

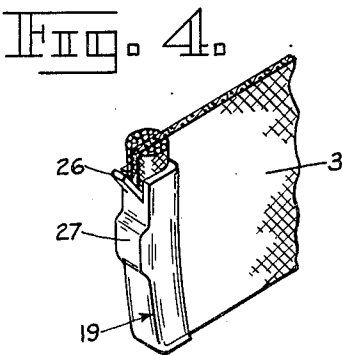
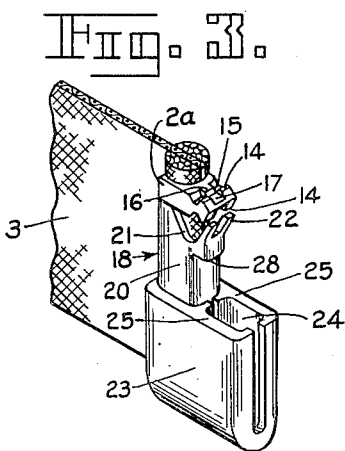
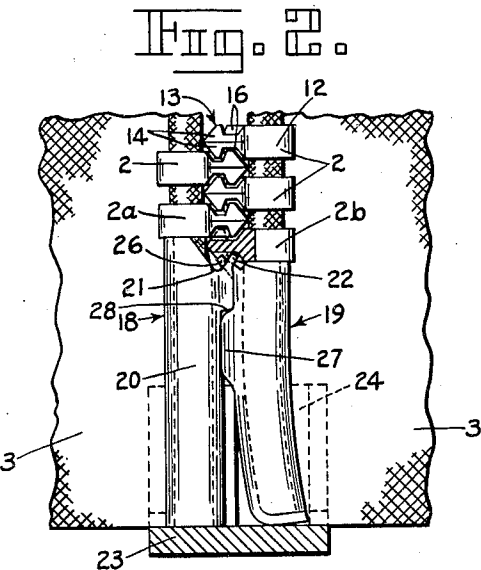
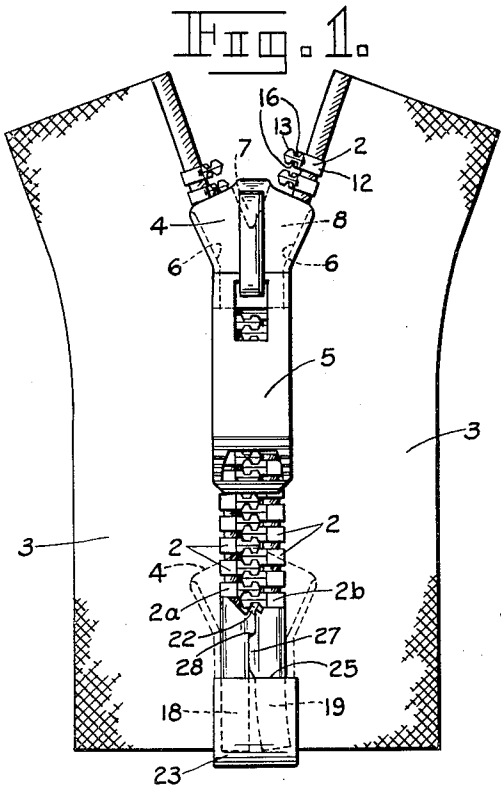
April 4, 1950

N. J. POUX

2,502,885

SEPARABLE END CONNECTION FOR SLIDE FASTENERS

Filed April 21, 1948



INVENTOR.
NOEL J. POUX.
BY *R. E. Speck*
ATTORNEY.

UNITED STATES PATENT OFFICE

2,502,885

SEPARABLE END CONNECTION FOR SLIDE FASTENERS

Noel J. Poux, Meadville, Pa., assignor to Talon, Inc., a corporation of Pennsylvania

Application April 21, 1948, Serial No. 22,373

9 Claims. (Cl. 24—205.11)

1

This invention relates to slide fasteners, and particularly to an improved separable end connection therefor for use with fasteners which are adapted to be completely separated at both ends.

