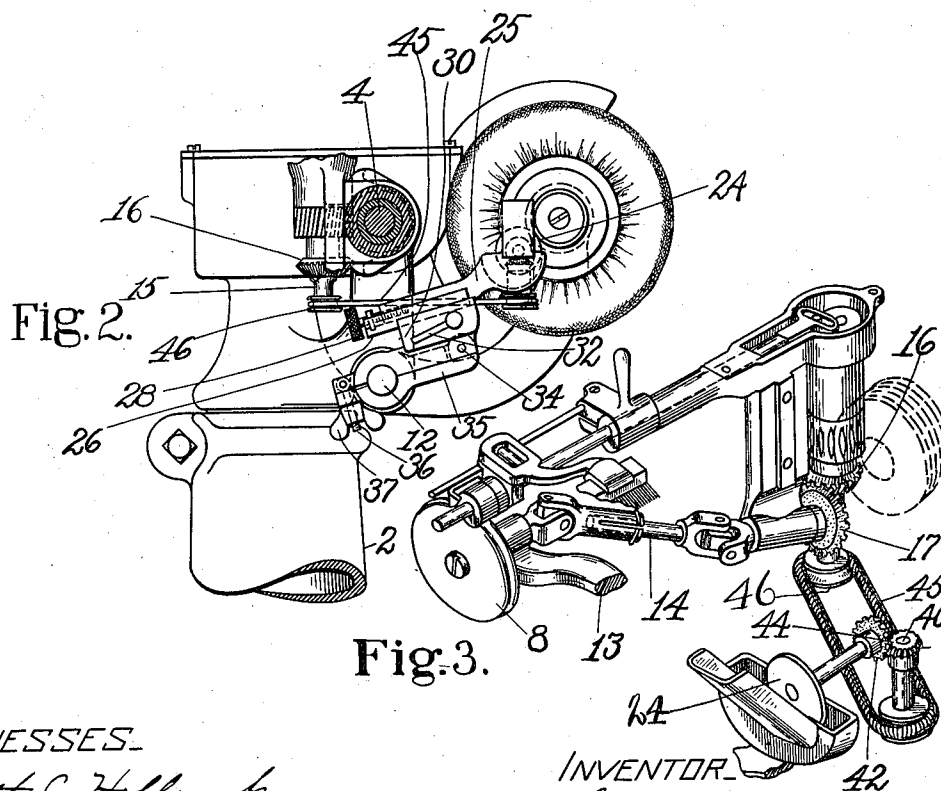
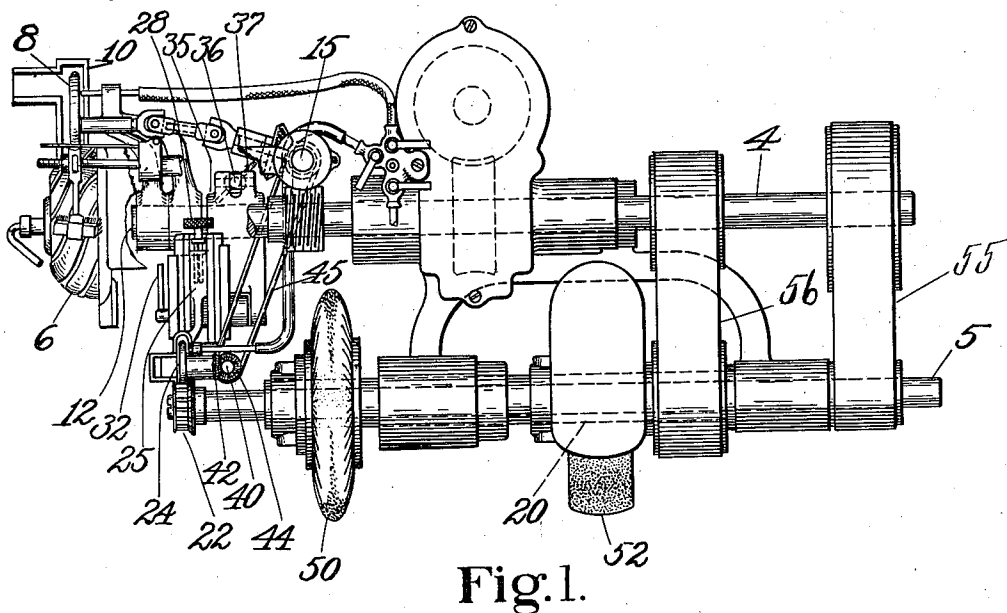


C. PEASE.
HEEL FINISHING MACHINE.
APPLICATION FILED JULY 16, 1908.

Patented Feb. 22, 1910.

