

G. W. SHERMAN.
VENDING APPARATUS.

No. 511,865.

Patented Jan. 2, 1894.

Fig. 1.

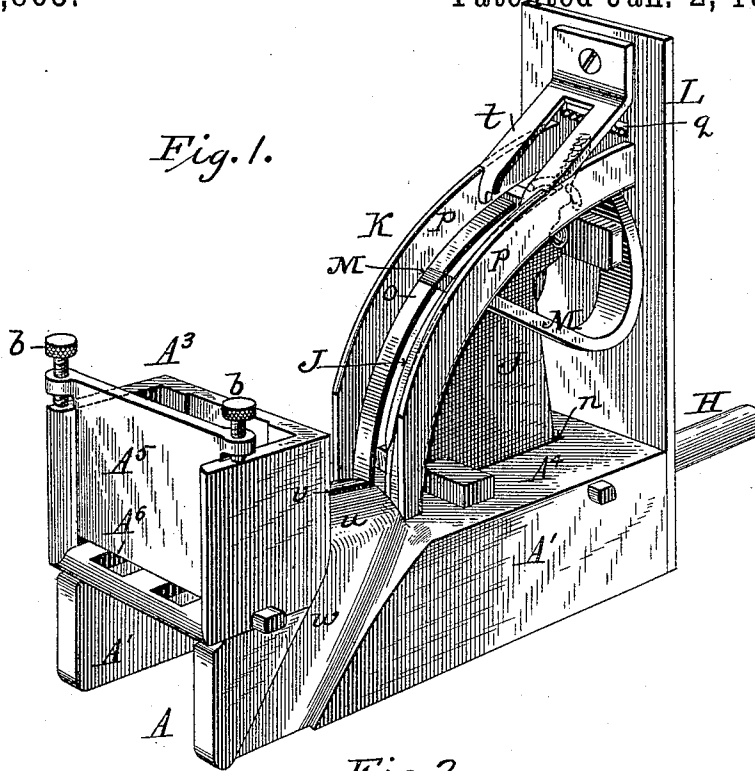


Fig. 2.

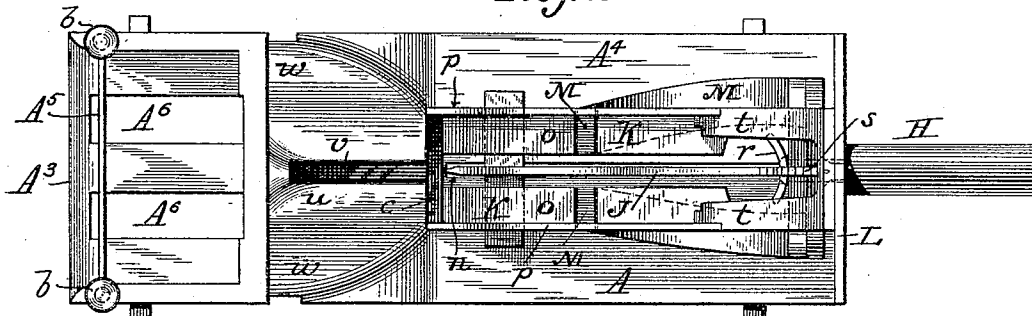
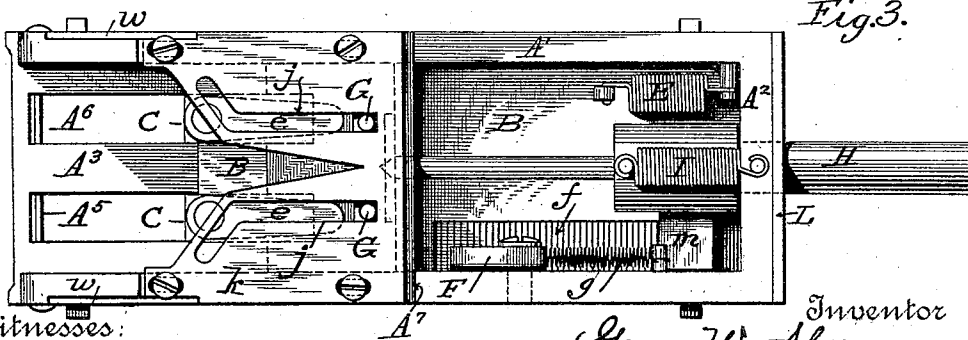


Fig. 3.



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(No Model.)

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Fig. 4.

