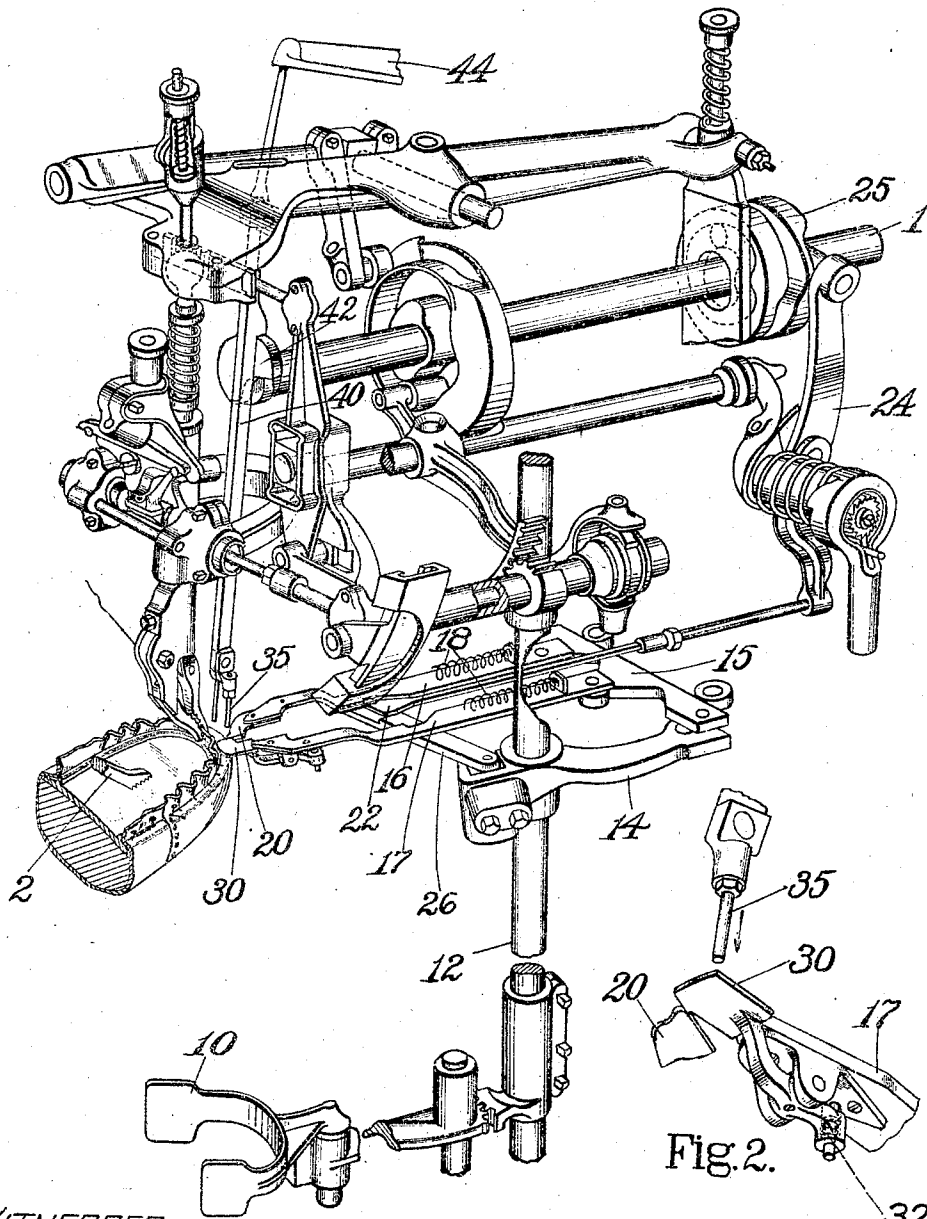


A. BATES.
MACHINE FOR MAKING BOOTS AND SHOES.
APPLICATION FILED AUG. 27, 1909.

1,009,036.

Patented Nov. 21, 1911.



WITNESSES.

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Fig. 1.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR MAKING BOOTS AND SHOES.

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specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed August 27, 1909. Serial No. 514,929.

To all whom it may concern:

Be it known that I, ARTHUR BATES, a subject of the King of England, residing at Leicester, Leicestershire, England, have invented certain Improvements in Machines for Making 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 lasting or otherwise forming or shaping shoes to the contour of the last over which they are made and preparing shoes for the reception of the bottoming material.

A particular object of the present improvements is to provide improved means for giving the desired form to the marginal portion of the shoe bottom. In making a welt shoe this means has the purpose of shaping the upper correctly to the contour of the innersole so that the welt can be attached in its proper snug relation to the innersole and a close or narrow welt crease be formed in the finished shoe as distinguished from a gapping crease. By forcing the upper firmly down upon the feather of the innersole and forming it into the angle between the welt and the innersole, as can be done by the use of this invention, so that the welt fits snugly into its place, a thinner and more attractive bottom for the shoe can be produced and also a saving effected in the amount of filling material required for the middle of the sole between the in seams because the in seams can be trimmed closer.

