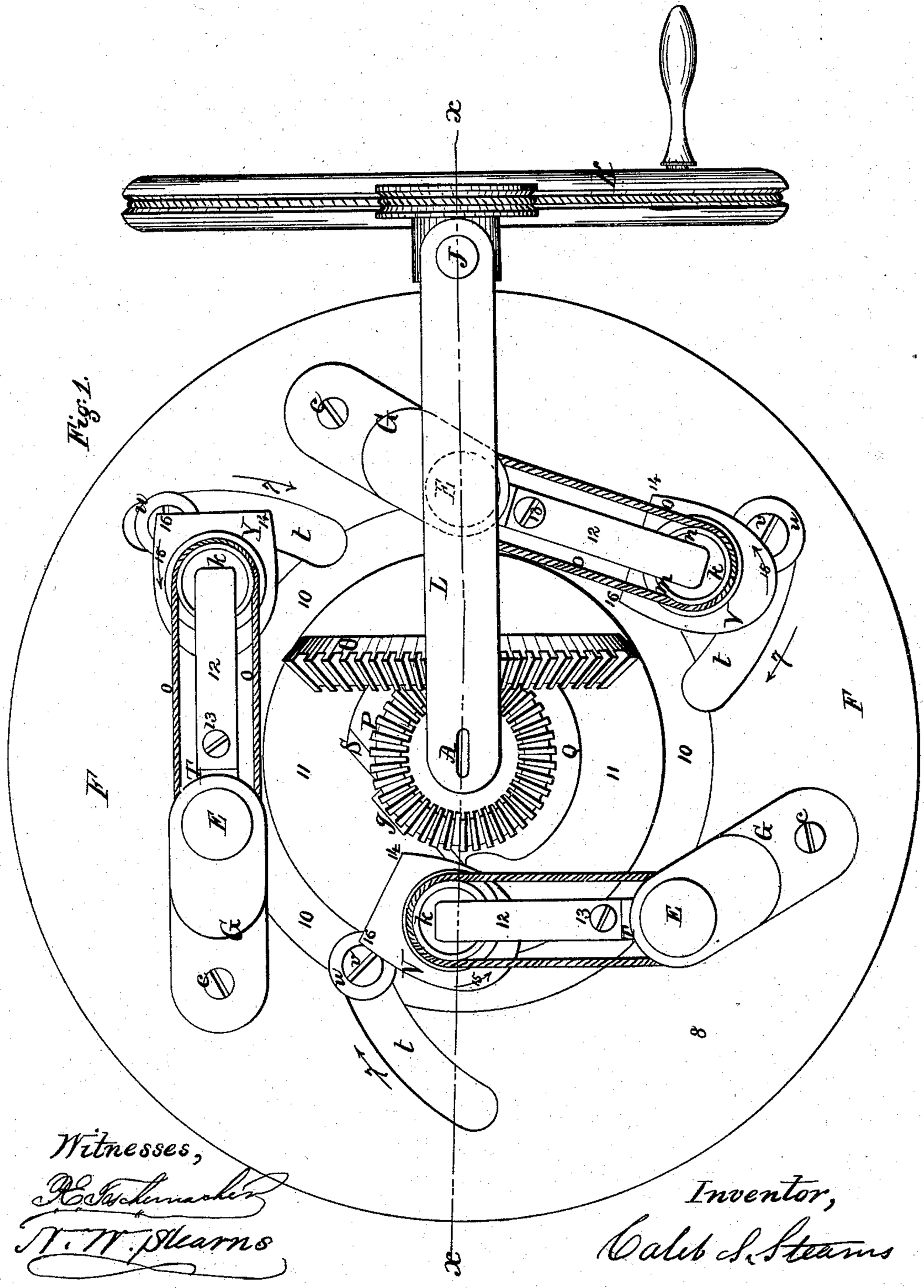
3 Sheets—Sheet 1.

C. S. STEARNS.

MACHINE FOR TRIMMING HEELS OF BOOTS AND SHOES.

No. 66,184. Patented June 25, 1867.

Fig: 1.



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N. W. Stearns

Inventor,
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3 Sheets—Sheet 2.

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MACHINE FOR TRIMMING HEELS OF BOOTS AND SHOES.

