

No. 648,893.

Patented May 1, 1900.

W. F. BAGLEY.
COIN OPERATED VENDING MACHINE.

(Application filed Apr. 19, 1899.)

3 Sheets—Sheet 1.

(No Model.)

Fig. 1.

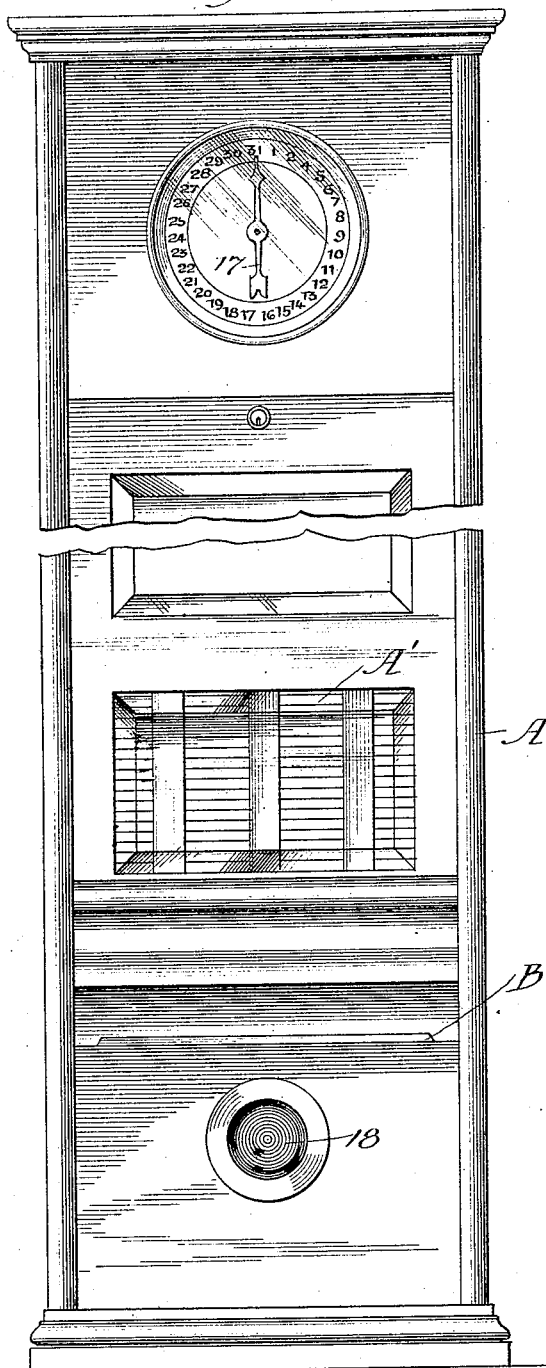


Fig. 5.

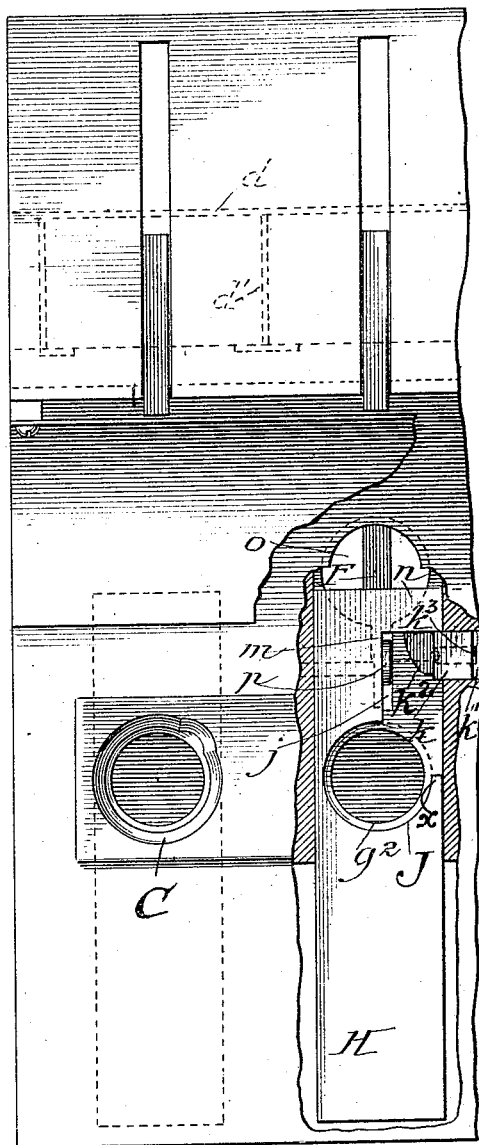
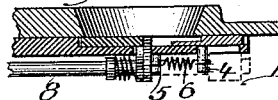


