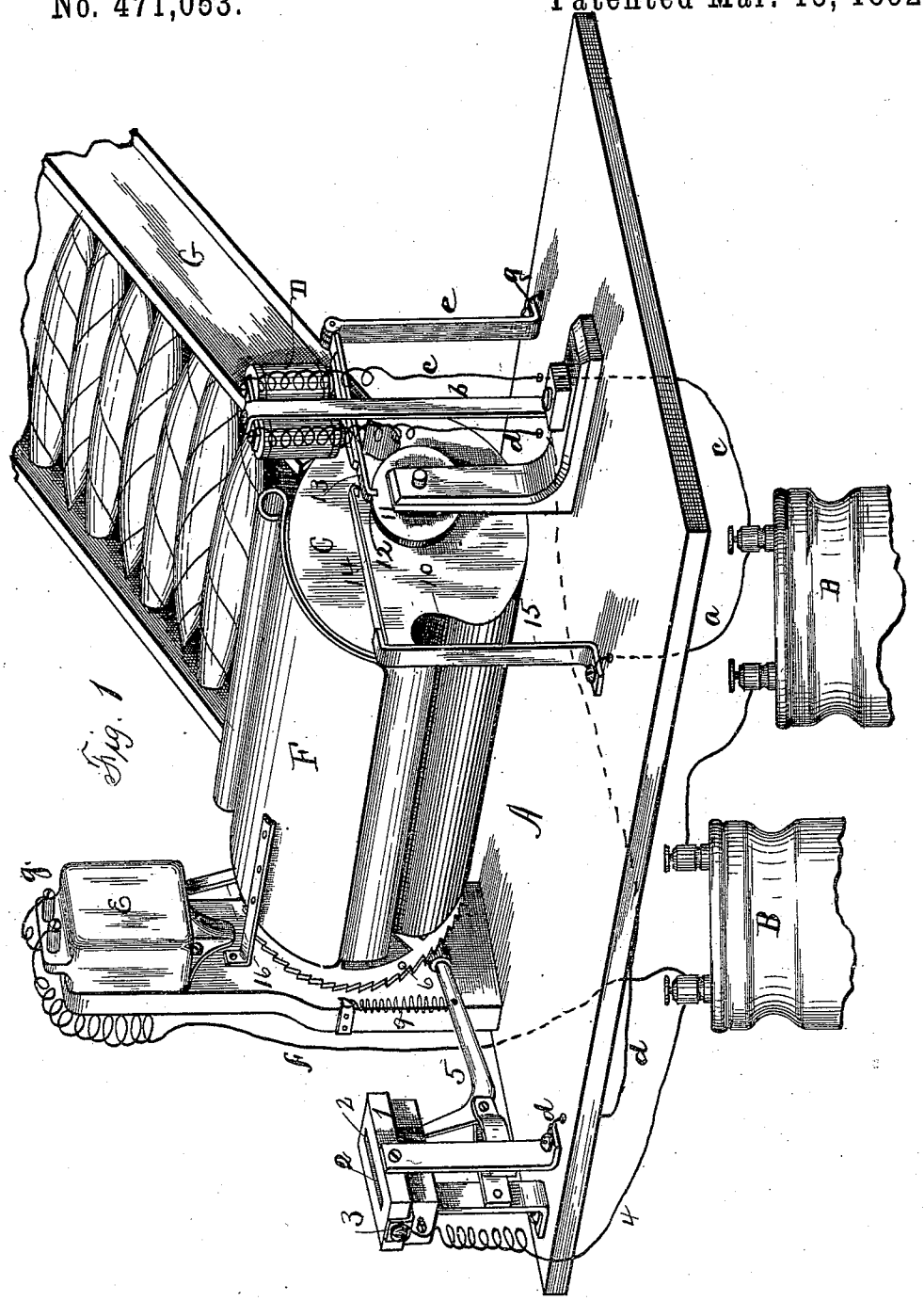
(No Model.) 4 Sheets—Sheet 1.

A. J. HENRY.

ELECTRIC ACTUATED VENDING MACHINE.

No. 471,053. Patented Mar. 15, 1892.



