

(No Model.)

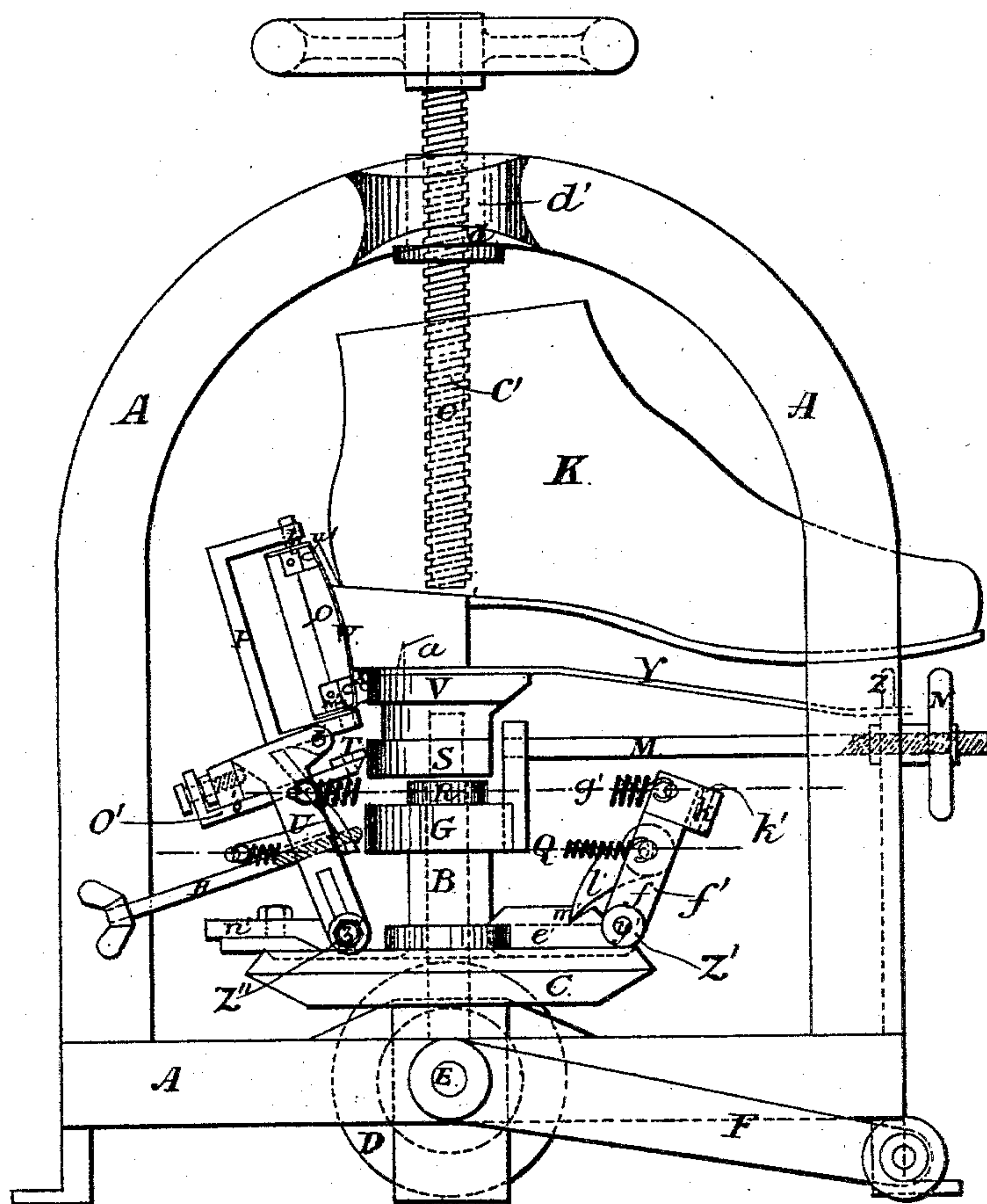
2 Sheets—Sheet 1.

R. H. SOUTHALL.  
BOOT OR SHOE HEEL TRIMMING MACHINE.

No. 414,731.

