

(No Model.)

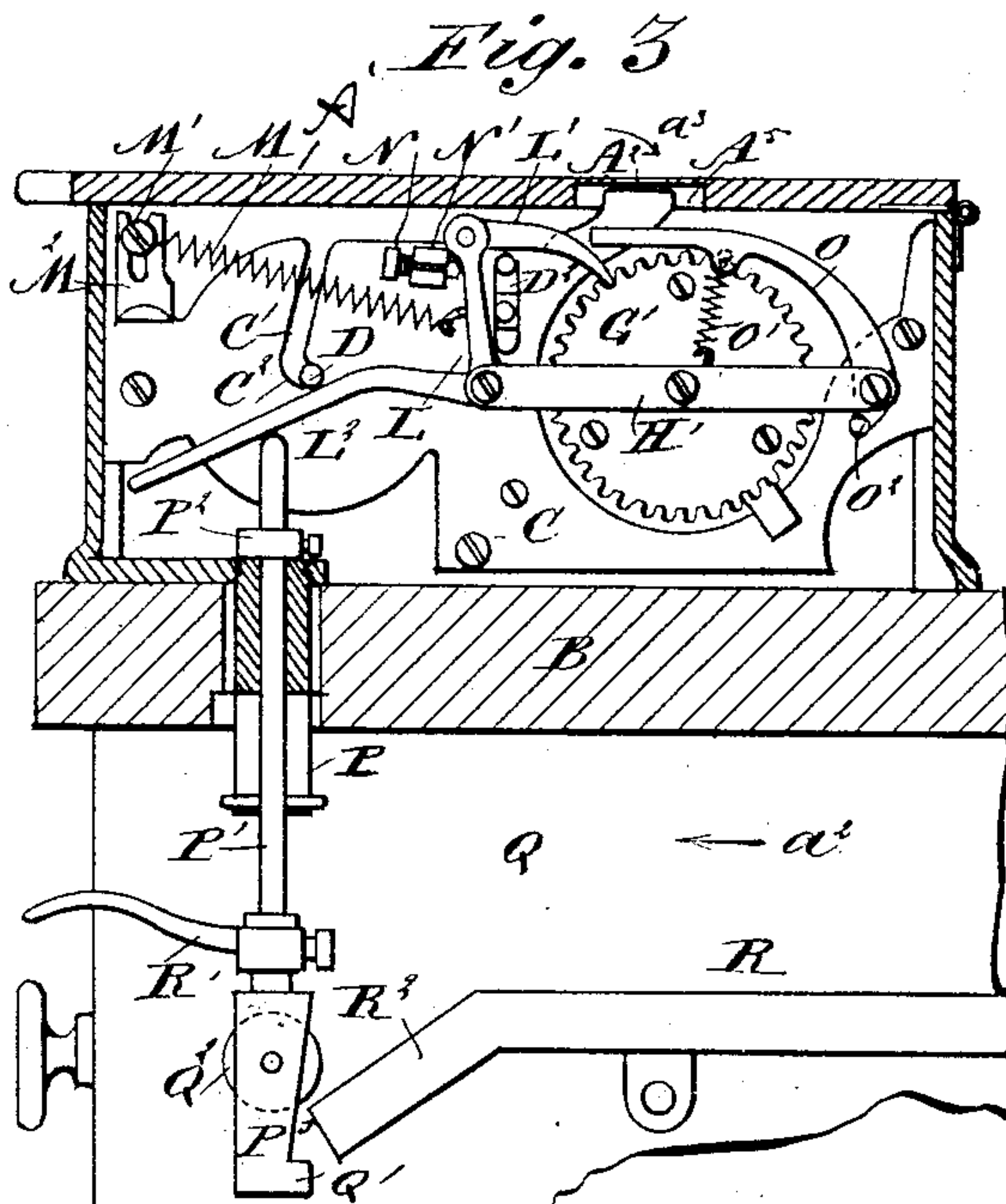
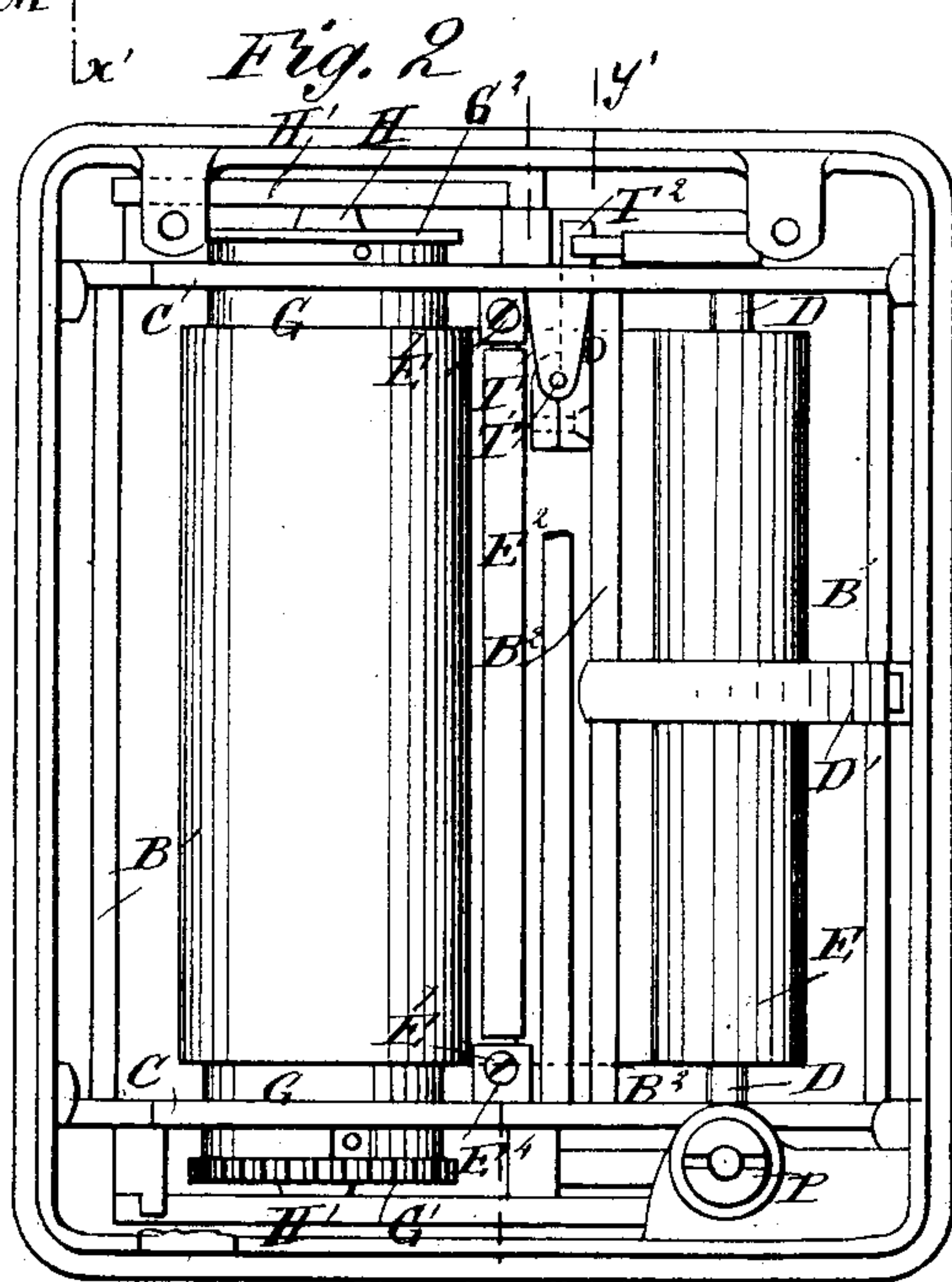
