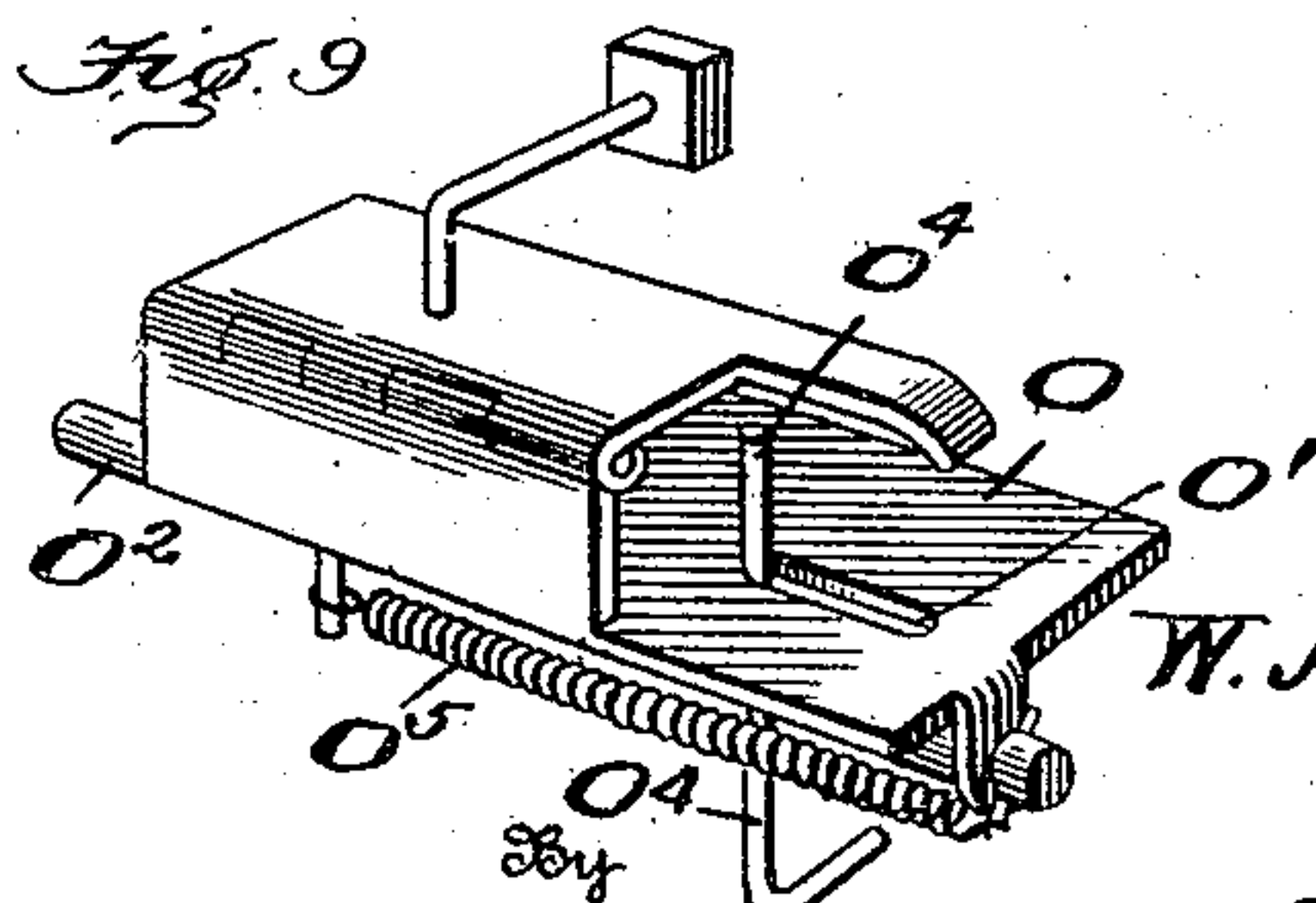