WITNESSES:
H. A. Earhart.
C. B. Kinnan.

INVENTOR,
Archie J. Henry
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his ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 4 Sheets—Sheet 2.

A. J. HENRY.

ELECTRIC ACTUATED VENDING MACHINE.

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Fig 4

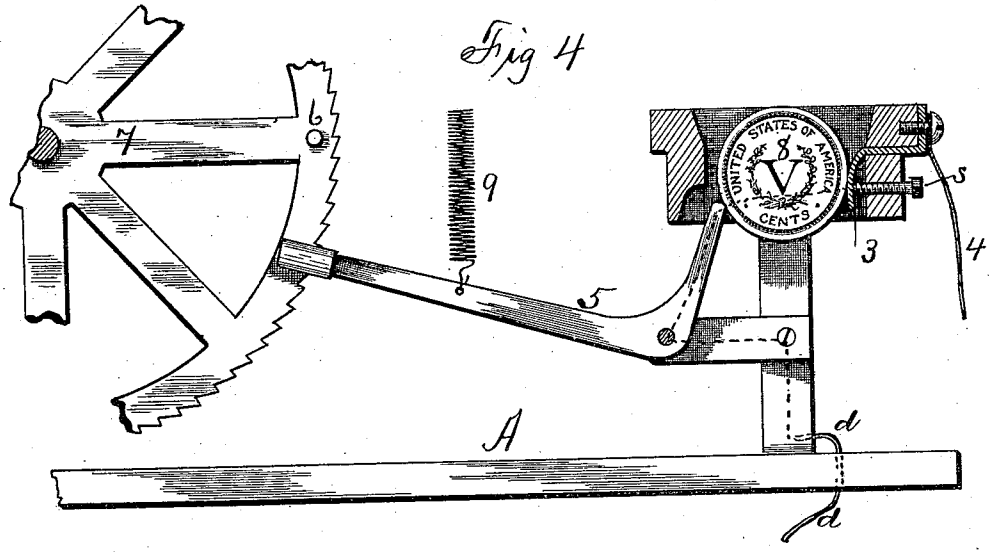
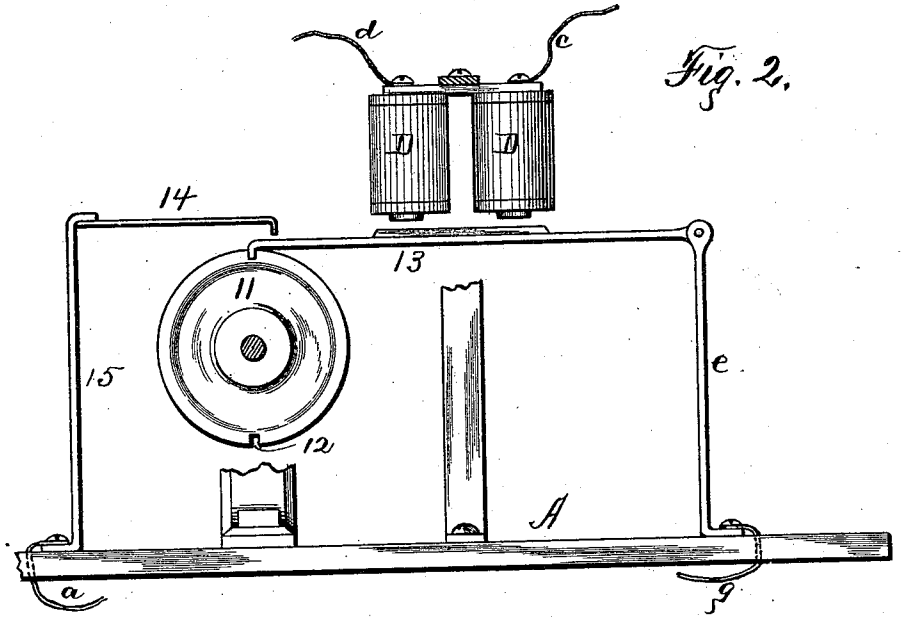


Fig. 2.



WITNESSES:
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(No Model.) 4 Sheets—Sheet 3.

