W. W. ABBOTT.

Machine for Cutting Wooden Heels.

No. 199,247. Patented Jan. 15, 1878.

Fig. 1.

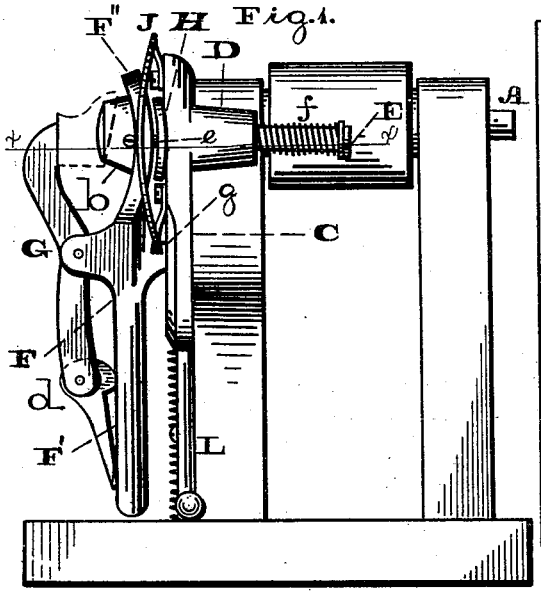


Fig. 2.

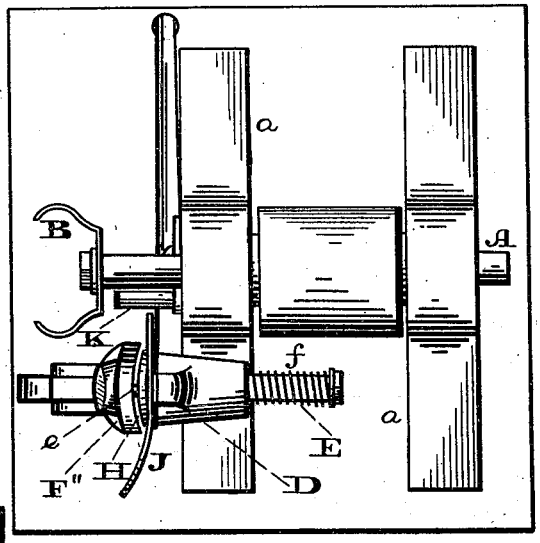


Fig. 3.

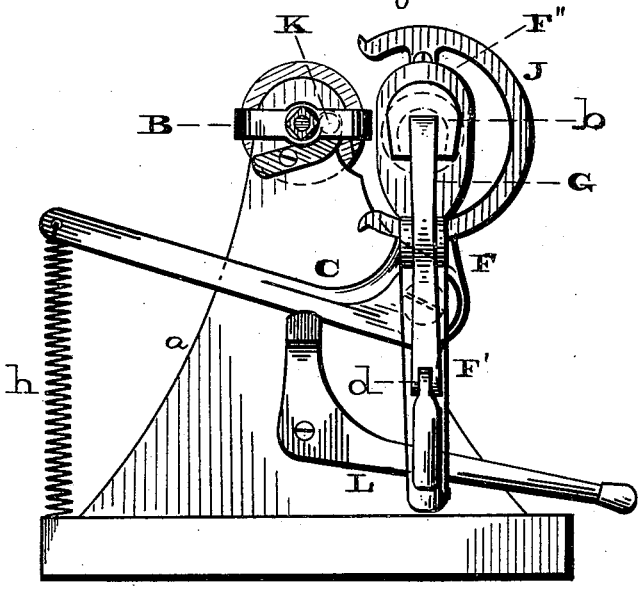
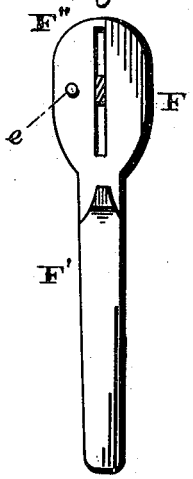


Fig. 4.



Witnesses:

Louis F. Brous

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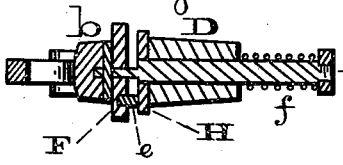
Fig. 5.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MACHINES FOR CUTTING WOODEN HEELS.

Specification forming part of Letters Patent No. **199,247**, dated January 15, 1878; application filed November 9, 1877.

To all whom it may concern:

Be it known that I, WILLIAM W. ABBOTT, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in a Machine for Cutting Wooden Heels, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side view of the machine embodying my invention. Fig. 2 is a top view thereof. Fig. 3 is a front view thereof. Fig. 4 is a view of detached parts; and Fig. 5 is a horizontal section in line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

My invention has for its object the formation of wooden heels for boots and shoes; and it consists of a former carrying the block of wood to be cut, and so mounted and connected that the block is caused to traverse a path corresponding to the contour of the heel to be shaped.

