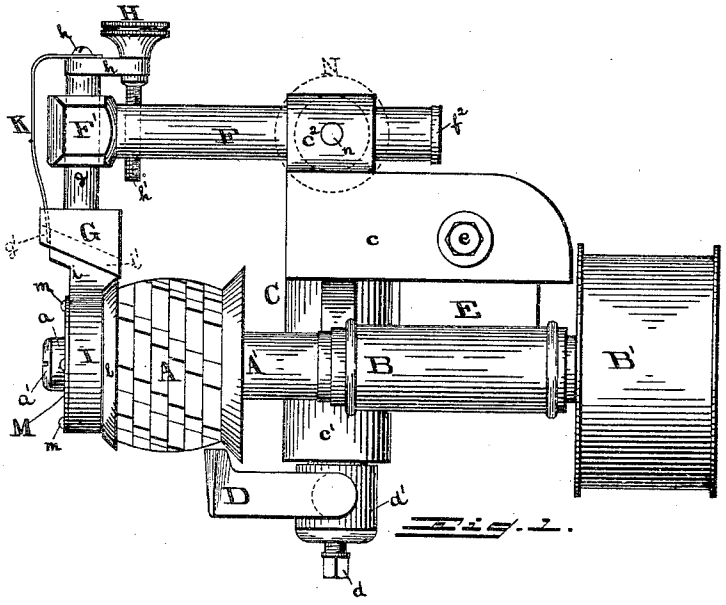
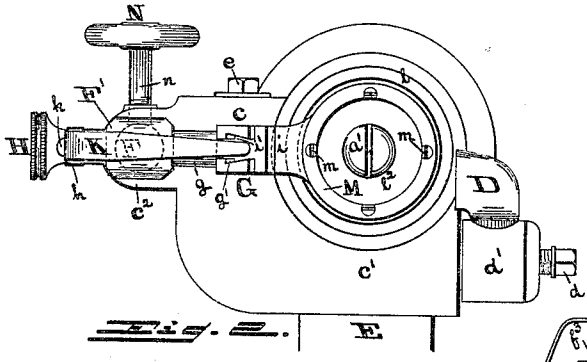
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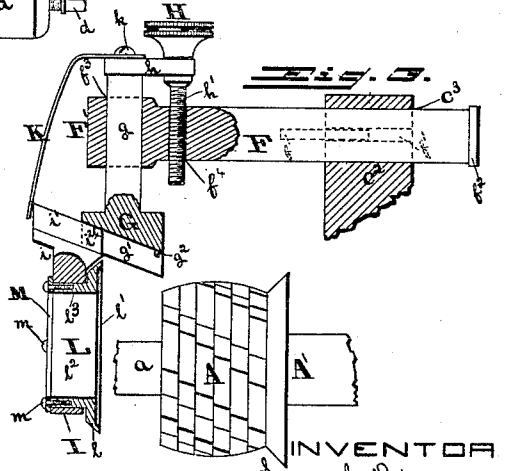
S. POPE.

HEEL TRIMMING MACHINE.

No. 433,213. Patented July 29, 1890.







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HEEL-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 433,213, dated July 29, 1890.

Application filed April 16, 1890. Serial No. 348,155. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL POPE, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Shoe-Heel-Trimming Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention.

My invention has relation to shoe-heel-trimming machines, and has for its object the provision of certain improvements in the construction of and the support for the heel-guard of the cutters of such machines.

My invention consists of certain details of construction and in the combinations of parts, as hereinafter more particularly described, having reference principally to a support for said guard independent of the cutter-shaft, such support being horizontally adjustable longitudinally and transversely for the purpose of adapting the normal position of the guard to the width and diameter of the cutter to be used, and the portion of said support in which is journaled the guard is so sustained as to be capable of movement from and to the aforesaid normal position, so that the position of said guard will be automatically conformed to the variations in the height and shape of the heel being shaved, thus dispensing with the necessity for the provision of a large number of guards of different sizes and the journaling of such guards on the cutter-shaft and the consequent heating and expansion which prevent the desired independent rotation of said guards on said shaft, and allowing the edge of the guard to always run in the crack between the shoe heel and upper, instead of on the latter, avoiding all danger of injury to said upper.

