No. 794,097. PATENTED JULY 4, 1905.

E. S. HAGEN.

DISCHARGING MECHANISM FOR VENDING MACHINES.

APPLICATION FILED AUG. 12, 1904.

2 SHEETS—SHEET 1.

Fig. 1

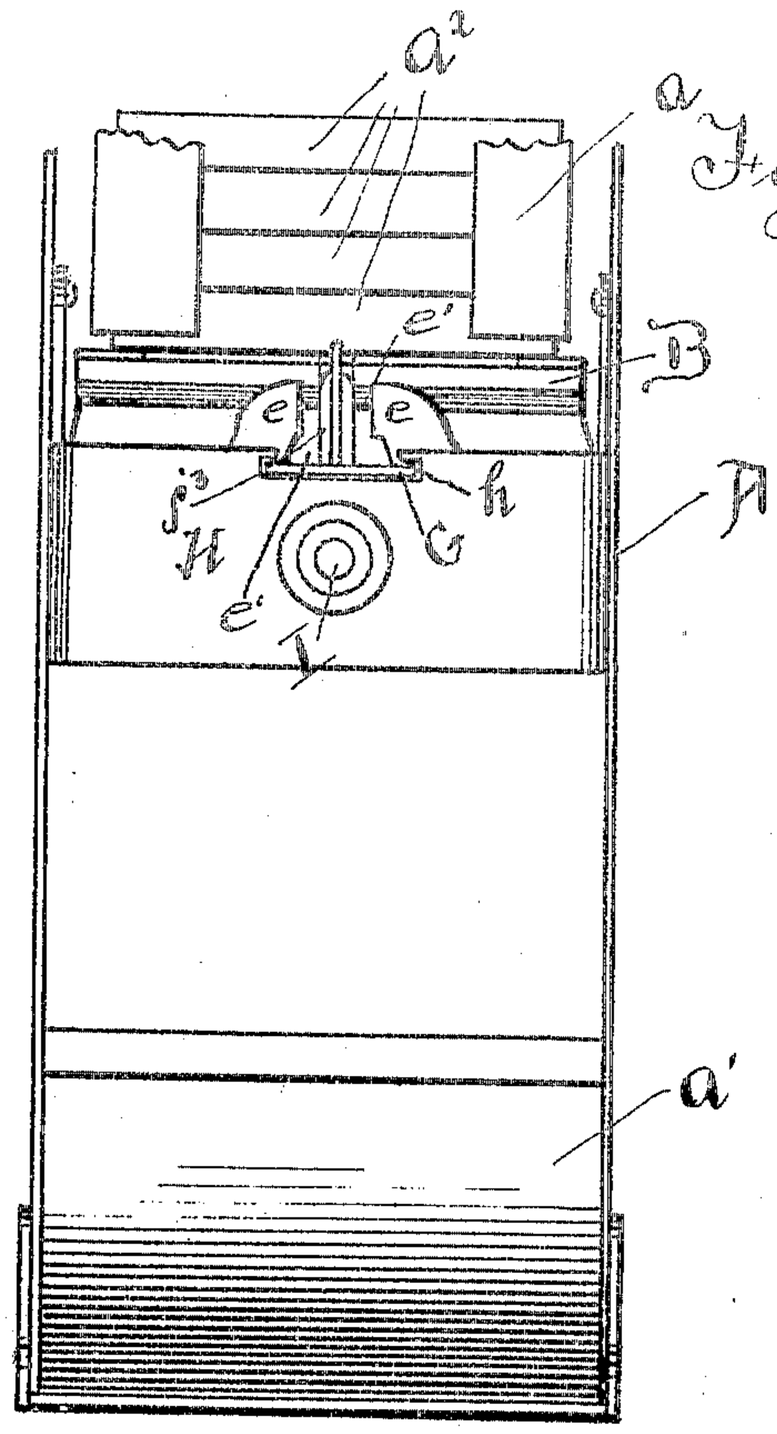


Fig. 2

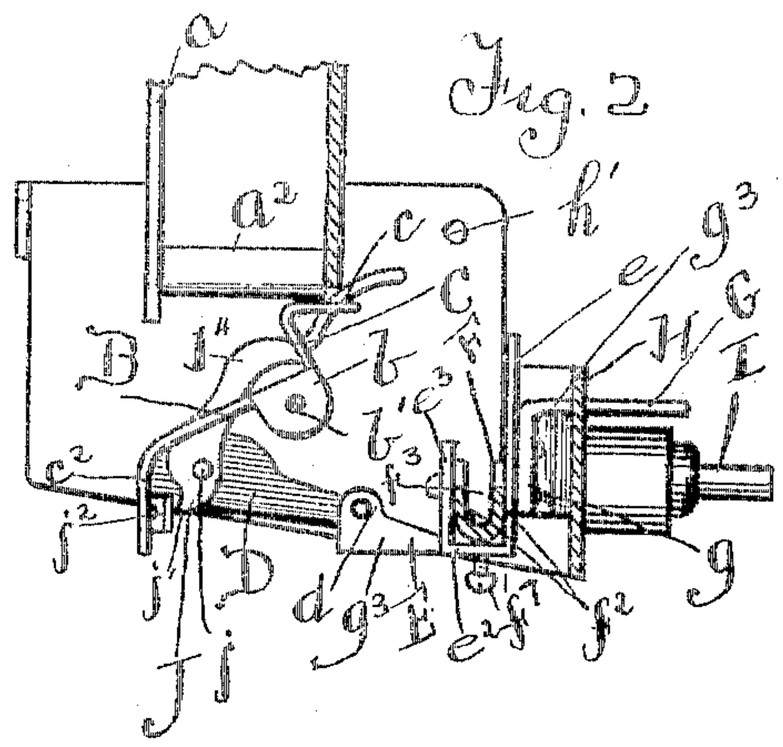


Fig. 3

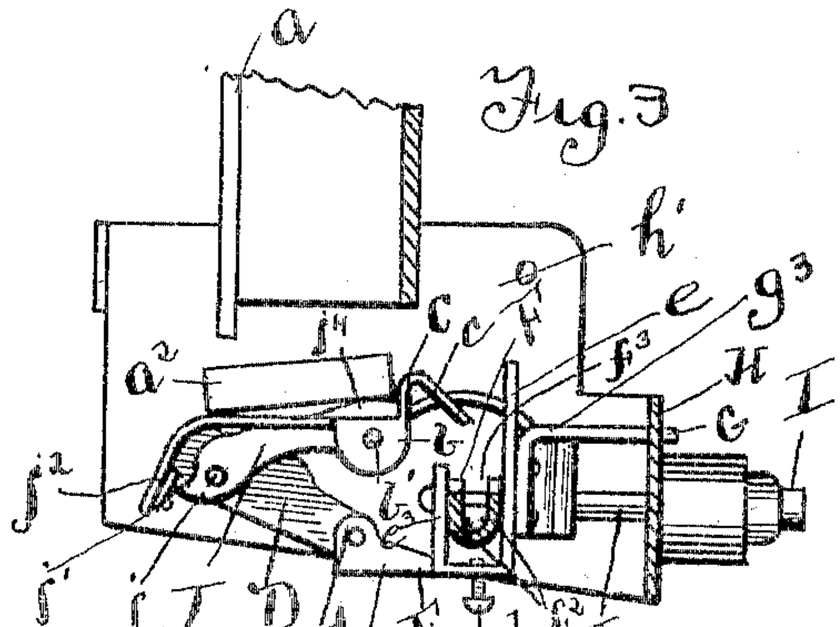


Fig. 4

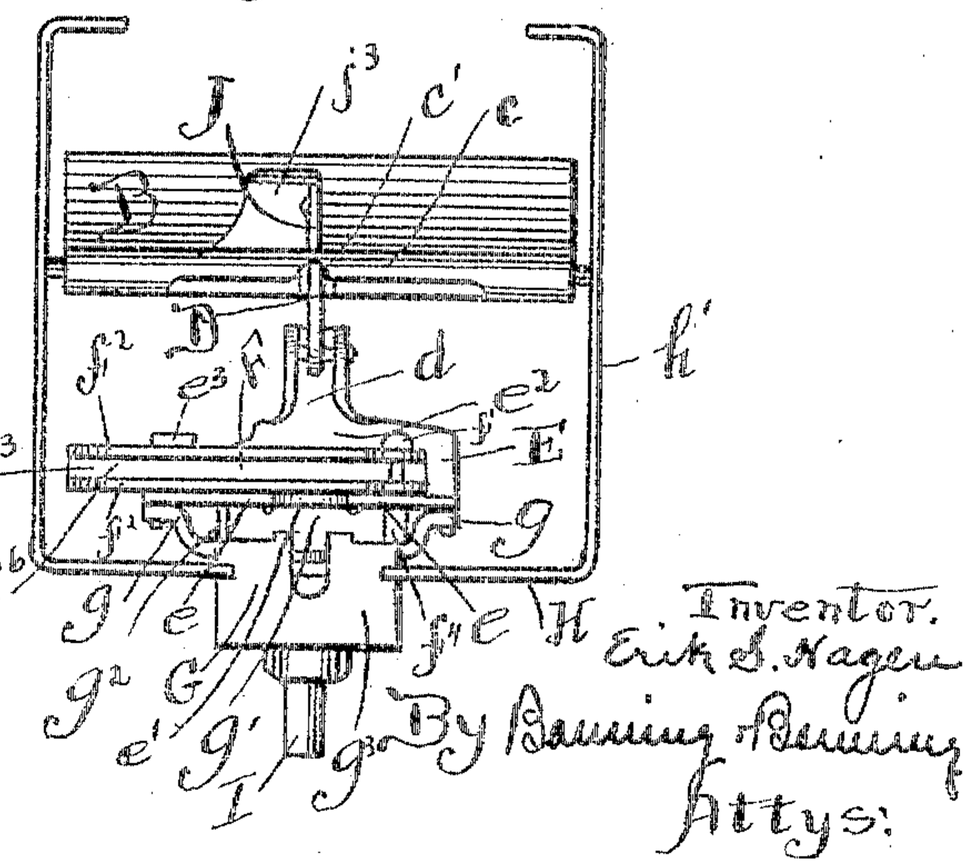
