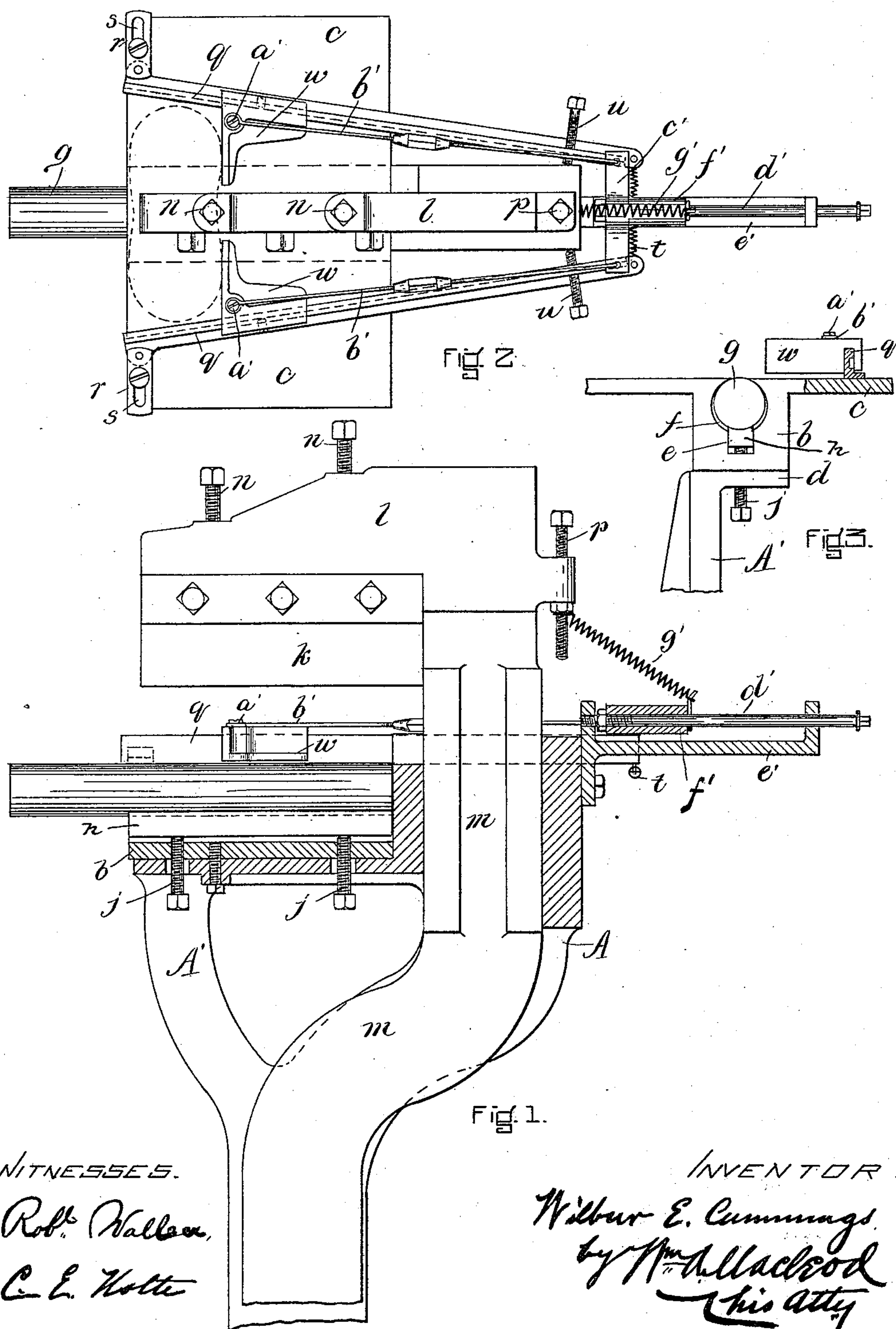


(No Model.)

W. E. CUMMINGS.  
HEEL CUTTING MACHINE.

No. 451,917.

Patented May 12, 1891.



WITNESSES.

Robt. Waller,  
C. E. Holte

INVENTOR.

Wilbur E. Cummings,  
by Wm. Hallcroft  
his atty



# UNITED STATES PATENT OFFICE.

WILBUR E. CUMMINGS, OF WOBURN, MASSACHUSETTS.

## HEEL-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 451,917, dated May 12, 1891.

Application filed November 18, 1890. Serial No. 371,785. (No model.)

*To all whom it may concern:*

Be it known that I, WILBUR E. CUMMINGS, of Woburn, county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Heel-Cutting Machines, of which the following is a specification.

It is common to make heels for boots or shoes by first building up the stock into a blank of the size and shape of two heels, so that by severing this blank in the middle two heels are formed.

My present invention relates to a machine for severing these double blanks to form two heels. In machines of this kind now in use, so far as known to me, difficulty is experienced with the cutting-block—that is, the block against which the knife operates in severing the blank. This block becomes worn and irregular, owing to the repeated action of the knife upon it, and it requires to be changed, because the machine will not operate well unless the block be substantially smooth. Difficulty has also been experienced in so presenting the double blank to the action of the knife as to insure its being severed centrally, so that the two heels produced will be of equal size. An ordinary gage on the table of the machine fails to insure this, because when the blanks dry they are apt to shrink unevenly, so that when cut by an ordinary gage the knife does not sever them in the middle, and thus the two heels produced are not of the same size, which is undesirable.