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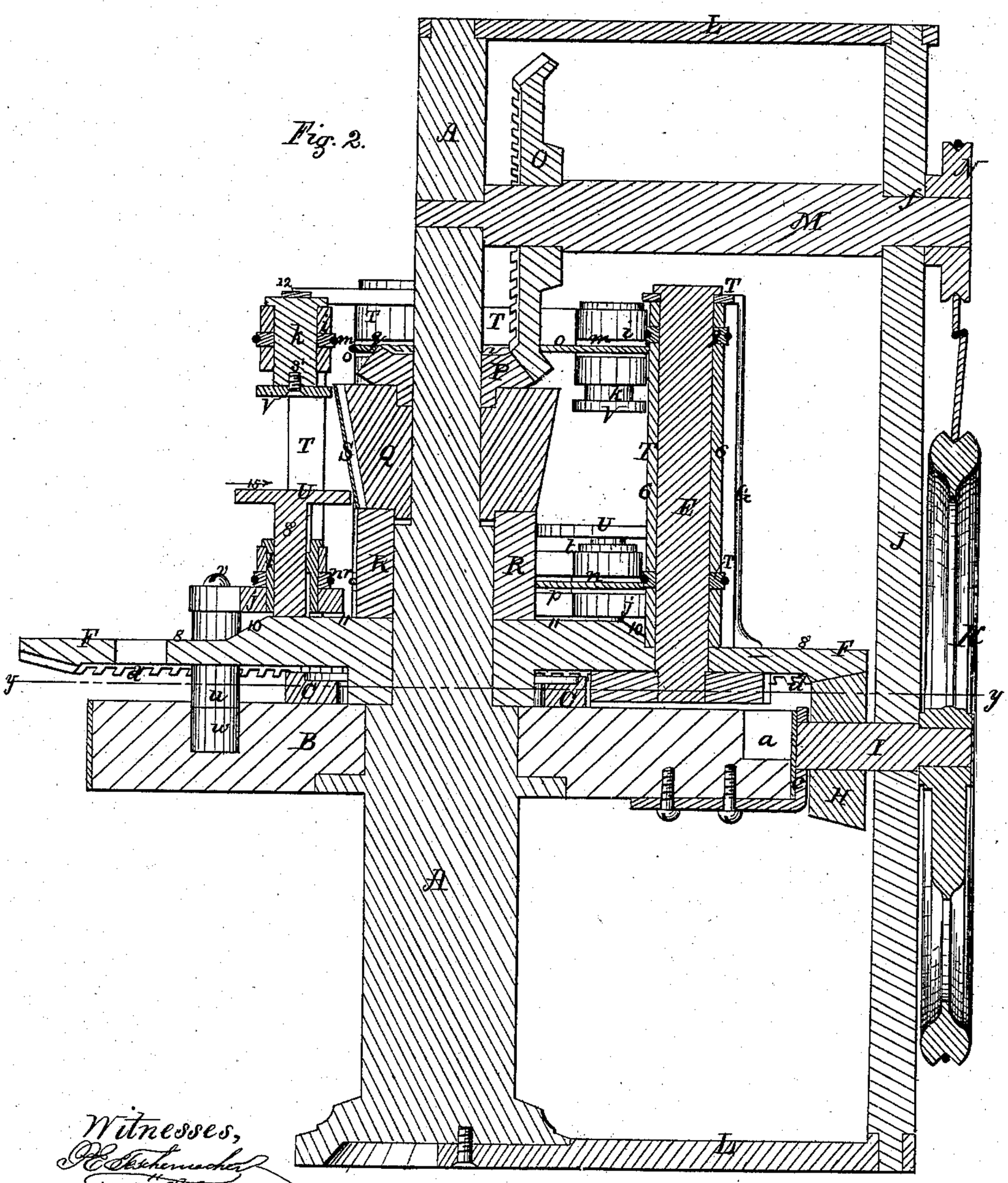
Fig. 2.



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3 Sheets—Sheet 3.

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MACHINE FOR TRIMMING HEELS OF BOOTS AND SHOES.

No. 66,184. Patented June 25, 1867.

Fig. 4.

