

(No Model.)

2 Sheets—Sheet 1.

A. J. HENRY.
VENDING MACHINE.

No. 482,683.

Patented Sept. 13, 1892.

Fig. 1.

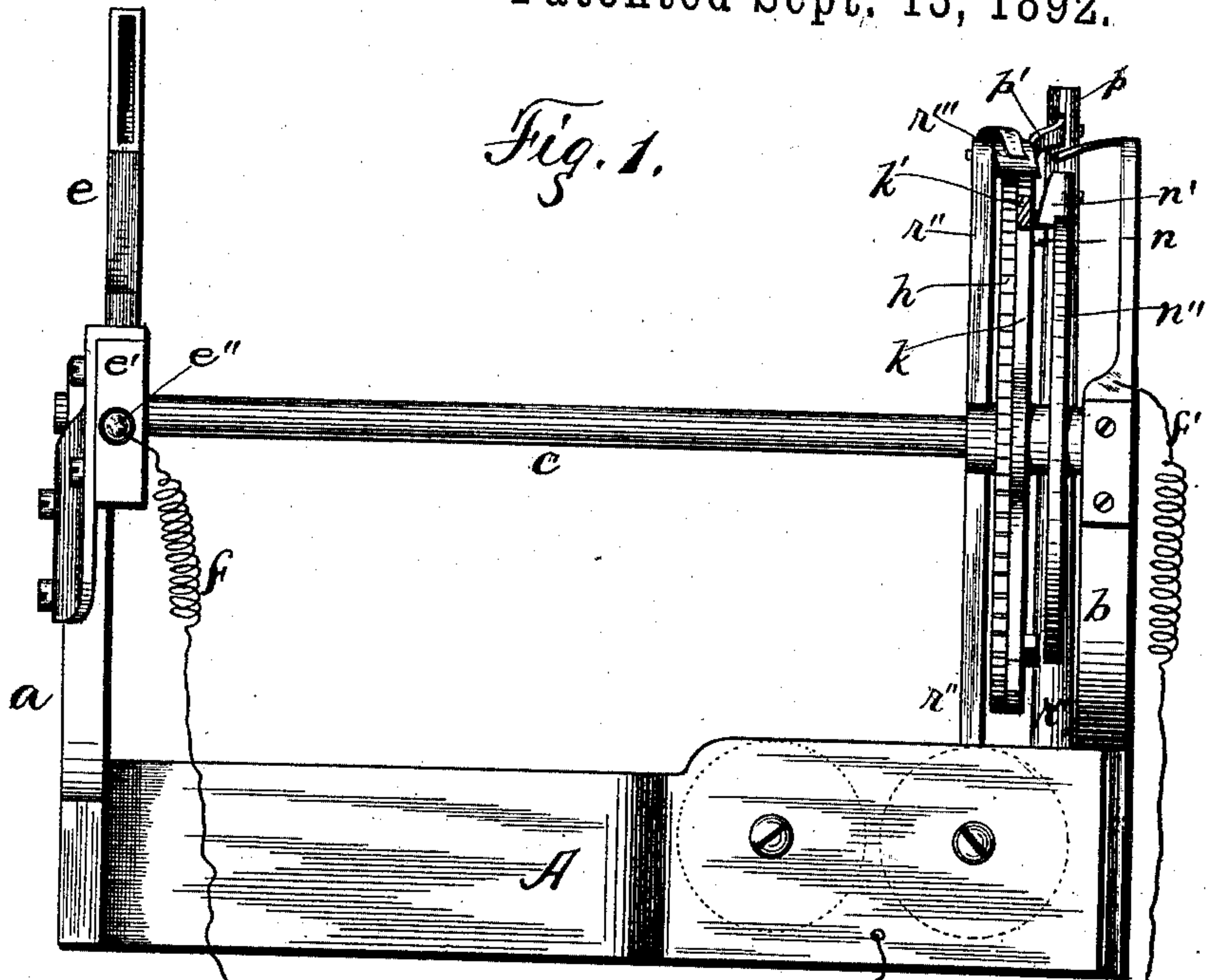


Fig. 3.

