May 27, 1924. 1,495,602

M. LEROY, JR

MANUFACTURE OF SHOE UPPERS

Filed June 13, 1922

Fig. 1

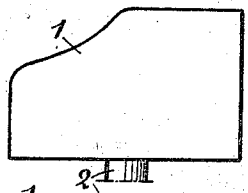


Fig. 2

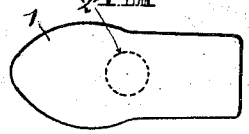


Fig. 3

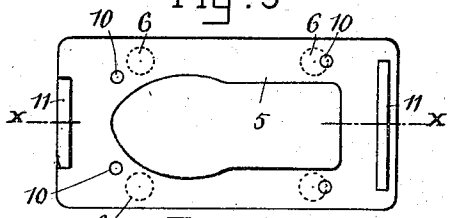


Fig. 4

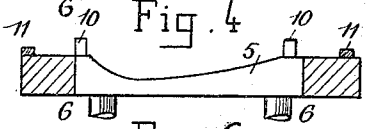


Fig. 5

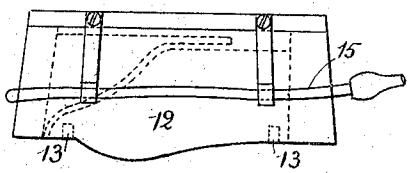
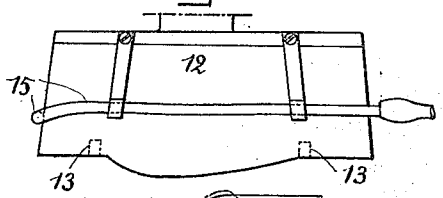


Fig. 6



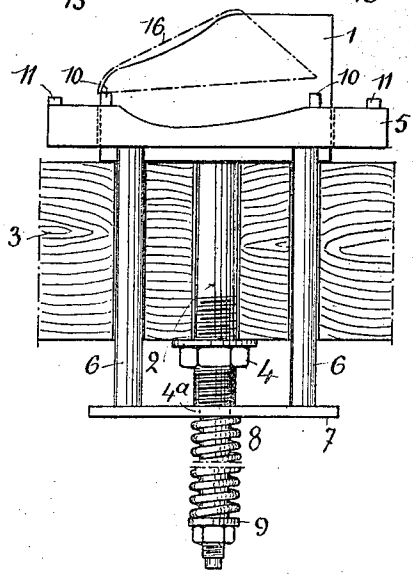


Fig. 7

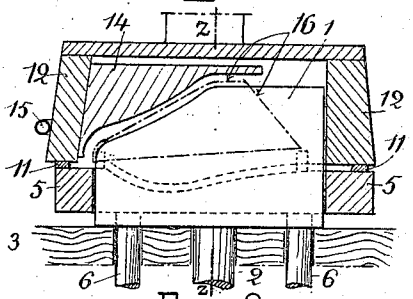


Fig. 8

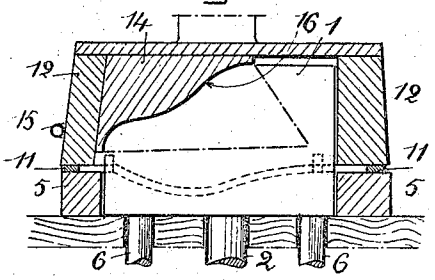
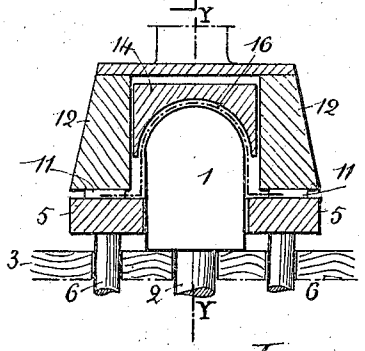


Fig. 9



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By Louis Parmelee

Attorney.

Patented May 27, 1924. 1,495,602

UNITED STATES PATENT OFFICE.

MAURICE LEROY, JR., OF VOVES, FRANCE.

MANUFACTURE OF SHOE UPPERS.

Application filed June 13, 1922. Serial No. 568,073.

To all whom it may concern:

Be it known that I, MAURICE LEROY, Jr., a citizen of the Republic of France, residing at Voves, France, have invented certain new and useful Improvements in Manufacture of Shoe Uppers, of which the following is a specification.

The present invention relates to the mechanical manufacture and shaping of leather uppers for goloshes or similar foot wear, and has for its primary object to provide certain improvements whereby such uppers may be manufactured and shaped without it being necessary to leave the upper on the shaping last after it has been mechanically brought into its proper shape.

