

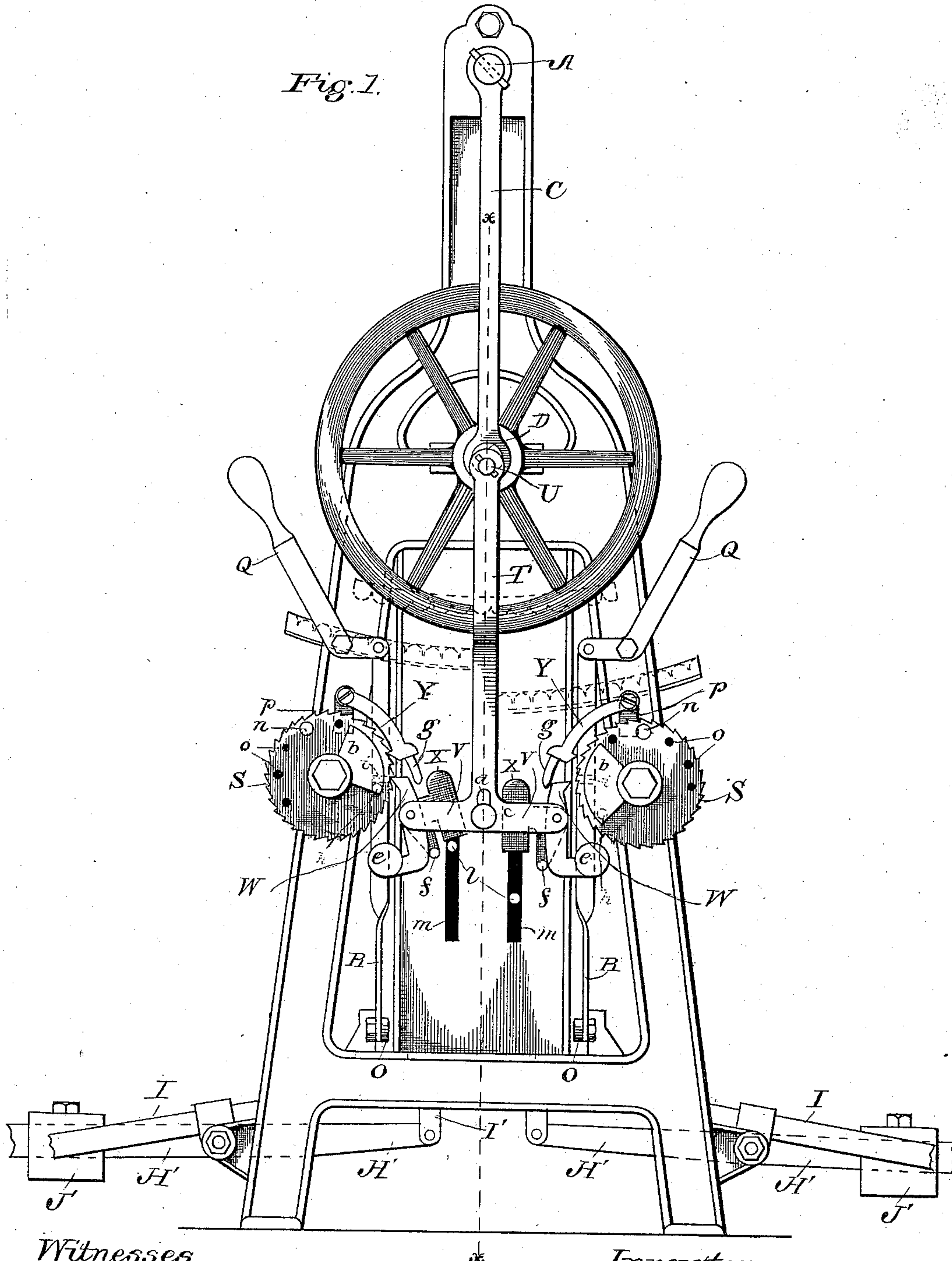
(No Model.)

3 Sheets—Sheet 1.

S. C. PALMER.
HAT SIZING MACHINE.

No. 365,852.

Patented July 5, 1887.



Witnesses
S. Williamson
C. L. Hubbard

Inventor
Seymour C. Palmer
By *Smith and Hubbard*
Atty's.

(No Model.)

