illustration of the manner in which the pin-side channel in the slider is alignable with the pin-socket in the box component, and showing the pin entering into the pin-side channel of the slider;

FIG. 7 is a view similar to FIG. 6, taken from an aspect looking toward the front, the socket side, and the lower end of the box component;

FIG. 8 is a front plan view of the assembly of FIG. 8, showing the substantial alignment of the outer side wall of the pin-side channel in the branched end portion of the slider with the cam surface at the upper end of the short wall of the pin-socket;

FIG. 9 is a transverse sectional view taken through the slide fastener means in the vicinity of the stem end portion of the slider, substantially along line **9—9** of FIG. 1, such view showing a prefered configuration of the point end portion of the lock mechanism for the slider;

FIG. 10 is a longitudinal sectional view taken through the slider substantially along line **10—10** of FIG. 9, and showing the location of the point end portion of the lock mechanism for the slider relative to both channels in the branched end portion of the slider, and showing somewhat diagrammatically the fastener elements as they are disposed in the slider; and

FIG. 11 is a view similar to FIG. 10, but of the slider when the two tape assemblies are separated and the slider is moved upwardly along only the box-side chain of the fastener elements, such view showing that the point end of the lock mechanism for the slider is positioned out of the path of the box-side chain of fastener elements.

Referring more specifically to the several figures of the drawing, the illustrated form of slide fastener constructed according to the present invention is shown to comprise a pair of tape assemblies **10**, **12**. Tape assembly **10** is herein referred to as the box-side tape assembly, and tape assembly **12** is herein referred to as the pin-side tape assembly.

Each assembly **10**, **12** includes a fabric stitching tape **14**, **14'** having a rearwardly turned inner edge portion **16**, **16'**. The term "fabric" is used herein in the broad sense. Thus, it includes materials that might be classifiable as a cloth, a plastic, or a paper, for example.

As perhaps best shown by FIGS. 3 and 4, a welt or edge bead **18**, **18'** is incorporated into each of the inner edge portions **16**, **16'**. A chain, roll or series of fastener elements **20**, **20'** are crimped about the welts **18**, **18'** and the immediately adjoining part of the inner edge portions **16**, **16'**, or are otherwise firmly secured to said edge portions **16**, **16'**.

The fastener elements **20**, **20'** are illustrated as each having a hook portion **22**, **22'** which substantially surrounds and clamps onto the welt **18**, **18'** to which it is secured, and a coupling head portion **24**, **24'**. A projection **26**, **26'** is formed on one side of the coupling head portion **24**, **24'** of each element **20**, **20'** (see FIGS. 4, 9 and 10, for example), and a complementary shaped recess **28**, **28'** (FIGS. 4 and 9, for example) is formed on the opposite side of each coupling head portion **24**, **24'**.

As clearly shown by FIG. 1, and somewhat by FIG. 9, when the projections **26**, **26'** are mated within the recesses **28**, **28'**, i.e. the fastener elements **20**, **20'** are coupled together, the inner edge portions **16**, **16'** of the tapes **14**, **14'** are held in abutting contact at the bight or fold regions thereof.

The stitch band portions of the tapes **14**, **14'** are shown in FIG. 9 to be related in substantially coplanar parallelism. The fastener elements **20**, **20'** are disposed wholly rearwardly of such stitch band portions. That is to say, no part of the elements **20**, **20'** is located on or projects outwardly beyond the front surfaces of the tapes proper. When the fastener elements **20**, **20'** are coupled a seam **30** is formed between and by the fabric tapes **14**, **14'** on the front side of the slide fastener.

As will be apparent, the slider **32** is arranged to couple the fastener elements **20**, **20'** when moved upwardly along both chains of fastener elements **20**, **20'**, and to decouple such elements **20**, **20'** when moved downwardly along both chains. The slider **32** includes a lower stem end portion and an upper branched end portion.

The stem end portion is illustrated in section in FIG. 4. It is in the form of a lipped channel, and the fastener elements **20**, **20'** move relatively through it coupled together. The rear wall **34** of the slider **32** forms the web of such channel. The side walls **36**, **38**, which are substantially parallel in their extent through the stem portion of the slider **32**, form the flanges of said channel. The front of the slider **32** is centrally open to provide an avenue through which the rearwardly turned portions **16**, **16'** of the fabric extend. Such front is formed by a pair of lips **40**, **42** which turn inwardly from the flanges **36**, **38** and extend toward each other in coplanar parallelism.