Fig. 6.



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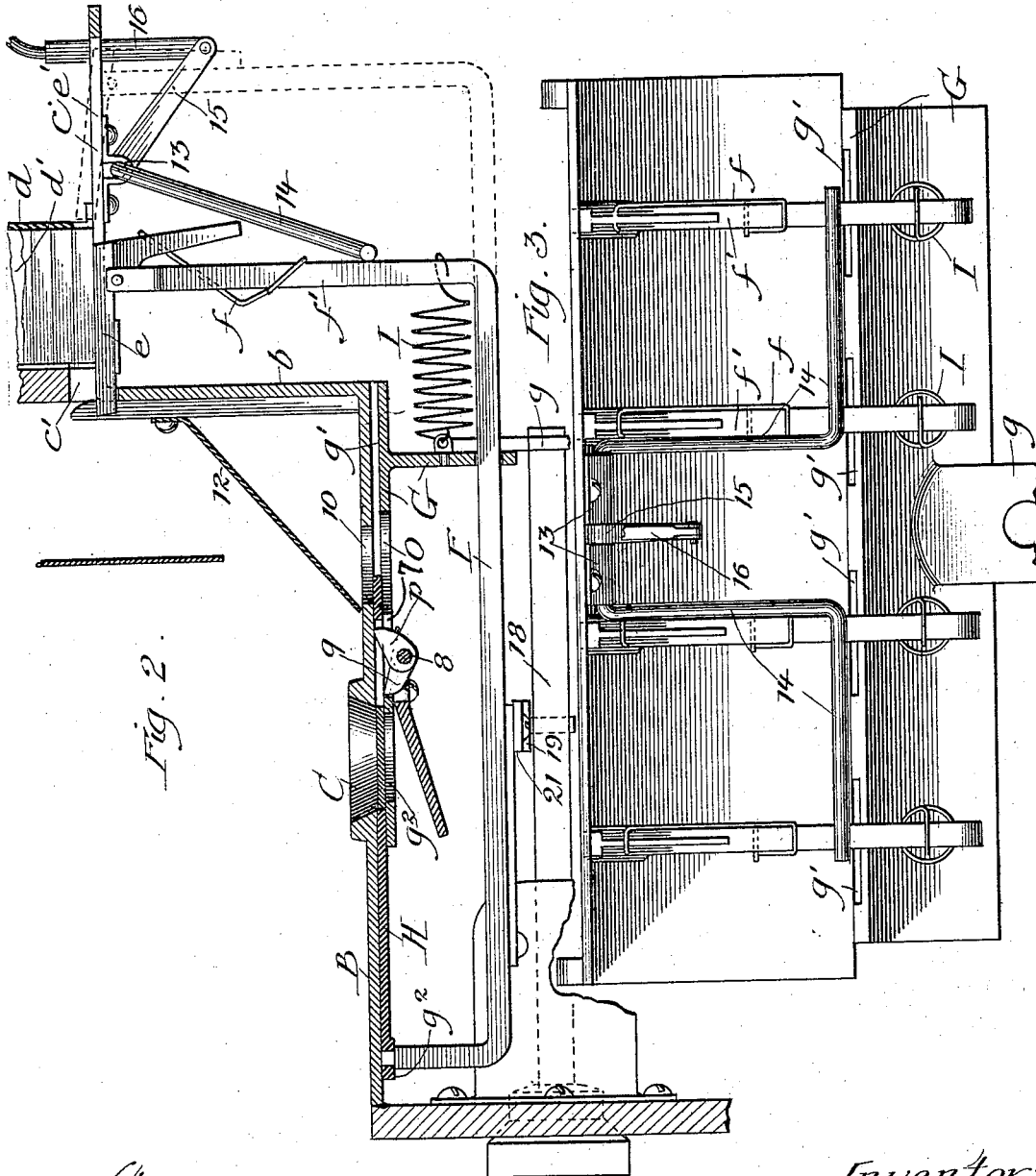
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3 Sheets—Sheet 2.



