(No Model.)

J. C. WETMORE.

HEEL TRIMMING MACHINE.

No. 316,710. Patented Apr. 28, 1885.

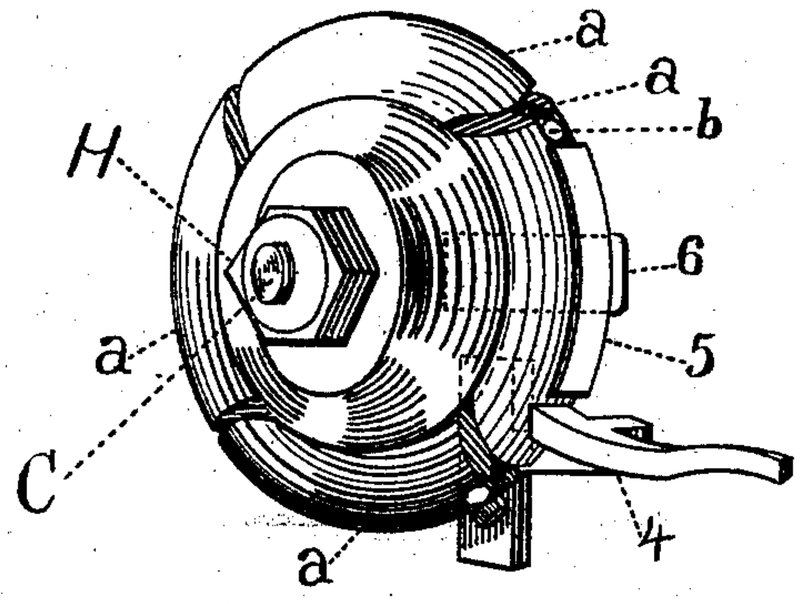

Fig. 1

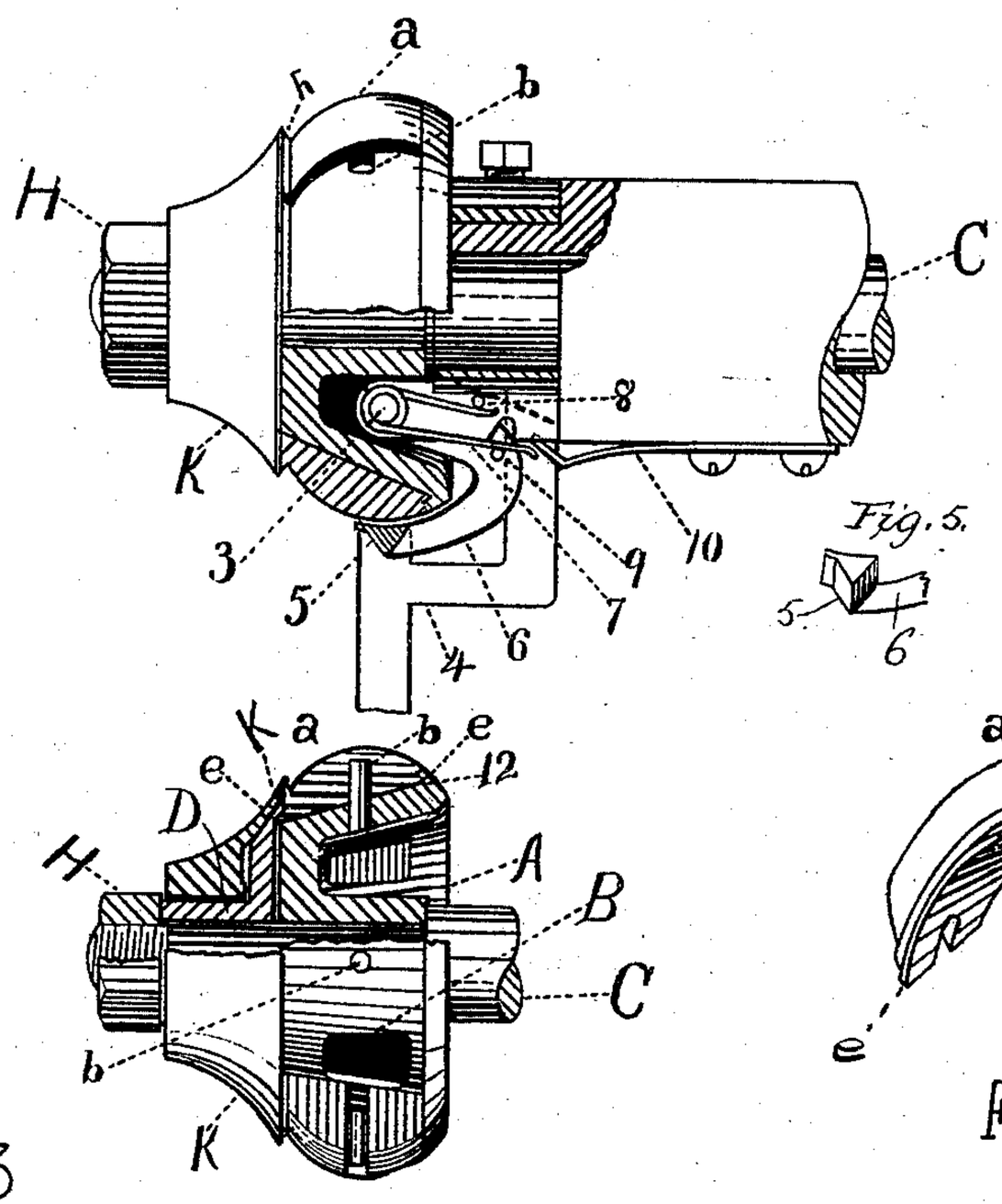

Fig. 2

Fig. 5.

Fig. 3

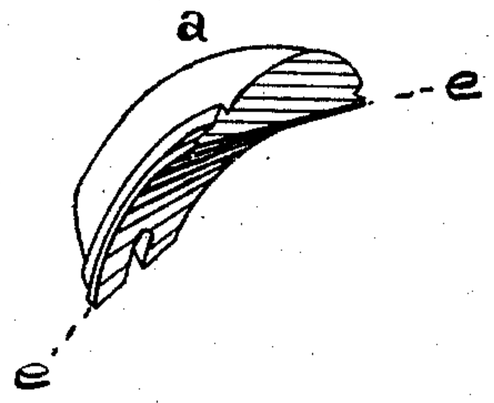

Fig. 4

Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH C. WETMORE, OF LYNN, MASSACHUSETTS, ASSIGNOR TO AARON F. SMITH, OF SAME PLACE.

HEEL-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 316,710, dated April 28, 1885.

Application filed November 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH C. WETMORE, of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Trimming-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to machines for trimming the heels of boots and shoes, and particularly to that class of such machines in which the work of trimming is performed by a suitable revolving cutter-tool; and the nature and object of this invention is fully described hereinafter, and specifically pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view, and represents a cutter-tool embodying my invention. Fig. 2 is a sectional plan view of the parts shown in Fig. 1. It is made partly in section, to better illustrate the form of the rest and the presser-guide, as well as the manner of combining these parts with the trimming-tool proper. Fig. 3 is also a sectional view, and illustrates the construction and combination of the several parts that go to make up the trimming-tool. Fig. 4 is a perspective view of one of the cutters detached. Fig. 5 is a detail view of the presser-foot or guide in end elevation.

