

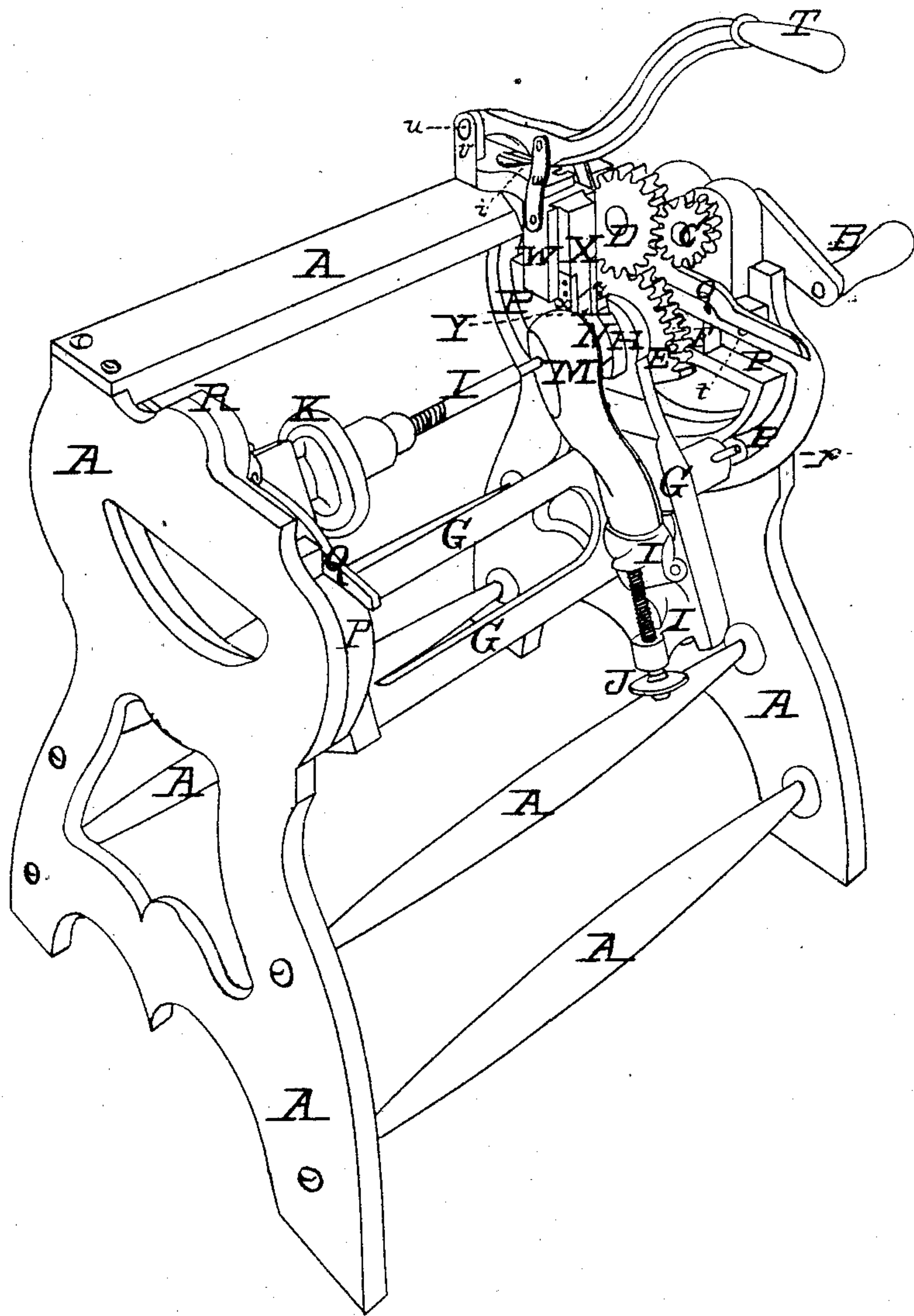
R. C. Lambert.

Heel Cutting Machine.

Nº 76207

Patented Mar. 31, 1868.

Fig. 1.