Patented Nov. 12, 1889.

FIG. 1.



**WITNESSES.**

Chas. Anon.  
Charles Morley

**INVENTOR.**

*Robert Heap Southall.*

Per *James H. Lancaster.*  
Attorney.

(No Model.)

2 Sheets—Sheet 2.

R. H. SOUTHALL.  
BOOT OR SHOE HEEL TRIMMING MACHINE.

No. 414,731.

Patented Nov. 12, 1889.

FIG 2.

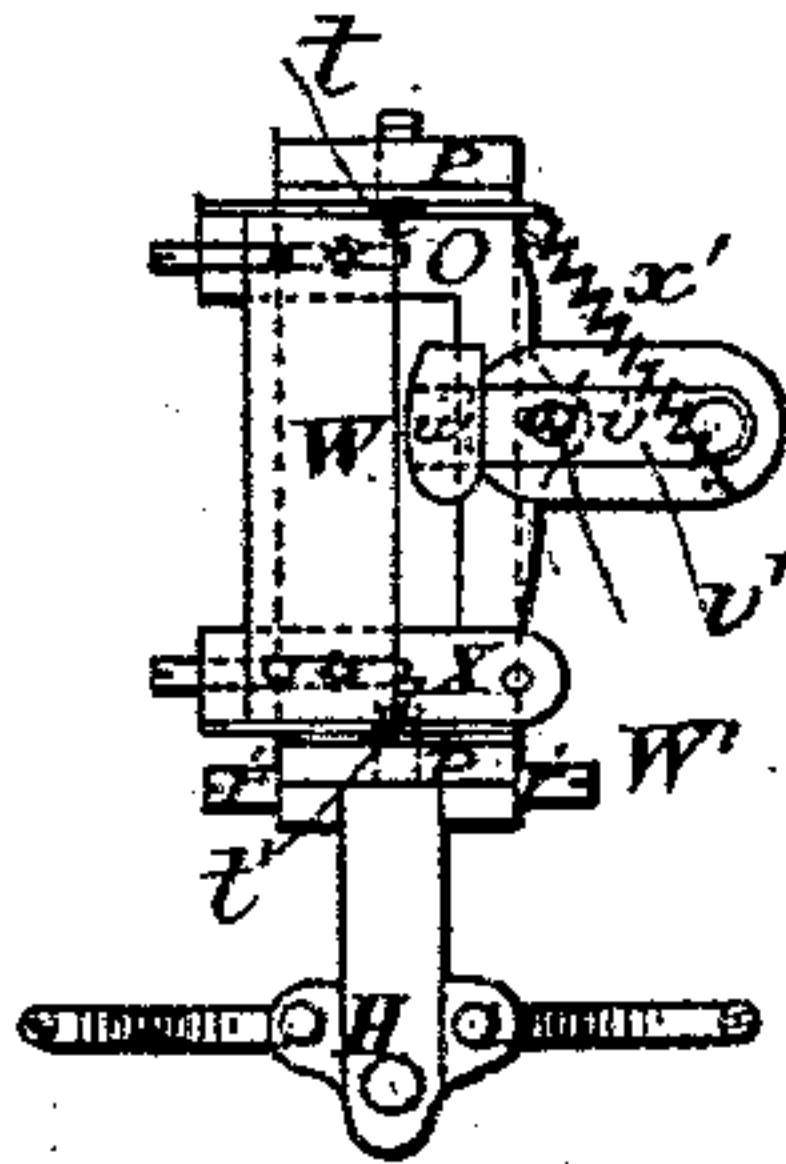


FIG 3.

