July 15, 1958 L. H. MORIN 2,842,824

SEPARABLE FASTENER WITH DUAL SIZE CENTER LEDGE SCOOPS

Filed April 20, 1955

Fig. 1.

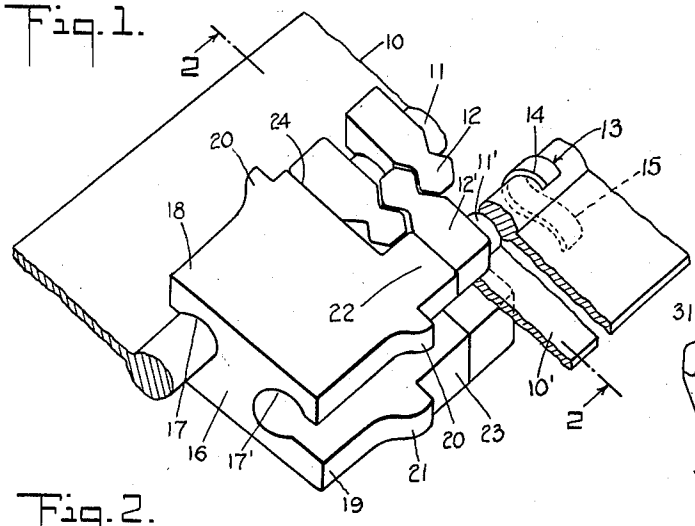


Fig. 4.

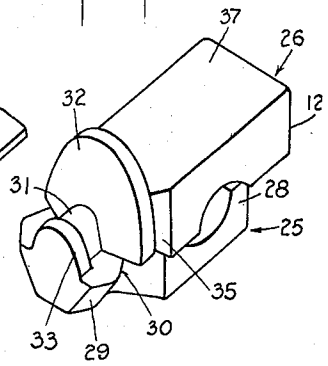


Fig. 2.

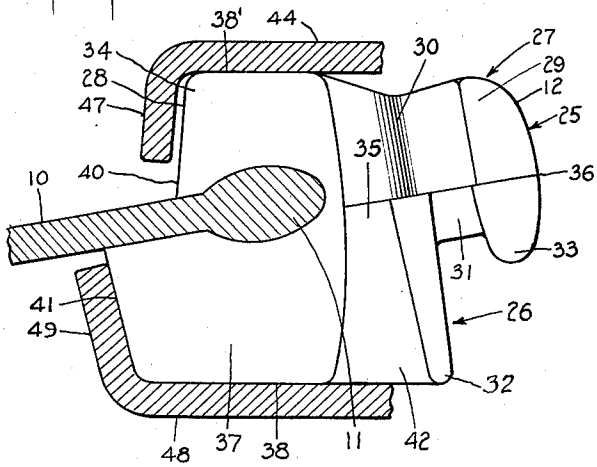


Fig. 5.

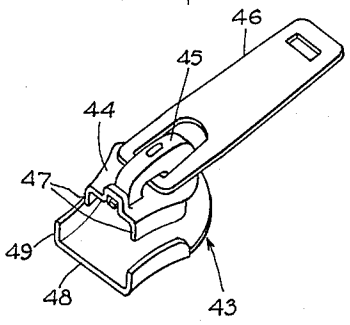
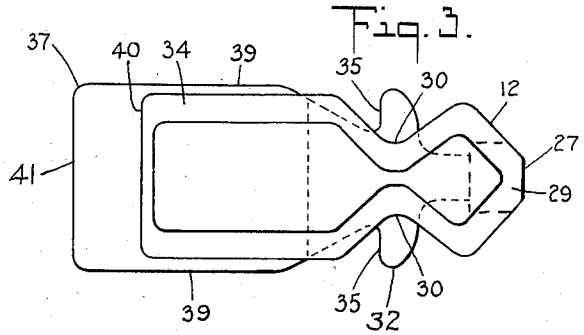


Fig. 3.



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SEPARABLE FASTENER WITH DUAL SIZE CENTER LEDGE SCOOPS

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11 Claims. (Cl. 24—205.11)

This invention relates to separable fasteners employing stringers with scoops spaced along beaded edges of the stringers and with a slider movable along the stringers to end stops provided on said stringers in the operation of opening and closing the stringers.