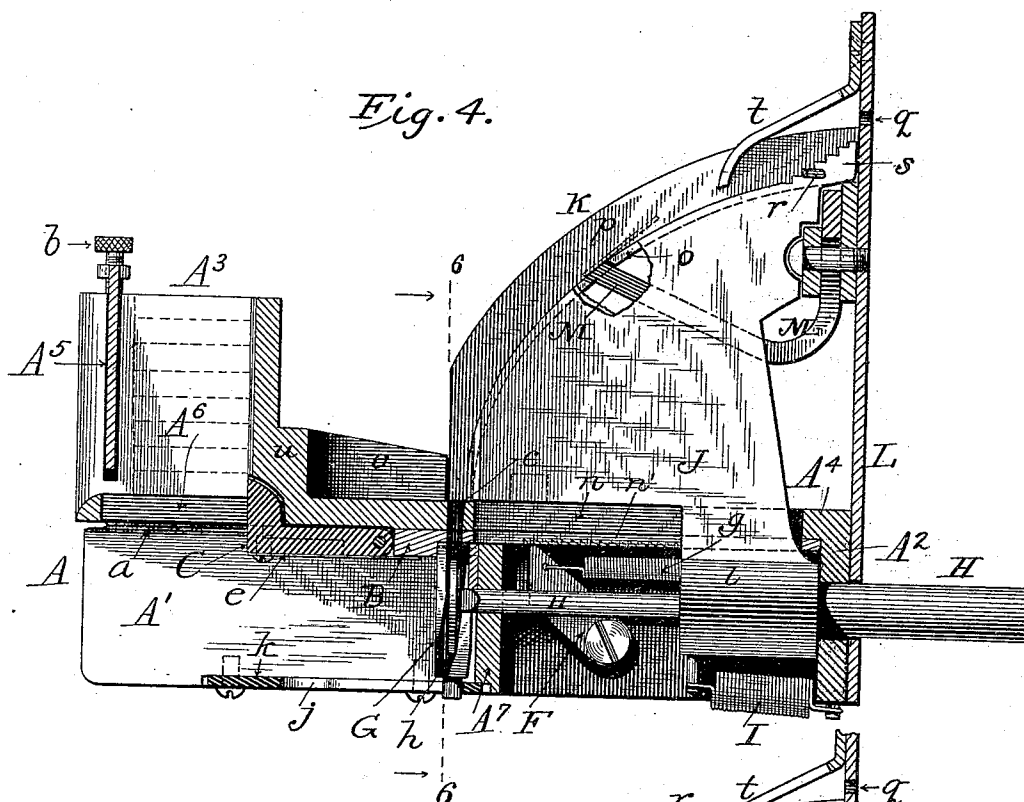
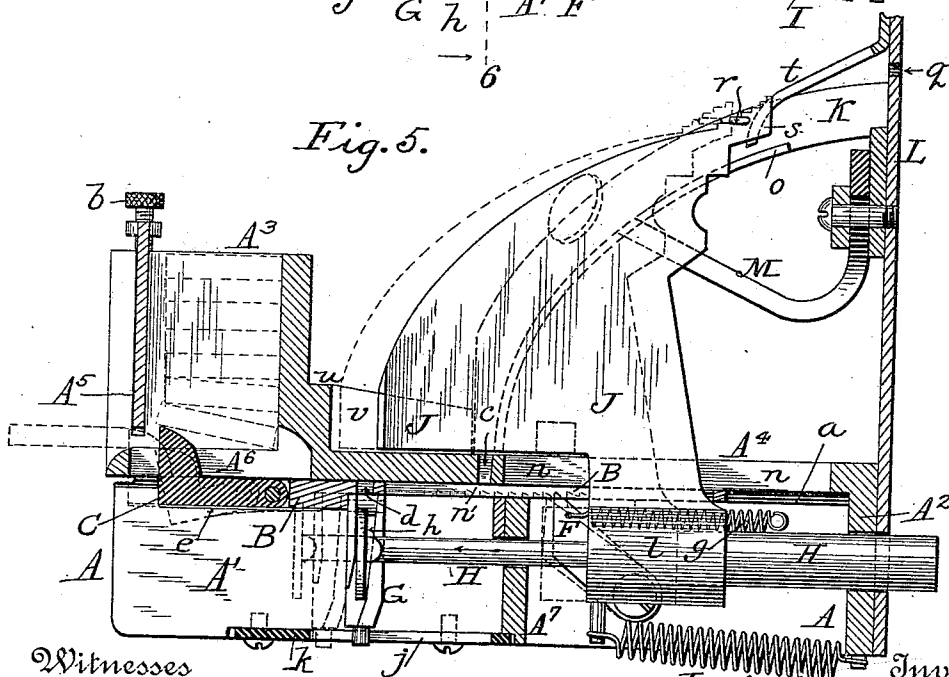


Fig. 5.



