

(No Model.)

2 Sheets—Sheet 1.

A. M. BOWERS.
LEATHER FINISHING MACHINE.

No. 339,134.

Patented Apr. 6, 1886.

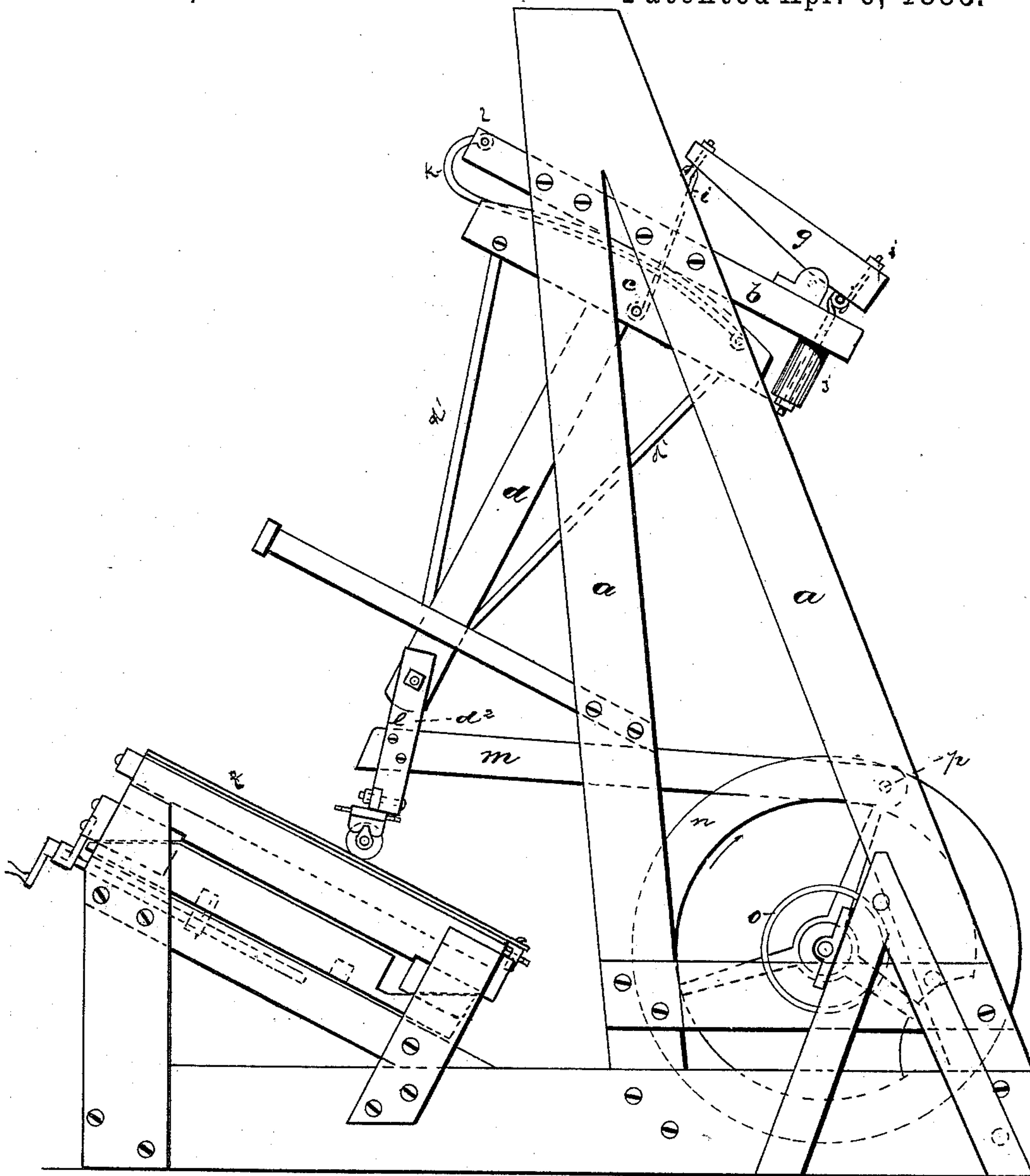


Fig. 1.

Attest:

And. S. Adams,
Oscar A. Michel.

Inventor:

Albert M. Bowers,
by Drake & Co.
attys.

(No Model.)

