Nov. 29, 1960 L. H. MORIN 2,961,757

METHOD FOR MAKING BOTTOM STOPS FOR CABLE SEPARABLE FASTENERS

Filed May 15, 1953

Fig. 1.

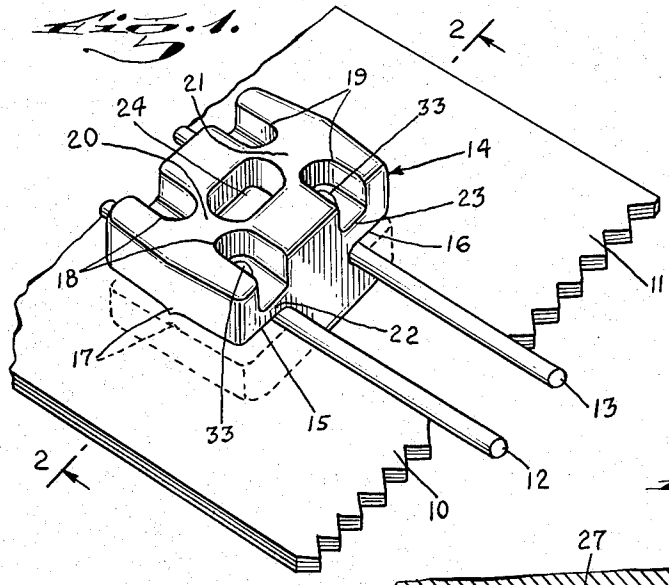


Fig. 2.

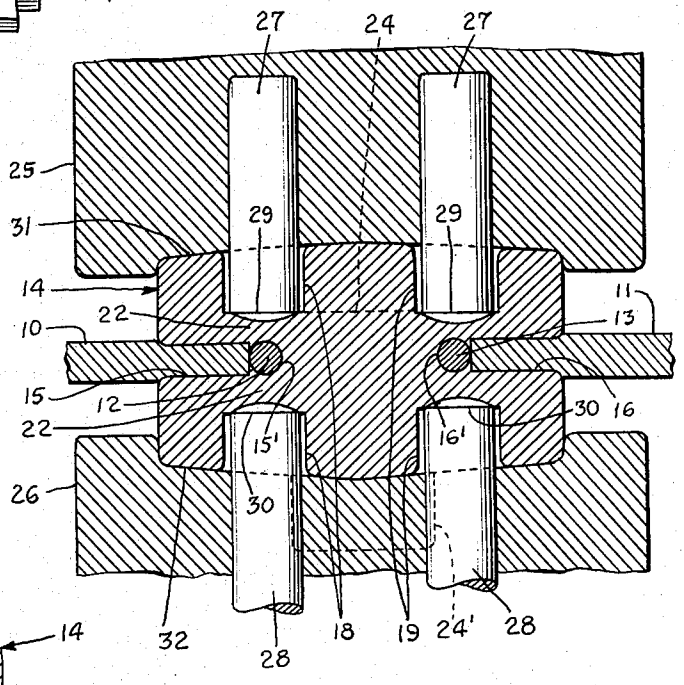
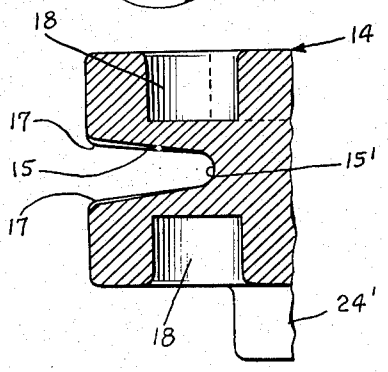


Fig. 3.



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METHOD FOR MAKING BOTTOM STOPS FOR CABLE SEPARABLE FASTENERS

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This invention relates to separable fasteners employing stringers adapted to be coupled and uncoupled. More particularly, the invention deals with a bottom stop for checking movement of sliders of fastener stringers in one direction thereon.

