

J. B. HADAWAY.
MACHINE FOR OPERATING ON THE SOLE EDGES OF BOOTS AND SHOES.
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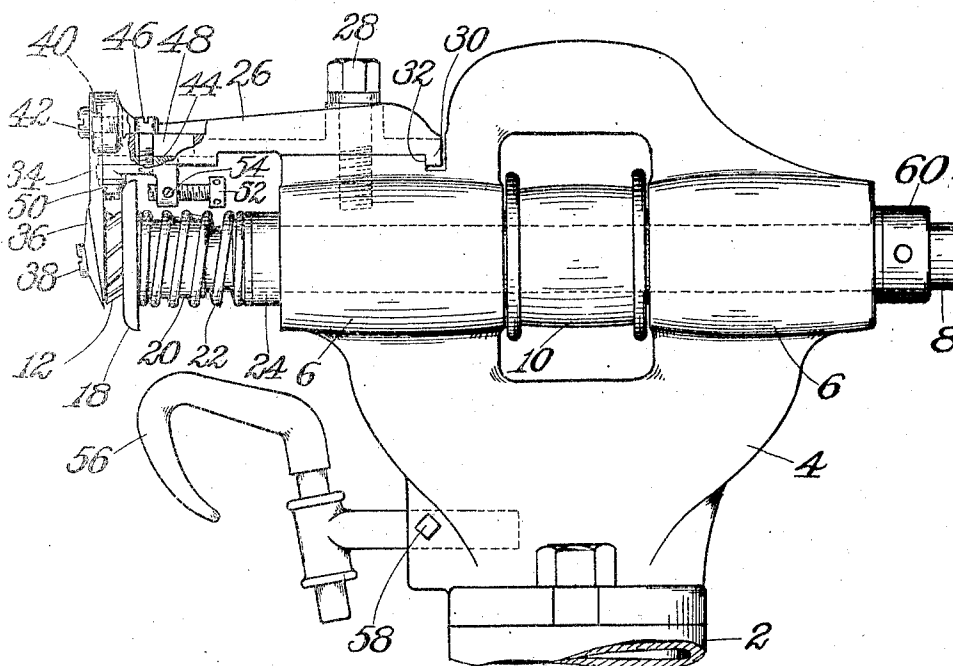


Fig. 1.

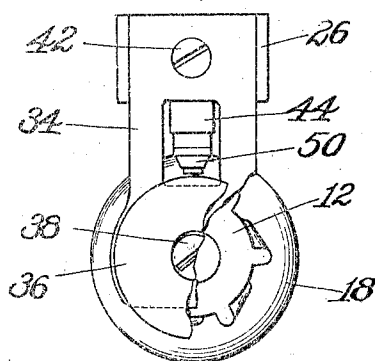


Fig. 2.

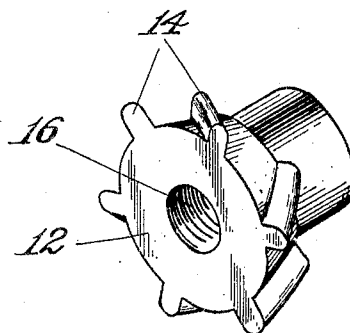


Fig. 3.

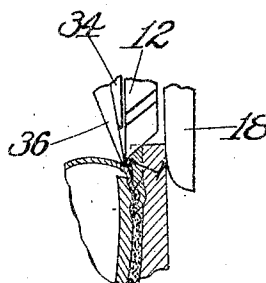


Fig. 4.

WITNESSES.

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MACHINE FOR OPERATING ON THE SOLE EDGES OF BOOTS AND SHOES.

1,026,032.

Specification of Letters Patent.

Patented May 14, 1912.

Application filed January 22, 1910. Serial No. 539,490.

To all whom it may concern:

Be it known that I, JOHN B. HADAWAY, a citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented certain Improvements in Machines for Operating on the Sole Edges 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 a machine for operating on the sole edges of boots and shoes.

In welt shoes, as ordinarily made, the line of stitches by which the outsole and welt are united usually shows on the upper surface of the welt. In manufacturing some kinds of shoes, particularly certain styles of women's shoes, it is desirable to conceal this line of stitches and it is the primary object of this invention to provide a machine by which this result may be effected.

To this end one feature of the invention consists in the provision of a rotary tool constructed and arranged to operate upon the welt to force some of the stock backwardly and upwardly over the stitches. In the preferred embodiment of the invention this tool is of frusto conical shape and is provided on its lateral surface with ribs or corrugations which are adapted to rub portions of the stock backwardly toward the upper.

