

Jan. 24, 1928.

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J. E. BARTLETT

STATIONERY VENDING MACHINE

Filed April 3, 1926

3 Sheets-Sheet 1

Fig. 1.

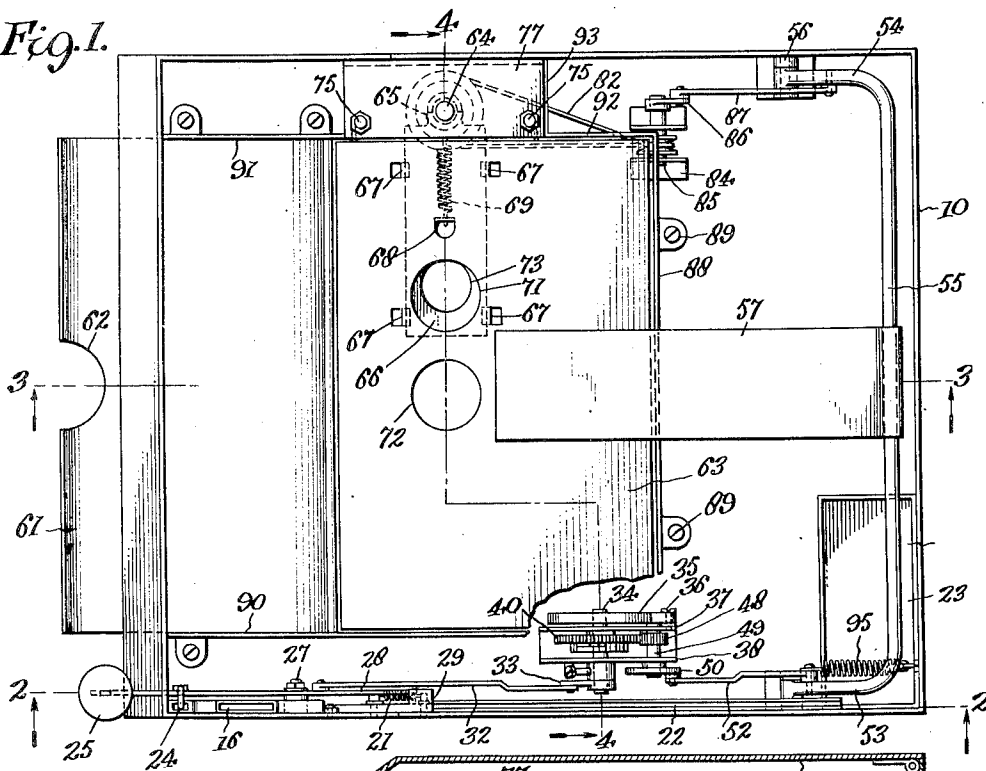
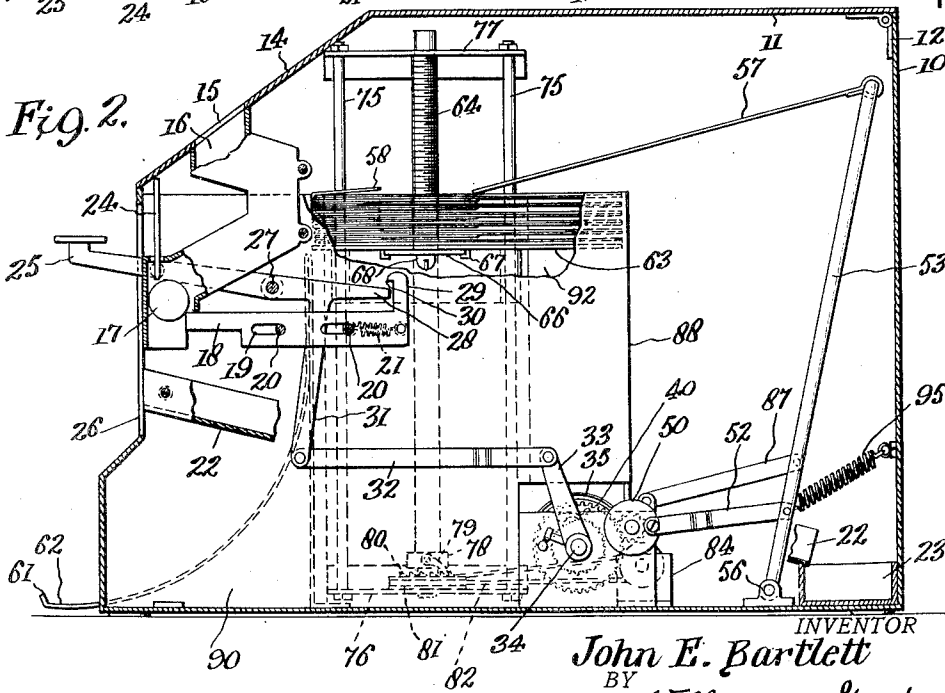


Fig. 2.



