I. VAN NOUHUYS & T. P. KING.

Machine for Trimming the Heels of Boots and Shoes.

No. 208,653. Patented Oct. 1, 1878.

Fig. 1.

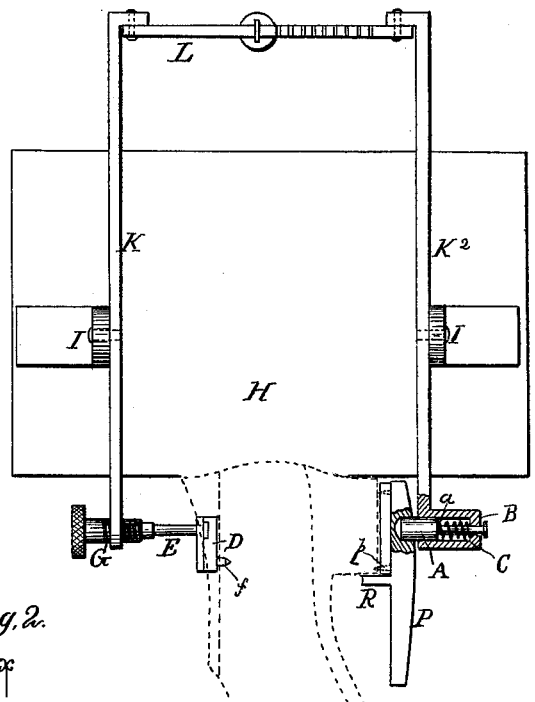


Fig. 2.

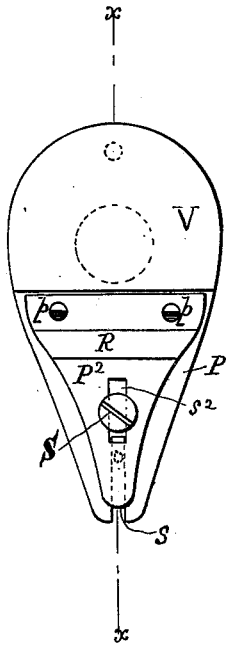


Fig. 4.

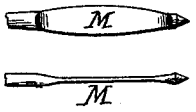
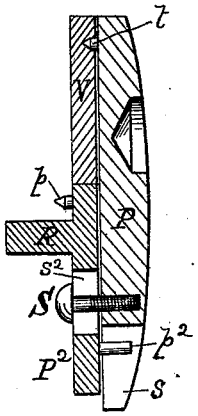


Fig. 3.



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UNITED STATES PATENT OFFICE.

ISAAC VAN NOUHUYS AND THOMAS P. KING, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR TRIMMING THE HEELS OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **208,653**, dated October 1, 1878; application filed September 4, 1878.

To all whom it may concern:

Be it known that we, ISAAC VAN NOUHUYS and THOMAS P. KING, both of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Heel-Trimming Machines, and that the following is a full, clear, and exact description thereof.

Our invention relates to heel-trimming machines similar to the one for which Letters Patent No. 168,540 were granted to us under date of October 5, 1875.

The present invention consists, first, in a novel construction, arrangement, and operation of the centers, between which the shoe is held in the work-carriage or jack, whereby provision is made for the proper adjustment of the work at all times during the operation of trimming the heel; also, in a novel construction of a pattern-plate, whereby the heel is accurately trimmed, and provision is made for "breasting" the heel, so as to leave the finished heel without blemish, and whereby the pattern-plate may be adjusted to heels of different sizes; and, further, in a novel mode of preventing the turning up of the grain of the leather by the cutters during the operation of trimming the heel.

The accompanying drawings represent the manner of carrying out our invention.

Figure 1 is a top view of a portion of a work carriage or jack in position for use with our improvements attached, and with a shoe shown in dotted lines. Fig. 2 is a face view of an improved pattern-plate, and Fig. 3 a longitudinal section of the same. Fig. 4 is a detail view of an elastic center-pin, hereinafter referred to.

The work carriage or jack here shown is similar to the one represented in Patent No. 168,540, aforesaid, consisting of a bed-plate, H, two standards, I I, and two oscillating beams, K K^2, having their rear ends flexibly connected by a cross-bar, L. To the front portion of the beam K^2 we apply an improved automatically-adjustable elastic center-pin, A, working in a cylindrical seat, B, and surrounded by a spiral spring, C. One end of the spring C bears against a shoulder, *a*, on the pin A, and the other end bears against the bottom of the seat B, and thus has a tendency to force the pin outward from its seat and toward the beam K. This pin A takes the place of the stud or pivot *q*, (shown in the patent aforesaid,) and receives the pattern-plate attached to the heel which is to be trimmed.

The operation of the jack is the same as described in Patent No. 168,540, aforesaid. As the beams K K^2 oscillate, and the front end of one beam rises or falls higher or lower than the front end of the other beam, the distance between said front ends varies, being sometimes greater than at other times. When the distance increases, the pin A is forced outward by its spring C, and thus follows up the pattern-plate and preserves its contact therewith, so as to prevent the possibility of its displacement.

