Nov. 8, 1927. 1,648,040

C. A. BLISS

FINISHING MACHINE

Filed Oct. 26, 1922

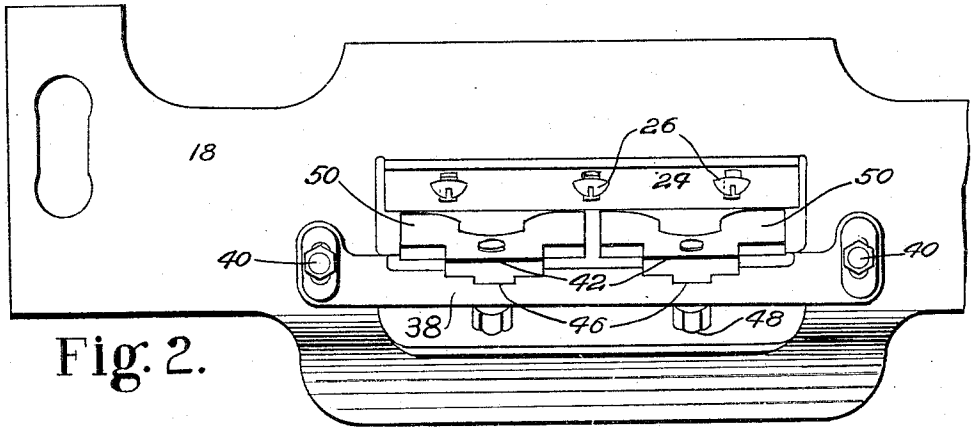
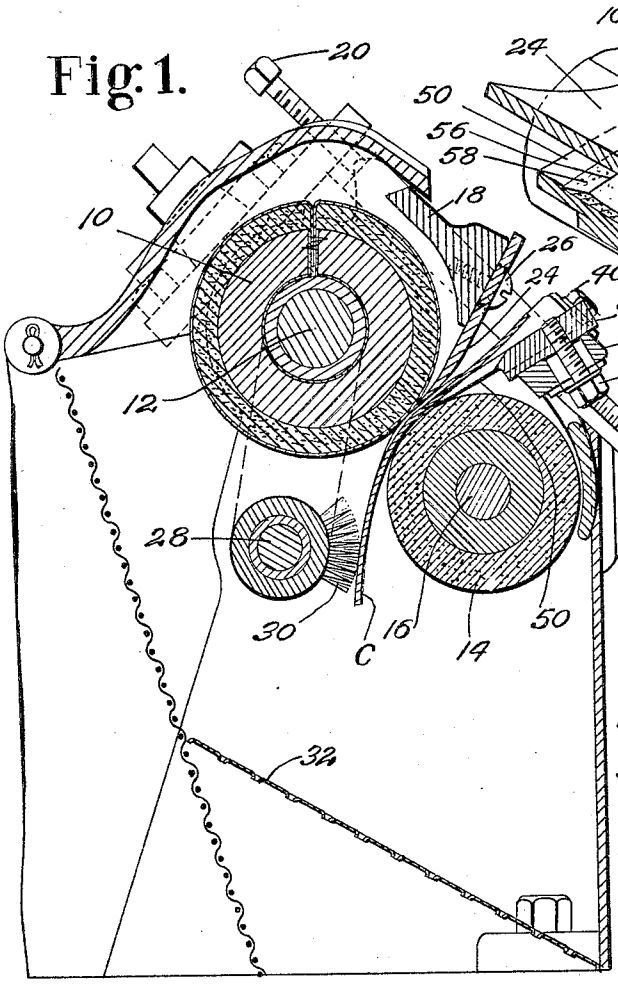


Fig. 2.

Fig. 1.



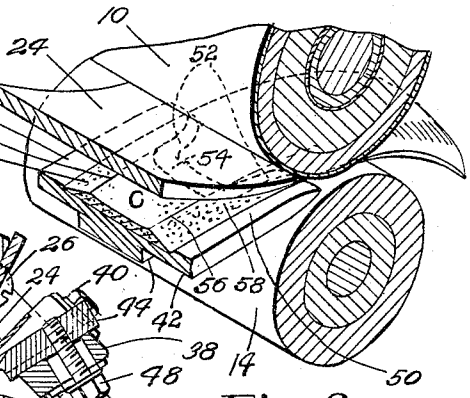


Fig. 3.

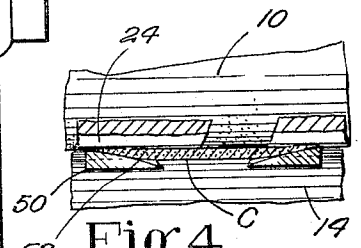


Fig. 4.

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UNITED STATES PATENT OFFICE.

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FINISHING MACHINE.

Application filed October 26, 1922. Serial No. 597,165.