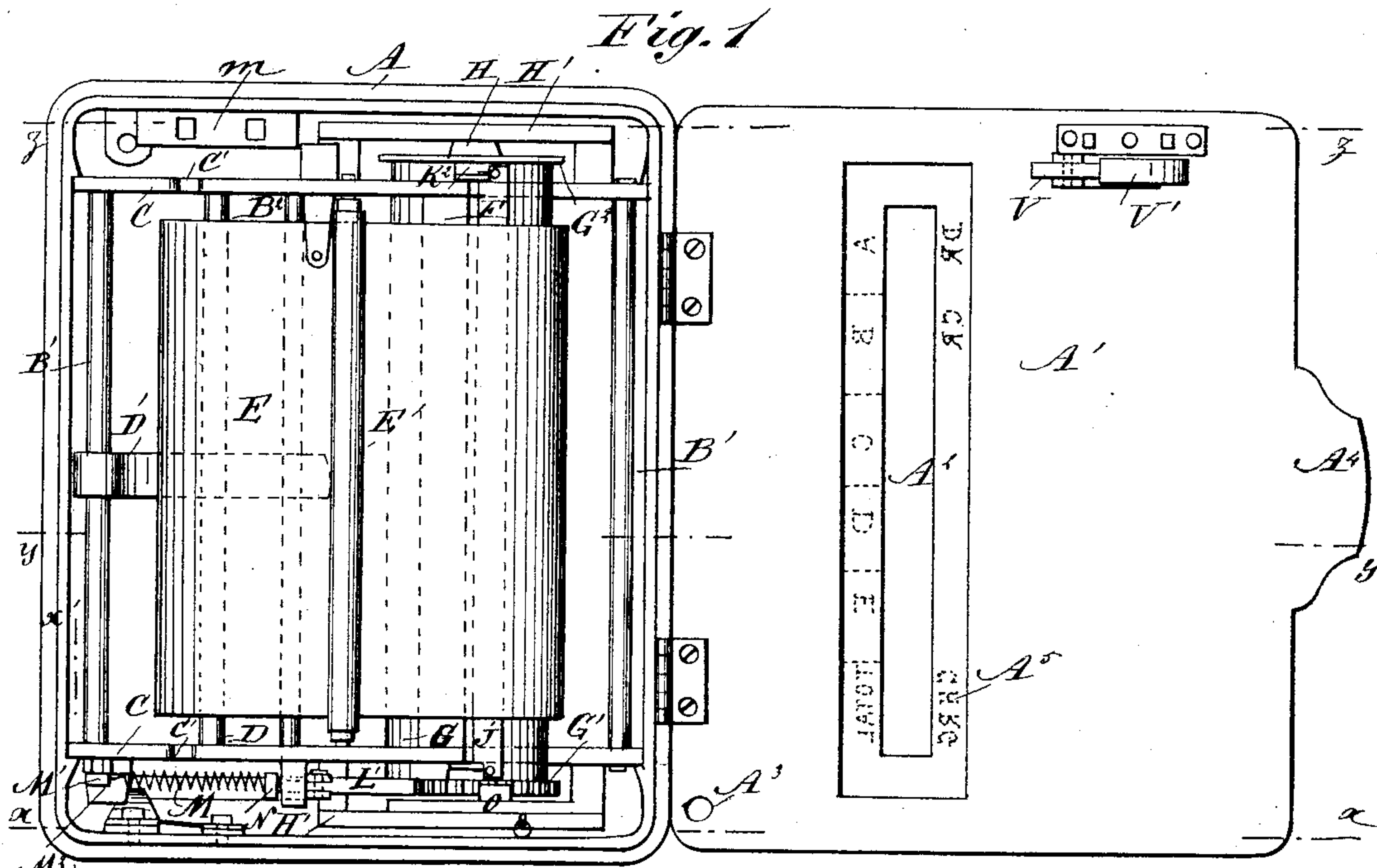
2 Sheets—Sheet 1.

