J. J. DOIDGE.

WORK SUPPORT FOR WELT BEATERS.

APPLICATION FILED JULY 27, 1909.

975,841. Patented Nov. 15, 1910.

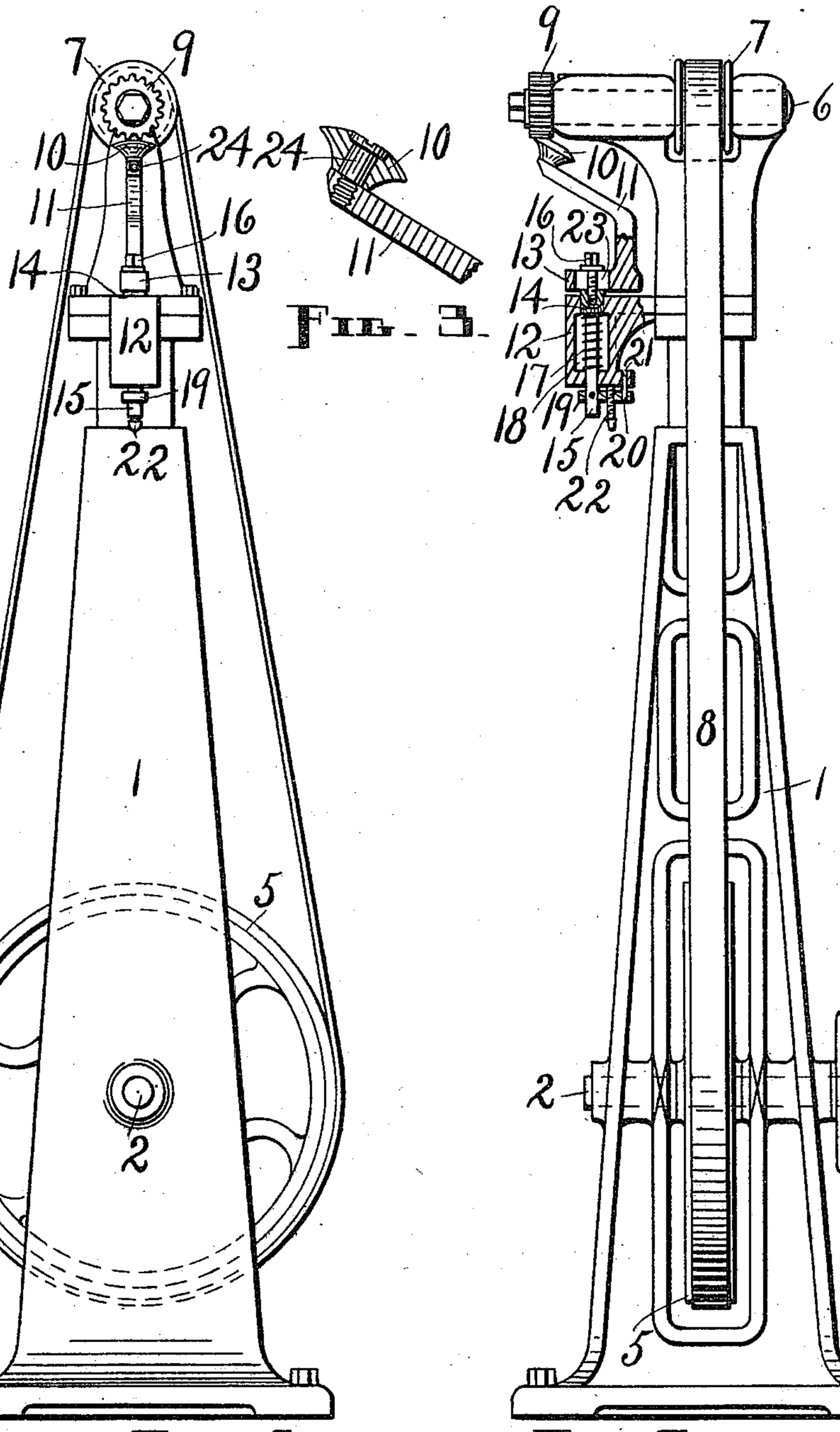

FIG. 1.

FIG. 3.

FIG. 2.

WITNESSES:

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WORK-SUPPORT FOR WELT-BEATERS.

975,841. Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed July 27, 1909. Serial No. 509,859.

To all whom it may concern:

Be it known that I, JOHN J. DOIDGE, a subject of the King of Great Britain, residing at South Framingham, in the county of Middlesex and State of Massachusetts, have invented a new and useful Work-Support for Welt-Beaters, of which the following is a specification.

My invention relates to improvements in that class of shoe machinery known as welt beaters, that is, to machines employed to beat out the welt and flatten the stitching, which attaches the welt and the upper to the inner sole, and the stitched parts, and said invention resides particularly in certain peculiar, adjustable, yielding supporting means for the work in such a machine, as hereinafter set forth.

The object of my invention is to afford simple, convenient and efficient means, in a welt beater, for properly adjusting the work support, and for so adjusting it as to adapt the machine to different thicknesses of material, whereby said machine is fully qualified to do whatever work may be required of the same. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a machine in which is embodied a practical form of my invention; Fig. 2, a side elevation in partial section of said machine, and, Fig. 3, an enlarged sectional detail of the anvil and the upper part of its supporting arm.

Similar figures refer to similar parts throughout the several views.

