J. J. RICHARDSON.

SHOE MACHINE.

APPLICATION FILED JULY 23, 1908.

988,211. Patented Mar. 28, 1911.

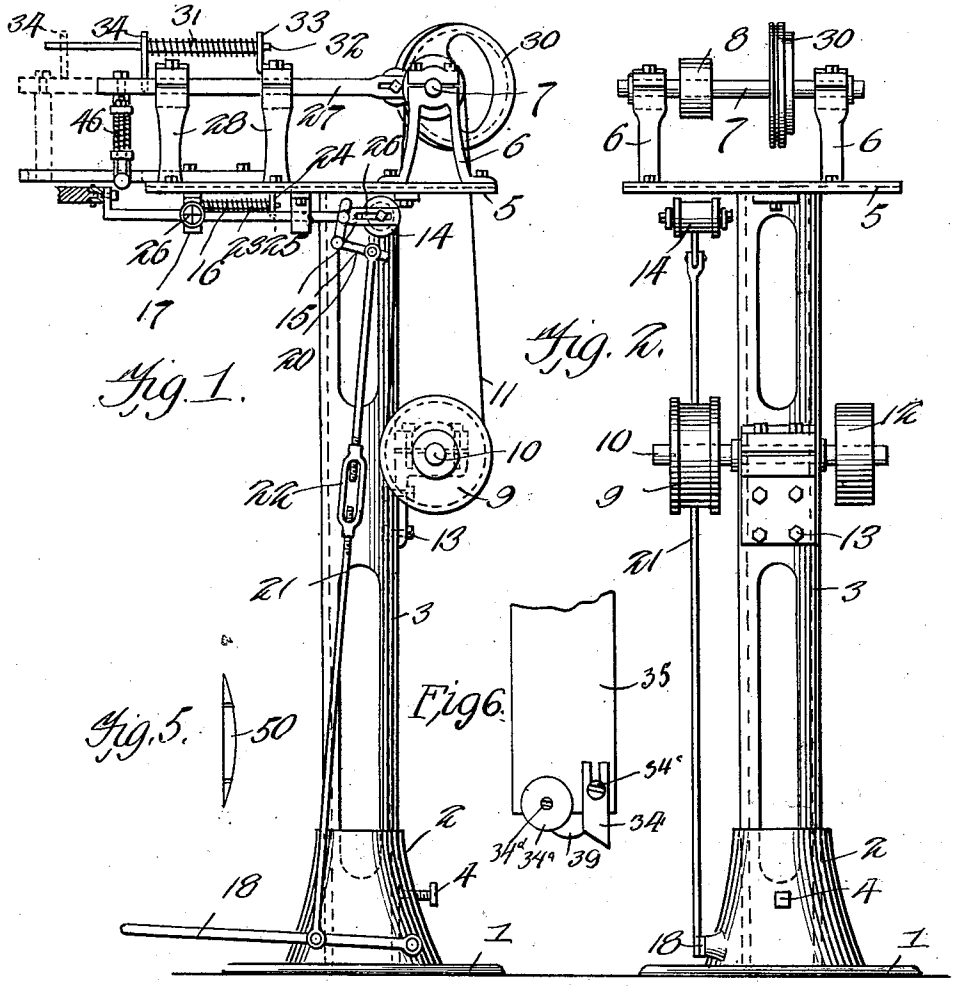

Fig. 1.

Fig. 2.

Fig. 5.

Fig. 6.

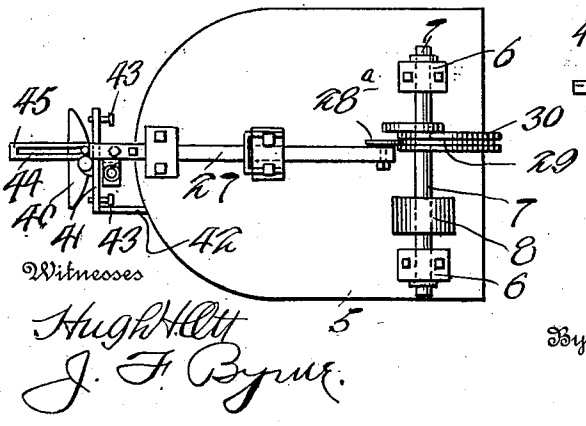

Fig. 3.

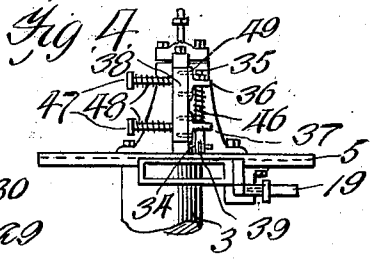

Fig. 4.

Witnesses

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SHOE-MACHINE.

