March 27, 1951 L. H. MORIN 2,546,649

CAST ON END STOP FOR SEPARABLE FASTENER STRINGERS

Original Filed Oct. 16, 1943

Fig. 1.

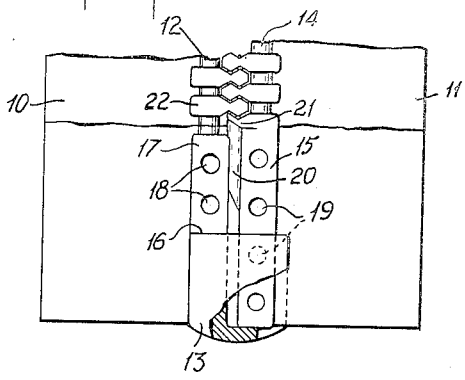


Fig. 2.

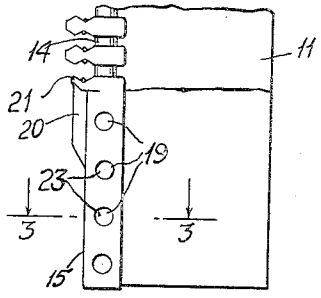


Fig. 3.

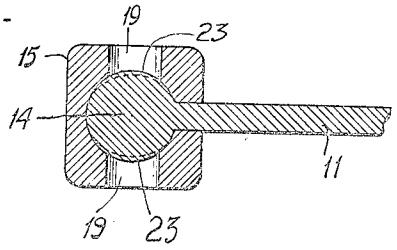


Fig. 4.

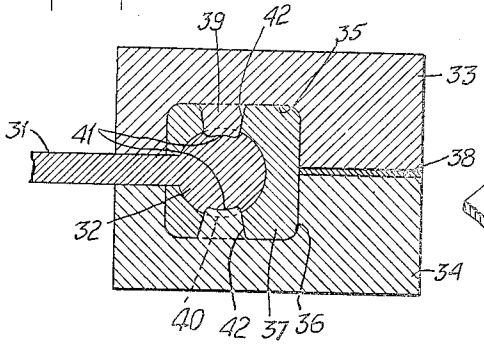
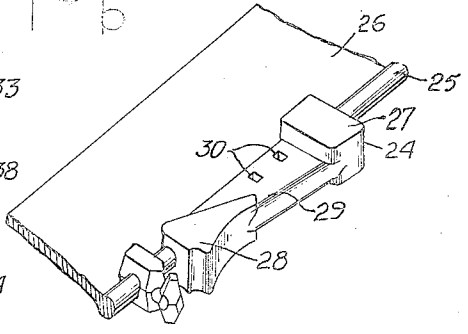


Fig. 5.



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CAST ON END STOP FOR SEPARABLE FASTENER STRINGERS

Louis H. Morin, Bronx, N. Y.

Original application October 16, 1943, Serial No. 506,466, now Patent No. 2,464,050, dated March 8, 1949. Divided and this application November 4, 1948, Serial No. 58,207

2 Claims. (Cl. 24—205.11)

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This invention relates to the formation of various kinds of end stops on the ends of the stringers of separable fasteners to limit or check movement of a slider on the stringers. More particularly, the invention deals with the method of forming end stops on fastener stringers to insure proper positioning and alinement of the stops on the beaded edge of the stringers, and further to provide cast-on end stops having means for keying the same against shifting movement longitudinally of the stringer tapes. 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 plan view of what is commonly termed a box and pin end stop coupling showing one adaptation of the invention.

Fig. 2 is a plan view of the pin portion of the stop shown in Fig. 1 detached.

Fig. 3 is a partial section on the line 3—3 of Fig. 2 on an enlarged scale.

Fig. 4 is a diagrammatic sectional view showing the dies employed in forming stops of the kind under consideration; and

Fig. 5 is a perspective view of another form of end stop showing another adaptation of the invention.

This application is a division of my prior application Serial Number 506,466, filed October 16, 1943, now Patent Number 2,464,050, issued March 8, 1949.

In the construction of fasteners of the kind under consideration, and particularly in the mounting of end stops on the ends of the stringers adjacent end links thereon difficulty has been experienced in die casting stops of this kind directly upon the beaded edges of the stringer tapes primarily from the standpoint of properly alining and positioning the stops on the tape ends.