A. S. KEATING.

CASH RECORDER.

No. 327,176.

Patented Sept. 29, 1885.



WITNESSES:

*C. Neveu*

*C. Sedgwick*

INVENTOR:

*A. S. Keating*

BY

*Munn & Co*

ATTORNEYS.

(No Model.)

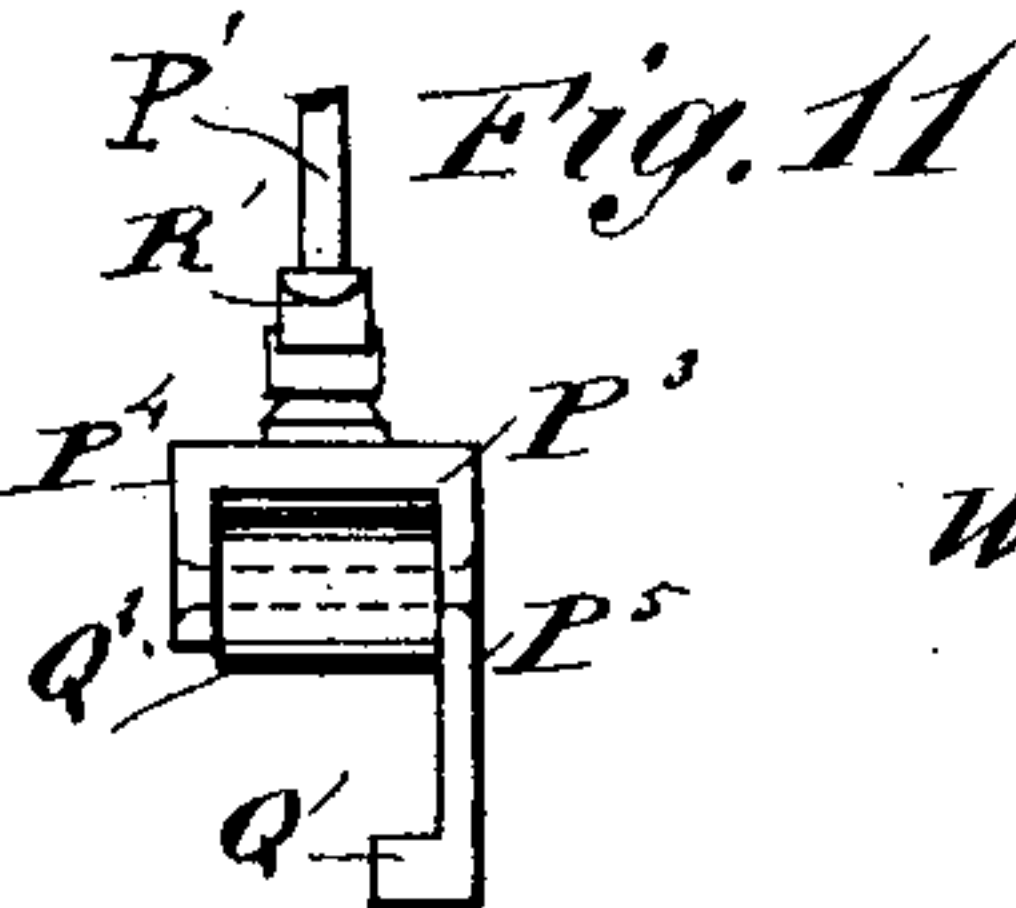
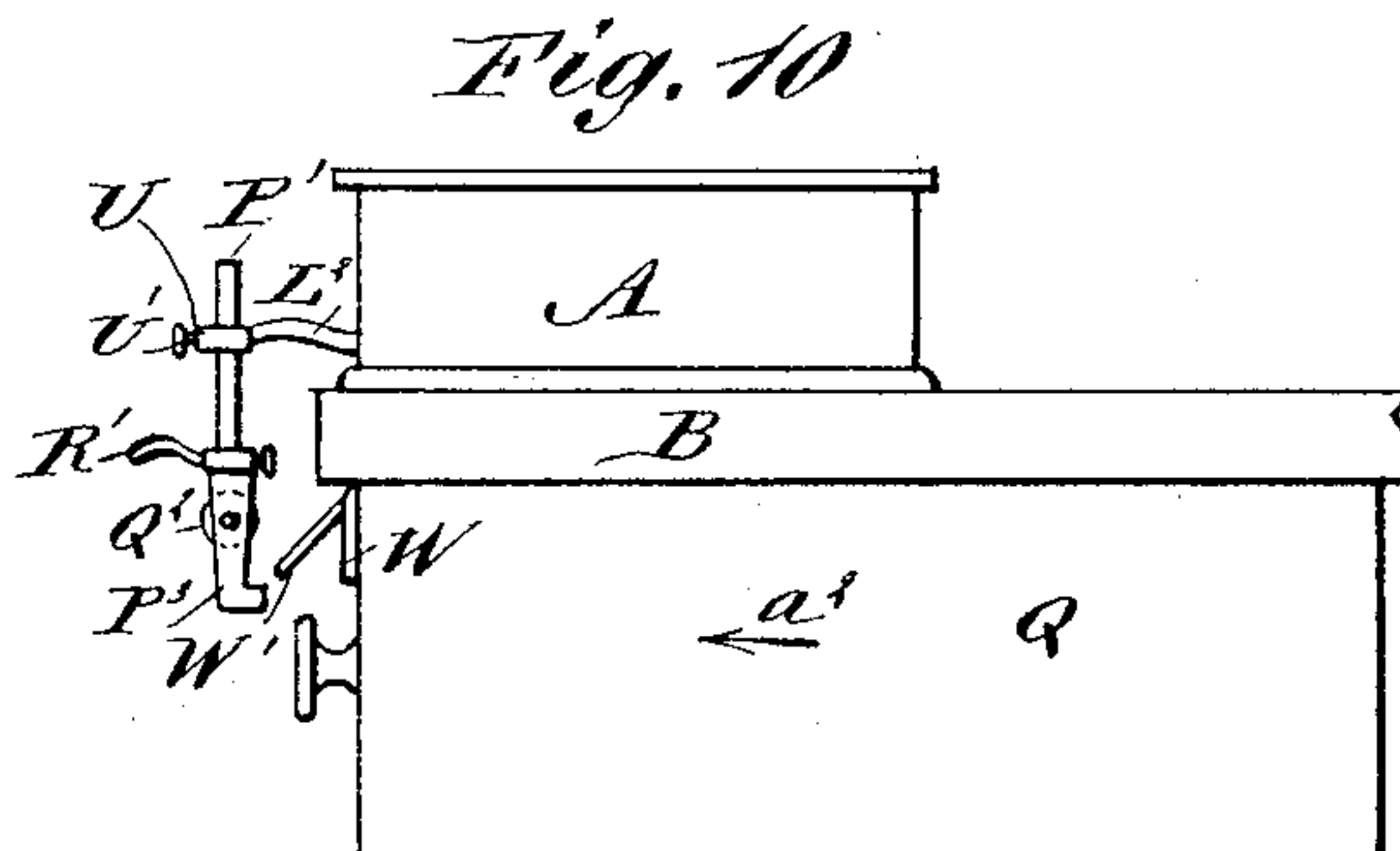
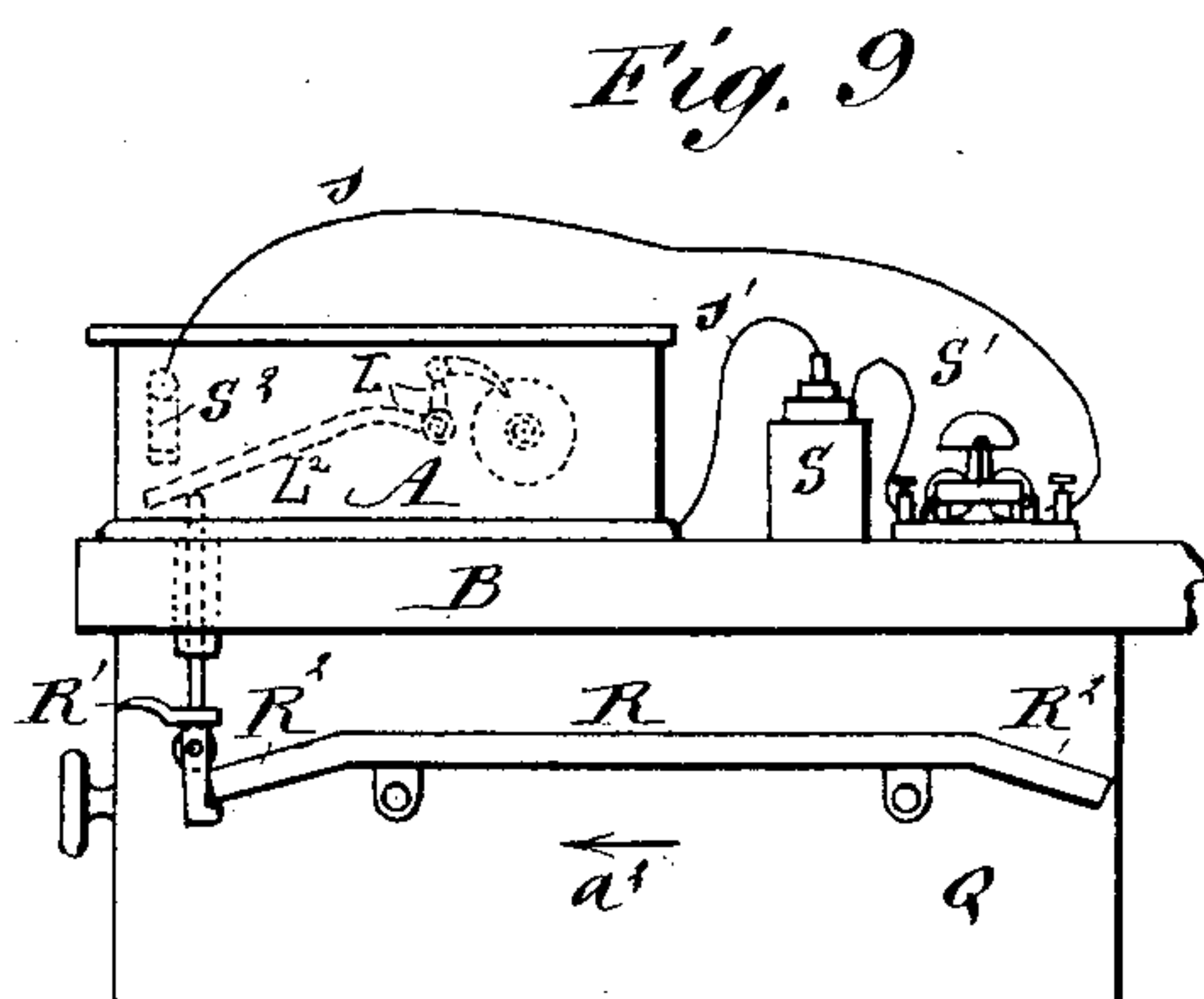