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To all whom it may concern:

Be it known that I, JOHN J. RICHARDSON, a citizen of the United States, residing at Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new Shoe-Machine, of which the following is a specification.

My invention relates to improvements in machines for cutting and beading the soles of shoes, and it consists of the construction, combination and arrangement of parts hereinafter fully described and claimed.

The invention is disclosed in the accompanying drawing, wherein,

Figure 1 is a view in side elevation of a shoe cutting and beading machine constructed in accordance with my invention. Fig. 2 is a view in rear elevation of the machine. Fig. 3 is a top plan view of the machine. Fig. 4 is a view in front elevation of the upper portion of the machine. Fig. 5 is a detail plan view of the guide. Fig. 6 is a view illustrating the cutter and beader, the cutter being shown applied to the lower end of the bolt.

Referring to the drawing by reference numerals, 1 designates a horizontal base which is provided on its upper surface with a vertically disposed socketed member 2. A vertical standard 3 has its lower end located in the socket of the member 2, said standard being secured in applied position by a set screw 4. Secured to the upper end of the standard 3 is a horizontally disposed table 5. A pair of bearing brackets 6 in which is journaled a shaft 7, is secured to the upper side of the table 5 adjacent the rear end thereof. A pulley 8 is fixed upon the shaft 7 in alinement with a pulley 9 fixed upon a shaft 10, a belt 11 passing about the pulleys. A pulley 12 is fixed upon the shaft 10 and is adapted to receive the belt of a suitable power means. The shaft 10 is journaled in a bearing 13 secured to the standard 3, and is in alinement with the shaft 7. The belt 11 passes loosely about the pulleys 8 and 9, and when it is desired to drive the shaft 7, the slack in the belt is taken up by forcing a roller 14 into engagement with one run of the belt. The roller 14 is journaled in the forked end 15 of a bar 16 which is slidably mounted on the under side of the table 5 in bearing brackets 17. The roller 14 may be forced into engagement with the belt 11 through the medium of a foot lever 18 pivotally secured at one end to the socketed member 2, or it may be operated by a hand grip 19 formed on the rod. An elbow lever 20 is pivotally secured to the standard 3 and has one of its arms connected with the bar 16. The other arm of the lever 20 is connected to the foot lever 18 through the medium of a rod 21 which comprises sections adjustably connected by a turn buckle 22. The roller 14 is normally retained out of engagement with the belt 11 by a contractile spring 23 which encircles a rod 24. The rod is secured at one end to one of the bearing brackets 17 and passes through an eye 25 secured to the bar 16. The spring 23 is secured at one end to that bearing bracket 17 to which the rod 24 is secured, and to the eye 25. The roller 14 may be retained in engagement with the belt 11 by means of a set screw 26 which is carried by that bearing bracket 17 to which the rod 24 is secured. The arms of the forked end of the bar 16 are slotted as at 26 to permit the adjustment of the roller 14 on the bar. A plunger 27 is slidably mounted in bearing brackets 28 secured to the upper surface of the table 5, and it is disposed at right angles with relation to the shaft 7. A disk 28^a, which is journaled on the inner end of the plunger 27, engages in the peripheral groove 29 of an eccentric 30 fixed on the shaft 7. The disk 28^a is held in engagement with the periphery of the eccentric 30 by a contractile spring 31, whereby the rotation of the shaft 7 will impart a reciprocatory movement to the plunger 27. The contractile spring 31 encircles a bar 32 secured at one end to a bracket 33 suitably mounted upon one of the bearing brackets 28. The bar passes through an eye 33^a secured to the plunger 27. One end of the spring 31 is secured to the bracket 33 and the other end thereof is secured to the eye 33^a. At its outer end the plunger 27 is provided with a cutting tool 34 and a beading tool 34^a. The tools are carried by the lower end of a bolt 35 and secured thereto through the medium of elements 34^c and 34^d, respectively. The bolt 35 is mounted for a limited vertical movement on bearing brackets 36 and 37 which are secured to the side of an arm 38, the arm being secured to and depending from the outer end of the plunger 27. The bolt 35 has journaled in its lower end a roller 39 which guides the tools over the sole of a shoe held

against a rest 40 which is pivotally mounted upon the arm 41 of a bracket 42. The bracket 42 is secured to the underside of the table 5 and projects forwardly therefrom. The arm 41 of the bracket 42 carries set screws 43 adapted to limit the pivotal movement of the rest 40 in both directions. The lower end of the arm 38 is disposed for movement in the slot 44 of a guide bar 45 secured to the upper side of the table 5 and projecting forwardly therefrom.