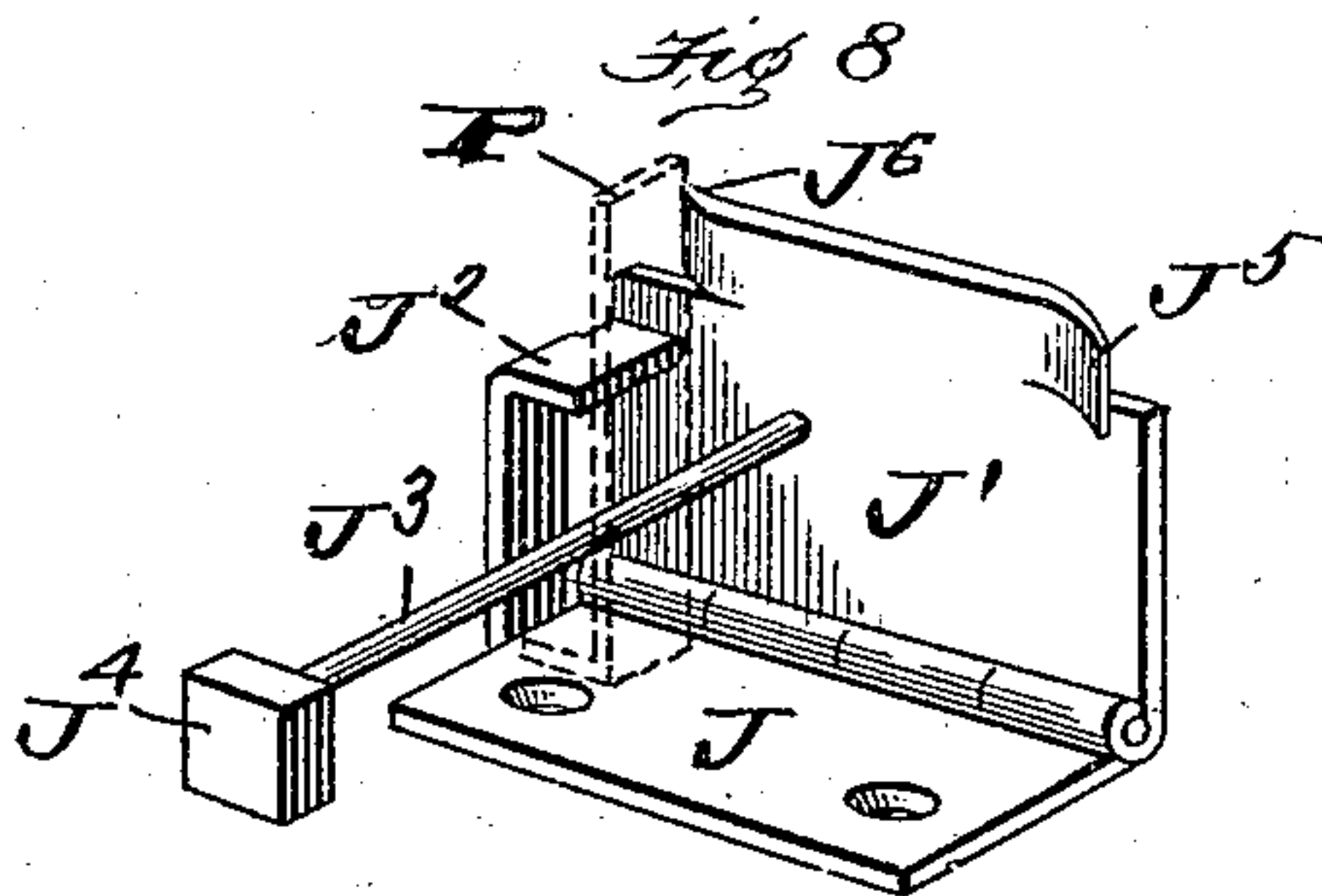
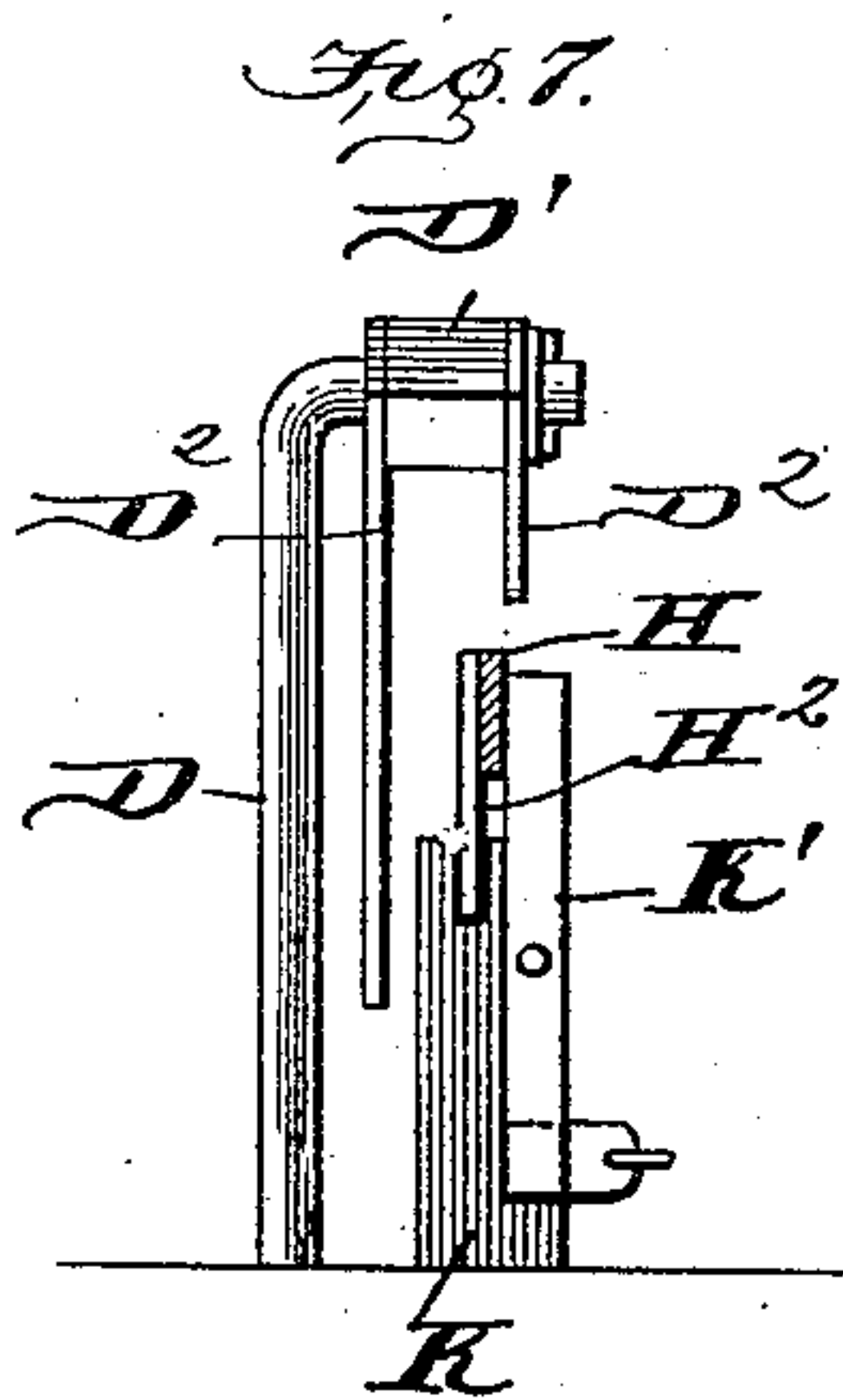