The side walls **36**, **38** and the lips **40**, **42** diverge apart as they extend away from the stem portion of the slider **32** and through the branched portion thereof (FIGS. 5–11). An island or separator **44** divides the interior of the branched end portion of the slider **32** into two separate branch channels, each of which is wide enough to accommodate only one chain of fastener elements **20**, **20'**. The branch channels diverge apart as they extend upwardly from the larger channel in the stem portion of the slider **32**. The branch channels also include an inner lip **46**, **48** formed at the inboard end of the separator **44**. As will be understood by those skilled in the slide fastener art, when the slider **32** is moved upwardly, the fastener elements **20**, **20'** will enter relatively into it uncoupled through the branch channels. The coupler elements **20** pass through the space bounded at the front by the lips **40**, **46**, at the sides by the flanges **46** and the separator **44**, and at the rear by the wall **34**. Fastener elements **20'** pass through the space bounded at the front by lips **42**, **48**, at the sides by flange **38** and separator **44**, and at the rear by wall **34**. The fastener elements **20**, **20'** are interleaved together inside the slider **32** and pass relatively through the stem portion thereof coupled together. When the slider **32** is moved downwardly with its stem portion leading, the elements **20**, **20'** are separated inside the slider **32**, and they pass relatively out through the branch channels uncoupled.

A pair of laterally spaced ears **50**, **52** extend forwardly from the separator **44**. A locking pawl **54** is mounted between the ears **50**, **52** by a pivot pin **56**. The upper end portion **58** of locking pawl **54** curves inwardly toward the separator **44** and its terminal rests on a coiled compression spring **60** bottomed in a socket formed in the separator **44**. The opposite or lower end portion of the pawl **54** also curves inwardly. It has a pointed terminal **62** that is normally biased by the compression spring **60** into an interference contact with coupler elements **20'** (FIG. 10) when the slider **32** is running on both chains of fastener elements **20**, **20'**, as will hereinafter be explained in greater detail. A connector ring **64** surrounds the locking pawl **54** between the pivot pin **56** and said lower end portion, and a pull tab **66** is connected to the ring **64**. As will be apparent, an outward pull on the pull tab **66** causes the pawl **54** to rock about its pivot pin **56**, resulting in the point **62** being pivoted clear of the fastener elements **20'**.

The connect-disconnect terminal elements, comprising a box component **68** and a pin component **70**, will now be specifically described.

As best shown by FIGS. 3 and 5–8, the box component **70** comprises a pin socket **72** and a welt socket **74**, separated by a divider **76**. The box component **68** may be attached to the lower end portion of tape **10** by the following procedure. The welt **18** is aligned with the welt socket **74** and the box component **68** is slid relatively endwise so that the welt **18** enters into the welt socket **74**. Care is taken to assure that the box component **68** is properly spaced below the last fastener element **20**. Then, the walls of the welt sockets **74** are squeezed inwardly so that the box component **68** is clamped or crimped onto the welt **18**.

The pin socket **72** is open at the top and at the front, and may also be at least partially open at the bottom. The opening at the front is a slot serving as an entry space for a portion of the pin component which borders

the pin proper, as will hereinafter be described. Such slot is narrower than the pin proper so that the pin cannot enter or leave the pin socket 72 through it.

As clearly shown by FIG. 7 in particular, the box component 68 is sized and configured so as to be snugly received in the stem end portion of the slider 32 when the slider 32 is moved downwardly as far as it will go. In slide fasteners of the illustrated type, which include a lock mechanism with a locking point portion 62, the slider 32 is stopped at the end of its run when the point 62 abuts against the upper end surface of the box component 68 at the divider 76.