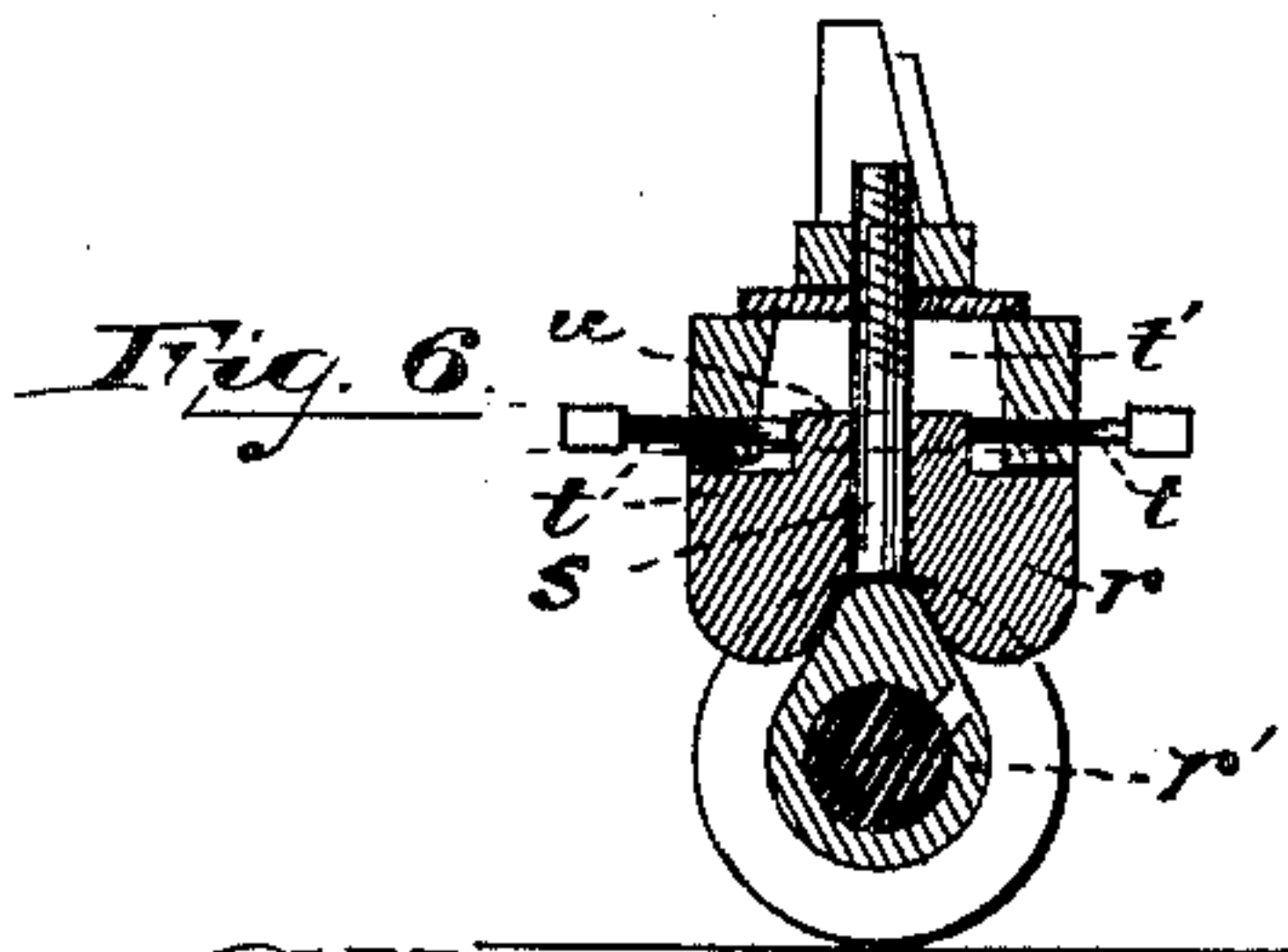