950,301.



WITNESSES.

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HEEL-FINISHING MACHINE.

950,301.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES PEASE, a citizen of the United States, residing at Beverly, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Heel-Finishing 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 finishing shoes and particularly to heel burnishing machines and a feature of this invention consists in a novel construction and arrangement of means for applying wax and working it into heels. This means as herein shown comprises a burnishing tool which will preferably be a fluted wheel having an unyielding working surface adapted to carry wax in the low portions or grooves and to rub the wax into the heel by the high portions or ribs. Coöperating with this wheel is a wax holder containing a wax-delivering disk for lifting the wax and depositing it upon the high portions of the burnishing wheel from which it is rubbed into the low portions of the wheel by the engagement thereof with the work. The wax holder has a sliding fit in a guide block in which it can be adjusted by a screw that is held against endwise movement in the block and takes into the holder. This permits very accurate adjustment of the holder with relation to the burnishing wheel. For the purpose of allowing rougher adjustments, as when a burnishing wheel of different diameter replaces one previously used, the guide block is arranged for lengthwise movement in a clamp having a convenient operating device and the clamp is itself pivotally mounted on a bracket which is bound to a circular support or rod along which the bracket and parts carried by it can be adjusted to position the wax-feeding disk with relation to the width of the burnishing wheel and about which the bracket can be adjusted to bring the contact point of the disk and wheel at the desired elevation. The pivotal connection of the clamp with the bracket, which together with the contact point of the wheel and disk is below the axis of the wheel, permits the holder to rock downwardly to prevent breakage in case any ob-

struction, such as a piece of leather, should be drawn in between the wheel and disk. The shaft of the wax-feeding disk has a beveled gear that meshes with a similar gear on a short depending shaft that is supported by the holder and carries a belt pulley. This receives a belt that extends to a pulley on a similarly mounted shaft which in turn is driven through beveled gears from a driving shaft.

A desirable feature of this construction is found in the use of intermeshing gears that are made of different materials whereby the noise incident to the driving engagement of the gears is materially lessened as is also the wear. One of the gears may be made of iron as usual, while the coöperating gear will preferably be made of a non-metallic composition, such, for example, as that used in the manufacture of the higher grades of fiber board.

In many of the smaller shoe manufacturing establishments both shoes having spring heels, which have inclined breasts merging into the tread of the heel and the shank, and shoes having square heels, which have breasts substantially perpendicular to the tread face, are made. The heel finishing devices which are adapted for treating square heel shoes are not adapted for treating spring heel shoes and it has heretofore been necessary to maintain two heel finishing machines or to change the heel finishing devices frequently.

In accordance with a valuable feature of the present invention the machine is equipped with devices for finishing both spring heels and square heels. The devices above described are adapted particularly for finishing spring heels, while mounted upon the driving shaft above mentioned there is a heel-finishing wheel which is adapted for finishing square heels and coöperating with this wheel is suitable wax-supplying mechanism. This arrangement enables an operator to finish spring heels and square heels in any order in which they may come to him without loss of time in traveling from one machine to another or in changing the finishing devices. It is the custom for the operator to present the shoe heel to a polishing brush or to two or more polishing brushes having different characteristics after the heel has been treated on the finishing

wheel and in accordance with this invention a single set of polishing brushes is arranged to be used with the two sets of finishing devices.

- 5 A further advantage which is incident to the present invention is that wax of different colors may be used with the two sets of finishing devices so that if both black and colored shoes are being made no time need be
10 lost in changing or cleaning the finishing devices to enable one lot to be finished after a different colored lot.

A further structural characteristic of the machine in which this invention is embodied
15 consists in driving one set of finishing devices at a different speed from the other set whereby work of different classes or grades can be finished without any adjustment of the machine.

- 20 These and other features of the invention, including certain details of construction and combinations of parts, will appear in connection with the description of the illustrated machine and will be pointed out in
25 the claims at the end of the specification.

Figure 1 is a plan view of the machine and Fig. 2 is an end elevation, while Fig. 3 is a perspective view of the two sets of wax-feeding devices.