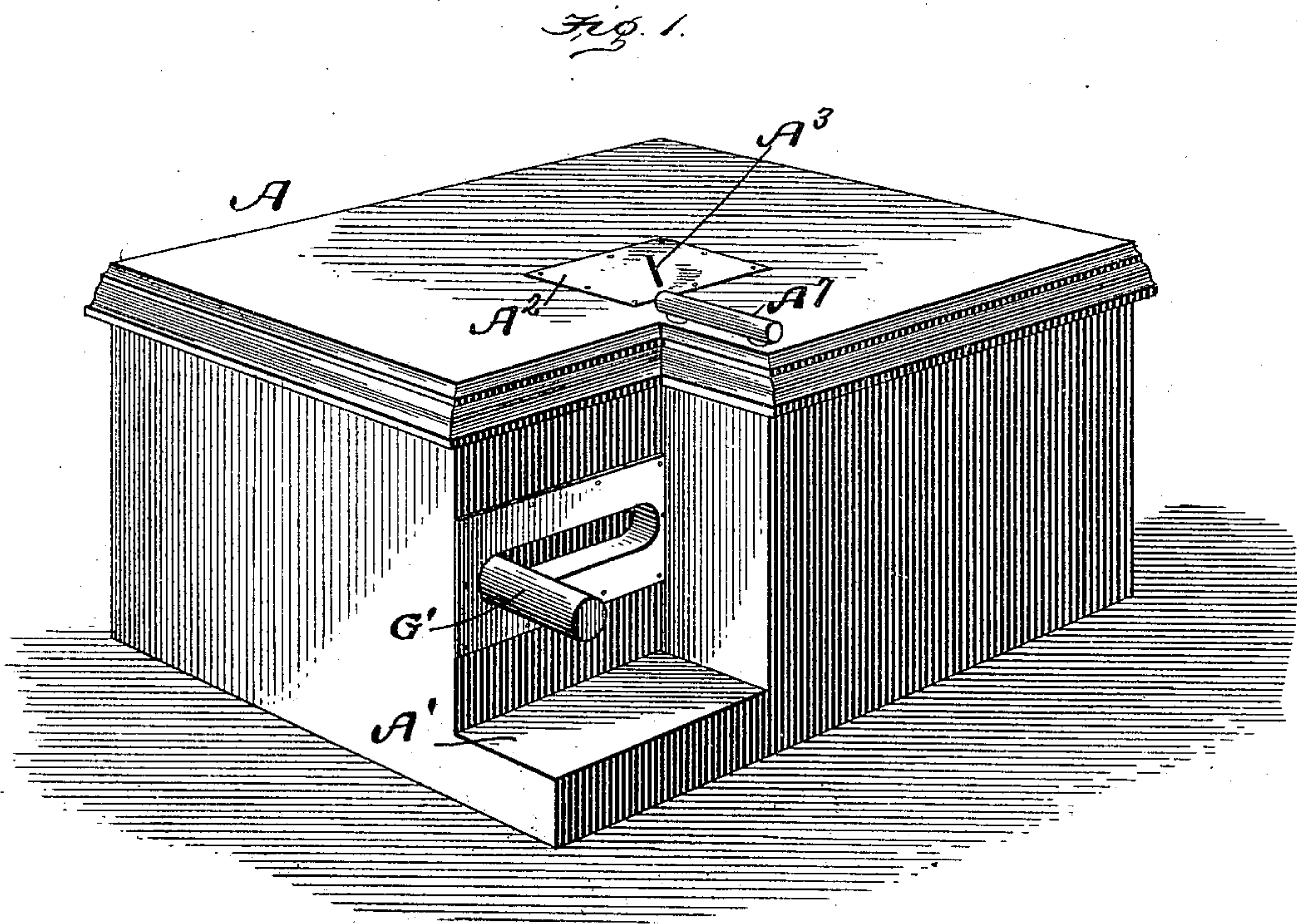


