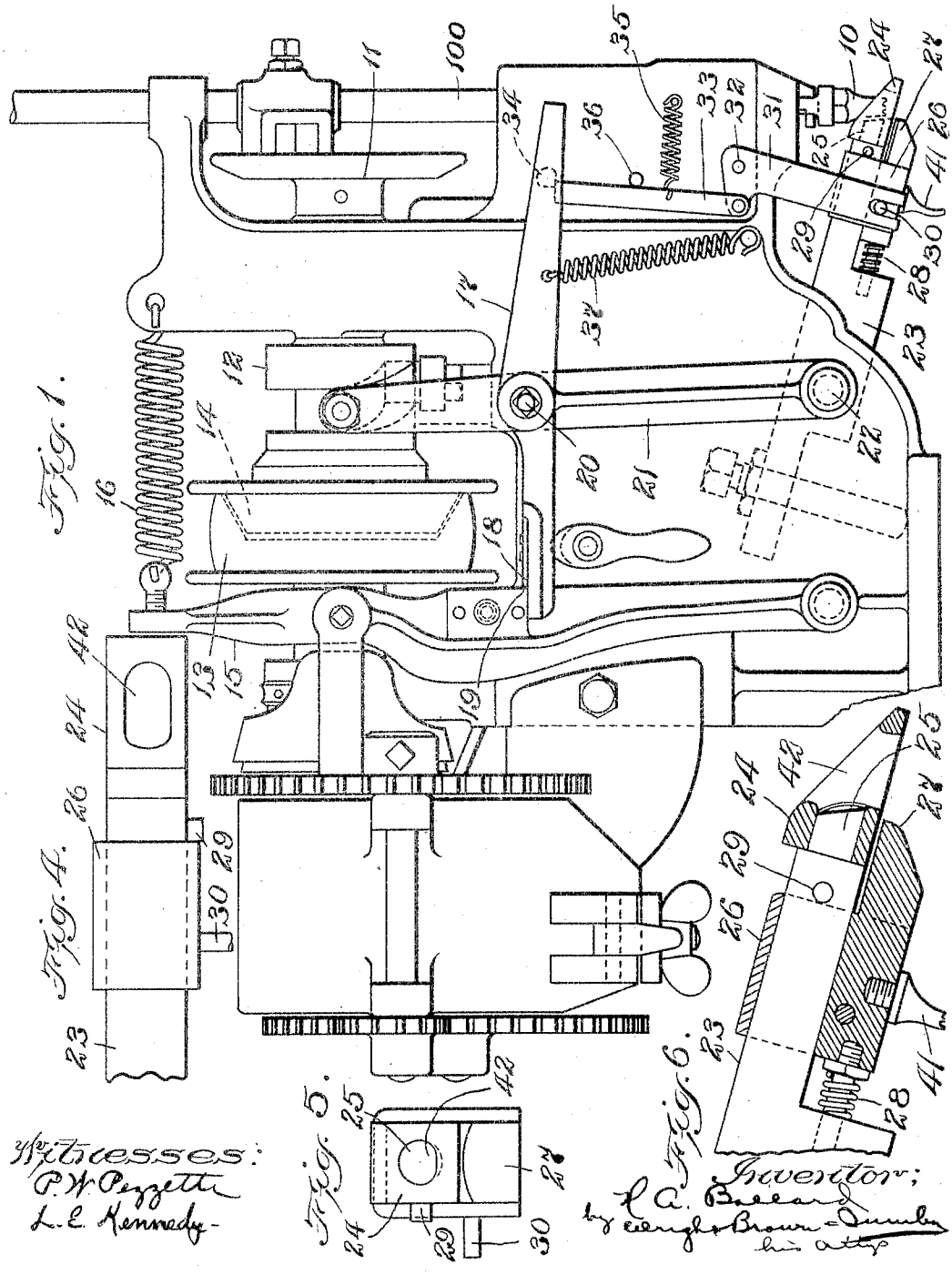
No. 776,771. PATENTED DEC. 6, 1904.

H. A. BALLARD.

SHOE TACKING MACHINE.

APPLICATION FILED APR. 13, 1903.

NO MODEL. 2 SHEETS—SHEET 1.



No. 776,771. PATENTED DEC. 6, 1904.

H. A. BALLARD.

SHOE TACKING MACHINE.

