

(No Model.)

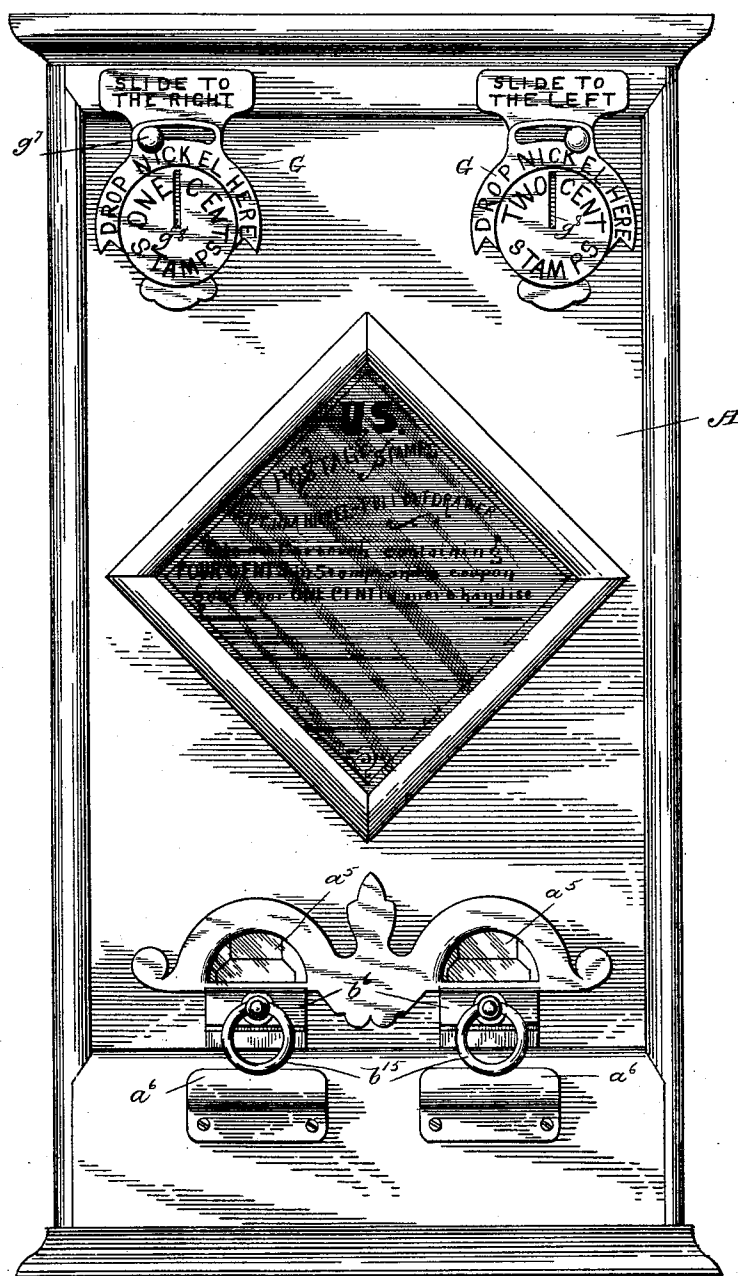
5 Sheets—Sheet 1.

E. L. PICKARD.
COIN CONTROLLED VENDING MACHINE.

No. 481,331.

Patented Aug. 23, 1892.

Fig. 1



Witnesses
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(No Model.)

