May 10, 1932. J. H. CHADBOURNE 1,858,038

LUG STRAP

Filed May 29, 1930

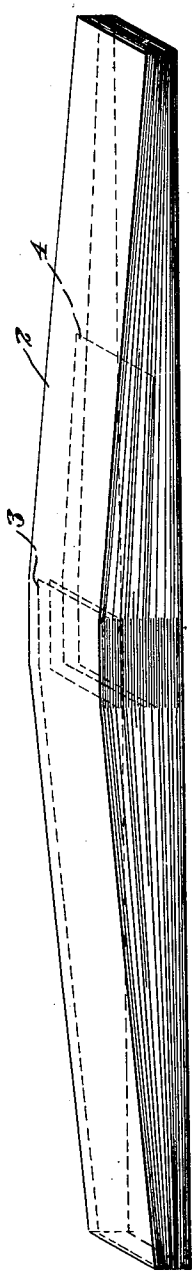

Fig. 1.

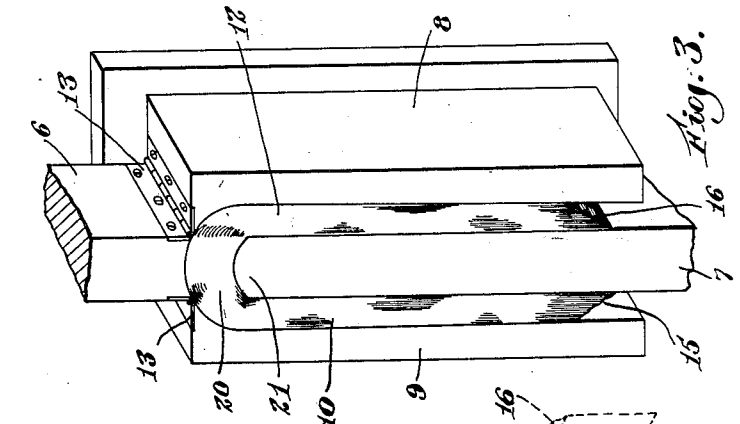

Fig. 3.

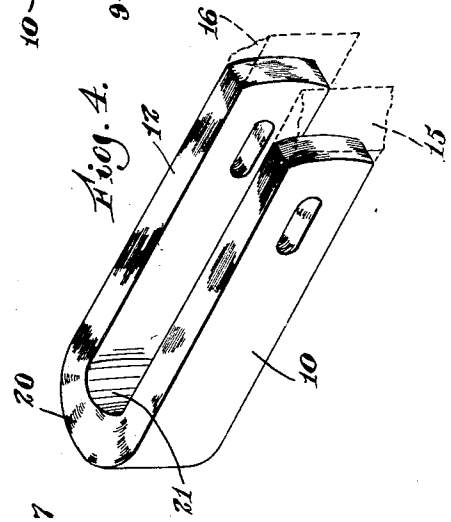

Fig. 4.

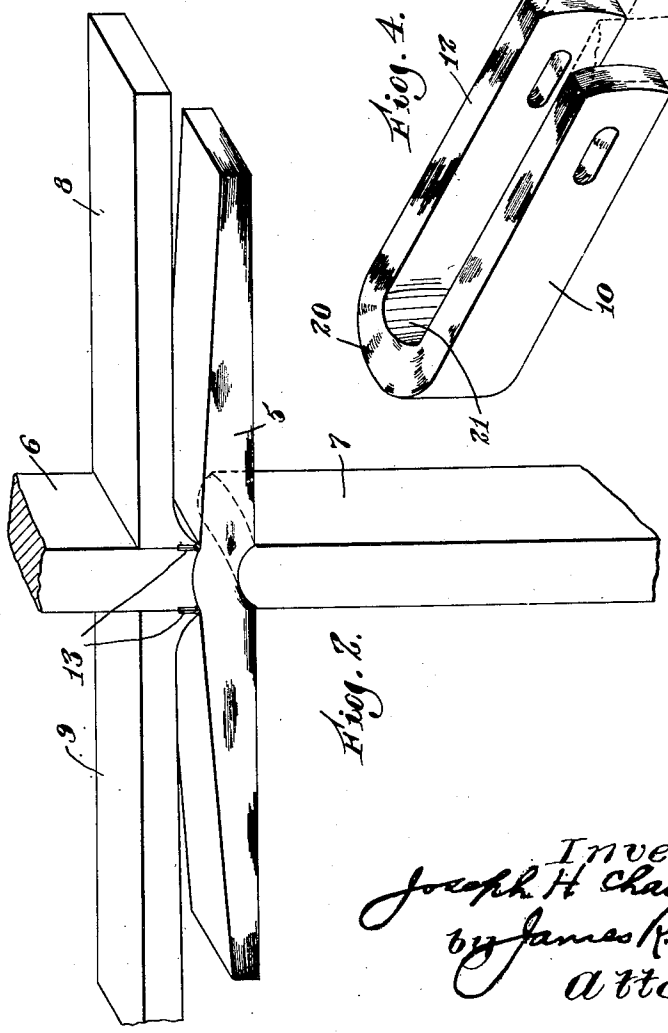

Fig. 2.

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UNITED STATES PATENT OFFICE

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LUG STRAP

Application filed May 29, 1930. Serial No. 456,894.

My present invention is a novel and improved lug strap and includes also the novel process of making the same.