A. J. HENRY.

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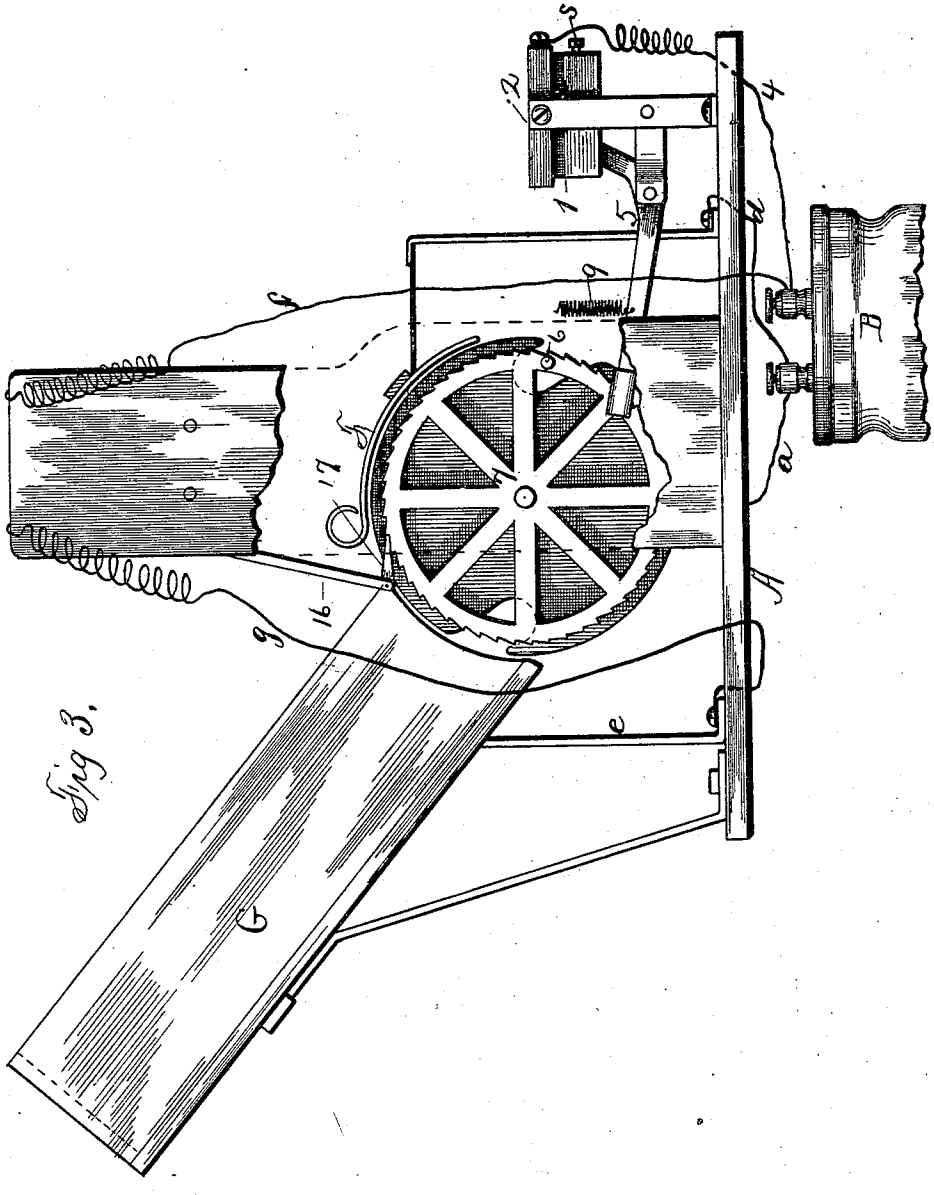

Fig 3.

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(No Model.) 4 Sheets—Sheet 4.

A. J. HENRY.

ELECTRIC ACTUATED VENDING MACHINE.

