C. S. SMITH & D. H. HADSELL.

MACHINE FOR PRESSING AND SHAPING THE BACKS OF SHOES.

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939,105. Patented Nov. 2, 1909.

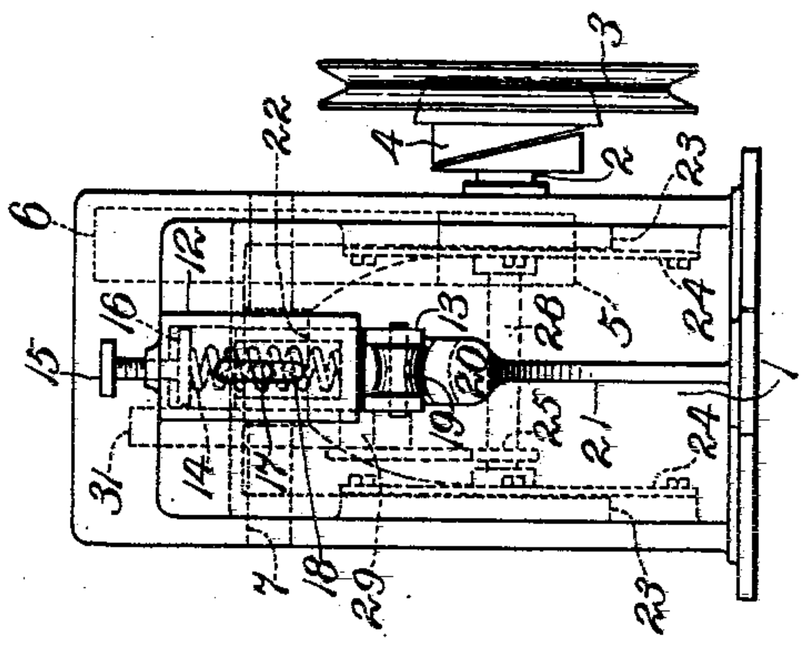

Fig. 2.