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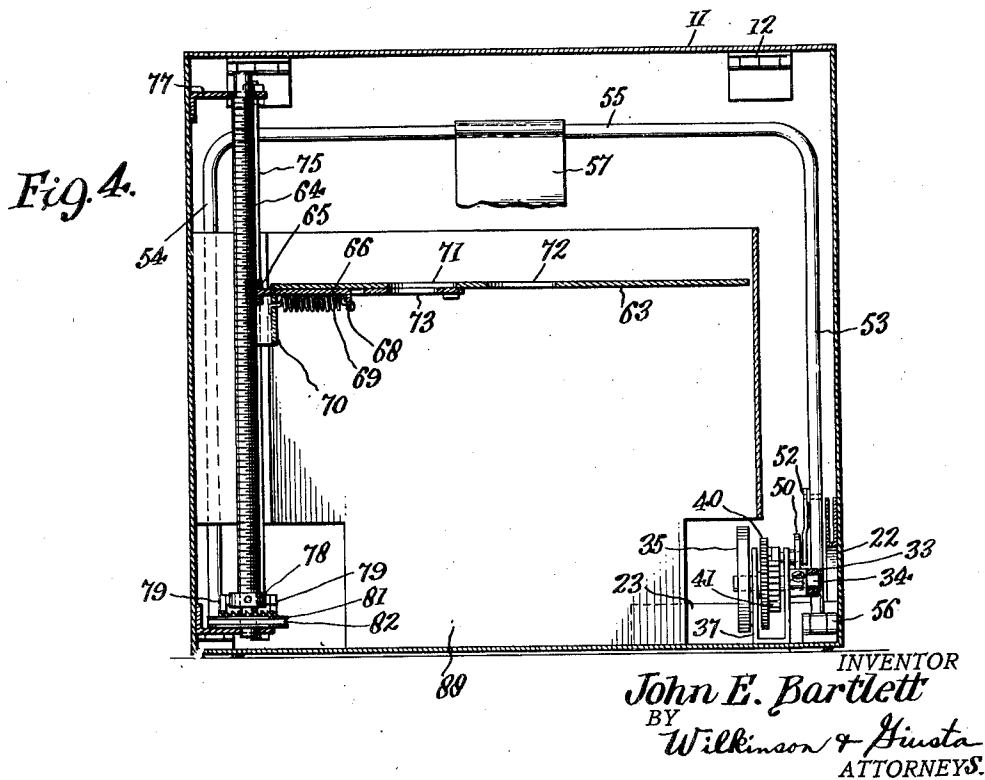
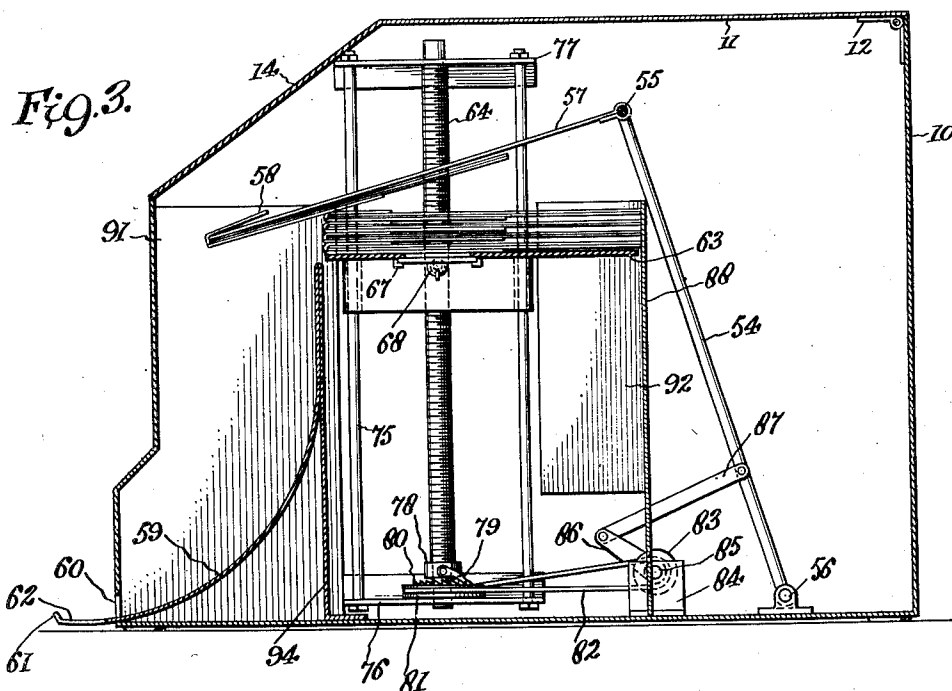
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3 Sheets-Sheet 2