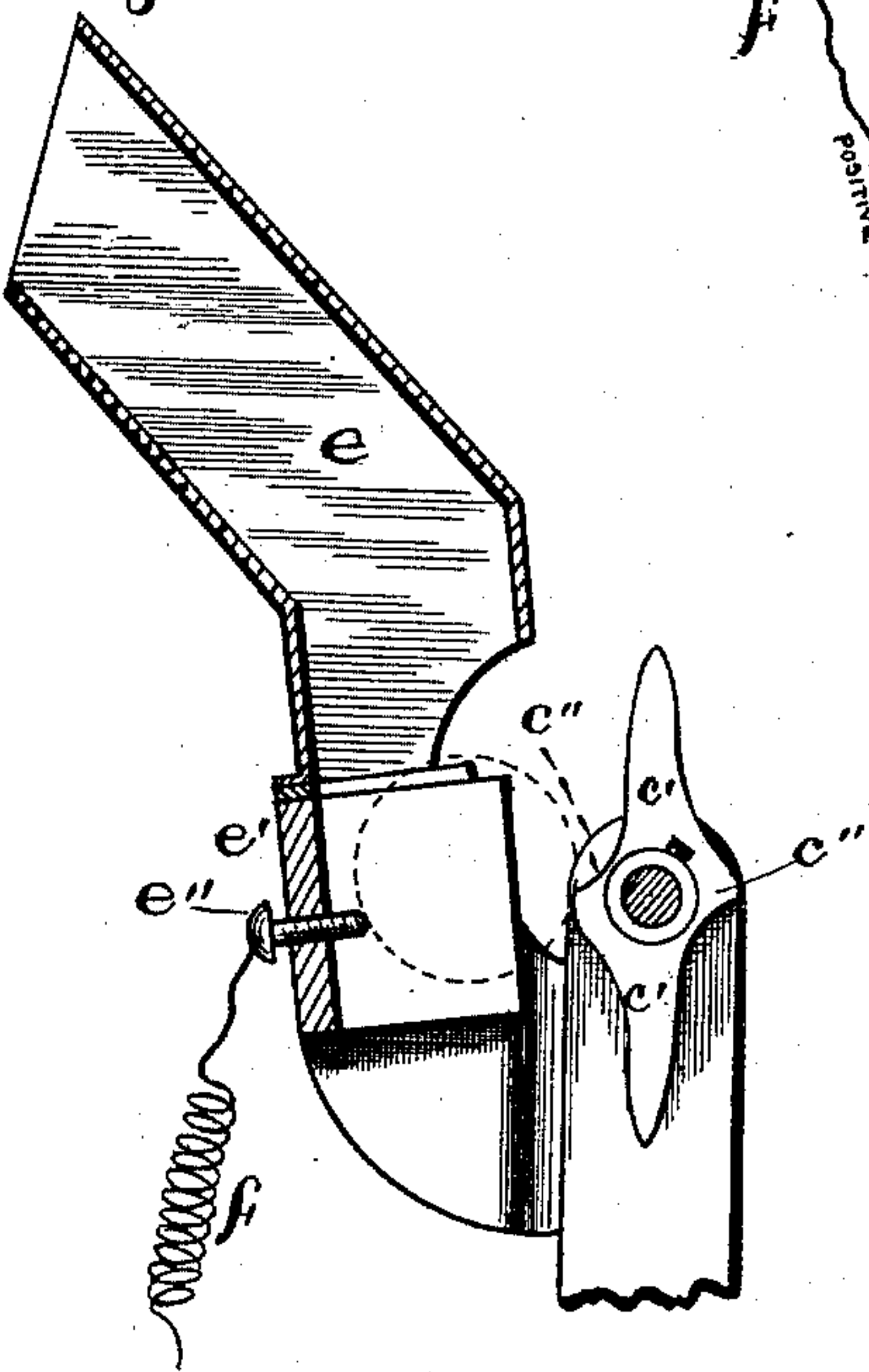