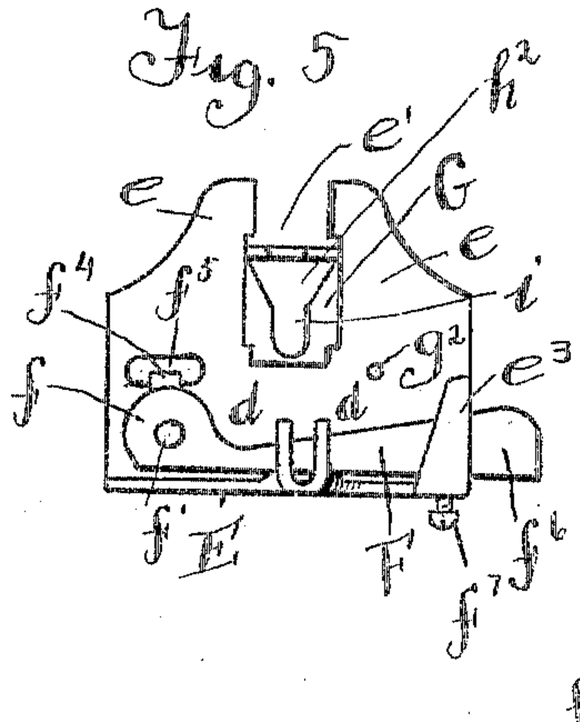


Fig. 5



Witnesses:
Pierson G. Banning.
William P. Bond

Inventor.
Erik S. Hagen
By Banning & Banning
Attys.