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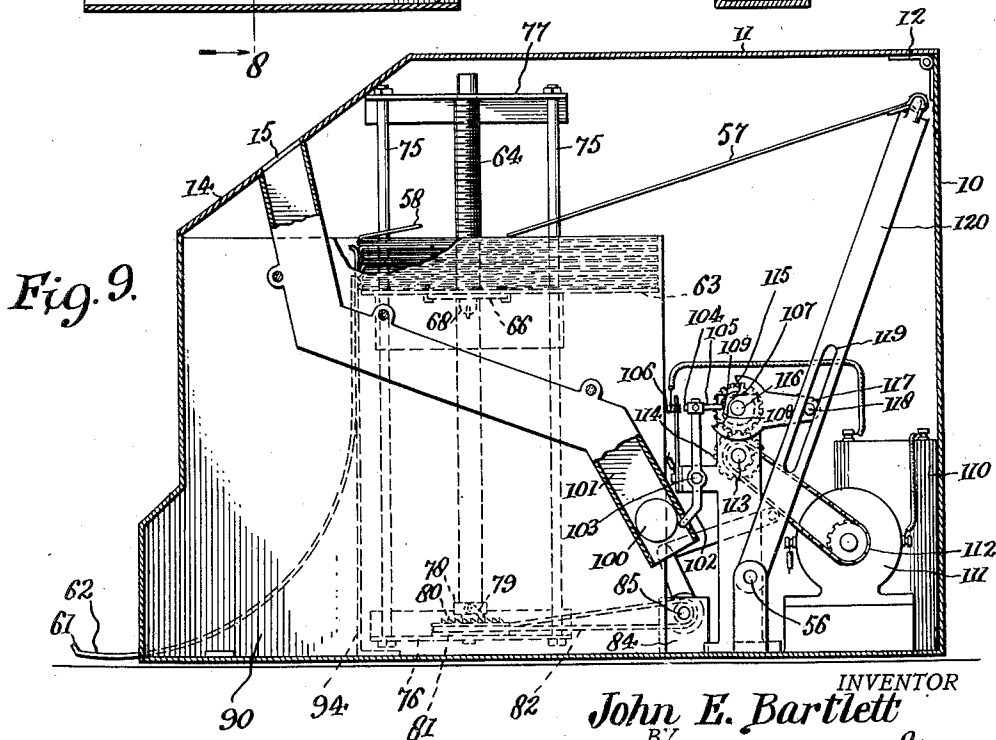
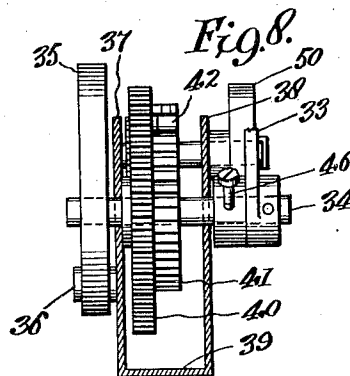
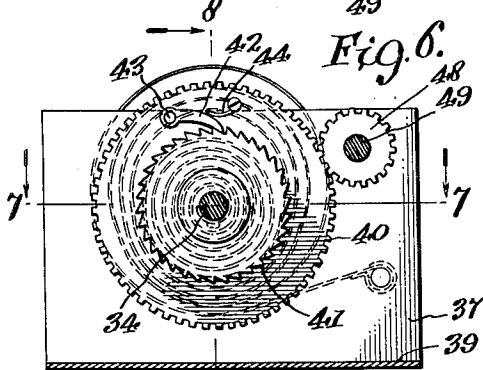
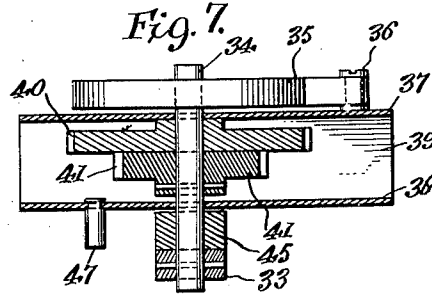
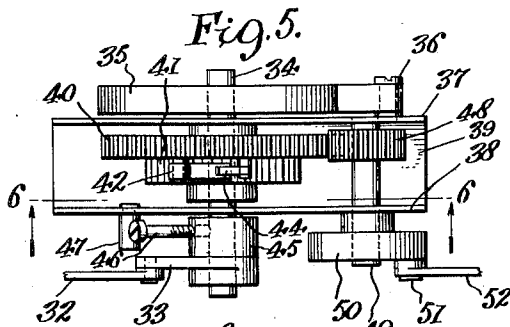
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STATIONERY VENDING MACHINE

