Feb. 14, 1933. W. J. SHAW 1,897,680

WOOD HEEL MACHINE

Filed June 27, 1925 2 Sheets-Sheet 1

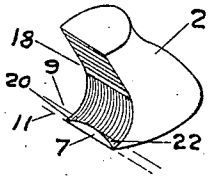

FIG 1

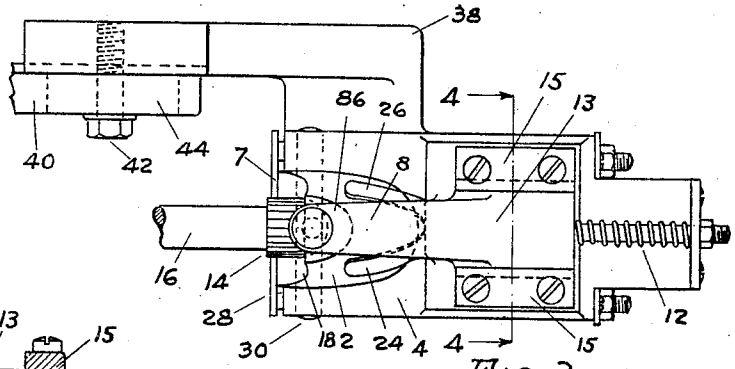

FIG 3

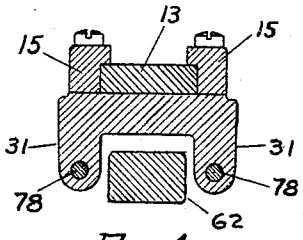

FIG 4

FIG 2

FIG 5

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WOOD HEEL MACHINE

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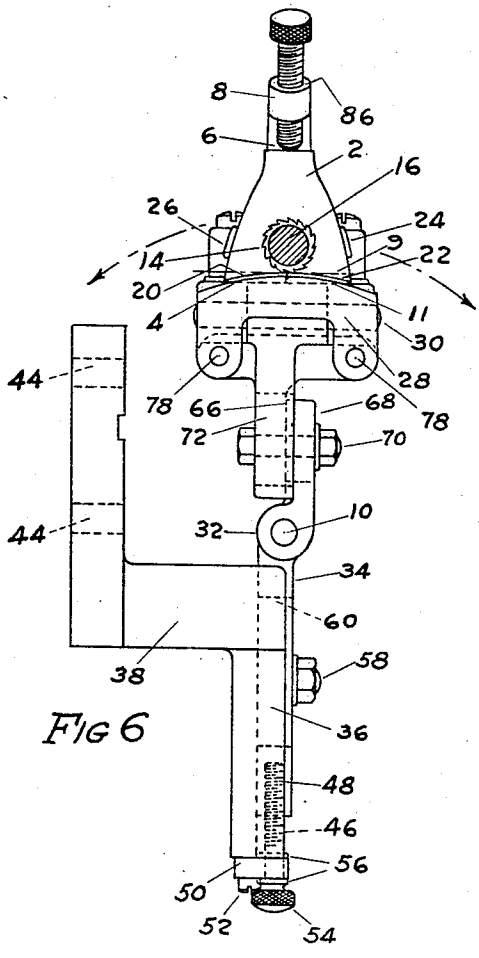

FIG 6

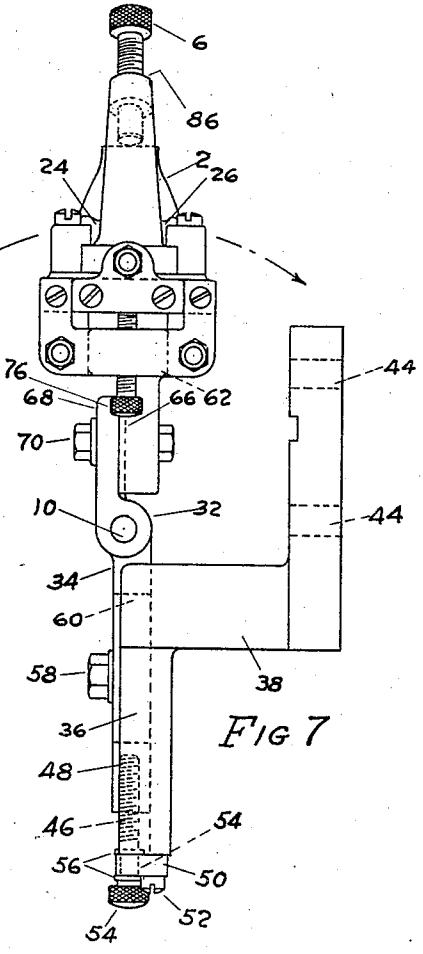

FIG 7

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WOOD-HEEL MACHINE

Application filed June 27, 1925. Serial No. 39,954.

