

No. 744,824.

PATENTED NOV. 24, 1903.

M. S. TYLER.
COIN CONTROLLED VENDING MACHINE.

APPLICATION FILED APR. 27, 1903.

NO MODEL.

4 SHEETS—SHEET 1.

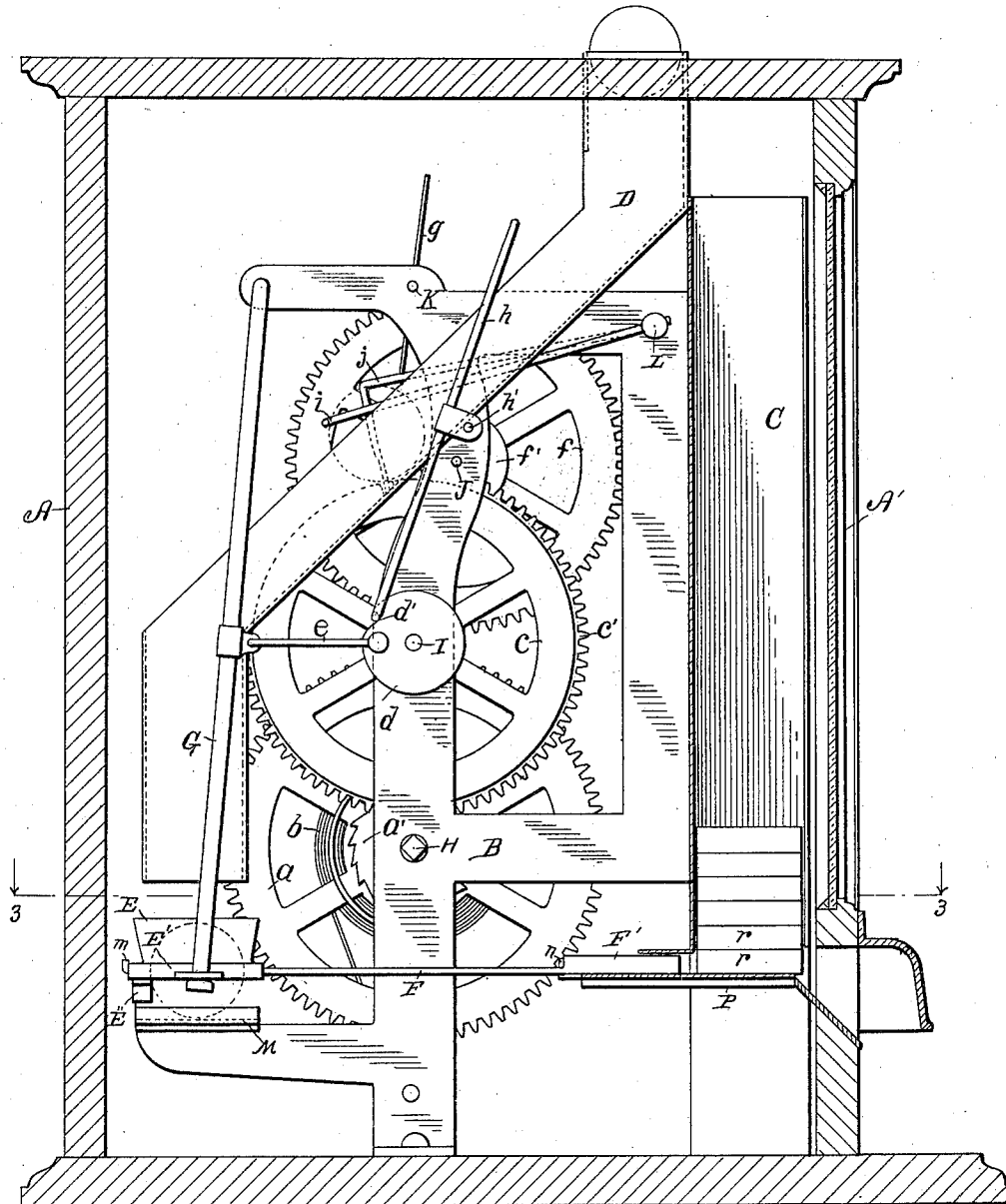


Fig. 1

Witnesses:

Ethel A. Teller
Otis A. Earl

Inventor,

By *Morris S. Pyler*
Fred L. Chappell
Att'y.

