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SOLE MACHINE.

APPLICATION FILED APR. 30, 1908. RENEWED OCT. 5, 1911.

1,030,959.

Patented July 2, 1912.

Fig. 1.

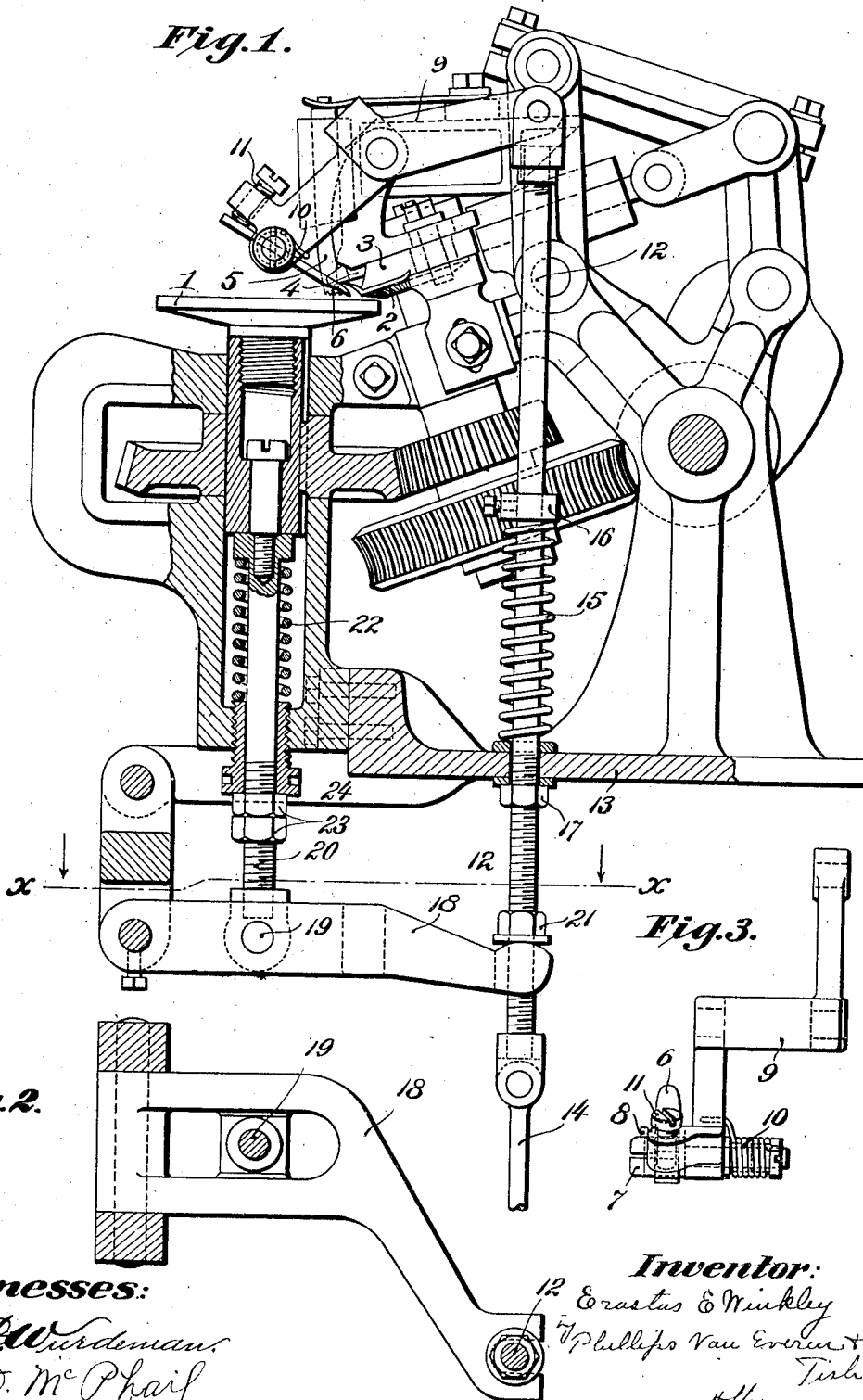


Fig. 3.