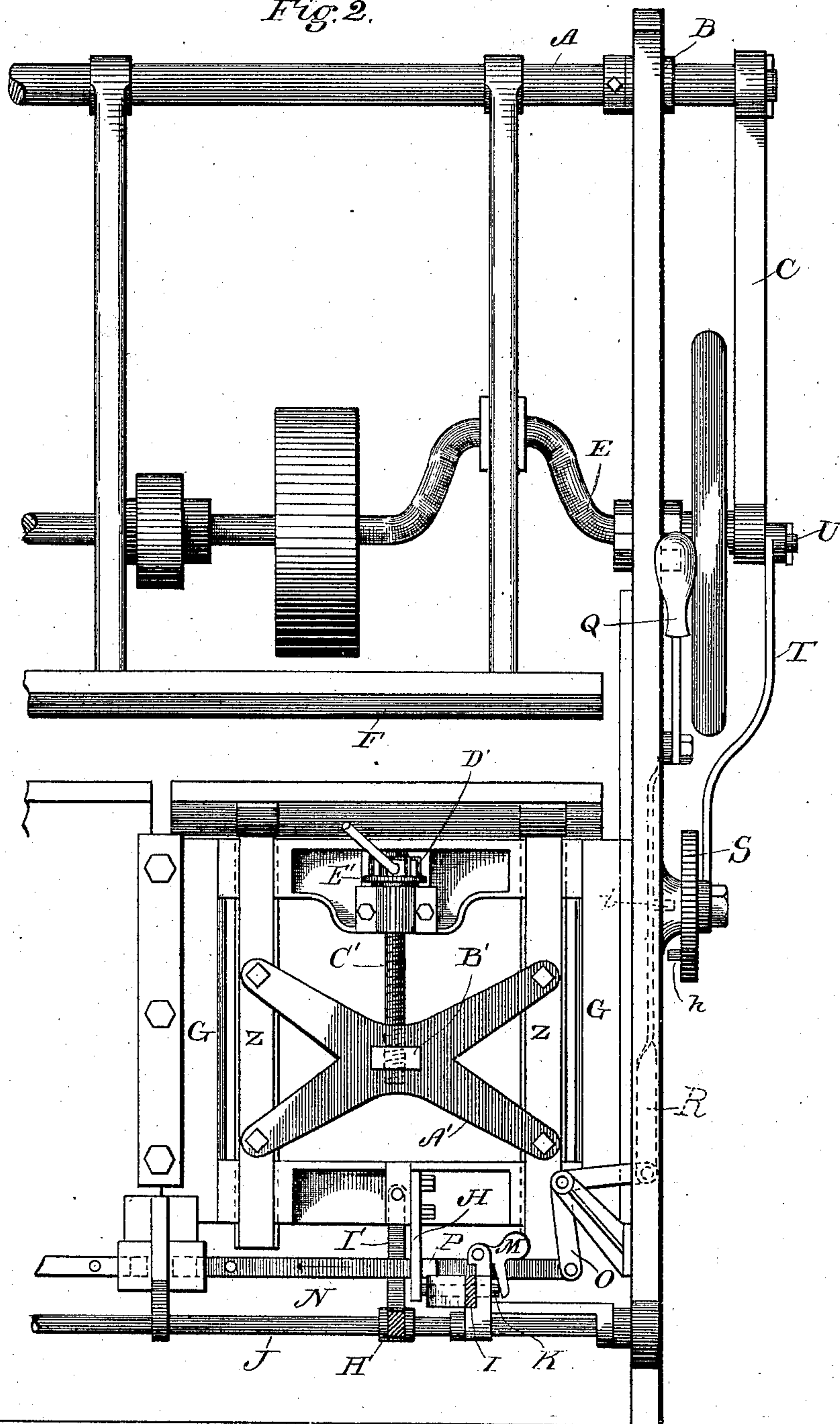
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Fig. 2.