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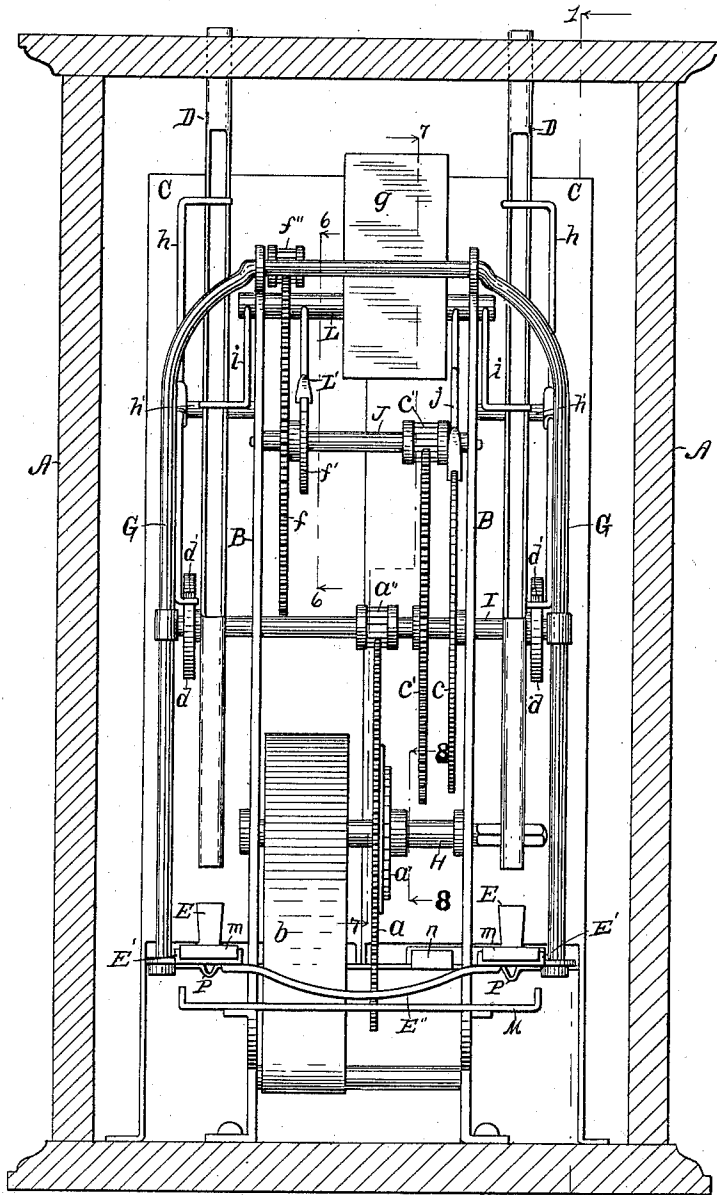


Fig. 2

Witnesses:

Ethel A. Teller
Otis A. Earl

Inventor,

By *Morris S. Pyler*
Fred L. Chappell
Att'y.

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4 SHEETS—SHEET 3.