In addition to these particular advantages obtained from the use of this invention in the manufacturing of welt shoes, and similar ones which will be obvious in the manufacture of turn shoes, the invention can be employed with good results in the manufacture of McKay or other types of shoes.

An important feature of this invention is found in the combination of a tool for pressing the upper inwardly and a second tool for beating the upper downwardly upon the shoe bottom. As arranged, the tools are located side by side and each portion of the upper is acted upon by the tool successively as the shoe is fed.

The illustration of the embodiment of the invention selected for description shows its

application to the lasting machine which is disclosed in United States Letters Patent No. 584,744. The tool for pressing the upper inwardly is like one of the "auxiliary presses" of that machine and the beating tool is mounted upon the carrier which supports the other auxiliary presser of that patent. This beating tool, together with the pressing tool, is arranged to be moved toward and from operative position and the beating tool is adapted to remain over the shoe in continuous contact therewith during repeated operations of the machine.

A further feature of this invention consists in the combination with means for working the upper over the last, of means for beating the upper which can be rendered operative or inoperative at the will of the machine operator.

In the illustrated embodiment of the invention the overworking means include grippers which are adapted to have imparted to them at times special movements to form plaits in the overworked upper, and the beater is arranged to be rendered operative at such times to pound down the plaited portions of the upper.

Other embodiments of the invention by which its advantages can be secured to greater or less extent will be obvious to those skilled in this art.

The features of the invention above mentioned and others, which may include certain details of construction and combinations of parts, will appear in connection with the following description of the illustrated machine and these features will then be more particularly pointed out in the claims.

Figure 1 is a perspective view showing so much of the machine of said patent equipped with the present improvement as is necessary for understanding this invention; Fig. 2 is also a perspective view looking at the new parts from the lower side.

The machine comprises a rest 2 for engaging the bottom of the shoe and positioning the shoe vertically with relation to the other instrumentalities. The grippers comprise jaws, of usual formation, which may be closed, uplifted and moved downwardly for gripping, updrawing and overdrawing the upper in known manner. These grippers are also arranged to be moved laterally and

turned by mechanism substantially like that in said patent for forming plaits at the toe portion of the upper. This mechanism for imparting plaiting movements to the grippers is controlled as described in said patent by a knee lever 10 connected to a vertical rock shaft 12 which also has a connection through an arm 14 with the positioning cam 15. This cam has a notched front face to engage rollers on plates 16, 17, which are movable endwise in one direction by the positioning cam and in the opposite direction by the springs 18. By this arrangement the devices carried by the plates 16, 17 are moved from and toward their operative position with relation to the shoe simultaneously with the adjustment by which the plaiting movements of the grippers are started and stopped. The sliding plate 16 carries the presser 20 which while in its operative position receives a movement forwardly and backwardly over the shoe bottom in substantially a horizontal plane. This forward movement is effected by a plunger 22 connected at its rear end to a lever 24 actuated by a cam 25 on the cam shaft 1 of the machine. The reverse movement is effected by the spring 18 which cooperates with the slide 16. The plunger 22 is moved out of position to engage and actuate the presser 20 by means of a link 26 connected with the rock shaft 12.

The slide plate 17 is provided with lugs on its lower surface between which is pivoted the shank of the beating tool 30. The tool has a rearwardly extending arm 32 in which is mounted a spring pressed plunger that holds the acting portion of the tool normally raised slightly. The machine is provided with the usual driver bar 40 which is lifted by the cam 42 on the cam shaft and depressed by a spring actuated lever 44. The driver bar is provided with a lateral extension in which is mounted a plunger 35 to engage upon the upper face of the beating tool 30 and impel it downwardly upon the shoe bottom.

In lasting welt and turn shoes a binder of wire or other continuous material is usually employed for securing the upper in overworked position. The beater 30 may advantageously be formed and arranged to overlie the binder and to force the binder, and the upper under it, downwardly toward the feather of the innersole for causing the binder to hold the upper securely in the angle between the feather and the lip of the innersole.