Filed April 3, 1926

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

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STATIONERY-VENDING MACHINE.

Application filed April 3, 1926. Serial No. 99,500.

The present invention relates to improvements in vending machines and has for an object particularly the vending of packets of stamped envelopes and stationery, although it will be understood that the device may be used in connection with other articles.

Another object of the invention resides in providing a vending device in which the ejecting mechanism for the articles will be operable by an agency separate and distinct from the hand manipulated operating member, which extends upon the exterior of the cabinet, although this manipulating member will be coupled to the ejecting agency in such a way as to place the agency in a potential position.

A further object of the invention consists in providing an improved cabinet and contained mechanism, the general arrangement and organization of which is compact in construction, inexpensive to make and entirely reliable and faithful in the operation.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a top plan view of an improved apparatus constructed according to the present invention with the top cover removed.

Figure 2 is a vertical section taken on the line 2—2 in Figure 1.

Figure 3 is a similar section taken on the line 3—3 in Figure 1 with the ejecting mechanism in the thrown position.

Figure 4 is a transverse vertical section taken on the line 4—4 in Figure 1.

Figure 5 is an enlarged top plan view of the spring motor employed in one form of the invention.

Figure 6 is a vertical section taken on the line 6—6 in Figure 5.

Figure 7 is a horizontal section taken on the line 7—7 in Figure 6.

Figure 8 is a vertical central section taken on the line 8—8 in Figure 6, and

Figure 9 is a longitudinal section, with parts broken away, showing a slight modification.

Referring more particularly to the draw-

ings, 10 designates a cabinet of appropriate form and dimensions and preferably of an artistic shape and design to form a fitting installation for hotels, banks and other public places where a machine of this kind would be profitable.

The cabinet 10 is provided with the removable top 11 hinged, as indicated at 12 to the back wall of the cabinet and preferably the top carries the front panel 14 extending down diagonally and in this panel is provided the coin slot 15.

The coin chute 16 is disposed within the forward portion of the cabinet and preferably to the right hand side thereof, this passage being a tortuous one in order to permit the nickel, or coin of other selected denomination, to gently descend therein until it arrives at the position indicated at 17 in Figure 2. Here it engages the stop formed by the forward end of the release bar 18, such bar being slotted as indicated at 19 and hung upon the bolts 20 secured to the side wall of the cabinet, the slots permitting of horizontal sliding movement of the release bar on the bolts. A coil spring 21 is secured to the bar and to one of the bolts 20 and functions to project the bar into the forward position. The coin, when released, will descend into the trough 22 and will be by it conveyed to an appropriate depository 23 located at the rear or other desired portion of the cabinet. The weight of the coin will not, in itself, be sufficient to cause the release bar 18 to retire out of its path, but force for this purpose is applied to the coin by the rod 24 carried by the actuating lever 25. The lever 25 operates through a vertical slot 26 in the front wall of the casing and it is pivoted as indicated at 27 on an appropriate bolt or fulcrum secured to the side wall of the casing. This operating member or lever 25 has a tail piece 28 projecting to the rear of the fulcrum point 27 and into engagement with an upstanding lug 29 on the inner end of the release bar 18.