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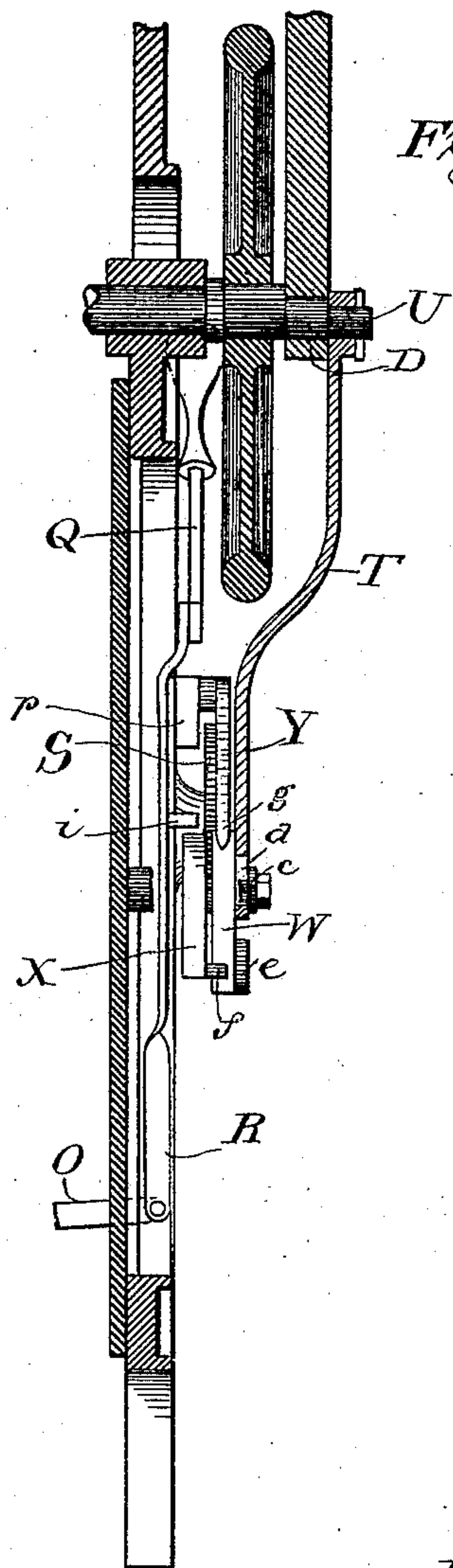