The present invention relates more particularly to machines for shank shaping Louis heels. Some features of the invention are, however, of more general application.

The nature and the objects of the invention will be better understood in connection with the accompanying drawings, in which Fig. 1 is a perspective view of a completed Louis heel; Fig. 2 is a side elevation of a machine constructed according to a preferred embodiment of the present invention; Fig. 3 is a plan of the same; Figs. 4 and 5 are sections taken upon the lines 4—4 of Fig. 3 and 5—5 of Fig. 2, respectively, looking in the directions of the arrows; and Figs. 6 and 7 are, respectively, front and rear elevations of the same.

In the illustrated machine an already-grooved Louis heel blank (having its breast surface already formed, but having its shank lip straight on its under side), is turned past a shank shaping tool in a circular path about an axis lying beyond the attaching face of the blank, with the shank lip lying between the axis and the tool. This operation rounds the lower surface of the lip. The curvature of the lip surface formed is determined by the distances of the axis from the lip and tool, and these distances are adjustable, as will be seen.

A previously grooved wood-heel blank 2 is adapted to be clamped between lower and upper jaws 4 and 6 of a clamp 8. The heel blank is at this time provided with a projecting lip or shoulder 7, included between parallel, straight lines 9 and 11. A shaping tool 14, that is rotatable upon a horizontally disposed shaft 16, mounted on the machine frame 40, extends over a centrally disposed portion of the lip 7, and into the bottom portion of the breast groove 18 of the clamped blank when the latter occupies its normal, illustrated position. The clamp is actuated about a horizontally disposed pivot 10, to the right and to the left of the said normal position, as viewed in Figs. 6 and 7, as indicated by the arrows. This may be done by means of a handle (not shown) or by merely grasping a portion of the clamp 8, as the arm portion 86. The shoulder 7 becomes thus circularly shaped by the cutter 14, on each side of the said centrally disposed portion, along the curved lines 20, 22. The blank is then removed from the clamp and another blank substituted. In order that the curves 20, 22 may be symmetrically disposed, it is necessary to have the blank 2 centered between the jaws 4 and 6, and this may be effected by using guiding fingers 24, 26. These guiding fingers automatically center the blank in proper position under the influence of a spring 12 which forces the fingers forward against the heel blank 2. The fingers and the clamp arm 86 are shown carried upon a common slide 13, between guides 15, so that the blank may be clamped and centered simultaneously. The position of the blank towards and from the cutter 14 is adjusted by means of an adjustable gage 28 that is engaged by the shoulder 7. The angular position of the blank may be adjusted to conform to the groove 18 in the heel by pivotally elevating the jaw 4 about a horizontally disposed pivot 30 that is perpendicular to, and positioned above, the pivot 10.

Provision is made for adjusting the pivot 10 vertically, or at right angles, to the lip 7, in order that its distance from the cutter 14, underneath which it is disposed, may be varied, in order to vary the radius of curvature of the lip surface formed. Such adjustment makes it possible to conform to the concave 18 in the heel and to gage the thickness of the shoulder or lip 7. This adjustment may be effected in any desired way. It is preferred to mount the pivot 10 in a bearing 32 provided at the upper end of a plate 34 that is vertically slidable between vertically disposed guides 36. The guides 36 are preferably integral with a bracket 38 that is horizontally adjustably secured to the frame 40 of the machine in any desired way, as by means of a pin-and-slot connection 42, 44. The position of the bracket may thus be adjusted to and from the tool 14. The plate 34 may be vertically adjusted by means of a threaded member 46 that is threaded into the plate at 48 and that is held against vertical movement by a cross bar 50 on the bracket 38. The cross bar 50 is secured to the bracket 38

by screws or the like 52 and is provided with an opening 54 through which the member 46 extends and with respect to which it is rotatable. Collars 56 provided upon the threaded member 46, and between which the bar 50 is confined, hold the member 46 against vertical movement. After the plate 34 has been vertically adjusted to the desired degree, it is clamped in adjusted position by a clamp screw or bolt 58 that extends through a vertically disposed opening 60 in the plate 34 and that may be threaded into the bracket 38.