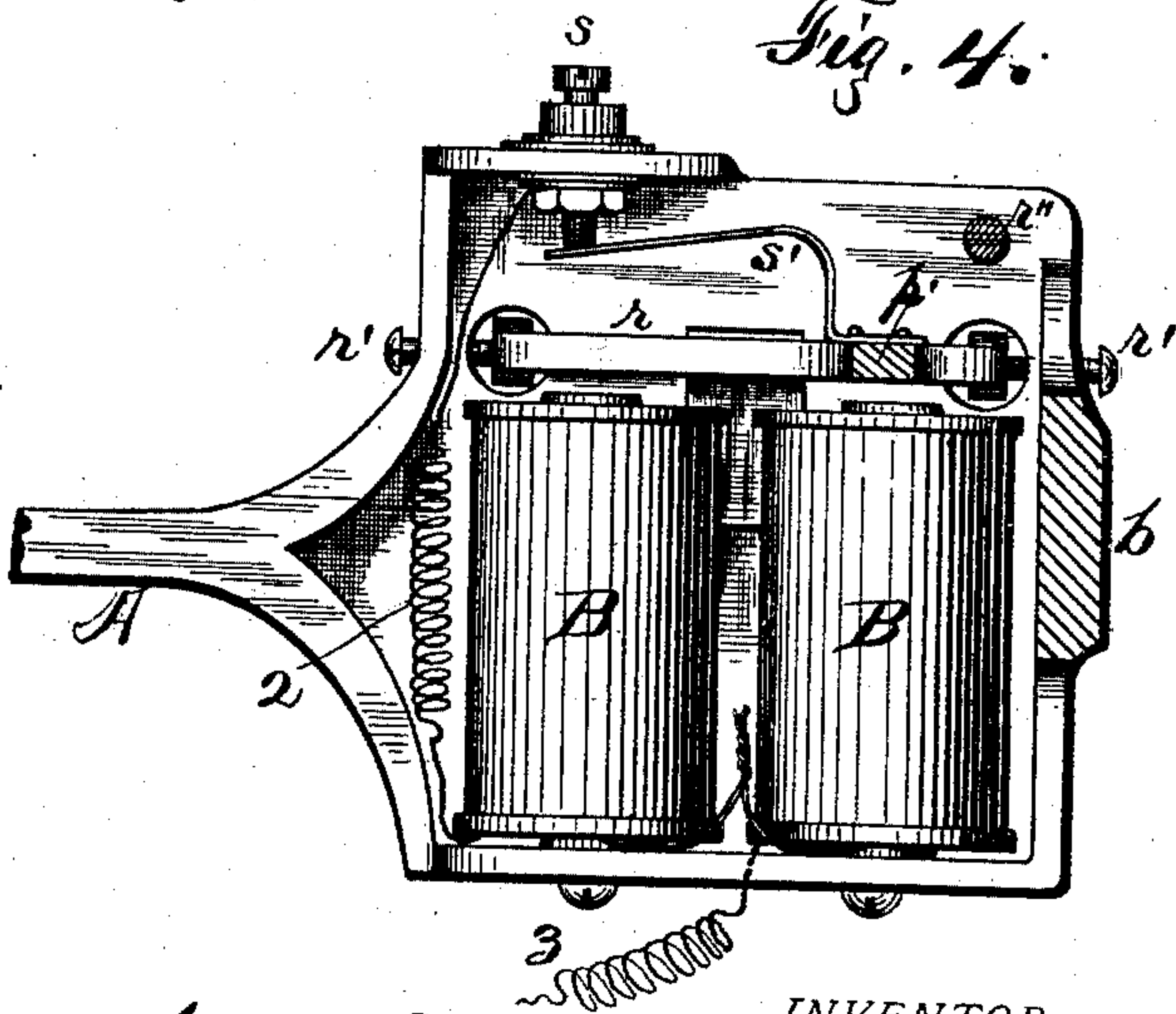