Fig 3

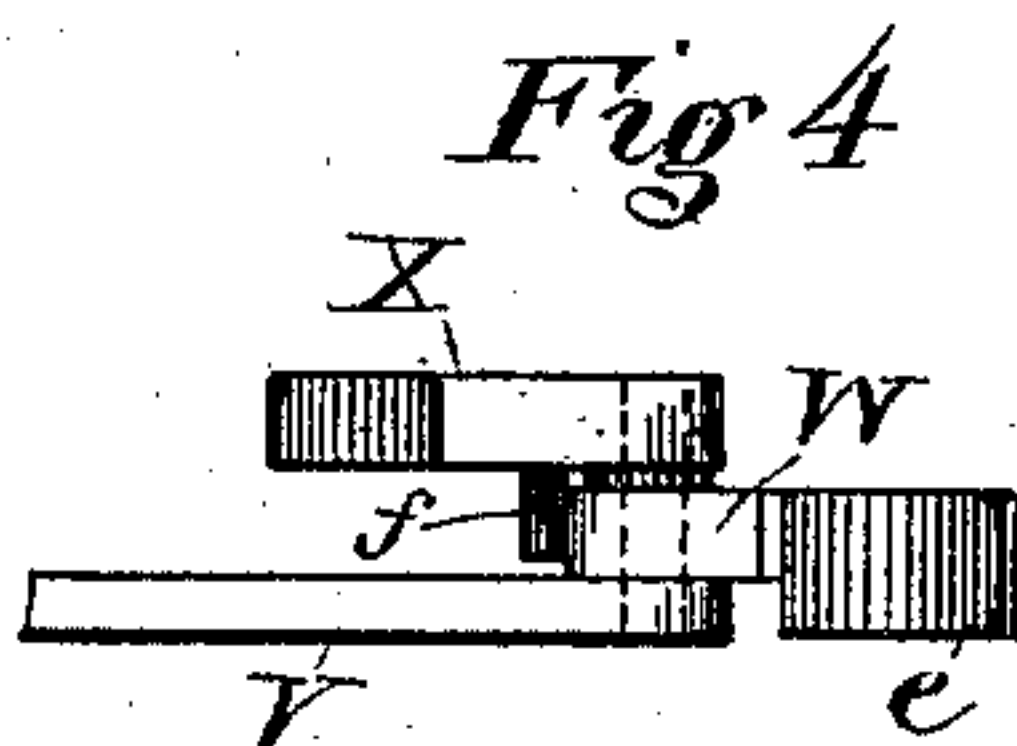


Fig 4

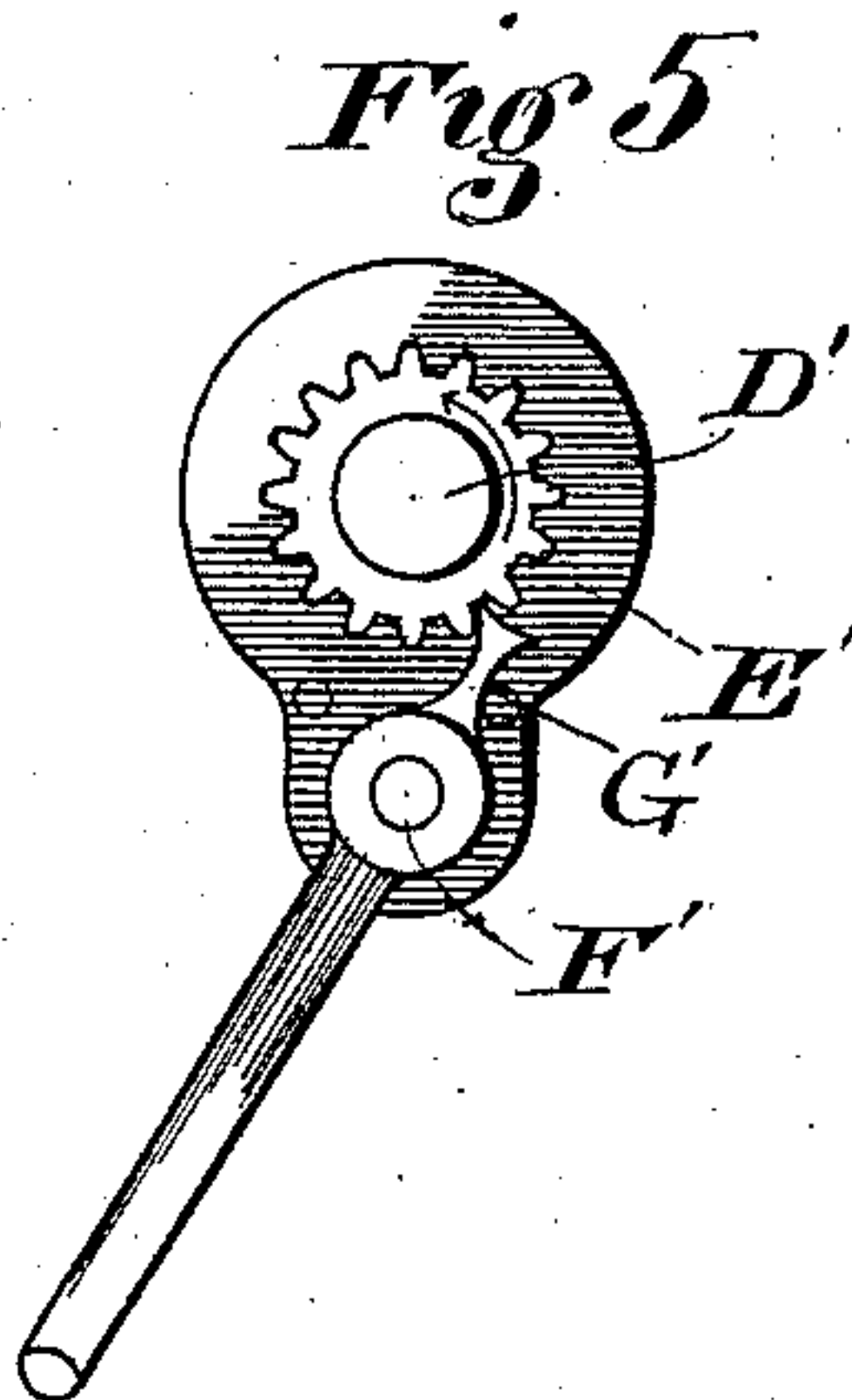


Fig 5

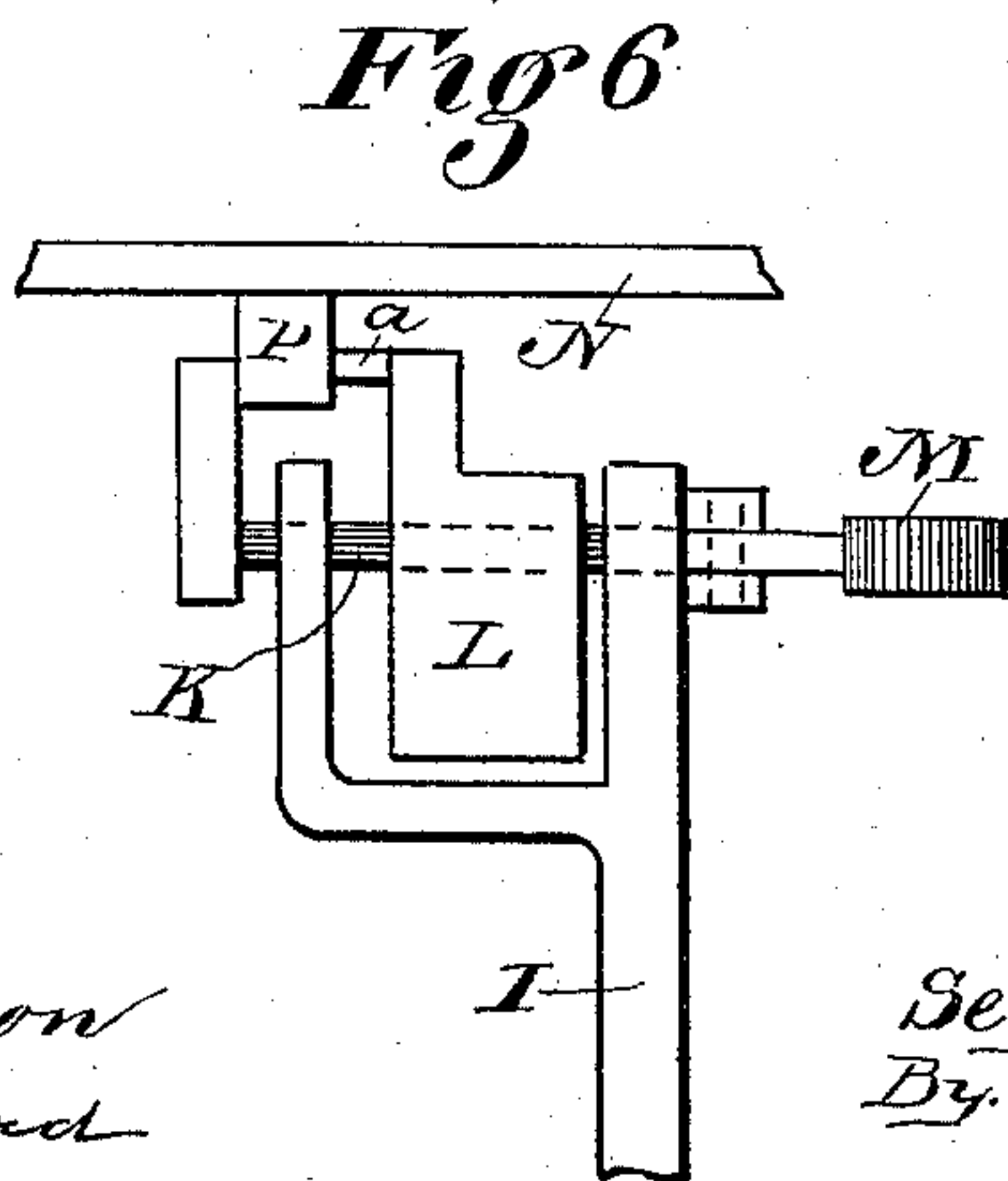


Fig 6

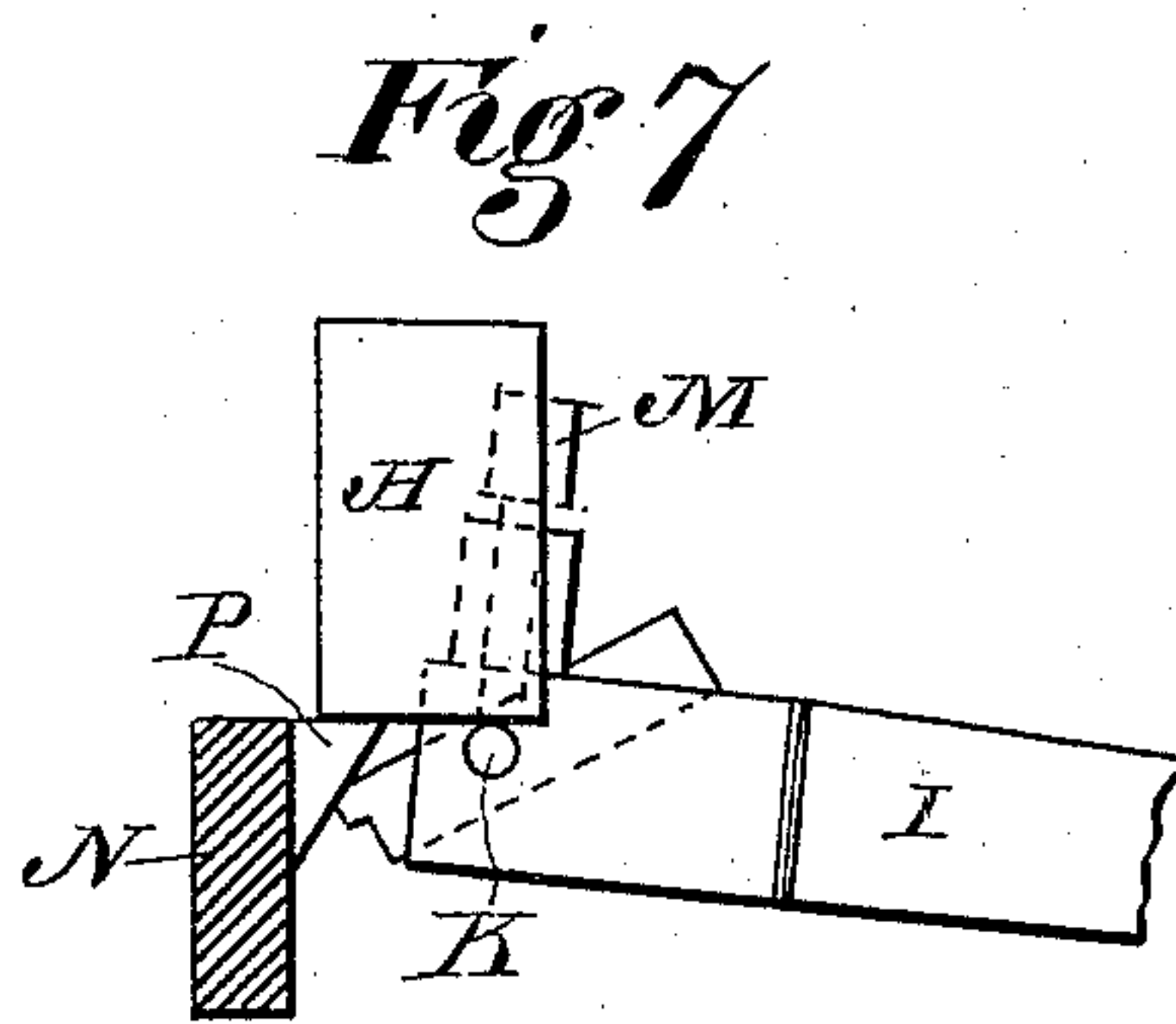


Fig 7

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UNITED STATES PATENT OFFICE.

SEYMOUR C. PALMER, OF SOUTH NORWALK, CONNECTICUT, ASSIGNOR
TO ELLEN M. PALMER, OF SAME PLACE.

HAT-SIZING MACHINE.

SPECIFICATION forming part of Letters Patent No. 365,852, dated July 5, 1887.

Application filed April 30, 1887. Serial No. 226,623. (No model.)

To all whom it may concern:

Be it known that I, SEYMOUR C. PALMER, a citizen of the United States, residing at South Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Hat-Sizing 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.

