April 18, 1961 L. H. MORIN 2,979,796

WEAR RESISTANT SURFACE COVERED SEPARABLE FASTENERS

Filed April 21, 1958

FIG. 1

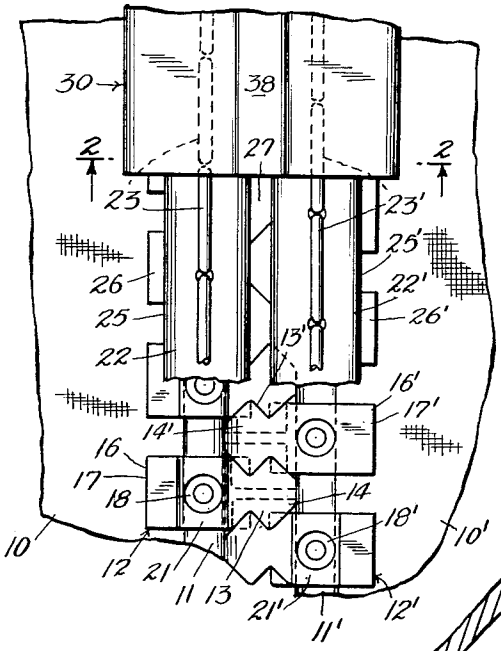


FIG. 3

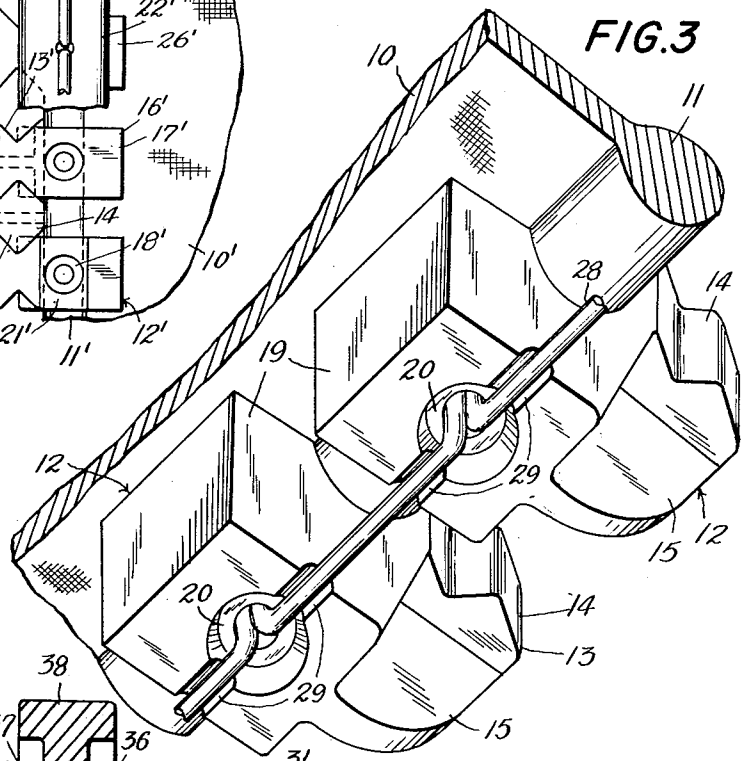
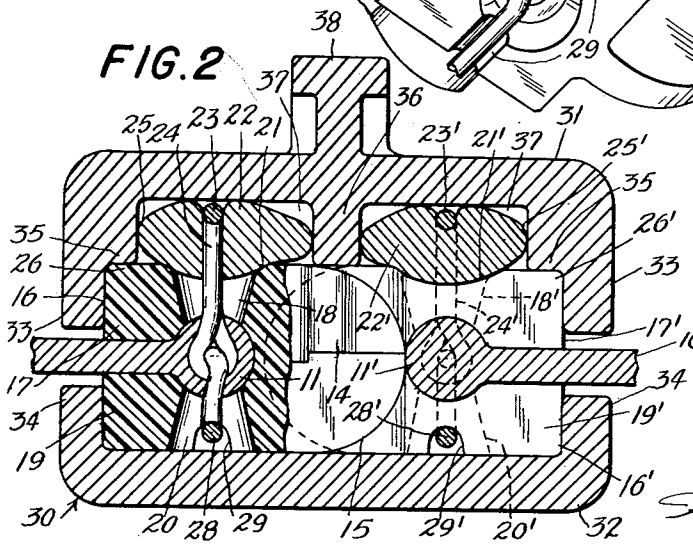


FIG. 2



INVENTOR
LOUIS H. MORIN
BY
Howard C. Thompson
ATTORNEY

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WEAR RESISTANT SURFACE COVERED SEPARABLE FASTENERS

Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware

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This invention relates to separable fasteners employing cover strands or cords arranged upon and secured to one surface of the scoops of separable fastener stringers by stitchings extending through apertured portions of each of the scoops of the stringers and, further, wherein side portions of the strands or cords are spaced with respect to inner ends of the mounting end portions of the scoops to provide exposed surfaces, on which heel elements or shoulders of a specially constructed slider operate in eliminating any wear of the slider upon the stitchings securing the cover strands or cords to the surface of the scoops.