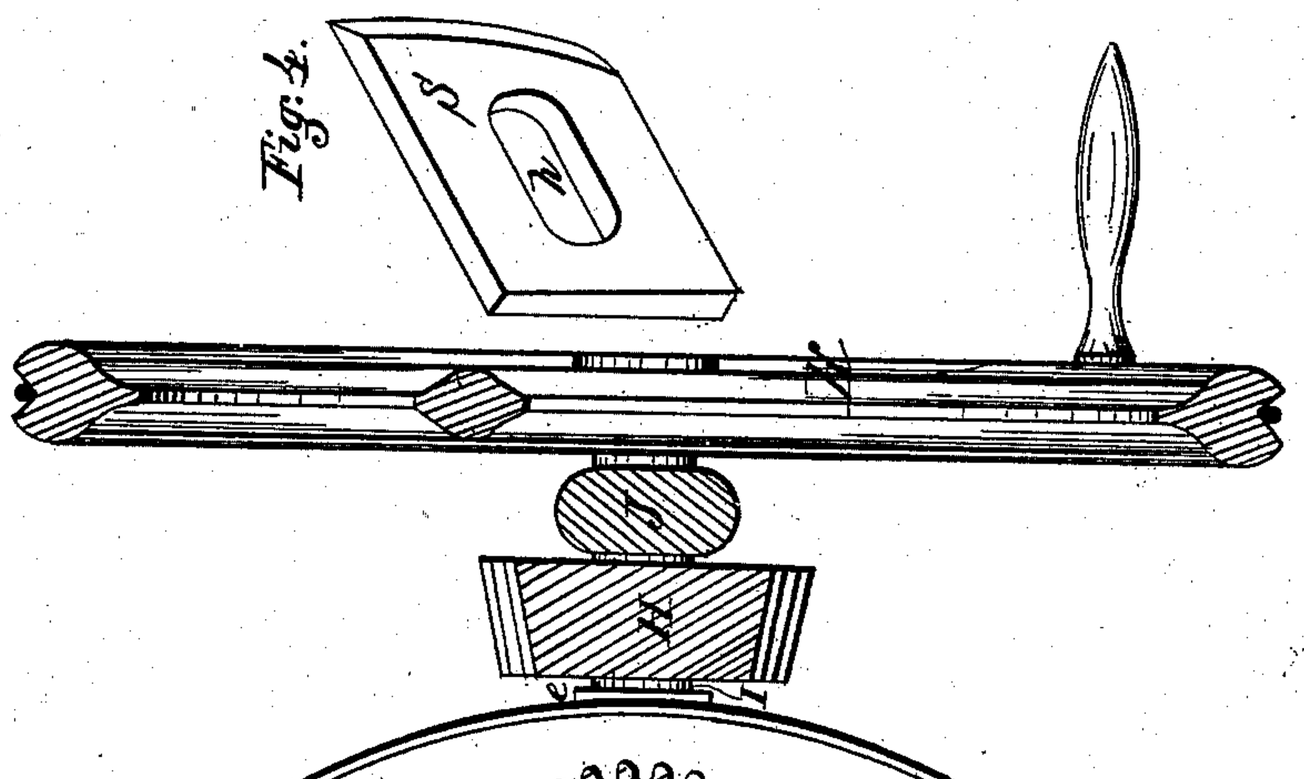