More particularly, the invention deals with what I term a dual size center ledge scoop, wherein one front side of the scoop is of a smaller size than the opposed rear side thereof, thereby presenting a smaller scoop appearance at the front of the fastener, while maintaining the desired strength in the rear larger scoop size.

Still more particularly, the invention deals with a separable fastener, wherein the slider, as well as the end stops of the fastener, have small front face portions and larger rear face portions, consistent with the dual size scoop structure employed.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed and, in which, the separate parts are designated by suitable reference characters in each of the views and, in which:

Fig. 1 is a diagrammatic perspective view showing parts of one end portion of a pair of stringers, including the end stop at such end, and also indicating the opposed end stop of one stringer.

Fig. 2 is an enlarged sectional view on the line 2—2 of Fig. 1, taken through part of one stringer and illustrating, in section, portions of opposed slider walls adjacent the front and rear side face portions of a scoop arranged on said stringer.

Fig. 3 is a plan view of the front face of a scoop detached.

Fig. 4 is a diagrammatic perspective view looking in the direction of the rear face of a detached scoop; and

Fig. 5 is a diagrammatic perspective view of a slider for use on stringers of the type and kind illustrated, in part, in Fig. 1 of the drawing.

In the use of separable fasteners, a problem presents itself, particularly in obtaining a fastener of the desired strength while, at the same time, minimizing the size of the fastener, as it appears on the front of the garment or article, in connection with which the fastener is employed. To fulfill this want, I have conceived what I term a dual size scoop structure, wherein the front side of the scoop is made in proportion to a small size fastener; whereas, the rear side of the scoop is made in proportion to a larger size scoop, thus producing, in the resulting fastener, the appearance of the smaller size scoop on the front or outer face of the resulting fastener. At the same time, the strength characteristics or properties are maintained in the scoop by virtue of the larger rear side of the dual scoop structure.

To illustrate, the front side of the scoop structure can be made of a number three size scoop; whereas, the rear side of the dual scoop structure can be made of a number five size scoop, thus the number three front size scoop will give a neat or dainty appearance; whereas, the rear

number five size scoop will provide the required strength in the use for which the fasteners are intended. It will be understood at this time that the different size ranges in dual scoop structures can be carried out throughout the various scoop sizes required going up to the number ten, or large size scoops.

In addition to enhancing the appearance of the front face portion of the resulting stringers by employing the smaller scoop sides, the end stops, as well as the slider movable along the stringers will have proportionately smaller front side portions, as well as larger rear side portions.

Considering now Fig. 1 of the drawing, I have shown diagrammatically and, in part, portions of two stringer tapes **10**, **10'**, to the beaded edges **11**, **11'** of which are attached, at longitudinally spaced intervals, dual size scoops **12**, **12'**; at one end of each of the stringers **10**, **10'** is arranged a top stop, one of which is seen at **13** on the stringer **10'**, the top stop having, at its front portion, a relatively narrow stop plate or arm **14** and, at the rear surface, a wider stop plate or arm, indicated in dotted lines at **15**. The stop plate **14** is consistent with the smaller front scoop portion and the stop plate **15** corresponds to the larger back scoop portion and also, of course, with the larger front and back plates of the slider. More conventionally, the stop arm **14** may be said to be shorter in length than the arm **15**. The other end portions of the stringers **10**, **10'** are joined in a common bottom stop **16**, having channels **17**, **17'** to receive the stringer tapes including the beaded edges **11**, **11'** thereof, as diagrammatically noted.

The bottom stop **16** has a narrow front plate **18** and a wider rear plate **19**, each having a width consistent with corresponding dimensions, in this case the lengths, of a pair of coupled scoops, that is to say, the front scoop portions in the case of plate **18** and the rear scoop portions in the case of plate **19**.

Side edges of the front plate **18** have laterally projecting stop lugs **20** and corresponding edges of the rear plate **19** have similar projecting stop lugs, one of which is indicated at **21**. The front and rear plates **18** and **19** also include inwardly projecting scoop engaging stops or members **22** and **23**, respectively, which are adapted to abut front and rear scoop portions of the adjacent scoop **12'**. The corresponding end scoop **12** abuts the inner edge of the walls **18** and **19**, one of which abutments is indicated at **24** in Fig. 1 of the drawing, that is to say, the abutment with the front wall **18**.

