Oct. 6, 1925. 1,556,124

P. L. O'DONNELL

PROCESS AND APPARATUS FOR REENFORCING SHOE VAMPS, TIPS, AND THE LIKE

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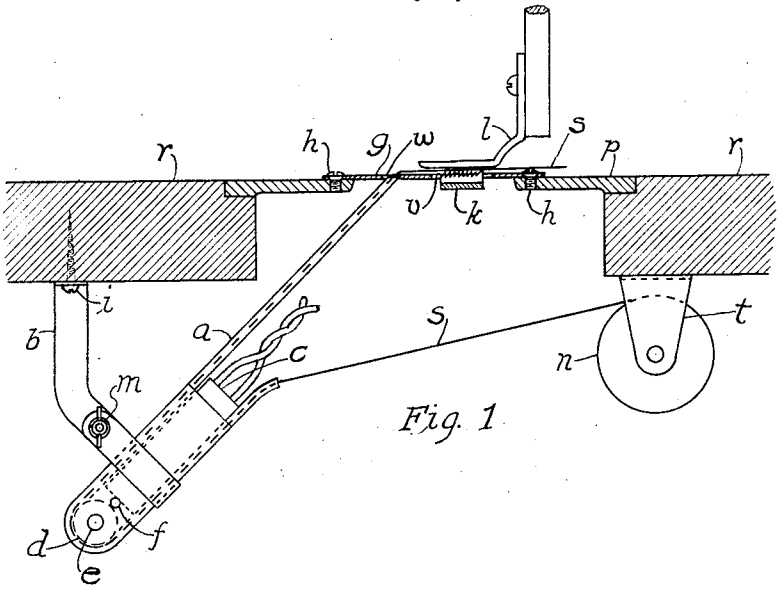


Fig. 1

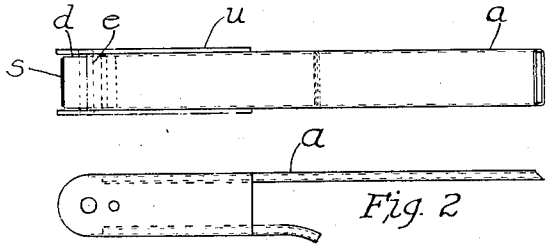


Fig. 2

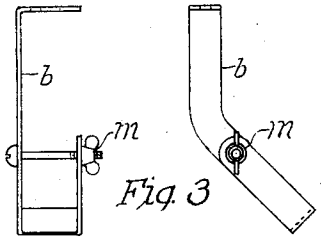


Fig. 3



Fig. 4

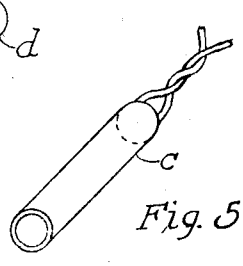


Fig. 5

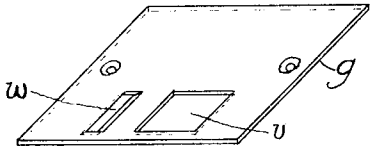


Fig. 6

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UNITED STATES PATENT OFFICE.

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PROCESS AND APPARATUS FOR REENFORCING SHOE VAMPS, TIPS, AND THE LIKE.

Application filed May 1, 1922. Serial No. 557,543.

To all whom it may concern:

Be it known that I, PHILIP L. O'DONNELL, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Processes and Apparatus for Reenforcing Shoe Vamps, Tips, and the like, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

It is the usual custom to reenforce the seams of vamps, tips, perforations and the like, in finishing shoes with strips of cloth secured in place by cement or glue which is applied with a brush to the cloth and the strips then pressed in place with a heated iron or hammered down with a rapidly operated hammer. Obviously the use of soft and sticky cement or glue is a comparatively slow and tedious operation and where a machine is provided to apply the cement and apply the strips, the adhesive material gums up the machine and is a source of continuous trouble. It has also been customary to employ rubberized cloth in which the rubber coating must be heated to render it adhesive, but to apply this material has involved hand work with a hot iron. The cloth strip heretofore in common use is also a stretchable material and does not afford the best reenforcement for such seams.

I have ascertained that I can use non-stretchable tape as the reenforcing material and that by applying to the tape on one side a coating or surface of rubberized cement or other heat plastic and allowing the treated tape to dry and harden, I have an adhesive tape which when cold can be furnished in rolls and instead of applying the tape to the seams and then heating it and pressing or hammering it in place, I have discovered that the tape can be heated as it is delivered from the cold roll to soften and render the cement adhesive and that it can then be readily and easily fed with the vamps to be reenforced in any ordinary sewing machine in which the needle has been removed, employing the feeder and presser foot of the machine to feed the vamps and cause the tape to adhere to the seams or other part to be reenforced.

