I. VAN NOUHUYS.

Heel-Trimming Machine.

No. 168,540. Patented Oct. 5, 1875.

Fig. 1.

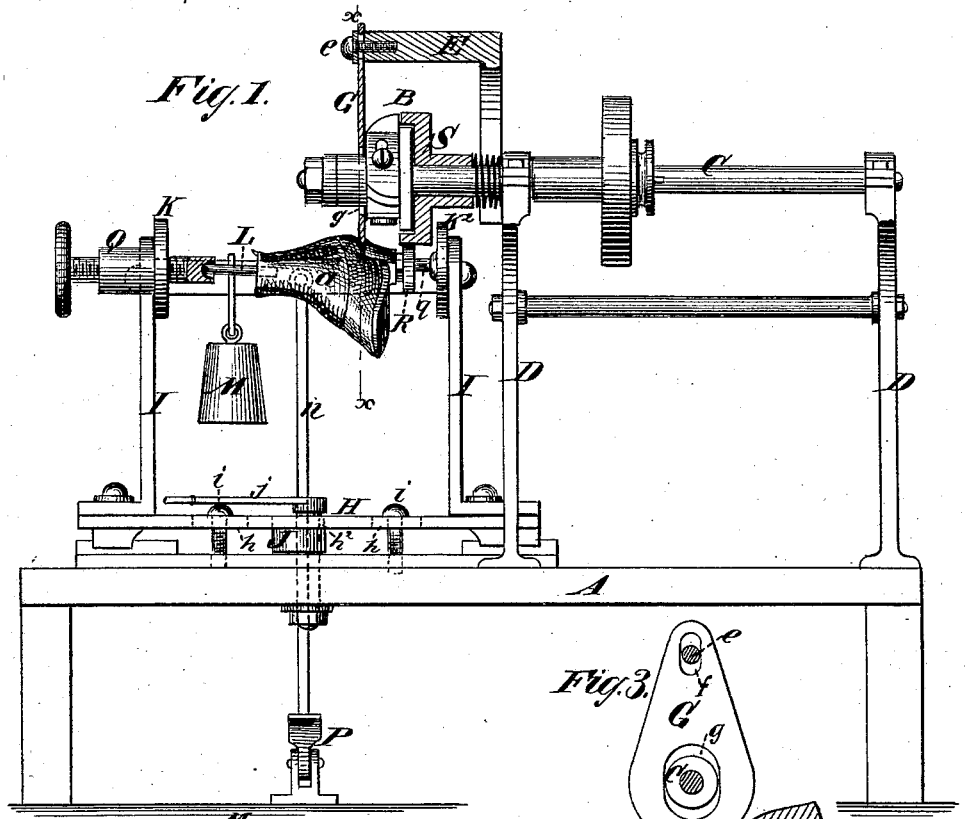


Fig. 3.

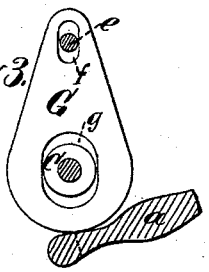
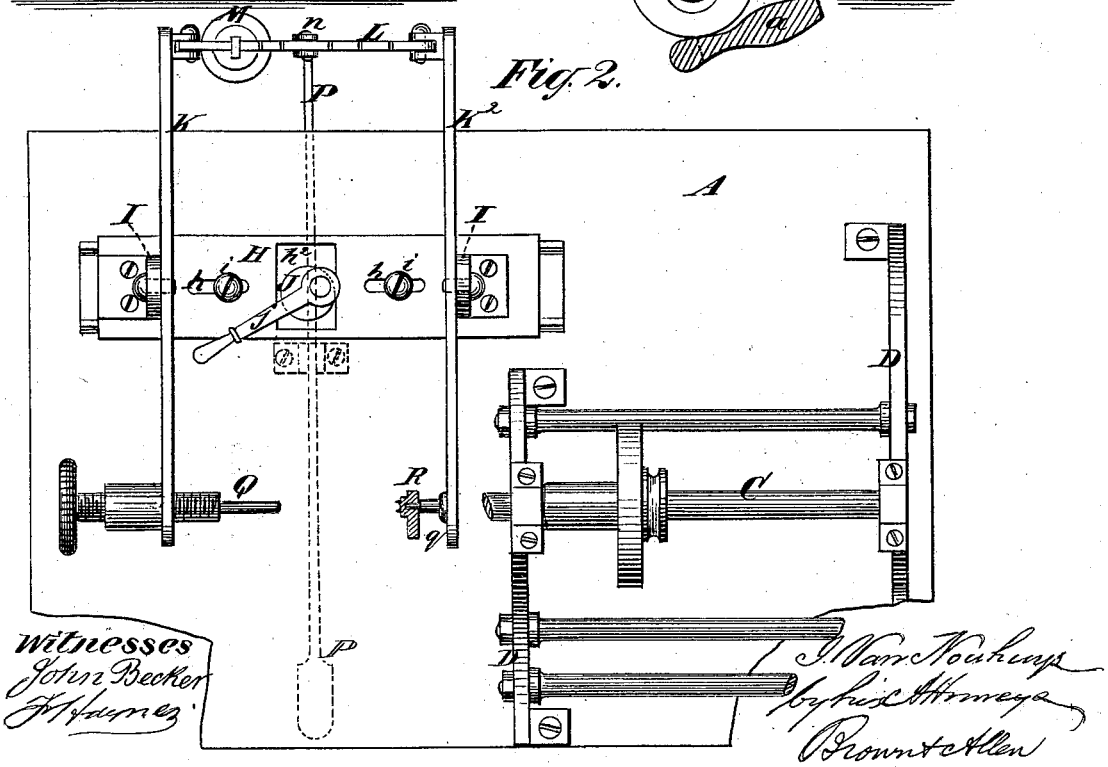