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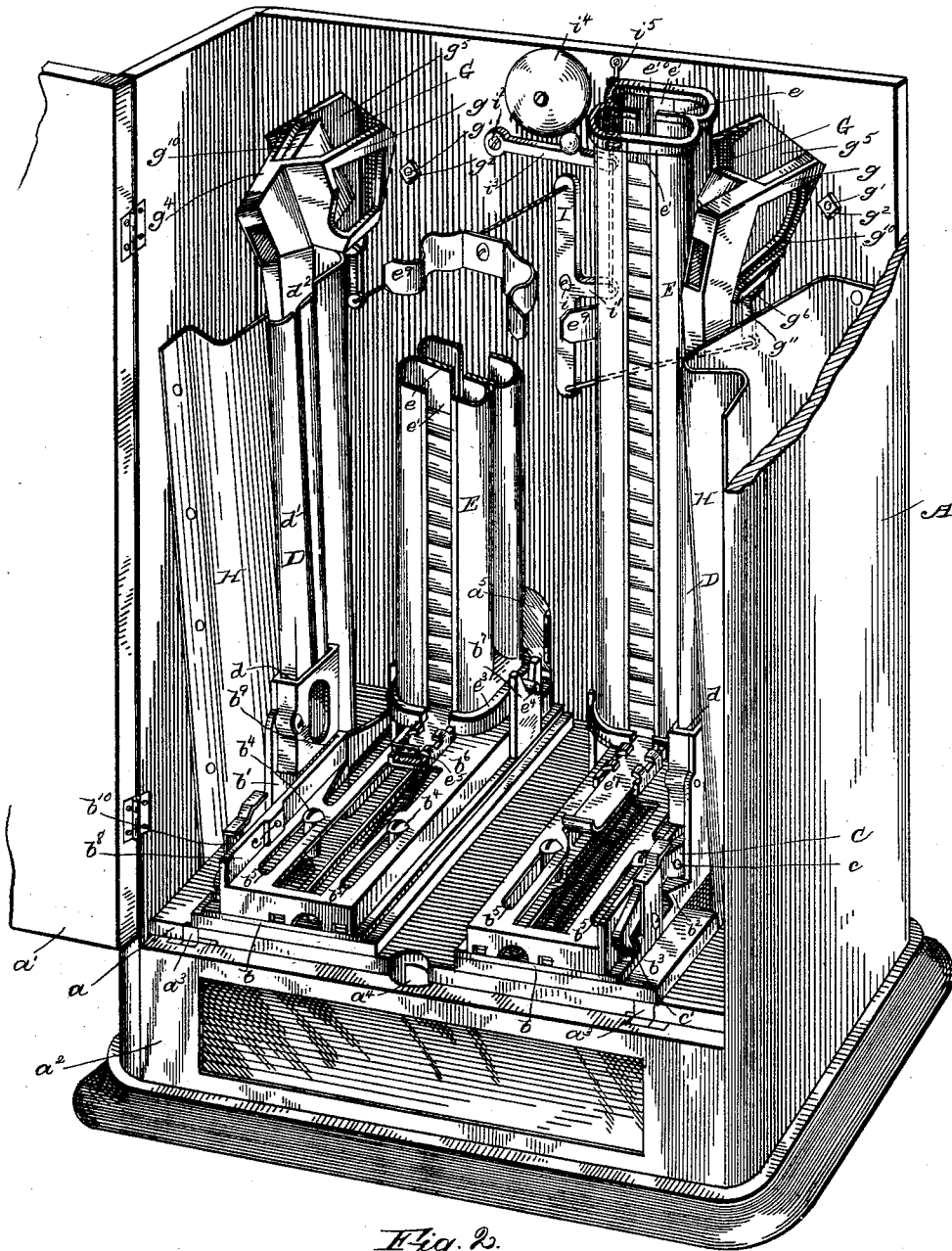


Fig. 2.

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(No Model.)

5 Sheets—Sheet 3.

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Fig. 3.