No. 841,302.

PATENTED JAN. 15, 1907.

W. ANDREWS.  
COIN OPERATED MACHINE.  
APPLICATION FILED APR. 1, 1905.

3 SHEETS—SHEET 1.



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No. 841,302.

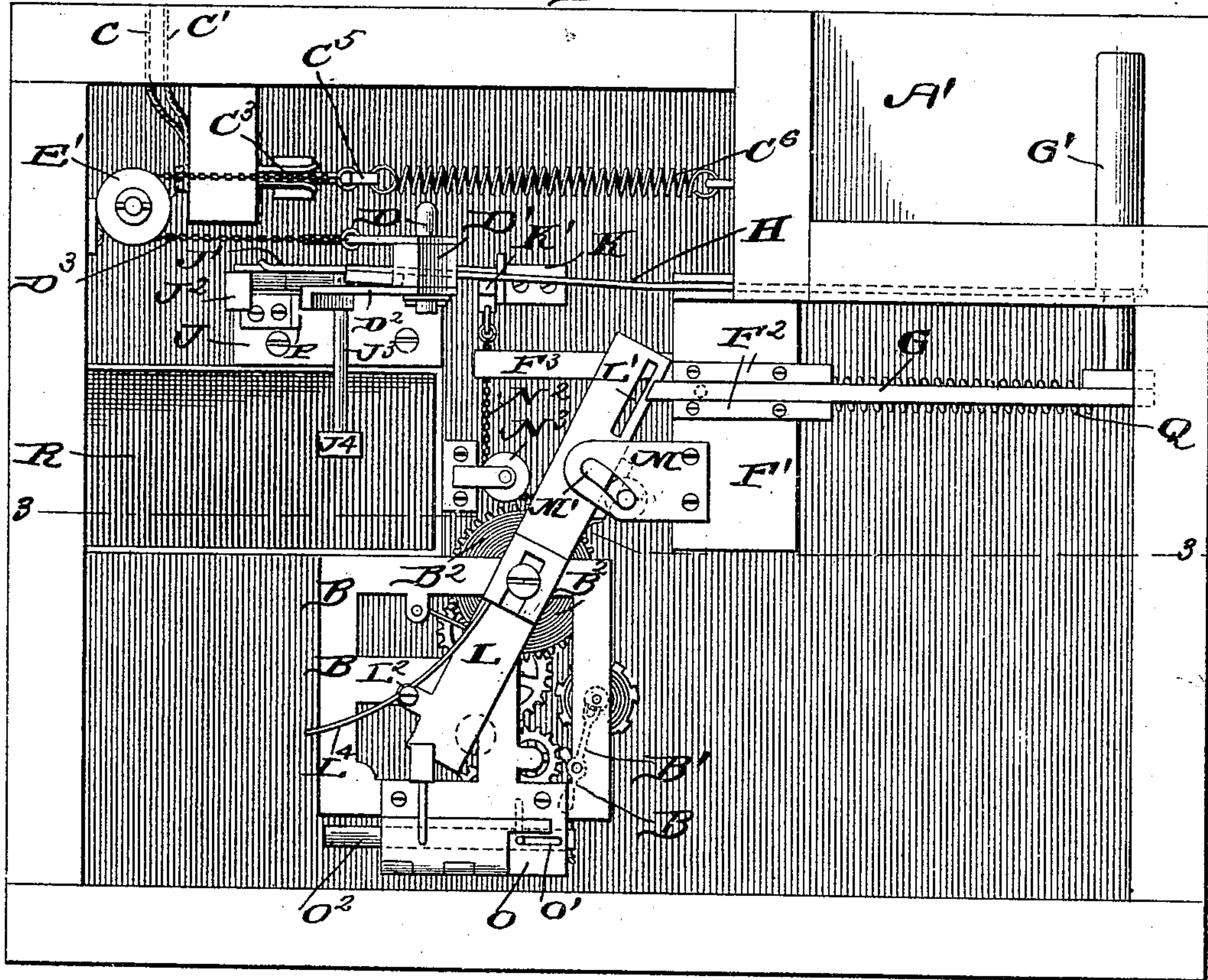
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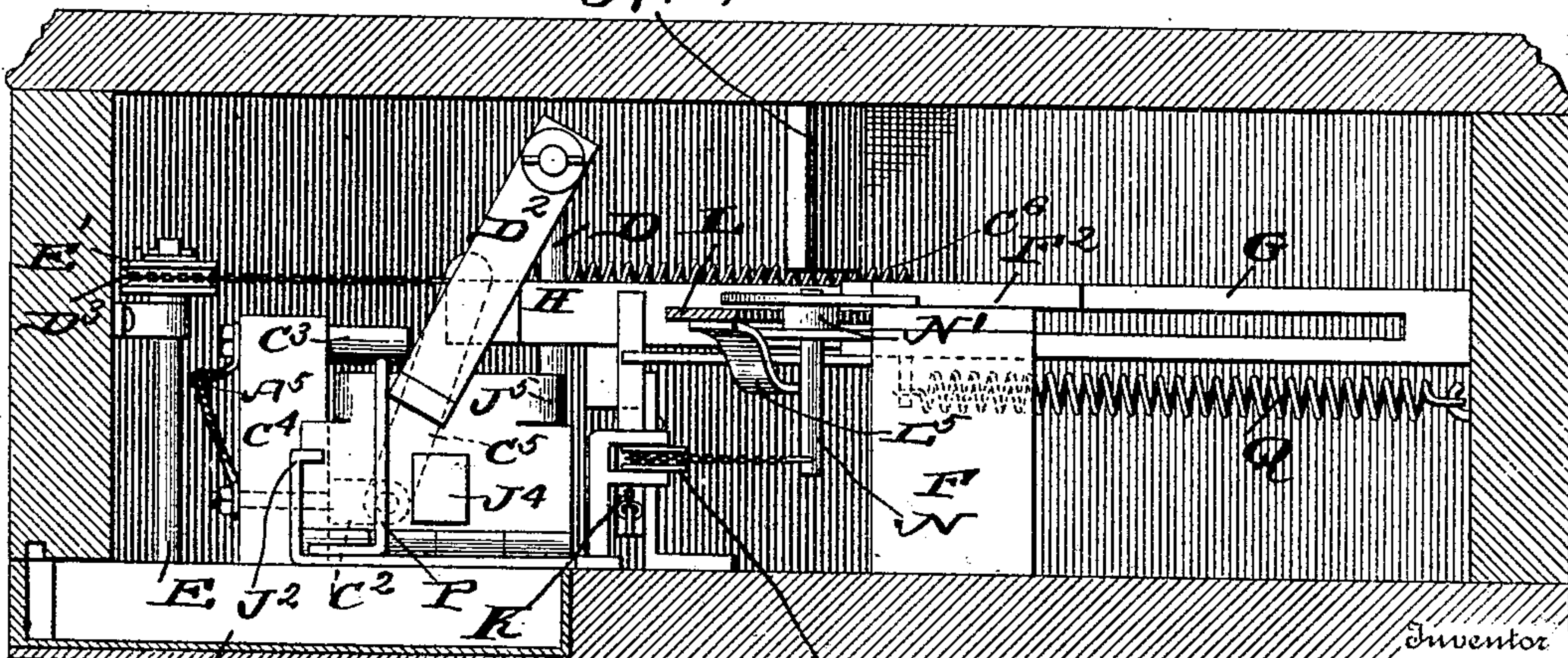
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3 SHEETS—SHEET 2.

Fig. 2.



A A4 Fig. 3.