William C. Cleveland -
William W. Hesse

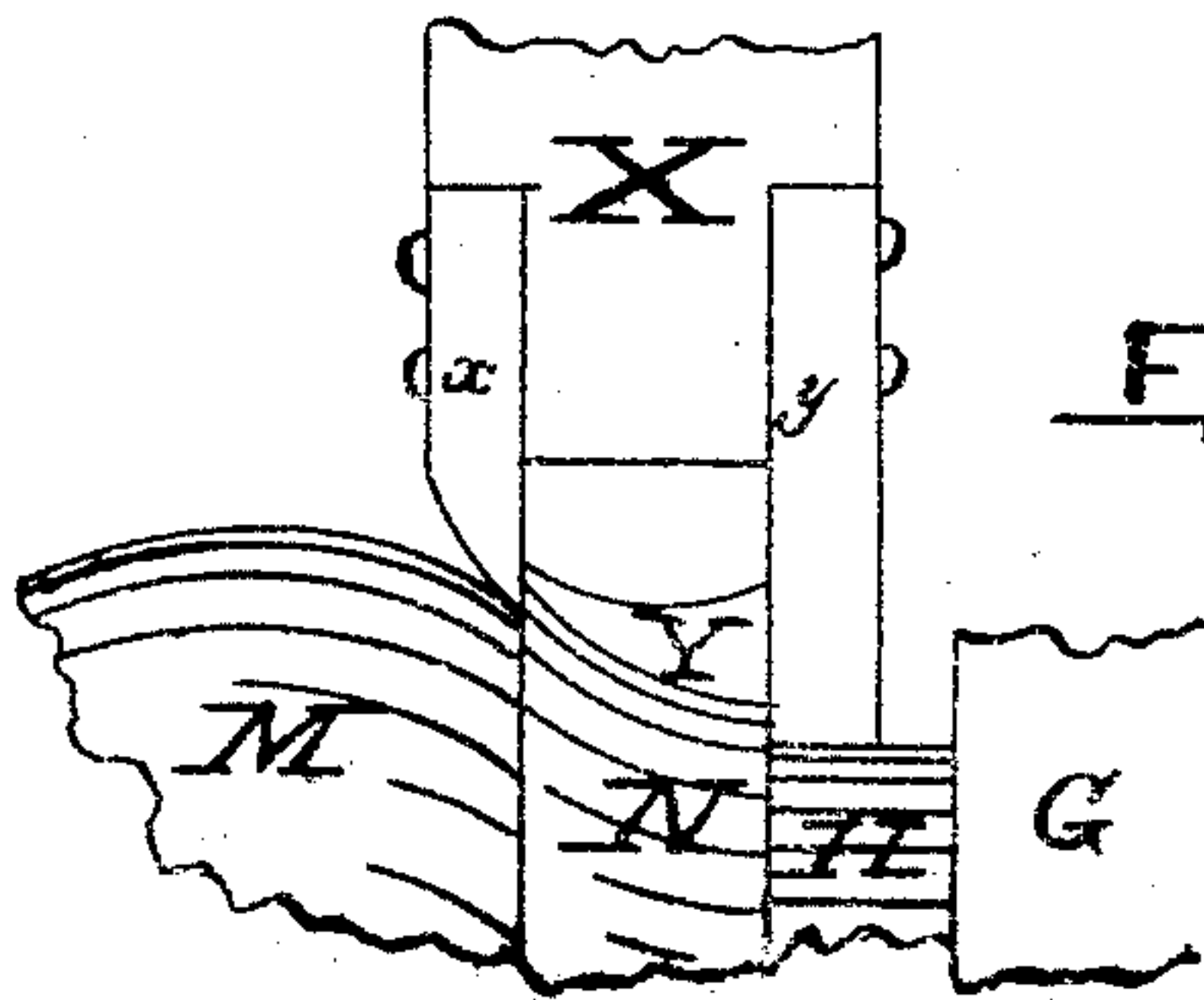
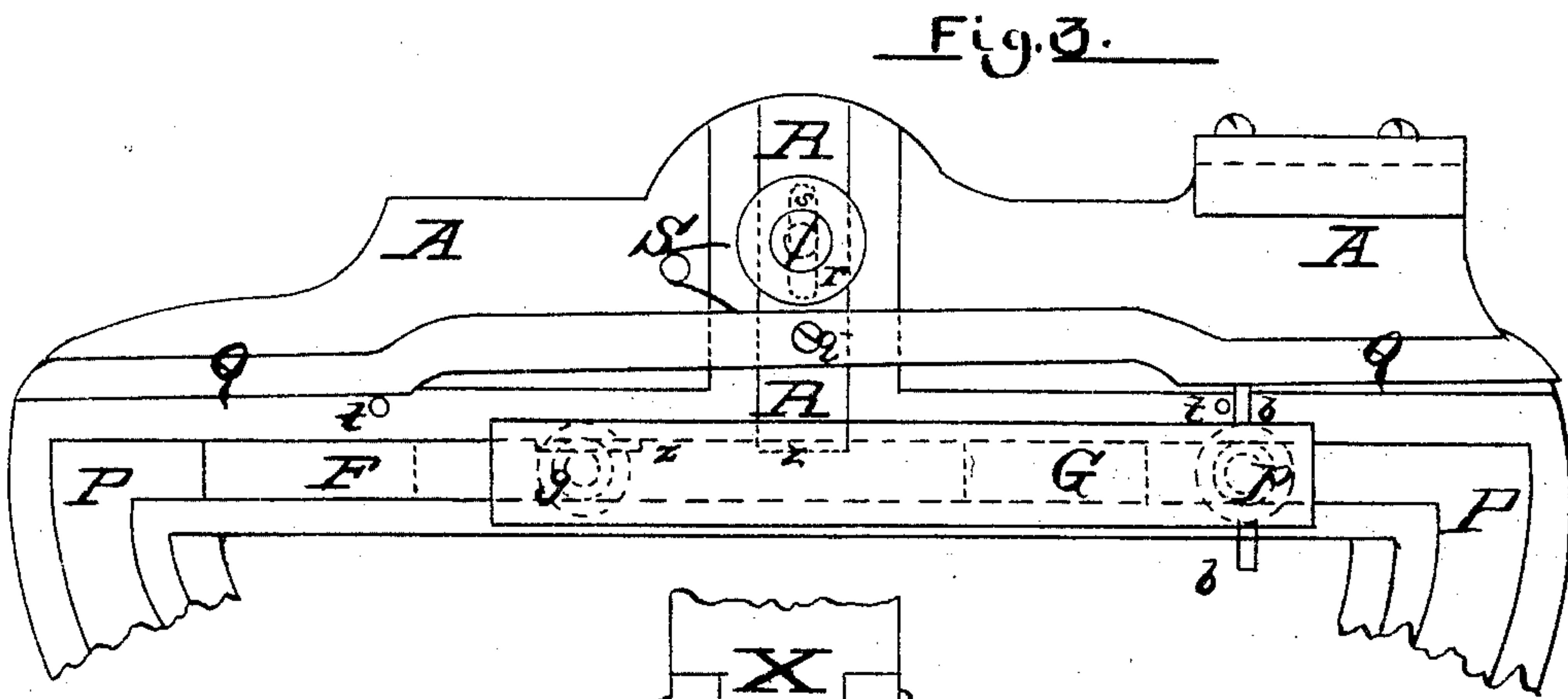