According to the invention, the blank, which has previously been cut to shape and spread out flat, is slightly moistened; this moistening may be effected by means of a jet of steam or by allowing the leather to remain in a damp place.

The leather, when thus moistened but not wetted, is applied against the upper surface of a last, the shape of which is appropriate to the shaped upper to be made, and the said leather is locked along its entire margin except at the neck by a movable frame fitting the lower contour of the last, the said frame being provided for that purpose with pins which serve as centering points for the positioning of the leather and as means for tightening the leather by forcing the said pins into the holes of a movable box containing a hollow matrix.

The leather, when spread and locked on the last, is compressed by the matrix which is shaped interiorly to conform to the shape of the upper to be made, the said matrix sliding in the movable box, which latter is vertically fixed on an ordinary press.

The compression of the leather causes its grain to disappear and thus does away with the ordinary operation of smoothing by hand by means of a piece of wood or glass.

The matrix may be engraved in order to trace out by means of compression the desired patterns on the upper during the operation of shaping.

The invention is illustrated in the accompanying drawing and described in the following specification, and is hereinafter specifically claimed.

In the drawing:—

Figure 1 represents in side elevation the last on which the leather cut out flat is applied in order to be transformed into a shaped upper.

Figure 2 is a top plan view of the last.

Figure 3 is a plan view of the frame in which the lower part of the last is fitted.

Figure 4 is a section of the frame on line *x*—*x* of Fig. 3.

Figure 5 is a side elevation of the box fixed to the press enclosing the shaping matrix.

Figure 6 is a side elevation showing the arrangement of the last, the frame and the movable box on the press, the said parts being in the position of rest.

Figures 7 and 8 are longitudinal sections on the line *y*—*y* of Fig. 9 showing the same parts during the manufacture of the shaped uppers, Fig. 7 representing the first phase of pressure and Fig. 8 the second and last phase of pressure.

Figure 9 is a transverse section on the line *z*—*z* of Fig. 7 showing the parts of the appliance during the first phase of the pressure.

The appliance comprises a metal last 1 mounted on a screw-threaded rod 2 which allows of fixing it on the framework 3 by means of a nut 4 (Fig. 6). This last is fitted at its base in a correspondingly shaped opening formed in a movable frame 5. This frame is supported by four columns 6 fixed at their lower ends on a plate 7 which slides freely on the screw-threaded rod 2; this plate abuts against a shoulder 4^a on the rod 2 under the action of a spiral spring 8 encircling the narrower part of the rod below the plate 7, the tension of the spring being regulated by a nut 9 screwed to the end of the rod 2.

The movable frame 5 is provided on its upper face with four studs 10 and two transverse packing strips 11, the part played by which will be explained below.

The appliance is completed by a metal box 12 mounted on the movable part of an ordinary press so as to appear above the last 1 and the frame 5 surrounding it. The lower edge face forming the peripheral wall of the box 12 is cut to the same profile as that of the corresponding upper face of the frame 5 against which the box must come to lie, and this edge face is provided with holes 13 to receive the studs 10 during the work of the press.

In the inside of the box 12 there is mounted a matrix 14 forming the hollow counter-

part of the last 1 and movable upwardly within said box; this movement taking place when the matrix comes into contact with the leather spread on the last 1. The matrix 14 may be plain or may be engraved to print patterns or designs on the upper.

The gas burner 15 arranged outside and around the box 12 allows of heating the box and the matrix 14 to a suitable temperature.

The appliance operates as follows:—

The parts being in the position of rest (Fig. 6), the last 1 is fixed on the framework 3 by the nut 4; the frame 5 which surrounds it, thrust upwardly by the spring 8 acting on the plate 7, is lifted and brought into its upper position. The box 12 fixed to the press (not shown) is lifted so as to release the upper surface of the last 1.

The leather 16, previously cut out flat and moistened as has been previously said, is placed on the last 1, making use of the studs 10 as centering points. In the first phase of the pressure (Figs. 7 and 9) the press, having been set in operation, lowers the box 12 on to the last 1 and the peripheral wall of the box comes to rest on the packing strips 11 of the frame. These packing strips, by leaving a small space between the box 12 and the frame 5, prevent the crushing of the leather between these parts; in this lowering of the box 12 the studs 10 pass into the holes 13 of the said box 12 and the leather is thus kept tight without being crushed between the box 12 and the frame 5. This frame, supported by the four columns 6 and maintained by the spring 8, occupies its upper position around the last 1.