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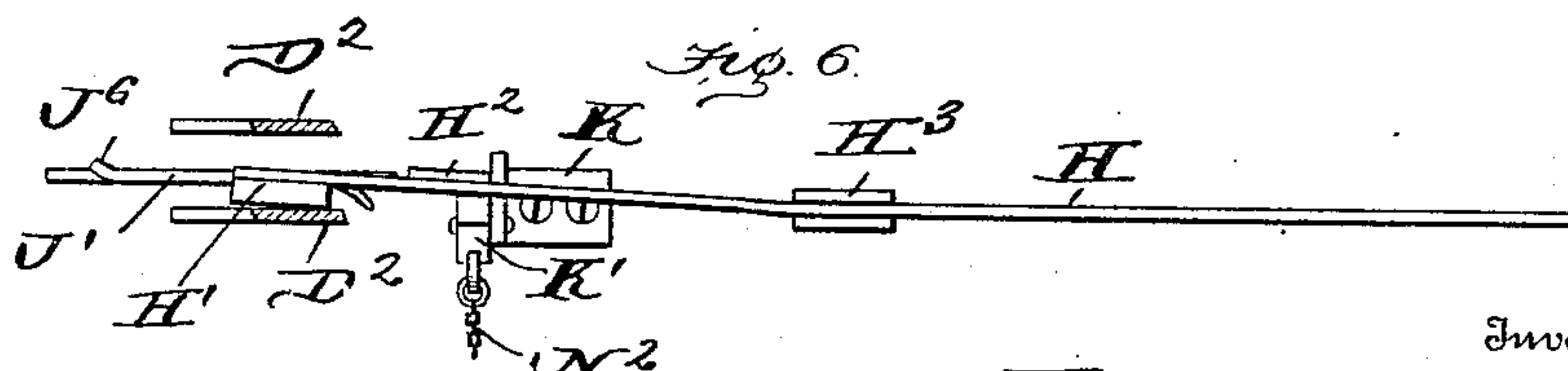
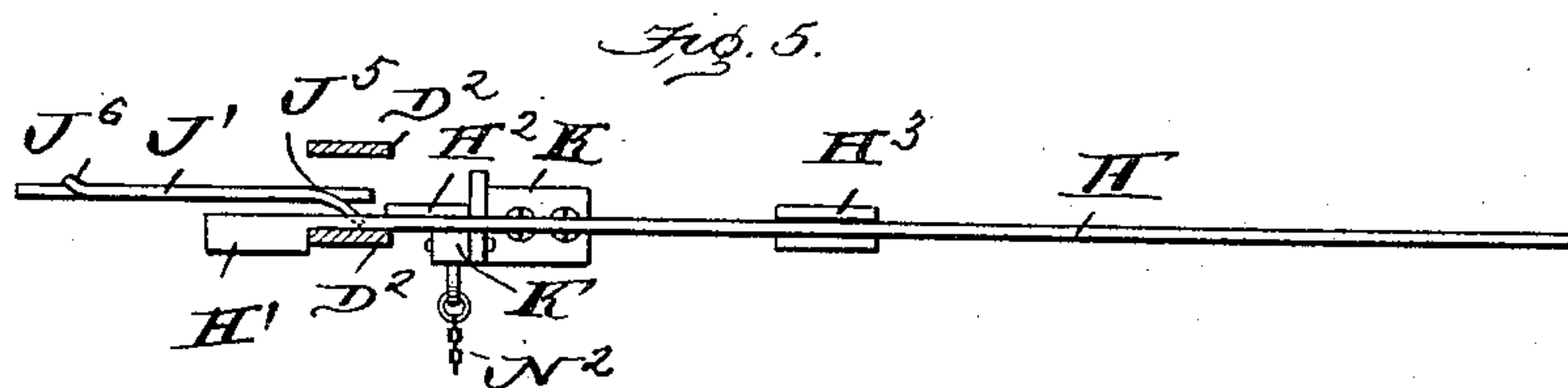
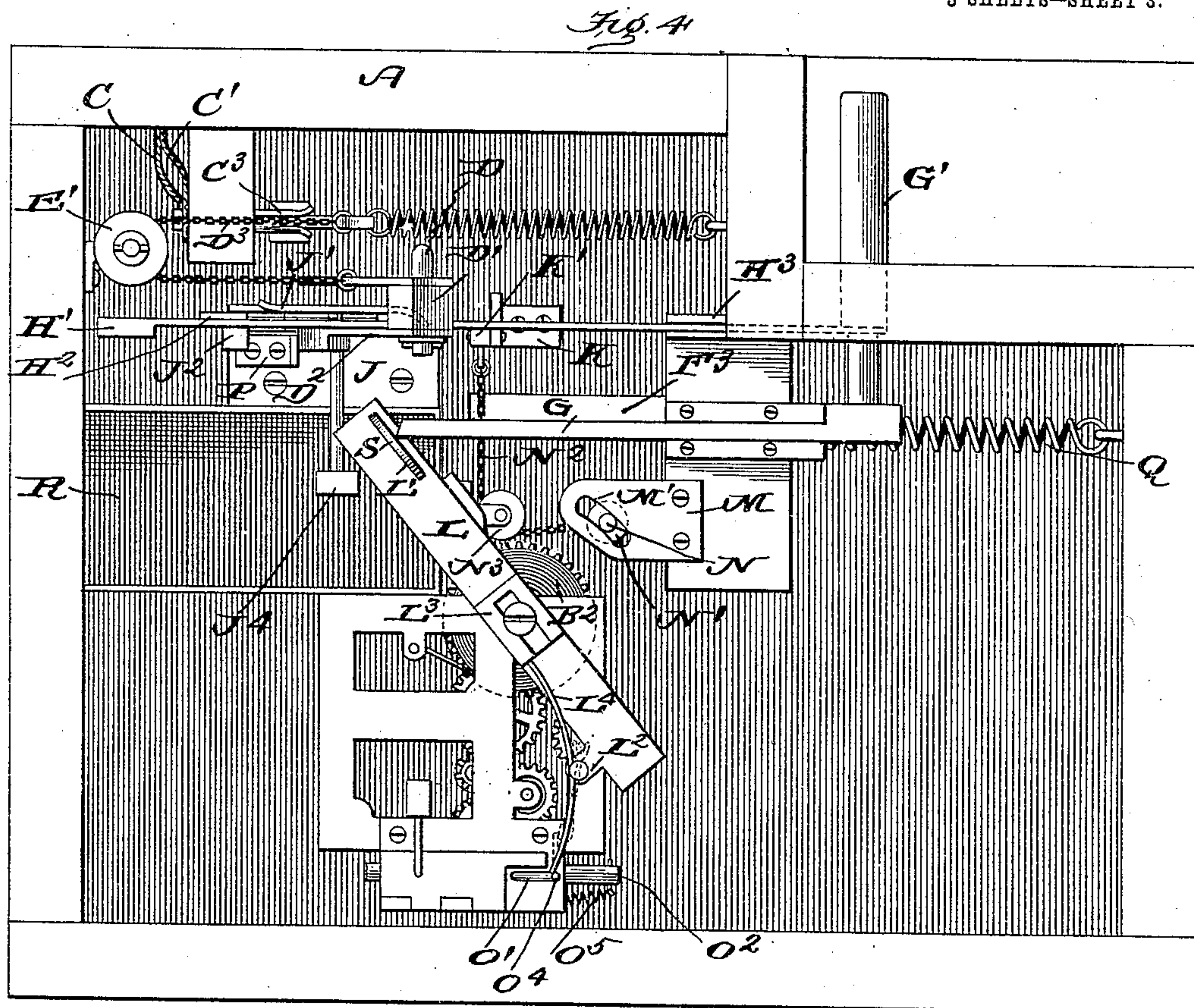
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3 SHEETS--SHEET 3.