APPLICATION FILED APR. 13, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

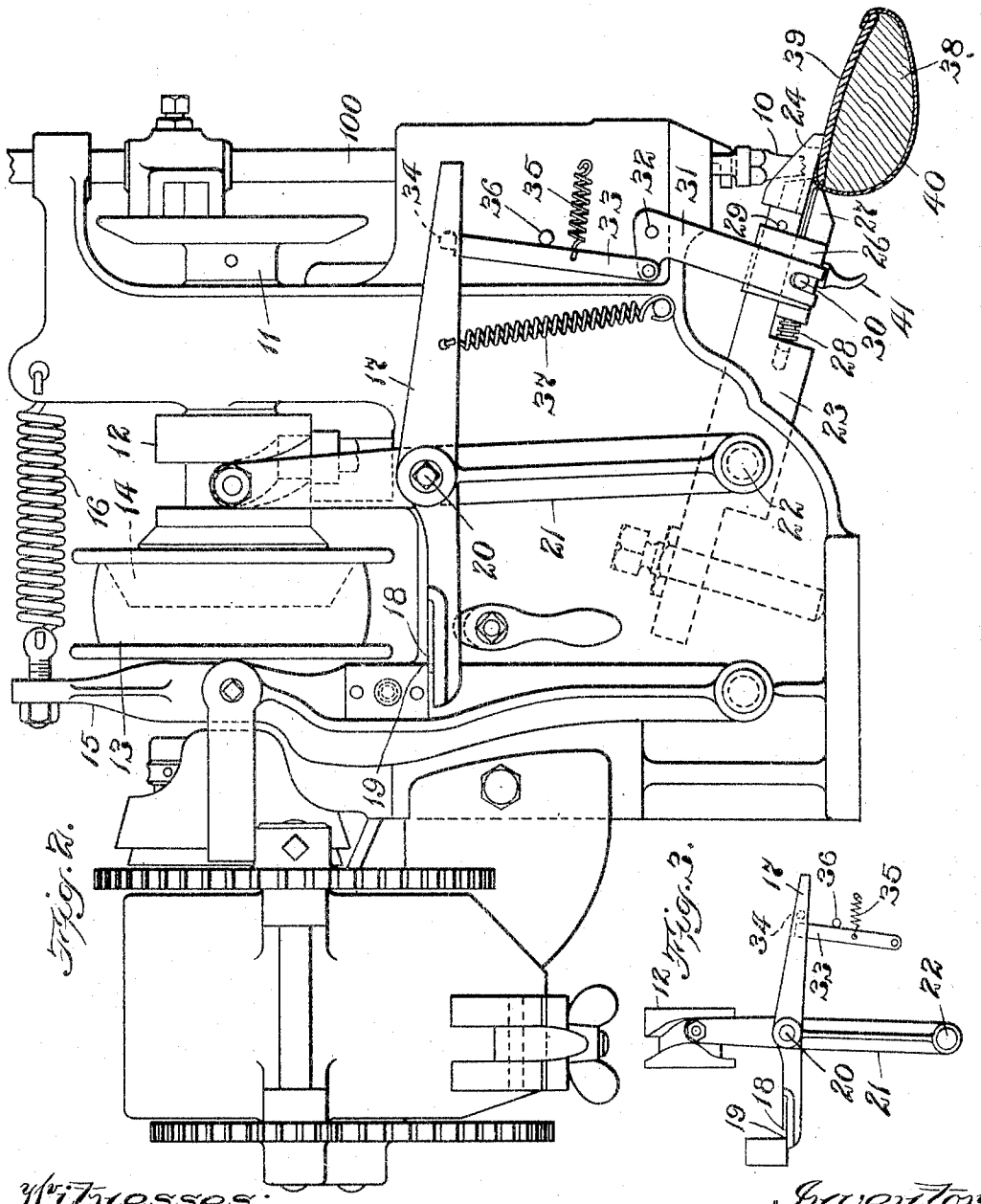


Fig. 2.

Fig. 3.

Witnesses:
P. W. Pezzetti
L. E. Kennedy

Inventor,
H. A. Ballard
by Brown Brown & Dunlap
his Attys.

No. 776,771. Patented December 6, 1904.

UNITED STATES PATENT OFFICE.