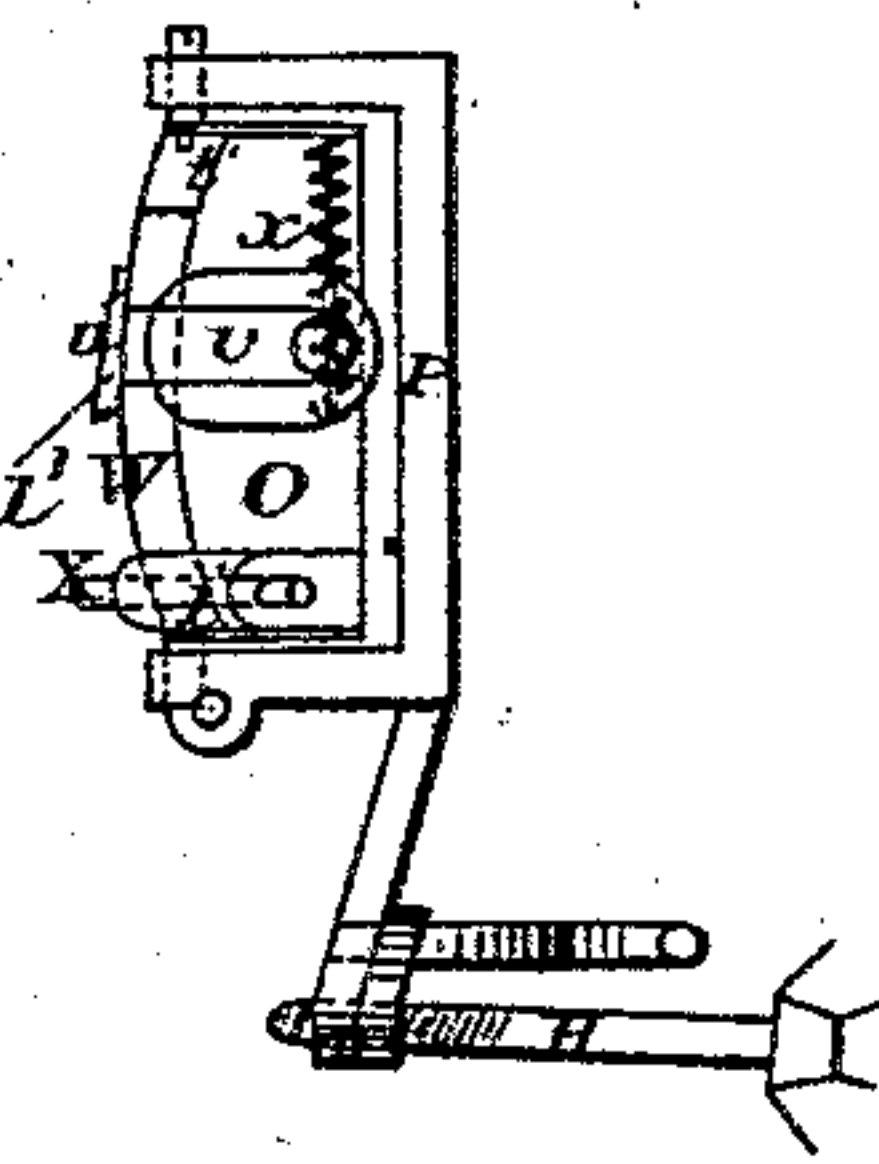


FIG. 5.



FIG 6

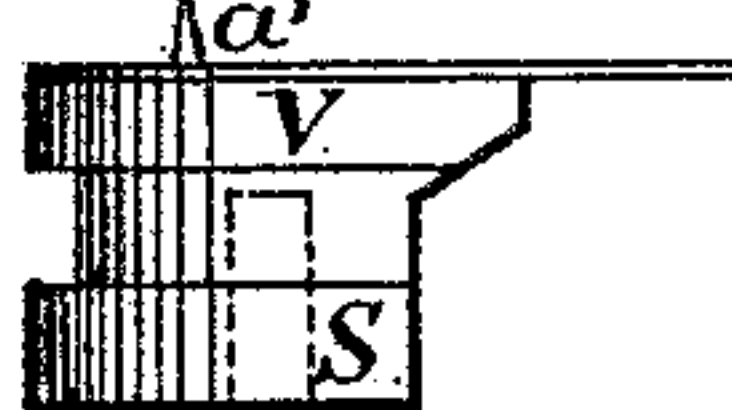


FIG. 7.