Various types of separating end connections have been heretofore suggested and used for slide fasteners so as to permit complete separation of the fastener stringers on each side of the opening in an article or garment such as, for example, a shirt, jacket, sweater, coat or the like. While some of these end connections have been satisfactory for use with conventional type fasteners, i. e., fasteners wherein the elements are of a construction capable of being engaged and disengaged by a slider movable only in one direction therealong, they were not satisfactory for two-way fasteners, i. e., fasteners wherein the elements are of the two-way or double action type capable of being engaged or disengaged by a slider movable in either direction along the stringers.

It has been found that in the use of most separating end connections, particularly with the so-called two-way fasteners, the endmost fastener elements which are positioned immediately adjacent the upper ends of the end connections would become disengaged or misplaced when the fastener was flexed at this point thereby resulting in failure of the fastener at this point. In other words, these endmost elements would tend to creep along the edge of the tape to which they were attached or become twisted, cocked, or displaced angularly relative thereto. Such failures occurred primarily for the reason that there was no means provided for supporting these endmost elements and to tie them in with the members of the end connection so as to provide a more unitary or continuous connection at this point.

Accordingly, it is the general object of the present invention to provide an improved separating end connection for slide fasteners which is constructed and arranged so that any movement or displacement of the endmost fastener elements relative to each other or to the members of the end connection, and any longitudinal or lateral movement of the members of end connections relative to each other, is prevented when the end connection is assembled thereby eliminating the above mentioned disadvantages.

It is another object of the invention to provide an improved separating end connection for slide fasteners which will support and tie in with the endmost fastener elements positioned adjacent

2

thereto so as to eliminate any danger of failure of the fastener in the vicinity thereof.

It is a further object of this invention to provide an improved separating end connection which consists of a minimum number of parts which can be inexpensively and easily fabricated and attached to the stringer tapes.

It is still another object of the present invention to provide an improved separating end connection for slide fasteners which is simple and neat in its construction and, at the same time, effective and efficient in its use.

Various other objects and advantages of this invention will be more apparent in the course of the following specification, and will be particularly pointed out in the appended claims.

In the accompanying drawings, there is shown for the purpose of illustration, an embodiment which my invention may assume in practice.

20 In these drawings:

Fig. 1 is a plan view of a slide fastener having the improved end connection of my invention incorporated therewith;

25 Fig. 2 is an enlarged view, partly in section, of the end connection as shown in Fig. 1;

Fig. 3 is a perspective view of the socket member of the end connection of the present invention; and

30 Fig. 4 is a perspective view of the pin member of the end connection.

Referring more particularly to the drawings, there is shown in Fig. 1, a slide fastener comprising a series of spaced-apart interlocking fastener elements 2 attached to opposed beaded edges of tapes or stringers 3. There is arranged on the series of fastener elements, a slider 4 having a pull member 5 pivotally attached thereto by which the slider is adapted to be moved longitudinally along the elements to open and close the fastener in a manner well known to those skilled in the art. Such slider consists generally of a channeled body member having spaced-apart upper and lower wings which are flanged at their opposite edges, as at 6, and connected at the top thereof by means of substantially a V-shaped neck 7 so as to provide substantially a Y-shaped channel 8 within the slider body through which the fastener elements pass as they are engaged and disengaged.