As each scoop **12**, **12'** is of the same construction, the brief description of one scoop, namely the scoop **12**, will be given and will apply to the structure of the other scoops. These dual scoops are what I term center ledge scoops and employ a front small scoop side **25** and a rear large scoop side **26**.

The dual scoop structure has a coupling end portion **27** and a mounting end portion **28**, the latter being fixed to the tape and the tape bead, as for example, in attachment to the stringer **10** and the bead **11** thereof, as partly seen in Fig. 2 of the drawing. The scoops are die cast directly upon the stringers and, in this method of procedure, the molten metal extends into the interstices of the braid of the stringer tape, thus establishing a secure attachment of the dual scoop **12** to the stringer tape.

The coupling end portion of the scoop has a head end **29**, which is generally diamond-shaped in form (note Fig. 3) with the walls tapering outwardly in the direction of the front face of the scoop. Inwardly of the head are reduced neck-forming recesses **30**, being adapted to receive the heads **29** of scoops of an opposed stringer, as diagrammatically seen in Fig. 1 of the drawing, in coupling the stringers together. This structure is on the front side **25** of the dual scoop. At the other or rear

side 26 of the dual scoop is a center ledge or rib 31 arranged between the large inner disc-like projection 32 and a smaller outer disc-like projection 33, the latter forming the male and female couplings with scoops of companion stringers, similar to the couplings 29 and 30 of the front side 25. It will appear, from a consideration of Fig. 3 of the drawing, that the disc-like projection 32 is arranged substantially in alinement with the recesses 30 and projects to the full width of the mounting end portion 34 of the front scoop part 25.

Inwardly of the projection 32 at the sides of the scoop are recesses 35, which are adapted to receive the projections 33 of the scoops of the opposed stringer. It will be understood that the male and female coupling portions of the scoop sides 25 and 26 intersect in the dividing line 36, or the plane passing through such line, clearly noted in Fig. 2 of the drawing. The angularity of this dividing line assists in the coupling of the scoops.

The mounting end portion 37 of the rear scoop side 26 is made larger than the mounting end portion 34 in three different dimensions. In the first place, it is of greater thickness, in other words, the lower side surface 38 is spaced from the tape bead 11 a greater depth than is the upper surface 38' of the mounting end portion 34.

Considering Fig. 3 of the drawing, it will appear that the sides 39 of the mounting end portion 37 extend outwardly beyond the sides of the mounting end portion 34, that is, are of greater width.

The inner portion 40 of the mounting end 34 and the inner portion 41 of the mounting end portion 37 extend onto the tape 10 beyond the bead 11. However, the end portion 41 extends a material degree onto the tape, thus making the mounting end portion 37 considerably longer than the mounting end portion 34. At this time, it will be understood that the enlargements in length, as well as in width of the mounting end portion 37, provide a materially greater surface bonding area with the stringer 10, as well as with the bead 11; thus adding materially to the strength of the dual scoop structure 12.

While the general size of the coupling end portion of the scoop side 26, and particularly the parts 31 and 33, can be maintained consistent with the scoop size represented by the side 25, the part 32, as well as the size of the recesses 35, is increased by virture of the added depth to the scoop side 26, as noted at 42 in Fig. 2 of the drawing.

In Fig. 5 of the drawing, I have shown, in diagrammatic perspective detail at 43, a slider for use on stringers having dual scoops, similar to the scoops 12, 12'. The slider indicated is of the lock type, including, on the front wall 44, a lock element 45 controlled by actuation of a pull 46. The wall 44 has inwardly extending spaced flanges 47, forming part of the channel of the slider body, controlling coupling and uncoupling of the stringers 10, 10'.

At 48 is shown the rear wall of the slider 43, which has spaced flanges 49, the latter being spaced farther apart than the flanges 47.

