

Aug. 20, 1935.

W. I. BULLARD

2,011,794

LUG STRAP AND METHOD OF MAKING

Filed Jan. 7, 1933

2 Sheets-Sheet 1

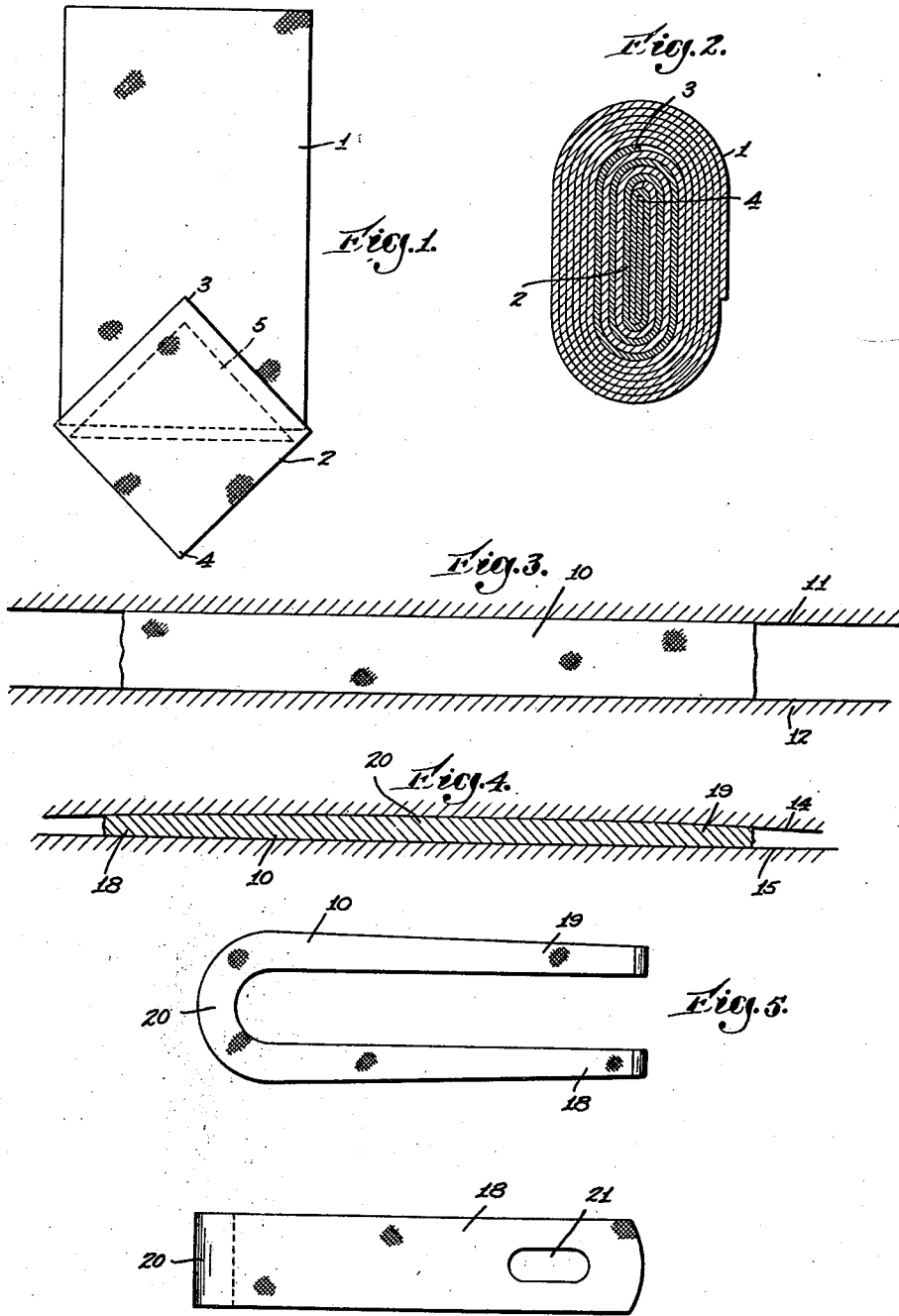


Fig. 6

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2 Sheets-Sheet 2

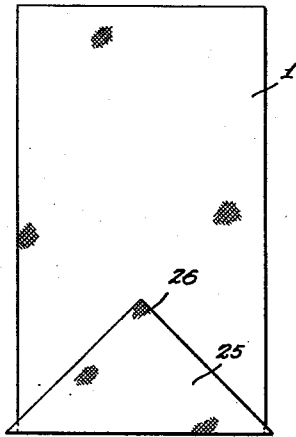


Fig. 7.