To carry out my process I employ a very simple apparatus which can be attached in a moment to any ordinary sewing machine, as shown in the accompanying drawings, in which—

Figure 1 is a side elevation of the apparatus as attached to the under side of the table of a sewing machine.

Figure 2 is a side elevation and plan view of the delivery tube.

Figure 3 is a front and side view of the bracket for securing the apparatus to the table.

Figure 4 is a perspective view of the feed roller.

Figure 5 is a similar view of the electric heater.

Figure 6 is a similar view of the sewing machine plate.

The rubberized non-stretchable tape *s* is furnished in a roll *n* with the rubber coating on the under side, the roll being mounted in a bracket *t* depending from the under side of the table top *r* of the sewing machine.

The apparatus comprises a flat tube *a* preferably formed in two sections held together by side plates *u*, *u*, which extend beyond the inner ends of the tube sections and carry a roller *d* mounted on the spindle *e*. The heater is secured by screws *i* to the under side of the table *r* by a bracket *b*, which is clamped around the heater by a thumb screw *m*. The space between the sections of the flat tube and the side plates is furnished with a small electric heater *c*, a stop pin *f*, being employed to prevent the heater *c* from coming into contact with the roller *d*.

To apply the apparatus to any ordinary sewing machine with presser foot *l*, the needle is removed and a plate *g* attached by screws *h* to the bed plate of the machine. This plate is provided with an opening *v* to receive the feeder *k* of the machine, and a slot *w* through which the tape is to be passed. The heater is attached so as to bring the upper end of the tube *a* to the edge of the slot *w* and the apparatus is ready for use.

The tape *s* is threaded through the tube, over the roller *d* and through the slot *w* in the plate *g*, rubber side up, the electric heater being turned on, the tape is rendered highly adhesive, and the operator applies the tape to the vamp seam with the leather uppermost and the presser foot being lowered, the material is fed rapidly and easily, as in sewing, the operator guiding the material

so that the tape is applied to the seam or other part to be reenforced. The operation is as rapid and effective as if the tape was to be sewed, and where it is desired to apply to a curved seam, the tape can be cut so that it can readily be turned smoothly the amount required.

The time saved and the convenience in use will be obvious. It will, of course, be understood that the details of apparatus can be greatly varied without departing from the spirit of my invention, which, at least so far as the process is involved, consists in means for heating the rubberized tape prior to its application and then in feeding the goods and reenforcing tape by the feeder and pressure foot of a sewing machine from which the needle has been removed.

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

1. A process of applying tape to shoes and leathers during the reenforcing operation which consists in applying heat to a heat plastic tape, and while hot feeding the tape together with the portion to be taped, by applying a drag on one side of the article, directed toward the desired line of feed, and at the same time imparting to the other side of the article a series of rapidly successive blows at approximately the same point of application as the drag.

2. A process of applying tape to shoes and leathers during the reenforcing operation which consists in applying heat to a heat plastic tape, and while hot feeding the tape together with the portion to be taped, by applying a drag on one side of the article, directed toward the desired line of feed, and at the same time imparting to the other side of the article a series of rapidly successive blows at approximately the same point of application as the drag, with the tape lying so as to receive the drag and the shoe or leather portion lying so as to receive the blows.

3. A process of applying tape to shoes and leathers during the reenforcing operation which consists in applying heat to a heat plastic tape, and while hot feeding the tape together with the portion to be taped, by applying a drag on one side of the article, directed toward the desired line of feed, and at the same time imparting to the other side of the article a series of rapidly successive blows at approximately the same point of application as the drag, the mechanism for applying the drag and blows being free from heat.

4. In a device of the kind specified, in combination with the feeder and presser foot of the sewing machine type, a casing to hold a heater, a tubular passageway adjacent the heater to receive a tape coated with heat plastic material, with the tube arranged to deliver the tape to the feeder and presser foot, for the purpose described.

5. A process of applying reenforcing tape to shoes and leathers in the reenforcing operation, which consists in uniting together a shoe or leather piece and a tape, one surface of which tape has been rendered adhesive and plastic, and thereupon imparting a frictional dragging action to the tape element of the united pieces, and at the same time and approximately the same point imparting a rapid succession of blows to the shoe or leather element thereof.

6. A process for reenforcing shoes and leather which consists in supplying a selvedge edge tape, having adhesive substance thereon in a plastic state, supplying a leather or shoe portion to be reenforced, and applying a frictional feeding action to the said materials at their point of junction and simultaneously causing them to adhere without stretching.

PHILIP L. O'DONNELL.