No. 794,097. PATENTED JULY 4, 1905.

E. S. HAGEN.

DISCHARGING MECHANISM FOR VENDING MACHINES.

APPLICATION FILED AUG. 12, 1904.

2 SHEETS—SHEET 2.

Fig. 9

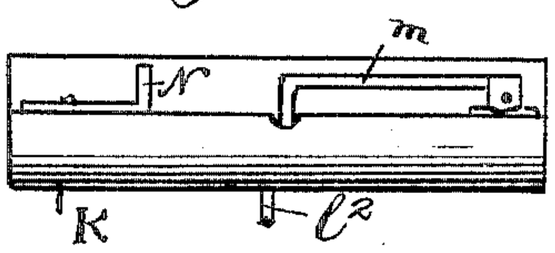


Fig. 6

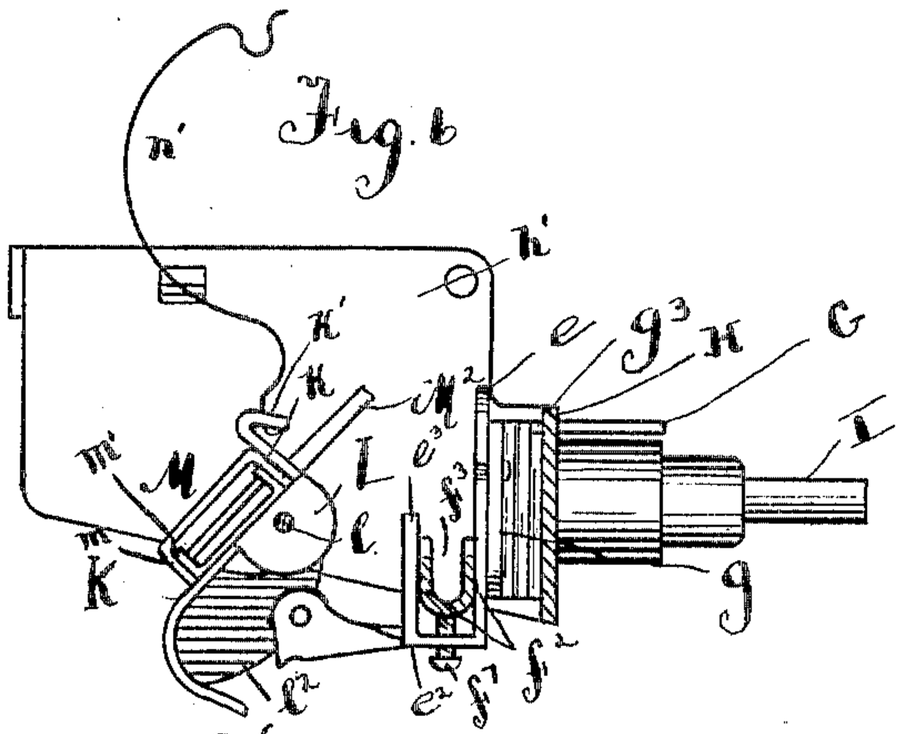


Fig. 7

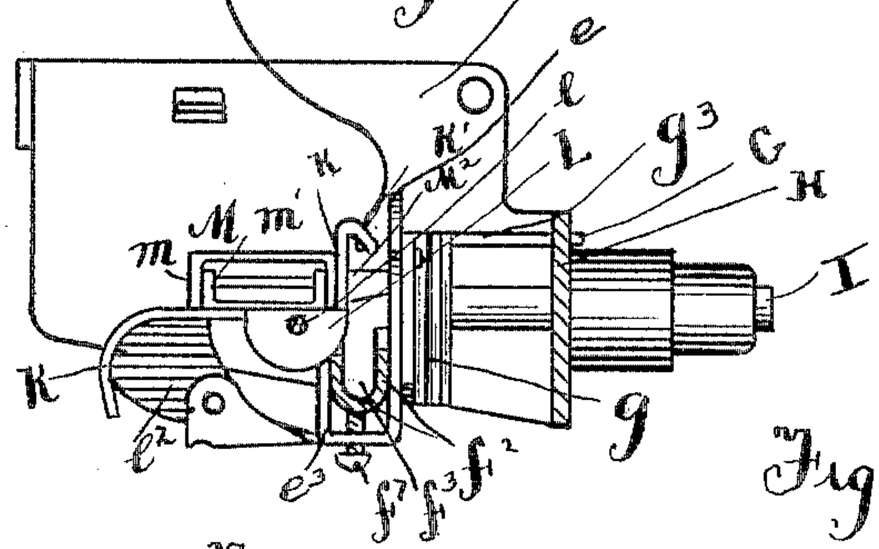
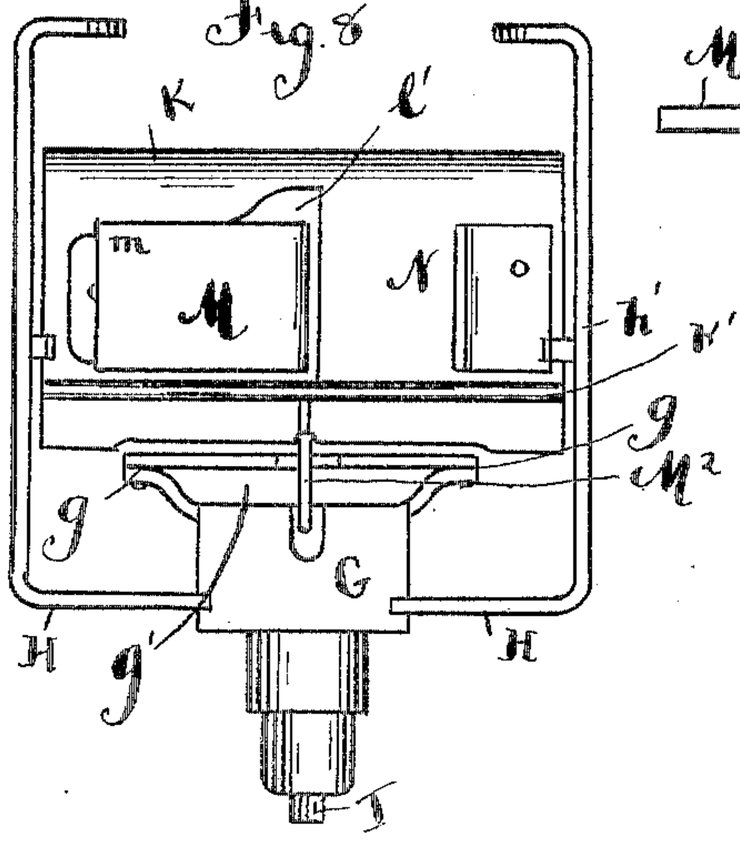


Fig. 10

Fig. 8



Witnesses:
William P. Bond
Walker Banning.

Inventor
Erik S. Hagen.
By Banning & Banning
Attys.

No. 794,097. Patented July 4, 1905.

UNITED STATES PATENT OFFICE.

ERIK S. HAGEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL PENNY SALES COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DISCHARGING MECHANISM FOR VENDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 794,097, dated July 4, 1905.

Application filed August 12, 1904. Serial No. 220,542.

To all whom it may concern:

Be it known that I, ERIK S. HAGEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Discharging Mechanism for Vending-Machines, of which the following is a specification.

This invention relates to the mechanism for discharging the packages after the coin has dropped from the chute; and the invention is intended to combine to the greatest degree simplicity of construction and operation with practical efficiency and perfection of adjustment. The parts are so arranged that a very fine degree of adjustment can be made to prevent a slug or false token from actuating the mechanism, and provision is also made for the dislodging of coins which are gummed with the intention of sticking in or to the operative mechanism after the discharge of a package.