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Fig 5

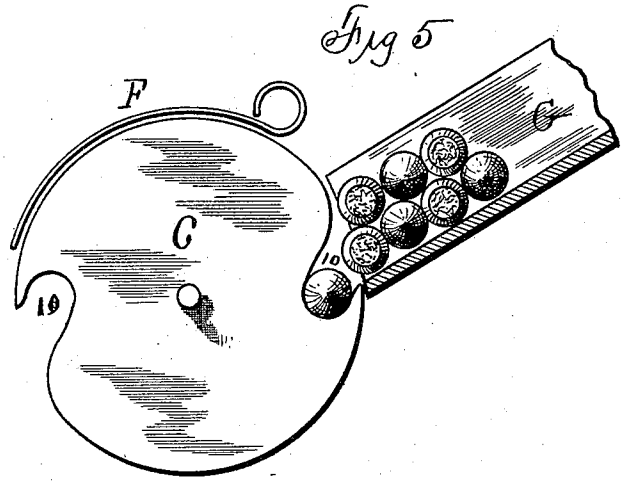
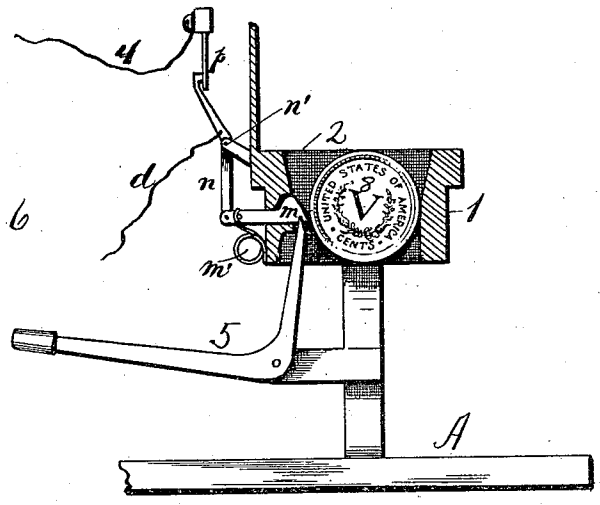


Fig. 6



WITNESSES:
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his ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARCHIE J. HENRY, OF WATERTOWN, NEW YORK, ASSIGNOR OF FIVE-EIGHTHS TO ERNEST A. E. MEYER, CHARLES H. SPRAGUE, AND JAMES B. WISE, OF SAME PLACE.

ELECTRIC-ACTUATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 471,053, dated March 15, 1892.

Application filed August 22, 1891. Serial No. 403,417. (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 useful Improvements in Electric-Actuated Vending-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates generally to that class of apparatus known as "coin-controlled mechanisms" for different objects and which operate or are released or unlocked for operation by the deposit of a coin of specified size and weight in a slot, and it relates particularly to that class which is adapted to rotate a cylinder for the purpose of delivering cigars or other articles of merchandise.

My object is to produce such a machine or apparatus actuated by electricity automatically, in which, when the coin is inserted in the slot, it makes a circuit between the battery and magnet, thereby first operating to unlock the cylinder, which is then rotated by the motor for the purpose of delivering the articles of merchandise and stopped when by such rotation the circuit is broken and the coin is dropped into the receiver.

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, reference being had to the accompanying drawings, in which—

Figure 1 is an isometrical elevation of the machine complete with cover removed ready for operation, showing cigars as the article of merchandise. Fig. 2 is a detail of the releasing mechanism upon the end of the machine containing the magnet. Fig. 3 is a view of the opposite end of the machine with a part of the motor-support broken away, showing the push-pawl and coin-releasing mechanism. Fig. 4 is a vertical section through the coin-slot, showing its internal construction and showing the path of the circuit through the coin by the dotted lines. Fig. 5 is a sectional elevation of the cigar-box and the cylinder provided with a recess for the reception of the cigars or articles of merchandise as it is rotated detached. Fig. 6 is a section of the slot, showing another mechanism for making the circuit.

Similar letters and numerals of reference indicate corresponding parts.

A is the base, upon which my apparatus is mounted, upon one corner of which, for convenience, I erect a standard-body 1 in any suitable manner, having a central slot 2. In the outer edge of the slot I mount a yielding conductor-finger 3 in circuit with the battery B through the wire 4.