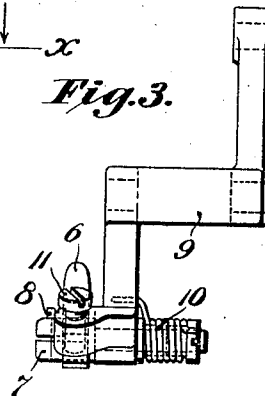
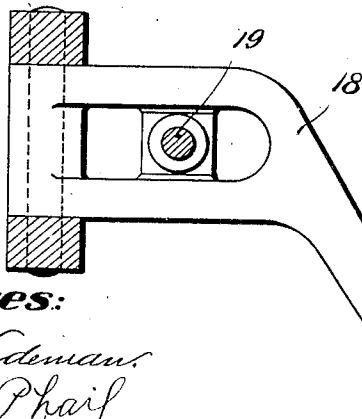


Fig. 2.



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SOLE-MACHINE.

1,030,959.

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To all whom it may concern:

Be it known that I, ERASTUS E. WINKLEY, citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Sole-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to machines for operating upon a sole or insole blank which has been partially prepared for use by channeling or by other operations resulting in the formation of a marginal abutment on the blank, and is intended more particularly as an improvement upon the lip turning machine shown and described in Patent No. 635,772, granted to J. B. Hadaway October 31, 1899, and upon the lip turning machine illustrated and described in my application filed May 24, 1906, Serial No. 318,530, although the invention is not confined in its application to the lip turning machines shown in said patent and application, and may be embodied in other forms of machines designed to perform other operations upon the margin of a sole.

In my application above referred to I have shown and described a lip turning machine such as is shown in the above patent to Hadaway, provided with a guide arranged to engage a channel or other marginal abutment on the blank in opposition to the devices operating upon the marginal portion of the blank, and to cooperate with the feeding devices to automatically guide the blank and swing it at proper times in conformity with the curvature of the edge at the point where the margin is being operated upon. In removing and inserting the work in the machine constructed as shown in the above application, the operator must not only depress the work support in the usual manner, but must also manipulate the abutment engaging guide in order that the work may be properly removed, or may be properly positioned with relation to the lip turning devices in inserting the work. In order that the guide may be thus manipulated by the operator the guide is mounted to swing into and out of position to engage the channel or other abutment, and is held yieldingly in position to engage the chan-

nel. With the guide thus mounted, it tends to return to normal position whenever moved from such position by engagement with the work as it is inserted or removed, and interferes more or less with the convenient positioning of the sole in the machine and the removal of the finished sole therefrom.

It is the primary object of the present invention to overcome this objection to the prior construction and arrangement of the guide, and to so arrange and operate the guide that it will not interfere with the manipulation of the work by the operator in either removing or inserting it in the machine, thus enabling successive soles to be presented to the devices for operating upon them with convenience and rapidity.

To this end the primary feature of the invention contemplates the provision of connected means for retracting the guide and work support, so that in retracting the work support the operator also retracts the guide.

The invention also contemplates the provision of means for automatically returning the guide into position in the channel when the work support is returned to position to support the sole during the operation of the lip turning devices thereon.

The specific construction and arrangement of the connections by which the guide is retracted upon the retraction of the work support, and is automatically returned to active position upon the return of the work support, is not material to the invention in its broader aspects, but may be varied without departing from the invention. It is usual, however, in this class of machine, to retract the work support by means of a treadle, and in accordance with a further feature of the invention, the guide and work support are both operated through connections with an actuating device such as a treadle, so arranged that upon operation of the device, both the guide and work support will be retracted, and upon release of the device the guide and work support will be returned into position to engage the channel or other abutment, and to support the work. These connections are also so arranged that the position of the guide will be independent of any variations in the position of the work support due to variations in the thickness of the soles, or to inequalities in different parts of a sole.