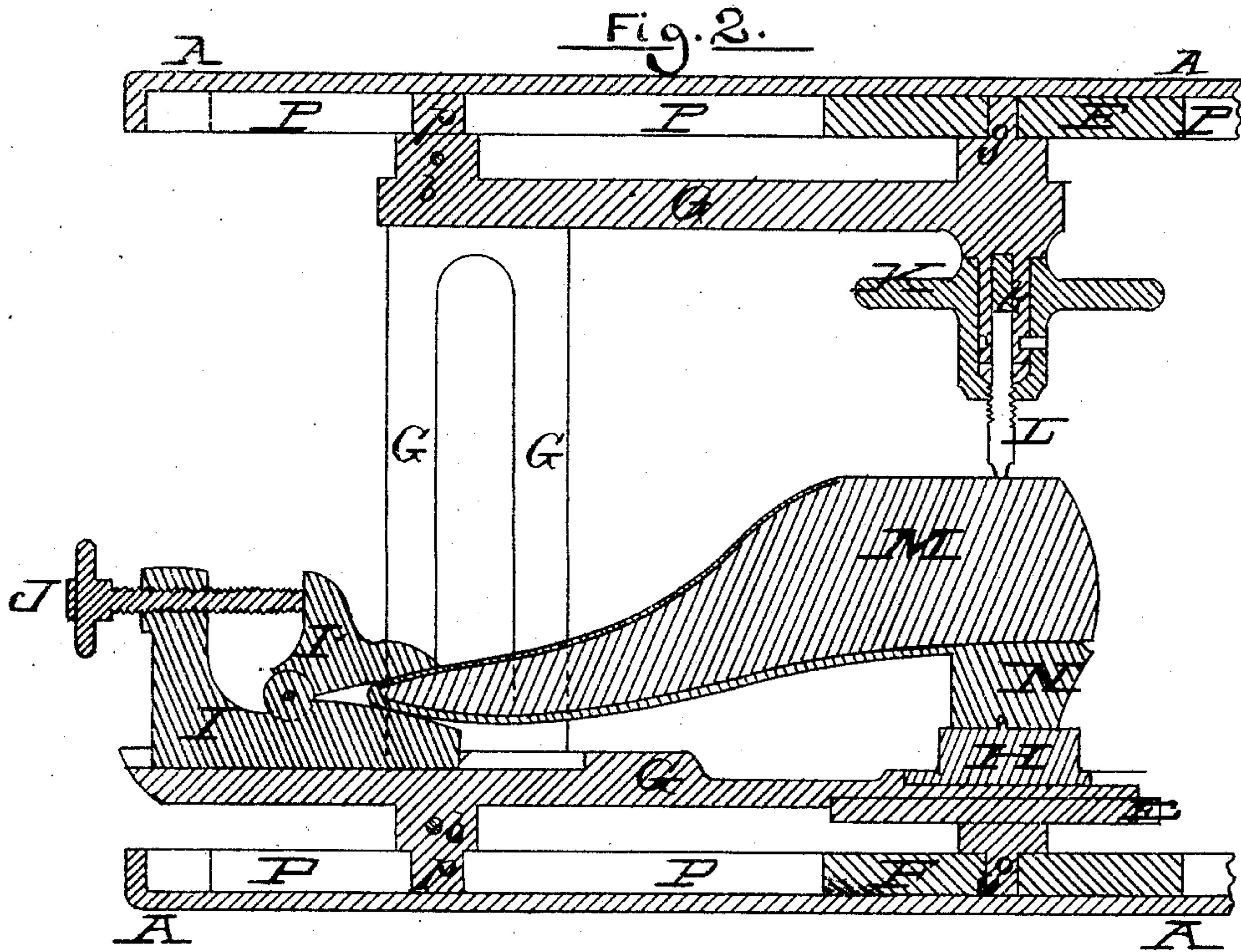
R. C. Lambert
By his Attorney
Chas. F. Farnsburg