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(No Model.)

3 Sheets—Sheet 3.

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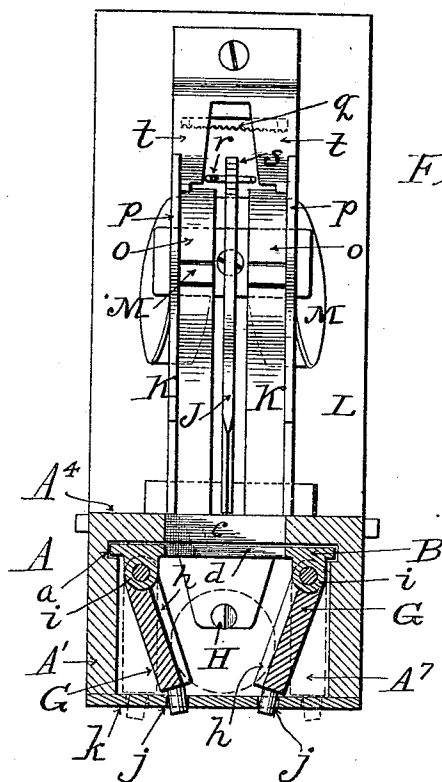


Fig. 6.

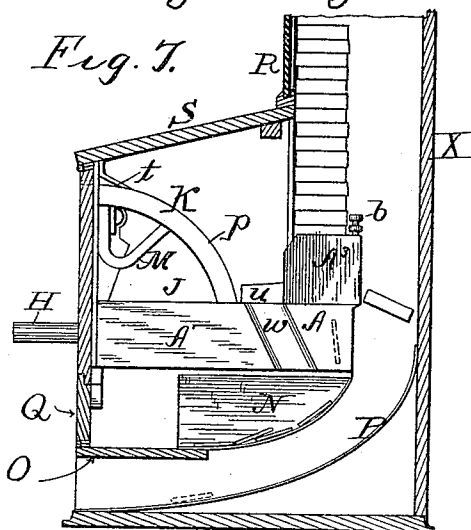


Fig. 7.

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UNITED STATES PATENT OFFICE.

GEORGE W. SHERMAN, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE
TUTTI FRUTTI AUTOMATIC VENDING COMPANY, OF SAME PLACE.

VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 511,865, dated January 2, 1894.

Application filed September 7, 1893. Serial No. 484,980. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SHERMAN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Vending Apparatus, of which the following is a specification.

My invention relates to coin controlled apparatus, and has reference more particularly to that class of machines in which the articles to be sold are ejected by means of a reciprocating slide. This slide which I shall term the delivery slide is adapted to be connected by a coin with a sliding member, which I shall term the actuating slide.

In the drawings Figure 1 is a perspective view, from the rear, of the actuating mechanism of my improved machine; Fig. 2 a top plan view; Fig. 3 a bottom plan view; Fig. 4 a vertical longitudinal sectional view; Fig. 5 a similar view, but with the parts in a different position; Fig. 6 a vertical transverse sectional view on the line 6—6 of Fig. 4; and Fig. 7 a sectional view, on a smaller scale, from front to rear, of the box or casing.

A indicates the main frame of the machine comprising the parallel side walls A' grooved on their inner faces as at *a*; a front wall A²; a box or compartment A³ into which the packages or articles to be sold descend from a chute, not shown; and a top plate or portion A⁴,—the walls A' and A² depending from the under side of the top plate, while the compartment or box A³ projects from the upper side of said plate A⁴. In practice the frame A will be made of a single casting, but this is not essential.

Box or compartment A³ is open at its top, and also on its rear face, but it is provided on its rear with a vertically adjustable gate or slide A⁵, which, by being raised from or lowered toward the base or bottom of the box or compartment makes a discharge opening of variable size. This adjustment may be readily effected by means of set screws *b* passing through ears or lugs upon the gate and bearing upon the top walls of the said box. The adjustment of the package discharge opening is a matter of considerable importance, as it enables me to adapt the machine to articles or packages of different sizes. The

bottom of the compartment A³ is slotted longitudinally as at A⁶, Figs. 1 to 5, to receive the ejecting fingers hereinafter referred to.

