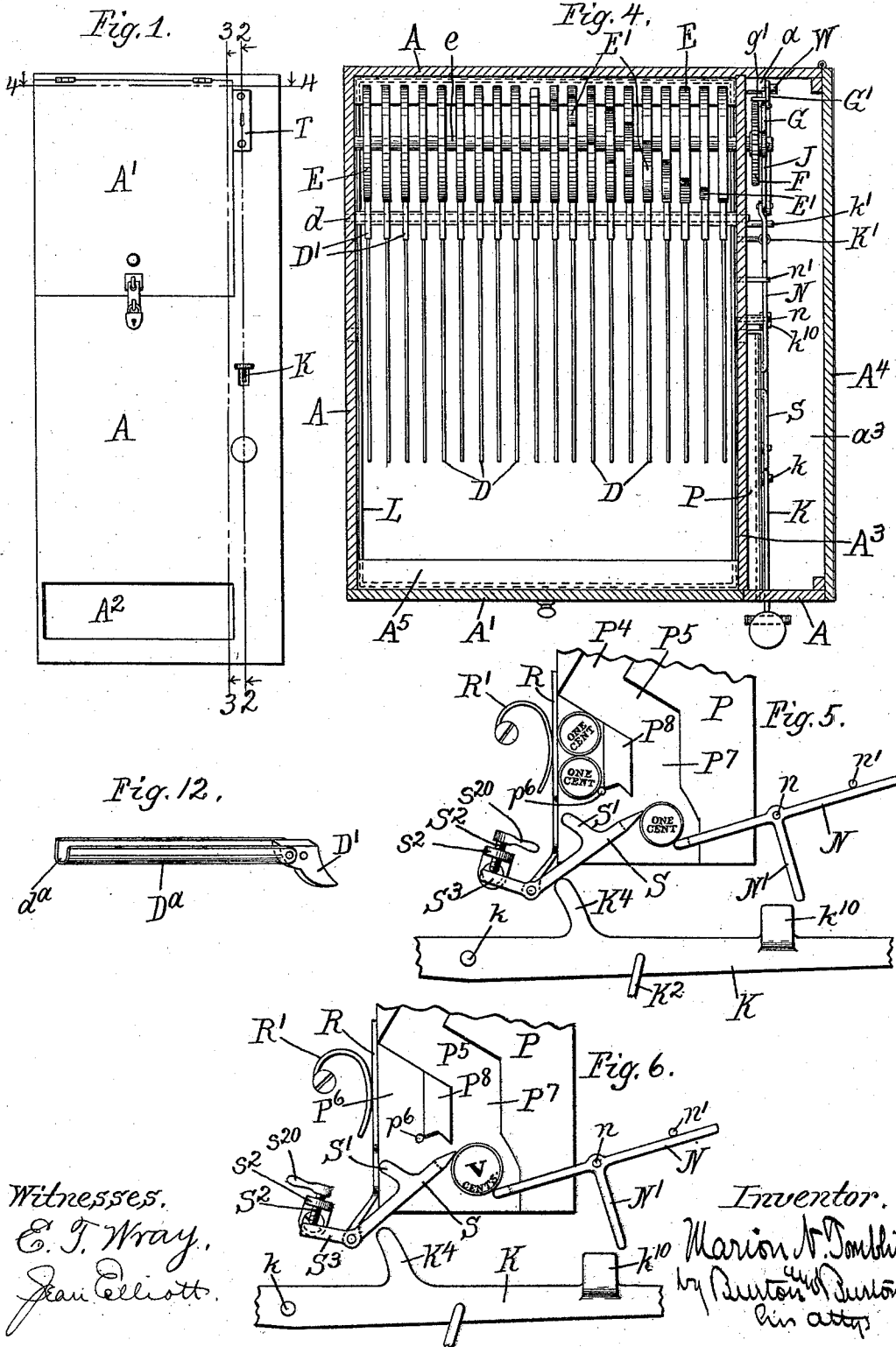


M. N. TOMBLIN.  
COIN CONTROLLED VENDING MACHINE.

No. 537,369.

Patented Apr. 9, 1895.



(No Model.)

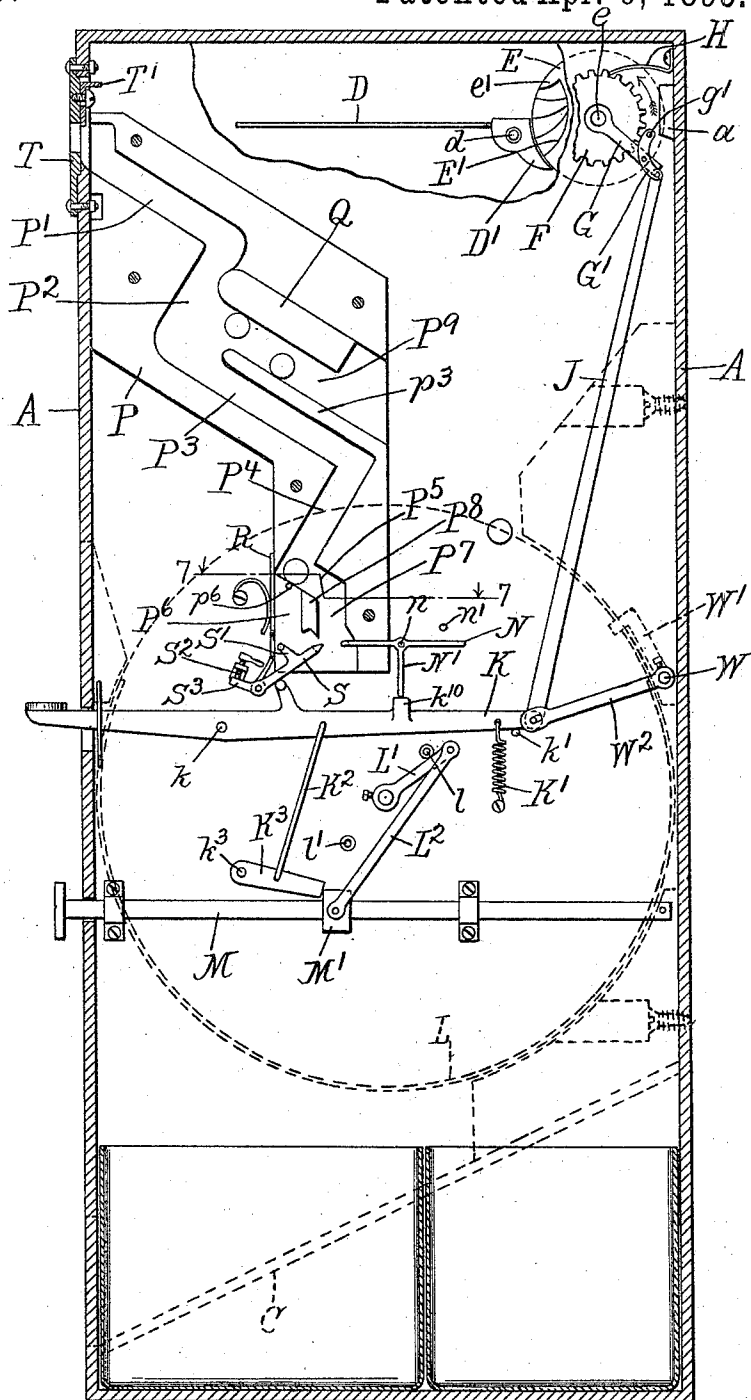
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Fig. 2.



Witnesses.

E. T. Wray.  
Frank Elliott

Inventor.  
Marion N. Tomblin  
by Burton & Burton  
his Attys

(No Model.)