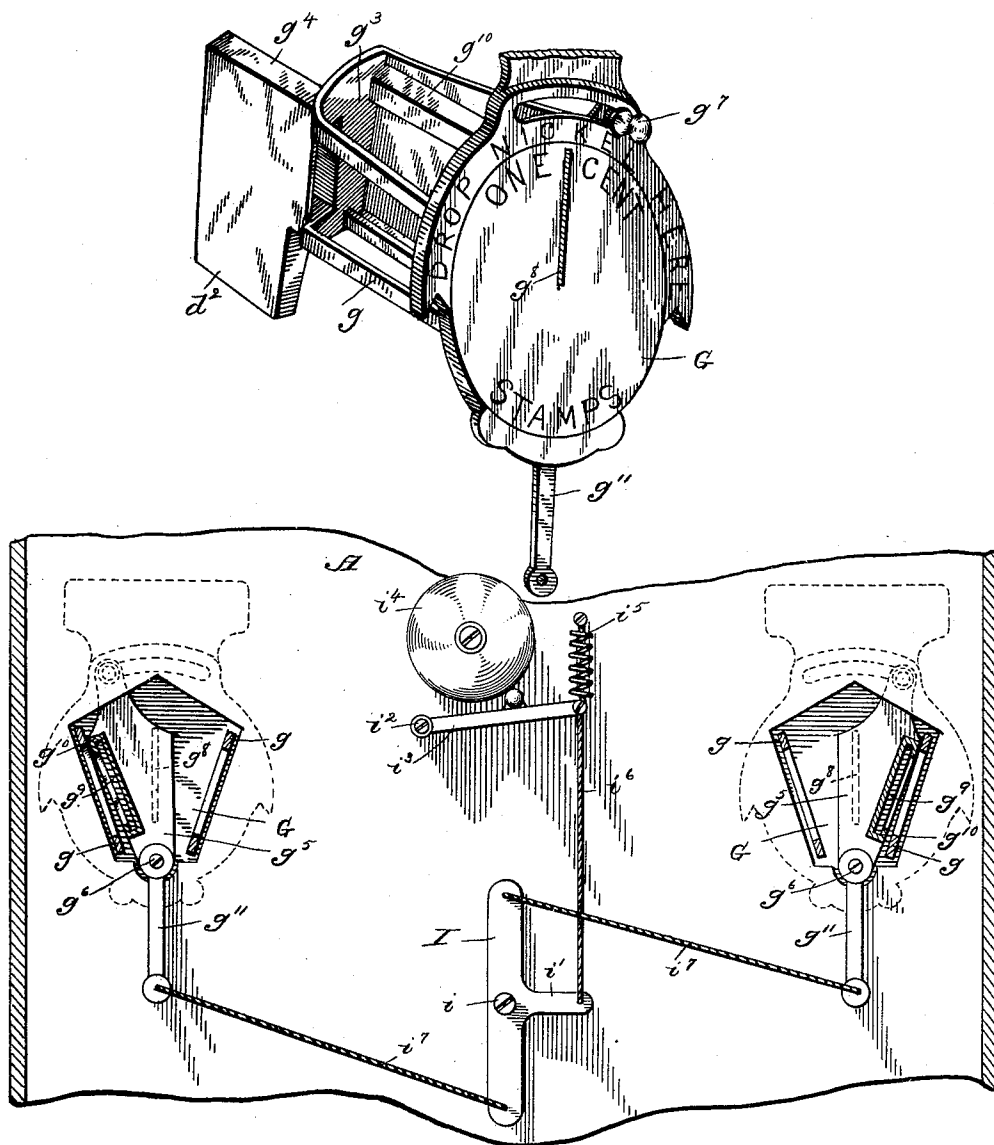


Fig. 4.

Witnesses

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Fig. 5.

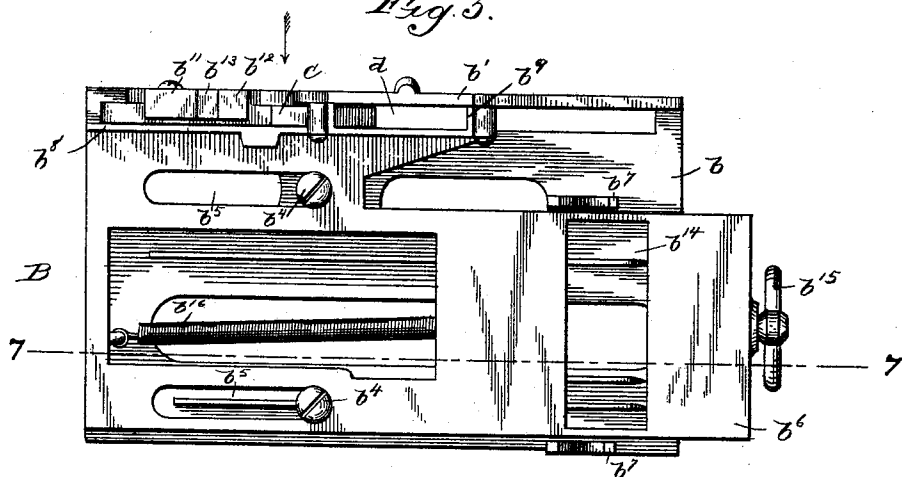


Fig. 6.