Fig. 2.



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UNITED STATES PATENT OFFICE.

ISAAC VAN NOUHUYS, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND THOMAS P. KING, OF SAME PLACE.

IMPROVEMENT IN HEEL-TRIMMING MACHINES.

Specification forming part of Letters Patent No. **168,540**, dated October 5, 1875; application filed August 2, 1875.

To all whom it may concern:

Be it known that I, ISAAC VAN NOUHUYS, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Machines for Trimming Boot and Shoe Heels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a side view of a machine embodying my improvements. Fig. 2 is a top view of the same. Fig. 3 is a section taken in the line *x x* of Fig. 1.

The principal object of my invention is to dispense with the collar heretofore used on the end of the cutter-shaft, outside of the cutter-head, and thereby to avoid the inconvenience and injury to the work resulting from the friction of said collar against the "upper" while the cutters are operating upon the heel.

The invention consists, first, in the combination, with the cutter-head and shaft, of a gage-plate of novel construction, and in the mode of attachment of said plate, as hereinafter described, whereby it may be adjusted vertically, to provide for trimming heels of various shapes and sizes.

The invention consists, further, in certain details of construction, arrangement, and combination of devices for feeding the work to and from the cutters, and enabling the work to adapt itself to the cutters while being operated upon thereby.

In carrying out my invention I use a cutter-head of any suitable construction. As represented in the drawing, the cutter-head B is carried by a horizontal shaft, C, having its bearings in a frame, D, of any ordinary construction. In heel-trimming machines in common use the outer end of the cutter-shaft is provided with a collar outside of the cutter-head, which collar serves as a gage and bears against the upper of the boot or shoe while the heel is being trimmed. The friction of this collar, revolving, as it does, at a very high speed, wears and burns the material of the upper and often seriously injures the work, especially when the upper is made of "lasting" or other light or thin material. To obviate this difficulty, I dispense with the collar referred to, and instead thereof I use a gage-plate, G, which may be of approximate ovoidal form, as shown in the drawing, or of any other suitable form. This gage-plate is attached by a screw, *e*, to an arm, E, extending from the frame D in a direction parallel with the shaft C. In the upper portion of the plate is a slot, *f*, through which the screw *e* passes; and in the lower portion is a larger slot, *g*, through which the cutter-shaft C passes, and in which it revolves freely. By means of the slots the gage-plate may be adjusted vertically to provide for trimming heels of various shapes and sizes, by loosening the screw *e* and arranging the plate at the desired height and again tightening the screw. When the work is fed up to the cutters the rounded lower edge of the gage-plate G engages with the seam between the heel and the upper of the shoe *a*, as shown in Figs. 1 and 3. The work is handled in the usual manner, commencing with the toe of the shoe toward the operator, so that the cutters operate first at the front end of the heel on one side, and gradually turning the heel until it reaches the reverse position and the cut is completed on the other side of the heel. The gage-plate remains in the seam during the entire operation of trimming the heel, and thus insures accuracy of cut and guides the work and prevents its displacement from the cutters.

As the gage-plate does not revolve, but remains stationary, and as it does not come at all in contact with the upper, all possibility of wearing, burning, or otherwise injuring the upper, by reason of friction, is entirely avoided.