45 The fastener elements illustrated are of the so-called double action type, and as all of the fastener elements on both stringers are identical in construction, it will be necessary to describe only the structure of one of these elements. Each fastener element comprises a body

having an attaching end portion 12 consisting of a pair of jaws secured to the beaded edge of the tape and an interlocking or coupling end portion 13. The interlocking end portion 13 is substantially arrowhead-shaped which forms upper and lower projections 14 adapted to engage in substantially V-shaped recesses 15 in the elements of opposed stringers. In each recess on both sides of the fastener element, there is provided centrally thereof a rib or web portion 16, and in each of the projections there is provided a groove or channel 17 which is positioned in line with and directly opposite the rib or web 16 therein. It will thus be seen that the ribs or webs 16 and grooves or channels 17 of one fastener element cooperate with the respective grooves and ribs of the adjacent fastener element on the opposed stringer. Thus, it will be seen that each of the elements are identical and symmetrical in construction, and that the stringers may be engaged or disengaged in a universal manner and by a slider moving in either direction along the stringers regardless of the arrangement of the slider relative to the fastener elements.

According to the present invention, there is secured to the beaded edge of one of the stringers directly below the endmost fastener element 2a thereof, a retainer or socket member 18 which is one part of the separable end connection of my invention, and there is secured to the beaded edge of the other stringer adjacent the endmost fastener element 2b thereof, a pin member 19 which forms the other part of the end connection. The socket member 18 consists of a tubular portion 20 in the form of a pin which is clamped around the beaded edge of the stringer and extends to and preferably abuts the endmost fastener element 2a of that stringer, as shown in Figs. 2 and 3. The upper end of this tubular portion is relieved so as to provide a recess 21 therein for receiving the arrowhead coupling portion of the endmost fastener element 2b of the opposed stringer.

On the inner side of this tubular portion at the upper end thereof, there is arranged a forked portion 22 which forms the outer wall of the recess 21 and which extends outwardly angularly therefrom so that the end thereof is disposed substantially directly below the outer end of the coupling portion of the endmost fastener element 2a on that stringer.

On the lower end of the tubular portion 20, there is arranged a hollow box-like member 23 which has a longitudinally extending recess or socket 24 therein arranged on the inner side of the tubular extension 20 and extending parallel thereto for receiving and housing the pin 19 of the opposed stringer when the members of the end connection are assembled. The upper end 25 of the member 23 acts as a stop for the slider, as shown in the broken lines of Fig. 1, so as to limit the movement of the slider in the opening direction and also to position the slider for manipulating the members of the end connection for engaging and disengaging the same. This member 23 also retains the slider on that stringer so as to prevent it from being displaced therefrom when the stringers are completely separated.

The lower portion of the pin member 19 attached to the beaded edge of the other stringer is preferably curved and extends to and preferably abuts the endmost fastener element 2b of that stringer, as shown in Fig. 2. At the upper end of this pin member, there is arranged a finger-like portion 26 which extends outwardly

angularly therefrom with the extreme end thereof of preferably abutting the outer end of the coupling portion of the endmost fastener element 2b so as to support the same. Intermediate the length of the pin member there is provided on the inner side thereof, a projection 27 which cooperates with a shoulder 28 on the tubular extension 20 of the socket or retainer member 18 in a manner and for a purpose hereinafter to be described.

When the stringers are coupled together with the members of the separating end connection interengaged, as shown in Figs. 1 and 2, it will be seen that the lower curved end of the pin 19 is positioned in the socket or recess 24 of the socket member 18 with the lower end of the pin disposed against the lower inner wall of the recess, and with the projection 27 of the pin positioned in under and abutting the shoulder 28 of the tubular extension 20. It is one of the purposes of the projection 27 in cooperation with the shoulder 28 to prevent longitudinal movement of the members 18 and 19 relative to each other and relative to the endmost fastener elements of the opposed stringers. It is also one of the purposes of the projection 27 on the inner side of the pin to provide an obstruction which interferes with the fastener elements on the opposed stringer and prevents the pin member 19 from being fully seated and positioned in the recess 24 and the fastener from being closed except when the pin member is properly seated in the recess and with the projection 27 in under the shoulder 28. In such assembled relation, it will be seen that the finger-like portion 26 on the upper end of the pin 19 extends into and between the forked portion 22 of the tubular extension 20 with the coupling end portion of the endmost fastener element 2b disposed in the recess 21 of the tubular portion 20 rearwardly of the forked portion 22. In such position, it will be seen also that the upper end of the forked portion 22 extends into the recess 15 of the endmost fastener element 2b at a point immediately above the pin member 19 so as to straddle and engage with the transverse rib 16 on the lower side of this fastener element.