HARRIE A. BALLARD, OF ASHLAND, MASSACHUSETTS, ASSIGNOR TO COPELAND BOOT AND SHOE TREEING COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

SHOE-TACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 776,771, dated December 6, 1904.

Application filed April 13, 1903. Serial No. 152,462. (No model.)

To all whom it may concern:

Be it known that I, HARRIE A. BALLARD, of Ashland, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Shoe-Tacking Machines, of which the following is a specification.

This invention relates to machines for tacking the edge or fringe of an upper to the inner sole of a boot or shoe after the inner sole and upper have been placed upon a last.

In order to give an understanding of the invention, it is herein set forth in connection with a tacking-machine of the type described in Letters Patent No. 389,275, granted to E. Woodward, September 11, 1888, although it will be understood that the invention is not limited to the details of that machine. In the patent aforesaid the last, with the upper and inner sole thereon, is placed upon a jack swung outwardly in its initial position and swung inwardly away from the operator and into coactive relation with the tacking mechanism when it is desired to insert a tack. The machine of the said patent has provisions such that when the shoe is brought into contact with the tack-applying nozzle of the machine mechanism is set in motion whereby the machine inserts a single tack through the fringe of the upper and inner sole and then stops automatically. The operator then moves the shoe to a fresh position and again swings it inwardly under the tacking mechanism, so that another tack is applied, and so on. In operating with the machine described it has been necessary to pull over the fringe of the upper by hand or with lasting-pincers in order to draw the upper to the desired tightness on the last and there tack it. It has been customary to serrate the lower end of the tacking-nozzle, so as to cause it in some measure to assist in pulling over the edge of the upper; but this pulling-over action has not been thoroughly effectual, as the pincers or the operator's fingers had to be used to secure the proper tightness of the upper.

The present invention has for its object to provide an effective automatic wiping action in order to draw the edge of the upper over the inner sole, and thus dispense with a separate hand operation.

A further object is to automatically start the machine in motion by a movement of the shoe in conjunction with mechanism other than the tacking mechanism, and these objects I accomplish by a certain novel construction and arrangement of parts, of which a practical embodiment is hereinafter described and claimed.

Of the accompanying drawings, Figure 1 represents a side elevation of the machine as it appears in a state of rest or before the shoe has been subjected to its operation. Fig. 2 represents a view similar to Fig. 1, showing the shoe with the edge of its upper wiped over and the mechanism for operating the tacker set in motion by the inward advance of the shoe. Fig. 3 represents a detail side elevation showing a further step in the operation of the mechanism. Fig. 4 represents a plan view of the wiper. Fig. 5 represents an end view thereof. Fig. 6 represents a longitudinal section.

The same reference characters indicate the same parts in all the figures.

In the drawings, 10 is a tack-delivering member or nozzle, and 100 is a tack-driving bar actuated by a horizontal shaft 11, having thereon a path-cam 12, and a loose pulley 13, containing a clutch 14.

15 is a lever controlling the clutch and yieldingly moved by a spring 16 in such a direction as to set the clutch and start the tacking mechanism, means being provided whereby said mechanism comes to rest after driving one tack.

17 is a lever having a shoulder 18, adapted to engage a complemental shoulder 19 on the lever 15 and hold the latter against the tension of its spring 16 in a clutch-releasing position. The lever 17 is pivoted at 20 to a rock-lever 21, pivoted at 22 to the machine-frame and swung by the cam 12. When the right-hand end of the lever 17 is tilted up-

wardly, the shoulders 18 19 become disengaged and the spring 16 draws the lever 15 to the right and sets the clutch 14.

The aforesaid parts operate substantially as described in the said Patent No. 389,275, and I have therefore not illustrated in detail the mechanism for effecting the operations stated. In the machine of the patent mentioned the oscillation of lever 17 to release lever 15 was effected by the shoe coming in contact with the tacker-nozzle 10; but in the present invention such oscillation is effected in a different manner, as will now be described.

23 is a wiper-support downwardly and forwardly inclined and affixed to the frame of the machine by suitable means, said support carrying at its forward end a wiper-block 24, the under surface of which acts as a wiper against the edge of the upper when the shoe is presented to the operation of the machine, said block being adapted for slight oscillations upon a stud 25, so as to conform to the position of the shoe or the outline of the last at different points.