- 30 The head of the machine, which is supported on a column 2, has bearings for a driving shaft 4 and an auxiliary shaft 5. The driving shaft, which in turn may be
35 operated from a main vertical shaft through a worm gear, as indicated in Fig. 1, carries a heel-finishing tool 6 which may be of any suitable construction and to which wax is fed by a disk 8 from a wax holder 10. The wax
40 holder is carried by a bracket which is angularly adjustable about a rod or support 12, whereby the disk may be moved from and toward the wheel. The disk is driven by a flexible shaft 14 connected through beveled
45 gears and a short vertical shaft 15 with a worm on the driving shaft 4. The auxiliary shaft 5 above mentioned is directly mounted within a sleeve 20 and on its front or
50 left-hand end is provided with a burnishing wheel 22 having an unyielding fluted peripheral working surface provided with alternate grooves and ribs. A wax-feeding disk 24 is mounted in a bearing in a wax-holder 25 which is formed to hold a quantity of
55 melted wax and preferably has also a lateral extension as shown in Fig. 1 to hold a stick of unmelted wax. The holder has a rearwardly projecting shank or stem which is received in a guide block 26. The guide block has bearings in which the screw 28 is
60 held against endwise movement. The screw takes into a threaded opening in the shank of the holder and forms means by which the holder with the disk may be moved from and toward the finishing wheel. The guide block
65 itself is arranged for lengthwise movement

in a clamp 30, the sides of which may be forced together by a screw provided with a handle indicated at 32. The clamp has pivotal connection at 34 with a bracket 35 which
70 comprises two members also pivoted together at 34 and formed to embrace the rod 12 before mentioned. The screw 36 has pivotal connection with one of the members of the bracket and carries a nut 37 adapted to en-
75 gage the other member of the bracket. This arrangement permits the screw to be swung out of engagement with the second member of the bracket and then the members separate for removing them from or applying
80 them to the shaft 12 without necessarily moving them lengthwise on the rod. This permits the bracket 35 and the parts carried by it to be taken from the rod or support without removing the bracket which carries
85 the wax holder 10. The wax holder 25 has a bearing for a vertical shaft 40 which is connected by bevel gears 42, 44 with the shaft of the disk 24. The shaft 40 has on its lower end a pulley to receive a belt 45 which
90 passes around a pulley 46 on the lower end of the shaft 15. By this arrangement both the wax-feeding disks 8 and 24 are driven from the same shaft 15. Preferably one of the gears 16, 17 and also one of the gears 42,
95 44 is formed of a non-metallic substance, such as fibroid for example, while the co-operating gear of each pair is formed of metal as it has been found that by the use of such a non-metallic gear with a metallic
100 gear the noise caused by their operation as well as the wear is materially reduced. The flexible shaft 14 is shown as formed in two parts which are frictionally connected to prevent breakage of the parts in case the
105 machine is started at a time when the feeding disk cannot turn—as, for example, when wax in the holder has solidified about the disk. Gas burners are provided to direct flames against the holders 10 and 25 for
110 maintaining the wax therein in melted condition when the machine is running.

The shaft 5 is driven from the shaft 4 by a large pulley on the latter shaft and a smaller one on the former connected by a belt 55 whereby the shaft 5 and the bur-
115 nishing wheel 22 carried by it are driven at a higher speed than the shaft 4 and its finishing wheel. It is desirable in finishing certain classes of work to drive the burnishing wheel at a higher speed than that which
120 is suitable for other classes of work. In the present instance the relatively smaller diameter of the wheel 22 as compared with the finishing wheel 6 reduces the apparent difference in the surface speed of the two
125 wheels. The sleeve shaft 20 within which the shaft 5 turns is driven from the shaft 4 by a belt 56 at a slower speed than the shaft 5. The sleeve shaft is utilized for carrying the brushes 50 and 52, which may advan-
130

tageously be of different qualities for polishing the surface of the heel after it has been treated by the burnishing wheels 6 or 22.