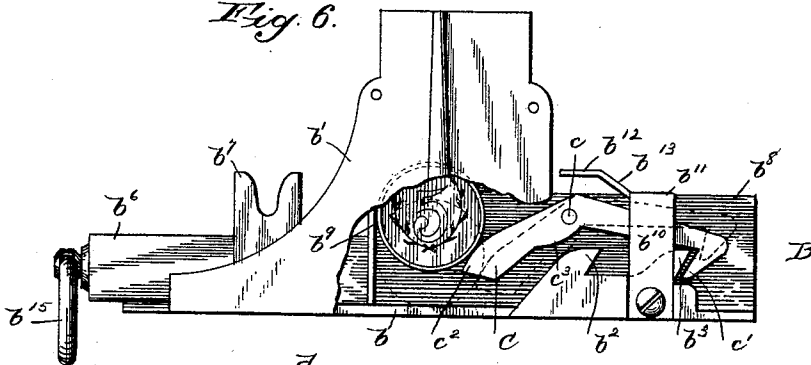
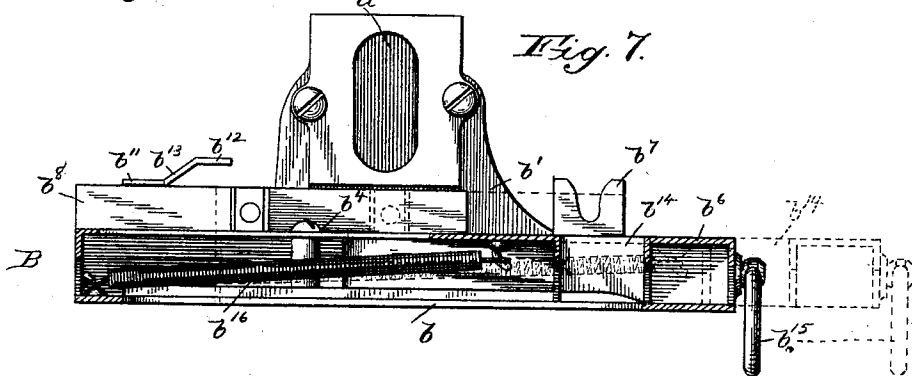


Fig. 7.



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5 Sheets—Sheet 5.

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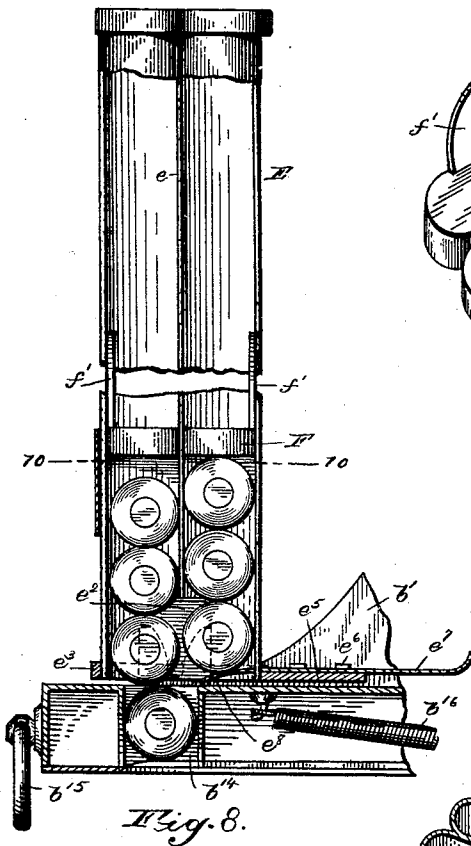


Fig. 8.

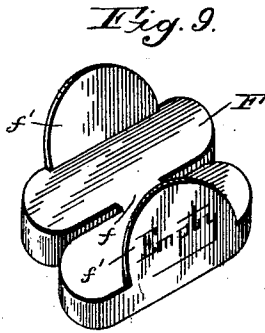


Fig. 9.

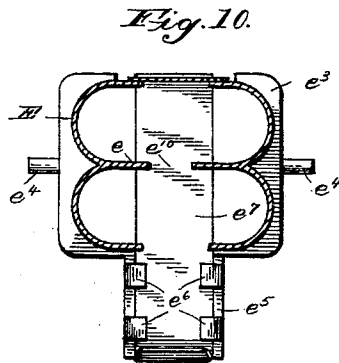


Fig. 10.