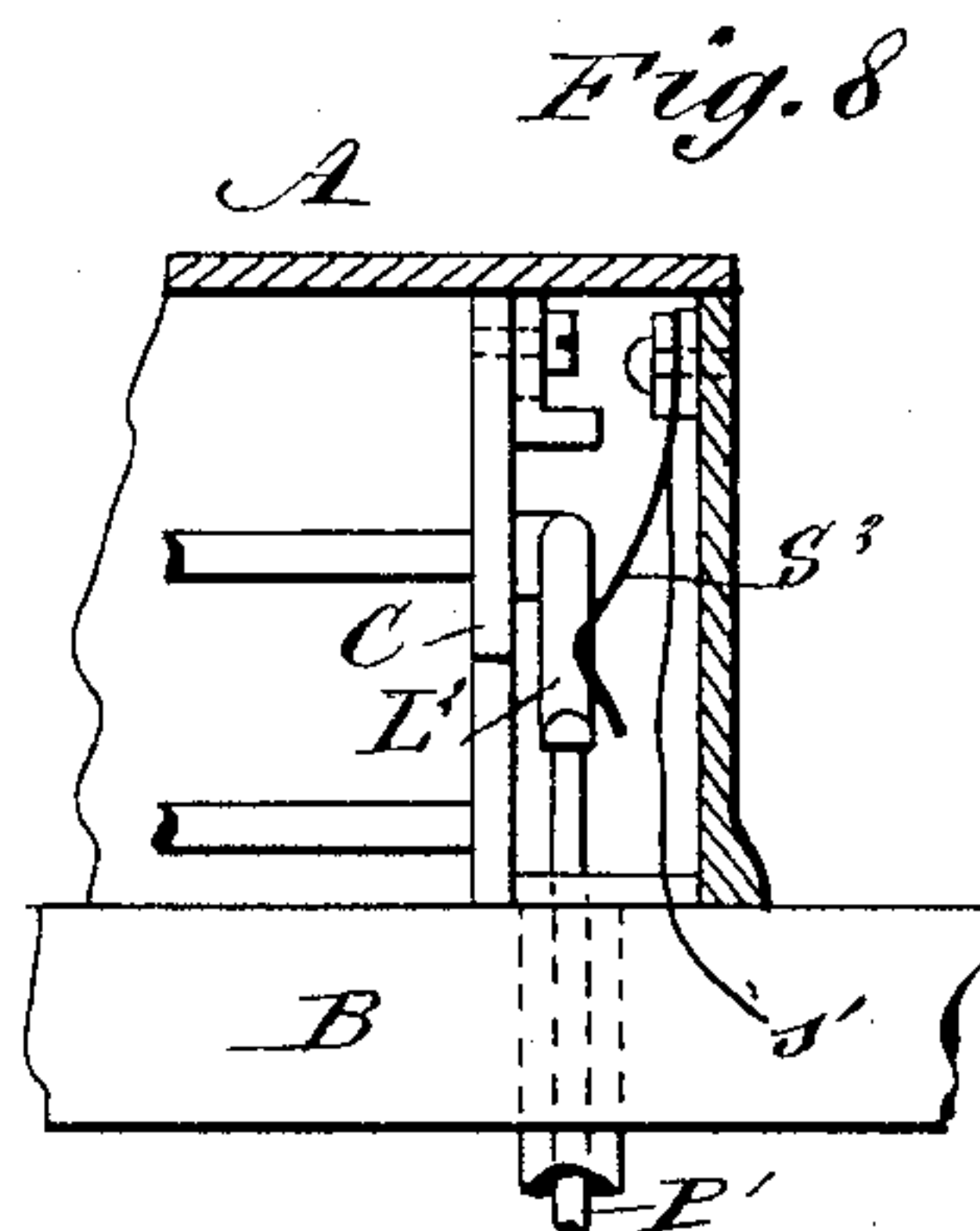
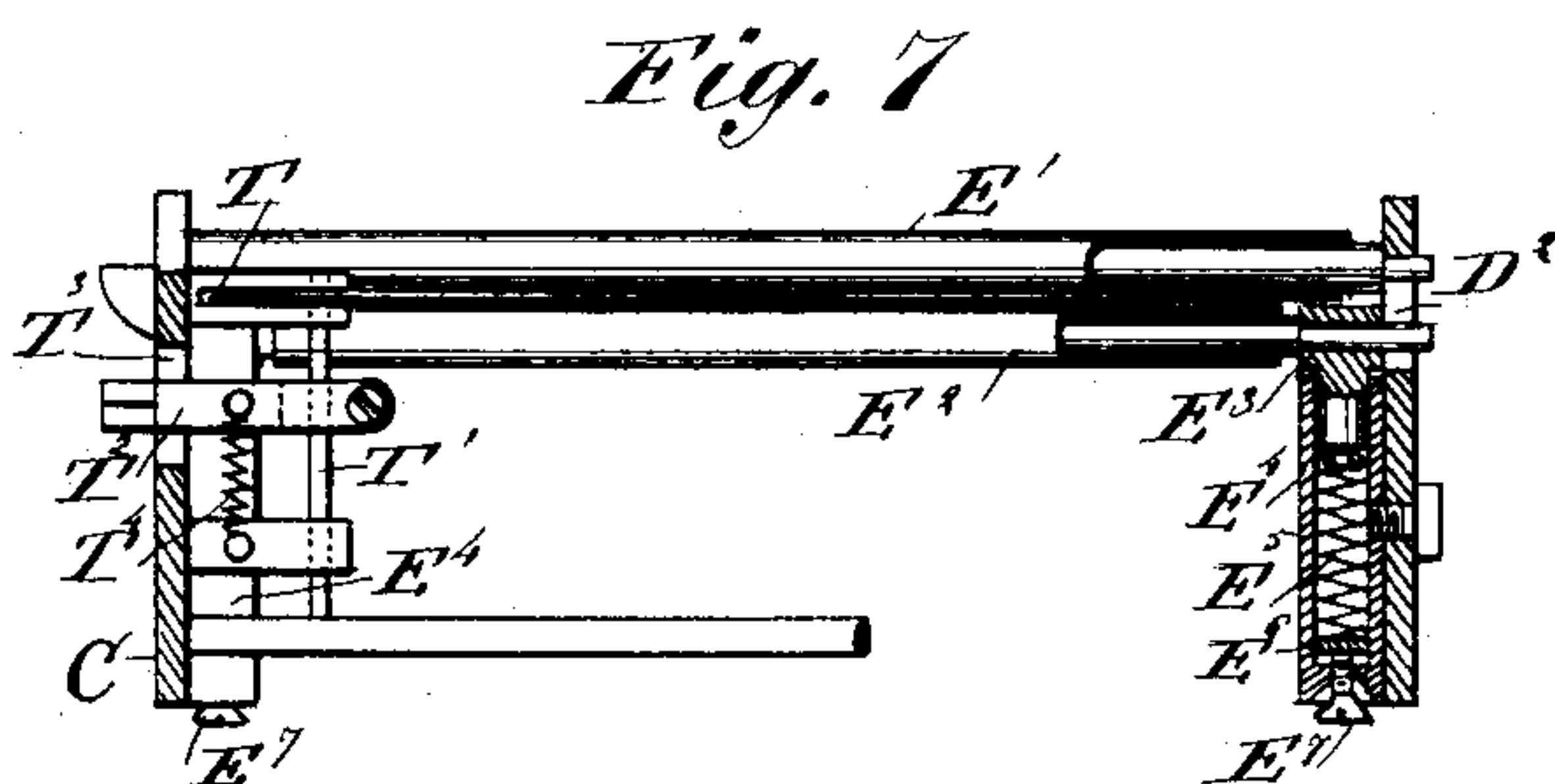
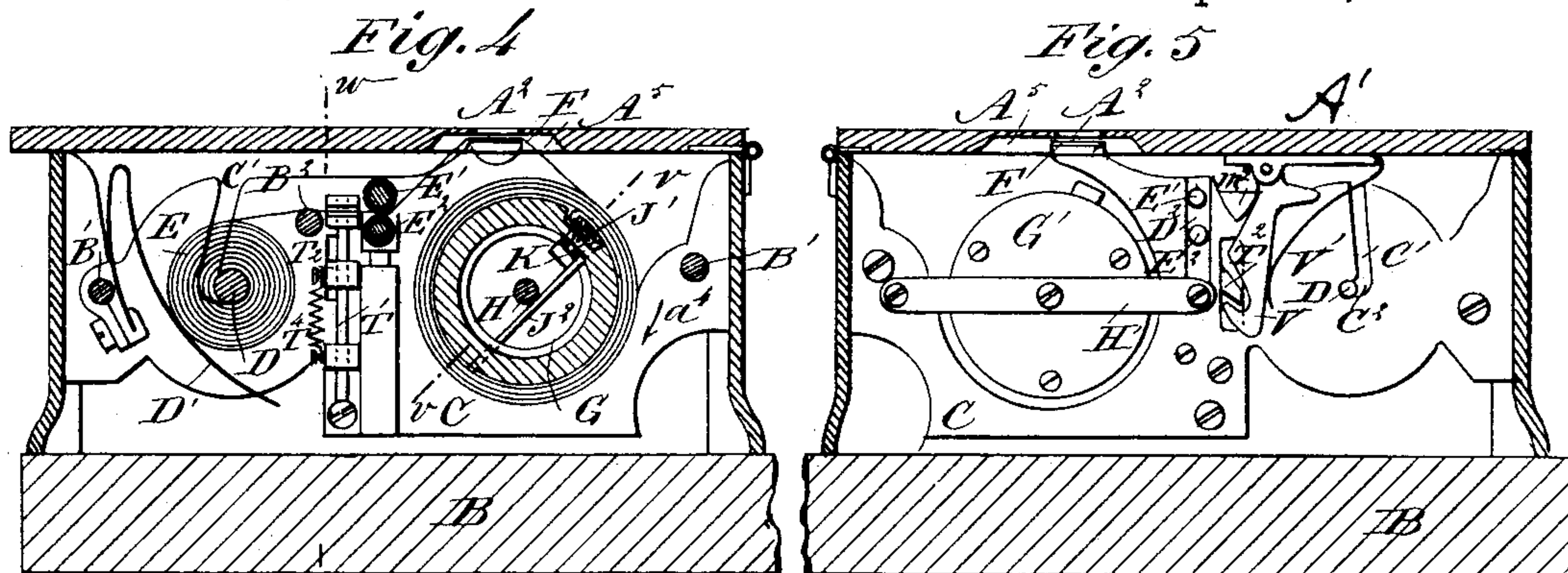
2 Sheets—Sheet 2.