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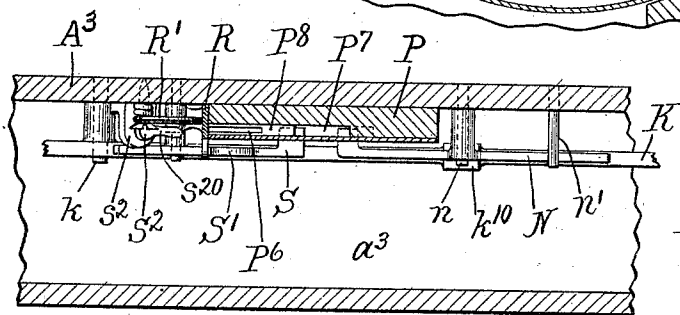
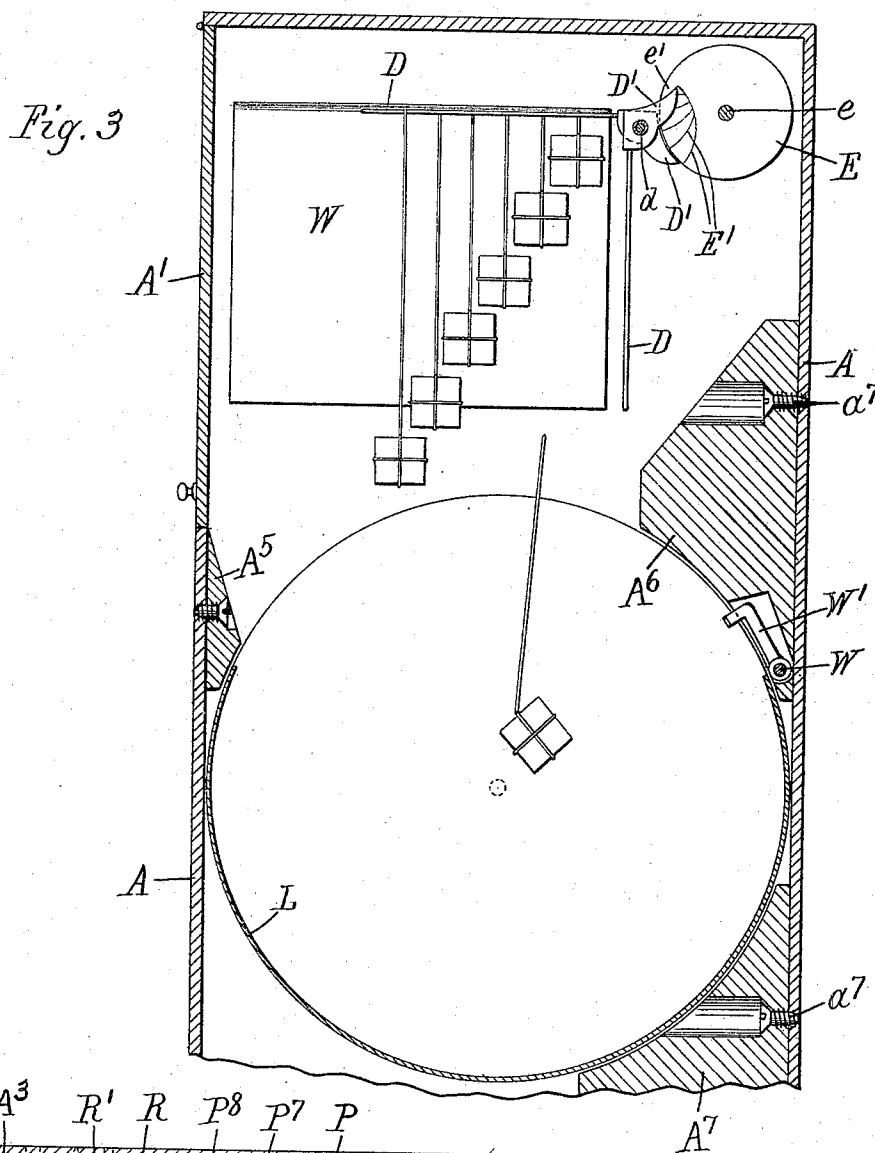


Fig. 7.

Witnesses,  
E. T. Wray.  
Jean Elliott.

Inventor.  
Marion U. Tomblin  
by Burton and Burton  
his Atty's.

(No Model.)

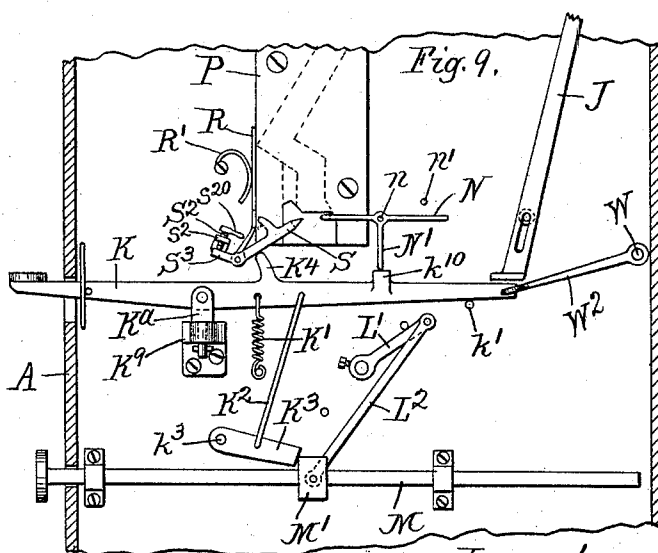
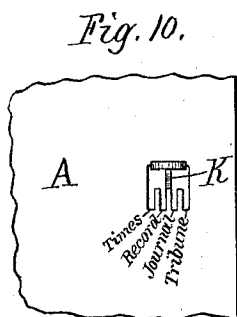
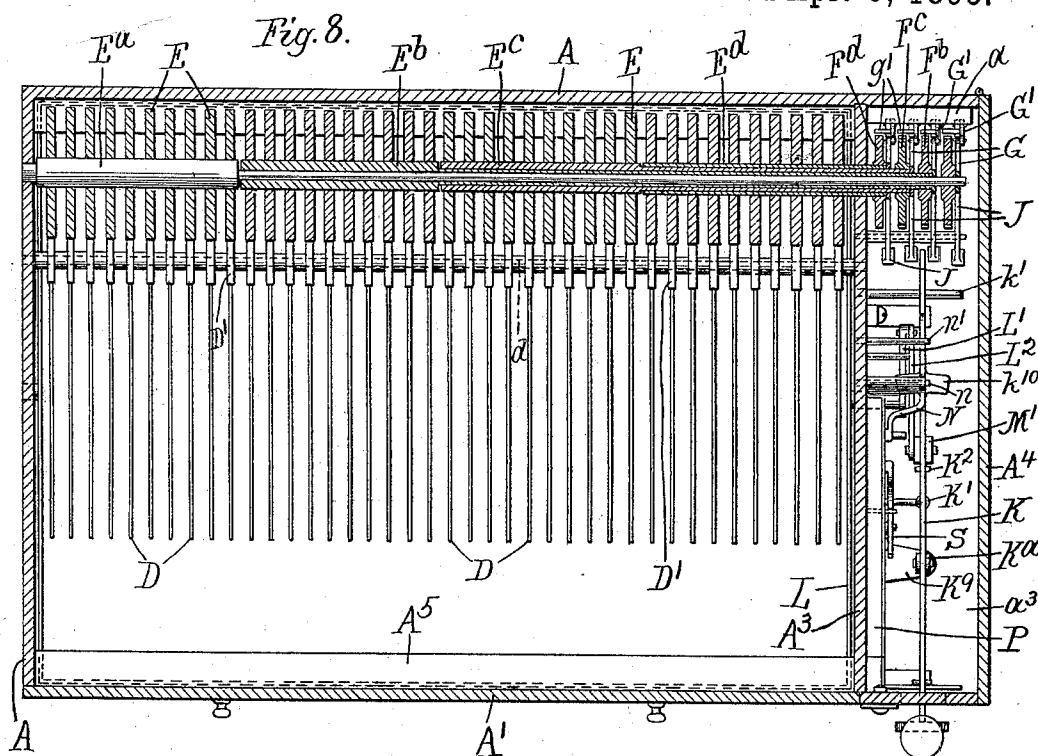
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M. N. TOMBLIN.