In Fig. 2 of the drawing, I have shown, in section, a small part of the walls 44, 48 of the slider 43, as well as one of the slide flanges 47 and 49 of each. It will be noted that the side flanges 49 snugly engage the mounting end portion 37; whereas, the wall 47 is spaced slightly from the mounting end portion 34, this clearance being provided for free coupling engagement of the scoops of companion stringers. In other words, the coupling and uncoupling engagement of the dual scoops is primarily cared for by the flanges 49 of the rear wall 48, that is to say, in operating directly upon the larger rear scoop side 26.

It will be apparent that the small top wall 44 of the slider 43 will enhance the appearance of the separable fastener and be consistent with the small front scoop structures 25. The slider 43, when operating upon the stringers 10, 10' and over the scoops 12, 12' arranged thereon, will be limited in its movement in both directions by the flanges 47, 49 striking the projecting lugs 20, 21, respectively, and by the slider engaging the top stops 13.

From the foregoing, it will be apparent that the dual size scoop structure employed on the stringers will provide the strength and durability of the enlarged rear scoop side 26 of each of the scoops; whereas, the front side of the stringers will have arranged thereon the small scoop sides 25 with other parts of the complete fastener, such as the end stops and slider, proportionately consistent with the two sides of the dual scoop structure employed.

Scoops of the type shown herein, but of uniform size, are described in co-pending application Serial No. 307,279, filed August 30, 1952, now Patent No. 2,798,274, issued July 9, 1957, of which the present application is a continuation-in-part.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a separable fastener stringer comprising a beaded tape having metal scoops die cast thereon and spaced longitudinally along the beaded edge thereof, each scoop having a coupling end and a mounting end, each scoop comprising a pair of dissimilar longitudinal portions of different size, and wherein the dividing line between said scoop portions extends centrally, vertically and longitudinally of the scoop so that each scoop portion includes a coupling end part and a mounting end part, the improvement wherein the mounting parts of both scoop portions of a scoop engage, and grip between them, both the bead and a portion of the tape inwardly of said bead, the engagement between said mounting end parts of said scoop and said beaded tape being enhanced by virtue of the extension of scoop metal into interstices of the beaded tape during the die casting of the scoop thereon, the mounting end part of one scoop portion of said scoop having a greater length, a greater width, and a greater thickness than the mounting end part of the other scoop portion, said one scoop portion by virtue of its greater length and width engaging a greater area of the tape and bead than said other scoop portion, the coupling end part of said one scoop portion having, over a portion of the length thereof, a greater thickness than the coupling end part of said other scoop portion, said stringer on one side exhibiting uniformly sized scoop portions that are smaller than the scoop portions on the other stringer side, said smaller scoop portions providing said one side of the stringer with a daintier appearance than said other side, and the larger scoop portions on said other stringer side providing the stringer with a scoop-to-tape attachment strength substantially equivalent to that of a stringer whose scoops are uniformly equal in size to the size of said larger scoop portions.

2. In a separable fastener stringer comprising a beaded tape having scoops die cast thereon and spaced longitudinally along the beaded edge thereof, each scoop having a coupling end and a mounting end, each scoop comprising a pair of dissimilar longitudinal portions of different size, and wherein the dividing line between said scoop portions extends centrally, vertically and longitudinally of the scoop so that each scoop portion includes a coupling end part and a mounting end part, the improvement wherein the mounting parts of both scoop portions of a scoop engage, and grip between them, both the bead and a portion of the tape inwardly of said bead, the mounting end part of one scoop portion of said scoop having a greater length, a greater width, and a greater thickness than the mounting end part of the other scoop portion, said one scoop portion by virtue of its greater length and width engaging a greater area of the tape and bead than said other scoop portion, said stringer on one side exhibiting uniformly sized scoop portions that are smaller than the scoop portions on the other stringer side, and said smaller scoop portions providing said one side of the stringer with a daintier appearance than said other side.

3. In a separable fastener stringer comprising a tape having scoops spaced longitudinally along a beaded edge thereof, each scoop having a coupling end and a mounting end, each scoop comprising a pair of dissimilar longitudinal portions of different size with each said portion including a coupling end part and a mounting end part, the improvement wherein the mounting end part of one portion has a greater length, a greater width, and a greater thickness than the mounting end part of the other portion, said one portion by virtue of its greater length and width engaging a greater area of the beaded tape than the other portion, the coupling end part of said one portion having a greater thickness than that of the other portion, said stringer on one side exhibiting uniformly sized scoop portions that are smaller than the scoop portions on the other stringer side and that provide said one stringer side with a neater appearance than the other side.