In the top plate A⁴ there is a coin slot *c*, Figs. 2, 4, 5 and 6, which normally registers with a corresponding slot *d* in the delivery slide B, the said delivery slide being mounted in the grooves or guides *a* in the side walls of the main frame. At its rear or inner end, slide B is provided with one or more L-shaped pivoted ejecting fingers C whose noses project through the slots A⁶ up above the upper face of the bottom of the box A³. These fingers C are held in normal working position, Figs. 4 and 5, by means of light flat springs *e* secured at one end to the fingers and bearing at the opposite end against the under face of slide B, as shown in Figs. 3, 4, and 5.

Fingers C are beveled or rounded slightly on the front face so that after returning with their slide toward the front of the machine after the ejection of a package, their beveled faces will strike the edge of the lowermost package and be depressed thereby as shown by dotted lines in Fig. 5. If this were not done, the upwardly extending portions of the fingers would catch on the lowermost package, which had previously descended behind them, and thereby prevent the slide from returning to its normal position. Slide B is returned to and held in its normal position, Fig. 4, by means of a coiled spring E, shown only in Fig. 3, and is provided with a series of ratchet teeth *f* on its under face with which a pawl F pivoted to frame A is designed to engage; the said pawl being held in engagement with the slide by means of a light coiled spring *g*, Figs. 3, 4, and 5.

In line with the coin slot *d* in the delivery slide, and on the under side of the latter, are two coin-holding arms G G, grooved on their opposing faces, as at *h*, Figs. 4, 5, and 6,—these grooves *h*, forming, as it were, a continuation of the coin slot. It is to be observed, however, that these arms G are set so far apart that when the coin is in place upon them, it will be entirely clear from the coin-slot *d* in the delivery slide. Arms G are pivoted at their upper ends to lugs *i* projecting from the under side of the delivery slide, thereby allowing the arms to swing toward and from

each other, at their lower ends. In order to effect this swinging movement, I employ a plate *k* having slots *j* to receive the lower ends of the arms, as shown in Figs. 3, 4, 5, and 6. For about two-thirds of their length these slots are parallel and then gradually diverge so that at about the time the package or article to be sold has been discharged, the arms *G* will be spread apart sufficiently to allow the coin held thereby to fall or be ejected therefrom.

In order to operate the delivery slide *B*, I employ an actuating slide or member which in the present instance comprises merely a rod or stem *H* passing at its outer or front end through the end wall *A*² and at its rear or inner end through a plate or partition *A*⁷ set into the frame *A*. See Figs. 4 and 5.

The outer end of slide *H* is enlarged somewhat so as to make a serviceable handle, while the inner reduced end of the slide or stem is sharpened. Between the front wall *A*² and the partition *A*⁷, the slide or stem is provided with a hub or enlargement *l* which serves to limit the movement of said slide or stem. Projecting horizontally from the slide,—preferably from the hub *l*—is a lug or projection *m*, Fig. 3, which, lying close to the under side of the delivery plate *B* is adapted to strike the nose or upper end of the pawl and throw the latter out of engagement with the said slide *B*, the relative arrangement of the parts being such that the pawl is not tripped until after the package is ejected and the coin freed from arms *G*. The operation of this part of the mechanism is as follows; assuming a coin of the requisite size to be in proper position on the arms *G*, as in Fig. 4, and the inner end of the stem or actuating slide in contact with or close to the front face of the coin. If the actuating slide *H* be pushed inward against the coin,—held at its side edges by the arms *G*,—the delivery slide, to which the arms are pivoted, will also be carried inward with the actuating slide,—the ratchet teeth *f* on the delivery slide riding over the end of pawl *F*. The ejecting fingers *C*, (which in their normal position were in front of the stack of packages) in moving inward with their slide *B*, take hold of the lowermost package, and, as the movement of the slide continues, they eject the package from the box or compartment *A*³. During this rearward or inward movement of the delivery slide *B* and its arms *G*, the latter travel in the straight portions of the slots *j* in plate *k*, but just before the package is ejected, they begin to ride into the inclined or diverging portions of the slots, and thus caused to gradually spread apart. At the instant that the package is ejected the diverging or spreading of the arms becomes so great as to permit the coin to fall from the arms or be thrown therefrom by the slide or stem *H* which has remained in contact with the coin. The discharge of the coin destroys the connection between the actuating and delivery slides, but the latter is prevented from re-