COIN CONTROLLED VENDING MACHINE.

No. 537,369.

Patented Apr. 9, 1895.



Witnesses,

E. J. Wray,  
Jean Elliott.

Inventor.  
Marion N. Paulsen  
by Burton W. Burton  
his Atty

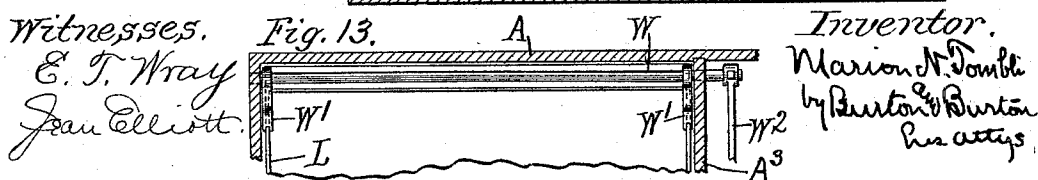
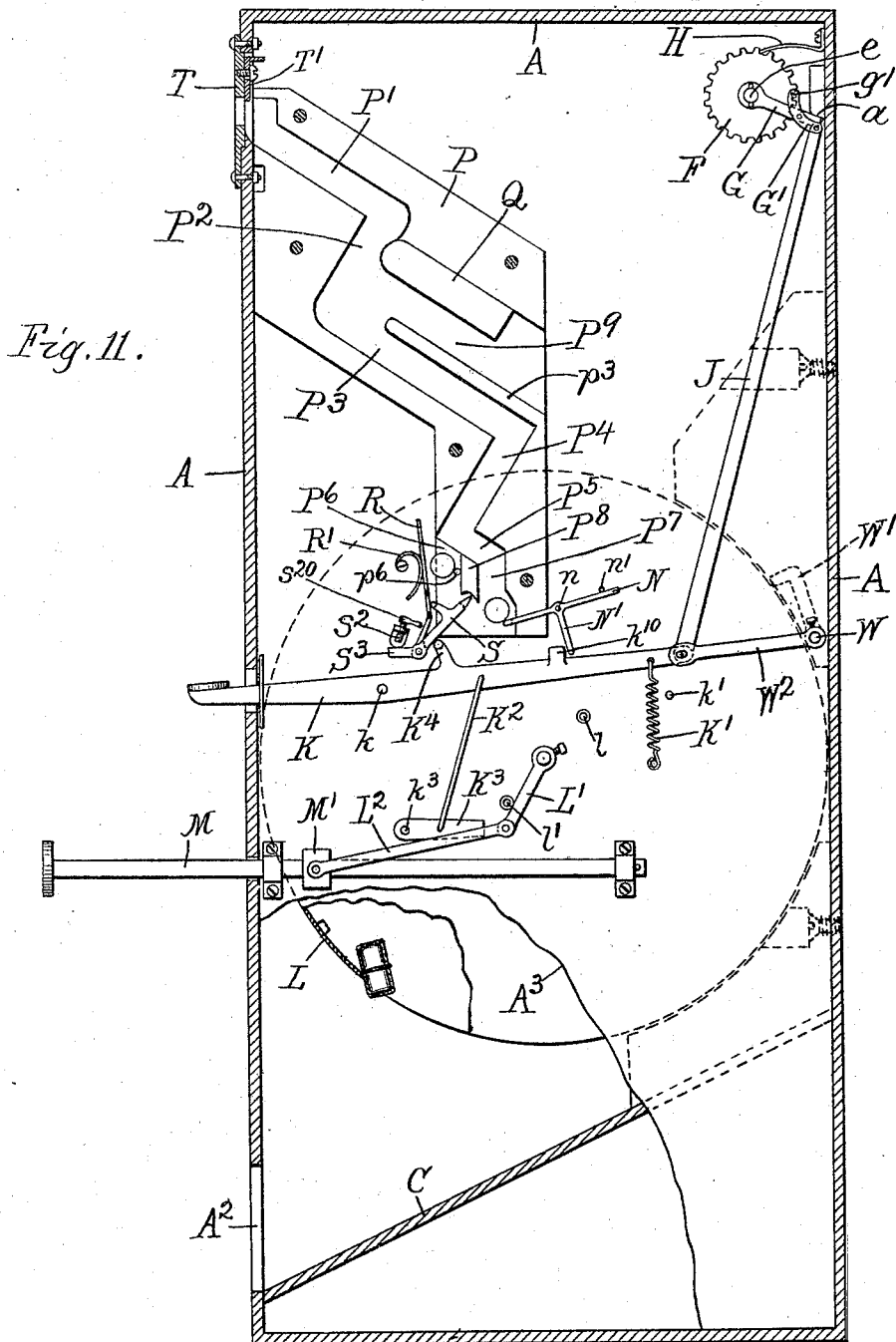
(No Model.)

5 Sheets—Sheet 5.

M. N. TOMBLIN.  
COIN CONTROLLED VENDING MACHINE.

No. 537,369.

Patented Apr. 9, 1895.



# UNITED STATES PATENT OFFICE.

MARION N. TOMBLIN, OF ROCKFORD, ILLINOIS.

## COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 537,369, dated April 9, 1895.

Application filed June 11, 1894. Serial No. 514,148. (No model.)

*To all whom it may concern:*

Be it known that I, MARION N. TOMBLIN, a citizen of the United States, residing at Rockford, county of Winnebago, and State of Illinois, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved mechanism adapted to be controlled by a coin deposited therein to deliver merchandise to the depositor of the coin. It is contrived with special reference to adapting it to deliver newspapers, but it is not limited to this particular use.

In the drawings:—Figure 1 is a front elevation of the cabinet containing my improved mechanism. Fig. 2 is a section at the line 2—2 on Fig. 1, showing in side elevation the coin-operated mechanism for controlling the machine. Fig. 3 is a section at the line 3—3, Fig. 1, showing the merchandise delivering mechanism in side elevation. Fig. 4 is a section at the line 4—4, showing the entire mechanism in top plan. Fig. 5 is a detail of the coin-operated mechanism, showing it in the position occupied after the deposit of the last of the number of coins necessary to operate it to unlock merchandise delivering devices when a plurality of coins is necessary. Fig. 6 is a similar detail showing the coin in position when a single larger coin only is necessary. Fig. 7 is a section at the line 7—7 on Fig. 2. Fig. 8 is a horizontal section axial with respect to the shaft of the trip cams which operate the merchandise delivering devices when the structure is modified so as to permit the delivery of any one of several different articles at the option of the depositor, a plurality of merchandise delivering devices being controlled by the same coin-operating locking devices. Fig. 9 is a detail side elevation of the coin-operated locking devices shown in Fig. 8, modified from the form shown in the other figures to correspond to the modification of the merchandise delivering mechanism. Fig. 10 is a detail elevation, showing the form of the slot in the front wall, through which the operating lever protrudes in the form shown in Figs. 8 and 9. Fig. 11 is a view simi-

lar to Fig. 2, but showing the merchandise receiving pan inverted and the wall of the merchandise chamber broken away at the lower part to disclose the inverted pan and the merchandise receiving shelf. Fig. 12 is a perspective of a modified form of the merchandise supporting finger designed to adapt it to serve as a receptacle as well as a support, when employed for the sale of articles suitable to be contained in and delivered from a tube or channel. Fig. 13 is a detail elevation showing the device for directly locking the merchandise delivering pan.