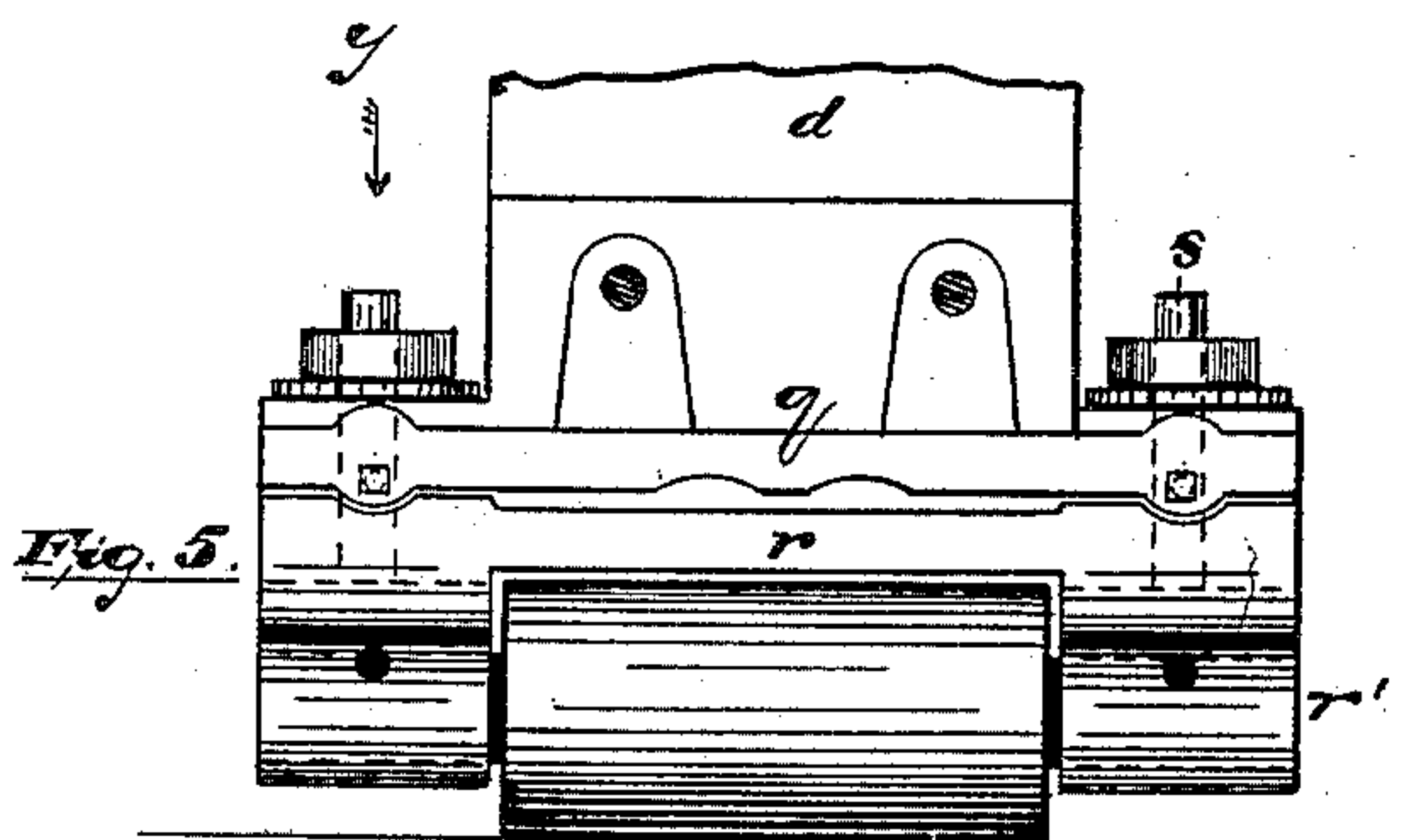
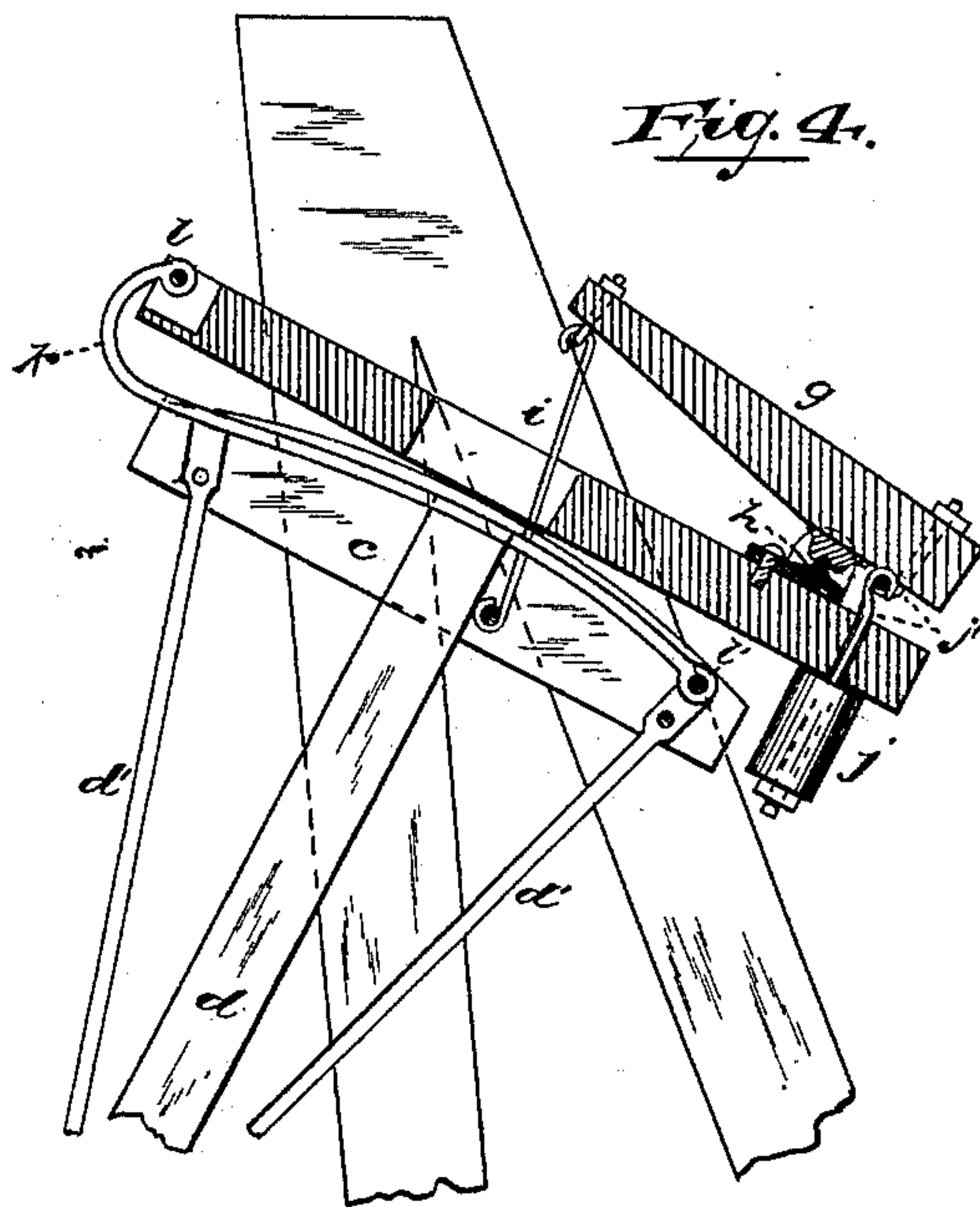