It is one purpose of the forked portion 22, together with the finger-like portion 26 with which it cooperates, to prevent any transverse movement of the pin and socket members relative to each other at the upper ends thereof, but the most important aspect of this construction is to tie the upper ends of both the socket and pin members in with the endmost fastener elements 2a and 2b so as to prevent any displacement of these endmost scoops relative to the beaded edge of the stringers and the pin and socket members when it is attempted to flex the fastener in the vicinity thereof. It will be seen also that the forked end portion 21 due to its engagement with the endmost fastener element 2b prevents this element from twisting relative to both the beaded edge of the tape and the pin member 18.

In the use of the fastener when it is desired to completely separate the stringers, the slider 4 is moved down to its lowermost position at the end connection with the lower end thereof abutting the upper end 25 of the socket or retainer member 23, as shown in the broken lines of Fig. 1. When the slider is moved to such position, it will be understood that the upper ends of the pin member 19 and socket member 18 are separated laterally by the neck portion 7 of the slider in a manner well known so as to permit the pin

5

member 19 to pass up through and out of the channel 8 of the slider. To assemble the end connection, the reverse procedure is followed with the pin member threaded down through the channel of the slider until the lower end of the pin member 19 strikes and is seated against the bottom end wall of the socket or recess 24 in the member 23. With the parts thus positioned, the slider is then moved along the stringers so as to move the upper ends of the pin member and socket member toward each other so as to interengage the finger-like portion 26 with the forked portion 22 in a manner hereinbefore described. Upon continued movement of the slider along the stringers, the fastener elements are interlocked with each other and the members of the end connection securely interlocked.

As a result of my invention, it will be seen that there is provided an improved separable end connection which is so constructed and arranged that it prevents any danger of accidental opening or failure of the fastener at a point immediately above the end connection due to flexing or misengagement of the fastener elements at this point. While my construction is shown incorporated with a fastener of the two-way or double acting type, it will be understood that it is not necessarily limited to such use but may be used with a conventional type fastener wherein the slider is adapted to move in one direction only along the fastener elements.

While I have shown and described an embodiment which my invention may assume in practice, it will be understood that this embodiment is merely for the purpose of illustration and description, and that other forms may be devised within the scope of my invention as defined in the appended claims.

What I claim as my invention is:

1. A separable end connection for slide fasteners having a series of interlocking fastener elements attached to a pair of flexible tapes, and a slider mounted thereon for longitudinal movement therealong for engaging and disengaging the elements, comprising a pair of interlocking stop members which are adapted to be separated by said slider, one of said members consisting of a pin member secured to one of the tapes adjacent the endmost fastener element thereof, and the other member consisting of a socket member secured to the tape adjacent the endmost fastener element of the other tape, one of said members having an angularly arranged forked portion carried thereby adjacent the upper end thereof projecting upwardly and outwardly from the inner side of said member, the other of said members having an angularly arranged finger-like portion carried thereby adjacent the upper end thereof projecting upwardly and outwardly from the inner side of said member which interlocks and cooperates with said forked portion of the other member so as to prevent transverse movement of said members relative to each other when they are interengaged, both said forked portion and said finger-like portion being of such length that they engage the endmost fastener element on one of the tapes whereby said endmost element is prevented both from twisting and drooping relative to the tape so that the same is rigidly supported thereby preventing displacement of said element from or along said tape.