A. S. KEATING.

### CASH RECORDER.

No. 327,176.

Patented Sept. 29, 1885.



**WITNESSES :**

C. Neveu  
C. Bidgwick

C. Sidgwick

**INVENTOR:**

A. S. Keating

BY

Munn & Co

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

ALPHONSO S. KEATING, OF CORRY, PENNSYLVANIA.

## CASH-RECORDER.

SPECIFICATION forming part of Letters Patent No. 327,176, dated September 29, 1885.

Application filed February 27, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, ALPHONSO S. KEATING, of Corry, in the county of Erie and State of Pennsylvania, have invented a new and useful Improvement in Cash-Recorders, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved cash-recorder for money-drawers, which is provided with mechanism for automatically shifting the paper when the drawer is opened, with devices for sounding an alarm when the drawer is opened, and with devices for showing when the register has been opened.

The invention consists in the combination, with a counter, and a drawer in the same, of a box on the counter, a paper-shifting device in the box, and a vertically-movable rod for operating the paper-shifting device, which rod is operated from a track or projection on the front or side of the drawer, whereby when the drawer is pulled out the rod is moved upward and the paper-shifting device operated.

The invention also consists in parts and details and combinations of the same, as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improved cash-recorder, the same being open. Fig. 2 is a plan view of the under side of the same. Fig. 3 is a cross-sectional view on the line  $xx$ , Fig. 1, the recorder being closed. Fig. 4 is a cross-sectional view of the same on the line  $yy$ , Fig. 1. Fig. 5 is a cross-sectional view of the same on the line  $zz$ , Fig. 1. Fig. 6 is a longitudinal sectional elevation of the paper-roller on the line  $vv$ , Fig. 4. Fig. 7 is a longitudinal sectional elevation on the line  $ww$ , Fig. 4, parts being broken away. Fig. 8 is a cross-sectional view of one end of the box on the line  $x'x'$ , Fig. 1. Fig. 9 is a side view of the register, showing the same applied on a counter and connected with an electric alarm. Fig. 10 is a similar view, showing a different arrangement. Fig. 11 is a front view of the roller on the tripping-rod. Fig. 12 is a front view of the modified tripping device.

The box A is provided with a hinged cover,

A', having a slot, A<sup>2</sup>, extending nearly from end to end, and a hole, A<sup>3</sup>, for receiving a pencil in one corner. On the free edge of the said lid a lip, A<sup>4</sup>, is formed, which serves as a handle for raising the lid. The box A is secured on the counter B in such a manner that the inner or front end of the box is flush, or about flush, with the edge of the counter.

In the box A a removable frame is held, which is formed of the side pieces, C C, united by a series of rods, B' B'.

In each side piece, C, a recess or slit, C', is formed, which extends from the top edge downward, and is provided at its lower end with a notch, C<sup>2</sup>, extending toward the rear.

The end pivots of a shaft, D, on which the paper E is wound, are passed through the side recesses or slits, C', the pivots being pressed into the notches C<sup>2</sup> by a flat spring-strip, D', held on the front cross-rod, B', and resting against the roll of paper, as shown in Fig. 4.

The paper passes from the roll on the shaft D over a cross-rod, B<sup>2</sup>, and then between the rollers E' and E<sup>2</sup>, both covered with rubber and journaled in the side pieces, C, parallel with the shaft D. The end pivots of the said rollers project into vertical slots D<sup>2</sup> in the side pieces, and the ends of the lower roller pass through boxes E<sup>3</sup>, also held in the upper ends of vertical casings E<sup>4</sup> on the inner sides of the pieces C, which boxes E<sup>3</sup> are pressed upward by springs E<sup>5</sup>, contained in the casings E<sup>4</sup>, and between the boxes E<sup>2</sup> and a plate, E<sup>6</sup>, resting on an adjusting-screw, E<sup>7</sup>, in the bottom of the casing, by means of which screw the tension of the spring E<sup>5</sup> can be adjusted, and the rubber-covered roller E<sup>2</sup> thus adjusted to exert a greater or less pressure against the upper roller, E'. A tablet-strip, F is secured to the side pieces, C, at the top edge, and is directly below the slot A<sup>2</sup> in the cover, a recess, A<sup>5</sup>, being formed in the bottom of the cover, so as to bring the said tablet-strip as close to the upper surface of the cover as possible. The paper is secured on a wooden roller, G, having metal end plates or disks, G' and G<sup>2</sup>, mounted on a shaft, H, suitably journaled in braces or cross-pieces H' on the side pieces, C. In the roller G, which is hollow, a longitudinal groove, J, is provided in its outer surface, which extends from end to end, and is adapted to receive a strip, J', also extending from end



to end of the roller, and provided at each end with a pin or rod,  $J^2$ , which pins or rods have their free ends passed through apertures in the roller, whereby the said pins are guided and prevent the strip  $J'$  from loosening.

