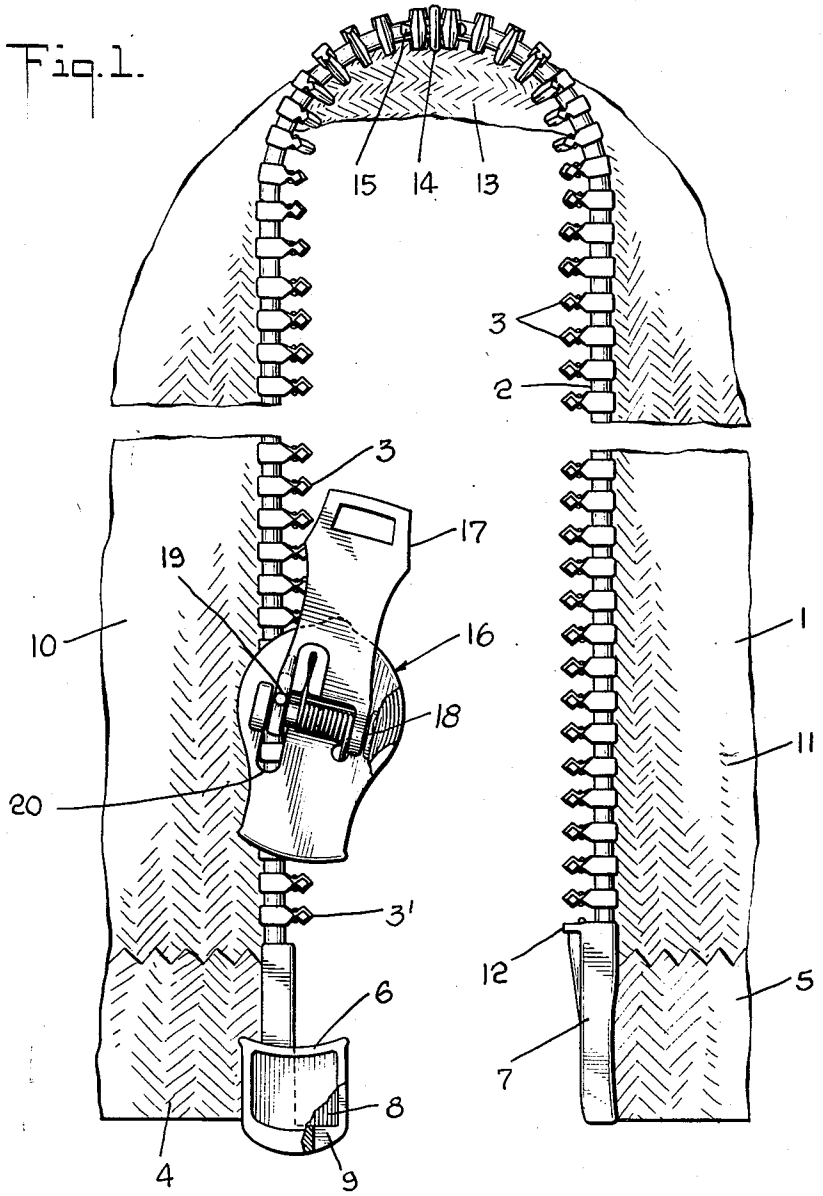
March 12, 1957 L. H. MORIN 2,784,473

ONE-STRINGER SEPARABLE FASTENER

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Fig. 1.



INVENTOR
LOUIS H. MORIN
BY
Howard J. Thompson
ATTORNEY

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Fig. 2.

