O. ASHTON.

SHOE SHAPING MACHINE.

APPLICATION FILED MAY 27, 1912.

1,066,781. Patented July 8, 1913.

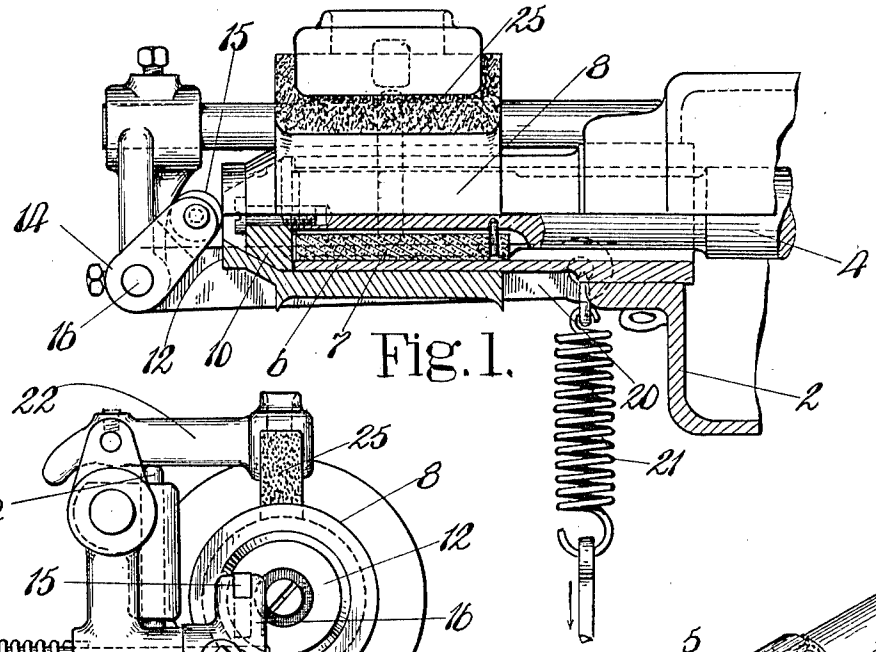


Fig. 1.

Fig. 2.

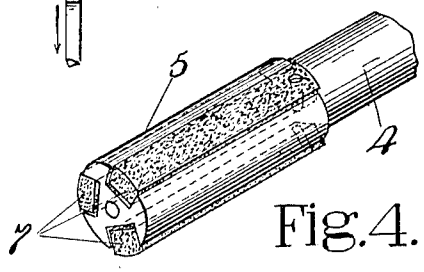


Fig. 4.

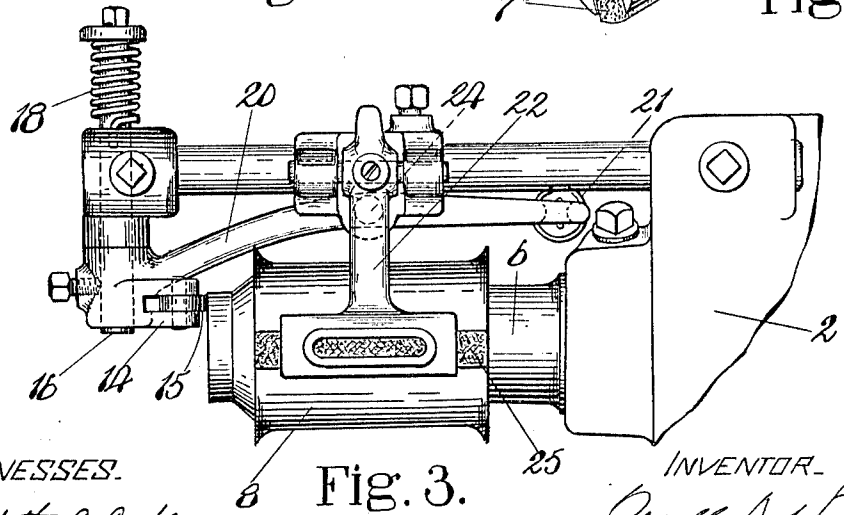


Fig. 3.

WITNESSES.

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SHOE-SHAPING MACHINE.

1,066,781. Specification of Letters Patent. Patented July 8, 1913.

Application filed May 27, 1912. Serial No. 699,974.