Fig. 4.



WITNESSES:
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his ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

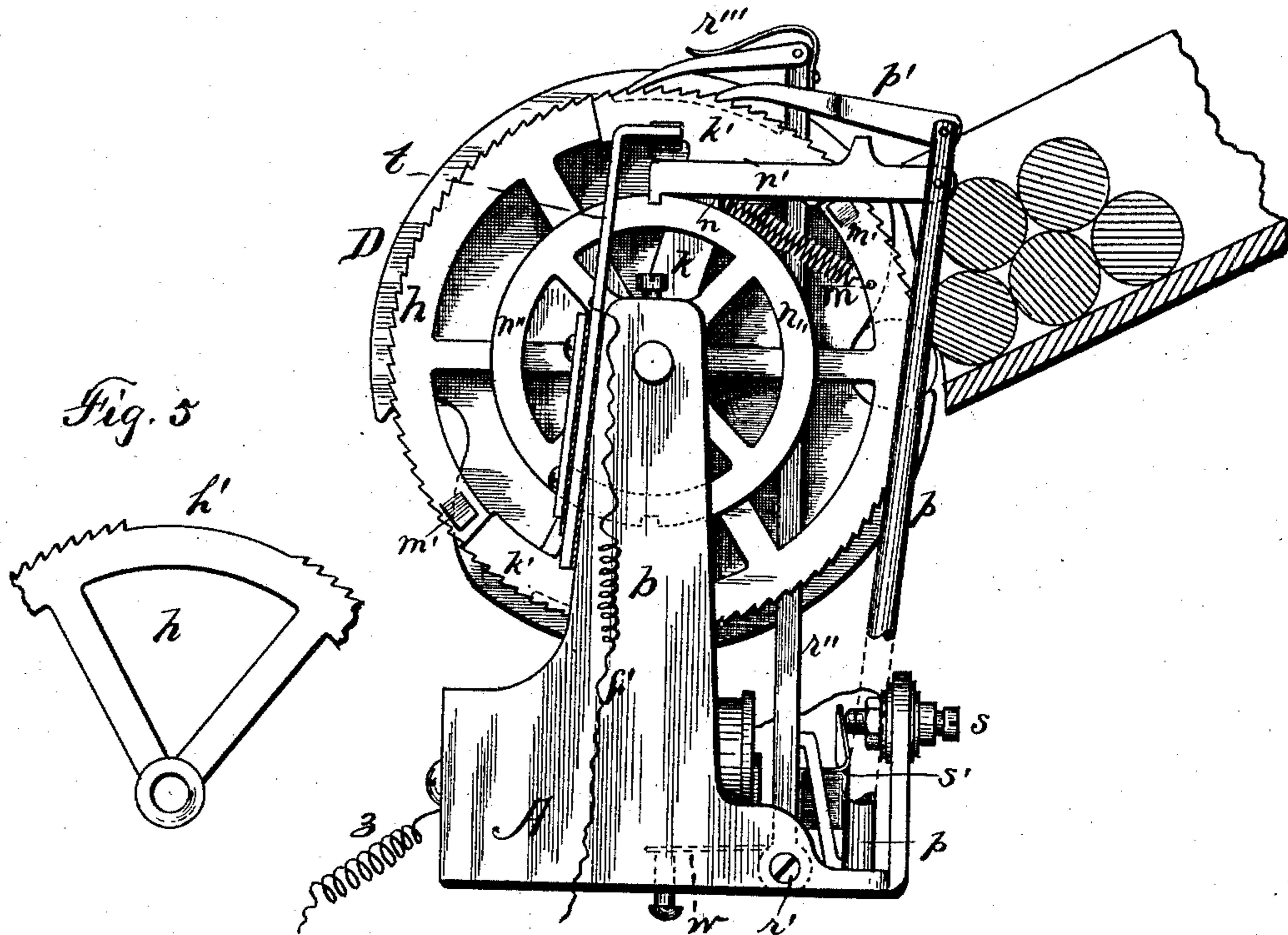


Fig. 5.