For feeding the work to and from the cutters, and adjusting it thereto during the operation, the following-described mechanism may be employed: On the table or platform A, which supports the machine, near the rear side thereof, is a plate, H, arranged to slide horizontally in ways or guides on said table, or on a plate attached thereto. The plate H is attached to the table, and its sliding motion is limited by means of screws or bolts *i* passing through slots *h* in the plate, and into or through holes in the table or superposed plate. About midway of the plate H is a

transverse slot, h^2, in which works an eccentric, J, attached to a vertical shaft or pivot, having its bearing in the table or superposed plate, and provided with a handle or lever, *j*, for turning it.

By moving the handle *j* in one direction or the other, the plate H is reciprocated horizontally on the table or platform in a direction transversely to the plane of revolution of the cutter-head. From near the ends of the plate H rise two standards, I I, to the upper portions of which are pivoted two oscillating beams or bars, K K^2. The rear ends of these beams are flexibly connected by a cross-bar, L, the connection being made by hinges or pivots, by which means the beams K K^2 are enabled to oscillate independently of each other. The sliding plate and attached standards and bars may be called a work carriage or jack. On the bar L hangs a weight, M, which has a tendency to keep the rear ends of the beam depressed and the front ends elevated toward the cutter-head.

The bar L may be provided with notches for the reception of the link, by which the weight M is suspended, and said weight may be moved along on said bar, so as to exert more pressure upon one of the oscillating beams than the other, when desired.

The bar L is connected by a rod, *n*, with the rear end of a treadle-lever, P, having its fulcrum under the table or platform A, and its front end within easy reach of the foot of the operator, by which means the operator is enabled to elevate the rear ends and lower the front ends of the beams by depressing the treadle P with his foot. The outer beam K is provided with a center, Q, and the inner beam K^2 is provided with a stud or pivot, *q*, for a pattern-plate, R, which may be of any suitable construction, and arranged to operate in connection with a collar, S, on the cutter-shaft C in the usual or any suitable manner.

The operation of the mechanism above described is as follows: The treadle P is depressed so as to lower the front ends of the beams of the carriage or jack. The pattern-plate R is attached to the heel of the shoe *a*, and placed in position on the stud or pivot *q*, and the work is secured by the center Q. The treadle P is released and the operator holds the work with his right hand, and the handle or lever *j* with his left, moving said lever so as to slide the carriage or jack to the exact position desired, and then allowing the work to rise until the rounded lower edge of the gage-plate G enters the seam between the upper and the heel, whereupon the cutters begin their work, commencing at the front edge of the heel, as before described.

As the work progresses the gage-plate follows any curve or deviation from a straight line which may exist in the seam, as the independent arrangement of the two beams of the carriage or jack allows a universal movement to the work, and enables it to adapt itself automatically to the cutters and the gage-plate.

If the deviation from a straight line should be very wide, or if the rear part of the heel should be very high, as compared with the sides thereof, the operator, by means of the handle or lever *j*, is enabled to move the jack to the exact position necessary to insure the engagement of the gage-plate with the seam.

By means of this mechanism the work is at all times completely under the control of the operator, and he is enabled to instantly feed the work to and from the cutters, and to so direct the operation as to insure its accuracy, and to prevent injury to the portions which are not being operated upon.

When the cut is completed the lever is depressed and the shoe removed, and the operation is repeated, as before described.

What I claim as new, and desire to secure by Letters Patent, is—

1. The gage-plate G, constructed as herein described, attached to the arm E by a screw, *e*, passing through a slot, *f*, and provided with the slot *g* for the passage of the shaft C, in combination with the rotary cutter-head and shaft, substantially as and for the purpose herein set forth.

2. The work carriage or jack, having its beams K K^2 arranged to oscillate independently of each other, whereby the work is enabled to automatically adapt itself to the cutters and gage-plate, substantially as herein described.

3. In combination with the two beams K K^2 of the jack the flexibly-connected cross-bar L and adjustable weight M, for varying the relative pressure on the two beams, substantially as described.

4. The combination, with the slotted bed-plate H of the carriage or jack, of the eccentric J and handle or lever *j*, substantially as and for the purpose herein described.

5. The combination of the treadle P, rod *n*, cross-bar L, and beams or bars K K^2 of the jack and weight M, for feeding the work to and from the cutters, substantially as herein described.

ISAAC VAN NOUHUYS.

Witnesses:
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