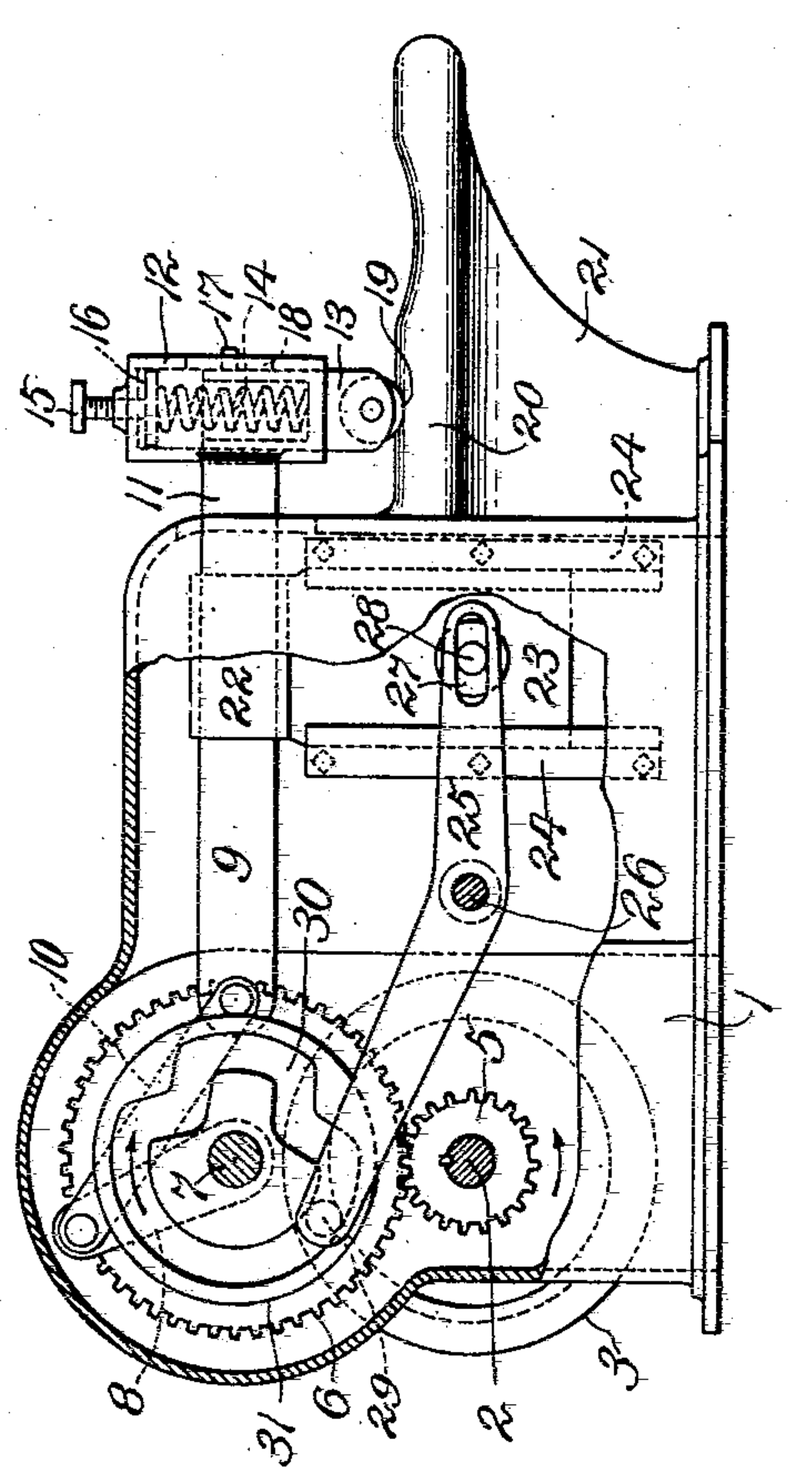

Fig. 1.

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UNITED STATES PATENT OFFICE.

CHARLES S. SMITH AND DORR H. HADSELL, OF BROCKTON, MASSACHUSETTS, ASSIGNORS OF ONE-THIRD TO THOMAS D. BARRY, OF BROCKTON, MASSACHUSETTS.

MACHINE FOR PRESSING AND SHAPING THE BACKS OF SHOES.

939,105. Specification of Letters Patent. Patented Nov. 2, 1909.

Application filed November 11, 1907. Serial No. 401,592.

To all whom it may concern:

Be it known that we, CHARLES S. SMITH and DORR H. HADSELL, citizens of the United States, and residents of Brockton, in the county of Plymouth and State of Massachusetts, have invented an Improvement in Machines for Pressing and Shaping the Backs of Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

In the manufacture of shoes in which a vertical seam extends along the back of the heel and top of the shoe, the common practice is to rub said seam down hard with a smooth iron after the manner of the usual treeing process, the result being that, although the seam is opened and laid flat, it is done at the risk of injury to the shoe and the destruction of the proper shape of the shoe.

Accordingly, our invention aims to accomplish by a single machine and operation the simultaneous shaping of the back, and pressing and flattening-out of the seam. To this end, we provide a reciprocating pressing tool, and operating mechanism therefor, in connection with a suitable formed rest or shaper, by means of which a constant even pressure is brought rapidly back and forth upon the seam at the back of the shoe, following the desired curvature or form to which it is desired to shape the shoe-back.

The constructional details of our invention will be pointed out more at length in the course of the following description, taken with reference to the accompanying drawings, in which we have shown one of various contemplated embodiments of our invention.

In the drawings, Figure 1 is a view in side elevation, partly broken away and sectioned, showing our machine in position ready to operate on a shoe-back; and Fig. 2 is a view thereof in front elevation.

