R. F. McFEELY.

MACHINE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES.

APPLICATION FILED JULY 29, 1908.

999,327. Patented Aug. 1, 1911.

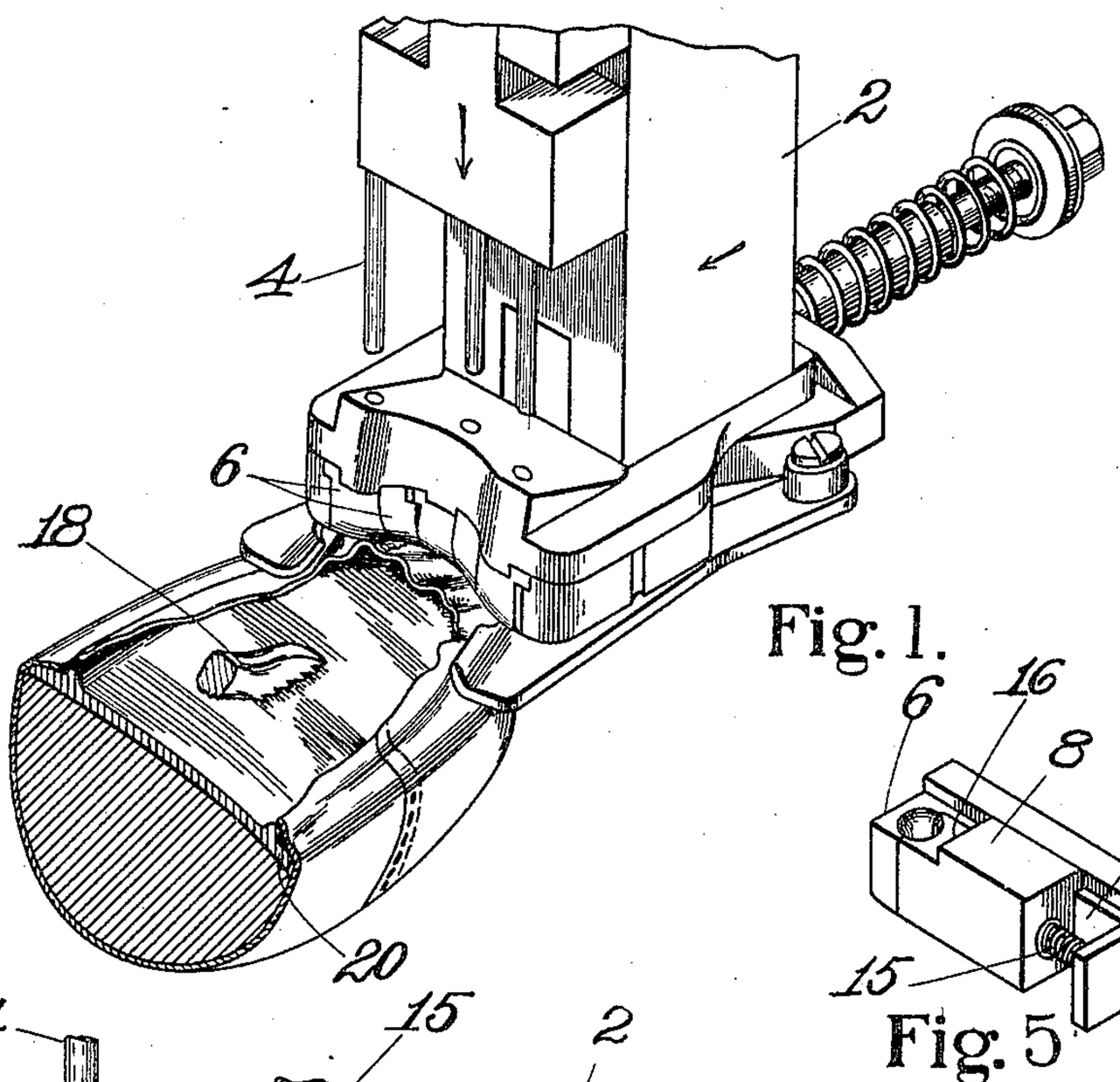

Fig. 1.