In order to insure the accurate centering of the shoe we employ what may be called an "offset-center." It consists of a rod, E, having attached to its front end, by a swivel-joint, a block or short bar, D, provided with a stud or spur, *f*. The rear end of the rod E enters a socket in the hand-screw G, carried by the beam K.

To place the work in position for trimming the heel, the pattern-plate is attached to the heel and is then engaged with the pin A. The offset-center is then engaged with the top of the last by inserting the stud *f* in a hole, which is always provided in the last for jacking the shoe. The hand-screw G is then tightened until the spring C is compressed and the face of the heel is close to the inner side of the beam K^2. This brings the rod E exactly in an axial line with the pin A, as shown in Fig. 1, and insures the proper rotation of the work during the operation of trimming the heel.

In some cases, where the heel is to be made very high and tapering forward from the rear, the jack or carriage, as ordinarily constructed, does not admit of sufficient oscillation of the beams. In such cases the center-pin shown in Fig. 4 may be employed in place of the rod E. This pin M is elastic and flattened, so as to allow it to yield, and permit the work to be properly adjusted to the cutter in order to be trimmed to the desired shape.

In heel-trimming machines as heretofore constructed, the pattern-plate is provided with three spurs or brads, arranged in a triangular

form, which are inserted in the top lift of the heel, to insure the turning of the work with the pattern-plate. When the trimming is completed and the pattern-plate removed, there appear in the surface of the heel three holes made by the spurs or brads, which holes are sometimes filled up, and sometimes they are covered by another lift of leather, trimmed by hand, when it is desired to conceal them.

In our invention the pattern-plate P has the spurs or brads *p p* arranged in a straight line running transversely of the heel, and very near the front edge or breast of the heel. When the trimming of the heel is completed by the cutters and the pattern-plate is removed, the heel is always "breasted," as it is technically termed, by cutting off the front edge or side of the heel and leaving it smooth and neat. By arranging the brads as above described, when the pattern-plate is removed from the heel the holes left by the brads are so near the front edge that they are cut off by the breasting operation, and the heel is left without any blemish whatever.

In order to still further secure the pattern-plate to the heel, it is provided with a guard, consisting of a rib or flange, R, projecting from its face and lying parallel with the line of the brads *p*. This guard may be in one piece with the pattern-plate, as shown in Fig. 1, or formed on a separate piece, as shown in Figs. 2 and 3. The breast or front edge of the heel lies against this guard R, which cooperates with the spurs or brads *p* in holding the plate firmly in contact with the heel.

In order to provide for adjusting the guard R and brads *p* to heels of different sizes, we sometimes attach them to a plate, P^2, of partially corresponding shape, but smaller than the plate P, and arranged on the face thereof. The plate P^2 is provided with a pin, p^2, working in a slot, *s*, in the plate P, and with a slot, s^2, through which a set-screw, S, passes into the plate P. By this means the guard and brads may be adjusted to heels of different sizes.

In pattern-plates as heretofore constructed, provision is made for preventing injury to the cutters by contact with the metal of the pattern-plate; and this is accomplished by forming on the face of the pattern-plate a shoulder or projection of corresponding shape but smaller than the desired size of the heel. A plate of such construction is shown in the Patent No. 168,540, aforesaid. In consequence of this construction the top lift of the heel is not always cut neatly and uniformly, but the grain of the leather is turned outward or upward. To prevent this we attach to our pattern-plate, by a spur, *t*, a lift or layer of leather, or of other suitable material which will not injure the cutters. This lift or layer V is of the exact shape and size which it is desired that the heel shall be when trimmed, and it presses closely against the top lift of the heel, so as to hold the grain of the leather in such a position that it cannot be turned up, but must necessarily be cut neatly and uniformly. The cutters are prevented from cutting away any portion of the lift V, because their depth of cut is limited by the contact of the edge of the pattern-plate against the face of a loose collar on the cutter-head shaft.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An automatically-adjustable elastic center-pin, in combination with the oscillating beams of the work carriage or jack, said center-pin working in a seat on one of said oscillating beams, and being provided with a spring for enabling it to adjust itself to the motions of the work and the oscillations of the jack-beams as the distance between their front ends varies, substantially as and for the purpose herein described.

2. An offset-center consisting of a rod, E, or elastic pin M, and a swiveled block or bar, D, provided with a stud or spur, *f*, in combination with the hand-screw G and the last which carries the work, as shown and described, for the purpose specified.

3. A pattern-plate provided with a guard and brads near the breast of the heel, adjustable on said plate, for regulating the length of the heel, substantially as herein described.

4. In a heel-trimming machine in which the axis of rotation of the work is parallel with the axis of the cutter-head, the combination, with said cutter-head and the pattern-plate, of a lift or layer of leather or other suitable material, carried by said pattern-plate and pressed against the top lift of the heel, to prevent the turning up of the grain of the leather and the injuring of the edges of the cutters, substantially as shown and described.

In testimony whereof we subscribe our names in the presence of two witnessss.

ISAAC VAN NOUHUYS.
THOMAS P. KING.

Witnesses:
WILLIAM W. PEARSON,
CHAS. O. HOFFMAN.