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Heel-Cutting Machine.

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William C. Cleveland
William H. Mau

R. C. Lambert.
By his Attorney
Chas. F. Ramsbury

United States Patent Office.

RICHARD C. LAMBERT, OF RAYNHAM, MASSACHUSETTS, ASSIGNOR TO
DAVID WHITTEMORE.

Letters Patent No. 76,207, dated March 31, 1868.

IMPROVED HEEL-CUTTING MACHINE.

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, RICHARD C. LAMBERT, of Raynham, in the county of Bristol, and State of Massachusetts, have invented a new and useful Heel-Cutting Machine; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the machine complete.

Figure 2 is a horizontal section through the axis of the jack; and

Figures 3 and 4 are detail views.

This invention consists of a machine for cutting heels of boots and shoes, in which both oscillating and reciprocating movements are imparted to a jack of novel construction, which holds the shoe, and gives it the proper movements, while the heel is presented to the action of an adjustable knife, which cuts it in a superior manner. It further consists in various details of construction hereinafter more particularly set forth.

To enable others skilled in the art to make and use my improved heel-cutting machine, I will proceed to describe its construction and operation, referring to the drawings, on which the same letter of reference indicates the same part wherever it occurs.

A marks the frame of the machine; B, a winch, indicating the point of application of the driving-power; C, a pinion attached to the shaft of the winch B, and meshing into the toothed wheel D, which engages with toothed segment E, the axis of which forms the centre of rotation of the jack. Its journals turn in proper boxes in the sliding block F. Attached to the face of the toothed segment E is the frame G of the jack, which oscillates upon the journals *g g'*, (see fig. 2,) describing a half circle at each oscillation. H is the heel-pattern, which serves in part to guide the operation of the knife. Its centre of rotation coincides with the centre of rotation of the segment E, and to it is attached the heel to be trimmed. I I' mark the toe-clamp, the movable jaw I' being hinged to the fixed jaw I, and operated by means of a screw, J, which fixes it at any desired position. The heel N being attached, as before described, the toe of the boot or shoe is received between the jaws of this clamp, and firmly held in place during the cutting-operation on the heel. The clamp slides on the arm G of the jack, towards or from the pattern H, and is fixed by a set-screw, to adjust it to the length of the boot or shoe being operated upon. On a hollow arm, *k*, of the jack-frame G, turns an adjusting-wheel, K, the inside of the nave of which is threaded, (see fig. 2,) to receive a screw, L, which is drawn in or thrust out by turning the wheel K, to chuck the shoe M on the pattern H, or to release it, as may be required. From the sides of the jack-frame project studs *p p'*, which run in the guide-ways P. Q marks an oscillating-lever, (see fig. 3,) whose office is to raise the slide R at the proper times to release the slide F, and allow it to move forward or back, in the ways P, as the case may be. The lever Q is pivoted to the slide R by the pin *q*. Its fulcrum is alternately on the pins *t* and *t'*. The slide R rises and falls in guides attached to the main frame. It has a slot, *s*, in it which receives a pin, which, by means of the washer *r*, holds the slide in place, while allowing it vertical movement. A spring, S, presses the slide R down, forcing it into the mortise *z* in the slide F, for the purpose of holding that slide firmly fixed while the jack oscillates upon its axis. The movement of the slide F is limited in either direction, by the stop-pins *t t'*, against which the pins *b b'* strike when the slide is to be arrested. T is a bent lever, by which the knife is controlled. It is pivoted at *u* to the stanchion *v*, which is pivoted to and turns horizontally on the frame A. It is connected by links *w* with the slide W, to which the knife-stock X is