turning to its normal position by reason of the pawl *F* engaging the ratchet teeth in said slide. After the package has been ejected and the coin discharged, the continued inward movement of the actuating slide brings the lug *m* of the latter into contact with the nose in upper end of pawl *F* and throws the latter down out of engagement with the delivery slide, thereby allowing the latter to be returned to its normal position by spring *E*. As the plate or slide returns to its normal position, the ejecting fingers *C* thereof are tipped downward or depressed by the package which descended during the ejecting action as previously explained. When the delivery slide begins its inward movement its coin-slot *d* is moved out of line with the slot *c* in the main frame, thereby preventing the insertion of coin, wires, strings, &c., during the actuation of the machine. This slide *B* can not be pushed partway in and then withdrawn, for unless the actuating slide be carried inward far enough to dislodge the coin, the lug *m* will not be brought into such position as to release the pawl *F* which latter holds the delivery slide against a return movement.

The actuating slide *H* acts in opposition to a spring *I*, and hence the device which is to establish the connection between the two slides *B* and *H*, must be strong enough to stand the strain incident to the extension of the springs *E* and *I*. Therefore, if a disk of thin metal or cardboard should happen to get into position on the coin-holding arms, it would be punctured and allow the pointed stem to pass through, or else it would be bent out of shape and thrown from the arms, the result in either case being a failure to properly connect the two slides. By the use of other devices now to be described, I contemplate the rejection of spurious coins or tokens before they can reach the coin-slots *c*, *d*.

Secured to the actual slide and projecting upward therefrom through a long slot *n* in the top *A*⁴ of the main frame and a slot *n'* in the slide *B*, is an upright plate *J* which works back and forth in a right line between two curved ways or tracks *K K*, as shown in Figs. 1, 2, 4, 5, and 6. The ways or tracks comprise a lateral or transverse portion *o* and vertical flanges *p*, the lateral portions *o* projecting inward toward each other to form a track or way for the coin, while the flanges *p* at the outer edges prevent the coin from passing or falling off at either side. The ways or tracks *K* extend from a coin-slot *q* formed in a front plate *L* secured to, or forming an upward extension or continuation of, the front wall *A*² of the main frame *A*, down to the coin-slot *c*, so that if the proper coin be inserted through the opening *q* it will slide flatwise down the track and into the slot *c*. At the extreme upper end where the portions *o* of the track are cut away the plate *J* is provided with lateral arms *r*, Figs. 2, 4, 5, and 6, which prevent the token inserted from falling off the said plate or the track; while above these arms the said

plate is provided with a notched or serrated nose *s*. Secured to the front plate and projecting down close to the portions *o* of the track or way *K*, are the arms *t*, which are so arranged as to cause the coin to lie flat upon the track in order to pass beneath them.

M indicates a permanent magnet which is carried by the front plate *L* and has its poles or ends arranged in line with the track *K*, the lateral portions *o* of the said track being cut away as shown in Figs. 1, 2, 4, and 6, to receive said magnet poles. If a piece of cardboard be passed through the slot *g* it will not, in all probability,—because of its lightness,—slide down the track, but will fall upon and be supported by the arms *r* or nose *s*, or both. Now if the operator push the actuating slide inward, the plate *J* will also be moved inward, and the paper disk supported by the plate will be carried against the arms *t* and crushed or bent out of shape. If the metallic washer, disk, or other magnetic metal token of suitable weight and size be inserted through opening *q*, and starts to slide down the track, it will be attracted to and held by the magnet; and if the actuating slide then be pushed inward, its plate *J* will strike the token, raise it off the magnet and track, and cause it to tip and roll off edgewise to one side. This precludes the entrance of the spurious token into the coin slots *c d*, for in order to enter them it must slide flatwise down the tracks *K*.

At the base of the tracks or ways *K*, the main frame is provided with a raised portion *u*, which is cut away centrally as at *v* to allow the plate *J* to enter when the latter is pushed inward; and which is also beveled or inclined from the center toward the sides of the frame, the beveled or inclined sides forming continuations of the bottom walls of passages or channels *w* formed in the sides of the main frame. Now it is clear that when the token has been dislodged by plate *J* and rolls down and off the tracks *K*, it will strike either one or the other of the inclined walls of projection *u* and caused to slide down into the channel or passage *w*.