The hub A is firmly secured to a revolving shaft, *c*, and is designed to carry on its periphery the cutter-knives *a*. (See Fig. 4.) Said cutters are provided with a cutting-edge formed with due regard to the shape to be imparted to the trimmed heel, all in the usual way, and they are further provided with angular ribs *e* on either edge, as fully shown in Fig. 4. This formation is provided to facilitate the operation of adjusting and holding the cutters to the hub A. To this end also the hub A is constructed with the angle 12, Fig. 3, to receive the rib on one side of the cutter, while that on the opposite side is fitted with a clamp-plate, D. Said clamp-plate D permits longitudinal movement on the shaft C, and may be forced, by an obvious turn of the nut H, to securely clamp the cutter *a*. Pins *b* are securely fixed to the hub A, and project radially therefrom a sufficient distance to enter notches or slots formed in the rear portion of the cutters, as shown, whereby the said cutters are held firmly against the back-pressure when they are forced into the work.

It will be understood that the slot in the end of cutter *a* may be dispensed with by allowing the pin to bear directly against the end surface of the cutter; but I prefer to use the slot, as it enables the rear end of one cutter to be in closer proximity to the next succeeding cutter.

The hub A is provided with the customary openings or throats, B, for the escape of chips removed by the cutters, and in all respects, except the angle 12 and the pins *b*, the construction of hub A is common to other rotating trimmers, and is well known to those persons skilled in the art to which it pertains.