Still more particularly, the invention deals with a bottom stop structure formed as a die cast body and adapted to be mounted on cable separable fastener stringers of the type and kind disclosed in my prior application, Serial No. 289,770, filed May 24, 1952, now Morin Patent No. 2,819,504, issued February 4, 1958.

Still more particularly, the invention deals with a simple method of first shaping the bottom stop, and then forming the same upon the stringers and cable of the stringers in secure attachment thereon.

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 perspective view of one end portion of a pair of stringer tapes showing one of my improved bottom stops attached thereto;

Fig. 2 is a section substantially on the line 2—2 of Fig. 1, on an enlarged scale, and illustrating the method of shaping the bottom stop in gripping the cables and stringer tapes; and

Fig. 3 is a sectional view through a part of a bottom stop showing the normal formed position thereof preparatory to attachment to the stringers, as indicated in Fig. 2.

In Fig. 1 of the drawing, I have shown at 10 and 11 lower end portion of a pair of separable fastener stringers, such for example as the type disclosed in the application above referred to, and at 12 and 13 I have shown the cables disposed at adjacent edge portions of said tapes, and at 14 I have shown one of my improved bottom stops.

The bottom stop 14 comprises a generally rectangular body having longitudinal side grooves 15 and 16 which open through both ends of the body, as clearly illustrated in Fig. 1 of the drawing. The grooves are normally of V-shaped cross-sectional form, as seen in Fig. 3, in initial casting of the bottom stop 14, the flared walls of the grooves having centrally thereof projecting ribs or ridges, the ribs or ridges of the groove 15 being illustrated at 17 in Figs. 1 and 3 of the drawing. These ribs or ridges serve to provide added keying of the bottom stop to the tapes 10 and 11, it being understood that the groove 16 has similar ridges which are not shown.

Upper and lower walls of the bottom stop 14 have pairs of recesses 18 in alinement with the grooves 15 and recesses 19 in alinement with the grooves 16, this construction being clearly illustrated in Figs. 1 and 2 of the drawing. The recesses 18 and 19 open through the ends of the bottom stop body, as clearly illustrated in Fig. 1 of the drawing, and these recesses are divided by center webs 20, 21, respectively, the latter being shown clearly in Fig. 1 of the drawing. The recesses 18 and 19

form relatively thin wall portions 22 and 23 adjacent the rounded base 15', 16' of the grooves 15 and 16 to form gripper walls to engage the cables 12 and 13, as later described.

The upper wall of the bottom stop body has a central recess 24, whereas the lower wall has a downwardly projecting central transversely wide stop element 24'. From a comparison of Fig. 3 of the drawing with Fig. 2, it will be apparent that in initial casting of the bottom stop body 14 the upper and lower walls are flat and parallel; whereas, after reshaping, these walls are contracted toward each other in closing the grooves to establish the gripping engagement with the cables 12 and 13, as well as the tapes 10 and 11.

In Fig. 2 of the drawing, I have diagrammatically shown a method of attaching the bottom stop 14 to a pair of stringers including the cables 12 and 13. In this drawing, I have shown an attaching tool for pressure-applying the bottom stop 14 to the tapes and cables, the tool comprising a pair of anvils 25, 26, each having two pairs of pin or rod members 27, 28, one pair only of each anvil being shown. The inner ends of the pins or rods 28 are preferably rounded to a slight extent, as seen at 29 and 30, so as to provide slight localized pressure on walls 22 and 23 to firmly press said gripper walls onto the cables 12 and 13 to securely fix the bottom stop 14 thereon.