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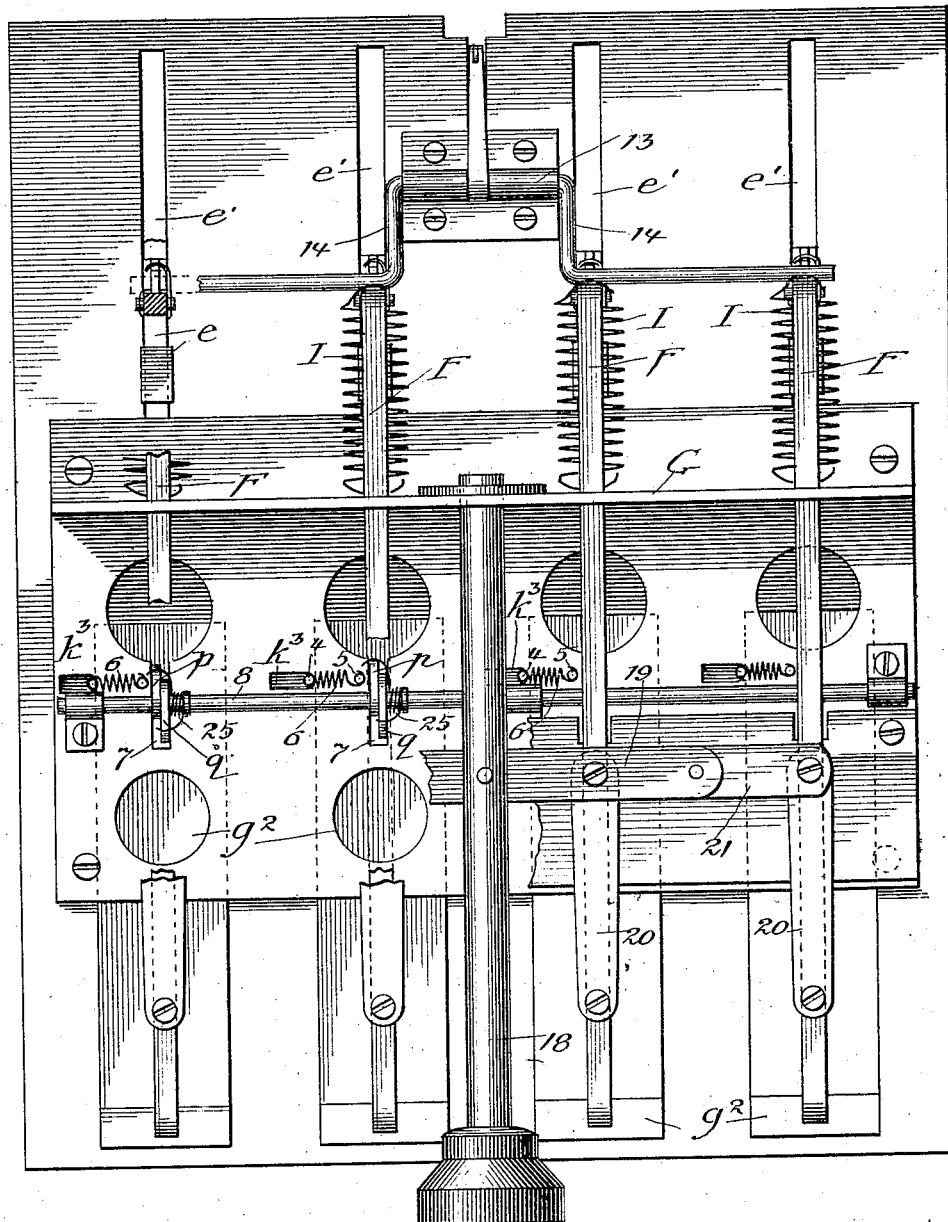
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(Application filed Apr. 18, 1899.)