4. The separable fastener of claim 3 wherein said smaller scoop portions are two scoop sizes smaller than said larger scoop portions.

5. In a separable fastener comprising a pair of stringers and a slider movable thereon to couple and uncouple the same, each stringer comprising a beaded tape having metal scoops die cast thereon and spaced longitudinally along the beaded edge thereof, each scoop having a coupling end and a mounting end, each scoop comprising a pair of dissimilar longitudinal portions of different size, said portions being divided by a plane which extends substantially centrally, vertically and longitudinally of the scoop so that each scoop portion includes a coupling end part and a mounting end part, the improvement wherein the engagement between said mounting end parts of the scoop and said beaded tape is enhanced by virtue of the extension of scoop metal into interstices of the beaded tape during the die casting of the scoop thereon, the mounting end part of one scoop portion having a greater length, a greater width, and a greater thickness than the mounting end part of the other scoop portion, the coupling end part of said one scoop portion having a greater thickness than that of the other scoop portion, said stringer on one side exhibiting uniformly sized scoop portions that are smaller than the scoop portions on the other stringer side and that provide said one side with a neater appearance than the other side, the larger scoop portions on said other side of the stringer providing the stringer with a scoop-to-tape attachment strength equivalent to that of a stringer whose scoops are uniformly equal in size to said larger scoop portions, said slider having front and back walls of different sizes, the front wall being smaller than the back wall in respect of the length and width thereof and being engageable with said smaller scoop portions on said one side of the stringers, the size and appearance of said front wall being consistent with said smaller scoop portions, and the larger back wall being engageable with said other scoop portions.

6. The separable fastener of claim 5 wherein said stringers are provided with a bottom stop comprising a pair of oppositely disposed front and back plates, the front plate being disposed on said one side of the stringers and being narrower than the back plate, said front plate having a width coextensive with the length of a pair of oppositely disposed coupled scoops as measured on said one side of the stringers, said back plate being disposed on the other side of the stringers and having a width coextensive with the length of a pair of oppositely disposed coupled scoops as measured on said other side of the stringers.

7. The separable fastener of claim 6 wherein said stringers have a top stop comprising a pair of front and back arms of different lengths, the front arm being shorter and disposed on said one side of the stringers and the longer arm being disposed on said other side of the stringers.

8. In a separable fastener comprising a pair of stringers, a slider movable thereon to couple and uncouple the same, and top and bottom stops for the stringers, each stringer comprising a beaded tape having scoops spaced longitudinally along the beaded edge thereof, each scoop having a coupling end and a mounting end, each scoop comprising a pair of dissimilar longitudinal portions of different size with each said portion including a coupling end part and a mounting end part, the improvement wherein the mounting end parts of one portion has a greater length, a greater width, and a greater thickness than the mounting part of the other portion, said stringer on one side exhibiting uniformly sized scoop portions that are smaller than the scoop portions on the other strainger side and that provide said one side with a neater appearance than the other side; said slider having front and back walls of different sizes, the front wall being smaller than the back wall in respect of the length and width thereof and being engageable with said smaller scoop portions on said one side of the stringers; said bottom stop comprising a pair of oppositely disposed front and back plates, the front plate being disposed on said one side of the stringers and being narrower than the back plate; said top stop comprising a pair of front and back arms of different lengths, the front arm being shorter and disposed on said one side of the stringers; and the size and appearance of the front wall of the slider and of the front plate and front arm of said bottom and top stops being consistent with the scoops on said one side of the stringers.

9. The separable fastener of claim 8 wherein said slider walls have flanges, and wherein the flanges on the front wall are spaced from the scoops to provide a smoother coupling and uncoupling action.

10. The separable fastener of claim 8 wherein said front plate of the bottom stop has a greater length than said back plate.

11. The separable fastener of claim 8 wherein said front and back plates of the bottom stop each has a pair of oppositely disposed projections extending laterally therefrom for checking movement of the slider, the projections on the front plate being offset in the fastener-closing direction relatively to the projections on the back plate.

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