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# UNITED STATES PATENT OFFICE.

WILLIAM ANDREWS, OF SIOUX CITY, IOWA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF SEVENTY-SIX ONE-HUNDREDTHS TO L. D. ROWLAND, OF SIOUX CITY, IOWA, AND TWENTY-FOUR ONE-HUNDREDTHS TO O. A. STEFFIN.

## COIN-OPERATED MACHINE.

No. 841,302.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed April 1, 1905. Serial No. 253,300.

*To all whom it may concern:*

Be it known that I, WILLIAM ANDREWS, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented a new and useful Coin-Operated Machine, of which the following is a specification.

My invention relates to that class of coin-operated machines adapted to serve as meters, especially in connection with an electric current, measuring out current for a certain length of time when a coin of a particular denomination is inserted and the mechanism put into operation by means of the usual push-rod.

The object of my invention is to furnish a coin-controlled device of this kind which can be used in connection with electric lights, fans, and machinery run by electric power, the device automatically connecting the lights, fan, or machinery with a suitable source of power when properly actuated and at the end of a predetermined length of time breaking the circuit automatically.

While my device is shown and will be described as more particularly designed for running an electric fan, yet it is immaterial what use is made of the electric current measured out by the device.

My invention consists of the novel features of construction and combination of parts hereinafter described, particularly pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a perspective exterior view of my apparatus. Fig. 2 is a plan view, the circuit being broken and the top of the apparatus being removed. Fig. 3 is a vertical section taken on the line 3 3 of Fig. 2. Fig. 4 is a plan view showing the position of the parts after the coin has been inserted and the push-rod pressed near its inward limit, the current still remaining broken. Fig. 5 is a diagrammatic plan view showing, partly in section, the position of certain parts when the circuit is completed. Fig. 6 is a similar view of the same parts, showing the position assumed by them when the circuit is broken. Fig. 7 is a detail elevation, partly broken away, showing certain of the parts shown in plan and section in Figs. 5 and 6. Fig. 8 is a perspec-

tive view of a stop and lock plate. Fig. 9 is a perspective view of the clock-starting mechanism.

In constructing my device I employ a casing A, having a set-in portion in one corner, as shown at A' in Fig. 1. Set in the top is a metal plate A<sup>2</sup>, having a diagonal slot A<sup>3</sup> formed therein, and which slot passes through the top of the casing and aligns with a coin-chute A<sup>4</sup>, carried by the top.

Arranged within and adjacent the rear side of the casing is a clock mechanism of any suitable kind carried by a frame B. The details of the clock mechanism are not a part of my invention and will be referred to only as may be necessary to make clear the use of parts relating directly to my invention. In Figs. 2 and 4 I have shown in dotted lines the verge B' and the large mainspring B<sup>2</sup>. It will be thought sufficient, therefore, to say that the clock is of that type known as "self-winding" and that it will run for a predetermined length of time—say one hour—and that at the end of that time the spring is set free to expend its remaining energy in the actuation of an arm—as, for example, in alarm-clocks.

In the top of my casing is formed an aperture A<sup>5</sup>, through which passes the insulated wires C and C', the wire C leading from a suitable source of power and the wire C' leading to the fan, light, or machinery to be driven. These wires are connected at their inner ends to insulated bifurcated plugs C<sup>2</sup> C<sup>3</sup>, carried by a bracket C<sup>4</sup>, which may be of porcelain or other insulating material. The plugs are arranged in vertical alinement, and it is not material which particular wire is connected to the upper plug and which to the lower.

A switch-lever C<sup>5</sup> is pivoted at its lower end in the bifurcated portion of the lower plug C<sup>2</sup> and when swung into vertical position is adapted to rest between the bifurcated members of the upper plug C<sup>3</sup> and complete the electric circuit between the two plugs. A spring C<sup>6</sup> is connected at one end to a wall of the case and at the opposite end to the lever and is adapted to normally hold the lever away from the plug C<sup>3</sup>.

Arranged adjacent the lever is a standard



D, having its upper end bent horizontally and reduced, and journaled on this upper end is a block D', and secured one on each side of the block are the depending arms D<sup>2</sup>, the arms being spaced apart by the block. Arranged in advance of the bracket C<sup>4</sup>—that is, on the side opposite the lever C<sup>5</sup>—and also in advance of the standard D is a vertical shaft E, having at its upper end a horizontal pulley E'. A chain D<sup>3</sup> has one end connected to the lever C<sup>5</sup> and the opposite end to one of the depending arms D<sup>2</sup>, passing around the pulley E' and adapted to draw the lever into engagement with the bifurcated plug C<sup>3</sup>. The tension of the spring C<sup>6</sup> normally holds the lever out of engagement with the plug and also normally holds the arms D<sup>2</sup> in the position shown in Fig. 3. When the arms D<sup>2</sup> are drawn into a perpendicular position, the lever will be drawn, through the medium of the chain D<sup>3</sup>, also into vertical position.