It is contemplated that a finishing wheel adapted for square heels will be applied to the shaft 4 and a finishing tool adapted for a different heel, as, for example, a spring heel, will be applied to the shaft 5. In using the machine if square heel shoes are to be finished the heels are presented to the wheel 6 by which wax supplied by the disk from the holder 10 will be applied to the heel and worked into the surface of the heel. When a sufficient quantity of wax has been applied and has been properly worked into the surface the shoe will be presented first to the brush 50 and then to the brush 52. If the next shoe or the next case of shoes is provided with spring heels or heels of a different type the shoes will be presented to the tool 22 by which the wax transferred from the holder 25 by the disk 24 will be applied and worked into the stock. The shoe will then be presented to the same brushes 50 and 52 by which the heels treated on the tool 6 were polished. The mounting of the wax holder 25 so that it can turn about the center 34 permits that holder to move downwardly out of the way in case any obstruction is drawn into the space between the wheel 22 and the disk 24. The clamp 32 permits adjustments of considerable length to be quickly made while the screw 28 provides means for accurately adjusting the disk with relation to the finishing wheel to cause the disk to deliver the required amount of wax. If for any reason the wheel is to be used without wax a turn of the screw 28 will retract the disk far enough to prevent it from delivering the wax. The retraction of the wax holder by the screw 28 also slackens the belt 45 so that the disk may stand at rest in its retracted position.

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, a finishing tool, and means for supplying the tool with wax comprising a wax holder, a disk for transferring the wax from the holder to the tool, a support upon which the wax holder is mounted for sliding movement toward and from the wheel, and means for adjusting the holder in its support.

2. A machine of the class described having, in combination, a finishing tool, and means for supplying the tool with wax comprising a wax holder, a disk for transferring the wax from the holder to the tool, a support for the holder with which the latter is adapted to have tipping movement,

and means for adjusting the holder lengthwise in its support.

3. A machine of the class described having, in combination, a finishing tool, and means for supplying the tool with wax comprising a wax holder, a disk for transferring the wax from the holder to the tool, means for supporting the holder comprising a guide block in which the holder is movable lengthwise, a screw for adjusting the holder in said block, and a clamp in which the guide block is adjustable.

4. A machine of the class described having, in combination, a finishing tool, and means for supplying the tool with wax comprising a wax holder, a disk for transferring the wax from the holder to the tool, a support for the holder arranged for angular adjustment to position the holder with relation to the tool, means for accurately adjusting the holder relatively to said support and independent provision for roughly effecting such adjustment.

5. A machine of the class described having, in combination, a finishing tool, and means for supplying the tool with wax comprising a wax holder, a disk for transferring the wax from the holder to the tool, a shaft for said disk, a second shaft extending at right angles to the disk shaft and connected therewith by beveled gears, bearings in the holder for said shafts, and a belt for actuating the second shaft to turn the wax-feeding disk.

6. A machine of the class described having, in combination, a finishing tool, and means for supplying the tool with wax comprising a wax holder, a disk for transferring the wax from the holder to the tool, a shaft for said disk, a second shaft extending at right angles to the disk shaft and connected therewith by beveled gears, bearings in the holder for said shafts, and driving connections for said disk comprising beveled gears one of which is formed of non-metallic material.

7. A machine of the class described having, in combination, a heel-finishing wheel adapted to apply wax, wax-supplying means comprising a wax-feeding disk, and a wax holder, and supporting means therefor having provision for adjustment to position the disk in different relations to the width of the wheel.

8. A machine of the class described having, in combination, a heel finishing wheel adapted to apply wax to a heel, a device for supplying wax to said wheel, a mounting therefor constructed and arranged to permit said device to be turned about an axis parallel to that of said wheel, a bracket carrying said mounting, a rod supporting said bracket, an adjusting screw for effecting adjustment of said wax supplying device and said wheel, and provision for moving

said wax supplying device quickly away from said wheel.

9. A machine of the class described, having, in combination, a heel-finishing wheel adapted to apply wax to a heel, means for supplying wax to said wheel comprising a wax holder, a support therefor, an adjusting screw arranged for moving said wax holder relative to said support to effect a fine adjustment of said holder and wheel, and provision for quickly effecting rough adjustment of said wax holder with respect to said wheel:

10. A machine of the class described, having, in combination, a heel-finishing wheel adapted to apply wax to a heel, means for supplying wax to said wheel comprising a wax holder, a support therefor, an adjusting screw arranged to move said holder bodily toward or from said wheel to effect a fine adjustment of said holder and wheel, and

provision permitting a bodily shifting of said wax holder for effecting a quick adjustment of said wax holder.

11. A machine of the class described, having in combination, a heel finishing wheel adapted to apply wax to a heel, a device for supplying wax to said wheel, a bracket pivotally supported with relation to the frame of the machine, said bracket carrying said wax supplying device, an adjusting screw arranged to move said wax supplying device toward and from said wheel, and provision for moving said wax supplying device quickly away from said wheel.

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

CHARLES PEASE.

Witnesses:

ARTHUR L. RUSSELL,
ELIZABETH C. COUPE.