Adjacent surfaces of the anvils 25 and 26 are shaped as seen at 31 and 32, respectively, so as to move the side portions of the bottom stop 14 toward each other to convert the flared grooves 15, 16 into grooves having substantially parallel walls, as shown in Fig. 2, which operation firmly secures the bottom stop to the tapes, compressing the tapes slightly in this operation as indicated in Fig. 2. However, this latter attachment is such as to avoid any possibility of cutting or rupturing the tape. In this last operation, the ribs or ridges 17 extend into the tapes to provide a definite key, preventing any possible movement of the bottom stop 14 longitudinally with respect to the stringer tapes 10 and 11.

With different types or sizes of separable fasteners, different bottom stops will be formed, and the tools employed will be constructed to produce the results set forth. In other words, in all instances it is important to provide an arrangement of pins 27, 28 which project with respect to the surfaces 31 and 32 so as to provide the greater pressure at the point of engagement of the walls 22 and 23 with the cables, than where the sides of the bottom stop are pressed upon the stringer tapes.

From a consideration of Fig. 1 of the drawing, it will be apparent that four localized pressure points of engagement of the bottom stop 14 with each cable 12, 13, is provided, part of these pressure engagements being indicated at 33 in Fig. 1 of the drawing.

The dimensions of the bottom stop 14 are such as to receive the contracted end of a slider, but movement of the slider is checked by the stop 24'.

It will be noted from a consideration of Fig. 1 of the drawing, that the bottom stop 14 is contracted toward both ends thereof, or, in other words, longitudinally with respect to the stringers, which will aid in entrance of the end portions of the stop 14 into the single channel end of the slider. By virtue of the structure shown, the bottom stop can be applied to the stringers with either end directed toward the scoops of the stringers. The scoops are not shown on the stringeers, but scoops would be at the left side of the bottom stop 14, as seen in Fig. 1 of the drawing.

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

1. A method of attaching bottom stops to reinforced stringer tape of the type having associated with the edge of the tape a reinforcing cable more resistant to compres-

sion than the tape comprising the steps of forming a stop blank, said stop blank having on each of two opposing sides a pair of opposed lateral arms forming between them a groove for the reception of the stringer tape and its reinforcing cable and at least one of said arms on each side having a recess adjacent the part of the groove designed to receive the reinforcing cable; inserting the stringer tape and reinforcing cable in the groove between opposed arms; fastening the stop to the stringer tape by pressing the opposed arms together sufficiently to exert a pressure on the tape surface low enough to avoid cutting or weakening the tape; and fastening the stop to the reinforcing cable by squeezing the bottom of each recess with a force sufficient to create a pressure against the reinforcing cable higher than that which would cut or weaken the tape were it applied to the tape.

2. A method of attaching bottom stops to reinforced stringer tape of the type having associated with the edge of the tape a reinforcing cable more resistant to compression than the tape comprising the steps of forming a stop blank, said stop blank having on each of two opposing sides a pair of opposed lateral arms forming between them a groove for the reception of the stringer tape and its reinforcing cable, said opposed arms having recesses adjacent opposite sides of the part of the groove designed to receive the reinforcing cable; inserting the stringer tape and reinforcing cable in the groove between the opposed arms; fastening the stop to the stringer tape by pressing the opposed arms together sufficiently to exert a pressure on the tape surface low enough to avoid cutting or weakening the tape; and fastening the stop to the reinforcing cable by squeezing together the bottoms of the opposed recesses with a force sufficient to create a pressure against the reinforcing cable higher than that which would cut or weaken the tape were it applied to the tape.

References Cited in the file of this patent

UNITED STATES PATENTS

454,345	Hadley	June 16, 1891
1,785,715	Norton	Dec. 16, 1930
2,048,709	Prentice	July 28, 1936
2,112,725	Carlile	Mar. 29, 1938
2,174,160	Marinsky	Sept. 26, 1939
2,226,849	Douglas	Dec. 31, 1940
2,264,327	Morin	Dec. 2, 1941
2,312,045	Morin	Feb. 23, 1943

FOREIGN PATENTS

571,113	Great Britain	Aug. 8, 1945
898,882	Germany	Dec. 7, 1953