Under the body 1, containing the slot, I pivotally mount a crank-arm 5, having its vertical arm extending upward into the slot 2 and on the opposite side from the finger 3 and its horizontal arm extending toward the rim of the cylinder, where it engages with the lug or pin 6 upon the side of the ratchet-wheel 7, which wheel is rigidly secured to the axis of the cylinder, by which wheel and pin the said bar is actuated to release the coin 8 in the slot after the circuit has been made, permitting it to drop down into the receptacle, whence it can be removed only by unlocking the case which incloses the apparatus or by some other suitable means. The horizontal end of the crank-arm is held in engagement with the pin upon the wheel by the spring 9 or other elastic connection.

C is a cylinder mounted centrally upon the shaft or axis, and is provided with longitudinal recesses 10 in its periphery. Upon the opposite end of the axis of the cylinder I rigidly secure a wheel 11, having recesses or notches 12 in its periphery at regular intervals, with which the downwardly-extending end of the armature 13 engages for the purpose of holding the cylinder in the locked position when the circuit is broken.

14 is a spring-arm located upon a standard 15 in connection with the battery of the wire *a*, the free end of which spring 14 is directly over the end of the armature 13 and forms a circuit when the armature is raised for the purpose of releasing or unlocking the cylinder.

D is an electro-magnet supported by the standard *b* and connected to the battery by the wire *c* and to the standard 1 by the wire *d*. The armature 13 is hinged to the post *e*.

At the opposite end of the cylinder I erect

the motor E, having a downwardly-extending lever-arm 16, which is connected to and operates the push-pawl 17 for the purpose of rotating the ratchet-wheel 7 and the cylinder, the motor being in proper connection with the battery by the wire *f* and to the standard *e* by the wire *g*. (Partially shown.)

F is a shield supported in any suitable manner just over the cylinder, and preferably having its upper edge turned up for the purpose of keeping the cigars or other merchandise from getting over the top of the cylinder.

G is a receptacle, as a box open at one end, containing cigars or other articles or merchandise, so arranged that one cigar will drop into each of the recesses 10 in the cylinder successively as the same is rotated to present a recess in proper position.

My invention is operated as follows: When a coin is placed in the slot 2, a circuit is made through the coin, the finger 3, lever 5, and wire 4 between the battery and the magnet D, which raises the armature 13 into contact with the spring 14, unlocks the wheel 11, making a circuit between the battery and motor E, and thus permitting the motor, by means of the lever and push-pawl, to rotate the cylinder. It will be seen that one circuit is made through the coin, battery, and magnet, and another is made between the armature, its standard, the wires *g f*, and motor with the battery. The first circuit operates to unlock the cylinder to permit it to be rotated, and at the same time makes the circuit with the motor. As soon as the cylinder begins its rotation the first circuit is broken by the pin 6, engaging with and depressing the inner end of the lever 5, and thus releasing the coin and permitting it to drop. When this circuit is thus broken, the motor-circuit remains unbroken, the point of the armature then riding upon the face of the wheel 11 until the cylinder has so rotated as to permit the armature to drop into a notch thereon, which will be just at the time when a cigar is discharged, and the separation of the armature from the spring 14 in making the lock breaks the motor-circuit.

I do not limit myself to the precise construction shown here for the purpose of releasing the coin, as it will be very evident that many other mechanical devices may be constructed without departing from the spirit of my invention; nor do I limit myself to the size, number, or form of the recesses in the rotating cylinder, nor do I limit myself to any form or style of motor, nor to the location thereof, as shown in the drawings.

In Fig. 6 I show a modification of the mechanism for making the circuit by the introduction of the coin. I insert a wedge-pointed slide *m* through the side of the standard 1, having its inner end projecting into the slot 2, and *m'* is a spring engaging with said slide. A lever *n*, pivoted at *n'* to the standard, is pivotally connected to the outer end of the slide, and its upper end is adapted to make a contact with a yielding or spring finger *p*, to which the wire 4 is connected, the wire *d* being also connected to said lever. When a circuit is made as aforesaid by the insertion of the coin, its weight will force the slide *m* outward, bringing the lever *n* into contact with the finger *p*, leaving the coin still supported, and then when the lever 5 is operated, as aforesaid, the slide *m* will be forced farther out and the coin released and the circuit be broken. It will be seen that the set-screw *s*, Fig. 4, enables me to adjust the finger 3 as may be desired.