This lug 29 has a forwardly projecting lip 30 at its upper end adapted to be engaged by the tail piece 28 to prevent operation of the mechanism or the ejection of an article except when a coin of proper denomination is introduced into the coin slot. The normal position of the tail piece 28 will be below the lip 30, whereby to permit an initial movement of the operating member 25,

such as will enable the rod 24 to push the coin 17 downwardly and out of the chute. Of course, this action of the coin causes the release bar 18 to be moved backwardly, withdrawing the lip 30 from the tail piece and permitting the complete or full-stroke actuation of the operating member 25.

The tail piece 28 of the operating member is provided with the downwardly extending arm 31 pivoted at its lower end to the link 32, which extends rearwardly therefrom and is pivoted to an upstanding arm 33 fixed upon a rock shaft 34.

The operating member, through the arm 33 thus causes winding of a spring motor and its subsequent release. The spring motor is shown in Figures 5 to 8 inclusive. In these figures the spring is indicated at 35 as being a volute spring secured at its inner end to the shaft 34 and having its outer end fixed to a post 36 on a wall 37 of the motor frame. The motor is entirely carried by this U-shaped frame consisting of the walls 37 and 38 and the base plate 39.

Loosely mounted on the shaft 34, between the walls 37 and 38 is a gear wheel 40. Pinned or otherwise affixed to the shaft 34, beside the gear wheel 40 is a ratchet wheel 41 having teeth inclined as shown in Figure 6. These teeth are intended to be engaged by the pawl or dog 42 pivoted at 43 to the gear wheel 40, which is of greater diameter than the ratchet wheel 41. A spring 44 carried by the side of the gear wheel presses upon the free end of the pawl 42 and urges it yieldingly against the inclined teeth of the ratchet wheel 41.

Outwardly of the wall 38, the shaft 34 carries the collar 45 affixed to it by the set screw 46 having the long shank for constituting a stop to engage against the abutment 47 projecting outwardly from the wall 38.

The gear wheel 40 meshes with a pinion 48 mounted upon a counter shaft 49 journaled in appropriate bearings in the walls 37 and 38 and projecting outwardly beyond the wall 38 where such counter shaft is provided with a disc 50 having a pin 51 projecting from its side edge for the purpose of pivotally coupling to the disc the link 52.

This link 52 is shown in Figure 2 as being pivoted to one arm 53 of the yoke lever having the other arm 54 at the opposite side of the cabinet and the connecting bar 55 at the upper ends of the arms 53 and 54. The arms 53 and 54 are, at their lower ends pivoted in appropriate brackets 56 supported on the bottom of the cabinet.

The connecting bar 55 supports and moves the ejecting tongue 57, this tongue being preferably an elongated flat piece of metal having its rear end rolled about the connecting bar 55 and with its forward end freely resting upon the uppermost packet of envelopes and paper or upon the upper-

most article in a stack of merchandise to be vended by the machine.

The envelopes are preferably placed in a stack face down with the flaps 58 extending upwardly and with the open sides of the envelopes facing the forward portion of the machine. The paper or stationery, including any number of sheets, is nested with the envelope and is fitted against the back of the envelope which is the portion uppermost and such sheets are fitted beneath the flap of the envelope. This arrangement will give the free end of the ejecting tongue 57 an opportunity to engage beneath the flap of the uppermost envelope, as indicated in Figure 3, for the purpose of removing the packet from the pile and projecting it forwardly until it is tilted and over-balanced and falls into the delivery chute 59 having the lower forwardly curved wall. The front wall of the cabinet at the base is provided with the delivery slot 60 and an apron 61 is extended forwardly beneath this delivery opening for catching the portion of the packet which protrudes from the opening. The apron is provided with the finger slot 62, shown in Figure 1, for the purpose of enabling the thumb and finger to close upon the packet and withdraw the same forcibly, the apron having an upwardly extending outer ledge to normally prevent the falling of the packet to the floor.