Referring to FIGS. 5–8, the upper end of the box component is slanted, and the upper end surfaces of the pin socket 72 are rounded so that they will funnel or cam the pin into the pin socket 72. The side cam surfaces are designated 78 and 80, and the rear cam surface is designated 82. As clearly shown by FIG. 8, the inner surface of wall 38 in the pin-side channel portion of the branched end portion of slider 32 is substantially aligned with a tangent to cam surface 78. As perhaps best shown by FIG. 6, the side of separator 44 forming the opposite side of said pin-side branch channel is oriented relative to cam surface 80 in such a manner that it directs the pin into contact an intermediate portion of cam surface 80 so that cam surface 80 may in turn properly direct the pin into the pin socket 72.

The pin component 70 is in the form of a thin plate of metal or plastic, for example. It is formed to include an inwardly curling pin forming portion 90 and may include a bottom flap 86 and a side flap 88. As will be evident, the pin forming portion 90 is curled about the lower end portion of welt 18' to form the pin, and the flaps 86, 88 are bent along the fold lines indicated in FIG. 4, back against the lower end portion of the tape 12 (FIG. 2, for example). The flaps 86, 88 may be crimped onto the tape 12. However, it is preferred that stitch openings 89 be formed in the pin component 70. The pin component 70 is then firmly secured to the lower end of tape 12 by hand stitching it in place. Alternatively, the pin component may be glued or bonded in place. Or, if plastic is used, it may be heat sealed onto the tape 12.

According to the present invention, the lower end portion of the welt 18' is twisted in the direction of turn of edge portion 16' (see arrow in FIG. 4) until the fastener elements 20' assume substantially the same attitude relative to tape 12 when uncoupled as they do when coupled, i.e. the inner edges of such elements 20' are substantially parallel to the tape 12. The pin component 70 is then installed, and it serves to hold the twist in the lower end portion of welt 18', and to maintain the lowermost fastener elements 20' in proper attitude for coupling. Preferably, the lower end portion of welt 18 is similarly twisted prior to the installation of the box component 68 thereon (FIG. 4).

Referring again to FIG. 8, after the pin component 70 is installed the lower end portion of the pin 90 is bent so as to make the pin 90 slightly curved longitudinally. The pin 90 is shorter than the combined length of the pin-side branch channel of the slider 32 and the pin socket 72. When the pin 90 is first inserted into said pin-side branch channel it is obliquely related to the pin socket 72. As it enters further into the pin socket 72 it tends to become more aligned with such socket 72, and its inner face moves toward the pin-side of separator 44.

Since box component 68 is engaged by the lower or stem portion of the slider 32, essentially no relative rotation can occur between it and the slider 32. The twisting of the lower end portion of welt 18, in the manner above described, results in the lowermost fastener elements 20 entering into the box-side branch channel in a correct attitude for coupling. The pin 90 and the pin socket 72 are complementary formed such that the pin 90 will assume essentially only one attitude in the pin socket 72. Thus, when pin 90 is engaged in the pin socket 72 its attitude is such that the lowermost fastener elements 20' (the positions of which are essentially set owing to the twisting of the lower end portion of welt 18') enter into the pin-side branch channel in correct attitude for proper coupling. A stop element 92 may be formed at the lower end of pin socket 72 for the purpose of limiting the movement of pin 90 through the pin socket 72. Alternatively, the lower end of pin socket 72 may be closed or at least restricted.

The relative proportioning of the slider 32, the box element 68 and the pin component 70, and the spacing of the bottom fastener element 20' relative to the stop element 92, and the bottom fastener element 20 relative to the point of contact between locking pawl 54 and the upper end of the box component 68, are such that when the slider 32 is moved down against the box component 68, and the pin 90 is bottomed in the pin socket 72, the fastener elements 20, 20' will fall in place for proper coupling as the slider 32 is moved upwardly.

As will be apparent from the foregoing, the act of inserting the pin 90 into the pin socket 72 can be done almost by feel alone, with sight being unnecessary. Let it be assumed that the slide fastener is installed on a jacket, for example, its two parts are separated, and the slider is at its lowermost position. In order to couple the two terminal elements together the wearer of the jacket need only hold the box-side of the garment steady, such as grasping it with his left-hand in the vicinity of area B. He may grasp the pin-side of the garment in his right-hand, such as by squeezing the area generally indicated A, and then merely move the pin 90 endwise downwardly into the open upper end of the pin-side branch channel of the slider 32. The pin 90 need be moved only straight downwardly until it bottomed in the pin socket 72. The rotational alignment is taken care of automatically, and the cam surfaces 78, 80, 82 assure its proper entry into the pin socket 72.