A further object is to simplify the discharge mechanism and enable the same to be easily constructed and arranged.

The invention finally consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings illustrating the invention, Figure 1 is a front view of the operative mechanism; Fig. 2, a side view of the same, showing one of the side walls or plates removed and the mechanism in normal position; Fig. 3, a view similar to Fig. 2, showing the mechanism in position to discharge a package; Fig. 4, a top or plan view of the discharging mechanism; Fig. 5, a view of the adjusting mechanism for regulating the size of the coin-discharge opening; Fig. 6, a modified form of construction, showing the parts in normal position; Fig. 7, a similar view in a different position; Fig. 8, a plan view of the same, and Figs. 9 and 10 detail views of the same.

As shown, the discharge mechanism of this invention is applied to a receptacle A, having a package-holding chute *a* and a discharge-chute *a'* for the delivery of the goods. Within the package-chute are a series of packages a^2, and the lowermost of said packages is supported upon and held in place by a discharge-plate B, which plate is provided on its sides by ears *b*, through which passes a pivot rod or pin *b'*, allowing the discharge-plate to rock or reciprocate back and forth. At the forward end of the plate is an upwardly-extending wall or flange C, bent at substantially right angles to the plate, and said wall or flange terminates in a forwardly-projecting supporting-bar *c*, provided in its forward edge with a notch *c'*. (Best shown in Fig. 4.) The rear or lower end of the discharge-plate terminates in a downwardly-projecting portion c^2, from which the packages are discharged into the delivery-chute *a'* to be received by the purchaser. The lowermost package is normally supported upon the top face of the forwardly-projecting bar *c*, as shown in Fig. 2, which supporting-bar normally projects under the package-carrying chute and forms an abutment for stopping the downward progress of the packages. The package-discharge plate is positioned and pivoted beneath the chute, and the upwardly-projecting wall or flange is of sufficient height to accommodate but a single package upon the discharging-plate, so that but one package at a time can fall thereonto. As before stated, packages are normally supported when the discharging-plate is in the position shown in Fig. 2, but are allowed to drop onto the plate when the latter has been thrown into the position shown in Fig. 3, in which position the wall or flange C and supporting-bar *c* are drawn down out of their inwardly-projected position, so that the lowermost package is allowed to drop onto the discharging-plate.

The plate is provided on its inner face with an arm D, which is cut from the plate and bent into transverse relation to the plate, and the arm is pivoted between rearwardly-projecting ears *d*, which are formed integral with a reciprocating plate E, which is provided with upwardly-extending walls *e*, with a slot or opening *e'* between them, and the recipro-

cating plate is provided with a base portion e^2, at one side of which is an ear e^3. The base portion e^2 forms a support for a weight-arm F, which is provided at one end with a head f, loosely pivoted by means of a pivot-pin f', which enters one of the walls e, and the weight-arm, as shown, is formed of a piece of plate metal bent to have side flanges f^2, leaving a longitudinally-extending channel f^3. The head is provided with a forwardly-projecting tongue f^4, which enters an elongated slot f^5 immediately above the pivot f', which tongue is allowed considerable play or movement within the slot by reason of the loose pivoting of the weight-arm. The free end f^6 of the weight-arm is held in place by means of the ear e^3, and the vertical movement of the free end of the weight-arm is regulated by means of an adjustable set-screw f^7, which can be regulated to allow the proper amount of play or movement for the weight-arm.

