

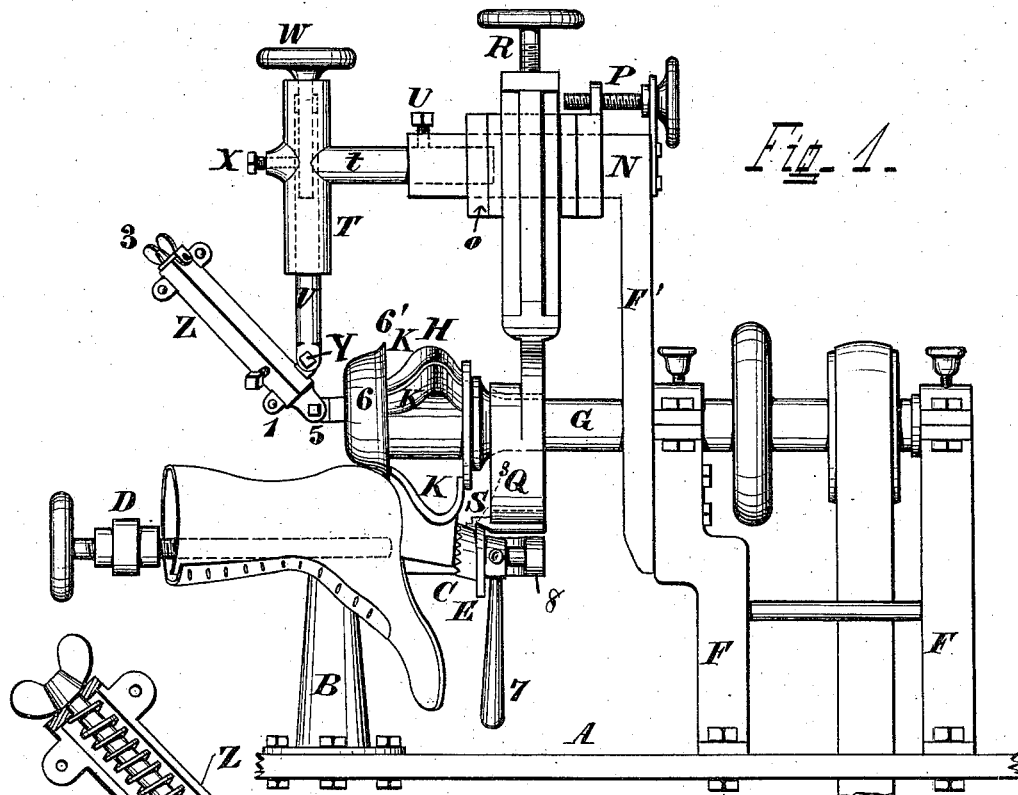
(No Model.)

O. BREUER.

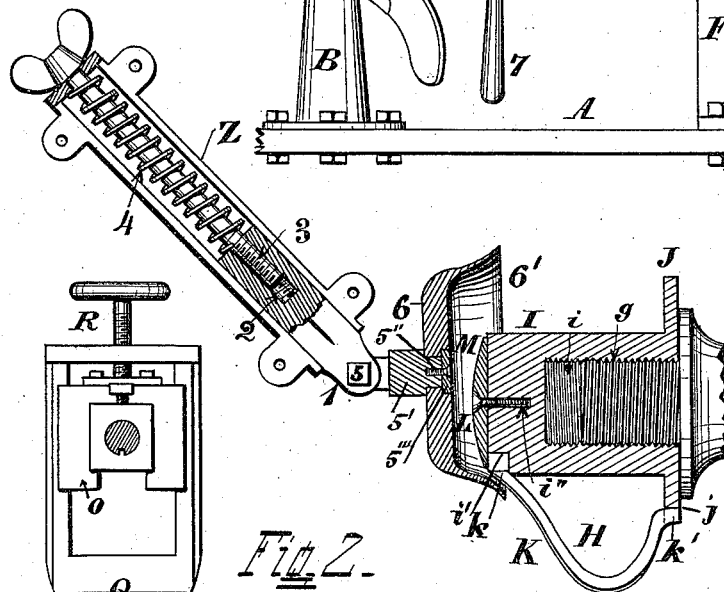
HEEL TRIMMING MACHINE.

No. 305,662.

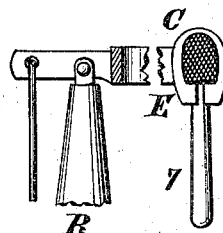
Patented Sept. 23, 1884.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

*Fig. 4.*

Attest  
Carl Spengel  
Geo. Wheelock

Inventor  
Otto Breuer  
by *Knight & Co's.*

# UNITED STATES PATENT OFFICE.

OTTO BREUER, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO CARL H. KRIPPENDORF, OF SAME PLACE.

## HEEL-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 305,662, dated September 23, 1884.

Application filed October 3, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO BREUER, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Heel-Trimming Machines, of which the following is a specification.

My invention relates to improvements in those machines in which a rotary cutter is employed to give the desired shape to boot and shoe heels. My improvements are such as to make one such cutter available for the shaping the backs of heels of many diverse heights both at back and breast.

In the accompanying drawings, Figure 1 is a side elevation of a heel-trimming machine embodying my improvements. Fig. 2 is a front elevation of the top-piece pattern-guide, the cutter-shaft and the bearing-bar being shown in section. Fig. 3 is an axial section of the cutter, together with the upper guard and the adjustable yielding helve. Fig. 4 is a front view of the outer heel-clamp and of its attached top-piece pattern.