To all whom it may concern:

Be it known that I, ORRELL ASHTON, a citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented certain Improvements in Shoe-Shaping Machines, 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 the manufacture of boots and shoes and more particularly to a machine for use in shaping and ironing the upper of lasted shoes to shrink and smooth the upper leather and bring the shoe into conformity with the shape of the last. This work has heretofore been done largely by ironing tools which are operated to iron all portions of the shoe in the same manner, that is, the tool has either been driven or it has been stationary or it has been loose and free to be turned by the work presented to it so as to have simply a rolling action on the work, and shoe manufacturers in buying an ironing machine have had to choose which type of action they preferred or to buy two or more machines if they wanted more than one type of ironing tool.

An object of the present invention is to provide a machine having a heated tool which is adapted to treat one portion of the shoe, such, for example, as the body portion of the upper of the shoe with a rolling and smoothing action and when it is desirable, is adapted to treat other portions of the shoe with a rubbing and burnishing action obtained by positively rotating the tool. This object is attained by providing an ironing tool which is normally disconnected from its driving mechanism and can be so used to iron with a rolling action a shoe presented to it, or which can be held normally stationary so that the work would be ironed by rubbing it against the tool, combined with means which can at the will of the operator be caused to actuate the tool. Thus the tool can be used as a passive or a semi-passive ironer for treating one portion of a shoe and can at any time be rendered an active ironer to treat portions of the shoe which will be better served by the more vigorous action of a driven tool.

One of the problems in the use of ironing tools is to provide a proper supply of vaseline or other similar material, herein conveniently designated as "oil," which experience has shown to be necessary to prevent injury to the upper leather from the heat of the ironing roll. This oil also has a beneficial effect on the leather in the shoe shaping and finishing operations. It is obvious that the heat will tend to cause the oil to be transferred freely from the usual pad resting upon the roll, and, unless a very scant supply of oil is furnished to the pad, the oil collects in excess on the lower portion of an idle roll between the times when the ironing roll is being used and therefore is liable to injure the shoe unless the roll is cleaned before being used. I have found that such a comparatively dry pad will not then furnish enough oil to prevent injury to the upper when the ironing roll is driven for active rubbing of a shoe. I have therefore provided means for automatically controlling the supply of oil in timed relation to the initiation and discontinuance of the driving of the ironing roll.

These several features of the invention including novel combinations of parts and more important details of construction will be more fully understood from the following description of the machine and the invention will then be pointed out in the claims.

Figure 1 is a front elevation of the machine shown partly in section. Fig. 2 is an end view of the machine. Fig. 3 is a plan view. Fig. 4 is a perspective of the heating member.

My invention as herein illustrated has been embodied in a shoe shaping machine of the type shown in my earlier application Serial No. 597,190, filed December 14, 1910, which has a plurality of shoe finishing instrumentalities but obviously it may constitute a separate machine.

The frame 2 of the machine has journaled therein a shaft 4 having an enlarged portion 5 which extends into a sleeve 6 that is preferably rigid with the frame 2 of the machine. The enlarged portion 5 of the shaft has a plurality of longitudinal recesses which receive friction block 7 preferably of asbestos and which are loose enough in the recesses to be pressed out by centrifugal force into contact with the inner face of the sleeve 6 when the shaft is rotated as

described and claimed in said earlier application.

A normally idle ironing roll 8 of suitable contour is mounted on the heated sleeve 6 and preferably is free to turn thereon for rolling engagement with a shoe moved under it while being confined substantially stationary against endwise movement by a shoe moved in that direction while in contact with it. The interior of the roll is cone shaped at its left hand end, (Fig. 1), and the shaft carries thereon a cone clutch friction member 10. An annular track 12 is provided on the end face of the roll 8 through which pressure can be applied to cause the roll to be driven from the shaft by clutch member 10 when a vigorous rubbing action of the ironing roll on the shoe is desired. For starting the roll 8 an angle lever 14 has on its upper arm a roller 15 to engage the track 12 on the end of the roll. The angle lever 14 is fast on the pivot rod 16, Fig. 3, through which a torsion spring 18 acts to withdraw the roller. A horizontal arm 20 of the angle lever 14 is connected through spring 21 and a rod to a treadle (not shown) by which the operator can at any time turn the lever 14 in opposition to the spring 18 for causing the ironing roll to be driven.

An arm 22 pivotally supported on a pin presses by gravity downward and carries a pad 25 the length of the ironing roll 8 which is adapted to contain and to apply to the ironing roll oil or the like. The arm rests on a sliding pin 24 the lower end of which stands upon the horizontal arm of the angle lever so that the pad 25 is normally held away from or in very light contact with the ironing roll by the action of the torsion spring 18. When the treadle is depressed the pad is allowed to descend automatically upon the ironing roll to furnish to it adequate oil to prevent injury to the shoe by the vigorous rubbing action of the driven roll. The pad is automatically lifted to reduce or discontinue the supply of oil supplied to the idle heated roll in response to the release of the treadle.