The base or frame work 1 of our machine may be of any suitable shape and character, being herein shown as approximately rectangular in general outline, and preferably formed to contain most of the operating mechanism within it, away from the dust, etc. Mounted on a suitable driving shaft 2, driven by a pulley 3 connected by a clutch 4, is a pinion 5 in mesh with a gear 6 on a countershaft 7 provided with a crank 8 for operating a reciprocating arm 9 connected thereto by a link 10. The outer end of the arm 9 extends beyond the frame 1 as indicated at 11, and is provided with a hollow head 12 containing a slide block 13 projecting at the lower end of said head, being normally moved down under uniform pressure by a spring 14 whose tension is regulated by any suitable means, as by a thumb screw 15 passing through the top of the head in engagement with a bearing plate 16 against which the spring rests. The slide block 13 is preferably retained by a stud 17 working in a slot 18 in the head, and carries at its lower end a rubbing roll 19 normally in engagement with a rounded shaping block 20, herein shown as supported on an anvil-like casting 21 at the forward end of the frame 1. The top surface of this shaping block 20 conforms to the shape of the shoe-back, the shoe being placed over the projecting end of the block 20 so as to bring the back seam uppermost, extending longitudinally along the middle of the top surface of said block 20, and then the ironing tool is reciprocated back and forth so as to cause the roll 19 to rub the seam out flat and at the same time shape the shoe.

In order that the pressure may correspond to the requirements of the work at all points of the irregular shaped shoe-back, we provide means for causing the head 12 to follow, in its reciprocations, parallel to the irregular shaping-surface of the shaping-block 20. Various mechanisms may be provided for accomplishing this purpose, our preferred construction including a movable bearing for the arm 9, which, while maintaining the latter horizontal, moves said arm and its head and connected parts bodily up and down according to the extent it is projected at any given moment. A bearing or slide way 22 is provided in a hanger 23 arranged to slide vertically in guide ways 24 and positively move up and down by a lever 25, pivoted at 26 to the frame 1. The lever at its forward slotted end 27 engages a stud 28 projecting from the hanger 23, and at its rear end has a stud or roll 29 traveling in the path 30 of a path cam 31 fast on the crank shaft 7. The path cam is so shaped and timed with relation to the movements of the crank 8 that it causes the lever 25 and the connected hanger 23 to move the arm 9 and head 12 bodily up and down as required to maintain the head always at the same

vertical distance from the shaping surface of the shaping block 20 as said head and its shaping roll 19.

In use, the operator simply places the shoe over the shaping block 20, with its back seam on top thereof, whereupon the seam is instantly ironed out flat, and the back shaped properly by a few rubbing reciprocations of the rubbing and shaping wheel 19. This process is repeated for successive shoes, and the operator quickly becomes expert, so that he can press and shape the shoes accurately, neatly, and with great rapidity. The mechanism is entirely automatic, as the spring 14 permits the ironing or rubbing and pressing tool to yield for any unevenness in the leather, or for a knot in the thread, wrinkle or bunch in the lining or the like, and the vertical up and down movement of the arm 9 and head 12 maintains the pressure uniform and the direction and angle of pressure the same at all times.

As already intimated, we do not intend to limit ourselves in all cases to the constructional details of the machine of the drawings, nor otherwise except as expressed in the claims.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is:

1. A machine for shaping and pressing a shoe-back, comprising a frame having at its forward end a stationary rounded shaping block, vertical guideways in said frame at the rear end of said block, a hanger arranged to slide vertically in said ways and provided at its upper end above said ways with a long horizontal bearing, a horizontally extending arm mounted to reciprocate in said bearing, a slide block carried by said arm and mounted to reciprocate vertically transversely thereof, a rubbing roll pivoted in the lower end of said slide block to bear on said rounded shaping block, means to maintain said slide block normally under downward engaging pressure, power mechanism to reciprocate said arm, and means operating simultaneously therewith to reciprocate said hanger.

2. A machine for shaping and pressing a shoe-back, comprising a frame having at its forward end a stationary rounded shaping block, vertical guideways in said frame at the rear end of said block, a hanger arranged to slide vertically in said ways and provided at its upper end above said ways with a long horizontal bearing, a horizontally extending arm mounted to reciprocate in said bearing, a slide block carried by said arm and mounted to reciprocate vertically transversely thereof, a rubbing roll carried yieldingly in the lower end of said slide block to bear on said rounded shaping block, power mechanism to reciprocate said arm, and means operating in connection with said power mechanism to reciprocate said hanger for maintaining the pressure of the roll uniform as it reciprocates along said shaping block.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

CHARLES S. SMITH.
DORR H. HADSELL.

Witnesses:
ELMER H. FLETCHER,
ARTHUR L. BEALS.