A. McDOWELL.

Heel-Trimming Machinery.

No. 166,933. Patented Aug. 24, 1875.

Fig. 1.

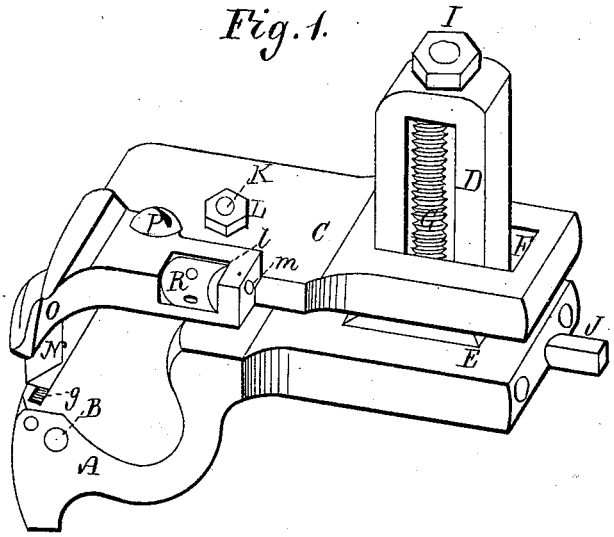


Fig. 2.

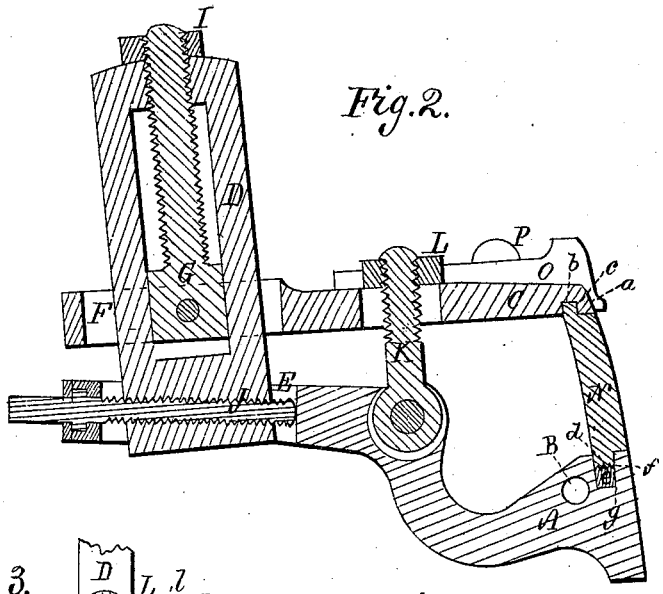


Fig. 3.

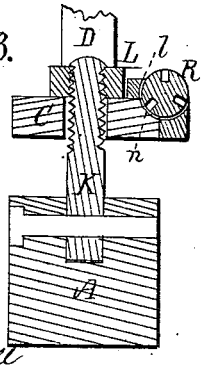
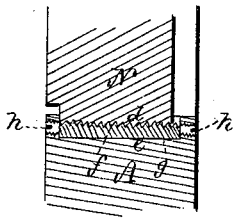


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALEXANDER McDOWELL, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN HEEL-TRIMMING MACHINERY.

Specification forming part of Letters Patent No. **166,933**, dated August 24, 1875; application filed July 6, 1875.

To all whom it may concern:

Be it known that I, ALEXANDER McDOWELL, of Lawrence, Essex county, Massachusetts, have invented certain Improvements in Heel-Trimming Machinery, of which the following is a specification:

This invention is an improvement in machinery for trimming or paring the heels of boots or shoes, and relates to means whereby I am enabled to employ a single knife stock or support by providing a series of interchangeable knife-blades, which are independent of the stock, and pivoted or hinged to it in such a manner that the relative angle or slope of the knife, with respect to the stock and the heel to be trimmed, may be varied as occasion requires.

Heretofore the trimming-knife and its base of support or stock have been forged from a single piece of metal, which necessitates a very sharp bend in the blade, and the thickness of the metal in connection renders the making and hardening of the tool very difficult.

The drawings accompanying this specification represent, in Figure 1, a perspective view, in Fig. 2 a vertical and longitudinal section, and in Fig. 3 a transverse section, of the knife of a heel-trimming machine embodying my improvements. Fig. 4 is a transverse section through the trimming-knife blade and the stock.