In addition to adjusting the distance of the pivot 10 from the cutter 14, it is desirable to shorten and lengthen correspondingly the radius of the arc described by the blank about this pivot and, therefore, the radius of curvature of the curves 20, 22. To this end, the jaw 4 is pivoted at 30 to a plate 62 that is adjustable towards and from the pivot 10. This latter adjustment is effected by means of grooves 64, vertically disposed in the plate 62, within which are mounted tongues 66 provided upon a plate 68, which is pivoted to the plate 34 at 10. After the plate 62 has been moved farther from, or nearer to the pivot 10, by means of this tongue-and-groove arrangement, it is clamped to the plate 68 by a clamp bolt and nut 70 extending through vertically disposed openings 72 in the plate 62 and the plate 68.

The plate 62 is provided with a projection 74 in which is vertically threaded an adjusting screw 76, the free end of which engages the jaw 4. It is by means of this adjusting screw that the jaw 4 may be pivotally elevated about the pivot 30. The under portion of the jaw 4 is provided with lugs 31, each having a horizontally disposed opening within which are slidably mounted rods 78. The gage 28 is carried at the ends of these rods. By sliding the rods 78 back and forth, therefore, the position of the gage 28 may be adjusted. The rods 78 may be clamped in adjusted position by nuts 84 or in any other desired manner.

In addition to the above-described adjustments, it is necessary also to make provision for the clamping of heel blanks of different sizes. This result may be attained by making one of the jaws adjustable. It is preferred to have the jaw 6 constituted of a clamping screw that is adjustably mounted in the arm 86 of the clamp. The position of the screw upon the arm 86 determines the size of the blank that will be clamped.

In operating the machine the operator draws back the slide 13 against the spring 12, inserts the heel blank between the fingers 24, 26, and then allows the spring 12 to force the blank forward against the stop 28, with its lip under the tool 14. He then swings the blank from side to side to enable the tool to round off the lip, as shown in Fig. 1. The thickness of the lip is controlled by the adjustment at 70, and the curvature of the lip by combined adjustments at 70, 58. In effect, in changing the curvature of the lip, the blank 2 and tool 14 are kept together and the pivot 10 is raised or lowered on the slides at 64 and 36.

It will be understood that the invention may be modified by persons skilled in the art without departing from its spirit and scope, as defined in the appended claims.

What is claimed is:

1. A machine for scouring heels having, in combination, a shank shaping tool, means for clamping a heel blank that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a normal position such that the tool extends into the groove of the blank opposite an intermediately disposed portion of the lip, the tool being narrower than the lip, whereby the lip extends beyond the tool on each side of the tool when the tool occupies the normal position, and means for relatively pivotally actuating the clamping means and the tool on each side of the normal position to cause the tool to engage the extending portions of the lip on each side of the intermediately disposed portion, thereby to scour the lip.

2. A machine for shaping the shanks of Louis heels having, in combination, a shank lip shaping tool, means for clamping a heel blank that has been grooved to provide a projecting lip, a guide for positioning the blank centrally upon the clamping means, the clamping means being adapted to occupy a normal position such that the tool extends into the groove of the blank opposite a centrally disposed portion of the lip when the blank is centrally positioned upon the clamping means, and means for relatively pivotally actuating the clamping means and the tool on each side of the normal position to cause the tool to engage portions of the lip on each side of the centrally disposed portion of the lip, thereby to shape the lip.

3. A machine for shaping the shanks of Louis heels having, in combination, a shank lip shaping tool, means for clamping a heel blank that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a normal position such that the tool extends into the groove of the blank opposite an intermediately disposed portion of the lip, the tool being narrower than the lip, whereby the lip extends beyond the tool on each side of the tool when the tool occupies the normal position, a gage for limiting the position of the blank relative to the tool, and means for relatively pivotally actuating the clamping means and the tool on each side of the normal position to cause the tool to engage the extending portions of the lip on each side of the intermediately disposed portion, thereby to shape the lip.