A rectangular cabinet whose walls are shown at A A A, &c., contains the mechanism which constitutes my invention, the upper part being a merchandise storage chamber and accessible through the door A', and containing the devices for causing the delivery of the merchandise by gravity into the lower part which contains the delivery pan or cylinder L, said lower part containing below the delivery pan an inclined shelf C, on which the merchandise is delivered by the pan or cylinder when inverted, said shelf being accessible through the delivery window A<sup>2</sup>.

At the left hand side of the cabinet, a portion a<sup>3</sup> is partitioned off from the merchandise storage and delivery compartments by the partition wall A<sup>3</sup>, said chamber a<sup>3</sup> containing the coin-controlled mechanism for locking and unlocking the merchandise delivering mechanism, and also the operating parts of the merchandise delivering mechanism. This compartment will also contain the coin pans which receive the coins deposited. It is accessible at the end door A<sup>4</sup>.

It will be understood that both the doors will be provided with suitable locks to prevent the intrusion of unauthorized persons thereinto.

The merchandise to be delivered from this machine is intended to be suspended from or upon arms D D D, &c., which extend horizontally in the position in which they support the merchandise, and drop to a dependent position in order to deliver it. These arms are all fulcrumed on the shaft d, which extends from right to left through the merchandise chamber, and near the upper rear corner. Each of the arms has connected to it a trip tail D', and as a convenient mode of construc-

tion I make the trip tail and the bearing of the arm on the shaft constitute a single piece of metal, into which the finger, which is made of a piece of wire or rod, is secured rigidly.

5 Upon a shaft  $e$ , which is journaled in one end of the cabinet and in the partition wall  $A^3$ , and extends through the latter into the chamber  $a^3$ , there are secured cam-like or tripping disks  $E E E$ , &c., one for each of the  
10 arms  $D$ , and located in the vertical planes respectively of the trip tails  $D'$ . Each of these disks is circular, except as to a single notch or recess  $E'$ . This notch is, in general, of the form of an arc struck about a center as far  
15 from the shaft  $e$  as the shaft  $d$ , and with a radius slightly greater than the length of the tail  $D'$ . The notch, however, does not include all that would be cut out by such an arc, but a small tooth  $e'$  is left standing at  
20 one extremity. The rear edge of the tail  $D'$  is curved to fit the circumference of the disk  $E$ , when the arm is horizontal, so that the circumference of the disk operates as a delay or locking surface to hold the arm horizontal,  
25 until, in the rotation of the disk, the notch  $E'$  comes opposite the tail when the arm becomes free to fall, the tail swinging in the notch  $E'$ , and the arm reaching a vertical position hanging downward when the point of the tail reaches the tooth  $e'$ , which terminates the  
30 notch. The further rotation of the disk, it will be observed, will cause the tooth  $e'$  to act as a cam gear tooth upon the curved surface of the tail, and swing the arm up again to  
35 horizontal position when it will be locked by the disk until the notch again reaches the tail. The disks are secured on the shaft with their respective notches  $E'$  each a little in advance of the notch of the preceding disk, so  
40 that as the shaft revolves, carrying the disk with it in the direction indicated by the arrow in Fig. 2, one arm after another will be dropped and gradually lifted again and locked.

45 On the end of the shaft  $e$ , which protrudes into the chamber  $a^3$ , there is secured a toothed wheel  $F$ , and on the same shaft there is a fork  $G$  which strides the wheel  $F$  and has fulcrumed on it beyond the periphery of the wheel a lever dog  $G'$ , which has a laterally projecting  
50 pin or tooth  $g'$ , adapted to engage between the teeth of the wheel  $F$ .

$H$  is a detent pawl spring which is secured to the side of the case, and is adapted to engage between the teeth and lock the wheel  
55 against rotation in one direction, and permit it to rotate in the other direction indicated by the arrow.

To the end of the lever  $G'$ , opposite that  
60 which has the tooth  $g'$ , a link  $J$  is connected and extends down to the rear end of a lever  $K$ , which is fulcrumed at  $k$  on a stud jutting off from the partition wall  $A^3$ , and extends through the forward side of the cabinet, and  
65 at the protruding end is adapted to be depressed by the operator, the forward wall being slotted to permit it to protrude, and the

lever being provided with a shield behind the slot to prevent access into the chamber.

It will be understood that when the lever  
70  $K$  is depressed at the forward end and thrown up at the rear end, it may lift the link  $J$ , and thereby first rock the lever dog  $G'$  upward at the rear end, and throw the tooth  $g'$  at the  
75 opposite end forward into engagement with the wheel  $F$ , and that, as the link is farther pushed upward, the fork  $G$ , now locked to the wheel by the dog  $G'$ , and rocking about the axis of the shaft  $e$ , carries the wheel and thereby the shaft and the disks  $E E$ , &c. It  
80 is designed that at each operation of the lever, the movement thus given to the wheel shall mount to only the distance from one tooth to the next, and to insure this result, I provide a tripping cam  $a$  upon the wall  $A$  of the cabinet, which the rear end of the dog  $G'$  encounters as it is pushed upward after the tooth  $g'$  has engaged the wheel, said cam causing the  
85 lever to be crowded in at its lower end, and the tooth  $g'$  to be thereby withdrawn from the wheel after a certain amount of movement; and the cam is calculated to effect this disengagement when the wheel has moved the distance specified, so that one tooth has  
90 been carried past the detent pawl  $H$ , which thereupon becomes engaged behind the next tooth.

The number of teeth on the wheel  $F$  is the same as the number of disks on the shaft  $e$ , so that the number of degrees of movement  
95 given to the wheel and disks by one action of the lever is the number of degrees interval between the corresponding edges of the notches  $E'$  of consecutive disks, and each such action, therefore, will trip off one of the merchandise-  
100 carrying arms and permit it to fall to vertical position and drop the merchandise which it holds, which falls downward into the upwardly open cylindrical pan  $L$ , which is journaled by means of pintles on its heads in one  
105 end wall of the chamber and the partition wall  $A^3$ , the pintle at the partition wall extending through the latter and being provided with a crank arm  $L'$  in the chamber  $a^3$ .  $L^2$  is a link attached to this crank arm and to the slide-bar  $M$ , which is supported in guide-  
110 bearings on the partition wall  $A^3$  in the chamber  $a^3$ , and extends out through the forward wall of the cabinet, so that it may be operated.

From the lever  $K$ , a link  $K^2$  extends to a  
115 dog  $K^3$ , fulcrumed at  $k^3$  on the partition  $A^3$ , and having its free end overhanging the bar  $M$ , and adapted to engage in front of a stop collar  $M'$  on said bar when that bar is at its innermost position,—that being the position  
120 which corresponds to the merchandise-receiving or upwardly-open position of the pan  $L$ , as seen in Fig. 2.

When the lever  $K$  is in what may be called its normal position, being the position which  
125 it assumes by gravity and to which it may be forced and held by the spring  $K'$ , which tends to depress the lower end onto the stop pin  $k'$ , the dog  $K^3$  is in position to lock the

bar M by engaging behind the stop M'; but when the forward end of the lever K is depressed and the rear end lifted to operate the wheel F and cause the delivery of merchandise as described, the dog K<sup>3</sup> is thereby lifted clear of the stop collar M', so that the operator can draw forward the bar M. This action will cause the link L<sup>2</sup>, actuating the crank arm L', to rock the pan L over to the inverted position shown in Fig. 11, which will cause any merchandise which has been dropped into it by one of the arms D to be emptied onto the shelf C, the pan, in that action, closing the access upward into the merchandise chamber; for this pan is preferably something more than half a cylinder in form, being open at a segmental plane which cuts about half way between the center and its circumference, and its diameter occupies the entire interior width of the cabinet and guard cheeks A<sup>5</sup> A<sup>6</sup> may be secured to the front and rear walls above the mouth of the pan when it is open upwardly, preventing any merchandise or other article falling otherwise than into the pan; and a guard cheek A<sup>7</sup> may be located at the rear side of the pan extending to such a point that before the rear edge of the segmental opening of the pan passes the guard cheek A<sup>7</sup> so that access could be obtained past that edge, the forward edge has reached the guard cheek A<sup>6</sup>, so that at no time during the action of the pan can access be obtained past it into the merchandise chamber to rob the machine. Nevertheless, the forward edge of the guard cheek A<sup>6</sup> is preferably rearward of the vertical plane at which the arms D hang when they fall, so that articles of merchandise which fall from them when they drop from their horizontal positions cannot fail to be delivered directly into the pan without reliance even upon any guidance upon the upper inclined surface of the cheek, which is nevertheless shaped as shown, in order that if, by any accident, an article should in falling be thrown farther rearward, it would with certainty be guided into the pan.