It is important that the lower end portion of welt 18' be twisted in the manner specified, and the twist be set by the pin component 70, for the following reasons. The fabric of which the tape 12 is made is relatively flexible, and although the hook portions 22' of the fastener elements 20' will cause the inner edge portion 16' of such fabric to turn or curl rearwardly, they do not set the fabric. Thus, the fastener elements 20' do not naturally assume a correct attitude for proper coupling. Furthermore, using the jacket again for an example, the coupler heads 28' of the fastener elements 20' may make contact with the shirt of the wearer of the jacket. When the side of the jacket to which tape 12 is secured is put in lateral tension (as indicated by directional arrows in FIG. 4) the coupler heads 28' may drag on the wearers shirt, causing the fastener elements 20' to rotate out of correct alignment for proper coupling. Experience has shown that improper coupling sometimes occurs if the lowermost coupler elements 20' are not held in a substantially correct attitude for proper coupling. The twist is put into the lower end portion of welt 18 for the same reasons. However, it has been found it is not as essential to proper coupling to preset the lowermost elements 20.

Reference is now made to FIGS. 10 and 11, the point end portion of the locking pawl is shown in these figures to be offset from center towards the pin-side of the slider. When the slider 32 is running on both chains of fastener elements 20, 20', and no pull is being exerted on the pull tab 66, the pointed terminal 62 of the pawl 54 is in an interference position with respect to the fastener elements 20'. When a pull is exerted on the pull tab 66 the pawl 54 is rocked back about the pin 56 and the pointed terminal 62 is moved upwardly to where it will clear the fastener element 20', leaving the slider 32 free to move.

As shown by FIG. 11, the straight line distance between point X on slider 32 and the opposing surface of the

pointed terminal 62 is larger than the width dimension of the fastener elements 20. Thus, when the slide fastener is separated and the slider is running only on the chain of fastener elements 20, the pointed terminal 62 is not in a position to interfere with the movement of slider 32, even when there is no pull on the pull tab 66 and the pawl 54 is seated. The slider 32 is free to move in either direction along the chain of fastener elements 20, without it being necessary to pull outwardly on the pull tab 66. The side of point 62 facing elements 20 is preferably curved in the manner illustrated so that it will present no sharp corners or edges towards the elements 20 on which they can catch.

It is harder to raise the pointed terminal 62 when the slider 32 is riding on only the one chain of slide fastener elements 20. This is because when a pull is exerted on the tab 66 it is easier for the slider to rotate with the chain of elements 20, about the fold or bight portion of tape 10, than for the pawl 54 to rock back about pin 56 and compress the spring 60. When the slider 32 is riding on both chains of fastener elements 20, 20', such rotation is resisted by the pull of the side of the garment of which elements 20' are a part.

Having thus described the invention, it is clear that the objects as stated above have been attained in a simple and practical manner. While a particular embodiment of the invention has been shown and described, it is to be understood that changes may be made in the construction and arrangements of the various parts without departing from the sphere and scope of the invention as expressed in the following claims.

What is claimed is:

1. In a separable concealed slide fastener, a slider that is closed at the sides and back and is centrally open at the front, said slider having a stem end portion of lipped channel form and a branched end portion including a lipped branch channel, a box component having a pin socket with an end entrance directed toward the stem channel end of said slider, said box component being externally sized so as to be snugly fitable inside the stem channel, with the entrance of the pin socket positioned inside said slider substantially where the branch channel meets the stem channel.

2. The combination of claim 1, wherein the branch channel is obliquely related to the stem channel, the entrance of the pin socket is slanted toward said branch channel, and said entrance is defined by inwardly converging rounded cam surfaces.