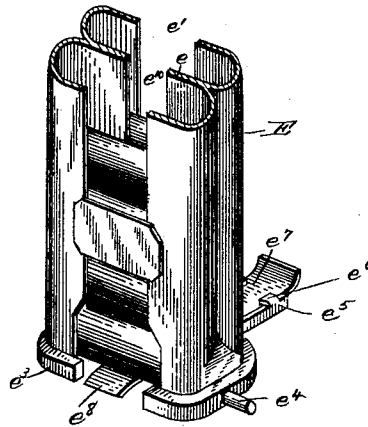


Fig. 1.1.

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UNITED STATES PATENT OFFICE.

EDWARD L. PICKARD, OF CHELSEA, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO THE UNITED STATES POSTAGE STAMP DELIVERY COMPANY, OF
BOSTON, MASSACHUSETTS.

COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 481,331, dated August 23, 1892.

Application filed May 10, 1892. Serial No. 432,537. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. PICKARD, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification.

My invention relates to coin-controlled machines of the type which permits the depositor of a coin having a certain value to receive one of a stock of articles or packages stored within the case of the machine; and my improvements have particular reference to the construction of the magazine for holding the packages, to the construction of the delivery slide or drawer and its connections, to the means for preventing the operation of the machines by anything other than the proper coin or by anything connected to a string or wire, and to the spring-operated slot-closer and alarm.

To this end my invention consists in the construction and combinations of parts, as hereinafter described and claimed.

In the drawings which accompany and form part of this specification, Figure 1 is a front elevation of the machine-casing and so much of the mechanism as projects or shows at the front. Fig. 2 is a perspective view from the rear with the door swung open and the top and a portion of the side broken away to show the mechanism and with the upper part of one of the magazines broken off. Fig. 3 is a detail perspective of the slot-closer or fraud-preventive mechanism. Fig. 4 is a detail elevation of the two slot-closers and alarm, said view being taken in a vertical plane through the vibrating portion of the coin-chute. Fig. 5 is a detail plan view of one of the delivery-slides and its connections. Fig. 6 is a side elevation, looking in the direction of the arrow 6 in Fig. 5 and with a part broken out. Fig. 7 is a vertical section on line 7 7 of Fig. 5, the slide being indicated in a withdrawn position by the dotted lines. Fig. 8 is a vertical section of the upper and lower parts of one of the magazines and a portion of its delivery-slide. Fig. 9 is a perspective view of the weight. Fig. 10 is a section on line 10 10 of Fig. 8, the delivery-slide being omitted.

Fig. 11 is a detail perspective of the lower part of one of the magazines, looking from the front.

Similar reference-letters indicate similar parts in the several views.

A indicates the casing, having a horizontal partition *a* near its lower portion to support the delivery-slides and magazines (see Fig. 2) and having a door *a'* at the back, which door may have any suitable lock to secure it in its closed position. This door has its lower edge about level with the partition *a*, and below said lower edge is the wall of the money-drawer *a*², having a glass panel and having two upwardly-projecting studs *a*³, adapted to prevent opening said drawer when the door *a'* is closed and locked. An opening or recess *a*⁴ at the rear edge of the partition *a* provides for the insertion of a finger to open the money-drawer when access is to be had thereto.

On the partition *a* are secured the base-plates *b* of the two coin-released delivering-slide mechanisms B, which are duplicates of each other except in the location of the trip-levers on different sides, in order to more conveniently place and secure the coin-chutes. Therefore the description of one will apply to both, and the same will be true of the coin-chutes and the slot-closers. The fixed base-plate *b* has a vertical flange *b'* at one side, the upper part of which is formed with a passage-way *d* for the coin, and at the rear of said flange are two fixed stops or teeth *b*² *b*³. Projecting upwardly from the base-plate are two pins or screws *b*⁴, which pass through slots *b*⁵ in the delivery slide or drawer *b*⁶, which is guided in its movements on said base-plate by the guide-pins *b*⁴ at its rear and by the two bifurcated lugs *b*⁷, projecting up from the base-plate on each side of the slide *b*⁶ near its front end. The slide *b*⁶ has a lateral extension provided with a vertical wall or flange *b*⁸, at the front end of which is an abutment *b*⁹, which registers in vertical line with and below one side of the passage-way *d* when the slide is in its normal position. (See Figs. 2 and 6.) Pivoted at *c* to the wall *b*⁸ is the trip-lever C, having a hook or toe *c'*, adapted to engage the tooth *b*³ and hold the slide against

