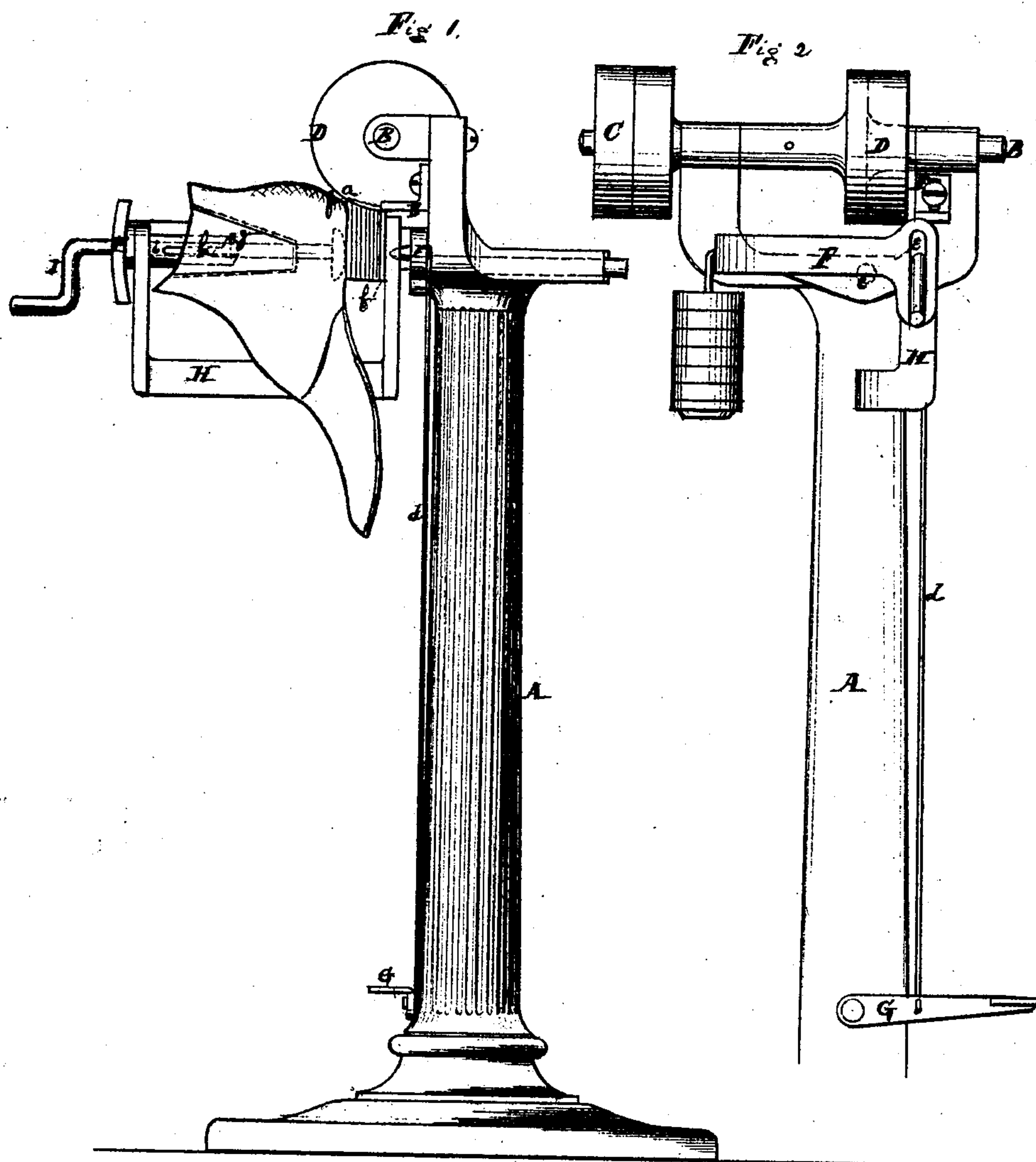


*E. F. Richardson,*

*Heel Machine.*

*No. 102,159.*

*Patented Apr. 19. 1870.*



*Witnesses*  
*W. B. Deming*  
*Wm. H. Breton Jr.*

*Everett P. Richardson*

# United States Patent Office.

EVERETT P. RICHARDSON, OF LAWRENCE, MASSACHUSETTS.

*Letters Patent No. 102,159, dated April 19, 1870; antedated April 9, 1870.*

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

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, EVERETT P. RICHARDSON, of Lawrence, in the county of Essex and State of Massachusetts, have invented a new and useful Improvements in Machines for Trimming the Heels of Boots and Shoes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings forming a part of this specification.

My invention has for its object the trimming or shaping of the heels of boots and shoes, in a more smooth, uniform, and expeditious manner than is done by the method now in use.

It consists of a knife or shave, of the curvature desired in the heel, having in addition to its forward cutting action a motion crosswise thereto, to produce a drawing cut, which is so advantageous in cutting leather.

Heretofore, in machines for this purpose, provided with a knife of this class, having a shaving motion around the heel, the knife has had a simple forward motion in relation thereto, and, if not perfectly sharp, met with much resistance, and was not easily governed, being liable to dig in or run out, and, even when sharp, not leaving the heel sufficiently smooth.

My invention consists also in means for presenting the heel to the knife in a proper manner.

A is the frame or standard.

B, a shaft, operated by the pulley C.

Upon this shaft is mounted the annular knife D, which is made to cut by the rotation of the heel, the knife at the same time having a lateral or rotary motion in a direction parallel, or nearly so, with its cutting-edge, thus giving a drawing cut. This motion may be reciprocating instead of a rotary motion, and the knife need not be continuous, but may be any portion of a circle, provided it is somewhat more in length than the height of the heel, while, in some cases, a straight knife might be used.

The heel, as is usual in hand work, has its "top-lift" *b* cut out by dies, to the form, and near the size desired in the finished heel, and, being driven on in the usual manner, governs the shape and size of the heel, by being held against the gauge or guide E, which is so adjusted that the knife slightly trims the said top piece or "top lift," while cutting the more projecting portions of the heels.

The heel is held up to the knife by the action of the weighted frame F, operating as a lever, having its fulcrum at *c*, and is retracted by the treadle G through the rod *d*.

In the frame F is hung the clamp H, in which the shoe is placed, either with or without the last. It is fixed at one end in the frame F, while the other is free to move up and down in the slot *e*, so that the knife forms the upper portion of the heel independent of the gauge E.

The form of this portion of the heel may be determined, and made to conform to the shape of the upper, by the shoe being held up to a suitable guide, resting against the counter *f*, or the operator may control it by the handle I.

The clamping of the shoe is effected by the handle I being pushed toward the shoe till the pin *g* is liberated from the slot *h* in the sleeve *i*; the handle I then being turned, its inner end is forced up to the shoe or last by the inclined end of the sleeve *i*.

Heels may be shaped by this machine before it is attached to the boot or shoe, when desirable.

The invention is also applicable to the trimming of the edges of boots and shoes, if somewhat modified in the devices for holding and moving the work in relation to the knife.

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

1. The knife or shave D, having, in addition to its forward shaving action around the heel, a motion crosswise or laterally thereto, for the purpose of effecting a drawing cut, substantially as described.

2. The annular knife D, in combination with the devices, substantially as described, for moving and guiding the heel in relation thereto.

3. The pivoted frame F, in combination with the clamp H, substantially as and for the purpose set forth.

4. The gauge or guide E, so arranged as to rest against the edge of the top lift of the heel, substantially as and for the purpose set forth.

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Witnesses:

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