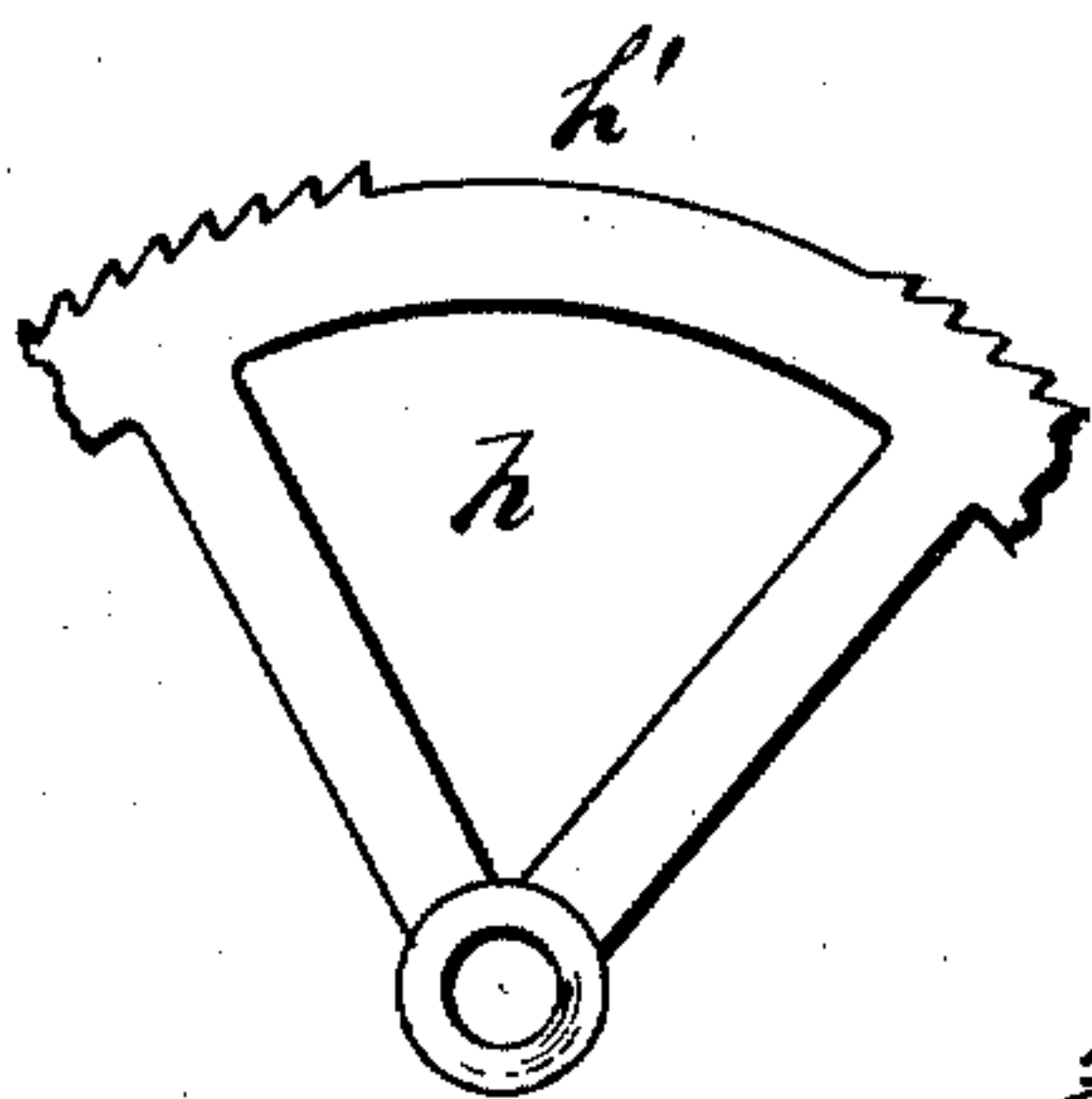


Fig. 6.