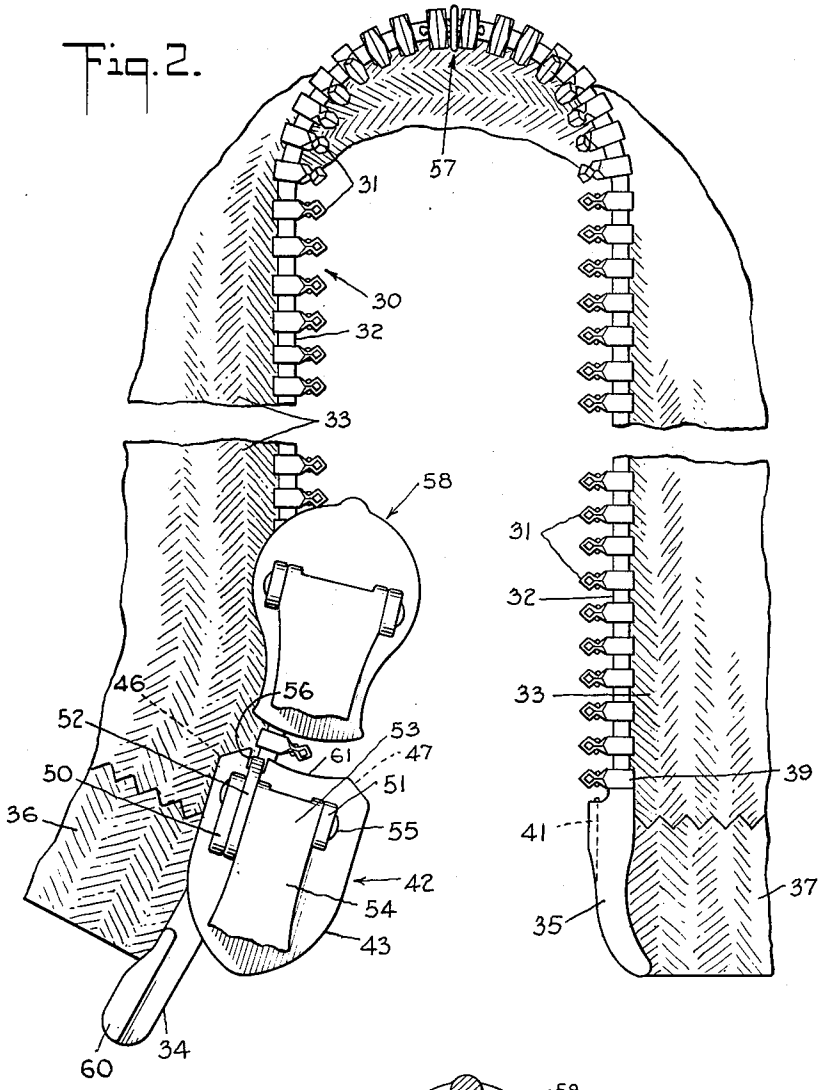
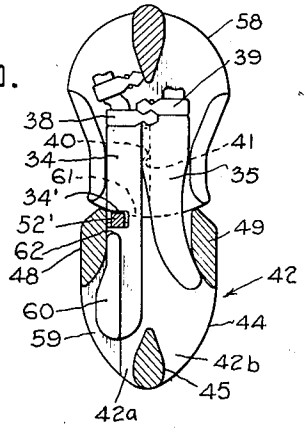


Fig. 3.



INVENTOR
LOUIS H. MORIN
BY
Howard T. Thompson
ATTORNEY

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2,784,473

ONE-STRINGER SEPARABLE FASTENER

Louis H. Morin, Bronx, N. Y.

Application October 26, 1950, Serial No. 192,239

11 Claims. (Cl. 24—205)

This invention relates to separable fastener stringers employing a slider for coupling and uncoupling the scoops of the stringers. More particularly, the present invention deals with devices of this type and kind, wherein the complete fastener is made from a single stringer tape folded centrally to bring end and/or side portions of the stringer tape in coupling engagement with each other.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawings, in which

Fig. 1 is a plan view of a fastener made according to my invention, with parts of the construction broken away and in section;

Fig. 2 is a plan view of a modified fastener; and

Fig. 3 is a reduced partial view, partly in section, of the fastener of Fig. 2 showing the lower ends of the stringer in coupled relation.

In Fig. 1, I have shown at **1** an elongated stringer tape, the length of which will be substantially twice the length of an opening or section to be closed by the fastener. The stringer tape **1** has the conventional enlarged or beaded edge **2**, to which is attached, at spaced intervals, scoops **3** of the double action type, that is to say, scoops having both male and female coupling portions on opposed surfaces thereof.

Ends of the tape **1** are inwardly folded, as indicated at **4** and **5**, and fixed to these inwardly folded ends is a box part **6** and pin part **7** of a separable coupling. The pin part **7** is insertable into the socket **8** of the box part and is stopped by the end wall **9** of said box part, so as to aline the scoops **3** at one side portion **10** of the tape **1** with the scoops **3** on the opposed side portion **11**.

The pin part **7** also preferably has formed thereon a scoop coupling head **12**, which is adapted to mesh and interlock with the end scoop **3'** on the side portion **10** of the tape. At **13** I have indicated the central portion of the stringer tape **1**, which portion can be folded in the manner indicated or the central portion may be extended into an arcuate position, if desired. Joined to two adjacent scoops at the central portion **13** is a stop member **14**, suitably fixed to the coupling ends of the scoops, as indicated at **15**. The stop **14** maintains a slider **16** on the side portion **10** of the stringer or, in other words, in association with the box part **6**.

The slider **16** is in the form of a conventional channelled slider body for reception of the scoops **3** in coupling the scoops on one side **10** with the scoops of the opposed side **11**. The slider is shown of the pin lock type, wherein a pull **17** is pivoted to one wall of the slider, as at **18**, the pull having a projecting pin or lock element **19** which passes through an aperture **20** in the slider wall to engage the scoops of the stringer to retain the slider in any position thereon when the side portions **10** and **11** are coupled together. This locking engagement of the slider with the stringer sides can take place at any desired position, so as to leave a large or small opening at the central portion of the stringer or substantially no opening, if the slider **16** is brought into close proximity to the stop **14**.