withdrawal until released by a coin resting on the other end or its heel c^2 , which extends under the passage-way d and into the path of a coin descending therethrough. The front surface of the tooth b^3 is of such height as to engage a cam-surface c^3 of lever C, as shown in dotted lines in Fig. 6, and so prevent the weight of a coin on the heel c^2 from lifting the hook or toe c' above the top of the tooth b^3 until the slide has been pulled outward, the first and immediate result of which is to remove the cam-surface c^3 from tooth b^2 and at once permit the weight of the coin to elevate the hook sufficiently clear of tooth b^3 to pass over it, it being understood that the abutment b^9 prevents the coin from rolling off from the heel c^2 . The lever is prevented from releasing the coin entirely, owing to the guard b^{10} , which is secured to the side of flange b' and is bent over the lever C. This guard has two horizontal portions b^{11} b^{12} , connected by an inclined portion b^{13} . The lower portion b^{11} prevents the toe part of lever C from rising far enough to permit the escape of a coin through a slot formed in the base-plate b , while at the same time permitting the hook c' to rise clear of tooth b^3 . As the delivery-slide is withdrawn the toe part of the lever C is moved up the incline b^{13} by the weight of the coin, which then drops into the money-box. On returning the delivery-slide the hook c' , which is at the heavier end of the lever, rides over the tooth b^2 and would be held thereby if it should be attempted to withdraw the slide and another package before returning the slide to its full extent and without depositing another coin. If for any reason, as by holding the machine in a laterally-tilted position, the trip-lever should not return to its normal position after the passage of a coin, the engagement of the cam-surface c^3 with the tooth b^2 will force the hook c' over the tooth b^3 sufficiently to prevent another withdrawal of the slide until another coin has been deposited. At b^{14} is shown a recess or passage in the slide to receive a package from the magazine, and b^{15} b^{16} are respectively a handle for withdrawing the slide and a spring for retracting it, the latter being connected to suitable lugs on the base-plate and slide.

D is a tube forming part of the coin-chute and connects the spout of the fraud-preventive with the passage-way d on flange b' . This tube D is preferably formed of sheet metal, with a vertical slot d' to permit the insertion of a suitable instrument to remove an obstruction should such exist in the tube.

Over each slide the front of the casing A is provided with a glass panel a^5 , and below each slide is a shelf a^6 to receive a package when delivered.

The articles intended to be sold by means of the machine illustrated consist of small cylindrical boxes with rounded ends, said boxes being designed to receive postage-stamps and a coupon rolled together and placed therein. To hold as many of these boxes as possible

and deliver them properly to the slide, I have produced the magazine, which I will now describe and which consists of a vertically-elongated sheet-metal shell E, made double or having a central partition e , the space each side of such partition being only wide enough for one of the stamp-boxes, so that all boxes in either pocket of the shell are in one vertical column. In practice each pocket of the shell is a distinct piece of sheet metal, C-shaped in cross-section, and these are placed back to back and secured so that the vertical spaces for the boxes are separated by two thicknesses of sheet metal, while the several boxes in each space can be seen through the vertical opening e' of each pocket, where the edges of the metal are turned back. The central portion is then cut to form a vertical slot e^{10} for a purpose hereinafter described. This central partition does not extend quite to the bottom, space being left sufficient for one box at a time to roll out of the second pocket after the first one has been emptied, as shown at e^2 in Fig. 8.