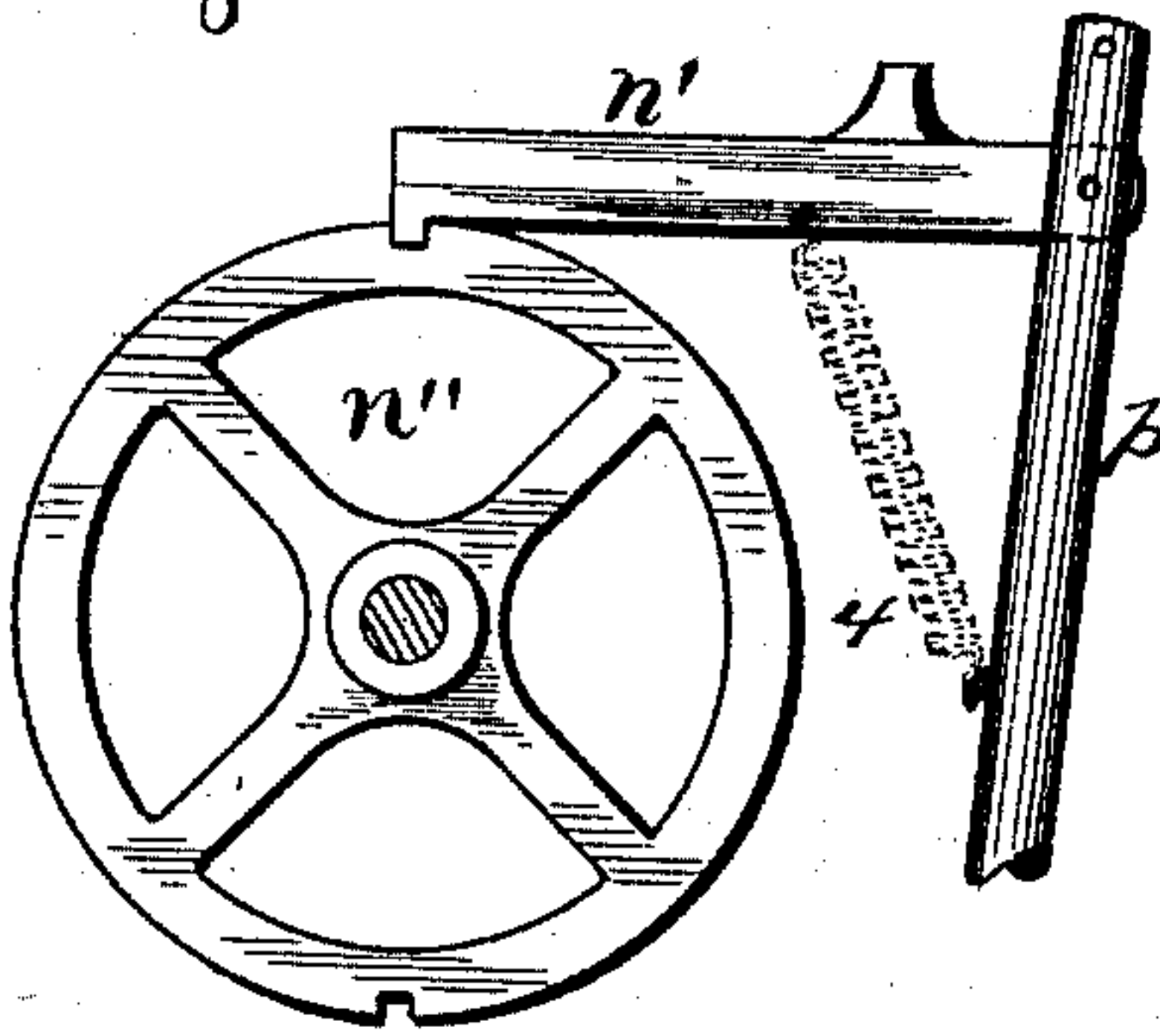
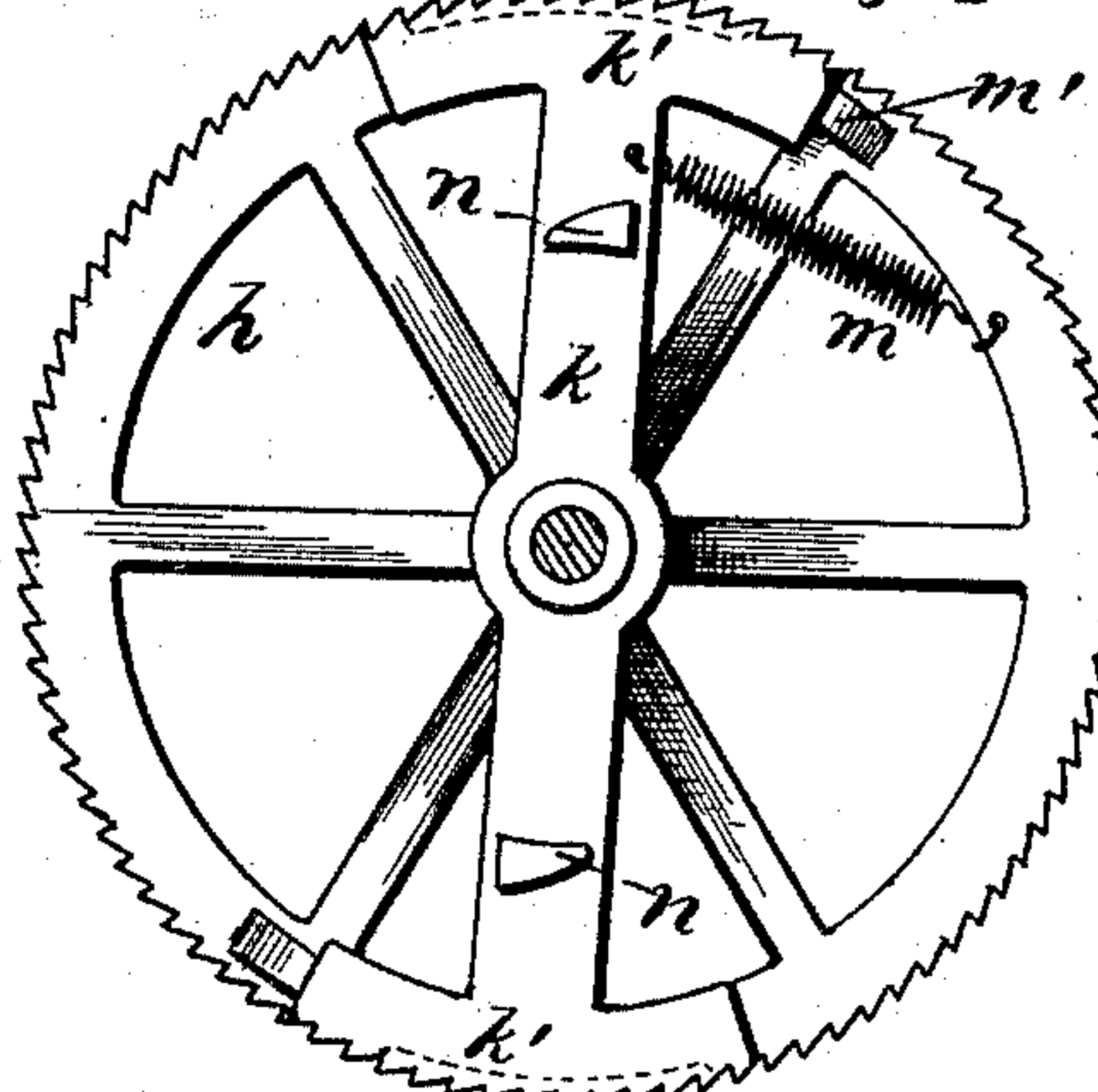