In the manufacture of lug straps for use in actuating the picker of looms it has heretofore been customary to make the same in a plurality of layers of unrolled canvas strips or sheets, together with reinforcing layers or portions, and all being solidified by adhesive. As such prior methods and the resulting lug straps were made in a substantially straight or horizontal plane or mass, and then either afterward bent into U-shape or proper form, the resulting structure was more or less wrinkled or corrugated around the inner surface of the U-shaped portion. This is necessarily due to folding in a plurality of layers which are laid flat and secured together, the inner portion of the curve being on a shorter radius than the outer layers and hence under compression during the U-shaped formation, while the outermost layers are under stretching tension.

My present invention obviates these difficulties and permits a lug strap to be formed on a plurality of layers in a novel method and then to be stamped or formed into U-shaped or final construction, insuring a smooth and relatively unruffled or wrinkled, corrugated surface on the inner part of the U where the contacting surface of the lug strap against the picker stick bears.

In carrying out my present invention I accomplish the foregoing desirable results by laying up a plurality of layers, preferably in the form of strips, elimating and saving the interrolling action, and preferably having these layers of slightly greater length than one of the legs of the resulting lug strap overlapping the same in alternative positions at the center portion, while assembling the strips or layers.

Then either before or after the same are treated with the desirable adhesive, and before it can "set", I apply the thus formed lug strap to a mould forming or stamping the same into the desired and final U-shaped form, simultaneously permitting the plurality of layers to slide on each other from the center portion outwardly to the free ends of each leg as the material is relatively displaced during the U-shaped formation. Thereafter I trim off the rough outer edging of each leg and retain the same in a mould or moulds until set and solidified. By thus permitting, in any manner whatever, the layers or strips to slide by each other during the U-shaped formation, I produce a smooth surfaced structure, retaining the entire strength of the plurality of layers in laminated form and preventing distortion either from compression or stretching, as was a prior difficulty in all old known methods.

I believe that my present novel method of forming a lug strap, permitting the layers to slide or "work" during bending, and thus forming the lug strap with the full tensile strength of each layer at the U-shaped portion and with the inner surface smooth and unwrinkled, is a distinct novelty, both in the method and in the resulting article and I wish to claim the same herein broadly.

Referring to the drawings, illustrating a preferred embodiment of the present invention,

Fig. 1 is a view, partly in perspective, showing the method of laying up the strips;

Fig. 2 is a view also in perspective illustrating a device for forming the same into U-shaped or final contour;

Fig. 3 is a view illustrating the forming action with the edges of the lug strap working or extending during the U-shaped conforming operation, and

Fig. 4 shows the completed lug strap with the roughened edges removed.

As illustrated in the drawing in its preferred form, I prepare a number of layers of strips of suitable width and length to total the length of the lug strap desired, and a

plurality of other strips of less length interlaid between the same of slightly more than one-half the length of the strap desired overlapping each other at the center to build up a reinforcing thickness layer. As indicated, full length strips are shown at 2 and partial strips in dotted line at 3, together with extra reinforcing members also shown in partly dotted lines at 4. With the canvas strips thus assembled, it will be noted that the prior methods of interrolling are eliminated and with the completely assembled lug strap designated generally at 5, as thus formed, with either adhesively treated members, and before the same are set, or afterward treated, is fitted to a conforming device. This may be any suitable means to shape up the lug strap thus formed into its final U-shaped construction, thus for example, I may divide a pair of clamping members 6 and 7 adapted to fit and hold the central portion of the lug strap, the member 7 being preferably of the desired thickness equal to the width of the U-shaped formation of the lug strap and about which the resulting legs 10 and 12 are formed.

To complete this conformation of the strap 5, I provide a pair of hinged leaves or clamps 8 and 9, hinged or otherwise pivotally secured to the clamping member 6 at 13. During this clamping action the lug strap is formed into the desired contour with the extending portions 10 or 12, as shown, and the layers or sections slide or work slightly upon each other during this conforming action—as in folding a deck of cards, with the result that the projecting edges, illustrated at 15 and 16 in Fig. 3 and in dotted lines in Fig. 4, are formed, thus permitting the layers to lay smoothly particularly around the heat or base 20.

It will thus be seen that my novel method produces a strong laminated lug strap structure with the inner end 21 of the U smooth in surface, and hence giving more wear and longer life. I believe that the building of the lug strap with layer strips in this way, overlapping at the center to give reinforcing, either with or without metal reinforcing elements in the central portion, is a distinct novelty and I wish to claim this feature. Also the formation of any layers, whether in strips or interrolled, whereby the layers are permitted to move, slide, or work past each other, as shown in Figs. 3 and 4, thus giving a smooth and uniform contour around the base 20 and particularly on the inner surface 21, preventing corrugating or wrinkling, and preventing injury to the layers of the lug strap either by compression on the inner layers and stretching on the outer layers, is distinctly new and I claim this feature broadly.

I believe also that the resulting lug strap with the smooth inner surface 21 is a distinct novelty and I claim same broadly.

Having thus described my invention, what I claim as new is:

An improved process of making lug straps which consists in assembling a plurality of strips of textile material, certain of said strips being of less length than the total length of the strap and greater than one-half of said length, constructed and arranged to provide predetermined portions to constitute a reinforcing overlap at the central portion, and forming said plurality of straps into final or U-shaped form.

In testimony whereof, I have signed my name to this specification.

JOSEPH H. CHADBOURNE.