A strengthening frame or casting e^3 at the lower end of the magazine is provided with two diametrically-opposite lugs e^4 , adapted to rest in the bifurcations of the base-lugs b^7 , and removably support the magazine in proper position over the recess b^{14} in the delivery-slide. A rearward extension e^5 of the frame e^3 is provided with guides e^6 for a slide e^7 , having a handle at one end and a downwardly-inclined portion e^8 at the other or front end. The magazine is supported in vertical position with its lugs e^4 resting on the lugs b^7 by a spring-clip e^9 , secured to the inside of the front wall of the casing and having its arms adapted to spring into the vertical grooves in the sides of the magazine. When the magazine is in place, the slide e^7 is withdrawn and the packages or boxes are free to roll one at a time into the recess or passage of the delivery-slide, and usually the front pocket of the magazine discharges first, after which the rear pocket will discharge, the packages rolling down the inclined end e^8 of the slide e^7 . If the magazine is to be removed before it is empty, the slide e^7 will be first pushed in to confine the packages and the magazine can then be sprung out of its retaining-clip e^9 and lifted from the base-lugs b^7 .

The vertical openings e' serve two purposes—viz., to permit a ready estimate of the number of packages in the pockets and to render the filling of the pockets more convenient by inserting the end of a finger near the top, and as the packages are dropped in at the top gradually lowering the finger, thus preventing the packages dropping endwise to position.

A narrow slot e^{10} is formed in the partition e , and through this slot passes the connecting-web f of a two-part weight F, which fits the cross-section of the two pockets. Front and rear flanges f' of the weight, by sliding down the inside of the pockets, prevent the

weight from binding, and on the front flange is a suitable indicator, as the word "Empty," adapted to show through the glass panel a^3 , Fig. 1, when both pockets of the magazine

5 are empty.

The device for preventing the operation of the machine by means of a wire or a coin or other disk attached to a string is shown in Figs. 1, 2, 3, and 4, and consists of a skeleton frame or casting g , projecting rearwardly through an opening in the front of the casing from a plate G , which is secured to the outside of said casing by screw-threaded pins g' , which project rearwardly therefrom through small openings in the casing and are secured by nuts g^2 , Figs. 2 and 4, on the inside of the casing. The rear wall g^3 of the frame g (see Fig. 3) has an opening communicating with a box-like coin-passage g^4 , having a spout d^2 , connecting with coin-tube D . A shield-plate g^5 is pivoted to the back of plate G at g^6 , Figs. 2 and 4, is normally spring-held in the position shown in Figs. 2 and 4, and has an operating-knob g^7 , projecting through a slot in plate G , which plate has a coin-slot g^8 . Secured to the back of the shield g^5 is a section of coin-chute g^{10} , and in said shield is a coin-slot g^9 , Fig. 4, registering with said section g^{10} and normally not registering with the coin-slot g^8 in plate G . One side of section g^{10} has an opening of less width than the diameter of the necessary coin to be used, as a five-cent nickel, but sufficient to permit a penny or a dime to fall therethrough. This opening is clearly shown in Fig. 3, in which figure the section g^{10} , shield-plate g^5 , and knob g^7 are shown in the positions which they occupy when held against the tension of the spring, yet to be described, and in position to permit a coin to be passed through slots g^8 and g^9 (which now register with each other) and to roll down chute-section g^{10} until it rests against the wall g^3 . If the coin is of less size than that required, it will immediately drop out through the side opening described or be thrown out when knob g^7 is released and fall into the hopper H , Fig. 2, and be conducted thereby through partition a to the money-drawer. If the coin is the required one, it will remain in section g^{10} until the latter registers with the opening into box g^4 , and will then roll therethrough and down spout d^2 , tube D , and passage-way d . As soon as the knob g^7 is released to permit this, the slot g^8 in plate G is closed by the shield g^5 .

The return motion of the shield may be obtained by a spring coiled about its pivot; but in the drawings I illustrate a preferable construction by means of which one spring will hold both shields in their normal position and also operate an alarm, as a bell-hammer. This is illustrated in Figs. 2 and 4, in which g^{11} indicates an arm or extension from each shield-plate below its pivot. At i is pivoted to the front wall of the casing a lever I , having a laterally-extending arm i' , and at i^2 is

pivoted one end of a bell-hammer arm i^3 , the knob of which is adapted to contact with a bell i^4 , which is preferably secured to the front wall of the casing. A spring i^5 is secured at one end to a fixed support, as the casing, and at the other end to the movable end of the bell-hammer arm i^3 . A cord i^6 connects the same movable end of arm i^3 with the end of arm i' , and cords i^7 connect the opposite ends of lever I with the lower ends of the extensions g^{11} . It is therefore evident that a movement of either shield-plate g^5 to cause its slot g^9 to register with the slot g^8 in plate G will expand the spring i^5 , and that upon releasing the shield-plate to permit the inserted coin to pass onto the operating mechanism the spring will cause said shield-plate to close slot g^8 and will also ring the bell.