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3 Sheets—Sheet 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM F. BAGLEY, OF CHICAGO, ILLINOIS.

COIN-OPERATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 648,893, dated May 1, 1900.

Application filed April 19, 1899. Serial No. 713,573. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BAGLEY, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Operated Vending-Machines, of which the following is a full, clear, and exact specification.

The object of my invention is to provide a simple and economically-constructed "slot-machine" for vending gum and other confectionery, the mechanism of which is so constructed as to prevent the successful substitution of spurious means to operate the actuating mechanism of the machine for the standard coin with which it is intended the machine shall be operated.

In the drawings, Figure 1 is a front elevation of my invention. Fig. 2 is a vertical longitudinal section through the lower portion of the same, in which the actuating mechanism of the machine is situated. Fig. 3 is a rear view of said actuating mechanism removed from the case of the machine. Fig. 4 is a plan view of the under side of said actuating mechanism removed from the case of the machine. Fig. 5 is a plan view of one-half of the upper side of the same, showing a portion of the delivery-plate broken away so as to expose one of the coin-slides. Fig. 6 is a transverse vertical section through a portion of the delivery-plate striking through one of the coin-receiving openings of the machine.

In the drawings, A represents a case of rectangular proportions, the rear portion of which is preferably considerably higher than the lower portion thereof, which latter projects forward a considerable distance, so as to provide a ledge or delivery-table upon which the transactions with the machine are performed. This table consists of a horizontal plate B, which has its rear portion extended vertically a suitable distance and then horizontally, so as to form a shield *b* to hide from view and prevent interference with the actuating mechanism of the machine and provide a platform *c*, upon which the gum or other confectionery is stacked in sheet-metal chutes or hoppers *d*. These chutes or hoppers consist of a rear vertical wall which has a suitable number of forwardly-projecting

partition-walls *d'*, the forward edges of which latter are flanged laterally, so as to make several of these hoppers or chutes, according to the number it is desired the machine should have in order to separate the differently-flavored gum or confectionery with which it is intended to stock the machine.

If desired, the front of the case A just above the plane of the platform *c* may be provided with a glass-covered opening *A'*, so as to expose to view edges of the packages of gum or other confectionery to enable the purchaser to make an intelligent selection, substantially as hereinafter fully explained.

The packages of gum which it is desired to purchase are ejected one at a time from the hopper *d* through a suitable opening *e* in the front of the case by means of an ejector *e*. This ejector consists of an L-shaped piece of metal, the horizontal branch of which moves in the longitudinal slot *e'* in the platform *c*, which slots extend centrally under each chute. The vertical branch of the ejector *e* extends downward from the rear of the horizontal branch thereof, and these ejectors are pivoted to the upper extremity of the rear vertically-bent portion *f'* of a horizontally-disposed longitudinal sliding bar F. This sliding bar extends through a suitable guide-opening in the drop-wall *g* of a retaining-plate G, (the purpose or function of which will be hereinafter more fully explained,) and the forward end of said bar is bent upward and is connected to the slide-plate H. The free end of the L-shaped ejector has a normal tendency to tilt up above the plane of platform *c* by reason of the forward pressure upon its vertical arm of a spring *f*, one end of which is secured to the portion *f'* of bar F. The bars F are normally kept at the limit of their forward movement by means of a coil contraction-spring I, which has one end suitably connected to the drop-wall *g* of plate G and the other end secured to the vertical rear portion of said bars, as shown. Thus when the bar F is pushed to the limit of its rear movement, substantially as shown by dotted lines in Fig. 2, and then released the contraction of spring I causes the said bar F to return to its normal or forward position, while the forward pressure of the spring *f* causes the ejector to tilt, so that the raised forward

end of the horizontal portion thereof will come back of the lowermost package of gum or confectionery and push the same out through opening c' as said bar F resumes its original position.