My present invention has for its object a machine which will avoid these difficulties, and by the use of which blanks may be continuously cut with ease, speed, and accuracy; and it consists in the employment of a cutting-block of the peculiar form shown, and hereinafter described, and so arranged that it may be readily shifted to expose a new surface to the action of the knife, and, further, in a gage or centering device by the aid of which the blanks which are to be cut may be quickly put in position and centered accurately, all as hereinafter described, and as is more particularly pointed out in the claims which are appended hereto and made a part hereof.

The accompanying drawings show my invention as embodied in the best form of machine now known to me, and I will describe

the same, having reference to said drawings, in which—

Figure 1 is a side elevation of my machine. Fig. 2 is a plan view. Fig. 3 is a vertical cross-section of the cutting-block, its bed, and the table, and showing a part of the centering device.

A is the upper portion of the standard of the machine, the lower portion, which is not shown, being of any well-known shape. Said upper portion of the standard is branched or provided with a forward projection A', which helps to support the cutter-block bed *b*. On top of the bed *b* is a table *c*, which may be integral with said bed *b*, and which serves to support the stock. The forward support A' may be of any desired shape; but I prefer to construct it, as shown, Fig. 3, with a flange at the top, which forms the support or rest for the bed *b*. The bed *b* for the cutter-block is firmly secured in place by being bolted to the flange *d*, and has a round hole *f* lengthwise of it, and below this hole and opening into it a recess or aperture *e*. The hole *f* is to receive the cutter-block *g*, which is circular in cross-section and preferably slightly less in diameter than the diameter of the hole *f*. The said cutter is arranged with its longitudinal axis parallel with the knife *k*, or approximately so, as clearly shown in Fig. 2; or, in other words, said block is arranged lengthwise of the knife beneath the same. In the aperture *e* is placed a strip or bar *h*, upon which the cutting-block *g* rests, and underneath the bar *h* are two adjusting-screws *j*, (see Fig. 1,) by means of which the strip *h* and the cutting-block may be raised to clamp the block firmly in place and give it a solid bearing. When the blank has been worn by repeated action of the knife, the screws *j* are loosened and the block seized at the front end, which projects in front of the machine, and turned to present a new surface to the action of the knife. If it were found desirable, the end of the block which projects in front of the machine, as shown in the drawings, may be cut off and any suitable means provided for turning it to expose a new portion. The knife *k* is secured in any suitable manner to a head *l*, which is mounted on top of a vertically-movable standard *m*, which slides in the frame A. The lower end of this stand-



ard is connected to suitable treadle mechanism, by means of which the knife may be given a vertical movement by the operator; or, if desired, power may be applied instead of the treadle in any well-known manner.

*n* are adjusting and securing screws for the knife.

*p* is a stop-screw, by means of which the extent of movement of the knife may be governed.

The centering device is more fully shown in Fig. 2, and consists of two side strips *q*, which are pivoted at their forward ends to adjustable lugs or projections *r*, which are secured by means of screws to the table *c*. The slots *s* in the pieces *r* permit of their adjustment. The said strips *q* extend rearwardly of the tables and are connected at their rear ends by means of a spring *t*, which allows their rear ends to spread slightly to accommodate the knife when it is forced through the blank. When the blank is severed, its halves are spread a distance equal to the thickness of the knife-blade, and the spring *t* permits this spreading of the halves of the blank.

*u* are adjustable centering-stops set through the strips *q* and normally bearing against the sides of the vertically-movable support *m*. These stops operate when the side strips *q* return to their normal position after being separated to center them, as will be clear.

On each of the strips *q* is secured a sliding gage *w* by means of a screw passing through a slot lengthwise of the strip. To each of the gages *w* is pivoted, at *a'*, a connecting-rod *b'*, the other end of said connecting-rod being pivoted to a cross-piece *c'*, which slides on a rod *d'*, mounted in a frame *e'*, which is bolted to the rear of the frame *A*, as shown, Fig. 1. The cross-piece *c'* has a rearward projection *f'*, to

the rear end of which is secured a spring *g'*, the other end of said spring being secured to the knife-head *l* or the stop-pin *p*, as shown. The spring *g'* operates to keep the gages *w* normally forward toward the front of the machine, they being free, as previously described, to slide lengthwise of the strips *q*.

When a blank is to be cut, the operator inserts it between the front ends of the strips *q* and shoves it back, forcing back the gages *w* against the tension of spring *g'* until the rounded ends of the blank bear against the strips *q*. When the blank has come to a bearing against the strips *q* at both ends and against the gages *w* at its rear side, it is in position to be cut, and the knife is then brought down, severing it.

What I claim is—

1. In combination, the bed *b*, having the hole *f* lengthwise thereof and the recess or aperture *e*, the cutter-block *g*, circular in cross-section and placed in the hole *f*, the strip or bar *h*, placed in the aperture *e* and upon which the cutter-block rests, and the adjusting-screws *j*, all substantially as described.

2. A heel-cutting machine having a device for centering the blanks, consisting of the converging strips *q* and the spring-pressed sliding gages *w*, substantially as shown and described.

3. In a heel-cutting machine, a centering device consisting of the pivoted strips *q*, a connecting-spring *t*, sliding gages *w*, connecting-rods *b'*, cross-piece *c'*, and spring *g'*, substantially as shown and described.

WILBUR E. CUMMINGS.

Witnesses:

WM. A. MACLEOD,  
ROBERT WALLACE.