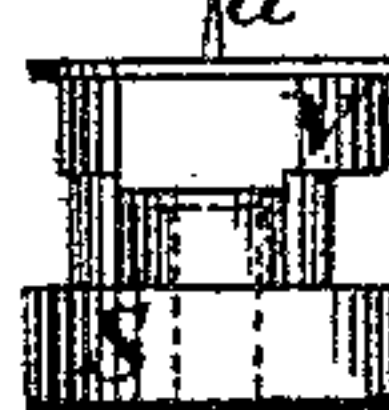


FIG 4.



FIG 8.

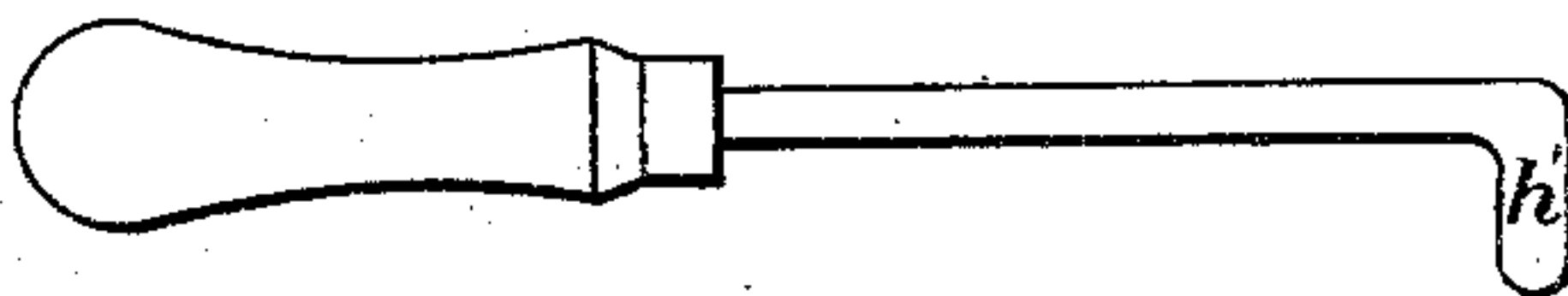


FIG 9.