Fig. 5

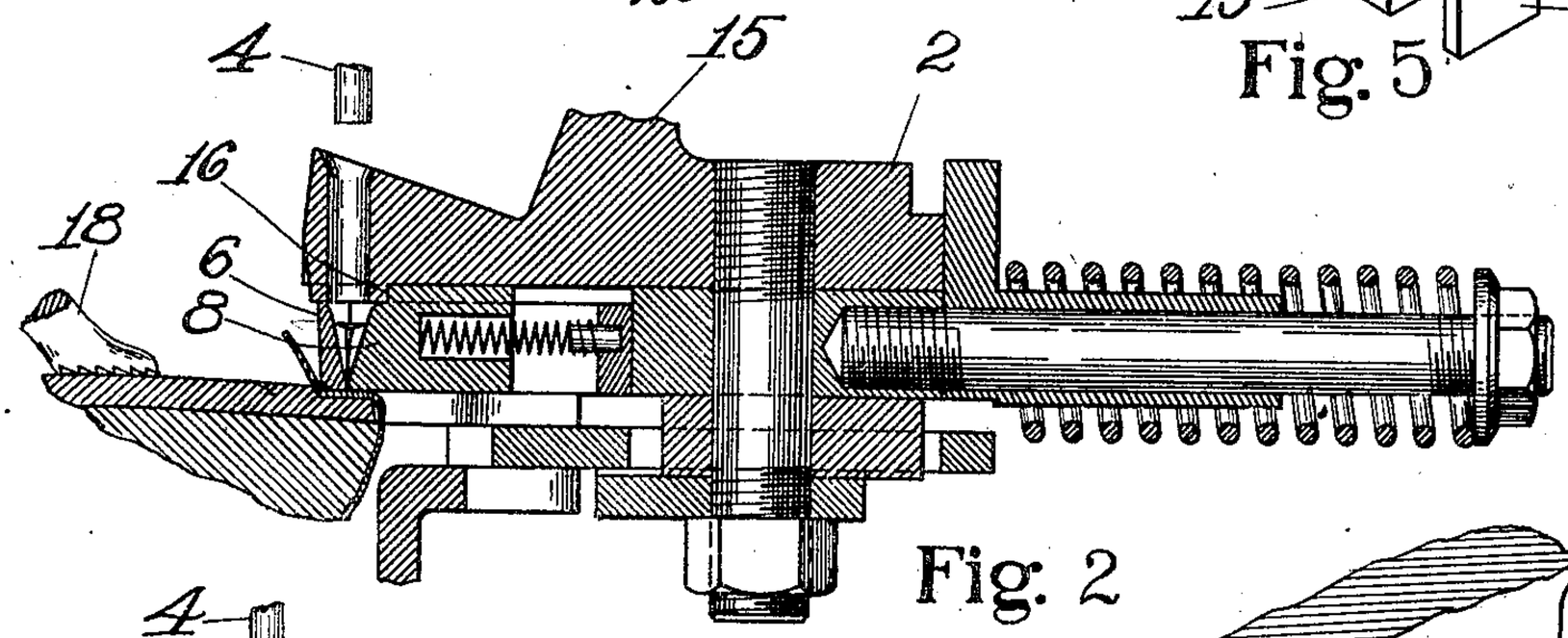

Fig. 2

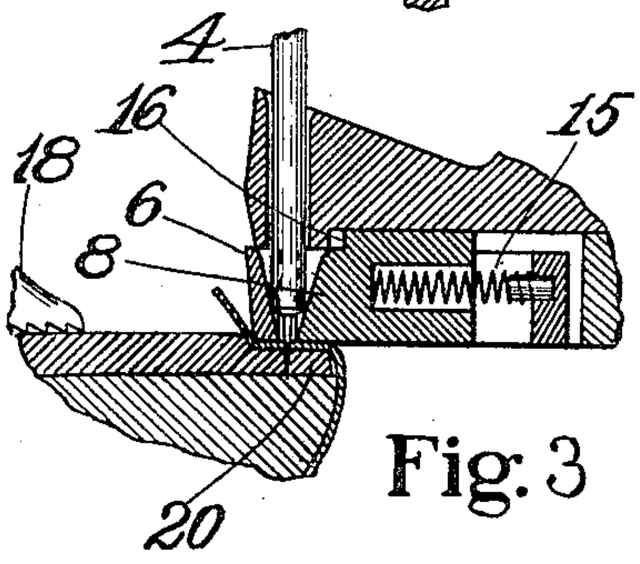

Fig. 3

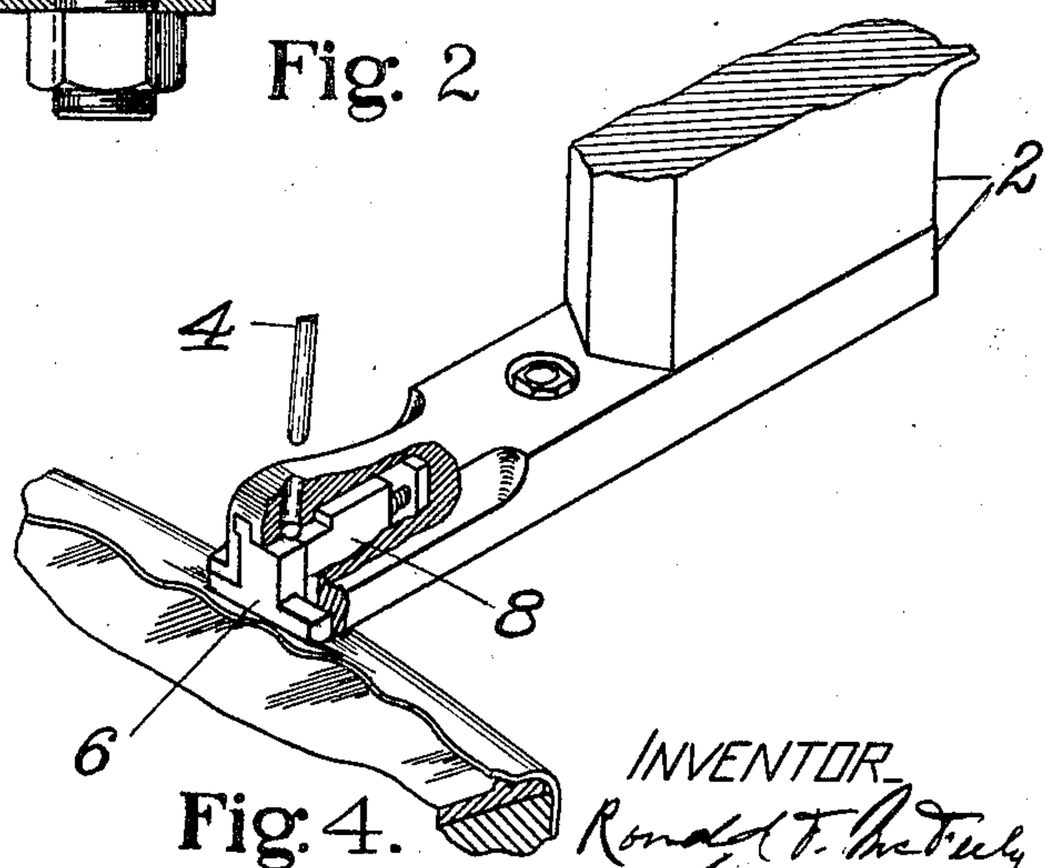

Fig. 4.

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MACHINE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES.

999,327. Specification of Letters Patent. Patented Aug. 1, 1911.

Application filed July 29, 1908. Serial No. 445,930.

To all whom it may concern:

Be it known that I, RONALD F. McFEELY, a citizen of the United States, residing at Beverly, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Machines for Use in the Manufacture of Boots and Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for use in the manufacture of boots and shoes and is herein shown as embodied in a machine for working an upper over a last and fastening it.

An object of the invention is to provide an improved tack holder which shall be of simple, economical, and durable construction, and a further object is to provide means for more satisfactorily forcing the upper into position to be secured. The tack holder according to this invention may include two blocks arranged to slide in opposite directions in a channeled carrier and held in normal tack-supporting position by a single spring. These parts while being cheap to make and efficient in operation, are durable and present little opportunity for the holder to get out of order.

In the preferred embodiment of the invention the end block forms the end face of the tack holder and constitutes a wiper for forcing the upper over the last bottom into lasted position. In this construction the end block receives in addition to its movement with the other portions of the holder inwardly toward tack-driving position a further forward movement effected by the driver when the tack is driven. This final forward movement produced by the impact of the driver causes a sharp advance of the end block over the upper, this advance being in the nature of a blow for driving the upper forwardly. It is produced by the engagement of the driver with an inclined tack-supporting face on the block and this engagement has a tendency to impel the end block downwardly. The rear and other portions of the tack holder are similarly engaged by the driver so that the two blocks by their movement outwardly in rubbing contact with the work from the tack-driving point smooth or beat down the upper adjacent to the tack in a way that is advantageous and is additional to the smoothing action of a wiper plate that extends between the tack-supporting blocks and the work and has only the rubbing movement incident to the advance of the tack holder into operative position.