The operation of the parts having been described above in connection with the constructive description, a further detailed statement seems unnecessary in view of the fact that the operation of most of the parts is obvious.

Having now described my invention, what I claim is—

1. In a vending-machine, the combination, with a coin tube or chute, of a laterally-movable section of coin-chute at the upper end thereof and having an opening in one side adapted to eject a small-sized disk, and a stop for holding a coin in said section until the latter is moved, substantially as described.

2. In a vending-machine, the combination, with a front plate having a coin-slot, of a bodily-movable section of coin-chute having an opening in one side adapted to eject a small-sized disk, said section being located behind and registering with said coin-slot when in one position and registering with a stationary coin-chute and out of register with the coin-slot when in the other position, and means for moving said section, substantially as described.

3. In a vending-machine, the combination, with a movable section of coin-chute for interrupting the passage of a coin, of a bell, a bell-hammer, connections between said bell-hammer and movable section, a single spring for holding them in one position, and means within reach of the operator for moving said section and hammer.

4. In a vending-machine, the combination, with a plurality of movable sections of coin-chutes for interrupting the passage of coins, of a pivoted arm, an alarm or signal device, flexible connections between said arm and signal and between said arm and movable sections, and a single spring for operating the signal and exerting tension on said pivoted arm, substantially as described.

5. In a vending-machine, the combination, with the frame or casing, of a removable magazine having a slide for temporarily closing one end thereof, said slide being fitted to guides secured to the end of the magazine, whereby

said slide may be operated to close the magazine at any time when the latter is to be removed, substantially as described.

5 6. A magazine for vending-machines, consisting of a plurality of pockets for the articles to be sold, said pockets communicating with each other at their lower ends, and means carried by the lower end of the magazine for temporarily closing the outlet for said articles.

10 7. A magazine for vending-machines, consisting of a pair of pockets divided by a vertically-slotted partition and having also vertical openings at the front and back, the said partition being cut away at its lower end to an extent somewhat greater than the diameter of one of the articles to be sold, substantially as described.

8. The combination, with a vending-machine magazine having a pair of pockets divided by a vertically-slotted partition, of a weight having two parts adapted to fit said pockets and a connecting-web passing through the slot of the partition, substantially as described.

25 9. In a vending-machine, the combination, with a delivery-slide and a stationary lug on each side thereof, of a magazine having a pair of trunnion-pins adapted to rest on said lugs and a slide for closing the lower end of the magazine, said closing-slide having a downwardly-inclined end under the magazine, substantially as described.

30 10. In a vending-machine, the combination, with a delivery-slide, of a pair of fixed teeth on one side thereof, a fixed coin-chute, a trip-lever pivoted to one side of the slide and hav-

ing a hook to engage the teeth and a heel portion extending into the path of a coin in the coin-chute, and a fixed guard adapted to prevent the lever from releasing the coin until the hook has passed both teeth, substantially as described.

11. In a vending-machine, the combination, with a delivery-slide, of a pair of fixed teeth on one side thereof, a fixed coin-chute, a trip-lever pivoted to one side of the slide and having a hook to engage the teeth and a heel portion extending into the path of a coin in the coin-chute, and a fixed guard located over the hook portion of the lever and consisting of two parts at different elevations connected by an inclined surface, substantially as and for the purpose set forth.

12. In a vending-machine, the combination, with a delivery-slide, of a pair of fixed teeth on one side thereof, a fixed coin-chute, and a trip-lever pivoted to one side of the slide and having a hook to engage the teeth and a heel portion extending into the path of a coin in the coin-chute, said trip-lever having a cam-surface adapted to strike the front surface of the first tooth and carry the hook down behind the second tooth, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of the subscribing witnesses, this 6th day of May, A. D. 1892.

EDWARD L. PICKARD.

Witnesses:

AZEL AMES, Jr.,
LYDIA J. PICKARD,
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