A spring-strip,  $K$ , is secured to the inner side of the roller at its middle by suitable screws, as shown in Fig. 6, and its ends  $K'$  are bent up and rest against the inner surface of the strip  $J'$  at the ends and press the said strip  $J'$  outward. On the inner surfaces of the disks  $G'$  and  $G^2$  flat springs  $K^2$  are secured, the free ends of which project from the surface of the roller, and the said springs are provided with notches for receiving the end parts of the strip  $J'$ . To fasten the paper, its end edge is placed in the groove  $J$  and under the strip  $J'$ , which is pressed to the bottom of the groove and securely clamps the paper, the said strip being locked in place by the springs  $K^2$ . The end disk,  $G'$ , of the roller is provided with teeth, and thus forms a ratchet-wheel. An elbow-lever,  $L$ , pivoted on the outer surface of the right-hand piece  $C$ , has a pawl,  $L'$ , pivoted on one end, the said pawl being adapted to engage with the teeth of the wheel  $G'$ , the other end,  $L^2$ , of the said lever being extended toward the front, and downward. A spring,  $M$ , for retracting the pawl  $L'$ , is secured to the upwardly-projecting arm of the lever  $L$ , and has its other end secured to a screw,  $M'$ , which also holds a vertically-adjustable slotted or forked stop,  $M^2$ , against the bottom outwardly-projecting lug or flange of which the swinging end of the long arm  $L^2$  of the lever  $L$  can strike, thus preventing the said lever from being swung up too far. A check-screw,  $N$ , is held in a lug,  $N'$ , projecting from the outer surface of the side piece, and against the end of the said screw the short arm of the lever  $L$  is thrown by the spring  $M$ , thus preventing the said spring from throwing the lever back too far and giving the pawl too great a throw. A check dog or pawl,  $O$ , is pivoted on the side piece,  $C$ , and pressed against the toothed edge of the wheel by a spring,  $O'$ , which dog  $O$  is provided at its lower end with a projection having a check-stud,  $O^2$ , which prevents raising the check-dog too high and stretching the spring  $O'$  too much, as when the check-dog is raised above a certain height the check-stud  $O^2$  strikes the bottom edge of the cross-piece  $H'$ , and this limits the movements of the dog. In the bottom of the box  $A$  a tube,  $P$ , is secured, which projects down through the top of the counter  $B$  at the outer side of the drawer  $Q$ , and in the said tube  $P$  a rod,  $P'$ , is arranged to slide up and down, and is provided with a collar,  $P^2$ , to prevent it from dropping. On the lower end of the rod  $P'$  a forked piece,  $P^3$ , is formed, which has a short shank,  $P^4$ , and a long shank,  $P^5$ , on the lower end of which long shank an inwardly-projecting tooth,  $Q'$ , is formed. A roller,  $Q^2$ , is pivoted between the prongs or shanks  $P^4$  and  $P^5$ . A curved finger-piece,  $R'$ , is held on the rod  $P'$ , directly above the forked

piece  $P^3$ , against the under side of which finger-piece  $R'$  the finger can be placed to push the rod  $P'$  upward. On the outside of the drawer a track-plate,  $R$ , is secured, the front and rear ends,  $R^2$ , of which are beveled downward. An electric battery,  $S$ , and an electric bell,  $S'$ , are connected by a wire,  $s'$ , with the box, and by a wire,  $s$ , with a contact-spring,  $S^2$ , on the inner side of the box  $A$ , which is located in such a manner that it comes in contact with the arm  $L^2$  of the lever  $L$  when the said arm is raised. The contact-spring  $S^2$  is properly insulated from the box.

In Fig. 7 the punching device is shown for punching the paper. This device consists of two inwardly-projecting jaws,  $T$ , between which the paper  $E$  passes, and of a vertically-movable punching-pin,  $T'$ , adapted to move through apertures in the ends of the jaws, and guided in a suitable piece projecting from the inner surface of the side piece. An arm,  $T^2$ , is secured to the punching-pin and projects horizontally through a slot,  $T^3$ , in the side piece,  $C$ , and is pulled down by a spring,  $T^4$ . On the cover  $A'$  of the box  $A$  a downwardly-projecting hook,  $V$ , is pivoted in such a manner that it can catch on the outer end of the arm  $T^2$ , a spring,  $V'$ , being secured on the under side of the lid  $A'$ , and resting against the swinging part of the hook  $V$  and pressing it against the arm  $T^2$ . Where a number of drawers are arranged side by side, there is not sufficient space for the tracks  $R$ , and other means must be provided for operating the recorder. In this case the long arm  $L^2$  of the lever  $L$  projects through a slot in the front of the casing at the right-hand side, and is provided with an eye,  $U$ , provided with a binding-screw,  $U'$ . The tripping-rod  $P'$  is passed through the said eye and held in the same. On the front of the drawer a plate,  $W$ , is secured, on which a downwardly and outwardly inclined plate,  $W'$ , is secured at the right-hand edge, and projecting beyond the said right-hand edge of the plate  $W$ , the plates  $W$   $W'$  being so arranged that the roller  $Q^2$  can run on the upper surface of the inclined plate  $W'$ . A projection,  $m^2$ , is formed on the inner surface of one side of the box for the purpose of disengaging the hook  $V$  from the arm  $T^2$  after the paper has been punched.

The abbreviations "Chrg.," "Dr.," and "Cr." are printed, painted, or otherwise formed on the cover at the slot  $A^2$ .

The operation is as follows: The paper is secured on the apparatus in the manner described, and the cover is swung down and locked on the box by means of the lock  $m$ . (Shown in Fig. 1.)

The paper is exposed at the slot  $A^2$ . When the drawer is opened—that is, pulled in direction of the arrow  $a^2$ —the roller  $Q^2$  slides up the front inclined end,  $R^2$ , of the track  $R$  and is pushed upward, and the rod  $P'$  is moved upward and striking the long arm  $L^2$  of the lever  $L$  swings the dog or pawl  $L'$  in the direction of the arrow  $a^3$ , Fig. 3, thereby revolving the



roller G in the direction of the arrow  $a^1$ , Fig. 4, and winding the paper on the said roller, and unwinding it from the shaft D, whereby the paper is shifted and another portion exposed at the slot A<sup>2</sup>. The money is placed in the drawer, the change taken out, and the amount deposited is written on the strip of paper showing at the slot A<sup>2</sup>; or any other entry can be made before or after closing the drawer—for instance, the name, number, or initials of the person who has made the sale, the article sold, &c. The drawer is then pushed back in the inverse direction of the arrow  $a^2$ , and the roller Q<sup>2</sup> slides off the track R and is pressed down by the action of the spring M on the lever L. The dog O locks the paper-roller in place, and the spring D' prevents the paper from unwinding too rapidly. In this manner the paper is shifted every time the drawer is opened.

If it is desired to give an alarm every time the drawer is opened the electric bell is connected with the box, and when the long arm L<sup>2</sup> of the lever swings upward it makes contact with the spring S<sup>2</sup> and closes the circuit, thus sounding the electric bell.

The lower roller, E<sup>2</sup>, gives sufficiently to let the paper pass when there are uneven or irregular parts in the paper.

To remove the strip on which the entries have been made after business hours, the paper is cut along the tablet-strip F and then unrolled from the roller. To accomplish this, the cover A' must be raised, and as the hook V on the cover is engaged with the end of the arm T<sup>2</sup> the said arm is pulled upward, and the punching-pin T' is also pulled upward and through the paper which is between the prongs of the piece T, whereby a hole is punched in the paper, showing that the box has been opened.

