

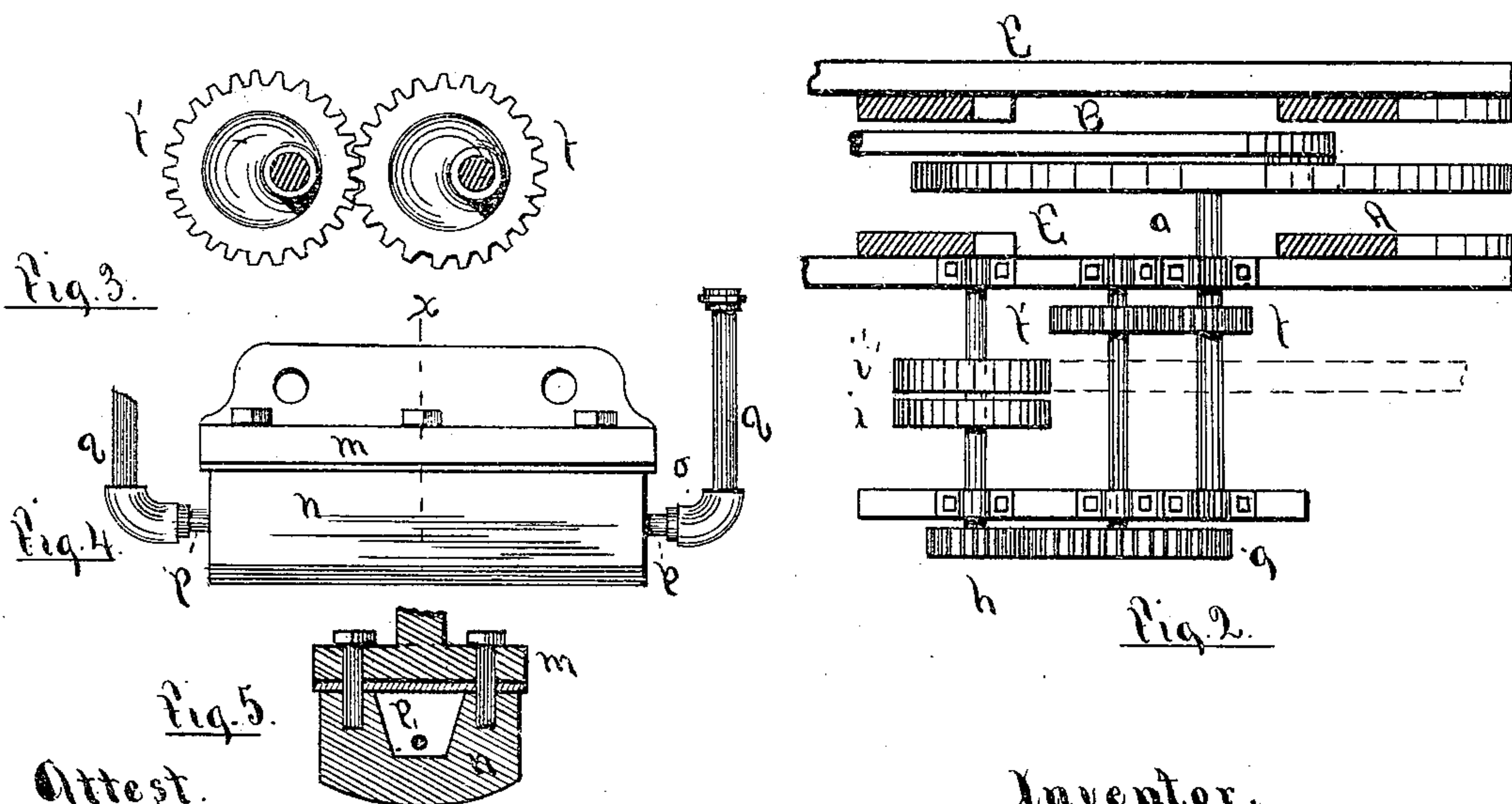
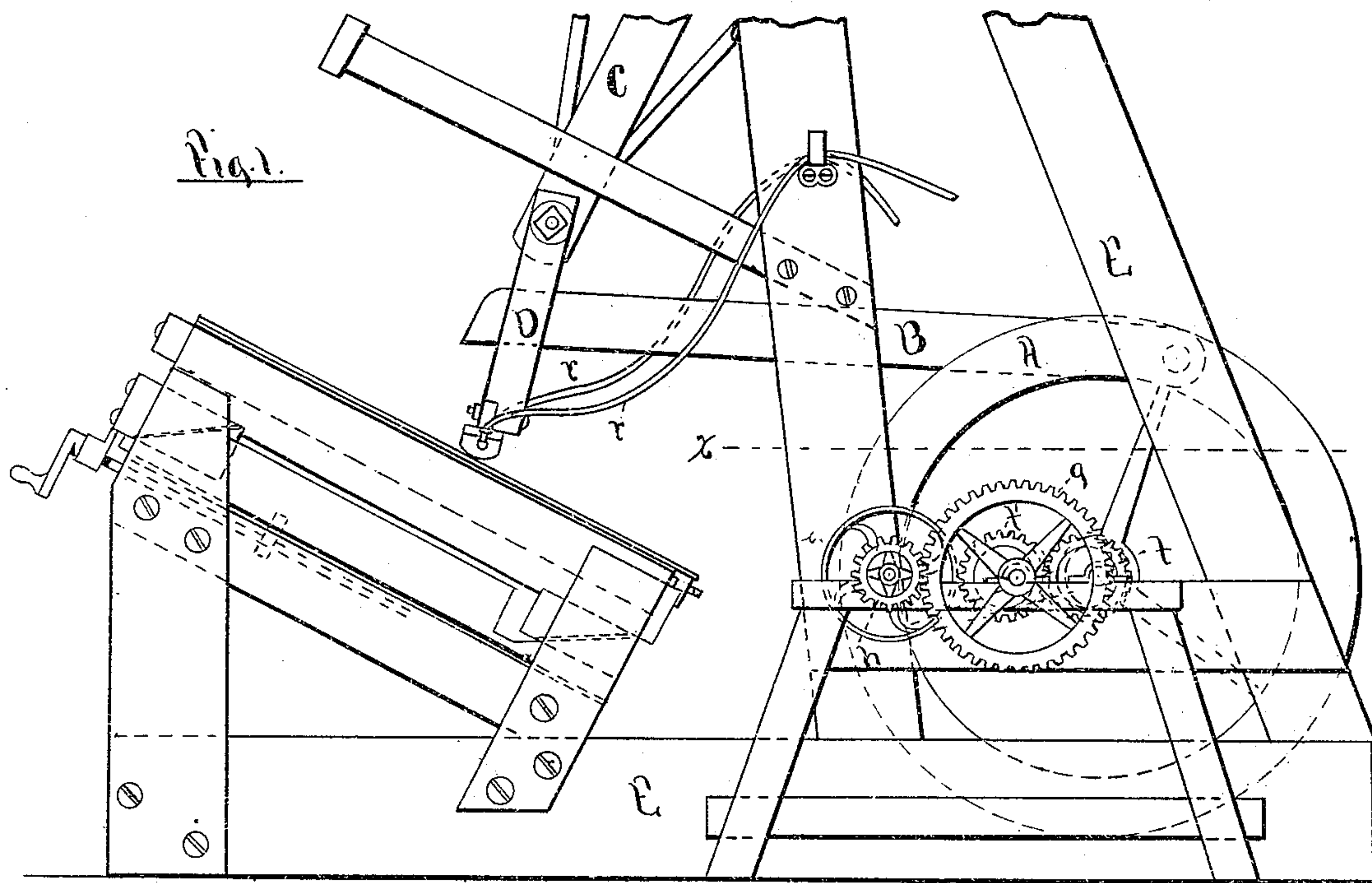
(No Model.)