This invention relates to finishing machines and is herein shown as embodied in a machine for buffing skived box toes, counters or other articles having beveled edges.

Counters to be incorporated in shoes are usually comparatively thick throughout the central portion and are skived to a feather edge, thereby leaving a more or less abrupt shoulder at the obtuse angle joining one surface of the body of the counter with the beveled edge. The counter is then customarily buffed to round off the shoulder and smooth the surface so that no discomfort will be caused to the wearer of the finished shoe. One well-known machine for performing this operation has a buffing roll rotatable at high speed, a feed roll rotatable at a slower speed and provided with a yieldable facing which allows the thicker portion of the counter to be pressed into the roll, thereby presenting the whole surface of the counter to the roll. For a detailed description of said machine, reference may be had to United States Letters Patent No. 1,078,050, granted Nov. 11, 1913 on application of Elmer Lane. Such machines have been used satisfactorily for buffing counters and box toes. Other machines used for this operation have had matrices on a feed roll to present the work to a buffing roll, the extent and character of the buffing depending on the matrix shape, but these are expensive and necessitate the feeding of the work in proper time relation to the movable matrices. Accordingly, it is an object of this invention to provide improved mechanism for rapidly finishing counters and similar articles over the whole surface including the entire beveled edge. To this end, in accordance with a feature of the invention means is provided for turning up the beveled edge of the counter or other article into the plane of its central portion and guiding it in a plane tangent to the buffing roll so that no part of the surface is slighted. In the illustrated construction, a fixed guide plate extends substantially tangentially towards a buffing roll and has a pair of spaced beveled arms to curl up the beveled edges of the work while the central portion of the plate is depressed or cut out to allow the thicker parts of the work to sink into a yieldable feed roll under the action of a presser thus distorting the work and presenting it to the roll in a distorted condition. The guide plate being always in operative relation to the rolls, the work pieces may be presented as fast as convenient without any necessity for timing the action.

Referring to the drawings,

Fig. 1 is a vertical, transverse section through the machine.

Fig. 2 is a plan view of a portion of the apparatus shown in Fig. 1.

Fig. 3 is a perspective view of a detail with some parts in section.

Fig. 4 is a detail sectional view showing the work being presented to a buffing roll.

The buffing roll 10, herein shown as a split roll, is fast to a shaft 12 which is rotatably mounted in slidable bearings the positions of which may be adjusted in any suitable manner towards or from a feed roll 14 which has a facing of rubber or other yielding material and is fast to a shaft 16 rotatable in fixed bearings. The plane which includes the axes of both rolls is inclined and, slidably mounted upon the frame of the machine parallel to this plane, is a throat plate 18 adjustably held between upper and lower stop screws 20 and 22. The throat plate 18 has an opening to allow insertion of the work, and fast to the plate at the upper side of the opening is a presser 24 which extends in a direction oblique to the direction of feed and extends within a short distance of the bite of the rolls. The pressure 24 is adjustably held on the plate 18 by screws 26 which pass through slots in the presser and are threaded into the throat plate. The purpose of the presser is to press against the work and force it into the yielding face of the feed roll 14 so that a drag may be applied to the work, this action being desirable by reason of the fact that the buffing roll 10 rotates at a much greater speed than the feed roll in a direction to advance the work between the rolls. Behind the rolls, in the line of feed is a shaft 28 having fast thereon the hub of a striker 30 herein shown as formed of stiff bristles and consisting of a segment of a cylindrical brush for beating the dust from the work as it passes through the rolls. Below the striker is a perforated guide 32 arranged at an

angle to deflect the piece of stock after it has passed the striker and to turn it back towards the front of the machine to be removed readily. Any suitable suction device or blower may be provided to exhaust the dust.

Extending across the opening of the throat plate 18 is a supporting bar 38 having bosses at the ends which are slotted for the passage of adjusting and clamping bolts 40 threaded in the throat plate. Supported on the bar 38 are one or more guide plates or matrices 42, each having a central rib 44 slidably mounted in a channel 46 of the supporting bar, there being a clamping bolt 48 extending downwardly from each guide plate and passing through a slot in the supporting bar 38 so that the positions of the guide plates or matrices may be adjusted. Each guide plate has a pair of spaced arms 50 extending in the same general direction as the rib and in a direction substantially tangential with respect to the periphery of the buffing roll 10 approximately to the point of tangency, the central portion of the plate being cut out to allow the presser 24 to depress the central portion of a piece of work into the yieldable facing of the feed roll. The inner edges of the arms 50 are beveled as indicated at 52 and this bevel is continued around the base of the U as indicated at 54.