Fig. 7.



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UNITED STATES PATENT OFFICE.

ARCHIE J. HENRY, OF WATERTOWN, NEW YORK, ASSIGNOR OF ONE-HALF
TO ERNEST A. E. MEYER AND CHARLES H. SPRAGUE, OF SAME PLACE.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 482,683, dated September 13, 1892.

Application filed November 28, 1891. Serial No. 413,375. (No model.)

To all whom it may concern:

Be it known that I, ARCHIE J. HENRY, of Watertown, in the county of Jefferson, in the State of New York, have invented new and
5 useful Improvements in Vending-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to coin-actuated vending-machines in which an electrical circuit
10 is made through the coin at the foot of the coin-chute and in which the delivery-cylinder is rotated by means of a pawl connected to a vibratory arm secured upon an armature mounted upon end pivotal bearings.

My object is to produce a vending-machine in which a delivery-cylinder is rotated by a vibratory arm carrying a pawl, said arm being secured to a swinging armature mounted upon
20 end pivots, said pawl engaging with a ratchet-wheel upon the cylinder-shaft end, means being also provided to unlock said cylinder and to again lock it, all under the control of said pawl and arm, said bar and armature
25 being vibrated by an electro-magnet and a contact-point opposite thereto, and the making and breaking of the connection with said magnet and contact-point shifting the course of the electric current.

My invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, with reference to
35 the accompanying drawings, in which—

Figure 1 is a front elevation of my machine with the casing and delivery-cylinder removed. Fig. 2 is a sectional end elevation of the delivery-cylinder and hopper and of
40 the rotating and stop mechanisms. Fig. 3 is a sectional elevation of the coin-chute and means for catching the coin and making a circuit through it while suspended. Fig. 4 is a top plan of the electro-magnet, its armature, and the alternating contact-point, showing part of the frame and the vibratory arm in section. Fig. 5 is a plan view of part of the ratchet-wheel, showing one of the breaks in the ratchet-teeth thereon. Fig. 6 is a detail of the escapement mechanism detached.
50

Fig. 7 is a plan of the ratchet-wheel mechanism detached.

A is the main frame, provided with the end posts *a b*, in which the shaft *c* is mounted, and B is the electro-magnet, supported by the frame above the bottom. The coin-chute *e* is
55 mounted upon or is a part of the post *a*, its lower end being insulated by the insulating-plate *e'*, and *e''* is a contact-screw inserted through the wall adjustably.

Upon the shaft *c* I secure the coin-support *c'*, of substantially the form shown and provided with shoulders *c''*, which support one edge of the coin, while the screw *e''* supports the other side, and then the circuit is made
60 through the coin from the positive wire *f*, connected to said screw and leading to the battery, so that the shaft is a part of the circuit. The coin remains in the chute until the auxiliary bar *k'* is rotated far enough to lift
65 the dog by the lugs *n* out of the notch in the escapement-wheel, thus making a new circuit with the dog through the arm, armature *r*, and spring *s'* to the contact-screw *s*, permitting the armature and push-pawl to retain its action after the coin is released from its support, which continues as long as the dog glides
70 on the edge of the escapement-wheel until dropped in the succeeding notch, when the circuit is broken and the machine stops, ready for the next operation. The delivery-cylinder D is secured upon said shaft and is rotated thereby. This cylinder may be of any construction desired, and in itself is not a part of this invention. Hence I do not accurately describe its construction. A ratchet-wheel *h* is secured upon said shaft, and it is shown as having a part of its teeth cut off on opposite sides, as shown at *h'* in Fig. 5 and by the dotted lines in Figs. 2 and 7. Along
75 side of the ratchet-wheel I mount loosely upon the shaft the auxiliary ratchet *k*, consisting of a diametrical bar having upon its ends the curved ratchet-bars *k'*, all of the same diameter as the ratchet-wheel. A spring *m* connects the ratchet *k* to the ratchet-wheel, and said ratchet is also normally held by said spring in contact with the stop-lugs *m'* upon the ratchet-wheel. Wedging-lugs *n* are also
80 mounted upon the ratchet-bar in such posi- 100