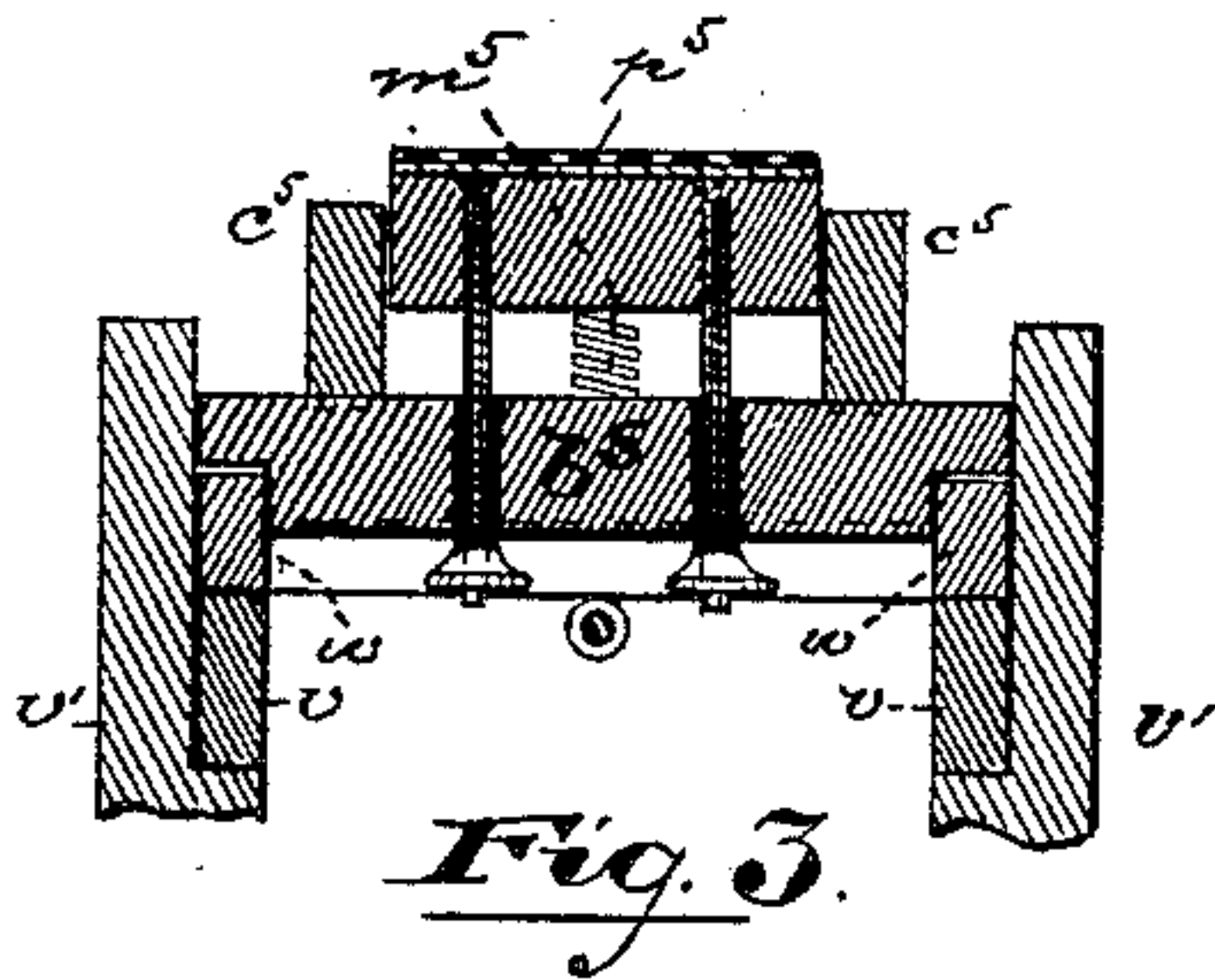