A. M. BOWERS.

LEATHER FINISHING MACHINE.

No. 354,178.

Patented Dec. 14, 1886.



Attest.

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UNITED STATES PATENT OFFICE.

ALBERT M. BOWERS, OF NEWARK, NEW JERSEY.

LEATHER-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 354,178, dated December 14, 1886.

Application filed September 2, 1885. Serial No. 175,972. (No model.)

To all whom it may concern:

Be it known that I, ALBERT M. BOWERS, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Leather-Finishing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 in the drawings above referred to is a side elevation of a leather-finishing machine, illustrating my improvement therein. Fig. 2 is a top view or plan of the large driving-wheel and the gearing by which said wheel is rotated, the supports of the frame being in section. Fig. 3 is a side elevation of the eccentric gearing. Figs. 4 and 5 are respectively a side elevation and transverse section of a steam-heated smoother or ironer, the sectional view being taken through line *x* of Fig. 4.

This invention relates to certain improvements in a leather-finishing machine for which an application for Letters Patent of the United States was filed June 8, 1885, Serial No. 167,975, and is designed to so control the movement of the roll-carrying beam and the parts secured thereto that while the finishing-roll is upon the leather the movement thereof is much slower than in the back or return stroke, and the work in consequence more thorough and perfect. The return movement from the end of the working-stroke to the beginning of the same is made very quickly, whereby the greater portion of the time, which was formerly equally divided into a forward and backward motion, only one-half of which was utilized in work, is now employed in actual and effectual work.

The invention also relates to improvements in rolling or friction devices employed in glassing and pebbling leather, whereby the leather is more perfectly treated and producing better results than with the ordinary rolls.

The invention consists in the combination, with the roll-carrying beam or the beam-actuating wheel of a leather-finishing machine herein described, of mechanism for causing said beam or wheel to vary their movement at

different portions of their stroke or revolution, producing a fast and slow motion in the beam and the parts attached thereto.

The invention further consists in a steam-heated smoother or ironer, preferably having a convex smoothing or glassing surface.

The mechanism illustrated in the drawings, and preferably used to produce the fast and slow motion in the roll-carrying beam, consists of eccentric gearing and their attendant actuating mechanism.