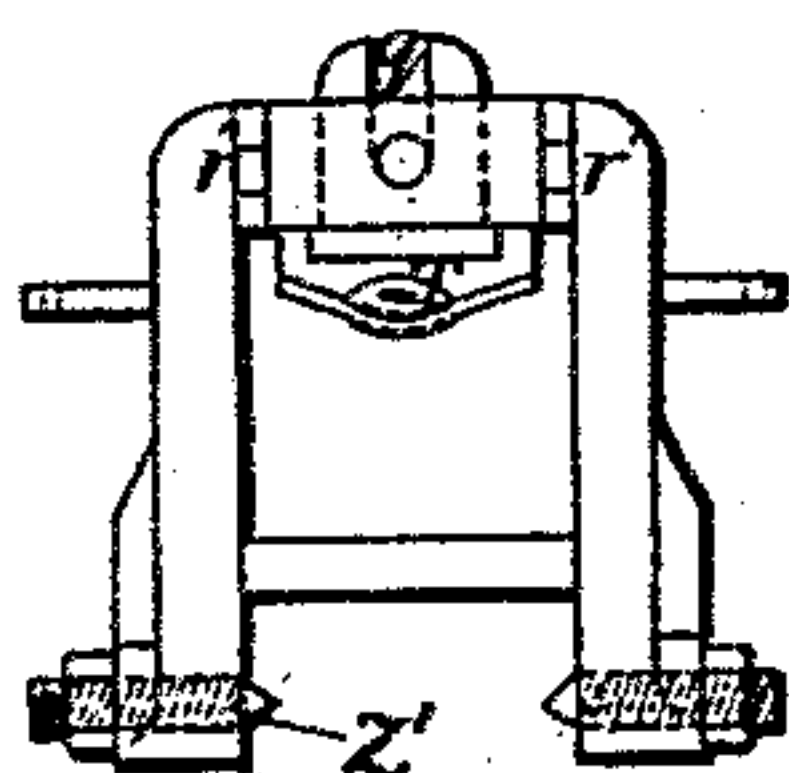


FIG 11

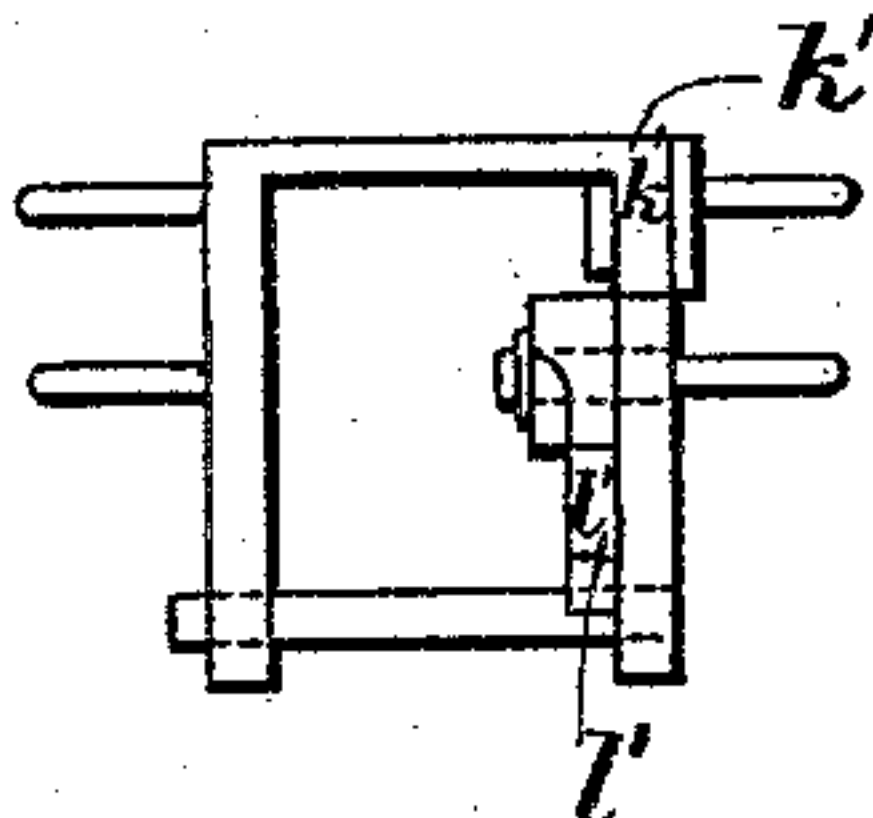


FIG 12.

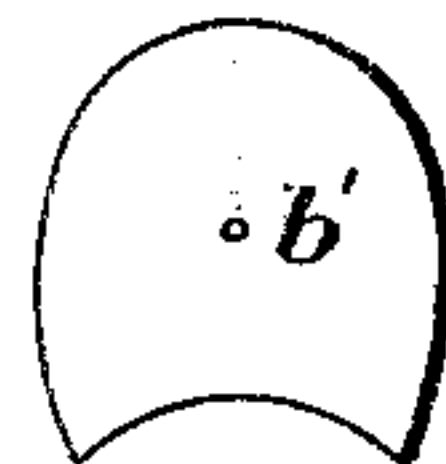


FIG 10.