Beneath each of the operating mechanisms, is a coin pocket or receptacle *N* whose side walls extend up close to the frames *A*, and whose front edges are supported by a cross bar or shelf *O* extending entirely across the lower part of the box or casing *X* as shown in Fig. 7. These pockets or receptacles *N* are set a slight distance apart so as to permit the ejected coins or tokens which pass down the channels *w* to fall down between the pockets *N* onto an inclined chute *P* which extends from the back wall of the box *X* to the bottom, at the front, said chute extending also from side to side of the box beneath all the operating mechanisms.

The front wall of the box *X* is open, from the bottom or base up to the shelf *O*, in order that the rejected coins which fall onto chute *P* may be returned to the person attempting to operate the machine. The articles sold

also fall into this chute *P* and are delivered to the operator through the opening in the front of the box or casing *X*.

A door *Q* at the front of the casing *X* prevents the access, by unauthorized persons, to the cash pockets or receptacles.

The door *R* which protects the columns of packages, closes over the upper face of a hinged lid or cover *S* and effectually holds said cover in its closed position.

Should the mechanism get out of order, access may be had to them by merely opening the door *R*, swinging it from over the cover *S*, and raising the latter, the said cover being hinged at its outer end to the upright front wall of box *X*.

It will be noticed upon reference to Figs. 1 and 6 that the lower wall or edge of slot *g* is serrated or provided with teeth, the object of which is to assist in tearing or mutilating paper or cardboard tokens, the latter being pressed down upon the teeth when its inner edge strikes the arms *t t*.

In Fig. 4 I have indicated in dotted lines a spurious token as caught by the magnet, and in Fig. 5, I have illustrated the said token as being tipped by the plate *J*.

Having thus described my invention, what I claim is—

1. In a coin-controlled apparatus, the combination with a slide having a coin-slot and a pair of pivoted coin-holding arms; of a cam plate adapted to separate the arms; and means for reciprocating the slide.

2. In a coin-controlled apparatus, the combination with a slide having a coin-slot and a pair of pivoted coin-holding arms; of a cam plate adapted to separate the arms; and an actuating device adapted to bear upon the coin and advance the slide.

3. In a coin-controlled apparatus, the combination with a slide having a coin-slot; of a pair of coin-holding arms provided with grooves *h* and pivoted to the slide; a cam plate with which the lower ends of the arms engage; and an actuating device to bear upon the coin and to thereby advance the slide.

4. In a coin-controlled apparatus, the combination with a delivery slide having a coin-slot and a pair of pivoted coin-holding arms; of a cam plate adapted to separate the arms; a pawl to hold the delivery slide in its extended position; an actuating slide adapted to bear upon the coin, and provided with a lug to release the pawl; and a spring to return the delivery slide to its normal position.

5. In combination with the main frame and the delivery slide having slots *c d*; the plate *L* provided with slot *g*; the curved track *K*; the magnet *M* intersecting the track; and an actuating slide provided with a plate *J* to work through the track.

6. In combination with plate *L* having coin-slot *g*; a curved track *K*; a magnet intersecting the track; and a slidable plate *J* working through the track.

7. In combination with the upright plate *L*

having the coin slot *q*; a curved track K terminating at the slot; arms *t t* projecting from above the slot down toward the track; and a slidable plate J provided with arms *r* to work beneath the arms *t*, substantially as shown and described.

8. In combination with the upright plate L having slot *q*; curved track K extending up to the slot; arms *t t* projecting down toward the track; and a slidable plate J provided with a notched nose *s* to work between the arms, substantially as shown and described.

9. In combination with the upright plate L having slot *q*; curved track K extending up to the slot; arms *t t* projecting down toward the track; and a slidable plate J provided with notched nose *s* and arms *r* to co-operate with the arms *t t*, substantially as shown and described.

10. In combination with plate L having a coin slot *q* whose lower edge is toothed; a curved track extending from said slot; and arms *t t* extending down toward the track, substantially as and for the purpose described.

11. In combination with the coin-actuated mechanisms placed side by side with a space between them for the rejected coin; the cash boxes located directly beneath the said mechanisms; and a chute extending beneath said boxes and intervening spaces, substantially as and for the purpose set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

GEORGE W. SHERMAN.

Witnesses:

EDGAR E. SCHIFF,
A. H. CLARK.