tion that they will alternately engage with and lift the stop-bar n' out of engagement with the escapement-wheel n'' , which is secured upon said shaft and is rotated by it and is released for such rotation by the aforesaid lifting of the stop-bar. Said stop-bar is pivoted upon a post p , and p' is a check-pawl adapted to engage with both said ratchet-wheel and ratchet-bar at times and only with one of them at other times, as shown. The armature r is mounted upon the end pivot-screws r' and is provided with a vertical arm r'' , carrying a spring push-pawl r''' , which is adapted to engage with either or both of said ratchets, according to their respective positions. The negative wire 2 connects the electro-magnet to the contact-screw s , mounted in the frame opposite to said magnet, and 3 is a negative wire leading to the battery. A contact-finger s' is secured upon the armature. When the coin is dropped into the chute, a circuit is made through it and the wire f , thence to the shaft c and its bearings to the frame of the machine, thence through the axes of the armature and the armature to the spring s' , and from thence to the contact-screws. The current through this path draws the armature forward through, throwing the tension of the spring w , and breaks the circuit between the spring s' and the contact-screw s , permitting the armature to be thrown backward by the spring w . The spring w is a strap-spring, preferably, secured to the lower end of the armature and extending down below it, where it is bent at substantially right angles, its opposite end being secured adjustably by a set-screw to the bed-piece of the frame under the magnets. Then the magnet exerts its force and, drawing the armature into contact with its poles, swings the arm and push-pawl over to the left, partially rotating the ratchet-bar and producing a tension upon the spring m , the ratchet-wheel and cylinder being held from rotation by the escapement. When this stop-bar is so released, it is raised into contact with the finger upon the standard t , a new circuit is made through the wire f' , and the rotation of the delivery cylinder rolls the shoulder e'' away from the coin, permitting it to fall into the concavity above the shoulder and away from the screw e'' and fall into the receptacle, which breaks this circuit at about the same time that the other one is made. The pur-

pose of the new circuit is to rotate the cylinder and deliver the articles of merchandise and bring the horizontal groove in the cylinder again in position to receive new supplies. When this is so made, the cylinder and ratchet-wheel are out of the direct circuit, the cylinder has rotated one-half of a revolution and has discharged a cigar (shown as an illustration) from the notch therein, and the opposite notch is in position to take another one away from the box, and this secondary circuit being formed holds the contact-finger s' against the screw s'' and the vibration of the armature ceases, and the stop-bar n' drops into re-engagement with a notch in the escapement and locks the machine, being aided by a spring 4. (Shown in dotted lines in Fig. 6.)

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the delivery-cylinder secured upon a shaft, of a ratchet-wheel secured thereon and a ratchet-bar loose thereon, pawls in engagement therewith, and means to reciprocate the push-pawl.

2. The combination, with the delivery-cylinder secured upon a shaft, of a ratchet-wheel secured thereon and a ratchet-bar loose thereon, a spring connecting said bar to said wheel, and means to rotate said ratchets.

3. The combination, with the delivery-cylinder secured upon a shaft and the escapement-wheel secured thereon, of a ratchet-wheel upon said shaft, a ratchet-bar loose upon said shaft, wedging-lugs upon said bar, an escapement-lock raised by said lugs to release the escapement, a spring connecting said bar to said wheel, and means to operate said ratchet-bar to produce a tension upon said spring before the escapement is released.

4. The combination, with the delivery-cylinder secured upon a shaft, the ratchet-wheel and ratchet-bar thereon, and the reciprocating push-pawl in engagement therewith, of an electro-magnet, its armature, and means to vibrate said armature and said pawl to which it is connected.

In witness whereof I have hereunto set my hand this 9th day of November, 1891.

ARCHIE J. HENRY.

In presence of—

C. W. SMITH,
HOWARD P. DENISON.