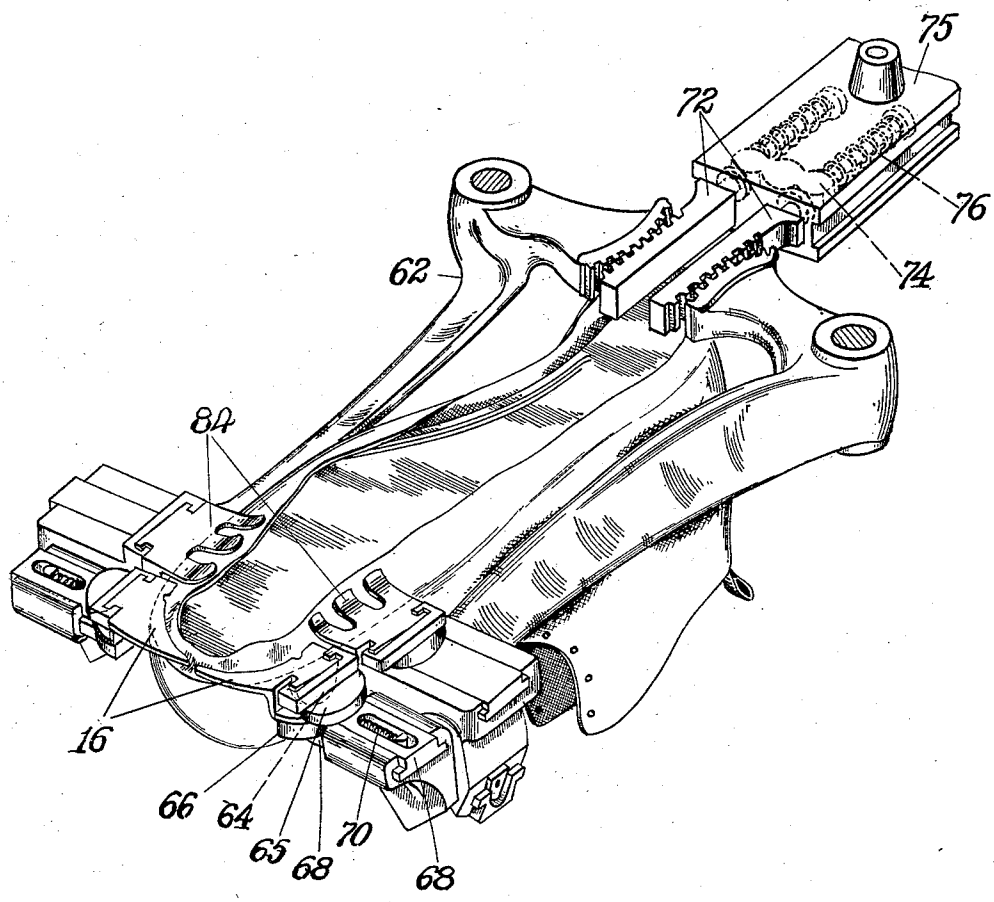
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PULLING-OVER MACHINE.

APPLICATION FILED OCT. 30, 1911.

1,068,841. Patented July 29, 1913.



WITNESSES.

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UNITED STATES PATENT OFFICE.

EMERY BAYARD, DECEASED, LATE OF ROCHESTER, NEW YORK, BY AMELIA A. BAYARD, EXECUTRIX, OF ROCHESTER, NEW YORK, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PULLING-OVER MACHINE.

1,068,841. Specification of Letters Patent. Patented July 29, 1913.

Original application filed June 17, 1910, Serial No. 567,529. Divided and this application filed October 30, 1911. Serial No. 657,536.

To all whom it may concern:

Be it known that EMERY BAYARD, deceased, late of Rochester, in the county of Monroe and State of New York, invented certain Improvements in Pulling-Over 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 pulling-over machines and has for its object to provide an improved machine for pulling-over a shoe.

The present application is a division of application Serial No. 567,529, filed June 17, 1910, for improvements in machines for use in the manufacture of boots and shoes.