In connection with the trimming-knives is a guard, K, which is suspended loosely on the rear end of the clamp-plate D, as shown in Fig. 3. The shape and contour of this guard is fully apparent from the drawings. On one side or edge it extends upward to and projects slightly over the sharp corners of the cutters *a*, (see Fig. 3,) and in operation this guard is depressed into the rand-crease and shields the upper-leather of the shoe from the sharp edges of the cutters *a* while the work of trimming the heel is being performed. The shoe while being trimmed is supported mainly in the hands of the workman, who holds the heel to the cutter with the guard K depressed into the rand-crease, as descibed, and turns the shoe to bring all parts of the heel into position to be trimmed; and to facilitate this operation I have devised certain mechanical aids which I shall now proceed to describe.

In the first place I obtain a bottom rest by means of the bracket-arm 4. This device consists of a simple angular arm or bracket having its rear end secured to a suitable support, and extending forward to a point in front of the trimmer to form a support or rest on which the work may be allowed to bear more or less heavily while being turned and held to the trimmer-tool. In addition to this I employ a secondary guide and presser-foot, 5, which is formed substantially as shown, and is located on the cutter opposite to and nearly parallel with the guard K. This guide 5 is formed to bear upon the edge of the "top lift" and also

against the bottom or tread surface of the heel. In operation the workman brings the shoe to the trimmer, and allowing it to rest upon the arm 4 he presses the heel forward to the cutter, allowing the upper guard, K, to enter the rand-crease between the upper and the heel-seat and with the guide 5 bearing upon the top-lift, as described, he turns the shoe to bring all parts of the heel to the trimmer.

It will be understood that in most heels the thickest point is at the rear and the thickness constantly diminishes in approaching to the corners or fore part of the heel, and this calls for a corresponding variation in the distance between the guard K and the guide and presser-foot 5, in order to allow the heel to be turned between these points, as described. To accomplish this I make the foot 5 to permit of motion to and from the guard K, said motion being across the face of the cutters *a*. To this end the foot 5 is provided with an angular arm, 6, Fig. 2, which, being curved, substantially as shown, has it rear end extending into and pivoted to a suitable support within the chamber of the hub A, as fully illustrated in Fig. 2. This construction is preferred, as it permits the guide or foot 5 to conform more closely in its lateral movement to the cross-curve of the cutter. The spring 7, which is connected, as shown, with the pivoting-pin 3, bears one end against the fixed pin or stud 8, and with its opposite end against the pin 9. It continually operates to push the foot 5 forward to its nearest approach to the guard K, and when the shoe is turned, as before stated, bringing a wider portion of the heel in between the guard K and the foot 5, the foot will be thereby pressed outward, and, overcoming the tension of spring 7, will move laterally across the path of the cutters *a* and away from the guard K. In this way the distance between these two points is automatically varied to suit the varying thickness of the same or different heels. As the foot 5 approaches its extreme backward throw, the end of spring 7 is brought into contact with the secondary spring 10, Fig. 2, to increase the holding power of the foot without destroying entirely the yielding power.

It should be understood that in operation the guard K is not allowed to revolve, but, on the contrary, it is depressed into the rand-crease, and prevented from revolving by its frictional contact with the shoe-upper.

Having thus described my invention, I claim and desire by Letters Patent to secure—

1. In combination with a trimmer-tool of substantially the construction described, the guide-foot 5, having arm 6, adapted to reach into the hub of the trimmer and pivoted therein, as stated, and the spring 7, adapted to operate substantially as and for the purposes stated.

2. In combination with a trimmer-tool arranged to operate substantially as described, the guide or foot 5, having arm 6, adapted to reach into the hub of the trimmer and pivoted therein, as stated, and the spring 7 and supplemental spring 10, arranged to operate substantially as and for the purposes described.

3. In combination with the revolving trimmer-tool adapted to operate substantially as described, the described guide or presser foot 5, adapted to operate against the top lift, as stated, and also permit of lateral movement across the path of the trimmer-tool on a line corresponding to the surface thereof, substantially as and for the purposes stated.

4. In combination with a rotary trimmer-tool adapted to operate substantially as described, the yielding non-revolving guide or foot 5, and stationary supporting-arm 4, arranged to operate as and for the purposes stated.

5. The combination of the hub A, carrying the recessed cutters, and sustaining-pins *b*, adapted thereto, plate D, loose on the driving-shaft, a tightening-nut on the shaft, adapted to clamp the cutters between the plate D and the rib of the hub, and the rand-guide, supported loosely on the plate D and extending over the edge of the same, all substantially as described.

Signed at Lynn, Masssachusetts, in presence of two witnesses.

JOSEPH C. WETMORE.

Witnesses:
C. C. TUTTLE,
C. B. TUTTLE.