Referring to the accompanying drawings, Figure 1 is a plan view of guard and support therefor and so much of the machine as to show the manner of attachment thereto. Fig. 2 is an end view of my improvements as shown in the first-mentioned figure, and Fig. 3 is a detached plan view, partly in full lines, but the major part in horizontal transverse section, with the cutter in full lines.

A represents the cutter, sustained in the usual manner on the shaft A′, and secured from disengagement therefrom by the collar a and the screw a', said shaft being journaled in the bearing B on the head of a machine and supporting the driving-pulley B′.

C represents the bracket provided with the plate c, and the lateral extension c' in the latter is secured by the bolt d, the support d' for the rest D, and through the former passes the bolt e, which secures the bracket to the machine-head E, all of which are substantially as have been heretofore used on machines of the class to which my invention pertains.

c^2 is a boss formed on the edge of the plate c, as shown, provided with an opening c^3 therein for the passage of a shaft F, which latter has on its under side a key f, which fits into a correspondingly-shaped groove f' in the lower part of said opening, said key and groove being shown in dotted lines and preventing the rotation of the shaft in the boss. The inner end of shaft F is provided with an annular flange f^2, which limits the outward passage of said shaft through the boss-opening and prevents its disengagement therewith, while the outer end is provided with an enlargement or head F′, with a round opening f^3 therein extending horizontally and transversely of the length of the shaft, in which opening is fitted a shaft g of such diameter as to permit of its sliding easily therein, and provided at its outer end with an arm h, extending horizontally and at right angles therewith. The free end of this arm is formed with an opening therein in which is swiveled the thumb-screw H, the shank h' of which is of sufficient length to permit of its considerably more than passing through a threaded horizontal transverse opening f^4 in the shaft F, so that as the thumb-screw is rotated in either direction the shaft g will be slid in its opening in the head F′ correspondingly.

G represents a square head on the inner end of the shaft g, which head is beveled on its end, and has formed therein a dovetail groove g', which extends clear through from side to side of said head, and is of even depth throughout.

I is a ring formed with a lug or extension i on its periphery, the outer end or face of which lug is dovetailed, as at i', correspondingly with and sliding easily in the groove g', yet is prevented from sliding entirely out at one end by the pin g^2, which engages with

a recess i^2 in one end of the dovetail portion i' of the lug i, this pin also preventing the contact of the guard with the cutter after said guard has been adjusted properly. A flat spring K, secured to the arm h by the screw k, at its free end bears strongly against the side of the lug i opposite to that in which is the recess i^2 and prevents accidental disengagement of the dovetail portion of said lug with the groove g' at the other end of this groove, at the same time allowing this portion i' to slide in the groove against its resistance and forcing the same to return to its normal position according as the distance between the guard and the back of the cutter increases or diminishes in the heel-shaving operation.

L is the guard, provided with the annular comparatively sharp-edged flange l, in the face of which is formed the concentric countersink or depression l', affording clearance between the guard and the cutter A, so as to prevent friction and interference with the free rotation of the former, also provided with the large central opening l^2, which prevents contact of the guard with the collar a and screw a' when such guard is laterally adjusted under the impulse of the thumb-screw H. The rear side of the guard L is formed with a flange or collar l^3, which encircles the central opening l^2 and fits easily in the central opening of the ring I, in which it is journaled and rotates freely under the rolling of the shoe-heel on the edge of the guard during the shaving operation only. At other times it is wholly at rest. The edge of the collar l^3 is provided with threaded openings for the reception of screws m, which pass through and secure a flat ring or washer M to such edge, the diameter of which ring is greater than that of said collar, so that it forms in effect a flange, which, in conjunction with the rear of the flange l, prevents dislodgment of the guard from its position in the ring I without interfering with its free rotation.