At a suitable point in front of the upper part of case A and at a point in front of each chute d I provide the plate B with coin-openings C. In the machine shown in the drawings there are four of these circular openings, and their diameter is just sufficient to permit of the passage therethrough of, say, a cent. Reciprocal longitudinally under each of these openings C in suitable channels g' g' , made in the retaining-plate G, which, as shown, is screwed or otherwise secured flush against the under side of plate B, are the sliding plates H. These slides H are about the same thickness as the coin used in the machine and are about one inch wide by four inches long, and when in their normal positions one end is very near the forward edge of plate B. Each slide H is provided with a coin-opening J, which when the slide is in its normal position will come concentrically under the companion opening C in plate B, and, as shown in Fig. 5 of the drawings, a rectangular section half the width of said plate is cut away therefrom, commencing at a transverse plane intersecting the center of said opening and extending about an inch and a quarter toward the rear end of the plate, so as to form a recess m in one side of said plate, thus leaving a point x alongside of opening C, the function of which will hereinafter be more fully explained.

The forward movement of slides H is checked by a bolt k , which consists of a rectangular body that is seated and reciprocal in a transverse groove k' , leading from the channels g' , and has a blade k^2 of one-half its thickness, which, together with a short portion of its body, is normally shot into the recess m and intercepts the portion n of the rear end of said slide H, resulting from the making of the recess. The end edge of the blade k^2 of the blade is curved, so as to describe a segment of a circle corresponding in diameter to that of a cent, and this curvature is such that when a cent is dropped into the opening C and the machine manipulated to procure the confectionery said cent will, as the slide H is moved to the rear, engage the edge of said blade k^2 and push bolt k aside, so as to permit said plate to continue its rearward movement until the cent is pushed over and can drop down through the opening o in the retaining-plate G into the compartment of the case below the bed B.

Should the attempt be made to defraud the machine by the employment of a metal disk thinner than a cent, just before it came in contact with the blade of the bolt k it would be lifted by the upward pressure under it of the spring-actuated pawl p , which will hereinafter be more fully explained, and will slide over the thin blade k^2 of said bolt, which lat-

ter will retain its normal position and remain in the path of and intercept the point x of slide H. Should the attempt be made to employ a disk of less diameter than a cent, it would, if too small, fall through an opening g^2 in plate G, located concentrically therein under opening C, and drop into the compartment of the case below the bed B without affecting the bolt k when the slide was operated, and if the spurious disk was too large to fall through opening g^2 , but less in diameter than the cent, it would not be able to push the bolt aside a sufficient distance to prevent said bolt from intercepting point x , thus stopping further progress of the slide.

In the bottom of the groove k' , in which the bolt k moves, the plate G is provided with a transversely-elongated slot k^3 , and extending down from this slot is a stud 4, which depends from said bolt. This stud 4 is connected to a pin 5, projecting in transverse alignment therewith from the under side of plate G, by a coil contraction-spring 6. This contraction-spring normally keeps the bolt k in the position shown in Fig. 5.