The packet of merchandise is supported upon a platform or table 63, such table adapted to be elevated as the packets are removed by the ejecting mechanism and for this purpose a vertically disposed screw or rod 64 is installed in the cabinet at one side of the table in position to be engaged by the half-nut 65 carried by the table and specifically upon the outer end of a slide 66 mounted for horizontal sliding movement in guide-ways 67 beneath the table. The slide 66 is provided with the down-turned lug 68 to which one end of a coil spring 69 is secured, the other end being affixed to the table or to the downwardly projecting ledge 70 at one side of the table. The table is provided with the finger holes 71 and 72, the hole 71 being above a similar smaller hole 73 in the slide plate 66. The engagement of the fingers in these holes may cause lateral movement of the slide and the withdrawal of the half-nut 65 from engagement with the screw rod 64, whereby the table may be lowered when the supply of merchandise has been exhausted and the machine is to be replenished with goods.

The downwardly projecting ledge 70 is rolled at its opposite ends to provide sleeves 74 engaging about the guide rods 75, which are secured by nuts or other appropriate mechanical parts in the lower and upper bearing plates 76 and 77. These plates may be secured to the side wall of the cabinet, as

shown in Figure 4, and these bearing plates afford suitable bearings for the screw shaft 64, which must be mounted for rotary movement. It is to be noted that the guide rods 75, preferably two in number and one located at each side of the screw shaft 64, are in a common plane which is closer to the table than any surface portion of the screw shaft 64.

It will thus be seen that the packets will be prevented, by these guide rods 75 from coming into injurious contact with the screw shaft. At the base of the screw shaft 64, a collar 78 is pinned or otherwise fixed thereto and this collar carries the pivoted pawl 79 resting upon the upwardly projecting inclined teeth 80 on a pulley 81. This pulley is loosely mounted about the screw shaft and is rotated intermittently by the belt 82, which is turned right angularly and engages also in the grooved pulley 83 mounted in appropriate bearings 84 extending near to the arm 54 of the yoke lever. The pulley 83 is mounted upon a shaft 85 to which is fixed the arm 86. A link 87 pivotally connects the arm 86 with the yoke arm 54.

The packets or stationery or other articles held upon the table 63 are confined upon the table and segregated from other portions of the apparatus by the arrangement of interior walls. These walls include a back wall 88 extending across the cabinet for a slightly greater distance than the table 63. This wall 88 is secured by appropriate fastenings engaging through lugs 89 into the bottom of the cabinet. A continuous side wall 90 extends from one end of the rear wall 88 to the front wall of the cabinet and is also secured to the cabinet in any appropriate way. At the other side of the table, owing to the presence of the paper feed mechanism, it is necessary to provide short side walls 91 and 92, the wall 91 being forwardly of the feed mechanism and the wall 92 to the rear thereof. The wall 92 is provided with the right angle extension 93 enclosing a portion of the rear part of the feed mechanism. The front wall section 91 extends at its rear end into overlapping relation with the table 63 and with the stationery packets thereon, so as to have a guiding and centering influence on the forward portions thereof.

The packets are also confined by a front wall 94 extending between the wall section 91 and the wall 90 and forming also a reinforcement for the curved wall 59 of the delivery chute.

In the operation of the invention, a coin is placed in the coin chute 15 and if of proper denomination it takes up the position indicated at 17 in Figure 2. If of a larger size, the coin will not enter the slot, and if of smaller size it will pass the obstruction

formed by the forward end of the release bar 18 and pass into the coin depository without permitting the actuation of the apparatus or the delivery of any of the articles. Assuming, however, that a proper coin has been placed in the slot, it will act as a connection between the operating member 25, which must be subsequently depressed, and the release bar 18, forcing the release bar rearwardly and thus freeing the operating member 25 in a manner which has already been described. The movement of the operating member serves to rotate the shaft 34 of the spring motor in such a way as to wind the spring 35 and put it in potential position so that when the operating member 25 is released, the spring will unwind and cause the subsequent actuation of the ejecting device. In winding the spring, the ratchet wheel 41 will rotate in a clockwise direction (see Figure 6) thus passing freely under the pawl 42. The stop 46 will also be withdrawn a corresponding angular distance from the abutment 47.