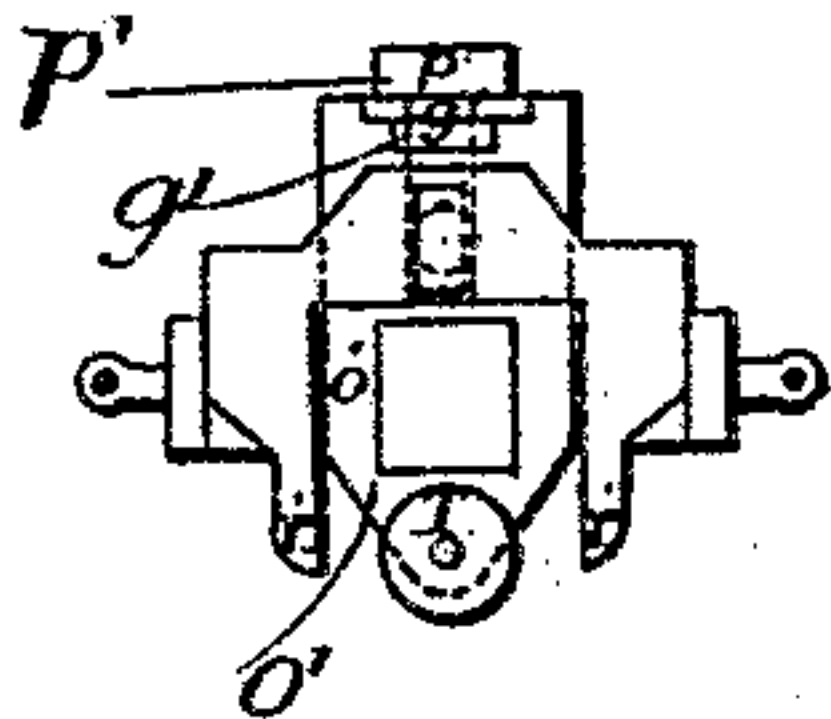


FIG 13.

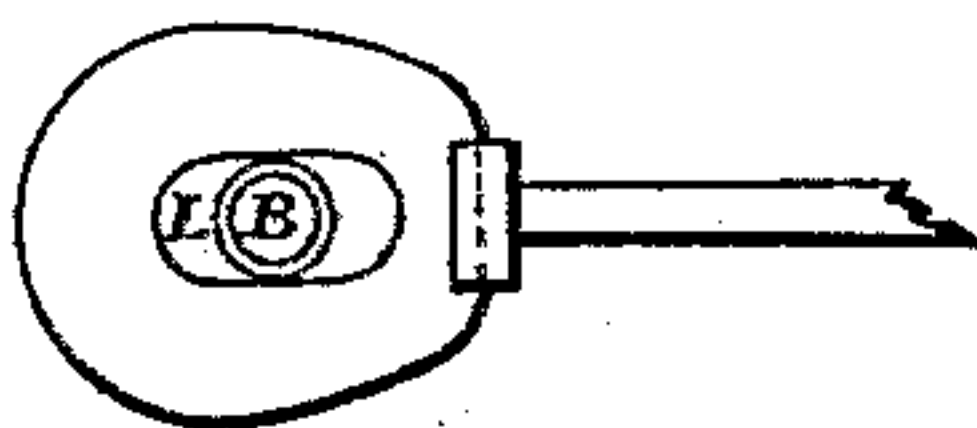


FIG 14.

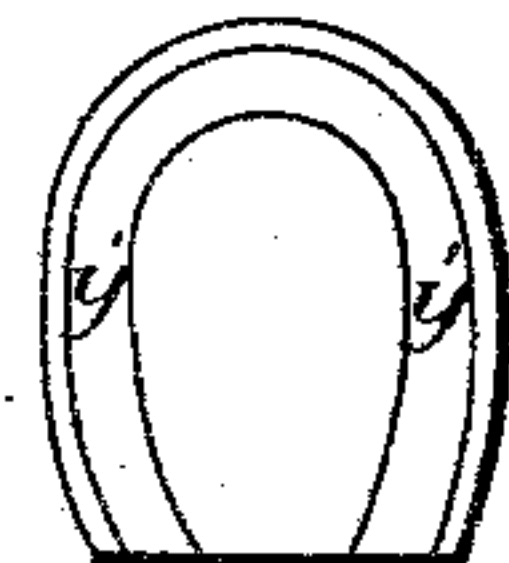
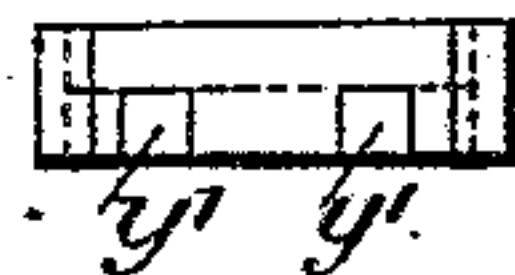


FIG 15



WITNESSES.