A in the drawings indicates the beam-actuating wheel; B, the connecting rod or beam; C, the rocker-beam; D, a pivoted arm or beam to which the leather-finishing roll or ironer is attached, and E the frame-work of the machine. To the shaft *a* of the large wheel A is keyed or otherwise fastened an eccentric gear-wheel, *f*, with which a second eccentric wheel, *f'*, meshes, as illustrated in Figs. 1, 2, and 3.

g and *h* are a gear and pinion, and *i* and *i'* are fast and loose pulleys, which drive the eccentric gear-wheels and the wheel A, &c.

Intermediate gearing may be interposed between the eccentric gearing and the large wheel A, to increase or diminish the speed should it be considered necessary or desirable; but under ordinary circumstances the arrangement shown in the figures of the drawings is preferred.

By reference to Fig. 3 it will be seen that the eccentric arc of the wheel *f* meshes with the concentric arc of the wheel *f'*. When in this position, the finishing-roll is in contact with the leather and the beam is making its slow downstroke, as indicated in Fig. 1. When the position of the eccentric gear-wheels is reversed, the concentric arc of the wheel *f* engages with the eccentric arc of the wheel *f'*, and in consequence the upstroke of the beam is made more rapidly. By this action the machine is made much more effective, performing in a given time a greater amount of work than has heretofore been accomplished, and of better quality. The eccentric gearing not only causes and transmits a variate movement, but greatly increases the pressure of the roll upon the leather, and the power of the machine by means of the increased leverage of the eccentric arcs.

In Figs. 4 and 5 is illustrated in detail a steam-heated ironer or glasser, which is secured to the beam D, as indicated in Fig. 1,

and consists of an upper plate, *m*, which is bolted to the beam D, to which is attached a hollow or chambered plate, *n*, with packing *o* between to provide a steam-tight joint. Steam-ducts *p* are made in each end of the plate *n*, communicating with the steam-chamber within, and piping *q*, connected therewith, as in Fig. 4.

The constant movement of the ironer and beam forward and backward necessitates flexible tubing *r*, to conduct steam to the ironer and at the same time permit the requisite amount of play.

The glassing-surface of the ironer which comes in contact with the leather is preferably convex, as indicated in Fig. 5, to more perfectly adapt itself to the leather as the ironer is moved thereon.

I am fully aware that a broad claim of eccentric mechanism, in combination with a leather-finishing machine, would be untenable, as a cam eccentric has been employed in connection with the agate or roller carrying arm to cause the raising and lowering of the said arm from and toward the bed of the machine; but in said machine the forward and backward movement of the agate-arm is regular and at equal rate of speed. By means of the eccentric gearing or toothed wheels in my improved device a varying rate of speed is produced in the ironer-carrying frame or beam acting directly from and through the driving-wheel, the lifting of the tool or ironer being effected by means of the pivoted arm D and pitman or connecting-rod B, as set forth in a contemporaneous application filed June 8, 1885, Serial No. 167,975.

Having thus described my invention, I desire to claim the following:

1. In a leather finishing machine, the combination of an ironer and its holding-frame or carriage having one rate of speed in its operative stroke, and a quicker rate of speed in its return-stroke, and a speed-varying device, substantially as described, for giving said movements to said frame and ironer, substantially as set forth.

2. In a leather-finishing machine, the combination, with the roller or ironer carrying beam, connecting-rod, and driving-wheel, of mech-

anism, substantially as described, whereby said wheel is caused to vary its speed at different portions of its revolution, producing a fast and slow movement in the connecting-rod and the ironer-carrying beam, for the purpose set forth.

3. In a leather-finishing machine, in combination, an ironer or roller carrying beam, a connecting-rod, a driving-wheel, and eccentric gearing arranged and operating in connection with said driving-wheel to cause the said wheel to vary its speed at different portions of its revolution, producing an alternating fast and slow movement in the connecting-rod and the ironer-carrying beam, for the purposes set forth.

4. In a leather-finishing machine, in combination, an ironer or roller, a beam to which said roller is attached, a connecting-rod, a driving-wheel, eccentric gear-wheels *f f'*, and actuating mechanism for said eccentric gear-wheels, substantially as and for the purposes set forth.

5. In a leather-finishing machine, in combination, an ironer-carrying beam, a connecting-rod, a driving-wheel, eccentric gear-wheels *f f'*, one of which actuates the driving-wheel shaft, gear-wheel *g*, and pinion *h*, all said parts being arranged and operating for the purposes set forth.

6. In a leather-finishing machine, the combination, with a tool or ironer frame or carriage, of a chambered tool rigidly secured to said carriage, having a convex ironing-surface and provided with openings or ducts *p*, communicating with the interior of said chambered tool, and flexible tubes *r*, connected with said ducts, by means of which steam is circulated through the chambered tool, and which also permit the free movement of the said tool and carriage, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of August, 1885.

ALBERT M. BOWERS.

Witnesses:

FREDK. F. CAMPBELL,
G. E. CAMPBELL.