The operation is as follows: The cutter being secured properly on its shaft, the shaft F is slid in the boss c^2 until the guard L just clears the end of said cutter, whereupon the jam screw n is turned in its threaded opening in said boss, through the medium of the wheel h, (which wheel may be discarded and replaced by a thumb-nut,) until its end bears or impinges heavily on the shaft F, preventing its movement in either direction in said boss, thus preventing the contact of the guard with the cutter, yet allowing the former to normally rest in its proper relation with the latter, yet free from friction therewith. Should, however, the diameter of the cutter be such that the sharp edge of the guard does not project sufficiently beyond the side of the cutter, or, on the other hand, projects too far, which must be determined by the judgment of the operator, the thumb-screw H is turned in such direction as to project or withdraw the guard from or toward the shaft F until the desired position is reached. The normal position of the guard is governed by the width of the cutter, which width is approximately equal to the shortest height of the shoe-heel, and the edge of the flange-guard being placed in the crack between the shoe heel and upper, as the said heel is rolled on said guard the latter will rotate correspondingly and be forced away from the end of the cutter as the height of the heel increases. After the extreme height is reached and the heel is shaved on its other side the spring K forces the guard inwardly toward its normal position according as the height of the heel decreases. When it is desired to remove a cutter from the shaft, the pressure of the screw n on shaft F is released and the latter drawn out until the key thereon clears its groove, whereupon the shaft can be turned, so as to get the guard out of the way.

It will be seen that with the use of a single guard supported as above explained a heel of any height can be shaved without such guard running on the shoe-upper and thereby injuring it, and the movement of the guard in addition to that in a plane with the axis of the cutter is at right angles with such axis, thus permitting of the shaving of the heel to a great degree of concavity, which concaving cannot be effected with a single guard, for the reason that the guard will run on the shoe-upper, which is convex to a great degree, thus preventing the heel from being placed into proper relation with the cutter. At the same time the bevel of the dovetail slot is not sufficient to prevent a direct pressure being exerted on the guard by the lateral movement of the latter but affords a solid resistance to such pressure, a movement in a plane with the axis of the cutter being necessary to move the guard away from said cutter.

Obviously my improvements can be readily adapted to use on any character of heel-trimming machine other than that shown in the drawings, and can be sustained on such machine in any convenient manner.

What I claim as my invention is as follows:

1. In a heel-trimming machine, the combination, with the cutter, of the shaft F, provided with the head F′ and the key f, the slot f', in the opening in which said shaft is supported for reception of said key, the shaft g in the opening f^3 in said head, having on its end the arm h, and the heel-guard sustained on shaft g, the thumb-screw H, swiveled in said arm and passing through a correspondingly-threaded opening f^4 in the shaft F, substantially as specified.

2. In a heel-trimming machine, the combination, with the cutter, of the head G, suitably supported, the dovetail slot g' in said head, a spring-controlled dovetail enlargement i in said slot, and the heel-guard sustained on said enlargement, substantially as specified.

3. In a heel-trimming machine, the combination, with the cutter, of a suitably-sup-

ported shaft g, having on one of its ends the arm h, the thumb-screw H, swiveled in said arm and passing through a correspondingly-threaded opening in the shaft-support, the head G on the other end of shaft g, the dovetail slot g' in said head, a spring-controlled dovetail enlargement i in said slot, and the heel-guard sustained in said enlargement, substantially as specified.

4. In a heel-trimming machine, the combination, with the cutter, of the shaft F, provided with the head F′, the opening f^4, and the key f, the slot f' in the opening in which the shaft is supported for reception of said key, the shaft g in the opening f^3 in said head, the arm h on one end of shaft g, the thumb-screw H, swiveled in said arm and passing through the opening f^4, the head G on the other end of shaft g, the dovetail slot g' in said head, a spring-controlled dovetail enlargement i in said slot, and the heel-guard sustained on said enlargement, substantially as specified.

5. In a heel-trimming machine, the combination, with the cutter, of a suitably-supported ring I, the heel-guard L, provided with the flange or collar l^3, journaled in the ring I, the ring M, secured to said collar, and means for securing the reciprocation of said ring in a plane at an angle with the axis of the cutter-shaft, substantially as specified.

6. The combination, with the cutter of a shoe-heel-trimming machine, of the shaft F, adjustably sustained and provided with the head F′, with the opening f^3 for the shaft g, and the opening h^2 for the thumb-screw H, swiveled in the arm h on the end of shaft g, the head G on the latter having the slot g', with the pin g^2 therein, for the reception of the dovetail enlargement i' with the recess i^2 therein, the ring I with the guard L secured thereto, and the spring K, secured therein by its collar l^3, and the ring M, secured to the arm h and bearing on said enlargement, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of April, A. D. 1890.

SAMUEL POPE.

Witnesses:
WM. H. LOWELL,
R. DALE SPARHAWK.