attached. The knife Y, (see fig. 4,) is connected to the stock X by means of the two guides *x y*. They serve to guide and steady the knife during the cutting-operation, one of them, *x*, running in the rand of the shoe, and the other, *y*, working in contact with the heel-pattern H. A spring, *z*, pressing the lever T upwards, throws the knife out of contact with the heel, except when the lever is depressed by the hand of the workman. The construction illustrated in fig. 3 is the same on both sides of the machine, and the operation of the corresponding parts is similar and simultaneous on the two sides. The horizontal portion of the guide-ways P is essential to the operation of the machine, but the semicircular portion of these ways is not indispensable, and may be removed if preferred.

The operation of the machine is as follows: The shoe is jacked by placing the centre of the heel on the

pin in the centre of the pattern H, and clamping the toe between the jaws I and I'. At the beginning of the operation, the jack-frame is in a horizontal position, the toe of the shoe being towards the back part of the machine, and the slides F in the most advanced position towards the front of the machine, the levers Q having released them from the slides R. The lever T is then depressed by the workman, until the knife Y is brought into the proper position to begin the cut, and motion is imparted to the jack. The slide F moves back till the mortise z comes under the slide R, which falls into it, and fixes the centre of oscillation of the jack. At the same instant the studs *p p'* enter the semicircular portion of the ways P, and passing around it to the forward end of the arc, impart a rotary movement to the heel N, which is finished by the operation as to its circular portion. The studs *p p'* now enter the forward end of the horizontal portion of the ways P, when the pins *b b'*, striking the forward ends of levers Q, raise them and throw the slides R out of the mortises z in the slides F, which, thus released, slide back until the pins *b b'* come into contact with the pins *t t'*, and arrest the movement. By this horizontal movement the last side of the heel is finished, and the work is completed. The lever T is then released, the knife is thrown up out of contact with the heel by the spring z, the shoe is released from the jack by a turn of wheel K, another shoe is jacked, and the jack-frame thrown back to its first position, ready for a repetition of the operation.

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

1. A heel-cutting machine, having a swinging and sliding jack, constructed and operating substantially in the manner described.
2. The combination and arrangement of the toothed segment E, driven as described, the sliding journal-block F, and the jack-frame G, constructed and operating as specified.
3. The mode described of jacking the shoe or boot by means of the screw L, operated as described, which holds the heel against the pattern H, and the jaw-clamp I I', which confines the toe, as set forth.
4. The manner of automatically releasing and fixing the centre of oscillation of the jack by means of the levers Q, operated by the pins *b b'*, and raising and lowering the sliding stop R, as specified.
5. In combination with the knife-stock, the guides *x y*, one running in the rand of the shoe, and the other in contact with the edge of the pattern H, as described.
6. In combination with the swinging jack-frame, the wheel K, and screw L, constructed, arranged, and operating as specified.
7. In combination with the swinging and sliding jack G, the guide-ways P, for guiding and steadying the horizontal and oscillating movements of the jack, as set forth.
8. The combination of the lever T, pivoted and operated as described, with the ways W of the knife-stock, to give both horizontal and vertical movements to the knife, as specified.
9. The toe-clamp I I', constructed, arranged, and operating as described.

The above specification of my said invention, signed and witnessed at Boston, this ninth day of January, A. D. 1868.

RICHARD C. LAMBERT.

Witnesses:

WILLIAM C. CLEVELAND,
CHAS. F. STANSBURY.