In the use of the machine the operator presents the shoe to the idle ironing roll 8 which is heated by the friction induced between the rotating blocks carried by the shaft and the stationary sleeve, in the usual manner to remove the wrinkles and smooth the upper as required. To drive the tool the operator depresses the treadle connected to the horizontal arm of the angle lever against the action of the spring 18 thereby actuating the other arm to force the roll into engagement with the continuously rotating clutch member 10 on the shaft, the oiling pad 25 being automatically caused to start or increase the supply of oil to the heated ironing roll when the driving of the roll is commenced and again to reduce or discontinue the supply of oil when the roll becomes idle again.

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

1. A shoe ironing machine having, in combination, driving mechanism including a continuously running shaft, an ironing tool which is normally idle with the shaft turning in it so that it can be so used to treat a shoe by moving the shoe in contact with it, and means by which the tool can be connected with its driving mechanism and more vigorous treatment of the shoe secured by the actuation of the tool over the shoe.

2. A shoe ironing machine having, in combination, a shaft adapted to be continuously driven, an ironing roll inclosing an end of the shaft and normally disconnected from said shaft and free to turn for rolling action upon a shoe presented to it, and means adapted for operation at the will of the operator for connecting the roll with the shaft to cause it to effect a rubbing of portions of the shoe under treatment which require more vigorous ironing.

3. A machine of the class described having, in combination, driving mechanism including a continuously running shaft, a tool which is normally idle on said shaft and can be so used by movement of the shoe relatively to it, continuously acting means for heating the tool operating to distribute the heat evenly throughout the tool, and means which can be operated at the will of the workman to connect the tool to its driving mechanism for causing it to be moved over the shoe.

4. A shoe ironing machine having, in combination, an idle ironing roll, a continuously running driving mechanism including means for frictionally heating the roll, and means under control of the operator by which the roll can be connected to the driving mechanism for turning the roll.

5. A shoe ironing machine having, in combination, an idle ironing roll, a continuously running driving mechanism extending into the roll and relatively to which the roll may be turned for rolling treatment of a shoe presented to it, and means for moving and maintaining the roll in frictional driving engagement with said mechanism.

6. A shoe ironing machine having, in combination, driving mechanism, an ironing roll normally idle and adapted in that condition for treating a shoe moved over it, means for heating the roll, means for connecting the roll to the driving mechanism, and an oil supplying device arranged to be adjusted by said means.

7. A shoe ironing machine having, in

combination, driving mechanism, an ironing roll normally idle and adapted in that condition for treating a shoe moved over it, means for heating the roll, means for connecting the roll to the driving mechanism, and an oil supplying device comprising a pad carrier and a connection from said carrier to said last mentioned means for permitting approach of the pad to the roll for supplying oil in appropriately increased quantity when the roll is driven by said mechanism and for reverse movement to decrease or discontinue the supply of oil when the roll is freed from its driving mechanism.

8. A shoe ironing machine having, in combination, a frame, a shaft, a sleeve secured in the frame and inclosing a section of the shaft, friction heaters carried on the shaft and engaging the sleeve by centrifugal action, and an ironing roll mounted to turn on the sleeve and be heated therefrom.

9. A shoe ironing machine having, in combination, a frame, a shaft, a sleeve secured in the frame and inclosing a section of the shaft, a clutch member carried by an end of the shaft, an ironing roll on the sleeve having a coöperating clutch face, and means manually controlled to press the ironing roll endwise into engagement with the clutch member.

10. A shoe ironing machine having, in combination, a frame, a shaft, a sleeve secured in the frame and inclosing a section of the shaft, a clutch member carried by an end of the shaft, an ironing roll on the sleeve having a coöperating clutch face, an angle lever having an arm extending adjacent to the end of the ironing roll, and means to actuate it for pressing the roll endwise to force its clutch face into driven engagement with the clutch member on the shaft.

11. A shoe ironing machine having, in combination, a frame, a shaft, a sleeve secured to the frame and inclosing a section of the shaft, a clutch member carried by an end of the shaft, an ironing roll on the sleeve having a coöperating clutch face, an oiling pad carrying arm having a pad held adjacent to the working face of the roll, an angle lever having one arm extending into position to press the roll into driving engagement with the shaft, a spring to hold said arm away from the roll, a treadle connected with the other arm, and a connection from the lever to the pad carrying arm to control the relation of the pad to the roll.

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

ORRELL ASHTON.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."