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

1. In a vending-machine, the combination, with the slotted coin-receiver, the yielding finger in the slot, and a lever having a vertical arm extending upward into the coin-slot and a horizontal arm beyond the pivot of said lever, of a wheel mounted above said lever and provided with side pins adapted to intermittently engage with the horizontal arm of said lever, depressing it and releasing the coin by swinging the vertical arm out of the coin-slot, and a motor to rotate said wheel.

2. In a vending-machine, the combination, with the slotted coin-receiver, the finger in the slot, and the lever having one arm engaging with the coin from below and normally supporting one side of it, of a ratchet-wheel provided with pins projecting from its side, adapted to engage with the other arm of said lever and depress it to release the coin, a push-pawl engaging with said ratchet-wheel, a lever connected to said pawl, and a motor to intermittently operate said lever and pawl.

3. In a vending-machine, the combination, with the slotted coin-receiver, the finger in the slot, and the lever having one arm engaging with the coin from below and supporting it, of a cylinder recessed longitudinally and mounted upon a shaft journaled in end bearings, a ratchet-wheel upon the end of said cylinder and provided with pins upon one side adapted to engage with the other arm of said lever and depress it to release the coin, a push-pawl engaging with said ratchet-wheel, a lever connected to said pawl, and a motor to intermittently operate said lever and pawl.

4. In a vending-machine, the combination, with the electric generator having its circuit-wires connected thereto, of a body having a coin-slot therein in circuit with the electric generator, the cylinder suitably mounted and recessed and provided upon one end with a notched wheel, an armature adapted to rest in engagement with said wheel, said cylinder having upon its opposite end a ratchet-wheel, a motor having its circuit-wires and actuating a push-pawl, a push-pawl engaging with said ratchet-wheel, and a crank-arm pivoted beneath the aforesaid slot and having one end adapted to engage with the ratchet-wheel at regular intervals and the opposite end adapted to engage with the coin.

5. In a vending-machine, the combination,

with the electric generator having its circuit-wires connected thereto, of a body having a coin-slot therein in circuit with the electric generator, a cylinder suitably mounted and recessed and provided upon one end with a notched wheel, a magnet and armature adapted to rest in engagement with said wheel, the spring 14, suitably mounted and having its free end located just above the armature and in circuit with a battery, the opposite end of the cylinder having a ratchet-wheel, a motor having circuit-wires and provided with a downwardly-extending shaft engaging with the push-pawl, a push-pawl engaging with said ratchet-wheel, lugs located upon the outer face of said wheel, and a crank-arm pivoted beneath the aforesaid slot, having one end adapted to engage with the lugs upon the ratchet-wheel at regular intervals and the opposite end adapted to engage with the coin, completing the circuit in the slot between the battery and the armature, for the purpose of releasing the cylinder.

6. In a vending-machine, the combination, with the electric generator having circuit-wires connected thereto, of a body having a coin-slot therein in circuit with the electric generator, a cylinder suitably mounted and recessed and provided upon one end with a notched wheel, a magnet, an armature adapted to rest in engagement with said wheel, said cylinder having upon its opposite end a ratchet-wheel, a motor having circuit-wires and actuating a push-pawl by means of a shaft, a push-pawl engaging with said ratchet-wheel, a crank-arm pivoted beneath the aforesaid slot and one end adapted to engage with the ratchet-wheel at regular intervals, the spring 9, holding said crank-arm yieldingly in engagement with said wheel and the opposite end of the crank-arm adapted to engage with the coin, forming a circuit in the slot beneath the battery and armature, the shield F, and the receptacle containing the article of merchandise.

In witness whereof I have hereunto set my hand this 17th day of August, 1891.

ARCHIE J. HENRY.

In presence of—
C. W. SMITH,
C. B. KINNE.