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The various features of the invention will be understood from an inspection of the accompanying drawings, in which—

Figure 1 is a side elevation partly in section of a lip turning machine embodying the invention in its preferred form; Fig. 2 is a plan view taken on line $x-x$, Fig. 1; and Fig. 3 is a detail view of the guide carrying lever.

In the drawings the invention is illustrated as embodied in a machine for turning and setting the lip of an insole blank which has been previously channeled, and the machine illustrated is the same in general construction and mode of operation as the machine shown and described in the patent to Hadaway above referred to, to which reference may be had for a full understanding of the construction and mode of operation of the parts which are not hereinafter explained.

As shown in the drawings, the machine is provided with a work support 1, a feed wheel 2, a lip turner 3, a lip setter 4, and a presser foot 5, all of which are constructed and operated in the manner set forth in the patent above referred to. The machine is also provided with a guide 6 arranged to engage the channel of the insole adjacent and opposite to the point at which the lip turning and setting devices are operating, and serving to maintain the blank in proper position relative to the devices which operate upon it as the blank is fed. This guide is arranged at one side in the direction of feed of the point of operation of the feeding devices upon the sole, so that it coöperates with the abutment formed by the bottom of the channel to swing the sole whenever, owing to the curvature of its edge, it tends to swing away from proper engagement with the lip turning devices, and thus coöperates with the feeding devices to automatically control the feeding movements of the sole, and to insure the presenting of the edge of the sole in proper position to the lip turning and setting devices throughout their operation upon the sole, and without requiring that the sole be swung by the operator in rounding the toe, or at other points where an abrupt change in the outline of the sole occurs.

The guide 6 is mounted for longitudinal adjustment in the end of a rock shaft 7. The end of the rock shaft 7 through which the guide 6 slides is split, as indicated in Fig. 3, and the guide is clamped in adjusted position by means of a screw 8 which draws the two parts of the split end of the shaft together. The rock shaft 7 is mounted in the end of a lever 9, and the guide is held yieldingly in position by a coiled spring 10 which holds the outer end of the guide against an adjusting screw 11. By turning the screw

may be raised or lowered to suit the thickness of sole being operated upon, and by moving the guide longitudinally in the rock shaft, the guide may be adjusted to properly engage the channel. The rear end of the lever 9 is pivotally connected to the upper end of a rod 12 which extends down through the base plate 13, and is connected by means of a link 14 with a suitable operating device such as a treadle (not shown).

The guide 6 is held in position in the channel by means of a spring 15, surrounding the rod 12 and interposed between the plate 13 and a collar 16 secured to the rod. The upward movement of the rod 12, under the influence of the spring 15, is determined by a nut 17, threaded on the rod 12, and arranged to engage the under side of the plate 13. By adjusting the nut 17, the position of the guide 6 may be varied. The spring 15 acts to yieldingly maintain the guide 6 in engagement with the channel or other abutment, and also acts to automatically advance the guide into engagement with the channel after it has been retracted by the depression of the rod 12. The downward movement of the rod 12, which withdraws the guide 6 from the channel so that it will not interfere with the removal or insertion of the work, also effects the withdrawal of the work support 1 so that the finished sole may be removed and a new sole brought into proper relation to the lip turning devices. The connections for effecting this movement of the work support comprise a lever 18 which is pivotally connected at 19 with the lower end of the rod 20, the upper end of which is connected with the work support. The rear end of the lever 18 is arranged to underlie a nut 21, threaded on the rod 12, so that it may be adjusted to properly engage the end of the lever 18. The work support is held yieldingly in its upper position by the spring 22, the position of the work support being determined by the adjustable nuts 23, one of which is arranged to engage the end of the sleeve 24, which supports the lower end of the spring 22. With the parts thus connected, an operation of the treadle or other device connected with the link 14 in a direction to move the rod 12 downward, retracts the work support 1 and also withdraws the guide 6 from position to engage the channel or other abutment so that the guide in no wise interferes with the removal or insertion of the work. After the work has been inserted in the usual manner, and the treadle or other device through which the rod 12 is operated is released, the guide 6 is automatically advanced into engagement with the channel by the action of the spring 15, while the work support 1 is automatically forced against the under surface of the sole by the action of the spring 22. The position of the guide 6 is determined by the position