As a solution to this problem, I employ a method which comprises forming, in the dies employed to produce the particular stop on the stringer end, two or more projecting members arranged in opposed relationship to each other in the dies, so as to form what might be termed a pair of gripping jaws which are so positioned as to firmly grip the bead of the tape to support the same in proper position, as well as in proper alinement, with respect to the die cavity, to insure the accurate arrangement of the beaded edge in the resulting casting not only from a standpoint of

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alinement, but also from a standpoint of centralization. This method of procedure provides an even distribution of the casting material around the beaded edge, and maintenance of proper longitudinal alinement, which latter result is accomplished by spacing pairs of the gripping jaws longitudinally of the dies, so as to engage the bead of the tape at longitudinally spaced intervals.

The pairs of jaws form in the resulting casting spaced apertures which expose the bead of the tape therethrough, and the bead of the tape expands into these apertures to form means keying the castings against movement on the stringer tape, and particularly in a direction longitudinally thereof.

It will be understood that the invention is generally applicable to castings of the kind under consideration formed on the stringer tape or other mounting member, and for purposes of illustrating certain adaptations of the invention the same has been illustrated as applied to certain types and kinds of end stops, for example, in one instance to the pin and box parts of one type of stop, and to the bar member of another type of stop.

In Fig. 1 of the drawing is shown one end portion of two stringers 10 and 11. To the beaded edge 12 of one stringer is attached the box part 13 of a detachable end stop coupling, and to the bead 14 of the other stringer is attached the pin part 15. The pin part 15 fits in a socket of the box part in coupling said parts together, and as in other devices of this kind, the pin part is separable from the box part usually through the slider when brought in position abutting the shoulder 16 on the box part 13.

The box part 13 includes a projecting pin or bar portion 17, and this pin or bar portion has spaced apertures 18 registering with two of a group of four corresponding apertures 19 in the pin part 15.

The pin part 15 including its associated stringer 11, is shown detached in Fig. 2 of the drawing, and this pin part includes at its outer edge a longitudinal projection 20 which abuts the pin portion 17 of the box part 13, and the inner end of the projection 20 has a link or scoop engaging part 21 adapted to engage the end link or scoop 22 of the stringer 10, as in other devices of this type and kind.

In Fig. 3 of the drawing is shown an enlarged cross sectional view through the pin part 15 and part of the stringer tape 11, in order to illustrate the slight extension of the beaded edge 14 into

the apertures 19, as at 23, these extensions or projections forming key like members which aid in retaining the castings against displacement from the stringer tapes, and particularly against movement longitudinally with respect thereto.

The members or parts 13, 15 are formed as die castings directly upon the beaded edge portions of the stringer tapes. In forming them of cast materials, whether metallic or plastic, a certain amount of the cast material will extend into the interstices of the braid of the tape to establish anchorage. However, in the plastic materials the degree of this flow of material is limited, as compared with cast metals, and it is particularly in such instances that the key members 23 are of importance.

In Fig. 5 of the drawing, another form of stop is illustrated at 24. This stop is in the form of an elongated bar arranged along the beaded edge 25 of a stringer tape 26, preferably at what is commonly referred to as the upper end or an end opposite to the ends illustrated in Fig. 1, which are commonly referred to as bottom stops. This is particularly true in such uses of the fasteners as would be applied to windbreakers and similar jacket type of garments.

The bar stop 24 has enlarged end portions 27 and 28, the latter having a curvature so as to facilitate detachment of a slider to provide separation of the stringers at the upper end thereof. The use of such devices is now known, and from this standpoint, further detailed reference will not be made in this application.

Between the enlarged ends 27 and 28 the central portion of the bar 29 is relatively thin, and spaced longitudinally thereof are apertures 30, which are rectangular in cross sectional form rather than being round, as seen in Figs. 1 and 2 of the drawing. At this time, it is well to point out that the particular contour of the apertures or openings may be varied to suit different types and kinds of castings.