My invention relates to certain novel and useful improvements in machines for sizing fur hats, and has for its object the improving and simplifying of the construction shown in Letters Patent No. 320,581, granted to me the 23d day of June, 1885.

With these ends in view my present invention consists in certain details of construction and combination of elements, hereinafter fully set forth, and then specifically designated by the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and operation, I will proceed to describe the same, referring by letter to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation fully illustrating the automatic trip mechanism in both its positions; Fig. 2, a front elevation, one side of the machine being broken away; Fig. 3, a detail vertical section at the line *xx* of Fig. 1; Fig. 4, a detail plan of the operating-pawl and counter-weight; Fig. 5, a similar view of the adjusting ratchet and lever; Fig. 6 a detail plan of the bed-lifting mechanism, and Fig. 7 an elevation of the same.

Similar letters denote like parts in the several figures.

The frame-work of my present machine is substantially the same as that shown in my former patent above mentioned, and I will therefore refer to it only as occasion requires.

A is the rock-shaft journaled in boxes B, which have a slight vertical play in the upper portion of the frame, precisely as in my former patent. This rock-shaft is supported by connecting-bars C, which are in turn supported by eccentrics D, formed on the ends of the driving-shaft E, so that it will be seen that

the revolution of the driving shaft will cause the rock-shaft to rise and fall through a given distance in the same manner as in the above-referred-to patent, except that in the latter this rise and fall was adjustable, whereas in my present construction it is fixed, as I have found by experiment that the adjustability was not needed.