During the second phase of the compression (Fig. 8), the box 12 continues its downward course and exerts a pressure on the frame 5 which offers some resistance owing to the reaction of the spring 8 pressing the plate 7 and the four columns supporting the frame; the descent of the box 12 counteracting the action of the spring, the frame 5 slides downward against the periphery of the last 1 and comes to rest on the framework 3.

During this descent the leather 16 spread on the last 1 is always locked between the box 12 and the frame. The result is that the leather, acted on by these two parts, will be tightly pressed on the last in proportion as the two parts 12 and 5 descend.

When the box reaches the end of its lower stroke and the leather is completely spread on the last 1, the matrix 14 compresses the leather on the last and completes the operation by smoothing the upper or tracing ornaments or patterns thereon if this matrix is engraved.

The operation being completed, the press is acted on to bring the box back to its initial upper position, the frame 5 likewise resuming its initial position under the thrust exerted by the spring 8, and the upper part of the last 1 is then completely released; it is easy to remove the upper which has been shaped in order to replace it by another upper to be shaped on the last.

The upper is shaped, smoothed and ornamented by a single downward movement of the press, which considerably enhances the daily output.

The piece of leather placed on the last 1 being simply impregnated with moisture but not wetted will not adhere to the last and can very easily be taken off.

What I claim and desire to secure by Letters Patent is:—

1. Apparatus for the manufacture of leather uppers for goloshes and similar foot wear, comprising a metal last provided in its centre on its lower face with a threaded rod intended for securing it to the framework of the press, a frame pierced in its centre with a hole shaped according to the outline of the last, the said frame being fitted with four columns sliding freely in the framework of the press and connected by a single plate located underneath the said framework, the upper face of the said frame being flat along its two shorter marginal edges and depressed between said flat edges along its longer marginal edges, a metal box closed at its upper part and provided with a rod connecting it to the press, the peripheral edge of the open part of the said box having the same configuration as the upper face of the frame on which it may rest, a matrix located in the said metal box and free to shift therein from below upwards, the said matrix being hollowed according to the configuration of the upper part of the last which receives the leather piece to be shaped, and a gas burner arranged around the external wall of the metal box.

2. Apparatus for the manufacture of leather uppers for goloshes and similar foot wear, comprising a metal last secured by a rod to the framework of the press, the said rod acting as a guide for a plate on which rests a spiral spring surrounding a reduced part of the said rod, a frame provided centrally with a hole allowing it to freely slide around the outline of the last, the said frame being fitted with four columns sliding freely through the framework of the press and connected by a single plate sliding along the rod which secures the last to the said framework, the upper face of the frame having its two shorter marginal edges made flat and provided each with transverse packing strips parallel to the said edges and its two longer marginal edges depressed, the upper flat face of the frame being provided furthermore with four pins, a metal box closed at the top and connected to the rod of the

press, the peripheral edge of the open part of said box having the same configuration as the upper face of the frame, the said edge being pierced with holes for accommodating the pins of the frame, a matrix located in the metal box and free to shift therein from below upwards, the said matrix being hollowed according to the configuration of the upper part of the last on which the leather piece is applied, and a gas burner arranged around the external wall of the metal box in order to heat the said box and the matrix contained therein.

3. Apparatus for the manufacture of shoe uppers, comprising a last; a spring-pressed frame slidably related to the last and having an opening wherein the lower portion of said last conformably fits; a movable case fitting over the last and adapted to clamp the marginal edges of the upper between its edge face and the upper face of said frame; and a hollow matrix movably disposed within said case and having its interior shaped to conform to the shape of the upper portion of the last.

4. Apparatus for the manufacture of shoe uppers, comprising a metal last adapted to support a moistened blank; a yieldingly mounted frame slidably related to the last and having an opening wherein the lower portion of said last conformably fits; a movable metal case fitting over the last and adapted to clamp the marginal edges of the blank against the upper face of said frame; a hollow matrix movably disposed within said case and having its interior shaped to conform to the upper portion of the last; and a device positioned to heat said case and the matrix therein.

5. Apparatus for the manufacture of shoe uppers, comprising a last; a spring-pressed frame slidably related to the last and having an opening wherein the lower portion of said last conformably fits; a movable case fitting over the last and adapted to clamp the marginal edges of the upper between its edge face and the upper face of said frame, the said edge face of the case having a plurality of vertically-extending sockets to receive upstanding centering pins on said frame face; and a hollow matrix movably disposed within said case and having its interior shaped to conform to the shape of the upper portion of the last.

In testimony whereof I affix my signature.

MAURICE LEROY FILS.