2. A separable end connection for slide fasteners having a series of interlocking fastener elements attached to a pair of flexible tapes, and

6

a slider mounted thereon for longitudinal movement therealong for engaging and disengaging the elements, comprising a pair of interlocking stop members which are adapted to be separated by said slider, one of said members consisting of a pin member secured to one of the tapes adjacent the endmost fastener element thereon, and the other member consisting of a socket member secured to the tape adjacent the endmost fastener element of the other tape, said socket member having an angularly arranged forked portion carried thereby adjacent the upper end thereof projecting upwardly and outwardly from the inner side of said member, said pin member having an angularly arranged finger-like portion carried thereby adjacent the upper end thereof projecting upwardly and outwardly from the inner side of said member which interlocks and cooperates with the forked-like portion of said socket member so as to prevent transverse movement of said pin and socket members relative to each other when they are interengaged, both said forked portion and said finger-like portion being of such length that they engage the endmost fastener element on one of the tapes whereby said endmost element is prevented both from twisting and drooping relative to the tape so that the same is rigidly supported thereby preventing displacement of said element from or along said tape.

3. A separable end connection, as defined in claim 2, including means carried by both the socket and pin members which cooperate with each other to prevent longitudinal movement of said members relative to each other.

4. A separable end connection, as defined in claim 2, wherein the angularly arranged forked end portion carried by the socket member is arranged and is of such length that it extends into the recess in the endmost fastener element on the opposed tape, and the angularly arranged finger-like portion carried by the pin member is arranged and is of such length that it abuts the outer end of said endmost fastener element of that tape whereby said element is prevented both from twisting and drooping relative to the tape so that the same is rigidly supported thereby preventing displacement of said element from or along said tape.

5. A separable end connection, as defined in claim 2, including a recess arranged in the inner side of the socket member below the angularly arranged forked portion carried thereby, and a projecting portion arranged on the inner side of the pin member intermediate the length thereof which cooperates with said recess to prevent unintentional longitudinal movement of the pin and socket members relative to each other.

6. In a slide fastener of the class described adapted to be completely separated at both ends, having a pair of stringers with a series of opposed spaced-apart interlocking fastener elements attached to the edges of each stringer, and a slider mounted along the elements for engaging and disengaging the same, the tapes projecting beyond the series of fastener elements at the bottom end of the fastener, a separable end connection comprising a socket member attached to one of the tape ends adjacent the series of fastener elements on that tape, a pin member secured to the projecting tape end of the other stringer adapted to be threaded into engagement with said socket member, said socket member having a hollow box-shaped portion spaced from the fastener members

7

and a tubular portion extending to and substantially abutting the endmost fastener element of said series, said tubular extension having an angularly arranged forked end portion carried thereby at the upper end thereof which projects outwardly therefrom, said pin member having an angularly arranged finger-like portion carried thereby adjacent the upper end thereof projecting outwardly from the inner side thereof and adapted to be disposed in and cooperate with the forked end portion when the parts are assembled with the upper end of said pin member and said finger-like projecting portion carried thereby adapted to substantially abut the endmost fastener element on that stringer.

7. The combination, as defined in claim 6, wherein the angularly arranged forked end portion is of such length that it is adapted to abut the endmost fastener element on the other stringer when the pin and socket members are interengaged.

8. The combination, as defined in claim 6, including a shoulder arranged on the inner side of the tubular portion of the socket member and a projection arranged on the inner side of the pin member which cooperates with said shoulder

8

when said pin and socket members are interengaged so as to prevent unintentional longitudinal movement of said members relative to each other.

9. The construction, as defined in claim 6, including means carried both by the socket member and the pin member which cooperate with each other to prevent unintentional longitudinal movement of said members relative to each other when said members are interengaged.

NOEL J. POUX.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,172,213	Marinsky	Sept. 5, 1939
2,300,369	Kellum	Oct. 27, 1942
2,302,339	Morin	Nov. 17, 1942

FOREIGN PATENTS

Number	Country	Date
397,231	Great Britain	of 1933
504,716	Great Britain	of 1939