The pulling-over mechanism may be of a known type or of any construction suitable for the purpose, and this invention consists generally in novel combinations with pulling-over mechanism of devices for shaping the corners of the toe.

In the operation of pulling-over a shoe the upper is gripped and pulled at the opposite sides of the ball and at the tip of the toe and is drawn over the last and tacked at each of these places. At either side of the toe tack, that is, at the corners of the toe, the upper stands out in a projecting pucker which is called a "dog-ear" in the shoe shop.

An important feature of the present invention is embodied in automatic upper over-working mechanisms including particularly novel means for turning inwardly the fullness at the corners of the toe instead of allowing it to stand out and form these dog-ears. By forcing the upper inwardly at the corners at this stage of the manufacture of the shoe, this fullness is distributed and prevented from localizing so that later operations are made easier. It is broadly new, as I am advised, to provide a pulling-over machine with means operating automatically to turn in the upper at the opposite corners of the toe to prevent the formation of dog-ears. In accordance with a preferred embodiment of this feature of the invention, the devices which turn in the upper at the corners of the shoe are formed as lasting plates or corner wipers. These end lasting plates for wiping over the two corners of the toe are separate from one another as distinguished from the connected wiper plates of the bed lasting machines in common use.

The wipers are mounted upon inwardly moving arms which are the side-clamp arms of the pulling-over machine and are actuated by said arms in a manner which is entirely automatic. In the use of wipers so actuated a binding wire will be depended upon to draw the upper into finally lasted position against the lip or shoulder of the innersole as well as to bind it in such position. These corner wipers are mounted to adapt themselves to the contour of the work by automatic adjustments about axes which are respectively perpendicular to the plane of the shoe bottom and parallel with said plane as well as to yield laterally of the shoe in the carrying arms. This mounting for end lasting devices is entirely new as I am advised and is of obvious advantage, particularly in a machine in which the lasting devices are automatically operated. The arms on which the corner wipers are mounted are pivoted to swing about separate centers which are so located at opposite sides of the shoe at the rear of the toe that the wipers have a backward as well as an inward sweep to draw the upper rearwardly from the toe end of the last.

These and other features of this invention including certain details of construction and more important combinations of parts will be explained in the following description of a preferred embodiment of the invention and will then be pointed out in the claims.

The drawing shows a perspective view of the new devices and their associated parts.

The invention is herein shown for the purpose of explanation, as applied to a machine like the well-known commercial pulling-over machine shown and fully described in United States Letters Patent No. 1,029,387, granted June 11, 1912 and in British Patent No. 12,304 of 1903 corresponding thereto. It is not necessary herein to show, or to describe, that machine and its operation except in those particulars in

which it coöperates with the lasting devices of the present invention, which are arranged to operate after the shoe upper has been pulled and adjusted upon the last and while the shoe is held in the machine with the upper under tension over the last.

The corner wiper plates 16 are supported upon the usual side clamp carrying arms 62 of the pulling-over machine shown in said patent above referred to. Each of these wiper plates 16 which have working edges curved to extend forwardly around the corner of the toe have at their rear or heel ends, segment formations 64 interlocking with a suitably formed recess in the block 65. This connection permits the wiper plate to adjust itself angularly about an axis extending laterally across the last and located near the rear end of the plate and substantially in the plane of the last bottom whereby each wiper plate can adapt itself automatically and independently of the other plate 16 to the longitudinal inclination of the portion of the shoe bottom over which the plate presses the upper. The block 65 is mounted to turn in a segmental block 66 on the front end of a horizontally movable slide 68 mounted in a suitably formed guideway on the front end of the arm 62. The slide 68 is pressed yieldingly toward the shoe in the direction of the shoe by the spring 70. This mounting permits each wiper plate 16 to turn about a vertical axis located near its rear end and also permits each wiper plate to yield against the action of its spring 70. These self adapting movements of the wiper plates enable them to conform their positions to the contour of the opposite corners of the last.