In Fig. 1, the slider **16** is shown in spaced relationship to the box part **6** for clarity in the illustration. It will be understood, however, that when the slider **16** is in abutting engagement with the box part **6**, the pin **7** can be moved into coupling engagement through the slider **16**, then into the channel or socket **8** of the box part **6**, which brings the side portions **10** and **11** into proper alinement. Thereafter, the slider can be moved away from the box part to couple the scoops of the stringer sides **10** and **11**.

In Fig. 2, another fastener is shown comprising a single stringer **30** having double acting scoops **31** attached to the beaded edge **32** of the tape **33**. Coupling members consisting of a bar or pin portion **34** and a pin member **35** are attached to the inwardly folded end portions **36**, **37** of the tape. It will be noted that the bar member **34** and pin member **35** are each disposed adjacent and in contact with the end scoops **38**, **39**, respectively, on the tape. Note Fig. 3. The bar member **34** is provided with a projection **40**, while pin member **35** has a groove **41** for receiving projection **40**, and in this way the coupling members may be keyed together, as shown in Fig. 3, to prevent lateral movement of one relatively to the other. As is also shown in Fig. 3, when the coupling members are coupled together, the end scoop **38** is in contact with, and supported by, both coupling members **34**, **35** to guard against turning of this particular scoop on the tape bead and to prevent possible mismeshing of the stringer ends.

The bar member **34** is associated with a movable box part or member **42** of the kind described and claimed in my copending application Serial No. 192,240 filed October 26, 1950, and also similar to those described and claimed in my co-pending application Serial Number 169,339, filed June 21, 1950, now Patent No. 2,649,688, issued August 25, 1953. For the purpose of the present invention a brief description of this box member may be useful. As may be apparent, it comprises a pair of upper and lower walls **43**, **44** joined and spaced together by a web portion **45** and provided with upper flanges **46**, **47**, and lower flanges **48**, **49**. A pair of channels **42*a*** and **42*b*** are thus formed which intersect above the web portion. One the upper wall **43** of the box member a pair of lugs **50**, **51** are provided between which are disposed a movable lock member **52** and the hinge portion **53** of a pull **54**. The lock member and pull are secured to the lugs by a pin or axle **55**, and the pull may be tensioned to the box member by means of a spring, not shown, as set forth in said co-pending applications. A recess **56** is formed in wall **43** through which the lock member is movable. As is described in the first mentioned co-pending application, the lock member **52** is actuated by the pull **54**.

A slider stop member **57** is provided on the fastener having the disposition and construction as shown in Fig. 1. The slider **58** is also of the same type as in Fig. 1.

In its use as a bottom stop, the box member **42** may be regarded as associated with the bar member **34** to form a box part corresponding to the box part **6** of Fig. 1, and thus serves to receive the pin member **35** to form a separable end coupling. In such use, the box member will have the position shown in Fig. 3. As described in said co-pending application Serial No. 192,240, in order to prevent the box member from sliding off the lower ends of the coupling members and becoming disengaged from the fastener, interengaging means for box member **42** and bar member **34** are provided, according to which the inner surfaces of the walls **43** and **44** of the box member are each provided with a groove, one of

8. In combination, a single stringer tape having double acting scoops spaced longitudinally of one edge of the tape to form a stringer length, a coupling member at each end of said stringer length, one of said coupling members comprising a pin part and the other comprising a box part, said members, when the ends of said length are brought together, being couplable to and detachable from each other to form of said stringer length a pair of couplable stringer sides, a slider on said stringer length for coupling and uncoupling one stringer side to and from the other, respectively, and a slider stop member on said stringer length intermediate the ends thereof.

9. In combination, a single stringer tape having double acting scoops spaced longitudinally of one edge of the tape to form a stringer length, a coupling member at each end of said stringer length, one of said coupling members comprising a pin part and the other comprising a movable box part associated with a stationary pin portion, said members, when the ends of said length are brought together, being couplable to and detachable from each other to form of said stringer length a pair of couplable stringer sides, a slider on said stringer length for coupling and uncoupling one stringer side to and from the other, respectively, and a slider stop member on said stringer length intermediate the ends thereof.

10. In combination, a single stringer comprising a tape having double acting scoops spaced longitudinally of one edge of the tape to form a stringer length, a coupling member at each end of the stringer length, one of said coupling members comprising a pin part and the other comprising a box part, said box part being permanently

secured to said stringer length and having means for releasably holding the pin part when the ends of said length are brought together to thereby couple said parts together, said members being couplable to and detachable from each other to form of said stringer length a pair of couplable stringer sides and slider retaining means intermediate the ends of the stringer.

11. In combination, a single stringer comprising a tape having double acting scoops spaced longitudinally of one edge of the tape to form a stringer length, a coupling member at each end of said stringer length, one of said coupling members comprising a pin part and the other comprising a box part, said box part being secured to one end of the stringer length and having means for releasably holding the pin part when the ends of said length are brought together to thereby couple said parts together, said members being couplable to and detachable from each other to form of said stringer length a pair of couplable stringer sides and slider retaining means intermediate the ends of the stringer.

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