If the box is opened at any time during the day for the purpose of changing the strip of paper, or for tampering with the same, so as to prevent the paper from shifting when the drawer is opened, or to wind the paper on the roller D, the punching-pin T' is moved upward by the hook in the manner described, and punches the paper, thus showing that the lid has been raised. After the hook V pulls the arm T<sup>2</sup> upward and punches the paper it is released by a lug on the side of the piece C, and allows the cover to open freely.

As it is sometimes necessary to shift the paper a number of times without opening the drawer, I have provided the finger-piece R', by means of which the rod P' can be moved upward to operate the paper-winding mechanism independently of the tracks or other devices. Every time the drawer is opened an entry must be made on the strip. If this is not done, a blank space shows on the strip of paper, and the owner of the establishment can easily control the cashier.

When the device shown in Fig. 10 is provided, the operation is quite similar. When the drawer is pulled in the direction of the ar-

row  $a^2$ , the top inclined edge of the plate W' strikes the roller and pushes the rod P' upward, causing the other parts to operate in the manner described. When the drawer is pushed back, the inner surface of the projecting part of the plate W' catches on the stud Q' on the prong P<sup>5</sup> and pulls the fork P<sup>3</sup> and the rod P' downward. The rear inclines, R<sup>2</sup>, on the tracks R are not absolutely necessary, and are only provided to facilitate replacing the drawer when the same has been entirely pulled out.

If the roller and rod P' are not allowed to follow the action or movement of the drawer—that is, if they should be held or fastened up—the drawer could not be opened, for the reason that the inner projecting tooth, Q', on the long shank P<sup>5</sup> of the forked piece P<sup>3</sup> would engage with the inclined outer surface of the rail R or plate W, whichever might be in use, thus acting as a stop and preventing the drawer being opened, as aforesaid, the object being to prevent the drawer from being opened without the recorder making tally of it.

The top edge of the side of the drawer forms the continuation of the rail when operating the recorder with the inclined plate W, thus forming a rail similar to the rail R.

When used as above, the projecting tooth Q' of the long shank P<sup>5</sup> of the forked piece P<sup>3</sup> passes by at the side of the drawer, the roller passing or rolling on the top edge of the side of the drawer.

The marks "Chrg.," "Dr.," "Cr." on the cover A' at the slot A<sup>2</sup> indicate where to make proper entries on paper slip.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a counter and a drawer in the same, of a cash-recorder on the counter, a pivoted lever in the register-box for operating the recording mechanism, a vertically-movable rod connected with the said lever, and a track on the drawer for operating the said vertically-movable rod, substantially as herein shown and described.

2. The combination, with a counter and a drawer, of a box on the counter, a recording device in the box, a rod projecting downward from the registering device and provided with a roller on its lower end, and a track on the drawer, substantially as herein shown and described.

3. The combination, with a counter and a drawer, of a box on the counter, a recording device in the box, a rod projecting downward from the box, a forked piece on the lower end of the rod, on one prong of which fork a lug is formed, a roller pivoted in the fork, and a track on the box and adapted to act on the above-mentioned roller, substantially as herein shown and described.

4. The combination, with a counter and a drawer, of a box on the counter, a recording mechanism in the box, a vertically-movable rod for operating the registering mechanism, a track on the drawer for acting on the said



rod, and a finger-piece projecting from the rod to facilitate operating the rod by hand, substantially as herein shown and described.

5 5. In a cash-recorder, the combination, with the side pieces, C, of the shaft D, the roller G, the rubber rollers E<sup>1</sup> E<sup>2</sup>, the boxes E<sup>3</sup>, in which the ends of the lower roller, E<sup>2</sup>, are journaled, the springs E<sup>5</sup>, the casings E<sup>4</sup>, containing the springs, the plates E<sup>6</sup> in the bottoms of the casings, and the adjusting-screws E<sup>7</sup>, substantially as herein shown and described.

6. The combination, with a roller, G, having a longitudinal groove, J, in its outer surface, of the strip J', fitting in the groove, and 15 the pins J<sup>2</sup>, passed loosely through the roller at the ends, substantially as herein shown and described.

7. The combination, with the roller G, having a longitudinal groove, J, of the strip J', 20 fitting in the groove, the end pins, J<sup>2</sup>, projecting from the strip J' through apertures in the ends of the roller, and the spring K, secured in the inner surface of the hollow roller, and having its ends bent upward and resting 25 against the under surface of the strip J' at the ends, substantially as herein shown and described.

8. The combination, with the roller G, having a longitudinal groove, J, of the strip J', 30 fitting in the groove, a spring, K, for pressing the strip outward, and springs K<sup>2</sup>, for locking the strip J' in place when pressed into the groove, substantially as herein shown and described.

9. In a cash-recorder, the combination, with 35 a drawer and a frame or side pieces, of a shaft on which the paper is wound, a drum or roller on which the paper is to be wound, a ratchet-wheel on one end of the drum, a locking dog or pawl engaging with the said ratchet-wheel, 40 and a pivoted elbow-lever provided with a pawl for engagement with the ratchet-wheel,

a vertically-movable rod for operating the elbow-lever, and a projection or track for operating the said vertically-movable rod, substantially as herein shown and described. 45

10. In a cash-recorder, the combination, with a drawer and a frame or side pieces, of a shaft on which the paper is wound, a drum or roller on which the paper is to be wound, a ratchet-wheel on the end of the drum, the pivoted dog 50 O, the stop projection O<sup>2</sup> on the lower end of the same, the spring O', the elbow-lever L, the pawl L', the rod P', and a track on the drawer for acting on the rod P', substantially as herein shown and described. 55

11. In a cash-recorder, the combination, with a frame or side pieces, of a shaft journaled in the same, on which shaft the paper is wound, a drum or roller on which the paper is to be 60 wound, a ratchet-wheel on the end of the said drum, an elbow-lever, L, provided with a pawl, L', adapted to engage with the said ratchet-wheel, the spring M, the stop M<sup>2</sup>, the set-screw N, and the projection N', substantially as herein shown and described. 65

12. The combination, with a counter and a drawer in the same, of a cash-register on the counter above the drawer, a paper-shifting 70 device in the cash-register, a lever for operating the shifting device, an electric bell, a battery having one terminal connected with the box of the cash-register, a contact-spring in the box, with which contact-spring the other terminal of the battery is connected, and a 75 rod for pushing the lever upward to operate the paper-shifting device, and to act on the contact-spring, substantially as herein shown and described.

ALPHONSO S. KEATING.

Witnesses:

JOHN GRIERSON,  
JOHN F. WESTROM.