To the outer faces of the walls e is attached a plate G, provided with inwardly-turned side flanges g, leaving a slot or opening g' between the plate G and the walls E for the insertion of a coin, and at one side of the wall is a transversely-extending fixed pin g^2, so positioned with respect to the tongue f^4 that a coin will normally be supported between the tongue and the pin. When, however, a slight pressure is exerted against the coin, the tongue will be forced back slightly to raise the free end of the weight-arm and allow the coin to drop through and out of its arrested position. The slot g' when in use is intended to be located immediately beneath and in line with the discharge end of a coin-chute (not shown) of any usual and well-known construction. The plate G, which is adapted to reciprocate with the plate E, is provided with a forwardly-extending tongue g^3, which tongue projects through and is adapted to reciprocate in a slot or opening h in a frame or support H, which frame or support is provided with side walls h' for the attachment and support of an operative mechanism heretofore described. The plate G is formed to have a slot or recess h^2, through which projects a spring-actuated plunger I, which plunger extends outwardly from the mechanism and is adapted to be compressed by the person using the machine, and when a coin has been deposited and held within the slot g' the inner end of the plunger will strike against the coin and cause the entire reciprocating mechanism, including the plates E and G, to be inwardly moved, thereby rocking the arm D and moving the package and supporting-plate B out of the position shown in Fig. 2 and into the position shown in Fig. 3. The plunger is provided with an enlarged inner end i, so that as the plunger returns to normal position the parts will be drawn back therewith and into position to receive and support the next succeeding package.

In order to discharge the coin from its arrested position within the slot after the package-supporting plate has been thrown out of normal position, an arm J is provided, which is pivoted, by means of pivots J, to the forwardly-projecting arm D, and the end j' of the arm abuts against a flat spring j^2, which normally holds the arm in raised position, and the arm passes through a slot j^3 in the package-supporting plate and the wall or flange C and lies within the notch c' in the forward edge of the supporting-bar c, so that as said bar is carried down by the movement of the package-supporting plate and bars connected therewith the arm J will be depressed and carried down through the opening c' to contact the top of the coin contained in the slot g' as the column of packages drops onto the flat body of the discharging-plate and strikes a sharp blow against a projecting shoulder j^4 of the arm J and further thrusts down the end of the arm to forcibly discharge the coin into the cash-box.

The operation of the device will be partially understood from the foregoing description, but may be briefly stated as follows: With the parts in the position shown in Fig. 2 the coin is dropped into place and arrested by the mechanism hereinbefore described, after which the plunger is depressed, which draws away the support for the lowermost package, allowing the same to fall onto the package-supporting plate, and simultaneously with the fall of the package the coin will be forced out of its arrested position to prevent the vending of more than a single package with a single coin, and after the plunger is released the parts will rise to their normal position, throwing up the package-supporting plate into an inclined position and allowing the purchased package to slide off into the discharge-chute for the delivery to the purchaser.

In Figs. 6, 7, 8, 9, and 10 is shown a slightly-modified form of mechanism adapted and intended for use with packages of less thickness than the packages discharged by the mechanism hitherto described, and the modification relates entirely to the discharging platform or plate, the method of mounting the same and the construction of the plunger being the same as that hitherto described. In the modified form the discharge plate or platform K is provided at its forward end with an upwardly-turned flange k, terminating in a supporting edge k', similar to that hitherto described. The supporting-platform is provided at its ends with ears L, through which passes a pivot pin or rod l, and the plate is provided in its body with an open slot l', and the piece of metal cut out of the slot is bent down in the form of a tongue l^2, to which are attached the operating parts of the plunger mechanism in the manner hitherto described with respect to the other form of the device. The feature in which the modified form va-

ries from the other form is more especially in the provision of a plate or platform M, provided with ears *m* at its sides, which ears are pivoted to ears *m'*, which are secured to the body of the discharging-platform, and the platform M terminates in a finger M^2, similar to the arm J, which finger operates within the opening in the plate or platform and is adapted to be moved with the supplemental platform *m*, upon which rests the package to be discharged. The opposite end of the package rests upon the edge of an angle-plate N, and the provision of the plate and supplemental platform enables the machine to be used with thin packages rather than thick cartons, the thickness of the package to be discharged depending upon the space between the top of the flange *k* and the surface of the supplemental platform and angle-plate. A positive return movement is assured by the presence of a supplemental spring *n'*, attached at one end to the projecting finger *k'*, so that the machine will be positively moved back into initial position after the package has been discharged. The operation of the machine is precisely similar to that hitherto described, the finger M^2 moving down with the movement of the mechanism, so that when the next succeeding package falls into position the entire weight of the column of goods will fall upon the supplemental plate or platform, forcing down the finger and discharging the coin in the manner precisely similar to that hitherto described, the supplemental platform serving the same function as the shoulder j^4 in the other form of construction.