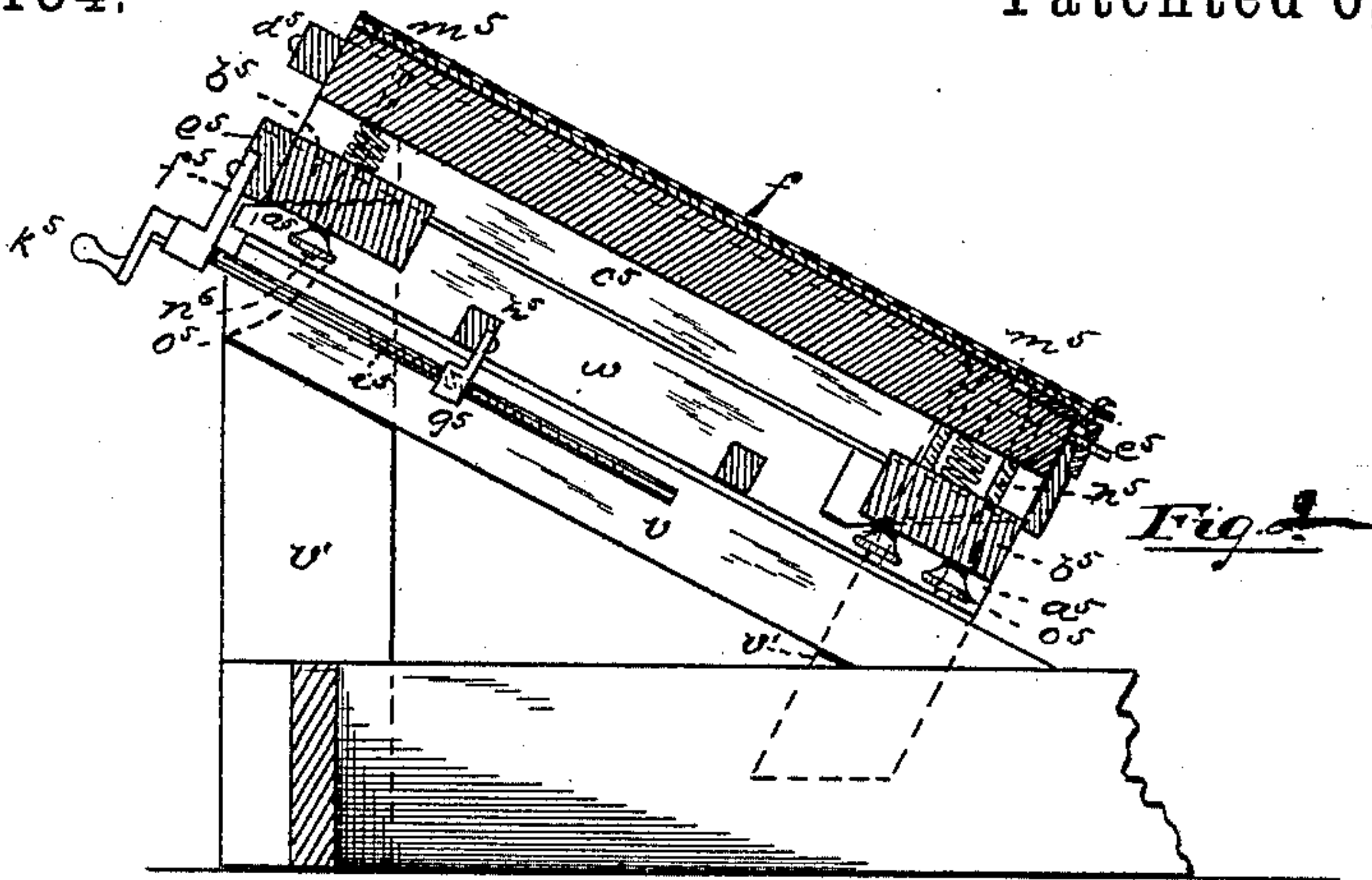
2 Sheets—Sheet 2.