4. A machine for shaping the shanks of Louis heels having, in combination, a shank lip shaping tool, means for clamping a heel blank that has been grooved to provide a projecting lip, a guide for positioning the blank centrally upon the clamping means, the clamping means being adapted to occupy a normal position such that the tool extends into the groove of the blank opposite an intermediately disposed portion of the lip, a gage for limiting the position of the blank relative to the tool, means for adjusting the gage, means whereby the guide is adapted automatically to center the blank when the blank is engaged by the gage, and means for relatively pivotally actuating the clamping means and the tool on each side of the normal position to cause the tool to engage portions of the lip on each side of the intermediately disposed portion, thereby to shape the lip.

5. A machine for shaping the shanks of Louis heels having, in combination, a shank lip shaping tool, means for clamping a heel blank that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a normal position such that the tool extends into the groove of the blank opposite an intermediately disposed portion of the lip, a pivot, means for relatively pivotally actuating about the pivot, the clamping means and the tool on each side of the normal position to cause the tool to engage portions of the lip on each side of the intermediately disposed portion, thereby to shape the lip, and means for relatively adjusting the pivot and the tool towards and from each other.

6. A machine for shaping the shanks of Louis heels having, in combination, a shank lip shaping tool, means for clamping a heel blank that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a normal position such that the tool extends into the groove of the blank opposite an intermediately disposed portion of the lip, a pivot, means for relatively actuating about the pivot, the clamping means and the tool on each side of the normal position to cause the tool to engage portions of the lip on each side of the intermediately disposed portion, thereby to shape the lip, and a plate slidable toward and from the tool upon which the pivot is mounted.

7. A machine for shaping the shanks of Louis heels having, in combination, a rotatable shank lip shaping tool, means for clamping a heel blank that has been grooved to provide a projecting lip, a guide for positioning the blank centrally upon the clamping means, the clamping means being adapted to occupy a normal position such that the tool extends into the groove of the blank opposite a centrally disposed portion of the lip when the blank is centrally positioned upon the clamping means, a gage for limiting the position of the blank relative to the tool, means for adjusting the gage, the construction and arrangement being such that the blank is clamped and centered simultaneously, means for relatively pivotally adjusting the clamping means and the tool, means for relatively adjusting the clamping means and the tool in a direction transverse to the axis of rotation of the tool, and means for relatively pivotally actuating the clamping means and the tool about an axis parallel to the axis of rotation of the tool on each side of the normal position to cause the tool to engage portions of the lip on each side of the intermediately disposed portion, thereby to shape the lip.

8. A clamp for a heel blank comprising two relatively movable jaws for respectively clamping the tread and the seat of the heel blank, and means carried by the tread-clamping jaw for centering the position of the heel blank upon the other jaw.

9. A machine for shaping the shanks of Louis heels having, in combination, a shank lip shaping tool, common means for automatically clamping and centering a heel blank that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a normal position such that the tool extends into the groove of the blank opposite a centrally disposed portion of the lip when the blank is centrally positioned upon the clamping means, and means for relatively pivotally actuating the clamping means and the tool on each side of the normal position to cause the tool to engage portions of the lip on each side of the centrally disposed portion of the lip, thereby to shape the lip.

10. A clamp for a heel blank comprising two relatively movable jaws for respectively clamping the tread and the seat of the heel blank, and means controlled by the movement of one of the jaws for centering the position of the heel blank upon the other jaw.

11. A clamp for a heel blank comprising a jaw upon which the heel blank is adapted to be positioned with the seat of the heel blank in engagement with the jaw, a movable jaw adapted to engage the tread of the heel blank to cause the heel blank to become clamped between the jaws, and means carried by the movable jaw for centering the position of the heel blank upon the other jaw.

12. A clamp for a heel blank having an attaching face, a breast and curved sides extending from the middle of the back of the heel to the breast, the said clamp comprising a support upon which the heel blank is adapted to be positioned with the attaching face in engagement with the support, a member for engaging the breast side of the heel blank, two members for respectively engaging the curved sides, and means for actuating the two members into engagement with the respec-

tive sides, thereby forcing the heel blank against the breast-side engaging member.