In Fig. 4 of the drawing is diagrammatically illustrated dies which may be used in forming any one of the castings, for example, the box part 13, the pin part 15, or the bar 24. The section in any such case, however, would be a section taken through the pin portion 17 of the box part 13, the smaller end of the pin part 15, or for example, on the line 3—3 of Fig. 2, or through one of the apertures 30 on the reduced central portion 29 of the bar 24. In that the section of Fig. 4 is applicable to any of the three devices above mentioned, the part of the tape on which the casting is to be formed will be designated by the reference numeral 31, and 32 will represent the bead of the tape, 33 is one die part, and 34 the other die part. Each die part has a cavity or impression 35, 36 respectively, which collectively form around the beaded edge 32 of the tape a casting, as at 37. At 38 is illustrated a gate passage for admission of the casting material to the cavities along the parting line of the dies 33, 34.

Arranged upon directly opposed walls of the cavities or impressions 35, 36 are inwardly projecting grippers or jaw members 39 and 40, which are adapted to imbed themselves into the bead 32 of the tape, as indicated at 41, when the dies 33, 34 are brought into engagement with each other.

As a matter of fact, in the operation of closing the dies, the grippers or jaw members 39 will first engage the bead 32 of the tape before the dies otherwise engage the tape, so that the tape becomes definitely centralized and positioned within and between the dies. In long castings, and where it is possible to do so, a number of the pairs of grippers or jaw members will be provided, and this is particularly desirable where thin wall structures are formed on the castings, so that the bead will be centralized within the thin wall structure of the castings, for example, as in the reduced pin extension 17 of the box part 13, throughout the full length of the pin part 15 and on the reduced portion 29 of the bar 24.

The inner surfaces of the jaw members will be rounded, so as to in no way injure the bead of the tape, and when the dies are separated after the casting has been formed, the bead will have a tendency to expand itself into the apertures 42 in the manner illustrated in Fig. 3 of the drawing in forming key members similar to the key members 23. It will be understood that in addition to the action of the jaw members upon the bead, the formation of the casting also places the bead under a certain amount of compression, and the apertures formed by the jaw members, such as the members 39, 40 allows the bead to expand to the extent of forming the key members referred to.

Above reference is made to the initial engagement of the jaw members 39, 40 with the beaded edge of the tape. In other words, the beaded edge is substantially round, and it will appear from a consideration of Fig. 4 of the drawing that as the dies are moved into closed position, the jaw members will first engage the bead before any other part of the tape is engaged by the dies, or before adjacent abutting surfaces of the dies are brought into engagement with each other. This firm and initial engagement with the bead prevents any possible lateral shifting of the tape within the dies, and thus maintains in the resulting casting a proper alinement of the bead in the casting in addition to centralization of the bead within the cavity or impression of the dies.

Die castings formed on mounting members in accordance with the method defined, will produce the strongest possible coupling of the castings with the mounting member, as well as to insure the longest life wear of the castings by equally distributing the material around the mounting.

However, in cases where a distortion or offsetting of the mounting is desirable within a casting, this can be accomplished by using one jaw member which is longer than the other. Where several pairs of jaw members are employed, as for example, in the pin part 15 of Fig. 2, alternate upper and lower jaws may be made longer, so that the tape would actually have a snake like curvature, or in other words, hill and dale arrangement throughout the length of the casting, even though the upper and lower surfaces of the casting would be flat throughout the length thereof. In other instances, the offsetting of the jaw members would be desirable in conforming the mounting when composed of flexible material to the contour of a casting having irregular outer surfaces.

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

1. An end stop for slide fasteners of the class described comprising a body member having a pair of spaced apart oppositely disposed portions for engagement with the edge portion of the stringer tape on which it is adapted to be mounted, each of said portions having an aperture arranged therein into which the edge portion of the stringer tape is adapted to expand so

as to aid in preventing displacement of the stop from the stringer tapes.

2. An end stop for slide fasteners of the class described comprising a body member having a pair of spaced apart oppositely disposed portions for engagement with the edge portion of the stringer tape on which it is adapted to be mounted, each of said portions having a substantially circular hole arranged therethrough centrally thereof into which the edge portion of the stringer tape is adapted to expand so as to aid in preventing displacement of the stop from the stringer tape.

LOUIS H. MORIN.

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