26 is a slide which travels on the support 23 and has a lip or abutment 27 working underneath and parallel to the under side of the wiper-block 24, said slide being projected outwardly by a spring 28 and having its outward movement limited by a pin 29, which stops the abutment 27 short of the outer end of the wiper-block. A pin 30 on the slide 26 engages the slotted lower end of a bell-crank lever 31, pivoted at 32 to the machine-frame.

33 is a prop or strut normally residing underneath a pin 34 on the lever 17 and held by a spring 35 against a fixed pin 36. A spring 37 normally depresses the right-hand end of lever 17.

41 is a finger-rest or abutment projecting from the under side of the slide 26, whereby the operator may manually retract said slide and start the tacking mechanism, if desired, when he presents the shoe to the action of the machine.

The operation may be thus described: In presenting the shoe to the operation of the machine the operator swings inwardly the jack carrying the last 38 and by this motion causes the stationary wiper-block 24 to crowd or push over onto the inner sole 39 the edge or fringe of the upper 40, thereby tightening the upper on the last and bringing said edge into proper position to receive a tack from the tacking mechanism. As the shoe is advanced inwardly it impinges against the abutment 27, and at the instant the shoe has reached the proper position to receive a tack the oscillation of lever 31 causes the prop 33 to raise the right-hand end of lever 17 and depress its left-hand end, thereby releasing the lever 15, which sets the clutch and causes the tacking mechanism to drive a tack through the edge of the upper and the inner sole 31 after the manner described in the aforesaid patent. During the rotation of the shaft 11 the cam 12 oscillates lever 21 toward the right, the latter carrying with it lever 17 and causing the pin 34 to advance beyond the prop 33. This allows the lever 17 to assume a position such that when said lever is retracted its shoulder 18 will engage the shoulder 19 and retract the lever 15, thereby releasing the clutch and stopping the machine. When the cam 12 moves the lever 17 to the left from the position represented in Fig. 3, the pin 34 engages and swings the prop 33 against its spring 35, and when the operator withdraws the shoe for a fresh operation the spring 28 projects the slide 26 and the prop 33 snaps underneath the pin 34.

It will be noted that the wiper-block 24 is formed with an aperture 42, through which the nozzle 10 projects, or, in other words, the wiper-block straddles the nozzle and operates on both sides thereof when the shoe is advanced beneath the wiper-block. The nose of the block is slightly curved or rounded on its under surface, so as to avoid catching and scarring the upper.

It will be understood that this invention is not limited to the exact construction herein described.

I claim—

1. In a machine of the character described, tacking mechanism including a stationary nozzle, and a driver, stationarily-mounted wiping means adapted to frictionally push the edge of an upper over the last when the shoe is advanced against said wiping means and means supported independently of the nozzle and operated by the shoe for setting said tacking mechanism in operation.

2. In a tacking-machine, tacking mechanism including a driver and a nozzle, a stationarily-mounted wiper supported independently of the nozzle, and a device movable by the advance of the shoe into coaction with said wiper for controlling the operation of said mechanism.

3. In a tacking-machine, tacking mechanism, including a driver and a nozzle, means for driving the same, a clutch to connect said means and mechanism, a stationary wiper, and a device independent of said nozzle actuated by the advance of the shoe in contact with said wiper for effecting the connection of said clutch.

4. In a tacking-machine, tacking mechanism including a tack-delivering member, means for driving said mechanism, a clutch to connect said means and mechanism, a wiper, and a device under said wiper actuated by the advance of the shoe into position for the operation of the wiper, and into operative alinement with said member for effecting the setting of said clutch.

5. In a tacking-machine, a driver, driver-actuating mechanism, a substantially vertical tack-delivering member, a wiper having a

wiping-surface occupying an inclined position with respect to said member, and a member adjacent said wiper for setting said driver-actuating mechanism in operation, and operated by the shoe.

6. In a tacking-machine, tacking mechanism including a substantially vertical tack-delivering member, a wiper inclined thereto, and a device mounted to slide in an inclined path parallel to said wiper and controlling said tacking mechanism.

7. In a tacking-machine, tacking mechanism, a wiper, and a device actuated by the advance of the shoe into operative relation therewith for controlling said mechanism and located below said wiper, said device having a finger-abutment whereby it may be manually actuated.

In testimony whereof I have affixed my signature in presence of two witnesses.

HARRIE A. BALLARD.

Witnesses:

R. M. PIERSON,

A. C. RATIGAN.