A. M. BOWERS.

LEATHER FINISHING MACHINE.

No. 339,134.

Patented 6, 1886.



Attest:

Edw. S. Adams,
Oscar A. Michel.

Inventor:

Albert M. Bowers,
by Drake & Co.
attys.

UNITED STATES PATENT OFFICE.

ALBERT M. BOWERS, OF NEWARK, NEW JERSEY.

LEATHER-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 339,134, dated April 6, 1886.

Application filed June 8, 1885. Serial No. 167,975. (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.

The object of this invention is to more evenly and perfectly pebble, glass or glaze, or otherwise finish the surface of sides of leather; and it consists in the arrangements and combinations of parts, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1, Sheet 1, is a side elevation of the improved machine. Fig. 2, Sheet 2, is a vertical longitudinal section of an inclined bed upon which the leather is finished. Fig. 3 is a cross-section taken through the adjusting-screws near the upper end of said bed. Fig. 4 is a vertical longitudinal section taken at the top of the machine, to show more clearly the arrangement of a rocking pendulum on its "tread." Fig. 5 is a front view of a head carrying a roller; and Fig. 6 is a section of the same, taken through line *y*.

In said drawings, *a a* indicate the frame, which provides bearings for several working parts, at or near the top of which is arranged a tread, *b*, for the rocker *c* of the pendulum. Depending from said rocker, at right angles thereto, or nearly at right angles, is a beam, *d*, which extends toward a bed, *f*, for holding the leather, and is braced by suitable pieces, *d' d'*, from which appropriate rigidity and strength are secured. The said bed *f* is preferably arranged in an inclined position, as shown, to enable the workmen to handle the leather more conveniently while it is being finished, and when such is the case the tread *b* is arranged parallel with it. The curved

side of the rocker is held up against the tread by a spring-actuated lever, *g*, fulcrumed on the tread or on any suitable portion of the frame, as at *h*, and tied at one end by the tie or coupling rod *i* to the rocker, at or near the center thereof. At the other end the said lever is connected with a spring, *j*, of rubber, metal, wood, or other elastic substance, which tends to lift the rocker and hold it against the tread, the said spring and lever being preferably arranged in the relative positions shown more clearly in Fig. 4, and connected by coupling-bolts *j'*.