Chas. Armon.  
Charles Morley

INVENTOR.

Robert Heap Southall

Per James H. Lancaster.

Attorney.



# UNITED STATES PATENT OFFICE.

ROBERT HEAP SOUTHALL, OF HEADINGLEY LEEDS, COUNTY OF YORK,  
ENGLAND.

## BOOT OR SHOE HEEL TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 414,731, dated November 12, 1889.

Application filed May 25, 1887. Renewed April 22, 1889. Serial No. 308,236. (No model.) Patented in England January 9, 1885,  
No. 294.

*To all whom it may concern:*

Be it known that I, ROBERT HEAP SOUTHALL, of Headingley Leeds, in the county of Yorkshire, England, have invented certain  
5 new and useful Improvements in Boot or Shoe Making Machines, (for which I have obtained a patent in Great Britain, No. 294, January 9, 1885;) and I do hereby declare that the following is a full, clear, and exact description  
10 thereof.

My invention consists of improvements in machinery for paring the heels of boots or shoes, and will be clearly understood by the following description thereof, reference being  
15 had to the accompanying sheets of drawings and the letters of reference marked thereon.

Figure 1 is a side elevation of my machine. Figs. 2, 3, and 4 are detached views of different positions of the knife. Figs. 5, 6, and 7  
20 are detached views of different positions of the templet. Fig. 8 is a detached view of the lever. Figs. 9, 10, and 11 are detached views of the grooved screws and attachments. Fig. 12 is a plan view of the plate with central  
25 hole. Fig. 13 is a detached view of the slotted templet. Figs. 14 and 15 are detached views of the templet G with slot.

I construct a frame A for carrying the various arrangements. In a proper position on  
30 this frame I secure a fixed pedestal B, on which I place, as on a stud, the bevel-wheel C. This is geared into the bevel-wheel D, keyed on the shaft E, which works in bearings in the frame A, and is turned by the winch-handle F.  
35 On the pedestal B and above the bevel-wheel C, I place the slotted templet G, (shown separately in Fig. 13,) against which works the end of thumb-screw H, the object of the  
40 said templet and thumb-screw being to give proper form to the seat of the boot K and a proper pitch to the heel thereof, as the said templet can be moved backward and forward, having a slot L, Fig. 13, by means of the  
45 rod M, with screwed end and hand-wheel N working on the screw. This causes the tool O and tool-frame P to slant in any direction required. I sometimes cast a groove y' in the  
50 templet G, like that shown in Figs. 14 and 15. In this case I dispense with the springs

Q, and substitute a roller to work in the groove. 50  
I keep the templet G in its place by the collar R.

Above the collar and on the pedestal B, I place the templet S, (shown separately on Figs. 5, 6, and 7,) the pedestal being turned down to form  
55 a shoulder for it to rest upon. The object of this templet is to give shape to the top piece of the boot-heel through the roller T, vertical lever U, tool-frame P, and tool O. I cast, also, with the templet S, but above it, the fixed  
60 cam V, which I use for giving a proper angle to the knife W in the tool O through the regulation-screw X. (Shown distinctly in Figs. 2, 3, and 4.)

By being cast together the templet S and  
65 fixed cam V can be removed easily by merely lifting it off the pedestal B when any different size or shape of heel is required to be pared. The said templet S and cam V are kept steady by means of the wrought-iron  
70 connection-piece y, with a hole bored in the end to fit on the pin Z.

I use the steel pin a' to facilitate the fixing of the boot-heel in its proper position. This  
75 pin a', I place exactly in the center of the top surface of the templet S, cam V, and wrought-iron connection-piece Y, as shown in Figs. 6 and 7, and I use a metal plate, Fig. 12, with the hole b' bored in the center for  
80 the purpose of making a hole in the right place of the leather top piece of the boot-heel before it is paired. By placing that hole on the tapered steel pin a' the boot-heel is certain to be fixed in a proper and central  
85 position. K is a boot so placed and held firmly in position by the screw c', working in the boss d', fixed in the frame A.