When the mechanism is used for selling newspapers, which are hung folded on the rods, it is so difficult to dislodge them by any device which could be passed up back of the partly tilted pan that it is not necessary to guard this passage so closely, and since it is desirable that the papers should have a clear fall both into and out of the pan, without any danger of becoming caught or hanging at any point until they reach the shelf, I prefer to make the cheeks A<sup>5</sup> and A<sup>6</sup> removable, so that they may be dispensed with when selling newspapers. They are secured, therefore, by disengageable fastenings, as seen at a<sup>7</sup>, set through them from the inside into the cabinet wall. When the pan, under the action of gravity, swings back to normal position, the crank L' and link L<sup>2</sup> operate to draw in the rod M, which is then locked by the dog K<sup>3</sup> engaging behind the stop M'.

The pan is preferably provided with a di-

rect lock in addition to the indirect lock which is afforded by the dog K<sup>3</sup>, locking the pan-operating pull-rod M. For the purpose of such direct lock, the rock shaft W, journaled behind the pan, near the upper edge of the latter, and having the locking dogs W' W' adapted to engage the pan at the rear, has also the lever arm W<sup>2</sup> on the end of the rock shaft which protrudes into the chamber a<sup>3</sup>, said lever arm being connected to the lever K, as may be conveniently done at the same pivot which unites the lever K to the link J,—the opening for the pivot in the lever arm being slightly elongated to allow for the eccentricity of the movements of the two levers. When the lever K is operated to actuate the shaft e and drop the merchandise-carrying arms, the pan is unlocked by the rocking of the shaft and throwing back of the dogs W'; and when the pan, after being tilted to empty its contents, swings back to normal position, the spring K' or the action of gravity upon the levers K and W<sup>2</sup>, causes the dogs W' and W' to engage and again lock the pan.

To prevent the pan L from being tilted too far by an abrupt operation of the pull rod M, and from being carried back too far by its momentum when the rod is released, I provide stops l l' on the cabinet wall, with which the crank arm L', or any other projection with which the pan may be provided, will collide at the proper limits of the swinging movement of the pan. These stops may be sheathed in rubber to render the action silent, and in that case, a too violent pull of the rod M causes a rebound from the resiliency of the stop, and further insures the return of the pan to receiving position.

The lever K is normally locked in the position into which it is forced by gravity or the spring K', by means of the T-shaped lever fulcrumed at n on the partition A<sup>3</sup>, and having its vertical arm adapted to thus lock the lever K by standing directly above the lug or boss k<sup>10</sup> on the arm, when the spring arm of the lever N is horizontal. The arm being substantially counterbalanced as to its horizontal portion, the depending member tends to hang vertical and thus control the position and make the normal position of the lever N such that it will lock the lever K as described. The forward end of the horizontal arm N protrudes into the coin track, and the lever is thereby adapted to be operated by the coin, the weight of the latter resting upon or tending to depress the forward end and swing the vertical arm of the lever N rearward, off the lug k<sup>10</sup>, thereby unlocking the lever K. When this is done, the latter lever can be depressed by the operator, and the merchandise delivered into the pan which may be tipped over by pulling forward the rod M, and thereby caused to deliver the merchandise onto the shelf C, from which the operator can take it through the window A<sup>2</sup>.

I will now describe the devices by which the

coins are delivered onto the lever N and elsewhere, and improper or insufficient coins are prevented from operating the mechanism.

The coin chute is formed in the surface of a block P by routing it out therein, as will now be described. This block is secured upon the partition A<sup>3</sup> on the side within the chamber a<sup>3</sup>. The coin chute comprises the portion P', which extends at an angle of about forty-five degrees from the forward edge of the block for a few inches, the portion P<sup>2</sup> which extends at right angles to the portion P' for an inch or two, the portion P<sup>3</sup> which resumes the original direction rearward and downward, the portion P<sup>4</sup> which turns again at right angles forward and downward; the portion P<sup>5</sup> which again resumes the direction rearward and downward, and the two portions P<sup>6</sup> and P<sup>7</sup> which extend directly downward from the lower side of the portion P<sup>5</sup>, which is only long enough to cover the upper ends of both said vertical portions between which there is a short interval occupied by the partition wall P<sup>8</sup> left standing between the two routes P<sup>6</sup> and P<sup>7</sup>. From the portion P<sup>2</sup>, however, I extend the false route P<sup>9</sup>, parallel with the true route P<sup>3</sup>, and a little above it, separated by the partition p<sup>3</sup>, and above said false route which extends to the rear edge of the block, I locate the magnetic deflector Q, whose lower edge constitutes the upper wall of said false route. This magnetic deflector at its forward end is rounded and this round end is a portion of a rear wall of the route P<sup>2</sup>; the route P' extending at its rear end a little farther than the rounded end of the magnet and thereby slightly overhanging the latter, and its wall being curved so that it blends with the curve of the rounded end of the magnet, as shown in Fig. 2. The partition p<sup>3</sup> is cut away at the entrance to said routes P<sup>3</sup> and P<sup>9</sup>, and does not protrude beyond a vertical line dropped from the end of the magnetic deflector, so that a true coin which is unaffected by the magnet, will fall past the mouth of the false route without any possibility of entering that route. The purpose of this magnetic deflector is to divert spurious articles, substituted for coins, from the true coin route, and cause them to be delivered by the false route without reaching the mechanism which it is designed the true coin shall operate. In experience, it is found that about the only things that are liable to be substituted for true coins to any considerable extent in machines which are designed to be operated by coins of the lower denomination are iron washers, because these latter may be purchased in any sizes, corresponding perfectly to any coin, at a few cents per pound. I therefore consider this substitution the only dangerous one and the only one against which it is worth while to make special provision in my machine. Such a washer being inserted through the coin slot into the coin chute will roll down the route P', losing its momentum as it strikes against the rear rounded end of