It will be seen that the device is simple in construction and operation and that the parts are so arranged that they can be easily adjusted to arrest coins of the proper denomination, so that it will be impossible to oscillate the mechanism by means of slugs or false tokens. The parts are all of them of a character to be easily cut or formed from sheet metal properly stamped or died out and when so formed are strong and durable in use and easy of operation.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a discharging mechanism for vending-machines, the combination of a pivoted discharging-plate having connected therewith an abutment against which a package is adapted to rest when in normal position, said discharging-plate being of a size to receive a package thereon when the same is dropped by the withdrawal of the abutment, a forwardly-projected arm connected with the discharging-plate, a slidable coin-holding mechanism adapted to arrest a coin, a plunger adapted to move the coin-holding mechanism by contact with a coin held thereby, and an arm adapted to be rocked by the discharge-plate to strike and discharge a coin from its arrested position in the coin-holding mechanism, substantially as described.

2. In a discharging mechanism for vending-machines, the combination of a pivoted discharging-plate provided with an abutment against which a package is adapted to rest when in normal position, said discharging-plate being of a size to receive a package thereon when the same is dropped by the withdrawal of the abutment, a forwardly-projected arm connected with the discharging-plate, a slidable coin-holding mechanism adapted to arrest a coin, a plunger adapted to move the coin-holding mechanism by contact with a coin held thereby, and an arm carried by the discharging-plate and adapted to be rocked therewith to strike against and release a coin from its arrested position, substantially as described.

3. In a coin-discharging mechanism, the combination of a coin-arresting mechanism having a slot therein for the passage of a coin, an abutment in the slot adapted to contact one side of the coin, a weight-arm carried by the coin-arresting mechanism and provided with a tongue adapted to contact the other side of the coin, and an arm adapted to downwardly force the coin out of arrested position with the discharge of a package, substantially as described.

4. In a coin-discharging mechanism, the combination of a coin-arresting mechanism having a slot therein for the passage of a coin, an abutment in the slot adapted to contact one side of the coin a weight-arm carried by the coin-arresting mechanism and provided with a tongue adapted to contact the other side of the coin, an arm adapted to downwardly force the coin out of arrested position with the discharge of a package, and an adjusting-screw for regulating the position of the weight-arm and tongue attached thereto, substantially as described.

5. In a coin-discharging mechanism, the combination of a discharging-plate provided with a flat body adapted to receive a package thereon and provided with an abutment adapted to arrest a package when in normal position, means for moving the discharge-plate to retract the abutment and allow a package to drop onto the flat body of the plate, a slotted coin-arresting mechanism provided with a pivoted weight-arm having an ear adapted to arrest the fall of a coin through the slot and adapted to be depressed and to raise the weight-arm and allow the coin to fall, and means for forcing down the coin with the discharge of a package, substantially as described. .

6. In a discharging mechanism for vending-machines, the combination of a pivoted discharging-plate provided with a flat body having therein a slot and an upwardly-projected abutment adapted to arrest a package when in normal position, an arm pivoted to the plate and provided with a shoulder projecting through the slot in the plate, and a free end outwardly projecting beyond the plate, a slot-

ted coin-arresting mechanism and a connection between the coin-arresting mechanism and the discharging-plate for rocking the discharging-plate to carry down the abutment from its projected position to allow the column of packages to drop onto and be supported by the flat body of the discharging-plate depressing the arm pivoted thereto for discharging a coin from the coin-arresting mechanism, substantially as described.

ERIK S. HAGEN.

Witnesses:
GEO. B. TOWNSEND,
SAMUEL W. BANNING.