F represents the upper sizing-surface, which is supported and oscillated as set forth in my former patent, and for the same purpose.

As this machine is quadruple in its action, the description of one of the beds and its operating mechanism will be understood as applying to all four beds.

G is the frame which supports the bed, and runs in suitable guideways so as to have a vertical movement. From the bottom of this frame projects a plate, H, for the purpose presently explained.

I is a foot-lever fulcrumed on the rod J and having its inner end forked, as shown in Fig. 6. Through the outer ends of these forks passes a pin, K, and on this pin, between the forks, is secured a block, L, the outer end of which is heavier than its inner end, so that its normal position will be that shown. Pivoted to one of these forks is a bell-crank weight, M, the lower arm of which bears against one end of the pin K, forcing the latter toward the plate H, under which it passes when the inner end of the foot-lever is sufficiently lowered, as seen in Fig. 7.

To raise the bed-frame when the pin is under the plate H, it is only necessary to elevate the inner end of the foot-lever, whereupon said bed-frame, to which the plate is attached, will be thrown up sufficiently to bring the bed within the field of action of the upper sizing-surface, for the purpose of allowing the latter to act upon the hat-roll previously placed upon the bed.

To retain the bed in its elevated position without the further attention of the operator, I provide a slide-bar, N, one end of which slides in a groove at the center of the machine, while the other end is pivoted to and is carried by the lower arm of a bell-crank lever, O. Formed with the slide-bar and projecting outwardly therefrom within the field of the plate H is a lug, P, which, when the bed is

down, bears against the side of the plate; but on the raising of the plate by the foot-lever slides under said plate, as hereinafter explained, and thus retains the bed in its elevated position.

To facilitate the dropping of the bed by the operator, I pivot a hand-lever, Q, to the side of the machine within easy reach of the operator, and connect the inner end thereof with the upper arm of the bell-crank lever O by means of the connecting-rod R, so that it will be obvious that by moving the hand-lever outward the lug P will be withdrawn from under the plate H, and at the same time the pin K will be forced backward by the contact of said lug with the toe *a* of the block L, thus allowing the bed to fall by gravity without affecting the foot-lever. The weight of the connecting-rod R is such as to overbalance the hand-lever and tend to throw the slide-bar N in the direction indicated by the arrow, which movement, when the bed is down, is prevented by the abutment of the lug P against the plate H. In lowering the inner end of the foot-lever, so as to permit the pin to pass under the plate H, the toe *a* of the block L also passes under the lug P; but, as the block is pivoted, it will be swung during the upward movement of the lever to the position shown in Fig. 7, when, by the springing of the lug under the plate H, the block L is released and returns by gravity to its normal position.

To relieve the operator of the necessity of giving his attention to the hat-roll during the time it is being operated upon by the upper sizing-surface, I provide automatic mechanism for tripping the bed and allowing it to fall without the field of operation of said sizing-surface at any predetermined time, which is as follows:

S is a ratchet-wheel, such as is shown in my patent aforesaid, journaled to the side of the frame and weighted, as seen at *b*, the object of the weight being to return the wheel to its normal position when released.

T is a rod, the upper end of which embraces an eccentric, U, on the extremity of the driving shaft, whereby said rod receives a vertical reciprocation. The lower end of this rod is guided by a bolt, *c*, passing through a slot, *d*, formed therein, and terminates in right-angled extensions V.

W is an actuating-pawl pivoted to the extremity of each extension V, and having its lower end weighted, as seen at *e*, so as to throw the upper end into engagement with the ratchet S, as seen at the left-hand side of Fig. 1.

X is a counter-weight, also pivoted to the extremity of the extension V, and provided with a pin, *f*, which is adapted to bear against the lower portion of the actuating-pawl. This counter-weight is sufficiently heavy to overcome the weighted end of the actuating-pawl and thus throw the latter out of engagement with the ratchet, as shown at the left-hand side of Fig. 1.