To throw the arms D<sup>2</sup> into a vertical position and to temporarily lock them there, the following mechanism is employed: Arranged at the upper ends of parallel vertical brackets F and supported by same is a horizontal plate F', on which are arranged parallel guide-blocks F<sup>2</sup>, the blocks forming a slide-way between which slides transversely of the plate the upper member of a bifurcated sliding bar G, the lower member sliding under the plate, the bar being longitudinally slotted to a point adjacent its rear end. In order that this bar may be actuated from without the casing, a horizontal slot A<sup>6</sup> is formed in the inset portion A', and a handle G' slides in this slot, the inner end of the handle being connected to the rear end of the bar G. Secured to the handle adjacent the slot A<sup>6</sup> and partly sliding in a groove formed in the side of the casing is a thin metal bar H, preferably of spring metal, slightly curved, laterally enlarged at its forward end, as at H'. This bar slides between the bifurcated portion of a guide-bracket H<sup>2</sup> and also between the arms D<sup>2</sup>, the distance between the arms being greater than the width of the enlarged portion of the bar H, so that this portion can also pass freely between the arms. As has been stated, one of the arms D<sup>2</sup> has secured to it the chain E', and the other arm normally lies in the path of the enlarged portion H' of the bar H.

Secured to the bottom of the casing is a plate J, having a hinged side member J', which extends upward between the lower ends of the arms D<sup>2</sup>, and having an end stop J<sup>2</sup>. A rod J<sup>3</sup> extends from the side J' over the plate J and has at its outer end a weight J<sup>4</sup>, which serves to normally hold the side J' against the end stop J<sup>2</sup>. The side plate J' is cut adjacent each end, and on the rear end the cut portion J<sup>5</sup> is bent inward over the plate J, and at the forward end the cut portion J<sup>6</sup> is bent outward away from the plate.

A depending lug H<sup>2</sup> is carried by the bar H, and this lug is adapted to strike the curved portions J<sup>5</sup> and J<sup>6</sup>, sliding on one side of the plate as the bar H is pressed forward and sliding on the opposite inner side of the plate as the bar H returns with the handle to its normal position.

A bracket K is arranged on the base of the casing below the bar H in the rear of the arms D<sup>2</sup>, and a vertical lever K' is pivoted intermediate its ends to the bracket K, the upper end of the lever bearing on one side of the bar H when the lower end of the lever is pulled away from the bar. The curvature of the bar H also serves to bring the bar into contact with this lever as the bar slides back and forth.

Arranged rigidly on the pintle of the spring B<sup>2</sup> is an arm L, having adjacent one end a slot L', adapted to aline with the coin-chute A<sup>4</sup>. This arm rests in the horizontal plane of the slot of the bar G, the upper member of the bar being adapted to pass transversely across the slotted portion of the arm L, the lower member passing under same. Below the arm L and parallel with the bar G is a flat plate F<sup>3</sup>, carried by one of the brackets F. The arm L is normally held by the spring B in alinement with the coin-chute A<sup>4</sup>. In this position a portion of the arm L rests between two parallel horizontal brackets M, arranged one above the other and slotted, as at M'. A rod N has a washer N' also adapted to slide between the brackets M and adapted to be struck and moved by the arm L. The rod N projects through the slots M', and to its lower portion is attached a chain N<sup>2</sup>, which passes around a loose pulley N<sup>3</sup> and is attached to the lower portion of the lever K', and when the arm L is in its normal position the washer N' is held so that the rod N rests in one end of the slot and the tension of the chain forces the upper end of the lever K' against the bar H. When, however, the arm L is swung away from the brackets M, the rod N can slide in the slots M', allowing the chain to become slack.

On the frame B is arranged a plate O, having a slot O', and sliding in depending lugs formed on this plate is a rod O<sup>2</sup>, carrying a vertical pin O<sup>4</sup>. The upper end of the pin works in the slot O', and the lower end is bent and adapted to contact with the verge and start the clock mechanism. The spring O<sup>5</sup> normally holds the pin O<sup>4</sup> away from the verge B'.

At its rear end the arm L has a lateral extension in which works a screw. A slotted adjustable block L<sup>3</sup> is held by a set-screw on the arm L, and in this block is held one end of a wire spring L<sup>4</sup>, the spring being curved outwardly over the extension, to which it is held by the screw, and the free end of the spring is adapted to contact with the spring O<sup>4</sup> and bring it into contact with the verge



B' and to finally release it and let the pin O<sup>4</sup> and the rod O<sup>2</sup> return to their normal position under the tension of the spring O<sup>5</sup>.

Carried on the under side of the arm L is a curved forwardly-extending subarm L<sup>5</sup> adapted to contact with the rod N intermediate the chain and the lower bracket M at the same time that the arm L contacts with the upper portion of the rod, thus aiding in sliding the rod along the slots M'.

Arranged on the plate J is a stop P, adapted to limit the forward movement of the arms D<sup>2</sup>. A coiled spring Q is secured at one end to the rear side of the casing and at its forward end to a pin carried on the under side of the lower member of the bar G. This spring holds the bar in its normal position and tends to draw it rearward after the bar has been pushed forward by the handle.

It is understood that proper insulation is used in connection with the plugs C<sup>2</sup> C<sup>3</sup>, the lever C<sup>5</sup>, and the chain D<sup>3</sup>, and spring C<sup>6</sup>.