Suitably secured to and just below plate G in the same transverse plane as the portion of bolt k nearest the opening g^2 is a stationary shaft 8, and journaled thereon in such position that it can extend up through a longitudinal slot 7 in the center of the channel in which slide H moves between opening O and opening g^2 is the pawl p , and loosely journaled on this shaft 8 just along the side of pawl p is a pawl 9. The pawl p inclines upward and to the rear of shaft 8, and pawl 9 projects slightly upward and toward the front of the machine, and both of these pawls are engaged by the ends of a coil torsion-spring 25, the coil of which surrounds shaft 8, so that in the normal position of the pawls the pointed extremity of pawl 9 will bear upward against the under side of the slide H contiguous to the longitudinal edge of recess m . Now supposing a washer of a commercial size of the same diameter of a cent and about the same thickness should be substituted for the cent. When the slide has been moved forward until the central opening of the washer is above the point of pawl 9, said pawl will be automatically raised and its tip bearing against the edge of the washer-opening will prevent further progress of the slide.

I prefer to make an opening 10 in the bed-plate B immediately over and concentric with opening O in plate G, and I prefer to cover this opening by the inclined apron 12, the upper rear edge of which is secured to vertical portion of b of bed-plate B, substantially as shown. The openings 10 are designed for the purpose of permitting access to the slide should some device be introduced into the machine which could force its way past the pawl 9 and bolt k into position above opening o and there become stuck, and the apron 12, in addition to hiding these openings 10 from view, is designed to deliver confec-

tionery purchased down upon the bed-plate just back of the openings C.

When a coin is deposited in opening C, the machine is operated through the medium of a push-bar 18, which moves through guide-openings in the front of the case A below the bed-plate B and in the drop-wall *g* of the plate G. At a suitable point intermediate its length said push-bar has pivotally connected thereto a cross-bar 19, preferably of a length sufficient to extend on either side somewhat beyond the middle of the space separating the pairs of sliding bars F. To each end of said cross-bar is pivotally secured an auxiliary member or cross-bar 21, extending into proximity to a pair of the sliding bars F and connected with said bars by means of forwardly-extending links 20, substantially as shown in Fig. 4. This connection enables any one of the sliding plates H which may have been supplied with the required coin in the manner heretofore described to be operated, so as to cause the delivery of a package of gum from the corresponding chute without causing the delivery mechanism of any of the other chutes to operate. Suppose, for example, that the coin has been properly inserted in the opening of the extreme right-hand section of the machine and the operating-button pressed upon. The rod 18 will be forced inward, carrying the cross-rod 19 with it, and all of the plates H will be moved rearward together. Before any one of the bars F has been moved rearward far enough to actuate its ejector, however, the points *x* of the three empty slide-plates H will come into contact with the corresponding bolts *k*, stopping all further rearward movement on the part of those slides. The pressure on the button continuing, the cross-rod 19, being completely checked on its left-hand end, will tilt, so as to continue the rearward movement of the right-hand half thereof. This causes a corresponding tilting of the auxiliary member 21, attached to said right-hand section of the cross-bar, as said member is itself held against rearward motion at its left-hand extremity by reason of the engagement of the point *x* of its slide H with a bolt *k*, as described. The right-hand end of the member, however, is free to continue its movement, as its plate H is equipped with the proper coin, and the rod F is pushed forward thereby until the limit of rearward movement is reached, and the ejector is raised ready for operation in the manner heretofore described. The operation would of course be substantially the same were any other of the slides to be operated, the links 21 serving to take up any lateral play caused by the tilting of the cross-bars in either direction.

What I claim as new is—

1. In a coin-operated vending-machine, the combination with a bed-plate having a coin-opening therein, a retaining-plate having a longitudinal channel in the portion thereof under said coin-opening and a coin-dis-

charge opening therein to the rear of and in longitudinal alinement with said coin-opening, and an automatically-returnable transversely-reciprocal bolt normally extending into said channel, of an automatically-returnable longitudinally-movable slide having a coin-receiving opening therein and provided with a longitudinally-elongated rectangular recess so shaped that the proper coin in said coin-receiving opening will, when the slide is moved to the rear, engage and push aside said bolt.