Referring to the drawings, it will be observed that I provide an upright frame or standard 1 of suitable construction, and journal therein in the lower part a shaft 2 upon which are mounted tight and loose pulleys 3 and 4, respectively, for a driving belt (not shown), and a tight pulley 5 in the center of said standard, the latter being recessed to accommodate said pulley 5. Journaled in the head of the standard 1 is a second shaft 6 upon which is mounted a tight pulley 7 connected by a belt 8 with the pulley 5. Tight on the front end of the shaft 6 is an indented disk or member 9 herein termed a rotary hammer. This rotary hammer is driven at a high rate of speed owing to the fact that the pulley 7 is much smaller than the pulley 5.

A revoluble anvil 10 is mounted on an arm 11 which in turn is supported yieldingly by a bracket 12 extending forward from the standard 1. The arm 11 has a base 13 which rests directly on a head 14 of a vertical plunger 15, to which head said base is secured by a bolt 16. The plunger 15 is slidingly mounted in the bracket 12 and rests upon a cushioned support in the form of a spring 17 in a chamber 18 in said bracket between the floor of said chamber and the bottom of the head 14.

Rigidly attached to the lower terminal of the plunger 15, below the bottom of the chamber 18, is an arm 19 having a pin 20 rising from its rear or inner terminal into a vertical opening 21 in the base of the bracket 12. Tapped through the arm 19, between the plunger 15 and the pin 20, is a thumb-screw 22 arranged with its upper end bearing against the bottom of the bracket 12. The office of the arm 19 with its pin 20 and its thumb-screw 22 is to prevent the plunger 15 from rotating and to regulate the amount of space between the anvil 10 and the hammer 9, the latter being accomplished by turning said thumb-screw to separate said arm from said bracket when such space is to be increased, on the one hand, and by turning said thumb-screw in the opposite direction to permit said arm to approach said bracket when such space is to be decreased, on the other hand.

The spring 17 serves to retain the vertically-movable parts at the height permitted by the thumb-screw 22 and the arm 19, and cushions the blows struck by the hammer 9 as it revolves, the spring being of sufficient strength for these purposes. Without such a yielding support for the work beneath the hammer the latter would be very liable to injure the same.

There is a slot 23 in the base 13, through which the bolt 16 passes to engage the screw-threaded sides of an opening in the plunger head 14, and this slot allows for whatever to-and-fro or rotary adjustment may be required on the part of the arm 11 in order to bring the anvil 10 into proper relation to the hammer 9.

The anvil 10 is loosely mounted on a stud 24 which is set into the upper terminal of the arm 11. The upper or working face or surface of the anvil 10 is beveled, substantially as shown, but this beveled surface always presents a horizontal portion or a portion which is parallel with the coinciding part of said hammer, that is, the portion of

the hammer which is immediately adjacent to or above the aforesaid parallel portion of the anvil. This condition is brought about by offsetting the arm 11 obliquely forward at the proper angle to cause the axis of the anvil 10 to stand at a suitable angle relative to the bottom of the hammer 9, the stud 24 being set in the offset branch of said arm at right-angles thereto. By mounting the anvil in this manner, with its axis inclined rearward or inward and upward, said anvil not only presents its outer, beveled working surface to the hammer, but its position is such as to leave a clear space for the work, that is to say, the parts as arranged do not obstruct or interfere with the free and proper use of the machine—they are out of the way of the operator.

In practice, the anvil 10 is adjusted, relative to the hammer 9, through the medium of the bolt 16 to obtain the desired horizontal adjustment, and through the medium of the thumb-screw 22 to obtain the desired vertical adjustment, as already explained. The latter adjustment should be made, of course, whenever the shoe parts to be acted upon by this machine vary, or, in other words, whenever such parts are thinner or thicker than those previously operated on. After attending to the matter of adjustment, the hammer 9 is set in motion and one welt after another is beaten out and the associated seam flattened by running the stitched portion of each inner sole around on the anvil between it and the hammer, care being taken each time at the start to have the welt extend over the anvil. As each inner sole is thus passed between the hammer and the anvil, the latter rotates as much as is necessary to facilitate and expedite the operation, and at the same time yields slightly under the rapid and incessant blows from the hammer so as to obviate all injury to the leather. Owing to the peculiar construction of the hammer, its action is both thorough and rapid.

Obviously changes may be made in the shape and size of some or all of the parts and in minor details of construction of my invention without departing from the nature thereof.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a welt beater, with a suitable supporting member, an upwardly-tensioned plunger mounted in such support and provided with an arm, an adjusting screw in engagement with said arm and said member and adapted to increase or decrease the amount of throw imparted to said plunger by the tension means, and means to prevent said plunger from rotating, of a second arm, means to secure said second arm to said plunger, and a work support carried by said second arm.

2. The combination, in a welt beater, with a suitable supporting member, an upwardly-tensioned plunger mounted in such supporting member and provided with a rigidly-attached arm, means of adjustment for said plunger, and a guide member between said arm and said member to prevent the former from turning and the plunger from being rotated, of a second arm, means to secure said second arm to said plunger, and a work support carried by said second arm.

3. The combination, in a welt beater, of a suitable supporting member, an upwardly-tensioned plunger mounted in such supporting member and provided with a rigidly-attached arm outside of such member, an adjusting screw in engagement with said arm and said member and adapted to increase or decrease the amount of throw imparted to said plunger by the tension means, a guide member between said arm and said supporting member to prevent the former from turning and the plunger from rotating, a second arm, means to secure said last-mentioned member adjustably to said plunger, and a work support carried by said second arm.

JOHN J. DOIDGE.

Witnesses:
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