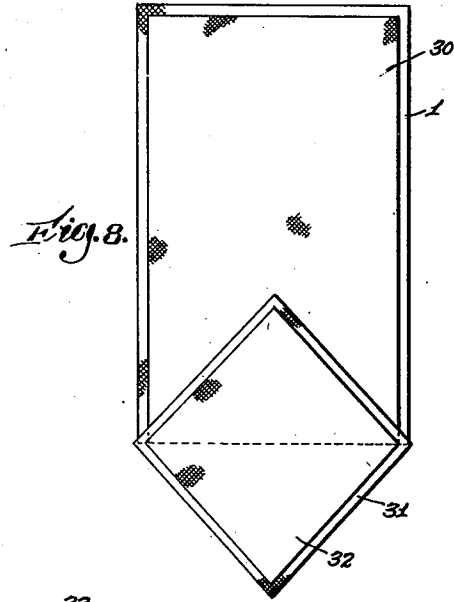


Fig. 8.

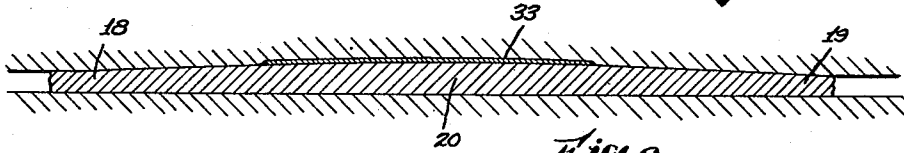


Fig. 9.

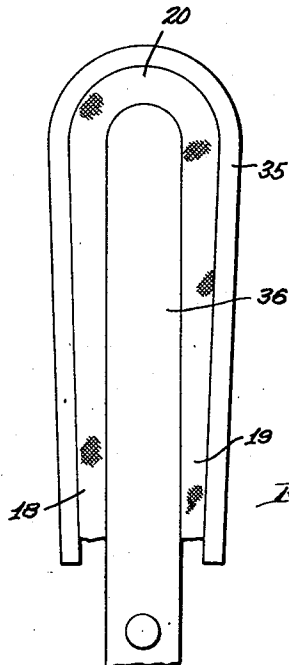


Fig. 10.

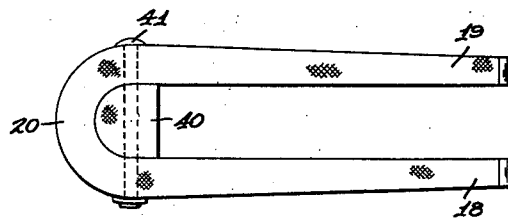


Fig. 11.

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UNITED STATES PATENT OFFICE

2,011,794

LUG STRAP AND METHOD OF MAKING

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1 Claim. (Cl. 139—153)

My present invention relates to lug straps for use in looms, and is directed to an improved reinforced lug strap and to a novel method of making same.

Heretofore it has been customary to form such lug straps of a plurality of layers of canvas, either made flat or in a U-shaped die, uniting the same by means of suitable cement into a substantially strong textile article suitable to withstand the impact blows from the picker stick in the operation of a loom.

In my prior Patent No. 1,775,077, dated September 2, 1930, I have illustrated and described an improved lug strap and a novel method of making same, and the present invention is an advanced improvement in the construction of such articles.

In carrying out my present invention I have devised a novel method for the reinforcement. Such reinforcing is important, particularly at the bow and at the bolt slots, and as shown in my said prior patent such reinforcement was provided by the addition of separate pieces in the formation of the article. However, such prior practice was objectionable in that it made separate bunches where the reinforcing was applied and caused difficulty in the subsequent pressing operation, and was objectionable also as producing reinforcing at spaced points without any corresponding intermediate strengthening.

My present invention obviates the difficulties above briefly outlined and provides a combined strengthened structure reinforced at the bolt slots as well as at the bow portion, with an increased strength as desired at the bow portion, and presenting a smooth, uniform, and tapered strengthened structure throughout.

I may accomplish this desirable result with any degree of reinforcing or strengthening desired, as by utilizing a single additional textile reinforcing layer, or by using a plurality of such layers, and also having the same of varying extent, weight, and strength as desired.

In carrying out my present invention the preferred method employed is to apply to the entire width of the canvas or textile layer from which the lug strap is made a special reinforcing layer, or layers, of triangular or square contour; if square, then with the same positioned diamond-like relatively with the sheet from which the lug strap is to be made, thus applying the same at the beginning of the interrolling operation by which the layers or plurality of layers of textile material are rolled and cemented into lug strap form for subsequent compressing into U-shape.