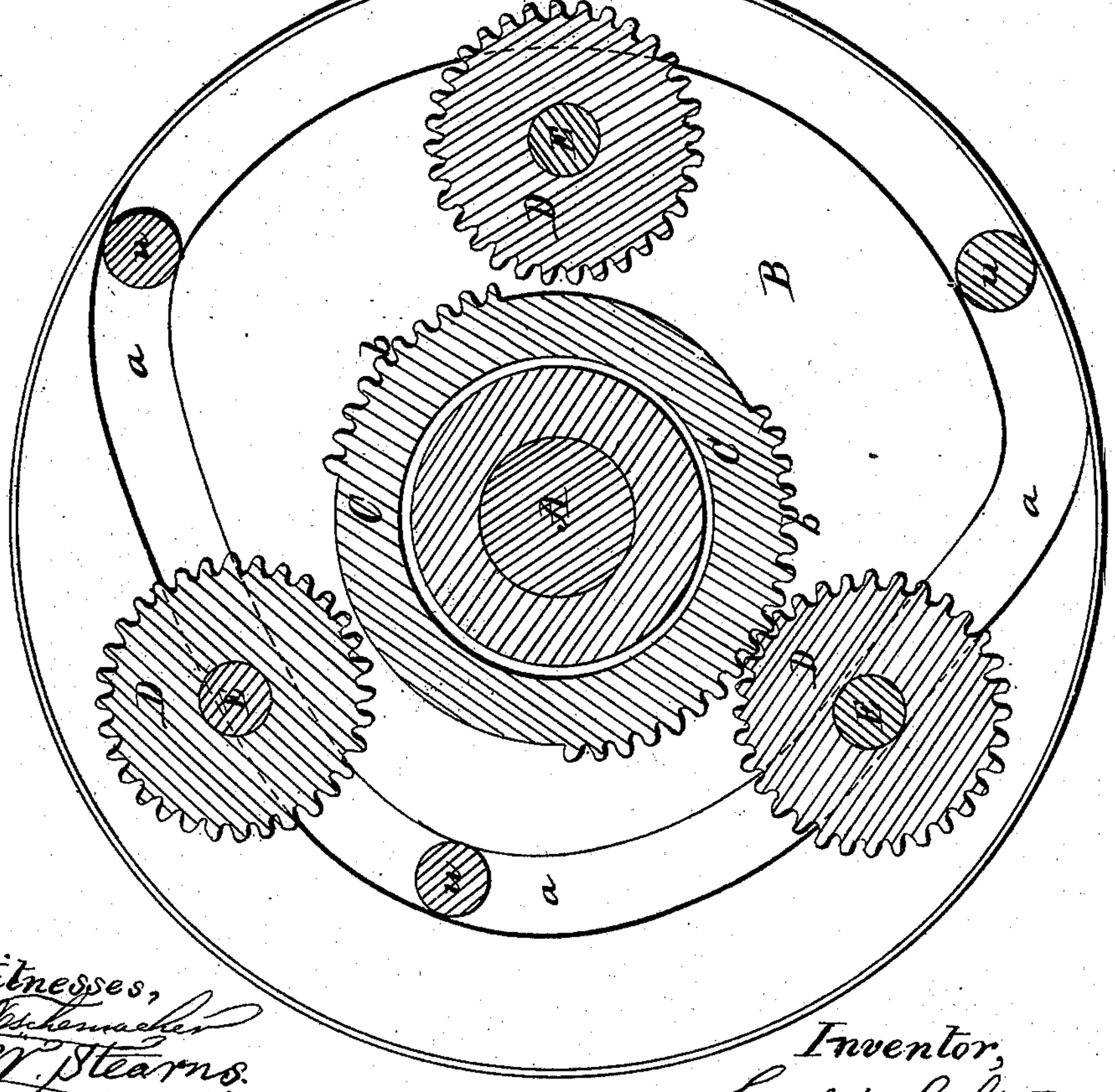