Another feature of the invention consists in the provision with a tool of the character indicated of a work support arranged to cooperate with the tool in effecting the result described. Preferably the tool is fixed to a rotary shaft and the work support is arranged slidably on the same shaft in position to engage the tread face of a shoe sole as it is presented to the tool. Preferably also a spring is arranged to urge the work support toward the tool, suitable stops being provided to limit the movement of the work support toward or from the tool.

A further object of the invention consists in the provision of suitable means for protecting the upper of a shoe from the operation of the tool described. This means pref-

erably consists of a shield positioned adjacent the tool to engage the upper and prevent it from coming in contact with the tool.

The above and other features of the invention including certain details of construction and combinations and arrangements of parts will be clearly understood from the accompanying description of one embodiment of the invention.

It is contemplated that it may be desirable, in manufacturing certain kinds of shoes not provided with a welt, to operate on the projecting margin of the sole in the manner in which it is proposed to operate upon the welt. It is obvious that the machine of this invention is adapted to perform such work and therefore the term "welt" as used in this specification and in the claims is intended, where the context permits, to include the similarly located portion of a shoe having no welt.

Referring now to the drawings, Figure 1 is a side elevation of the upper portion of one embodiment of this invention; Fig. 2 is a front elevation of the tool and adjacent mechanism, certain of the parts being broken away to more clearly illustrate the construction; Fig. 3 is a perspective view of the tool; and Fig. 4 is a fragmentary view showing the tool and adjacent parts in their relative positions in operating upon a shoe sole.

The frame post 2 has a head 4 bolted thereto which is provided with bearings 6-6 supporting a horizontal rotary shaft 8. The shaft may be connected to any suitable source of power by means of a belt running over a pulley 10 rigidly secured on the shaft between the bearings 6-6. A tool 12 is fixed to the forward end of the shaft for rotative movement therewith and the tool illustrated consists of a short hub and a frusto conical portion having on its lateral surface a plurality of ribs or corrugations 14. It is not essential that the body of the tool shall be frusto conical in shape, although this design forms a very convenient shape to manufacture. It is preferable, however, to so form the tool that the crests of the ribs shall lie in the surface of a cone, as in the tool illustrated. It is preferable,

also, to have the ribs extend diagonally to the elements of the cone in which they lie or, in other words, to have the ribs inclined to the planes passing through the axis of the tool. This arrangement enables the ribs to exert a wiping action on the welt tending to crowd the stock toward the upper. In order to secure the tool to the shaft it is provided with a threaded aperture 16 adapted to receive a correspondingly threaded stud projecting from the end of the shaft 8.

It will be understood that a variety of shapes or forms of tools may be employed in this machine without departing from the spirit of the invention.

A disk-like work support 18 is slidably mounted on the shaft 8 in the rear of the tool 12 and is provided with an integral sleeve 20 to give it greater stability. The work support is urged toward the tool by a coiled spring 22 surrounding the sleeve 20 and shaft 8 and abutting against a collar 24 on said shaft. Extending parallel with and above the shaft is a stationary arm 26 secured to the frame-head 4 by a bolt 28 and prevented from turning by an integral flange 30 engaging a shoulder 32 of the head. On its forward end the arm 26 is provided with a vertical guideway in which is received a sliding plate 34 carrying near its lower end a shield 36 pivotally mounted on the stud 38. The lower end of the plate is beveled toward the tool 12 as shown in the drawings so that the lower edge of the shield is positioned very close to the ribs or corrugations 14 of the rotating tool. The plate may be adjusted relative to the tool and arm 26 and is provided for this purpose with a slot 40 through which a clamping bolt 42 extends. The arm 26 also carries a slide 44 mounted in a horizontal guideway formed in its lower side. The slide may be adjusted along the guideway and may be secured in adjusted position by a bolt 46 threaded therinto and extending through a slot 48 in the arm with its head resting on the upper side of the arm. On the lower side of the slide is journaled a roll 50 having a beveled face arranged to engage the forward rounded or beveled face of the work support 18 to limit its movement toward the tool 12. The slide also carries a second stop consisting of a short screw or bolt 52 threaded through a depending portion of the slide and arranged to engage the rear side of the work support 18 to limit its movement away from the tool 12. The bolt 52 may be held in adjusted position by a set screw 54.

For the purpose of aiding the workman in guiding the shoe, particularly in operating around the toe portion, a finger hook 56 is provided and is adjustably secured to the frame head 4 by a screw 58. The thrust of the tool against the work tends to slide the

shaft axially through its bearings and a collar 60 is therefore pinned to the rear end of the shaft to resist this tendency.