To prevent any longitudinal displacement of the rocker on the tread, I provide, preferably, a rod, *k*, which is secured at one end, as at *l*, to said tread, and at the other, *l'*, to the rocker, the said rod lying longitudinally parallel with the parts to which it is attached, and having a pivotal motion, to allow the proper motion of the pendulum. To the lower end of the beam *d* of the pendulum is pivoted, so as to allow a motion independent of that of the said beam, a carriage, *d''*, which is rigidly connected to a pitman or connecting rod, *m*. Said rod *m* is attached by means of a suitable crank-pin, *p*, to a crank-wheel, *n*, operated by a driving-pulley, *o*. The crank and pitman give a reciprocating motion to the lower end of the beam and the finishing-tool thereon, and the position of the carriage is, because of the rigid connection of the two, effected by that of the pitman, so as to raise the roller from the bed or the leather thereon in one of its strokes, and secure an operative working of the tool on the leather in one direction only—that is to say, the position and motion of the crank-wheel being in the direction indicated in Fig. 1, and the position of the pitman being nearly horizontal and that of the carriage vertical, the movement of the crank and pitman holds the tool down on the leather on the bed *f*, to produce the desired finish, as long as the motion is backward or from the operator, and the crank-pin *p* is raised above a position horizontally in line with the crank-wheel. On the return-stroke of the pitman toward the operator the end connecting with the crank is lowered so as to lie in an inclined position. This tilts the carriage, so that the roller is raised considerably above the sur-

face of the leather, allowing the operator to change the position and otherwise manipulate the same.

It will be observed upon reference to Figs. 1 and 2 that when the greatest tension is on the spring *j* the tool is at the beginning of its operative and return strokes, so that the said spring helps the machine in its work, and the jar which would otherwise be occasioned, and which makes other machines for a similar purpose so objectionable, is greatly reduced.

By the construction described the operative stroke of the roller or tool is parallel with the surface of the bed, and the pressure of the said tool on the leather is uniform throughout its said stroke, making a uniform glaze, or, if an engraved roller is employed, a uniformly-impressed pattern. In lieu of the roller, I may employ a stationary tool, which produces the desired finish by rubbing or friction.

The lower end of the carriage is provided with suitable bearings for the roller. I prefer to form the same substantially as shown in Figs. 5 and 6, in which *q* is a head or casting rigidly fastened to the body of the carriage, and *r* is an adjustable plate on which the tool is secured either by means of supplemental bearing-pieces or journals *r'* *r'* or directly. The said adjustable plate is held to the fixed head by screws or bolts *s s*, which pass through slots *t' t'* of the former, the slots allowing the relations of the fixed-head screw to be changed, as will be explained.

Projections *u u* of the adjustable head extend up into the slots *t'*, and to adjust the plate *r* so that the roller will lie exactly at right angles to the line of action of the pendulum I provide the fixed head, at each side of the roller, with set-screws *t t*, which bear upon the opposite sides of the said projection, holding the latter therebetween. By loosening one set-screw and taking up the play with the other the relation of the roller to the fixed head may be changed, so that the roller will not tend to roll to one side or the other, but will take a direct course in line with a normal vibration of the pendulum.

The inclined bed on which the rubber rests is made adjustable, whereby it may be readily accommodated to the varying thicknesses and grades of leather, may be moved to or from the tool, so as to bring the leather to a working engagement with the tool, the desired pressure upon the leather may be secured, and a uniformity of pressure may be gained. The mechanism whereby these results are attained is in substance as follows: At the bottom of the bed, considered as a whole, are inclined fixtures *v v*, which may be held in proper position by upright pieces or standards *v' v'*, which also serve the purpose of guides. Upon said fixtures slide beams *w w*, each of which is provided at or near its opposite ends with wedge-shaped portions *a^s a^s*, the inclined surfaces of which are parallel with one another, as indicated. Upon said inclines rest cross-pieces *b^s b^s*, the opposite ends of which