13. A machine for scouring heels having, in combination, a scouring knife, means for clamping a heel block that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a position such that the knife extends into the groove of the block and adjacent to the lip, the clamping means being immovable in a direction towards and from the knife during the operation of the machine, means for positioning the block on the clamping means so that the knife shall extend into the groove of the block and adjacent to the lip when the clamping means occupies the said position, and means for relatively pivotally actuating the clamping means and the knife on each side of the said position to cause the knife to engage portions of the lip on each side of an intermediately disposed portion of the lip, thereby to scour the lip.

14. A machine for scouring heels having, in combination, a scouring knife, means for clamping a heel block that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a position such that the knife extends into the groove of the block and adjacent to the lip, a gage for limiting the position of the block relative to the knife, means for positioning the block on the clamping means so that the knife shall extend into the groove of the block and adjacent to the lip when the clamping means occupies the said position, and means for relatively pivotally actuating the clamping means and the knife on each side of the said position to cause the knife to engage portions of the lip on each side of an intermediately disposed portion of the lip, thereby to scour the lip.

15. A machine for scouring heels having, in combination, a scouring knife, means for clamping a heel block that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a position such that the knife extends into the groove of the block and adjacent to the lip, a pivot, means for relatively pivotally actuating about the pivot the clamping means and the knife on each side of the said position to cause the knife to engage portions of the lip on each side of an intermediately disposed portion of the lip, thereby to scour the lip, and means for relatively adjusting the pivot and the knife.

16. A machine for shaping the shanks of Louis heels having, in combination, a shank lip shaping tool, means for clamping a heel blank that has been grooved to provide a projecting lip, the clamping means being adapted to occupy a position such that the tool extends into the groove of the blank and adjacent to the lip, a pivot, means for relatively pivotally actuating about the pivot the clamping means and the tool on each side of the said position to cause the tool to engage portions of the lip on each side of an intermediately disposed portion of the lip, thereby to shape the lip, and means for relatively pivotally adjusting the clamping means and the tool.

17. In a machine for treating the front surfaces of Louis heels, a tool shaped to form a desired shape on the front surface of a Louis heel blank, a jack for holding the blank, a pivotal axis about which the jack is pivotally movable to carry the front surface of a heel blank therein past the tool, said axis and jack being so located that the attaching face of a heel blank in the jack lies between the top-lift end of the blank and the axis, and means comprising two parallel slides for adjusting the distances of the axis from the jack and from the tool to adjust the radius of the said pivotal movement.

18. In a machine for treating the front surfaces of Louis heels, a tool shaped to form a desired shape on the front surface of a Louis heel blank, a jack for holding the blank, a pivotal axis about which the jack is pivotally movable to carry the front surface of a heel blank therein past the tool, said axis and jack being so located that the attaching face of a heel blank in the jack lies between the top-lift end of the blank and the axis, and means for adjusting the distances of the axis from the jack and from the tool to adjust the radius of the said pivotal movement, said adjusting means comprising two members pivoted to each other on the said axis, one of said members being adjustable toward and from the tool, and the other being adjustably connected to the jack.

19. A heel cutting machine having a tool, a member adjustable toward and from the tool, a second member pivoted to the first-named member on an axis, a jack carried by said second-named member and adjustable thereon toward and from the axis, said jack being constructed and arranged to hold a Louis heel blank with its attaching face toward the said axis and its breast face toward the tool and with its central longitudinal vertical plane passing substantially through said axis, whereby the breast face of the blank may be moved about said axis past said tool in a curved path.

20. A heel cutting machine having a tool, a member adjustable toward and from the tool, a second member pivoted to the first-named member on an axis, a jack carried by said second-named member and adjustable thereon toward and from the axis, said jack being constructed and arranged to hold a Louis heel blank with its attaching face toward the said axis and its breast face toward the tool and with its central longitudinal vertical plane passing substantially through said axis, whereby the breast face

of the blank may be moved about said axis past said tool in a curved path, the connection between said second-named member and said jack comprising also a pivotal axis at right angles to said first-named axis.

In testimony whereof, I have hereunto subscribed my name.

WESLEY J. SHAW.