Fig. 3.



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United States Patent Office.

CALEB S. STEARNS, OF MARLBORO, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND W. E. C. WORCESTER, OF SAME PLACE.

Letters Patent No. 66,184, *dated June* 25, 1867.

IMPROVED MACHINE FOR TRIMMING 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, CALEB S. STEARNS, of Marlboro, in the county of Middlesex, and State of Massachusetts, have invented an improved Machine for Trimming the Heels of Boots and Shoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of my improved machine.

Figure 2 is a vertical section on the line *x x* of fig. 1.

Figure 3 is a horizontal section on the line *y y* of fig. 2.

Figure 4 is a detail to be referred to.

My invention has for its object to provide a machine in which a number of heels for boots and shoes may be successively placed in position and be trimmed and removed therefrom without the necessity of stopping the machine; and my invention consists in a revolving table provided with upright frames, in bearings, in each of which the plate carrying the heel is made to revolve independently of the table, and in a contrary direction to that of the knife while trimming the heel, which, when carried up thereto, and during the operation of trimming, is held securely in place, and is unclamped automatically when carried back from the knife to admit of its removal by the attendant.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is a vertical post, which supports a horizontal plate, B, in the upper side of which is formed a cam-groove, *a*, of the shape seen in fig. 3. Upon the plate B, and concentric with the post A, is secured an annular ring, C, portions *b b'* of the outer surface of which are provided with teeth, into which gear the cog-wheels D, secured to the lower ends of the shafts E, which pass up vertically through a revolving table, F, and through standards G, secured thereto at *c*; the construction of the parts being such as to allow these shafts to revolve freely therein. The table F is revolved in the following manner: *d* is a bevel-gear, cut on the rim of the under side of the table, which is driven by a bevel-pinion, H, secured to a short shaft, I, the inner end of which rests in a bearing, *e*, secured to the outside of the plate B; the outer end of this shaft passing through a standard, J, and being provided with a pulley, K, to which the driving power is communicated. The upper and lower ends of the standard J are secured to the ends of pieces L, which are fastened to the top and bottom of the vertical post A, while near the upper end of this standard is formed a bearing, *f*, for a horizontal shaft, M, to the outer end of which is keyed a pulley, N, driven by means of a belt passing around the pulley K. The inner end of the shaft M revolves in the post A, and is provided with a bevel-wheel, O, which engages with and drives a bevel-pinion, P, secured to the top of a block, Q, which surrounds the post A, and rests upon a cylindrical collar, R, also surrounding the post. S is a knife or cutter, of the form seen in fig. 4, secured to the side of the block Q by the screw *g*, and provided with a slot, *h*, by which construction the necessary adjustments may be readily made. T are frames, the inner or upright portions, 6, of which surround the shafts E, and swing freely thereon. Each frame T is provided with an upper and lower arm, *i j*, the outer ends of which are turned out for the reception of short cylindrical shafts or arbors *k l*, upon which are formed small grooved wheels *m n*, which are revolved by belts or chains *o p*, passing over corresponding grooved wheels *q r*, on the shaft E, when the cog-wheel D, at its lower end, is brought into a position to engage with the teeth *b* on the annular ring C. The shaft or arbor *l* is made hollow for the reception of a short cylindrical pin, *s*, to the top of which is secured a plate, U, a plate, V, also being secured to a pin, *s'*, screwed in the bottom of the arbor *k*, (see fig. 2.) Between these plates U V is placed, bottom side up, the heel to be trimmed, which is retained in place therein, and carried forward to the revolving knife by the following means: The revolving table F is provided with slots *t*, for the reception of upright pins *u*, secured at *v* to the extremities of the arms *j* of the frames T. These pins *u* project down through the slots *t* into the groove *a*, and are provided with friction-rollers *w*, which are made to travel freely therein by the operation of revolving the table F, the form the groove *a* being such that the pins *u* are carried thereby back and forth in the slots *t*. As each of these pins is moved in its slot in the direction of the arrow 7, the lower end of the pin *s* is moved from off the

flat surface 8 of the revolving table up the side of an incline 10, to the flat surface 11 of the said table, by which operation the heel is raised, and thereby securely clamped against the under side of the plate V, which is pressed down upon it by means of a flat spring, 12, secured to the arm *i* at 13. As the table F is revolved, the cog-wheel D engages with the toothed portion *b*, and the heel in the position above described is brought up so that its edge 14 comes in contact with the knife, when the heel commences to revolve in the direction of the arrow 15, the knife making a smooth and finished cut round to the point 16. As the table F continues to revolve, the pin *u* is carried in the slot *t* away from the axis of revolution, and the plates U V, with the finished heel between them, recede therefrom, when, as the bottom of the pin *s* descends the incline 10, the heel is unclamped automatically, and is then removed by the attendant, who places another heel upon the plate, which, on the gear D engaging with the toothed portion *b'* of the annular ring C, is revolved so as to bring the heel into the proper position to be cut, as previously described. The end of the arm *j* to which the pin *u* is secured may be provided with a slot in order that heels of various sizes may be adjusted into the desired position in respect to the knife.

By the employment of an automatic apparatus, constructed as above described, great economy of time and labor is effected in the operation of finishing heels, as it is only necessary for the attendant to place them on their plates U V, when they are successively carried up to the revolving knife one after the other, and revolved in a contrary direction thereto, and after being trimmed, are removed by hand in a convenient and expeditious manner, and the plates are ready for the reception of more heels to be trimmed, in the manner previously explained.

Claim.

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

The revolving table F, with its swinging-frames T, operated by mechanism, substantially as described, for traversing the heels to and from the knife, and for holding them in position while being trimmed, substantially as set forth.

I also claim the shafts E, with their gears D, revolved by the tooth portions *b b'* of the annular ring C, in combination with the pins *s s'*, and their plates U V, or other suitable mechanism for producing the required revolution of the heels, substantially in the manner set forth.

I also claim the incline 10 for raising the plates U, which support the heels for the purpose of holding them firmly in position between said plates U and yielding pressure-plates V, substantially as set forth.

CALEB S. STEARNS.

Witnesses:

P. E. TESCHEMACHER,

N. W. STEARNS.