are correspondingly beveled or inclined, to engage the wedge-like portions of the slides. The said cross-pieces *b^s b^s* are rigidly fastened to and carry a frame composed of longitudinal pieces *c^s c^s*, and a tie piece or pieces, *d^s*, in which frame the bed proper, *f*, fits and works vertically, or approximately so, therein. The cross-pieces *b^s* and frame are held from moving laterally by the standards *v' v'*, (see Fig. 3,) and longitudinally by the tie-pieces or end-stops or guides, *e^s e^s*, (see Fig. 2,) but are allowed an upward movement in the stops or guides *v' e^s*, being actuated by the inclines or wedges of the sliding beams *w*. Said beams *w* are caused to move longitudinally by an adjusting-screw, *i^s*, having a fixed bearing, *f^s*, on the piece *e^s*, connecting the upper standards, and a second bearing, *g^s*, on a cross-bar, *h^s*, which connects the sliding pieces *w*. By turning the screw *i^s* by means of the crank *k^s* the sliding pieces are caused to move longitudinally, so that the wedge-like portions thereof engage the beveled surfaces of the cross-pieces *b^s*, causing the frame *c^s c^s d^s* and the bed *f*, carried thereby, to rise or fall uniformly throughout its length to or from the finishing-tool.

To accommodate the bed to any slight inequalities, the said bed is seated on springs *m^s m^s*, centrally disposed near the upper and lower ends of said bed, on the underside thereof, said bed being held down on said springs by bolts *n^s n^s*, the first being centrally in line with the said springs and the latter laterally adjacent to the upper spring, as shown in Fig. 3, whereby the bed may be tilted to one side or the other, so as to bring it parallel with the roller or other tool carried by the pendulum. The said bolts are held firmly in the bed *f*, but are allowed a limited play in the cross-pieces, the said play being controlled by thumb-nuts *o^s*. The bed *f* may be covered with a leather strap or other form of cushion, *p^s*, Fig. 3, which latter may be drawn or distended by a suitable end screw (not shown) fastened to the lower of the tie-pieces *e^s*.

I am aware that these adjustments may be secured by other means than the mechanism herein shown and described, and I do not wish to be understood as limiting myself to such mechanism, although it is preferred because of its simplicity, durability, strength, firmness, and cheapness.

I am aware that adjustable beds for holding the sides of leather are not new in machines for finishing leather; also, that reciprocally-moving tool-carrying mechanism actuated by a crank-wheel and pitman has been devised and patented; consequently I do not claim, broadly, such construction.

Having thus described my invention, what I claim as new is—

1. In a leather-finishing machine, the combination, with the parallelly-arranged leather-holding bed and rocker-tread, of a pendulum consisting of a rocker working on said tread, having a beam, *d*, secured thereto, and mech-

anism adapted to hold a finishing-tool connected with said beam, substantially as described, and also adapted to impart a reciprocating motion to said tool attached thereto, causing the same to engage with the leather bed in one stroke and be lifted from said bed in its return-stroke, for the purpose set forth.

2. In a leather-finishing machine, in combination, an adjustable leather-holding bed, a rocker-tread parallelly arranged in relation to said bed, a pendulum consisting of a rocker working on said tread and having a beam, *d*, extending therefrom, a spring-actuated lever connected with said rocker and secured upon the tread, a finishing-tool carriage pivotally-attached to said beam *d*, a crank-wheel, and a pitman rigidly secured to said tool-carriage, for the purpose set forth.

3. In combination, in a leather-finishing machine, an adjustable leather-holding bed, a rocker-tread parallelly arranged in relation to said leather-holding bed, a pendulum consisting of a rocker working on said tread and having a beam, *d*, extending therefrom, a spring-

actuated lever secured upon said rocker-tread and connected with the rocker, a rod, as *k*, one end of which is fastened to the tread and the other end to the rocker, to prevent longitudinal movement thereof, a tool-carriage pivotally attached to the lower end of the beam *d*, a crank-wheel, and a pitman rigidly secured to said carriage, for the purposes set forth.

4. In a leather-finishing machine, the combination, with a finishing-tool carriage, of a finishing-roll and its holding mechanism, consisting of a head or plate, *g*, adapted to be bolted to said carriage, an adjustable plate, *r*, and roller-journals *r'*, secured to said adjustable plate, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of May, 1885.

ALBERT M. BOWERS.

Witnesses:

OLIVER DRAKE,
CHARLES H. PELL.