of the nut 17, and is unaffected by any movement of the work support 1, which may position itself against the under surface of the work without effecting any movement in the rod 12, since the lever 18 is free to move downward away from the nut 21 on the rod.

While in the construction shown in the drawing the guide 6 is formed to engage a channel, and while the invention may be used with especial advantage in connection with such a guide, it will be understood that it is not essential to the invention in its broader aspects that the guide should engage a channel, and that its form may be modified to cooperate with other forms of abutments, such, for instance, as grooves or shoulders, which are sometimes used in place of a channel, to receive the seam. It will also be understood that the invention may be embodied in machines for performing operations other than that of turning up and setting the lip, so far as the broader features of the invention are concerned.

Having set forth the nature and object of the invention, and specifically described one form of machine in which it may be embodied, what I claim is:—

1. A machine for operating upon a sole blank provided with a marginal abutment, having in combination, means for supporting, feeding and operating upon the marginal portion of the blank, including a guide engaging the abutment in opposition to the operating means to swing and maintain the blank in engagement therewith, and connected means for retracting the guide and work supporting means to enable the convenient insertion of the work, substantially as described.

2. A machine for operating upon a sole blank provided with a marginal abutment, having, in combination, a work support, means for feeding and operating upon the marginal portion of the blank supported by the work support, a guide arranged to engage the abutment to swing and hold the blank in engagement with the operating means, and connected means through which the work support and guide may be retracted and operating to automatically return the work support and guide when released, substantially as described.

3. A machine for operating upon a sole blank provided with a marginal abutment, having, in combination, a work support to engage the surface of the sole, means cooperating therewith to feed the sole, means operating upon the marginal portion of the sole, a guide arranged to engage the abutment on the sole and swing the blank as it is fed to present it properly to the operat-

ing devices, and connected means for retracting the guide and work support, substantially as described.

4. A machine for operating on a channeled insole blank, having, in combination, means for operating on the marginal portion of the blank, means for feeding the blank, a guide arranged to engage the channel of the sole and swing the blank as it is fed to present it properly to the operating means, a work support, and means for retracting the guide upon the retraction of the work support to enable the work to be removed or inserted, substantially as described.

5. A lip turning machine, having, in combination, a work support to engage the un-lipped surface of the sole, means cooperating therewith to feed the sole, means for turning the lip of the sole, a channel guide arranged to engage the channel of the sole and swing the blank as it is fed to present it properly to the lip turning means, and connected means for retracting the work support and guide for the insertion or removal of the work, substantially as described.

6. A machine for operating upon a sole blank provided with a marginal abutment, having, in combination, a work support, means for feeding and operating upon the marginal portion of the blank supported by the work support, a guide arranged to engage the abutment on the sole and swing the blank as it is fed to present it properly to the operating devices, an actuating device, connections for retracting the work support and guide by the operation of the actuating device, and means for independently returning the work support and guide in normal position, substantially as described.

7. A machine for operating upon a sole blank provided with a marginal abutment, having, in combination, a work support to engage the surface of the sole, means cooperating therewith to feed the sole, means operating upon the marginal portion of the sole, a guide arranged to engage the abutment on the sole and swing the blank as it is fed to present it properly to the operating devices, and connections for retracting the guide and work support so arranged that the position of the guide will be independent of the position of the work support, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

ERASTUS E. WINKLEY.

Witnesses:

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N. D. MCPHAIL.