In the use of the machine, the presser 20 and the beater 30 are moved from their retracted position, where they are out of touch with the shoe, into their operative position by the same adjustment of the knee lever 10 which throws the plaiting mechanism into operation. When the presser and the

beater are in their operative position, the presser is reciprocated horizontally over the shoe bottom wiping the upper inwardly from the edge of the last and pressing it into the angle between the feather edge and the lip or shoulder of a welt or turn shoe. This movement of the presser 20 takes place in time relation to the plaiting movement of the grippers and the presser operates upon the portion of upper plaited by the grippers. The beater 30, while in its operative position, rests continuously over the shoe bottom, as shown in Fig. 1, and may constitute an edge resting means against the end of which the shoe is pressed and guided. The beater is located at the side of the presser in position to act upon a portion of upper previously acted upon by the presser. The beater is actuated downwardly, or in a direction substantially perpendicular to the movement of the presser, by a plunger or leg 35 on the driver bar. By this arrangement the beater is caused to drive the marginal portion of upper firmly down upon the feather of the innersole or sole and advance into the angle between the feather and lip. This forms or shapes the marginal portion of the shoe bottom for the reception of the welt in a welted shoe so that the welt can fit snugly into its place and the stitches of the inseam can engage and enter the lip close to its base, thus making a tight seam and a close welt crease and permitting the between substance to be trimmed closer to the plane of the innersole than would otherwise be practicable.

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. A machine of the class described, having, in combination with actuating means, a tool for pressing an upper into position, and a second tool to beat the same portion of upper.

2. A machine of the class described, having, in combination with actuating means, a tool for pressing an upper into position, and a second tool arranged to beat the same portion of upper at a subsequent operation of the machine.

3. A machine of the class described, having in combination, two tools to engage adjacent portions of upper on a shoe bottom, means for actuating one of the tools to press a portion of upper into position, and means to actuate the other tool to beat that portion of upper at the next operation of the machine.

4. A machine of the class described, having, in combination, two tools to engage adjacent portions of upper on a shoe bottom, means for actuating one of the tools to wipe the upper inwardly from the edge of the

shoe bottom, and means to actuate the other tool to press the upper downwardly upon the shoe bottom.

- 5 5. A machine of the class described, having, in combination, two forming tools to treat adjacent portions of the shoe bottom successively, and means for actuating said two tools in directions perpendicular to one another.
- 10 6. A machine of the class described, having, in combination, a forming tool, means for setting it in operative position over the shoe bottom and holding it there during repeated operations of the machine, and
15 means for actuating it to beat the upper substantially perpendicular to the shoe bottom.
7. A shoe lasting machine, having, in combination, means for working an upper over a last, and means adapted to be rendered operative or inoperative to beat the shoe.
8. A shoe lasting machine, having, in combination, means for working an upper over a last, means adapted to be moved from
25 and toward a position to engage the shoe continuously during repeated operations of the machine, and means for actuating said engaging means to beat the shoe bottom.
9. A shoe lasting machine, having, in combination, a gripper, a horizontally moving presser which rubs over the shoe bottom, and a vertically moving pounder which beats the shoe bottom independently of said presser.
- 30 10. A shoe lasting machine, having, in combination, a gripper, means adapted to be rendered operative or inoperative to actuate the gripper to plait the upper, a beater, and means to actuate the beater to beat the
40 plaited upper when the gripper is operative to form plaits.
11. A shoe lasting machine, having, in combination, a gripper, means to actuate the gripper to plait the upper, a beater adapted
45 to be rendered operative or inoperative, and means to actuate the gripper and the beater to form a plait in one cycle of the machine's operations and to beat the plait in the next cycle.
- 50 12. A machine of the class described, having, in combination, means for working an upper over a last, a beater comprising a thin plate adapted to overlie the overworked up-

per upon the last bottom, and a driver bar having a plunger or leg adapted to strike 55 the beater during the downward movement of the tack driver.

13. A machine of the class described, having, in combination, a plate adapted to rest continuously upon the shoe bottom, and a 60 reciprocating member movable toward and from the plate to impart to the latter downward impulses for beating the shoe.

14. In a machine of the class described, the combination with a beater 30 comprising 65 a lever having its front end formed to engage the shoe bottom, a spring acting on the rear arm of the beater and arranged to raise the front end, the plunger 35, and means for actuating the plunger into and out of en- 70 gagement with the beater.

15. A machine of the class described, having, in combination, means for working an upper over a last into position to be secured by a binder of wire or other continuous ma- 75 terial, a beater adapted to overlie the binder, and means for impelling the beater downwardly to force the binder into position to hold the upper in the angle of union between the feather edge and lip of the shoe 80 innersole.

16. A lasting machine, having, in combination, means for working an upper over a last, a tool adapted to have a continuous engagement with the overworked upper, and 85 means for intermittently actuating the tool downwardly to press the upper into lasted position.

17. A shoe lasting machine, having mechanism for forcing an upper into lasted position in the angle between the feather and the lip of a welt shoe innersole, said mechanism comprising a device to press the upper inwardly toward the lip, a device performing its work independently of the presser and 95 serving to force the upper downwardly toward the feather, and means for actuating said devices.

In testimony whereof I have signed my name to this specification in the presence of 100 two subscribing witnesses.

ARTHUR BATES.

Witnesses:

ARTHUR ERNEST JERRAM,
ELEANOR PYWELL.