In lasting shoes that have shouldered soles or inner-soles, such as "turn" and "welt" shoes, it is desirable to force the upper materials snugly into the angle between the shoulder and the feather edge or thin marginal portion of the sole in order that it may be so fastened there by the sewing machine as to make a tight seam. The upper materials of course have a tendency to bridge over this angle and if they are thick or stiff, as is often the case at the toe portion of the shoe, the operator finds difficulty in holding the shoe up against the advancing tack holder with sufficient force and firmness to cause the upper to be pressed snugly into the angle. It is an important feature of this invention that the end block constitutes in the present construction a device for punching the upper materials forwardly and into the angle of a shouldered sole, when such a sole is employed, by a quick sharp blow after the advance of the combined tack holder and wiper into tack-driving position has been effected. It is characteristic of the illustrated construction that this final independent movement of the end block forwardly occurs while the tack is being driven so that the tack assists the usual shoe bottom rest in holding the shoe as a whole while the end block forces the upper into position. These and other features of the invention, including certain details of construction and combinations of parts, will be more fully explained in connection with the following description of the illustrated embodiment of the invention and will then be pointed out in the claims.

Figure 1 is a perspective view of a construction embodying the present invention and adapted to insert a plurality of tacks. Fig. 2 is a vertical section. Fig. 3 shows a different position of the parts. Fig. 4 is a perspective view showing a single tack holder mounted in a carrier. Fig. 5 is a

perspective view of the tack-supporting blocks of the carrier.

The machine, which may be of any usual or suitable construction for working an upper over a last and securing it, comprises a carrier, designated by the reference character 2 in Figs. 1, 2, and 4, which is actuated forwardly to advance the tack holder into position for the tack to be driven and rearwardly for uncovering the shoe bottom. The driver is indicated at 4 and is suitably supported for movement through the tack-receiving opening in the tack holder and may be actuated by any usual means. The tack holder comprises two blocks, 6 and 8, the block 6 having a lateral neck 10 and a heel 12 adapted to rest normally against a fixed portion of the carrier, as indicated in Figs. 2 and 4. The neck of the block 6 is provided with a rib 14 by which said block is guided for forward and backward movement in the holder. The neck is formed on its inner side with a guiding rib for the block 8 and a spring 15 is arranged between the heel 12 and the adjacent end of the rear block 8. The arrangement is such that the spring holds the heel normally against the carrier and forces the rear block 8 forwardly so as to hold their abutting faces together. A shoulder 16 on the block 8 is adapted to engage a shoulder on the carrier, as shown in Fig. 2, to limit the forward movement of the block 8 and together with the engagement of the heel and the carrier determine the normal position of the two blocks. The two blocks are formed at their abutting faces with tapering tack-receiving walls in alinement with the driver passage in the carrier. The descent of the driver between said walls forces the end block 6 forwardly and the rear block 8 rearwardly, as shown in Fig. 3, both blocks yielding against the tension of the spring 15. The end block 6 thus receives in addition to its normal forward movement with the carrier toward operative position, during which movement it wipes the upper inwardly over the feather or marginal portion 20 of the sole, an additional and independent forward movement effected by the engagement of the driver with the inclined tack-supporting face of the block. This additional movement of the end block forwardly independently of its movement with the carrier drives it toward the shoulder of the sole and causes it to force the upper snugly into the angle between the feather and shoulder. This additional forward movement of the end block, being effected by the usual spring-actuated or other quick moving driver, is in the nature of a blow and causes the end block to force the upper into the angle by impact as distinguished from pressure applied to the upper by the tack holder as a whole during its advance into operative position. It is laborious work for the operator on a lasting or similar machine to hold the shoe against the wiping action of the tack holder with sufficient firmness to insure that the upper materials will be snugly forced into the angle between the feather and the shoulder, but the driving action of the end block effected as described takes place so quickly that the inertia of the shoe appears to prevent it from moving much under said blow of the end block. The usual bottom rest 18 by its engagement with the sole at the inner side of the shoe assists in holding the shoe against displacement by the impact of the end block. It is also to be observed that the independent movement of the end block forwardly takes place while the tack is being driven and the tack itself assists in resisting forward movement of the shoe by the end block.

While a tack is shown in the tack holder in position to be inserted by the driver at the same time that the end block receives its independent movement, it will of course be understood that the function of the tack holder as a wiper and the operation of the end block for punching or forcing the upper forwardly and into the angle of a shouldered sole is independent of the presence of a tack in the holder. If it were desired to work the upper into lasted position without fastening it by tacks as it is customary to do in lasting the toe portion of certain shoes, the operation would be the same as above described except that no tacks would be fed to the holder.