When the operating member is released, however, the spring will unwind and rotate the shaft 34 in a counter-clockwise direction, carrying with it the ratchet wheel 41. The ratchet teeth will engage the pawl 42 and drive the gear wheel 40 before it thus effecting rotation of the pinion 48 in a clockwise direction. This pinion and the disc 50 are coupled together, insuring that the link 52 be pulled down by the pin 51 and the yoke lever thus rocked forwardly from the position shown in Figure 2 to that shown in Figure 3. The ejecting tongue is pushed forwardly carrying with it the uppermost packet and providing for its release in the manner before referred to.

In moving forwardly, the yoke lever arm 54, as shown in Figure 3, pushes forwardly upon the link 87 and rotates the shaft 85 and pulley 83, thus causing movement of the belt 82 and connected pulley member 80. When rotated in one direction, for instance on the forward movement of the ejecting mechanism, the inclined ratchet teeth 80 of the grooved pulley will slide without effect beneath the pawl 79, but on the reverse movement the pawl and ratchet teeth will be rocked together and an appropriate angular movement given the screw shaft 64. The screw shaft, through the half-nut will thus raise the table a degree corresponding substantially to the thickness of the packet. In this way successive packets will be brought under the influence of the ejecting tongue.

A spring 95 is shown in Figure 2, as indicated between the yoke lever and the rear wall of the cabinet for the purpose of restoring the yoke lever and connected parts to the initial position.

Referring more particularly to Figure 9,

a modified form of the invention is shown in which the actuation is electrical rather than mechanical.

The coin is indicated at 100 as having passed through a form of coin chute 101, which will be clear from the drawings. The coin has taken up a position against a trip finger 102 pivotally mounted about a fulcrum 103 and having at its upper end a contact 104 at one side and a stop lug 105 at its opposite side. The contact 104 faces a similar contact upon a resilient contact finger 106. The lug 105 is adapted to extend into a notch made in a rounded head 107. One wall 108 of the notch is inclined while the other wall 109 is radial and engages normally against the lug 105, the lug thus preventing movement of the parts until tripped by the force of the coin 100. The passage of the coin will rock the trip lever 102 out of the notch and will close the contacts 105 and 106. This completes the circuit from the battery or other source of current 110 to the electric motor 111. This motor is provided with sprocket and chain 112 to a shaft 113 having the pinion 114 which meshes with a similar pinion 115 upon the shaft 116 about which the head 107 is mounted to rotate. The head is provided with an arm 117 having a pin 118 at its outer end sliding in a slot 119 in the yoke lever 120. The head 107 carries the pivoted pawl 121 which engages the ratchet wheel 122.

In the operation of this form of the invention, when the coin closes the contacts and releases the mechanism, the motor 111 will begin operation and will continue to rotate until the contacts 104 and 106 are again broken, this condition will not be permitted, however, until a complete revolution of the head or crank arm has been made, because the lug 105 cannot slip back until the notch is again brought into register with it. The elongated slot in the lever 120 permits the pin 118 to make a complete revolution and in so doing the parts will be returned to initial position after ejecting a packet.

It is obvious that various changes and modifications may be made in the details of construction and design of the above speci-

cally described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. An article delivery device comprising a cabinet for holding the articles, an ejecting mechanism for delivering the articles from the cabinet, a motor for actuating said ejecting mechanism, and manually movable operating means coupled to said motor for operating during its actuating stroke to initially wind the motor and subsequently release the wound motor, whereby said wound motor in its unwinding may actuate the ejecting mechanism.

2. An article delivery device comprising a cabinet for holding articles and having a delivery chute, ejecting mechanism in the cabinet for delivering such articles, a motor coupled to actuate said ejecting mechanism, and operating means coupled to the motor extending upon the outside of the cabinet and operating during its actuating stroke to first wind the motor and subsequently release said motor.

3. An article delivery device including a cabinet, a movable table in the cabinet for the articles, ejecting means for removing the articles from the table, a motor coupled to move said table intermittently toward the ejecting means and also coupled to actuate said ejecting means, and an operating member coupled to said member for winding the motor and then releasing it during the actuating stroke of said operating means.

4. An article delivery device comprising a cabinet, a movable table in the cabinet for the articles, a screw shaft journaled adjacent said table, a half nut slidably carried by said table and yieldably pressed against said screw shaft, ejecting mechanism for removing the articles from the table, a motor for actuating said ejecting means and for also turning said screw shaft, and an operating member coupled to initially wind said member and subsequently release the motor during the actuating stroke of said operating means.

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