Such forms are made very flat or straight and compressed, or in U-shaped form as desired. This method with the pointed portion of the layer approximately in the middle of the sheet forms an increasing strengthened reinforcing at the middle, which will be the bow portion, as the layers are interrolled into lug strap form of desired length, width and thickness.

Referring to the drawings illustrating preferred embodiments and method,

Fig. 1 is a plan view showing the operation of applying the reinforcing strap;

Fig. 2 is an enlarged cross-sectional view illustrating the interrolling lug structure when completed;

Figs. 3 and 4 are plan and cross-sectional views, respectively, illustrating the compressing action showing the even taper afforded by my present invention;

Figs. 5 and 6 are top and side views respectively of the completed lug strap;

Fig. 7 illustrates a modification using a small reinforcing layer;

Fig. 8 shows the use of a plurality of layers both for body structure and reinforcing;

Fig. 9 is a cross-sectional view illustrating the compressing action with an extra leather layer at the bow;

Fig. 10 is illustrative of the shaping action, and Fig. 11 shows a reinforced lug strap of the block type.

As shown in Figs. 1 and 2, a canvas or textile sheet 1 is cut into suitable width for the length of lug strap desired and of suitable length for the width and thickness into which the same is to be rolled. To such a piece of fabric 1 I apply my novel reinforcing sheet 2 with the greatest diameter approximately equal to the width of the sheet 1 and with the same positioned diamond-wise relatively with one piece with the inner point 3 approximately in the middle width-wise of the sheet 1, and with the lower point 4 folded thereover, as shown in dotted lines at 5.

The canvas thus assembled is coated with suitable adhesive, rolled with the proper width into an interrolled structure, as best shown in Fig. 2, and constitutes lug strap 10, which is thus subjected to pressure as shown in Figs. 3 and 4, between the forms 11 and 12 respectively and between upper and lower plates 14 and 15 respectively of any suitable die compress. As thus formed, it will be appreciated that the reinforcing layer 2 when interrolled affords an even, tapered, interrolled layer throughout the entire length of the lug strap 10, the end portions 18

and 19 being slightly tapered over the center or bow portion 20, so that when the strap 10 thus formed is subsequently formed into the completed lug strap of Figs. 5 and 6, it will have a substantially uniformly tapered contour from the bow 20 to the ends of the arms 18 and 19, with the reinforcement 2 both in the bow 20 and in each of the bolt slots 21.

In the form shown in Fig. 7 the base layer or sheet 1 has applied to it a triangular reinforcing member 25 with one apex of the triangle 26 positioned midway between the sides of the sheet 1 and in the resulting position of the bow of the completed lug strap. This layer also reinforces both the bolt slots 21 and the bow portion 20 with equal strength between the same, eliminating the prior objectionable and relatively weak spaces between the reinforced sections.

In Fig. 8 is illustrated my method as applied to a plurality of layers, 1 and 30 being the base sheets, and 31 and 32 a plurality of reinforcing members which are interrolled into a strongly strengthened structure but providing even tapered contour from the center to each end, as already described.

My present method and improved lug strap can also be readily equipped with a further layer 33 of leather or the like around the bow portion 20 as is frequently desired.

In Fig. 10 I have illustrated the forming of the lug strap in its finished bow form between outer clamps 35 and an inner mold 36. This can be employed either in connection with the straight presses or as an improved mold after the rolling and setting of the interrolled layers and the adhesive uniting them.

In Fig. 11 I have illustrated my improved reinforced and evenly tapered lug strap provided with a block 40 and a retaining bolt 41, where this type of lug strap is desired.

It will be appreciated that in the various forms of my invention, with the reinforcing layer as a square sheet as shown in Fig. 1, a half sheet or triangular, of Fig. 7, or a plurality of reinforcing layers either of whole or half sheets, as in Fig. 8, the positioning of the apex or angle midway of the sides of the base sheets or members 1, or 1 and 30, produces the greatest reinforcing thickness at the center or bow portion of the resultant lug strap, while the ends of the reinforcing layer provide reinforcement for the bolt slots 21. My improved lug strap provides an automatically tapered and reinforced structure from the bow to each end; is easier to curve into the final form; is easier to compress and to mold, presenting no bulky portions, and constitutes the advantage of a single reinforcement, covering both the slot bolts and the bow portion with uniform strength between these parts.

I claim:

As a new article of manufacture, a lug strap of interrolled textile layers united by adhesive, with one of the layers constituting a complete reinforcing structure from one end of the completed lug strap to the other end and surrounding the slotted portions adjacent each of the ends, said reinforcing layer being positioned angularly relatively with the body of the lug strap fabric and tapering uniformly to each end.

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