Having explained the nature of this invention and described a preferred construction embodying the same, I claim as new and desire to secure by Letters Patent of the United States:

1. In a machine of the class described, the combination with a driver, of a tack holder longitudinally movable and provided with tack blocks arranged one in advance of the other and mounted for movement lengthwise of the holder to permit a tack to be driven, the front block being provided with a face adapted to engage and press the work into position to be secured when it is moved lengthwise of the holder.

2. In a machine of the class described, the combination with a driver, of a tack holder longitudinally movable, means for actuating the holder over the work to and from tack driving position, and a tack block forming the front face of the holder and mounted for movement endwise of the holder by the action of said driver to permit a tack to be driven.

3. In a machine for working an upper over a last and fastening it, the combination with a driver and a tack holder provided with a member forming the front face thereof and arranged for forward movement

by the driver to force the stock inwardly from the edge of the last as the tack is driven.

4. In a machine for working an upper over a last and fastening it, the combination with a driver and a tack holder comprising tack blocks arranged one in advance of the other for relative movement lengthwise of the holder during the operation of said driver to permit the tack to be driven and adapted to rest upon the work and smooth it by such relative movement.

5. In a machine for working an upper over a last and fastening it, the combination with a driver and a tack holder comprising tack supporting blocks arranged one in front of the other in the holder for direct engagement with the work and having beveled faces in the path of the driver wherethrough they are actuated downwardly and outwardly on the work as the driver is operated and power operated mechanism for actuating said holder over the work in wiping contact therewith to tack inserting position and then automatically actuating the driver.

6. In a machine for working an upper over a last and fastening it, the combination with a driver and a tack holder comprising a movable member mounted in the front end of the holder for engagement with the work, and means whereby the said member is actuated to force the upper inwardly and downwardly when the driver is operated.

7. In a machine for working an upper over a last and fastening it, the combination with a driver and a tack holder movable inwardly over the shoe bottom toward tack driving point and provided with a member adapted to be actuated independently of said movement of the holder to force the upper inwardly and downwardly.

8. In a machine of the class described, the combination with a presser adapted to force the upper into the angle of union between the shoulder and the feather edge of a sole, of means for actuating the presser to wipe the upper over the shoe bottom, and means for giving to the presser a final sharp advance to drive the upper into said angle.

9. In a machine of the class described, the combination with a driver, of a tack holder comprising the tack block 8, the tack block 6 having a head in advance of the block 8 and arranged for direct bottom rubbing and side pressing contact with the work, and the neck 10 and the spring 15 arranged to hold the two blocks in tack-supporting position.

10. In a machine of the class described, the combination with a driver, of a tack holder comprising a carrier, the tack block 8, and the tack block 6 having a head in advance of the block 8, the neck 10 extending past the block 6, and the heel 12 arranged to abut against the carrier and form a rigid support against rearward displacement of the block 8.

11. In a machine of the class described. the combination with means for presenting and driving tacks, of a device arranged to be actuated during the insertion of the tack to force the upper inwardly over the shoe bottom.

12. In a machine of the class described, the combination with means for wiping an upper inwardly over the feather of a shouldered innersole on a last bottom, of a device arranged to have an independent movement for forcing the upper in advance of the wiping means into the angle between the shoulder and the feather, and suitable actuating means.

13. In a machine of the class described, the combination with a shoe bottom rest, of a tack holder constructed and arranged for forcing the upper inwardly over the shoe bottom, and a driver for inserting a tack to fasten the upper, said machine having a device arranged to engage the upper between the tack-inserting point and the bottom rest and to be actuated forwardly against the upper during the tack-driving operation.

14. In a machine of the class described, the combination with means for wiping an upper inwardly over the bottom of a shouldered sole on a shoe bottom, of a device arranged to be actuated independently for forcing the upper inwardly into the angle between the shoulder and the feather, and a rest for engaging and holding the sole at the inner side of the shoulder.

15. A machine of the class described having, in combination, a tack holder adapted for movement over a shoe bottom to force an upper toward lasted position and having a device adapted for independent actuation to force the upper farther inwardly.

16. A machine of the class described having, in combination, a driver, a reciprocating tack holder adapted for movement over the feather of a shouldered sole on a shoe bottom and having a device arranged for independent actuation forwardly by the driver and adapted to force the upper into the angle between the feather and shoulder of the sole.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RONALD F. McFEELY.

Witnesses:
CHARLES H. HOYT,
ARTHUR L. RUSSELL.