Y is a gravity-retaining pawl, pivoted to the

frame of the machine and having a finger, *g*, which extends down and rests upon the back of the actuating-pawl when the latter is out of engagement with the ratchet. Projecting from the inner face of the ratchet is a pin, *h*. (Seen in Fig. 2 and also in dotted lines in Fig. 1.) The object of this pin is to lift the connecting-rod R by striking against a lug, *i*, which projects from said rod within the field of rotation of said pin, and thereby trip the bed in the same manner as described in connection with the hand-lever. This is accomplished by the step-by-step movement of the ratchet-wheel when the pawls are thrown into engagement therewith, which is brought about by the elevation of the counter-weight X out of contact with the actuating-pawl by means of a pin, *l*, projecting from the bed-frame out through a slot, *m*. Thus it will be seen that when the bed is elevated, as described, the pin *l*, carried thereby, will relieve the actuating-pawl of the counter-weight, and allow said pawl, together with the retaining-pawl, to go into engagement with the ratchet by their weight. Now, as the ratchet is actuated one tooth at each oscillation of the upper sizing-surface, it follows that the hat will be operated upon as many times as there are ratchet-teeth between the pin *h* on the ratchet and the lug *i* on the connecting-rod before the bed is dropped, and as their relative position between said pin and lug may be varied by changing the stop-pin *n* to either of the holes *o*, in the same manner as described in my patent before cited, it will be seen that the desired extent of operation upon the hat-roll in its several stages may be controlled automatically and without the care of the operator. When the bed is dropped by the withdrawal of the lug P from under the plate H, as above described, the lowering of the pin *i* will permit the counter-weight to exert its force upon the back of the actuating-pawl and thus disengage the latter, as well as the retaining-pawl, from the ratchet, as seen by the position of the parts at the right hand of Fig. 1. This frees the ratchet and allows it to return, on account of the weight, to its normal position, which latter is determined by the stop-pin striking against the block *p*. The several parts are now in the position necessary for a repetition of these movements upon the subsequent raising of the bed.

In order to vary the pressure upon the hat-roll while the upper sizing-surface is operating thereon, I provide a slide-frame consisting of the bars Z, which run in ways in the bed-frame and are connected by a criss-cross, A', in which latter is secured a nut, B'. In this nut runs an adjusting-screw, C', the upper end of which is secured in the bed-frame and provided with a ratchet, D'. Around the shank of this screw, just below the ratchet, is a plate, E', free to revolve, and projecting upward from said plate is a stud, F'.

G' is a pawl having an operating-handle and adapted to fit over the stud, so that the latter will form a fulcrum therefor. When the pawl

is in the position shown at Fig. 5, the operation of the ratchet will be in the direction of the arrow and will lower the bed; but by removing said pawl from the stud and replacing it so that it will operate on the opposite side of the ratchet, said ratchet will be turned in the direction reverse to that indicated by the arrow, thus elevating the bed.

To prevent the shock incident to the falling of the bed, I fulcrum a lever, H', to the rod J, and connect the inner end thereof to the bed-frame by a link, I', the outer end being provided with an adjustable weight, J'.

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

1. In a hat-sizing machine, the sizing-surfaces adapted to operate as described, in combination with the automatic tripping mechanism consisting of a ratchet-wheel actuated by a gravity-pawl carried by a rod which receives its reciprocation directly from the driving shaft, and means, as a counter-weight, for disengaging said pawl from the ratchet-wheel at a predetermined time, substantially as specified.

2. In a hat-sizing machine, the sizing-surfaces adapted to operate as described, in combination with a ratchet-wheel for automatically tripping the bed, a gravity actuating and retaining pawl, the latter adapted to be controlled by the former, a counter-weight for disengaging said pawls from the ratchet, and a pin carried by the bed for relieving said pawls of the counter-weight when said bed is elevated, substantially as and for the purpose set forth.

3. In a hat-sizing machine, the slide-bar adapted to retain the bed in an elevated position, in combination with means for tripping the same, substantially as described.

4. In a hat-sizing machine, the automatic bed-tripping mechanism consisting of a ratchet-wheel weighted, as shown, to return it to its normal position when released by the tripping of the bed, in combination with a gravity actuating and retaining pawl adapted to be kept out of engagement with the ratchet, when the bed is dropped, by a counter-weight, as specified.

5. In a machine as described, a foot-lever forked at its inner end and provided with a sliding pin adapted to engage with the bed-frame, whereby the latter may be elevated, in combination with a block secured to said pin and adapted to swing out of engagement with the lug P, and a toe formed with said block, whereby the latter may be removed by the abutment of the lug P against said toe to withdraw the pin K from the bed-frame, as and for the purpose set forth.

6. In a machine as described, a lever one end of which is connected to the bed-frame and the other provided with a weight adapted to modify the fall of the bed, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

SEYMOUR C. PALMER.

Witnesses:

L. H. HUBBARD,
S. S. WILLIAMSON.