that route P<sup>2</sup>, and immediately afterward passing over the end of the magnet will be held against the latter, and instead of continuing the route P<sup>2</sup>, will be diverted into the false route P<sup>9</sup>, and instead of rolling on the lower side of that route, will roll on the upper side of it, which is formed by the lower edge of the magnet, rolling down its inclined lower edge and hanging to it until it approaches the middle of the length of the magnet where the attraction of the latter is zero, when it will fall from the magnet and thence continue down the false route, rolling on the lower wall and passing out at the rear end of that with an impetus which will carry it clear of the block P, and cause it to fall into a receptacle provided for it at the bottom of the cabinet, or into the lower space of the cabinet at the lower end, so that it will not mingle with the coins which will be received by the true route. The proper coin, however, entering the coin chute will be unaffected by the magnet and will fall past the entrance into the route P<sup>9</sup>, and follow the routes P<sup>3</sup> and P<sup>4</sup>. At the end of the route P<sup>4</sup> and the entrance of the route P<sup>6</sup> there is a hole for a pin p<sup>6</sup>, which, if it is placed in the hole at that point, will cause the coin to turn into the route P<sup>5</sup>, and thence into the route P<sup>7</sup>; but if the pin is omitted, the coin will pass from the route P<sup>4</sup> into the route P<sup>6</sup>. This route P<sup>6</sup> is deep enough to contain a plurality of coins of some determined denomination standing one upon another edgewise, and pin-holes are provided at points in the height of this route corresponding to the diameter of one or more coins, so that one or more of the determined coins may pass into this route and fill it, so that the uppermost coin will be in the line of the lower margin of the route P<sup>5</sup>. If, for example, the route P<sup>6</sup> is deep enough to contain two one-cent pieces on edge, and the pin is placed in the lowest pin-hole, the first cent will fall to the bottom and rest on the pin and the next one will fall into the route and rest upon the first, its upper edge being in position such that the third cent cannot enter that route, but will pass over it through the route P<sup>5</sup> into the route P<sup>7</sup>. If the pin is placed in the second pin-hole, the first cent will lodge upon that pin, and extend to the top of the route, and the second cent, striking the first, will roll over it through the route P<sup>5</sup> and into the route P<sup>7</sup>, but when it is designed that one coin only shall be necessary to operate the device, the pin being placed in the top pin-hole will prevent any coin from entering route P<sup>6</sup>. The coins which enter route P<sup>6</sup> do not operate the locking mechanism. The coin which enters the route P<sup>7</sup> lodges on the forward end of the lever N, and by its weight depresses that end of the lever sufficiently to cause the depending arm to pass off the lug k<sup>10</sup> of the lever K, and unlock said lever. This position is shown in Fig. 5. S is a lever fulcrumed on the partition wall A<sup>3</sup>, and having one end extending up at an oblique angle toward the lower end of the route

P<sup>7</sup>, and standing normally at such position under the end of that route that the coin which descends therethrough will lodge not only upon the end of the lever N, but also upon the lever S; but the range of rocking movement of the lever N, limited, as it is, by the stop pin n', is not sufficient to open the path between the ends of the two levers wide enough for the proper coin to pass, and that coin will remain lodged between the levers as seen in Fig. 5 until the lever S is lifted to open the way for it to fall through into the coin receptacle. The lever S is thus lifted by a lug K<sup>4</sup> on the lever K. When the latter is depressed at the forward end to operate the merchandise delivering devices, this lug swings the lever S upward, and the coin is thereby released and falls. The rear wall of the route P<sup>6</sup> is formed by a gate R, which may be fulcrumed on the same stud which accommodates the lever S. It is provided with a spring R', tending to hold it in the position shown in all the figures except Fig. 11,—that is, in such position that the coins in the route P<sup>6</sup> cannot fall out past the stop pin. When the lever K is rocked and the lever S thrown up to release the last coin which has operated the mechanism, the lug S' on the lever S engages the gate R, and swings it rearward, thus removing the forward support of the coins in the route P<sup>6</sup>, and permitting them to roll off the pin and fall out from the bottom end of the route into the coin receptacle.

This machine being contrived especially for the sale of articles requiring for their purchase sums from one to five cents, the coins for which it is especially designed are copper cents, and five cent pieces, commonly called "nickels." In principle, however, it is equally suitable for the employment in the same manner of dimes and quarters or other coins.

When the device is set to be operated by one-cent pieces it may be adjusted for one or more in the manner already described,—to wit, by changing the position of the pin p<sup>6</sup>. The coin slot formed in the plate T, which is secured upon the face of the machine and leads into the coin chute, has a supplemental guard plate T' at its rear, which may be set to close up the slot to any desired extent to adapt it to exclude coins larger than those designed to operate the unlocking devices and for which the latter are adjusted.

When the machine is set for nickels, it is important to provide that the smaller coins which cannot be excluded from the slot shall not operate the mechanism. This is accomplished by adjusting the lever S when the device is set for one-cent pieces for example, the point of this lever stands distant from the point of the lever N when the latter is against the stop n' less than the diameter of the one-cent piece. This position is determined by the adjusting screw S<sup>2</sup>, which is set through the lug s<sup>2</sup> mounted on the wall A<sup>3</sup>, and forms a stop for the tail S<sup>3</sup> of the lever

S. When the machine is to be set for nickels, this screw is given a half turn, its lever handle s<sup>20</sup> being simply thrown over from one side where it rests against the wall to the other side, the thread being of such gage that this change effects just the desired degree of adjustment. When the opening between the points of the levers S and N is thus increased, the one cent piece falling through the route P<sup>7</sup> will tilt the lever N enough to let the coin through without tilting it sufficiently to carry the end of the stem N' of said lever off the stop lug k<sup>10</sup> of the lever K. The coin will therefore pass through the mechanism into the coin-box without unlocking the lever, and therefore without permitting the delivery of any merchandise. The nickel, however, will lodge between the levers in the same manner as the smaller coin lodged there when the machine was adjusted for smaller coins. When the device is set to be operated by a plurality of one cent coins as by three cents, it may sometimes happen that an intended purchaser, unable to obtain the change, may prefer to pay a nickel for the article, and if he is so minded he should be accorded that privilege. The nickel may properly operate the device when it is set for two or three cents, if it passes into the route P<sup>7</sup>, because it will lodge on the levers N and S, and operate the former lever properly, and when the latter lever is thrown up by the lever K, the gate-way will be thrown up wide enough to let the nickel pass as readily as the smaller coin; but since, in such an event, the upper end of the route P<sup>6</sup> is open, provision must be made for preventing the nickel from entering this route where it would fail to operate the mechanism and probably become stuck fast on account of its diameter being greater than provided for in that route. This is prevented by making the route P<sup>6</sup> too shallow to admit a coin so thick as a nickel, it being only sufficient to admit a coin of the thickness of a one-cent piece. The nickel will therefore obtain a track to roll upon at the edge of the upper end of the route P<sup>6</sup>, but this edge may be slightly beveled, so that the cent pieces will not roll on this margin.

This device is intended especially for the delivery of newspapers, and a newspaper is represented at W, hung by its fold on one of the arms. When it is used for other merchandise, such merchandise may be put up into convenient packages and suspended on the arms, and although these arms are placed as close together as consistent with the intention of hanging newspapers on them, nevertheless, sufficient space may be obtained for packages which are thicker than the distance between the vertical planes of the arms by taking advantage of the height, and of the depth from front to rear of the merchandise chamber, by hanging packages on consecutive arms at different distances rearward on the arms, or suspending them by strings of

different lengths, the lowest package being on the arm to be first dropped, so that it will not collide with other packages in falling.

When the same machine is to be used for  
5 selling several papers, the purchaser to select his paper, I employ the modification shown in Figs. 8 and 9. In this modification the shaft of the disks E is made in sections, one within another, the first section having the  
10 disks which operate the arms most remote from the wheel F and extending within all the others, the next section being tubular and outside of the first, the next having a larger interior diameter and outside the second, and  
15 the next being still larger and outside of the third, &c. The first or most remote section I have indicated by the letter E<sup>a</sup>, the second F<sup>b</sup>, the third E<sup>c</sup>, the fourth, E<sup>d</sup>. Each of these has its independent toothed wheel corresponding to the wheel F, and these wheels  
20 are indicated respectively by the letters F<sup>a</sup>, F<sup>b</sup> pertaining to the shaft E<sup>a</sup>, F<sup>c</sup> pertaining to the shaft E<sup>b</sup>, F<sup>d</sup> to the shaft E<sup>c</sup>, and F<sup>e</sup> to the shaft E<sup>d</sup>, said wheels being side by side in the  
25 chamber a<sup>3</sup>, their respective shafts being extended, the innermost the farthest, and each in succession a little less distance, as shown in Fig. 8. The forks G, dogs G', and levers J for each of these wheels are indicated by those  
30 letters respectively, since they are identical with the similarly indicated parts in the principal form, except that at the lower end. The links J in this modified form, are not directly attached to the lever K, but instead are in  
35 position to be actuated by that lever when its rear end is swung under them respectively; and in order that it may be thus adjusted, the fulcrum of the lever K in this form is provided upon a post K<sup>a</sup>, swiveled or vertically  
40 pivoted in a bracket K<sup>b</sup>, secured upon the partition walls A<sup>3</sup>. The slot through which the lever protrudes at the forward side of the case is horizontally elongated and notched at several points to provide for the  
45 vertical movement of the lever at those several points which correspond to the position of the rear end of the lever under the ends of the several links J respectively. Each notch will be marked with the name of the paper  
50 which may be obtained by setting the lever over and operating it in such notch, and the paper corresponding to this indication is hung upon the arms D, which are in range of the disks on the shaft operated by the link  
55 which is acted upon by the lever when it is in position to play in the notch so marked.