It also consists in rendering the former reversible, so as to cut the wood in the direction of the grain thereof, whereby the heel will be made smooth, and the wood will not split during manipulation.

Referring to the drawings, A represents a horizontally-arranged shaft mounted on suitable uprights or supports *a*, and carrying cutters B, whose contour is the reverse of the pattern of the heel to be cut.

C represents an elbow-lever, which is pivoted to one of the supports *a* on the side at which the cutters B are arranged, and the upper limb of said lever is formed with a boss or bearing, D, through which is passed a sliding bolt, E, extending longitudinally or in the direction of the shaft A, and having pivoted to the end adjacent to the cutters B a former, F, which consists of a lever, F′, having at its upper or inner end a circular head, F″, and a bed, *b*, on which is placed the block of wood to be cut, said block being held by a clamping-lever, G, which is pivoted to the lever F′, and pressed against the block of wood by means of a cam-head, *d*, pivoted to lever G, and tightening against the lever F′. From the upper or inner end of the former, on the side opposite to the bed *b*, there projects a horizontally-arranged pin or lug *e*, which is adapted to ride over a cam, H, interposed between the former F and boss D, and secured to or formed with the boss, the bolt E passing through the cam; and said pin is held in contact with the cam H by means of a spring, *f*, bearing against the head of the bolt E, to which the former is pivoted, as has been stated.

To the upper limb of the elbow-lever C there is secured a cam-shaped guard, J, whose configuration accords with that of the cam H, and the former F engages with said guard J by means of a hook or lug, *g*, projecting from the former.

K represents a lug or pin, secured to and projecting horizontally from the upper end of the support *a*, parallel with the shaft A, and adjacent thereto, so that the circular head F″ bears against and rises over said lug K. To one of the supports *a*, at the side to which the elbow-lever C is pivoted, there is pivoted a lever, L, which is adapted to throw off or separate the former F from the cutters, the elbow-lever having connected to it a spring, *h*, for restoring it to its normal position and holding the former to its work during the cutting operations.

The block of wood from which the heel is to be made is placed on the bed *b* and clamped by the lever G. Power is applied to the shaft A in order to rotate the cutters B. The former F is now rotated on the bolt E as an axis to the extent of a quarter-turn, and as the head F″ of the former bears on the lug K, and the pin *e* rides over the cam H, the former yields longitudinally and transversely, owing to its pivoted connection with the bolt E, the sliding motion of said bolt, and the pivoted connection with the elbow-lever, whereby the former traverses such a path as to describe one side and half of the rear of the figure or contour of a heel, and, the block of wood being carried by the former and presented to the cutters, said block will be cut or shaped one side and the half of the rear of the heel.

The lever L is now depressed, in order to raise the contiguous limb of the elbow-lever C, and thus throw off the former from the cutters. The former is now swung around a full half-turn, or a little more than a half-turn, the

lever L disengaged from the elbow-lever, and the former is thus restored to a working position. The former is then rotated in the direction from which it started, and the cutters reversed, in which operation the block of wood will be cut and the other side and remaining half of the heel will be shaped.

It will be noticed that in the two operations the heel will be cut, first on one side from front to middle of the rear, and next on the other side from front to middle of the rear, whereby both sides and the entire rear will be shaped. By this provision the cut will be with the grain in both operations, and it will be smooth and uniform, without roughness and liability of splitting the wood.

The former will now be thrown off, the shaped heel removed, a fresh block applied to the bed *b* and clamped thereto, the former restored to its normal position, and the other operations repeated.

The former is prevented from displacement or disengagement by means of the connection with cam-shaped guard J, which, also, in connection with the cam, serves to give the pitch to the heel.

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

1. The former hinged to the rotary and sliding bolt E, in combination with the supporting arm or lever C, and with the cam H and bearing-lug K, whereby said former may be caused to traverse a path corresponding to the contour of boot and shoe heels, substantially as and for the purpose set forth.

2. The reversible former F, in combination with the lever C and the lever L, substantially as and for the purpose set forth.

3. The former hinged to the sliding bolt E, and carrying the pin or lug *e*, in combination with the cam H and the lug or pin K, substantially as and for the purpose set forth.

4. The cam H interposed between the former F and boss D, in combination with the bolt E passed through said boss and cam, and connected to the former, substantially as and for the purpose set forth.

5. The former carrying the clamping-lever G, in combination with the cam-head *d*, pivoted to said lever, and bearing against the former, substantially as and for the purpose set forth.

6. The former F and cam H, in combination with guard J, substantially as and for the purpose set forth.

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Witnesses:
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