In these drawings, A denotes the curved swinging block or stock of the tool-carrier, and which, in practice, is pivoted, at B, to the heel-trimming machine. Above this stock A I place a clamp-plate, C, and pivot the outer ends of the two by an adjustable connection, composed, in the present instance, of an upright slotted bar, D, sliding at bottom in a channel, E, created in the stock A, and inclosed within an orifice, F, in the plate C, the said plate C being pivoted to the lower end of a feed-screw, G, which is disposed within the slot of the bar D, and passes upward through the head H of said bar, and is provided with a nut, I. The bar D is moved upon the stock A by a screw, J, which passes through its lower end, and is swiveled at its outer end to the extreme outer end of the said stock. The inner or front end of the clamp-plate C is forced toward the stock A by a bolt, K, which passes through the former, and is provided with a nut, L, the lower end of such bolt being swiveled within the stock. The trimming or paring knife is shown at N as a simple, thin piece of steel, the general vertical curvature of which corresponds to the curved outline of the heel which it is to trim, such knife being confined in place by compression between the extreme inner ends of the stock A and plate C. My object in uniting the stock and clamp-plate by a variable or adjustable connection, as stated, is to enable the slope of the knife with respect to the stock, and therefore with respect to the heel, to be varied, in order that such knife may be adapted to heels of varying shapes or slopes; and in order to securely confine said knife in place, and permit it to conform to the various angles it may assume, I provide a suitable joint at top and bottom, the former of which is shown at *a* as a rabbet or tenon, *b*, formed upon the knife, and entering a groove, *c*, in the clamp-plate C. The lower joint consists of a sectional screw-thread, *d*, cut upon the lower edge of the knife, and engaging a block, *e*, which is also provided with a corresponding sectional thread, *f*, such block being let into a pocket, *g*, created in the outer edge of the stock A, and adjusted transversely therein and of such stock by screws *h h*, screwed into the stock, and abutting against opposite ends of said block. By means of the screw-threaded block *e* the knife N is adjusted transversely upon the stock, in order to compensate for the receding of its edge as the latter wears away. A series of knife-blades are to be provided in such number and of such curves or shapes as shall be needed to furnish a heel-trimming machine, and to be interchangeable with the stock and clamp-plate, and therefore readily applied and removed.

The protector or guard to prevent the knife from injuring the upper of the boot or shoe, and constituting also a depth-gage, is shown at O as of ordinary form, and confined to the top of the clamp-plate C by a screw, P, which screws into such plate, and passes through a slot in such protector, while the position of the protector or guard upon the clamp-plate, and with respect to the knife, is varied by a

cylindrical block, R, which is let into a recess, *l*, in the gage, and is formed with a screw-shank, *m*, which screws into the gage, the recess *l* being of sufficient length to permit of the necessary end play of the block R, while the bottom of such block is received within a pocket, *n*, formed in the upper edge of the clamp-plate C.

Among the advantages attaching to my invention are the following: First, I provide a ready means of instantly compensating for the wear upon the knife, whereas heretofore the knife, when it becomes worn, must be removed and reforged or a new one substituted. Second, I am enabled to readily apply or remove knife-blades of varying lengths or adjust the angle or slope of the knife-blade without removing any portion of the machine, whereas heretofore a separate knife and stock have been employed for every length or shape of heel. Third, I entirely avoid the difficulty and expense heretofore experienced in making the knives, as the labor is great, the hardening uncertain and difficult, and many are ruined in the attempt, added to which many are broken in using, which would not result in my case. Fourth, I reduce very greatly the first cost of a set of knives for heel-trimming machinery, as I dispense with but one stock and multiply simply the knife-blades, and produce these blades of small pieces or scraps of steel.

I claim—

1. The knife-stock consisting of the two plates A C, clamped together by bolt K, and adjustable horizontally and vertically with respect to one another, substantially as and for the purposes set forth.

2. The combination, with plates A C and clamping-bolt K, of the slotted bar D, feed-screw G, and adjusting-screw J, substantially as shown and set forth.

3. As a means of effecting the lateral adjustment of the knife-blade, the block *e*, engaging the lower edge of such blade, and fed forward and back by the screws *h h* or their substitutes, substantially as and for purposes stated.

4. The means herein shown for adjusting the gage or guard O, the same consisting of the block R, pivoted to the guard, as explained, and playing within a pocket in the clamp-plate C, substantially as and for purposes stated.

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Witnesses:

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