Before the shoe is operated upon by this machine it is usually given a rough trimming to even up the edge and leave a uniform width of margin projecting around the entire forepart. The sole edge is then put in a softened or tempered condition and is presented to the tool 12 in substantially the position indicated in Fig. 4. The work support may yield as the sole edge is crowded in between it and the tool, or the stops 50 and 52 may be adjusted to hold it at a fixed distance from the tool. As the tool 12 rotates the ribs 14 catch portions of the stock and crowd or carry it backwardly and upwardly toward the upper thus covering the stitches as indicated in Fig. 4, and this operation results, as the shoe is fed past the tool, in forming a substantially uniform beveled or inclined margin around the sole edge. The shoe may then be given a final trimming and the upset welt may be finished on a welt indenting and burnishing machine or in some similar manner.

It will be noted that the shield may rotate idly with the shoe as it is fed past the tool and that it prevents the upper from coming in contact with the tool and becoming marred or otherwise injured thereby.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A machine of the character described comprising a rotary tool having an acting face constructed and shaped to act upon the welt to force some of the stock backwardly and upwardly toward the upper.

2. A machine of the character described comprising a rotary tool of frusto conical shape provided on its lateral surface with ribs arranged to act upon the marginal portion of the welt to force some of the stock backwardly and upwardly toward the upper to conceal the stitches of the out-seam.

3. A machine of the character described comprising a rotary tool having a working surface provided with ribs, said ribs being inclined to the axis of the tool and arranged to operate upon the welt portion of a sole edge to force some of the stock backwardly toward the upper.

4. A machine for operating on the welt of a shoe to force some of the stock backwardly toward the upper comprising a rotary tool having a ribbed lateral surface with the crests of the ribs arranged substantially in the surface of a cone.

5. A machine for operating on the welt of a shoe to force some of the stock backwardly toward the upper comprising a rotary tool having a ribbed lateral surface with the crests of the ribs arranged sub-

stantially in the surface of a cone, the ribs being inclined to the elements of the cone.

6. A machine of the character described comprising in combination a rotary tool having an acting face constructed and shaped to act upon the welt portion of a sole edge to force some of the stock backwardly and upwardly toward the upper and a work support arranged in operative relation to said tool.

7. A machine of the character described comprising in combination a rotary tool having an acting face constructed and arranged to act upon the welt portion of a sole edge to force some of the stock backwardly and upwardly toward the upper, a work support arranged in operative relationship to said tool and provision whereby relative adjustment of said tool and support may be effected.

8. A machine of the class described comprising in combination a rotary tool having an acting face constructed and shaped to act upon the welt to force stock backwardly over the stitches and a yielding work support arranged in operative relation to said tool.

9. A machine of the class described comprising in combination a rotary tool having an acting face constructed and arranged to act upon the welt to crowd a portion of the stock backwardly over the stitches, a work support arranged adjacent said tool, means for yieldingly urging said work support toward the tool and means for limiting the range of movement of said work support.

10. A machine of the class described comprising in combination a rotary shaft, a tool carried by said shaft and arranged to act upon the welt to force some of the stock backwardly and upwardly toward the upper and a work support also mounted on said shaft and positioned adjacent said tool.

11. A machine of the class described comprising in combination a rotary tool having an acting face constructed and arranged to act upon the welt portion of a sole edge to force some of the stock backwardly and up-

wardly toward the upper and means for protecting the upper of the shoe from the operation of said tool.

12. A machine of the class described comprising in combination a rotary shaft, a tool fixed to the forward end of said shaft, said tool being constructed and arranged to act upon the welt of a shoe to force some of the stock backwardly toward the upper, a shield positioned in front of said tool and a support slidably arranged on said shaft and adapted to engage the tread face of a shoe sole presented to the tool.

13. A machine of the class described comprising in combination a rotary shaft, a tool fixed to the forward end of said shaft, said tool having a ribbed surface constructed to operate upon the welt portion of a sole edge to force some of the stock backwardly toward the upper, a work support slidably mounted on said shaft, a spring operating to move said work support toward the tool, adjustable stops arranged to engage opposite sides of the work support to limit its movement and a rotatable shield positioned in front of said tool.

14. A machine of the class described comprising in combination a rotary shaft, a tool fixed to the forward end of said shaft, said tool being frusto conical in shape and having a ribbed lateral surface, a disk-like work support slidably mounted on said shaft at the rear of said tool, a spring tending to move said work support toward the tool, an adjustable slide mounted adjacent said work support, two stops carried by said slide arranged to engage opposite sides of the work support, one of the stops being adjustable, and a pivoted shield positioned in front of said tool and arranged for adjustment relative thereto.

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

JOHN B. HADAWAY.

Witnesses:

LEONARD M. JOHNSON,
JOHN H. MCCREADY.