Assuming that the shaft 10 is in motion, the forcing of the roller 14 into engagement with the belt 11 through the medium of the foot lever 18 or hand grip 19 will cause the rotation of the shaft 7. The rotation of the shaft 7 will, through the medium of the eccentric 30, disk 28[a] and spring 31, reciprocate the tools. If the shoe is held in inverted position against the rest 40, the tool will cut or bead the shank thereof, making a dividing line between the shank and the fore part of the shoe. The roller 39 engages the shank and causes the tool to make a cut or bead of uniform depth in the shank. The roller 39 is yieldingly held in engagement with the shank of the shoe by a spring 46. The bearing brackets 36 and 37 are carried by beaded bolts 47 between the heads of which and the arm 38 are mounted springs 48, said bolts passing through the arm 38. If it is desired to make a straight cut or bead in the shank of a shoe the brackets 36 and 37 are secured to the arm 38 against movement thereon by screws 49. When it is desired to make a curved cut or bead in the shank of a shoe the screws 49 are removed and a curved guide 50 is secured to one side of the guide bar 45 for engagement by the bolt 35, the bolt during its movement traveling over the curved edge of the guide. The springs 48 hold the bolt 35 in engagement with the curved face of the guide. As the spring 23 yieldingly retains the roller 14 out of engagement with the bolt 11, the machine will be thrown out of operation as soon as the pressure is removed from the foot lever 18 or the hand grip 19. If it is desired to maintain the machine in constant operation the bolt 26 is turned into engagement with the bar 16.

When it is desired to cut and bead the sole of a shoe, the shoe is placed against the rest 40 with the sole uppermost, after which the machine is set in operation. The operation of the machine carries the cutting and beading tools 34 and 34[a], respectively, across the shoe sole, cutting and beading the same. As the cutting and beading tools 34 and 34[a], respectively, are mounted upon the plunger 27 for vertical movement relative thereto, the tools may follow the curvature of the shoe sole, and as the tools are mounted upon the plunger for horizontal movement relative thereto, the cut and bead may be formed on a curved line, the guide 50 causing the tools to follow a curved line. The cut and bead may be made on a straight line by securing the tools 34 and 34[a] against horizontal movement with relation to the plunger 27, the tools being adapted to be secured against such movement through the medium of the screws 49. When the cut and bead is to be made on a straight line the guide 50 is removed from the machine.

From the foregoing description, taken in connection with the accompanying drawing, it should be apparent that I provide a machine in the use of which a shoe shank may be readily and quickly cut and beaded, that the machine is comparatively simple and durable of construction, and that it may be manufactured and sold at a comparatively low cost.

Having thus described the invention, what I claim as new, is:—

1. A shoe machine of the character set forth comprising a horizontal plunger, means for reciprocating the plunger, a tool mounted upon the plunger for movement therewith and for vertical and lateral movements relative thereto, a guide adapted to cause the tool to move laterally during the reciprocation of the plunger, and means by which the tool may be held against lateral movement.

2. A machine for cutting and beading the soles of shoes, comprising a horizontal plunger, means for reciprocating the plunger, and cutting and beading tools mounted upon the plunger for movement therewith and for vertical movement relative thereto, the vertical movement of the tools permitting them to follow the curvature of a shoe sole.

3. A machine for cutting and beading the soles of shoes, comprising a horizontal plunger, means for reciprocating the plunger, cutting and beading tools mounted upon the plunger for movement therewith and for lateral movement relative thereto, and a guide adapted to cause the tools to move laterally during the reciprocation of the plunger to form the cut and bead on a curved line.

4. A machine for cutting and beading the soles of shoes, comprising a horizontal plunger, means for reciprocating the plunger, cutting and beading tools mounted upon the plunger for movement therewith and for vertical movement relative thereto, said tools being also capable of lateral movement with relation to the plunger, the vertical movement of the tools permitting them to follow the curvature of the shoe sole, and a guide adapted to move the tools laterally during the reciprocation of the plunger to form the cut and bead on a curved line.

5. A machine for cutting and beading the soles of shoes, comprising a horizontal plunger, means for reciprocating the plunger,

cutting and beading tools mounted upon the plunger for movement therewith and for vertical movement relative thereto, the vertical movement of the tools permitting them to follow the curvature of the shoe sole, and a spring adapted to retain the tools in yielding contact with the shoe sole.

6. A machine for cutting and beading the soles of shoes, comprising a horizontal plunger, means for reciprocating the plunger, cutting and beading tools mounted upon the plunger for movement therewith and for lateral movement relative thereto, a guide adapted to cause the tools to move laterally during the reciprocation of the plunger to cause the cut and bead to be formed on a curved line, and a spring retaining the tools in engagement with the guide.

7. A machine for cutting and beading the soles of shoes, comprising a horizontal plunger, means for reciprocating the plunger, cutting and beading tools mounted on the plunger for movement therewith and for vertical movement relative thereto, the vertical movement of the tools permitting them to follow the curvature of a shoe sole, and a rest pivotally supported at a point below the tools.

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