2. In a coin-operated vending-machine, the combination with a bed-plate having a coin-opening therein, a retaining-plate provided with a longitudinal channel in the portion thereof immediately under said coin-opening having a coin-discharge opening therein to the rear of and in longitudinal alinement with said coin-opening, and an automatically-returnable transversely-reciprocal bolt the end edge of the portion of which normally projecting into said channel is curved, of an automatically-returnable longitudinally-movable slide having a coin-receiving opening therein and provided with a longitudinally-elongated rectangular recess so shaped that the proper coin in said coin-receiving opening will, when the slide is moved to the rear, engage and push aside said bolt.

3. In a coin-operated vending-machine, the combination with a bed-plate having coin-openings therein, a retaining-plate provided with a longitudinal channel in the portion thereof immediately under said coin-opening, a coin-discharge opening therein to the rear of and in longitudinal alinement with said coin-opening, and an automatically-returnable transversely-reciprocal bolt having the portion thereof which normally extends into said channel stepped to a less thickness than the remainder thereof and having its end edge curved, of an automatically-returnable longitudinally-movable slide having a coin-receiving opening therein and provided with a longitudinally-elongated rectangular recess so shaped that the proper coin in said coin-receiving opening will, when the slide is moved to the rear, engage and push aside said bolt.

4. In a coin-operated vending-machine the combination with a bed-plate having coin-opening therein, a retaining-plate provided with a longitudinal channel in the portion thereof immediately under said coin-opening which has a discharge-opening therein to the rear of and in longitudinal alinement with said coin-opening, an automatically-returnable transversely-reciprocal bolt having the portion thereof which normally extends into said channel stepped to a less thickness than the remainder thereof and having its end edge curved, and a spring-actuated pawl *p* the point of which extends in a rearward direction up through a longitudinal slot in said channel for lifting spurious substitutes for the coin as the same are moved over it, of an automatically-returnable longitudinally-

movable slide having a coin-receiving opening therein and provided with a longitudinally-elongated rectangular recess so shaped that the proper coin in said coin-receiving opening will, when the slide is moved to the rear, engage and push aside said bolt.

5 5. In a coin-operated vending-machine, the combination with a bed-plate having coin-openings therein, a retaining-plate with a longitudinal channel in the portion thereof immediately under said coin-opening which has a coin-discharge opening therein to the rear of and in longitudinal alignment with said coin-opening, and a spring-actuated pawl 10 the point of which extends in a forward direction upward through a suitable slot in the retaining-plate and normally bears against the under side of the slide, of an automatically-returnable longitudinally-movable slide 20 having a coin-receiving opening therein and provided with a longitudinally-elongated rectangular recess as and for the purpose set forth.

6. In a coin-operated vending-machine, the 25 combination with a bed-plate having coin-openings therein, a retaining-plate with a longitudinal channel in the portion thereof immediately under said coin-opening which is provided with a coin-discharge opening therein to the rear of and in longitudinal alignment with said opening and a spring-actuated pawl 9 and automatically-returnable transversely-reciprocal bolt having the portion thereof which normally extends into said 35 channel stepped to a less thickness than the

remainder thereof and having its end portion curved, of an automatically-returnable longitudinally-movable slide having a coin-receiving opening therein and provided with a longitudinally-elongated rectangular recess 40 so shaped that the proper coin in said coin-receiving opening will, when the slide is moved to the rear, engage and push aside said bolt.

7. In a coin-operated vending-machine, the 45 combination with a bed-plate having the rear portion thereof extended vertically and then horizontally and provided with coin-openings in the lower horizontal portion of the same and longitudinal slots in the upper horizontal 50 part thereof, a retaining-plate secured under the lower horizontal portion of said bed-plate and having longitudinal channels in its upper surface arranged in longitudinal alignment with said coin-openings and having coin-discharge openings in the rear portion of said 55 channels, a longitudinal slide having a coin-opening therein and having a rectangular recess *m* as described which reciprocates in said channels, a spring-returnable sliding bar *F* to the forward upturned end of which said slide 60 is connected, and a spring-actuated ejector which is L-shaped and is pivoted at its inner angle to the top of the rear vertical portion of bar *F*, as and for the purpose set forth.

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Witnesses:

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