More particularly, the invention deals with a fastener construction of the character described, wherein the surface of the scoops opposed to the surface to which the strands or cords are arranged are recessed or grooved to receive the stitching to, at all times, maintain the stitching in spaced relationship to the opposed wall of the slider to prevent wear and, further, to prevent a pressing iron from directly contacting the stitching on said surface of the scoops.

Still more particularly, the invention deals with a fastener of the character described, wherein the scoops of the stringers are preferably of the center ledge type and can be molded or cast directly upon the stringer tapes and, in some instances, such plastic materials as nylon and Delrin can be employed and, further, wherein the slider includes a central projecting bearing portion for engagement with coupled scoops intermediate inner adjacent edge portions of the strands or cords arranged upon the outer surface of the scoops.

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 an enlarged diagrammatic plan view of a portion of two stringers, part of a slider and portions of two cover strands or cords, with parts of the construction broken away.

Fig. 2 is an enlarged section on the line 2—2 of Fig. 1; and

Fig. 3 is a diagrammatic enlarged perspective view of the lower surface portion of two adjacent scoops of a stringer.

In illustrating one adaptation and use of my invention, I have diagrammatically illustrated in Fig. 1 of the drawing a small sectional portion of a pair of coupled separable fastener stringers, in which 10, 10' represent the stringer tapes, to the beaded edges 11, 11' of which are fixed molded or cast scoops 12, 12', the scoops being generally of what is known as the center ledge type of scoops and, while these scoops can be formed of any suitable materials, the present illustration will deal with plastic scoops made of nylon, Delrin or similar materials.

As each of the scoops are of the same construction, the brief description of one will apply to the other.

The scoops include projecting coupling end portions 13, 13' of the center ledge type, in other words, having more or less diamond-shaped coupling heads 14, 14' upon their upper surfaces and a central rib 15 on the lower recess surface of the scoop, as best noted in Fig. 3 of the drawing. At 16, 16' I have shown the mounting end portions of the scoops which are arranged upon the beaded edges 11, 11' of the tapes 10, 10'.

Considering Fig. 2 of the drawing, it will appear that the upper portions 17, 17' of the mounting end portions have outwardly flared apertures 18, 18' and the lower portions 19, 19' have similar apertures 20, 20' and both apertures 18, 20, 18', 20' expose portions of the beaded edges 11, 11' of the tapes, as will clearly appear at the left of Fig. 2 of the drawing. The upper portions 17, 17' have, on their upper surfaces, transverse recesses or nests 21, 21' to form seats for cover strands or cords 22, 22' which are secured in position by stitchings 23, 23' performed on a special sewing machine. In the stitching operation, the upper sewing thread 24, 24' compresses the strand or cord 22, 22' substantially as diagrammatically illustrated in Fig. 2 of the drawing and, in this operation, the inner side edge portions 25, 25' will be spaced from inner ends of the mounting end portions 17, 17', leaving protruding platforms 26, 26' at inner ends of the scopes for purposes later described. It will also appear that the outer side edge portions of the strands or cords 22, 22' are spaced apart when the pair of stringers are coupled together, as clearly noted in Figs. 1 and 2 of the drawing, the space being designated by the reference character 27 in Fig. 1 of the drawing.

The stitchings will firmly support the strands or cords in the recesses or nests 21, 21' and the lower or bobbin threads 28, 28' of the stitchings engage the upper threads within the beaded edges 11, 11', as diagrammatically seen in Fig. 2 of the drawing, and these lower threads seat in the apertures 20 and in grooves 29, 29' formed in the lower surfaces of the scoops, so that the lower threads are housed within said lower surfaces; thus, in a laundering or pressing operation, a pressing iron will not have direct contact with the threads, as will clearly appear.

In Fig. 1 of the drawing, the stitchings 23, 23' are shown on portions of the cords 22, 22'; whereas, the lower surfaces of said figures are uncovered in order to clearly illustrate the apertures 18, 18', as well as the recesses 21, 21'; whereas, in Fig. 3 of the drawing, the arrangement of the lower threads 28 in the grooves 29, as well as the apertures 20, is clearly illustrated.

In Fig. 1 of the drawing, I have shown at 30 the narrow channelled end portion of a slider, such as commonly used in coupling and uncoupling the scoops of stringers of the kind under consideration and, in Fig. 2, I have shown a sectional view through said end portion of the slider. Considering Fig. 2, it will appear that the slider includes upper and lower wall portions 31 and 32 having flanged sides, as at 33 and 34, respectively, which engage inner end portions of the upper or lower parts 17 and 18 of the mounting end portions 16, 16' of the scoops. With the present slider construction, the flanges 33 of the upper or outer wall of the slider are deeper than customary and upon the inner surfaces of the flange sides are formed inwardly projecting shoulders or heel elements 35 adapted to bear directly upon the protruding platforms 26, 26'; thus eliminating, as will appear from a consideration of Fig. 2 of the drawing, any downward pressure of the slider wall 31 upon the strands or cords 22, 22' and, particularly, the stitchings 23, 23' which embed themselves in the strands or cords, as diagrammatically illustrated in said figure.