A may represent a part of a customary or any suitable bench or base plate; B, the standard that supports the customary outer and inner jaws, C D, of the "jack" or heel-clamp, of which the outer jaw, C, carries the top-piece pattern E of the particular grade or style of boot or shoe heel to be trimmed.

The above-mentioned parts, except the jack or heel-clamp, may be of any suitable or customary construction.

Pedestals F upon base A afford journal-bearing to the shaft G of a rotary cutter or trimmer, H, of any suitable construction, having blades K of counterpart contour to that desired for the shoe-heel. A vertical extension, F', of the housing has projecting horizontally from it in the vertical plane of the trimmer-shaft a bearing-bar, N, preferably of the represented square or other non-circular transverse section. This bar N carries a saddle, O, which is adjusted forward or backward by means of a screw, P. The saddle O supports a yoke, Q, adjustable perpendicularly by means of a screw, R, which yoke has at its lower end a guide, S, which, when the machine is in action, (occupying the position shown in front of the top-piece pattern's upper edge,) holds said pattern, and consequently the at-

tached work, to the proper plane and axis of rotation. With this object in view the guide S has on its under side a notch, s, which engages the (for the time being) upper edge of the top-piece pattern E, so as to hold the shoe against displacement longitudinally of the cutter, and that without contact with or abrasion of the heel-tread. The bar N is perforated in front to receive the shank t of the tube T. This member T t is made capable of adjustment forward or backward, and of being held to any specific adjustment by means of screw U. The tube T contains a rod, V, capable of adjustment to any elevation by means of screw W, and of being firmly retained to such adjustment by means of screw X.

A bolt, Y, enables the operator to secure rigidly, at any desired obliquity, a tube, Z, of square or other non-circular section. Fitted to slide easily within this tube is a plunger, 1, whose threaded orifice 2 receives a screw, 3, that serves as an adjustable stop to the automatic protractions of the plunger, caused by a spiral spring, 4.

Rigidly fastened at any desired obliquity to the lower end of plunger 1, by means of bolt 5, is a hub, 5', to which is secured by screw 5" and washer 5''' the represented dish-formed upper guard, 6, whose (preferably out-flared) rim 6' occupies during use of the machine the rand-seam or crease between the heel and the upper-leather, the irregularities of which the spring 4 permits the guard to follow without leaving its place in the crease. This member 6 is, in use of the machine, so adjusted as to just cover, and thus render in-operative so much of the cutter's length as is in excess of the height of the special grade of shoe being operated upon.

The above-described construction of guard enables it to either rotate automatically about its axis with the work, or, by sufficient tightening of the screw 5", to remain non-rotative during use, but to be capable of being from time to time shifted about said axis by the operator, so as to bring unused parts of its periphery into service.

In use of the machine the top-piece pattern E is held by the operator firmly against the guide S, the trimming operation commencing at the breast-corner on one side, and being

continued clear around the back of the heel to the opposite breast-corner as the shoe is rotated by the operator. In this action the top-piece pattern E and guard J coact with the rotary cutter to impart the proper contour to the heel, contact of the cutter-blades with the upper-leather being rendered impossible in consequence of the dished guard 6 being (by the stress of spring 4 and by the discretionary pressure applied by the hand of the operator) retained firmly in the crease and compelled to follow it through all of its sinuosities.

The clamp or jack B C D, with its attached pattern E, is supported on trunnions 8 and provided with a handle, 7, to enable the operator to give the work the customary partial rotation.

The useful novelties of the cutter, being the joint invention of myself and of Karl Kripendorff, are claimed in a separate application for patent.

I claim as new and of my invention—

1. In a heel-trimming machine, the combination, with a rotary cutter of proper longitudinal curvature, of a guard formed and arranged as described to inclose to a greater or less extent the smaller end of said cutter, and to yield in a direction oblique to the cutter's axis, and for its margin to occupy the rand-seam of the boot or shoe, substantially as and for the purpose set forth.

2. In a rotary heel-trimming machine, the circularly and longitudinally adjustable and automatically-yielding upper guard, 6, substantially as described.

3. In a heel-trimming machine, the combi-

nation, with the rotary cutter, the clamp or jack adapted to partially rotate, and the automatically-yielding upper guard, of the top-pattern guide, adjustable both radially and axially of said pattern, substantially as set forth.

4. In a rotary heel-trimmer, the dish-formed upper guard, 6, having the longitudinally-adjustable and automatically-yielding helve or plunger 1, substantially as set forth.

5. In a rotary heel-trimmer, the dish-formed upper guard, 6, having the angularly-adjustable attachment 5, in combination with the longitudinally yielding and longitudinally and angularly adjustable helve or plunger 1, substantially as set forth.

6. In a rotary heel-trimmer, the combination of the pattern E, the depending yoke Q, the pattern-guide S projecting from the yoke Q, the saddle O, the vertical and horizontal adjusting-screws R P, and the bearing-bar N, substantially as and for the purposes set forth.

7. In a heel-trimming machine, the described combination, with the bearing-bar N, of the horizontally-adjustable piece T t, the vertically-adjustable piece V, the tightening-screws Y 5, the vertically and angularly adjustable tube Z, the plunger 1, the adjusting-screw 3, the spring 4, and the dish-formed upper guard, 6, substantially as set forth.

In testimony of which invention I hereunto set my hand.

OTTO BREUER.

Attest:

CARL SPENGLER,  
F. R. MCCORMICK.