In Fig. 12 I have shown a form of the merchandise-carrying finger which is adapted to serve as a receptacle for some forms of merchandise, such as cigars or pencils, or anything that can be formed into slender parcels. Such merchandise being lodged in the channel d<sup>a</sup> which, in this form D<sup>a</sup>, constitutes the finger, will slide therefrom when the latter  
60 falls. This form of finger is equally adapted to the mode of use indicated in the other figures,—that is, the merchandise can be suspended over or from it, as well as over or from the simple rod.

I claim—

1. In a merchandise vending machine, in combination with a merchandise delivering mechanism and coin-controlled locking devices for the same; a merchandise-supporting arm pivoted at one end, and a device for lifting and holding the same outstretched substantially horizontally from its pivot and for releasing and allowing it to fall; and connections from the coin-controlled locking devices to such arm-releasing devices whereby the arm is released and allowed to fall before the merchandise delivering mechanism is operated: substantially as set forth. 70 75 80

2. In a merchandise vending machine, in combination with merchandise delivering mechanism and coin-controlled devices for locking and releasing the same; a plurality of arms pivoted at one end and adapted to be outstretched to support the merchandise and to fall from such position to drop their load; a plurality of rotating cams adapted each to actuate one of such arms to alternately lift and release the same; a shaft by which all of said cams are rotated; connections from such shaft to the coin-controlled locking devices, whereby the shaft is rotated when said devices are operated: substantially as set forth. 85 90 95

3. In a vending machine, in combination with the merchandise delivering mechanism and the coin-controlled devices for locking and releasing the same; a plurality of arms pivoted at one end and adapted to be outstretched to support the merchandise and to fall from such position to drop their load; locking and releasing disks for said arms respectively, secured upon a common shaft and adapted to re-lease their respective arms at different points in the rotation of such shaft, and connections from coin-controlled locking mechanism to such shaft, whereby the operation of the mechanism rotates the shaft with a step-by-step motion, one step for each locking and releasing action of said mechanism: substantially as set forth. 100 105 110

4. In a merchandise vending machine, in combination with a merchandise-receiving and delivering pan adapted to be rocked over a horizontal axis from receiving to delivering position; merchandise holding arms pivoted at one end and adapted both to be outstretched to carry the merchandise and to fall from such position to drop their load into the pan, and lifting and releasing devices for said arms respectively adapted alternately to lift and release them, in combination with operating mechanism for the merchandise receiving and delivering pan, whereby the same is inverted and righted; and mechanism for operating the arm-lifting and releasing devices; and a coin-controlled locking device for the latter mechanism; and a locking device for the pan-operating mechanism connected to and operated 115 120 125 130

by said latter mechanism: substantially as set forth.

5. In a merchandise vending machine, a merchandise receiving and delivering pan of segmental cylindrical form having its mouth at its truncated side, said pan being fulcrumed at its axis and adapted to rock thereabout; the case in which said pan is supported, and fixed guards  $A^6$  and  $A^7$ , embracing an arc about said cylinder as great as that spanned by its mouth; the merchandise chamber and the coin-controlled mechanism for delivering merchandise therefrom when the same is open toward said chamber: substantially as set forth.

6. In a merchandise vending machine, a merchandise chamber and a plurality of arms therein pivoted at one end and adapted to be upheld at, and to swing about their pivots from, merchandise supporting position, and provided with the tail-pieces  $D'$ ; the disks  $E$  having recesses  $E'$  and the teeth  $e'$  adapted, respectively, to permit the tails to enter them and to engage such tails to lift the arms as the disks revolve; the shaft by which said disks are revolved and the coin-controlled mechanism for revolving it: combined and operating substantially as set forth.

7. In a merchandise vending machine, in combination with the merchandise chamber and the arms  $D$  therein pivoted at their ends respectively; the shaft  $e$  and the disks  $E$  thereon having each the recess  $E'$  and tooth  $e'$ , the arms being provided respectively with tails adapted to enter the recesses and be engaged by the teeth of the disks respectively; a chamber adjacent to the merchandise chamber and coin-controlled mechanism therein; the shaft  $E$  protruding into such chamber; and connections from the coin-controlled mechanism to such shaft, whereby the same is operated: substantially as set forth.

8. In combination with the merchandise chamber and the chamber  $a^3$  adjacent thereto, the merchandise supporting arms in the merchandise chamber; the shaft  $e$  extending through the merchandise chamber and into the adjacent chamber; and the disks thereon adapted to operate the arms to alternately lift and release them as the disks revolve; a toothed wheel on said shaft in the adjacent chamber; a dog operating thereupon to rotate it step by step as the dog reciprocates; the coin-controlled mechanism in said chamber, and a link extending from the lever arm thereof to the dog to reciprocate it over the toothed wheel: substantially as set forth.

9. In combination with the merchandise supporting arms and the disks which operate them; the toothed wheel  $F$ , on the shaft of said disks; the fork which strides said wheel and is pivoted on said shaft; the dog pivoted on the end of the fork and having a tooth adapted to engage the teeth of the wheel; a link connected to the opposite end of the dog; and coin-controlled mechanism which oper-

ates said link; and the stop  $a$  fixed in the path of the link-connected end of the dog adapted to stop the same at the limit of the feeding stroke: substantially as set forth.

10. In a coin-controlled vending machine, a merchandise-supporting arm or finger pivoted at one end and adapted to be upheld in substantially horizontal position, and to fall from such position when released, such finger being hollowed and open at the free end, whereby merchandise lodged therein may be delivered by gravity out of the same when it falls from horizontal position.

11. In a coin-controlled vending machine, the coin chute comprising a true route in which the coin rolls edgewise in an inclined direction, said route having an angle at which the change of direction is not less than ninety degrees, whereby the coin is brought to a full stop at such angle, the chute beyond that point being of suitable width and inclination to permit the coin to resume its rolling movement under the action of gravity alone; a magnetized deflector fixed in the wall of the chute in position to be in contact with the coin when the latter comes to rest at the angle; and a false route opening through that wall of the true route in which the deflector is fixed and immediately beyond the deflector; whereby a paramagnetic substitute for a coin is diverted from a true route into the false route: substantially as set forth.

12. In a coin-controlled vending machine, the coin chute comprising a true route in which the coin rolls edgewise in an inclined direction, said route having an angle at which the coin is abruptly deflected, the chute leading from the angle being of suitable width and direction to permit the coin to depart from the angle under the action of gravity alone; a false route leading through that wall of the chute which the coin encounters at the angle and beyond the point of such encounter; a magnetized deflector fixed in position to be in contact with the coin at the instant at which it encounters the angle, and constituting the wall of the chute from that point to the entrance into the false route; whereby a rolling paramagnetic substitute for a coin has its movement checked while in contact with the magnet and is diverted thereby into the false route: substantially as set forth.