It will also appear, from a consideration of Fig. 2 of

the drawing, that the central portion of the top wall **31** of the slider includes an inwardly projecting center ridge or web **36** positioned between adjacent side edge portions of the cords of coupled stringers and bearing upon the engaged coupling head end portions **14, 14'** of the scoops in further maintaining the desired arrangement of the strands or cords **22, 22'** within what may be termed chambers or channels **37** formed on the inner surface of the wall **31** between the ridge **36** and the shoulder or heel portions **35**. This free arrangement of the strands or cords within the chamber eliminates wear upon these cover strands or cords, it being apparent that the bearing engagement of the slider is taken up directly upon the scoops at all times.

This type of covered stringer construction lends itself to attachment of stringers to supports of any desired shape or contour, as it aids in the stitching operation of sewing the stringers to the articles or supports to which the stringers are attached.

In Fig. 2, a section is shown through the recessed rib or web **38** centrally of the top wall **31** of the slider, with which the usual pull, not shown, is attached.

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

1. In separable fasteners employing stringers with plastic scoops spaced along adjacent beaded edges of the stringers and a slider movable along the scoops of the stringers to couple and uncouple the same, a cover cord arranged along one side surface of the scoops of each stringer, stitchings for securing the cords to the scoops and stringers, opposed sides of the mounting end portions of each of the scoops having outwardly flared apertures exposed to the beaded edges of the stringer tapes, the sides of the scoops to which the cords are attached including transverse recesses aligned with said beaded edges forming seats for said cords, the other sides of the scoops having transverse grooves opening into the apertures of said sides, said stitchings compressing the cords firmly in the recesses, and the opposed thread of the stitchings seating in the grooves in a second named sides of the scoops.

2. A structure as defined in claim 1, wherein the last named thread is maintained in spaced relation to outer surfaces of said grooved side of the scoops.

3. A structure as defined in claim 1, wherein the said stitchings are interlocked within the bead of the tape edge.

4. A structure as defined in claim 1, wherein the inner side edge of the cover cord is maintained in spaced relation to inner ends of the mounting end portions of the scoops to provide projecting platforms.

5. A structure as defined in claim 4, wherein opposed sides of said slider include inwardly projecting heel elements operatively engaging the platforms of scoops of coupled stringers.

6. A structure as defined in claim 5, wherein the central portion of said slider includes a downwardly projecting web operatively engaging surfaces of coupled scoops intermediate outer spaced edges of the cover cords of said coupled scoops.

7. In separable fasteners employing stringers with scoops spaced along adjacent beaded edges of the stringers and a slider movable along the scoops of the stringers to couple and uncouple the same, the slider having opposed walls including flanged sides, the flanges of one slider wall having inwardly projecting heel elements adapted to operatively engage surfaces of mounting end portions of the scoops of a pair of stringers in coupling said stringers together, the central portion of said slider wall having a downwardly projecting web adapted to engage surfaces of coupled scoops, said web, in combination with the heel portions, forming, within said wall of the slider, side channels beyond surfaces of coupled scoops, and cover means fixed to the scoops of each stringer and movable freely in said channels in operation of the slider along the stringers in coupling and uncoupling said stringers.

8. A structure as defined in claim 7, wherein attachment of the cover means to the stringers comprises stitchings passed through apertures in the mounting end portions of each of the scoops and extending into the beaded edges of said stringers.

9. A structure as defined in claim 8, wherein the surfaces of the scoops, adjacent said cover means and aligned with said beaded edges, are recessed to partially receive said cover means in definitely positioning the cover means on the scoops.

10. A structure as defined in claim 9, wherein opposed sides of the mounting end portions of the scoops are fashioned to completely house the stitchings within boundaries of outer surfaces of said last named sides.

11. In separable fasteners employing stringers with scoops spaced along adjacent beaded edges of the stringers and a slider movable along the scoops of the stringers to couple and uncouple the same, the slider having opposed walls including flanged sides, the flanges of one slider wall having inwardly projecting heel elements adapted to operatively engage surfaces of mounting end portions of the scoops of a pair of stringers in coupling said stringers together, the central portion of said slider wall having a downwardly projecting web adapted to engage the upper surfaces of coupled scoops, said web, in combination with the heel portions, forming, within said wall of the slider, side channels beyond surfaces of coupled scoops, and the spacing of the heel portions of one wall of the slider with respect to the inner surface of the opposed wall of the slider being such as to snugly, but freely dispose the scoops within the slider walls for free operation of the slider on said scoops, while maintaining adjacent edges of the flanged sides of the slider walls in spaced relation to the stringer tapes.

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