On the casting e', bolted to the bevel-wheel C, I hinge the vertical lever f' on the centers  
90 Z', and the said vertical lever, Fig. 11, I use for drawing, by means of the springs g', the opposite vertical lever U toward the center of the pedestal B. To do this and gain sufficient power, I use the angled lever shown in  
95 Fig. 8. The end h', I place in the socket K' and press the handle downward till the pawl l' falls in the notch m', cut for its reception. I then remove the lever, and the pawl holds



the various parts in position till the paring operation is completed, when I again repeat the process of liberating the pawl. The vertical lever U, I hinge to the casting  $n'$  at the centers  $z''$ . The said casting is slotted to enable it to be moved either nearer or farther from the center of the pedestal B, and thereby make it suitable either for a tapered or straight boot-heel.

I use the slide  $O'$ , which carries the roller T, which works, when in working position, against the templet S, for the purpose of giving form to the top piece of the boot and draw it backward and forward by means of the grooved screw  $p'$ , which works in vertical slot  $q'$ , for the purpose shown. (See Fig. 9.) By means of the slide  $o'$ , I am enabled to make the boot-heel either larger or smaller at pleasure, for by screwing up the screw  $p'$  the tool is drawn farther from the boot-heel and by unscrewing it is brought nearer. The vertical lever U may therefore be considered as a movable platform, which moves round according to the shape of the templet S, against which it is drawn by the force of the spring  $g'$ . In this manner I give shape to the top of the boot-heel; but as the seat is of a different form I find it necessary to make the joints  $r'$ , in which I work the tool P, so that in reality it becomes a lever, the centers  $r' r'$  being the fulcrum and the end of the thumb-screw H being one end. The screw H is kept against the templet G by the spring Q, which is drawn tight in the same manner and at the same time as the springs  $g'$ . The end of the screw H, working against the templet G, must therefore give shape to the top end and to the seat of the boot.

The tool and tool frame or holder are shown in Figs. 2, 3, and 4.

P is the holder or frame for carrying the tool O, and works in the centers  $r'$  in the vertical lever U. Through the lower end passes the thumb-screw H, the end of which works against the templet G. The tool itself works in the centers  $t' t'$ . The tool O, I cast in brass or some other suitable metal and of a suitable form. To this I secure the knife. The

centers  $t' t'$  on which it works I place about a quarter of an inch behind the cutting-edge, so that when it begins to cut the leather it has a tendency to turn round. In doing so the regulating-screw X comes in contact with fixed cam V, and this keeps the knife at a proper cutting-angle. The regulation-screw I place about five-eighths of an inch in advance of the cutting-edge of the knife, and cause it to suit large or small circles by the form I give to the fixed cam V. To protect the upper of the boot from being injured by the knife W, I construct the guard  $u'$ , which I fasten to the lever  $v'$ , in the proper place of which I secure the stud  $w'$ , which I place in the bearing bored for it in the tool-block O.

The spring  $x'$ , I use for keeping the guard in its proper place and working position.

I am aware that various machines for shaping heels of shoes have heretofore been made. I therefore do not present broad claims for my invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The combination, in a shoe-heel-shaping machine, of the pedestal B, having mounted thereon templets G and S, cam V, and the pointed steel pin  $a'$ , substantially as shown and described.

2. The combination, with the pedestal B and its mountings, herein described, of the vertical lever U, fulcrum Z, slide  $O'$ , roller T, springs  $g'$ , vertical lever  $f'$ , pawl  $l'$ , and notch  $m'$ , substantially as shown and described.

3. The combination, in the shoe-heel-shaping machine herein described, of the tool-frame O, regulating-screw X and guard  $u'$ , lever  $V'$ , spring  $X'$ , and thumb-screw H, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of May, 1886.

ROB. HEAP SOUTHALL.

Witnesses:

CHAS. H. SOUTHALL,

CHAS. GILLIARD.