13. In a coin-controlled vending machine, a coin-chute comprising a true route in which the coin rolls edgewise in an inclined direction, said route having an angle at which the coin is abruptly deflected, the chute leading from that angle being of suitable width and direction to permit the coin to depart from the angle under the action of gravity alone; a magnetized deflector fixed in that wall of the chute which is in continuation of the upper wall of the incline immediately preceding the angle, and in position to be in contact with the coin at the instant at which the latter encounters the chute wall beyond the angle,

and a false route opening through the same wall immediately beyond the deflector: substantially as set forth.

14. In a coin-controlled vending machine, 5  
a coin chute comprising a true route in which the coin rolls edgewise in an inclined direction, such route having an angle at which the coin is abruptly deflected, the chute leading from the angle being of such width and direction as to permit the coin to depart from the angle under the action of gravity alone; a magnet fixed in and having one pole constituting part of that wall of the chute beyond the angle which is in continuation of the upper wall of the incline which immediately precedes the angle; a false route opening through the same wall beyond the magnet and having the side of the magnet for the upper wall of its initial portion: substantially as set forth. 10 15

15. In a coin-controlled vending machine, 20  
a coin chute comprising a true route in which the coin rolls edgewise in an inclined direction, said route having an angle at which the coin is abruptly deflected; the chute leading from the angle being of such width and direction as to permit the coin to depart from the angle under the action of gravity alone; a magnet fixed in that wall of the chute beyond the angle which is in continuation of the upper wall of the incline which precedes the angle, and having a rounded pole forming part of said wall of the chute immediately succeeding the position in which the coin encounters the chute wall at the angle; a false route leading through the same wall immediately beyond the rounded pole of the magnet and having the side edge of the magnet for its upper boundary: substantially as set forth. 25 30 35

16. In a coin-controlled vending machine, 40  
the coin chute comprising a true route in which the coin rolls edgewise in an inclined direction, said route having an angle at which the change of direction is not less than ninety degrees, whereby the coin is brought to a full stop at the angle, the chute at that point being of suitable width and direction to permit the coin to resume its movement under the action of gravity alone; a magnetized deflector fixed in that wall of the chute which is in continuation of the upper wall of the incline immediately preceding the angle and in position to be in contact with the coin when the latter comes to rest at the angle, and a false route opening through the same wall immediately beyond the deflector: substantially as set forth. 45 50 55

17. In a coin-controlled vending machine, 60  
the coin chute comprising a true route in which the coin rolls edgewise in an inclined direction, such route having an angle at which the change of direction is not less than ninety degrees, whereby the coin is brought to a full stop at the angle, the chute beyond that point being of suitable width and direction to permit the coin to resume its movement under the action of gravity alone; a magnet fixed in 65

and having one pole constituting part of that wall of the chute beyond the angle which is in continuation of the upper wall of the incline which immediately precedes the angle; 70  
a false route opening through the same wall immediately beyond the magnet and having the side of the magnet for the upper wall of its initial portion: substantially as set forth.

18. In a coin-controlled vending machine, 75  
a coin chute comprising a true route in which the coin rolls edgewise in an inclined direction, said route having an angle at which the change of direction is not less than ninety degrees whereby the rolling coin is brought to a full stop at the angle, said chute being continued beyond such angle of suitable width and direction to permit the coin to resume its movement from the angle under the action of gravity alone; a magnet fixed in that wall 80 85  
of the chute beyond the angle which is in continuation of the upper wall of the incline which precedes the angle, and having a rounded pole forming part of said wall of the chute immediately succeeding the position at which the coin comes to rest; a false route leading through the same wall immediately beyond the rounded pole of the magnet, and having the side edge of the magnet for its upper boundary: substantially as set forth. 90 95

19. In a coin-controlled vending machine, the coin chute having two terminals; coin-operated devices exposed in the path of the coin in one of such terminals, the other terminal being provided with a movable coin stop, whose adjustment determines the capacity of such terminal for determined coins, said terminal leading from the main chute before the other terminal: substantially as set forth. 100

20. In a coin-controlled vending machine, 105  
the coin chute having two terminals, the first terminal being adapted to contain one or more determined coins, and leading from the main chute before the second terminal; the coin-operated releasing devices located at the mouth of the second terminal; and independently operated mechanism released by the lodgment of the coin on said devices adapted to be operated at will to open both terminals to permit the coins to escape therefrom: substantially as and for the purpose set forth. 110 115

21. In a coin-controlled vending machine, the coin chute having two terminals, the first terminal being thinner or shallower than the main chute and the second terminal, and leading from the main chute before the second terminal; a coin-operated releasing device exposed in the path of the coin in the second terminal, and mechanism released by the lodgment of the coin, and adapted, when operated, to open both terminals to permit the escape of the coins therefrom: substantially as and for the purpose set forth. 120 125

22. In a coin controlled vending machine, the coin chute having two terminals, the first terminal being provided with a movable stop to adapt it to contain a determined number of 130

the determined coins; a coin-operated releasing device exposed in the path of the coin in the second terminal, and mechanism released thereby adapted to open both terminals; the stop in the first terminal being a movable pin adapted to be inserted at determined points at the side of the coin path in said terminal which is proximate to the other terminal, the opposite wall of said terminal being a spring-closed gate, which is opened by the coin-released mechanism: substantially as set forth.

23. In a coin-controlled vending machine, the coin chute; the coin-operated locking and releasing lever N having a finger protruding into the path of the coin toward the end of the chute and adapted to receive the coin on said finger and be operated thereby to release the mechanism; the lever S protruding also into the path of the coin toward the end of the chute, and constituting a further support for the coin and adapted to be rocked out of the path of the coin to permit it to fall off the end of the lever N, the position of the lever S being adjustable to vary the distance between its point and that of the lever N when the latter is depressed by the coin: substantially as and for the purpose set forth.

24. In a coin-controlled vending machine, a merchandise chamber and a plurality of arms D, pivoted therein and adapted to hang pendent from their pivots respectively, a plurality of shafts one within the other, each protruding beyond the end of the next exterior shaft within the chamber and all protruding therefrom at one end, the innermost shaft protruding farthest and each successive exterior shaft a less distance; and toothed wheels F on the outer ends of said shafts respectively; disks E on the exposed portion of the shafts respectively within the merchandise chamber, said disks being adapted respectively to engage and operate the arms D; the dogs and levers pertaining to the wheels F, respectively, and the links hanging therefrom adapted

ed to operate the same; the lever K and the coin-operated mechanism for operating and releasing it, said lever having its fulcrum rotatable about a vertical axis to bring the end of the lever at will in position to operate any one of the links: substantially as and for the purpose set forth.

25. In a coin-controlled vending machine, a merchandise chamber and a plurality of arms D, pivoted therein and adapted to hang pendent from their pivots respectively, a plurality of shafts one within the other, each protruding beyond the end of the next exterior shaft within the chamber and all protruding therefrom at one end, the innermost shaft protruding farthest and each successive exterior shaft a less distance; and toothed wheels F on the outer ends of said shafts respectively; disks E on the exposed portion of the shafts respectively within the merchandise chamber, said disks being adapted respectively to engage and operate the arms D; the dogs and levers pertaining to the wheels F, respectively, and the links hanging therefrom adapted to operate the same; the lever K and the coin-operated mechanism for operating and releasing it, said lever having its fulcrum rotatable about a vertical axis to bring the end of the lever at will in position to operate any one of the links; the wall of the case having the slot through which the lever K protrudes, horizontally extended to permit the horizontal oscillation of the lever, and notched at points corresponding to the engagement of the lever with the links respectively: substantially as set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, this 8th day of June, 1894.

MARION N. TOMBLIN.

Witnesses:

CHAS. S. BURTON,  
JEAN ELLIOTT.