3. A separable concealed slide fastener comprising a pair of fabric members, each having a rearwardly turned inner edge portion, a chain of slide fastener elements mounted on each inner edge portion, said fastener elements, when coupled, holding the said inner edge portions together in abutting contact, so that a simulated seam is formed on the front side of the fastener between and by the two fabric members, a slider movable along said chain for coupling and decoupling of the fastener elements, said slider being closed at its sides and back and centrally open at its front, said slider including a stem end portion of lipped channel form through which the two chains of fastener elements pass coupled together, and a branched end portion including a separator dividing it into two branch channels which converge toward the stem channel and through which the chains of fastener elements pass separately, a box component secured to one of said fabric members, substantially immediately adjacent the endmost fastener element thereon, said box component including a slotted pin socket having a substantially C-shaped cross-sectional configuration, with the slot thereof directed forwardly, and an end entrance directed toward the stem channel end of said slider, said box component being externally sized so as to be snugly receivable inside of the stem channel, with the entrance of the pin socket positioned inside said slider substantially where the stem channel meets with the branch channel related to the fastener elements on the other fabric member, so that relative rotation between the box component and the slider is substantially prevented, and a pin component secured to the corresponding end of said other fabric member, substantially immediately adjacent the endmost fastener element thereon, said pin component including a pin sized to be snugly received in said pin socket when inserts endwise into it.

4. The combination of claim 3, wherein the entrance of the pin socket is slanted toward the branch channel associated with the pin component and the fastener elements on the fabric member to which the pin component is secured, and wherein said entrance is defined by inwardly converging rounded cam surfaces, related to the bounding surfaces of said branch channel in such a manner that such bounding surfaces of the branch channel lead substantially smoothly into said rounded cam surfaces.

5. The combination of claim 3, wherein the box component includes a second forwardly open socket that is substantially parallel to the pin socket, and a separating wall between said sockets, and wherein the inner edge portion of the fabric member to which the box component is attached is located inside said second socket, with the side walls of the second socket being squeezed against such portion of the fabric member so that the box component is clamped in place.

6. The combination of claim 3, wherein said pin component comprises a stiff, substantially planar portion of substantial area secured to the fabric material and an inner edge portion that is curled about the inner edge portion of said fabric member to form the pin.

7. The combination of claim 6, wherein the inner edge portion of said fabric member is twisted in the direction and to the extent necessary to cause the lowermost fastener element to assume when uncoupled substantially the same attitude relative to the fabric member that they assume when properly coupled, and then the pin component is installed so that it serves to hold the twist and maintain the said elements in a correct attitude for proper coupling.

8. In a separable concealed slide fastener, a slider that is closed at its sides and back and is centrally open at its front, said slider having a stem end portion of lipped channel form and a branched end portion including an island separator and a pair of lipped branch channels extending away from said stem channel along divergent paths on opposite sides of the separator, a box component having a pin socket with an end entrance directed toward the stem channel end of said slider, said box component being externally sized so as to be snugly receivable inside the stem channel, with the entrance of the pin socket positioned inside said slider substantially where the branch channel associated with it meets the stem channel, and with the entrance of said pin socket being slanted toward said branch channel, and being defined by inwardly converging rounded cam surfaces.

9. A separable concealed slide fastener including a pair of fabric members, each having a rearwardly turned inner edge portion, a chain of slide fastener elements mounted on each inner edge portion, connect-disconnect terminal means comprising a box component secured to one of said fabric members at an end of its chain of slide fastener elements, and a pin component secured to the other fabric member at a corresponding end of its chain of slide fastener elements, and a slider movable along the chain of fastener elements associated with the box component when the terminal means are disconnected, and along both chains of fastener elements, for coupling and decoupling the fastener elements, when the terminal means are connected, said slider being closed at its sides and back, and being centrally open at its front, said slider having a stem end portion of lipped channel form and a branched end portion including an island separator and a pair of lipped

branch channels extending from the stem channel along divergent paths on opposite sides of the separator, and a locking pawl mounted on said separator and having a pointed terminal and spring means normally biasing said pointed terminal into a position of interference with the chain of fastener elements associated with the pin component, when the slider is riding on both chains of fastener elements, and at a location whereat it will not interfer with the chain of fastener elements associated with the box component when the slider is running along said chain alone, said slider being movable over said terminal

means till the entrance of said box component is substantially where a branch channel meets the stem channel.

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