The arms 62 extend rearwardly and are pivotally supported at opposite sides of the shoe near its rear end and have segment racks connected with rack bars 72 which in turn are yieldingly connected together and to their actuating slide 75 by an equalizer 74 and springs 76, this mounting for the side arms being the same as that shown in said prior patent. It will be readily understood that the movement of the arms 62 about their respective centers carries the corner wipers 16 laterally toward the shoe from opposite directions and that these wipers which project inwardly toward each other from the front ends of the arms are moved in the arc of a circle which carries them backwardly as well as inwardly as they approach and move over the corners of the shoe. This mounting gives to the wipers an automatic movement having a small component of backward movement to the side face of the toe of the last so that it is substantially perpendicular in direction.

In the use of the machine a shoe will be presented thereto and the upper pulled and adjusted as described and shown in said prior patent. The machine will then be restarted and when the side clamp arms 62 swing inwardly the lasting plates or corner benders 16 will be brought in with the side clamps 84 and will turn inwardly the stock between the toe and the side grippers which has heretofore formed the "dog ears" of a pulled-over shoe, as represented for example in Fig. 81 of the original pulling-over machine Patent No. 663,777. This stock having been bent inwardly while it is under tension tends to stay so bent in position for lasting after the shoe has been fastened and released from the machine and the upper does not slack back over the corners of the toe as much as when it stood out in dog ears free of the last. Preferably the corner bender engages the shoe ahead of the side clamp and has a tendency to work the stock backwardly.

Having fully explained the nature of this invention and described how it may be embodied in suitable mechanism 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, end lasting plates, and means for relatively actuating said plates and last to work an upper over the toe portion of the last, said machine having provision for automatic angular movement of the plates independent of one another to adapt them to the longitudinal inclination of the bottom of that portion of the shoe engaged by them.

2. A machine of the class described having, in combination, end lasting plates, and means for relatively actuating said plates and last to work an upper over the toe portion of the last, said machine having provision for automatic angular movement of the plates independent of one another about axes located near their rear ends and extending perpendicularly to the plane of the shoe bottom to adapt them to the shape of the toe portion of the shoe.

3. A machine of the class described having, in combination, the plate 16 having a wiping edge curved to extend forwardly around the corner of a last, the supporting block 65 connected with the rear end of the wiper plate for angular movement of the plate about an axis extending transversely of the last, and the slide 68 connected to said block to permit angular movement of the block and plate about an axis extending substantially perpendicular to the plane of the last bottom.

4. A machine of the class described having, in combination, the side clamps 84 for opposite sides of the shoe, and the corner lasting plates 16 supported for permitting sliding movement relatively thereto transversely of the machine and angular positioning movements about axes, one of which

is perpendicular to the plane of the shoe bottom, and another parallel with said plane and extending transversely of the shoe.

5. A pulling-over machine having, in combination, upper overworking means including side clamps and corner benders yieldingly mounted thereon in front of the clamps and operating automatically to bend inwardly over the last bottom the upper at the corners of the toe.

6. A pulling-over machine having, in combination, upper overworking means including the side clamp carrier 62 having two guideways in substantially the same horizontal plane and the side clamp 84 and the corner bender 16 mounted in said guideways and having provision for relative movement to adapt themselves to the contour of the shoe edge.

7. A pulling-over machine having, in combination, upper overworking means including the side clamp carrier 62 having two guideways in substantially the same horizontal plane and the side clamp 84 and the corner bender 16 mounted in said guideways and means for yieldingly holding the corner bender pressed inwardly toward the shoe in position to engage the stock in advance of the side clamp.

8. A pulling-over machine having, in combination, upper overworking means including the side clamp 84 and the plate 16 in front of said side clamp and coöperating therewith to lay the upper over upon the shoe bottom, and the carrier 62 in which said plate and clamp are relatively yieldable.

9. A pulling-over machine having, in combination, upper overworking means including the side clamp 84 and the plate 16 in front of said side clamp and coöperating therewith to lay the upper over upon the shoe bottom, and the carrier 62 in which said plate and clamp are mounted and the plate can turn relatively to the clamp about a vertical axis to adapt itself to the corner of the toe.

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

AMELIA A. BAYARD,
Executrix of the will of Emery Bayard.

Witnesses:
G. WILLARD RICH,
TERESSA H. BAYARD.

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