The operation of my device is as follows: The parts being in the position shown in Fig. 2, it is obvious that as the bar G straddles the arm L no movement of the arm is possible by simply pushing forward the handle G'. When, however, a nickel is dropped into the coin-chute A<sup>4</sup>, it will fall into the slot L' and rest there, being prevented by the plate F<sup>3</sup> from passing entirely through the slot and falling to the bottom of the casing. If the handle be pressed forward after the nickel has been deposited in the chute, the members of the arm G will engage the nickel, as shown in Fig. 4, the nickel being indicated at S, and the arm L will be swung around, winding the spring B<sup>2</sup>, and during this swinging movement the free end of the wire spring L<sup>4</sup> will engage the upper portion of the pin O<sup>4</sup> and slide same along the slot O' until the lower end of the pin has engaged the verge B', and through its oscillations the clockwork will be started. The further swinging of the arm L will cause the curved spring L<sup>4</sup> to disengage the pin, and the spring O<sup>5</sup> will draw the rod O<sup>2</sup> and pin O' back to their normal position. As the bar G moves forward the bar H will also move forward, and the lug H<sup>2</sup> will strike the curved portion J<sup>5</sup> and pass back of the plate J'. When the handle has reached its extreme forward movement, the arm L will be held from a return movement by the spring B<sup>2</sup>, which is locked by the clockwork. The slotted end of the arm L will have passed the forward end of the plate F<sup>3</sup>, and the nickel, no longer supported in the slot, will fall into the coin-box R. When the forward limit of movement on the part of the bar H has been reached, the lug H<sup>2</sup> will be in advance of the cut-out portion J<sup>6</sup>. Return movement of the handle G', due to or assisted by the spring Q, draws the bar H back, and on this return movement the lug H<sup>2</sup> is guided by the curved cut portion J<sup>6</sup>, so that

it slides on the inward face of the side plate J', and the enlarged portion H' strikes the arm D<sup>2</sup> in its path and swings both of these arms D<sup>2</sup> rearward, drawing on the chain D<sup>3</sup> until the lever C<sup>5</sup> is in engagement with the plug C<sup>3</sup>, when the movement is arrested and further movement of the parts stopped. Now if the handle G had been moved forward without a coin of the proper size being deposited in the chute the arm L would have remained in its normal position, the bar H would have passed forward, the lug H<sup>2</sup> acting as above described; but on the return movement the lug would not have passed to the inward side of the plate J', owing to the pressure of the lever K' against the bar H. It is obvious, therefore, that as long as the arm L holds the rod N at the farther end of the slot M' from the bar H the enlarged portion of that bar will be forced out of the path of the arm D<sup>2</sup> and will not come into contact with same.

As previously stated, the clockwork can be made to release the spring B<sup>2</sup>, and consequently the arm L, at the end of a predetermined length of time. This time commences to run with the contact of the pin O<sup>4</sup> with the verge, and at the expiration of the time limit the spring B<sup>2</sup> will throw the arm L back to its normal position, crowding the pin N to the end of the slot M' and throwing the end of the lever K' against the bar H, disengaging the portion H' from the arm D<sup>2</sup>, and the spring Q will at once draw the bar back to its normal position, and the spring C<sup>6</sup> will draw back the lever C<sup>5</sup>, breaking the electric circuit. It will also be obvious that the user can at any time break the circuit himself by pushing slightly on the handle, bringing the lug H<sup>2</sup> against the curved portion J<sup>5</sup>, and then allowing the spring Q to draw the handle back, and having broken the circuit he can again complete it at any time before the arm L has been returned to its normal position. After the clockwork has released the arm L the current can again be had through the circuit C C' only by depositing a coin in the chute and forcing the arm L back into the locked position described.

Arranged on the casing adjacent the inset portion A' is a bar or bracket A<sup>7</sup>, which is grasped by the fingers, while the handle G' is grasped by the thumb.

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

1. A coin-controlled apparatus comprising a casing having a horizontal slot on one side, a coin-chute arranged in the casing, a clockwork within the casing having a main-spring, an arm secured on the winding-stem of said spring and having a slot in normal alinement with the coin-chute, means for holding a coin in said slot, a slotted bar



adapted to straddle said arm and bear against the coin, a handle secured to said bar, said handle projecting through and being adapted to slide in the slot in the casing, 5 a bar carried by said handle and arranged substantially parallel to the slotted bar, and means for completing an electric circuit adapted to be actuated by the last-mentioned bar when the arm is moved by the 10 first-mentioned bar.

2. A coin-controlled apparatus having means arranged therein for completing an electric circuit, a clockwork mechanism having a mainspring, an arm secured to the 15 winding-stem of said spring, a coin-chute, a bar adapted to slide forward and straddle said arm, means for holding a coin temporarily on said arm, means for bringing the ends of the slotted bar into engagement with 20 the coin and swinging the arm, means carried by the arm for starting the clockwork, means for locking said arm at the limit of its swinging movement, means for actuating the circuit-completing means when the arm is in 25 a locked position, and means for returning the arm to its normal position and breaking the circuit at the end of a predetermined length of time.

3. In a coin-controlled apparatus of the

kind described, a casing having a slot therein, 30 a handle projecting from and adapted to slide in said slot, a thin, slightly-curved spring-bar secured to the handle within the casing, a pivoted arm arranged within the casing at one side of the path of said bar, 35 means carried by the forward end of the bar adapted to engage said arm, a plate arranged on the bottom of the casing and having a hinged side plate, the said side having cut portions at each end, the rear end portion 40 being turned inward and the forward end portion turned outward, a depending lug on the bar adapted to engage said portions, a pivoted lever having an end adapted to bear against the side of the bar and hold same 45 from engagement with the pivoted arm, a coin-chute in the casing, means for relieving the bar from the pressure of said lever on the insertion of a coin, means for completing an electric circuit when the bar is in engage- 50 ment with the pivoted arm, and means for forcing the lever against the bar and disengaging it from the arm at the end of a predetermined length of time.

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