There is indicated at C a counter skived at the edges and having shoulders 56 at the junction of the central portion with the beveled edges 58. The counter is fed lengthwise to the rolls, the thick central portion being forced into the feed roll by the presser and the beveled edges being curled up by the underlying beveled surfaces 52 on the arms 50 of the guide plate. The edges of the counter are thus supported in the plane of the body portion, or in other words, they are presented to the buffing roll in a plane which is substantially tangent to the roll. Hence the beveled edges are finished over their whole surface; and the shoulders eliminated. The edges 58 are not allowed to sink into the facing of the feed roll under the action of the presser, although the thicker central portion of the counter is and should be depressed into the feed roll.

Although the invention is set forth in connection with a particular machine, it should be understood that the invention is not limited in the scope of its application to the particular machine shown and described.

What I claim as new, and desire to secure by Letters Patent of the United States is:

1. In a machine for buffing pieces of work having beveled edges, a buffing roll and a feed roll between which the work is passed, and co-operating work-guiding plates arranged to engage the opposite faces of pieces of work presented to the rolls, that plate which engages the face of the work supported by the feed roll being constructed with spaced arms arranged to underlie the edges of the pieces of work, said plates being constructed and arranged to co-operate to distort the pieces of work and present them to the buffing roll in a distorted condition so that all parts of one of the surfaces including the beveled edges will be treated by the buffing roll.

2. In a machine of the class described, an abrading roll, a feed roll, means for rotating the rolls, and means for presenting a piece of work having beveled edges to the rolls, said means comprising a fixed guide plate having spaced arms extending between the rolls and underlying the beveled edges of the work to hold said edges in a plane tangent to the abrading roll.

3. In a machine of the class described, an abrading roll, a feed roll having a yieldable facing, a presser to force the work into the yieldable facing, and means for presenting a piece of work with beveled edges to the rolls, said means comprising a plate having a cut-away central portion to receive the body portion of the work and raised sides to support the beveled edges in the plane of the body portion.

4. In a machine for buffing work with beveled edges, a buffing roll, means for rotating the roll in a direction to advance and abrade the work, and a guide plate having a pair of spaced arms extending substantially tangent to the roll, said arms underlying the beveled edges of the work approximately to the point of tangency to guide them in a plane tangent to the roll as they are advanced over the guide plate by the rotation of the roll.

5. In a machine of the class described, an operating tool, a guide plate for presenting work to the tool, said plate having spaced arms extending towards the tool to support the sides of the work, the inner edges of the arms being beveled to allow the central portion of the work to be depressed gradually below the sides, and means for passing work over said guide plate to present it to the tool.

6. In a machine of the class described, an operating tool, and a guide plate for presenting work to the tool, said plate being substantially U-shaped with the open end of the U toward the tool, the inner edges of the U being beveled to allow the central portion of the work to be depressed below the sides as the work is guided over the plate to the tool.

7. In a machine of the class described, an abrading roll, a supporting bar having a channel extending towards the roll, a guide plate provided with a work-receiving groove and a rib extending in the same general direction, said rib being guided by and mov-

able in the channel, and means for clamping the guide plate to the bar in different adjusted positions.

8. In a machine of the class described, a frame, an abrading roll journaled in the frame, a throat plate having an opening adjacent to the roll, a supporting bar fixed to the throat plate and extending across the opening, and a pair of guide plates one of which is adjustably secured to the bar, said plates being spaced at a point within said opening and extending towards the roll to guide to the roll a piece of work inserted through said opening and between the plates.

9. In a machine of the class described, an abrading roll journaled in the frame, a throat plate having an opening adjacent to the roll, a supporting bar on the throat plate, means for adjusting the bar on the plate, a guide plate fixed to the bar and extending towards the roll to guide the work thereto, and means for clamping the guide plate in different positions on the bar.

10. In a machine of the class described, an abrading roll, a feed roll having a yieldable facing, a presser to force the work into the facing, and a guide plate on the side of the work opposite the presser to modify the effect of the presser on predetermined portions of the work.

11. In a machine of the class described, an abrading roll and an opposing feed roll between which the work is passed, and means independent of said feed roll arranged to engage a face of the work opposite to that engaged by the abrading roll for distorting the other surface of the work in its passage through the rolls to vary the action of the abrading roll on said surface.

12. In a machine of the class described, a finishing roll and a guide plate, the position of which with respect to the finishing roll is fixed for presenting a piece of work in sheet form with beveled edges to the roll, said plate having raised portions at the sides to deflect and hold up the edges of the sheet of work as the latter is moved over the guide plate in its presentation to the finishing roll.

13. In a machine of the class described, a finishing roll, a feed roll, means for rotating the rolls, and means for presenting a piece of work having beveled edges to the rolls, said means comprising a fixed guide plate having spaced arms extending between the rolls and underlying the beveled edges of the work to hold said edges in a plane tangent to the finishing roll.

In testimony whereof I have signed my name to this specification.

CHARLES A. BLISS.