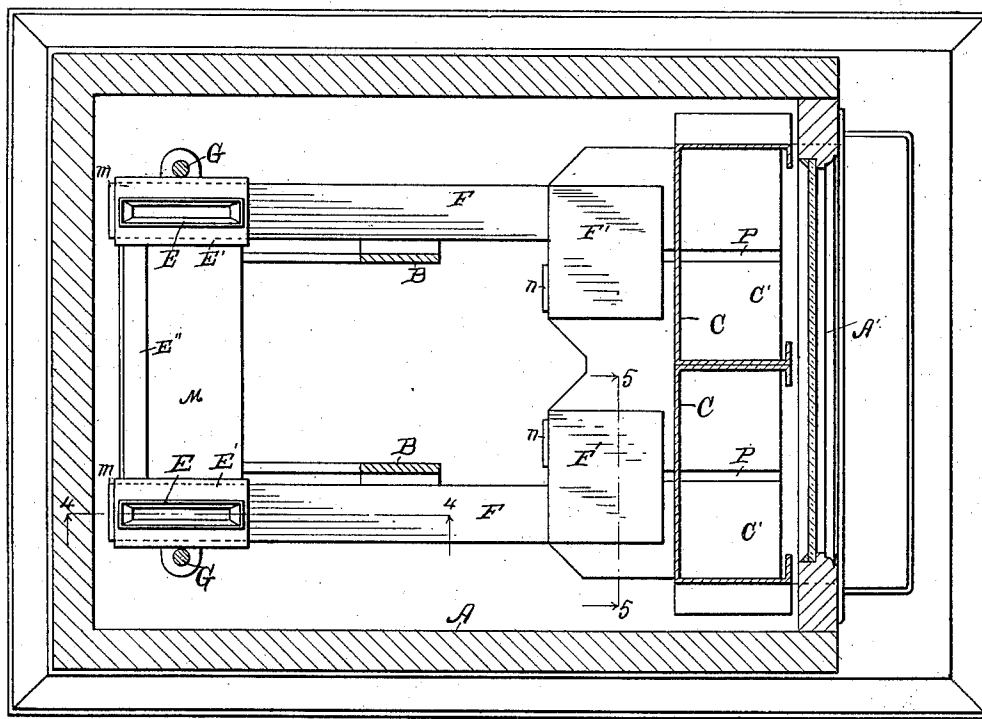


Fig 3

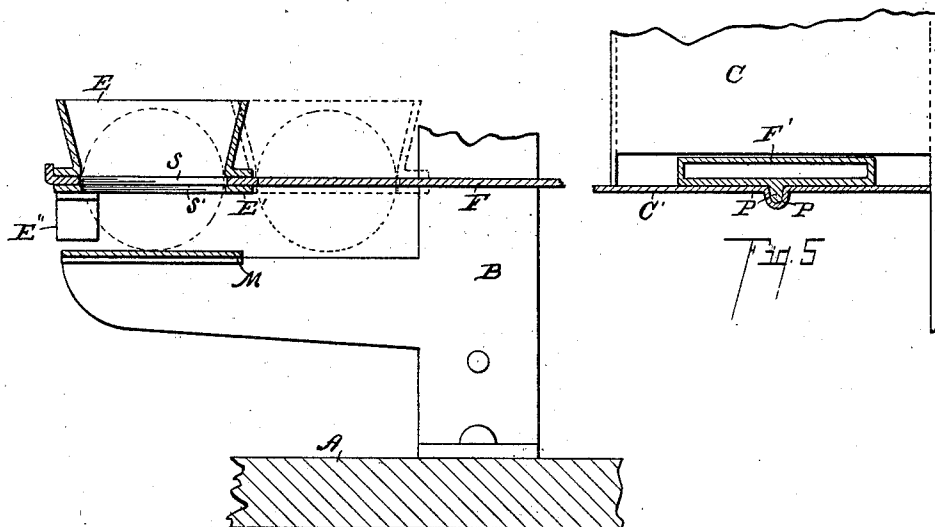


Fig 4

Witnesses:

Ethel A. Teller
Otis A. Earl

Inventor,

Morris S. Tyler
By *Fred L. Chappell*
Att'y.

No. 744,824.

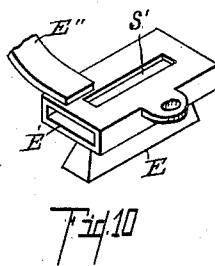
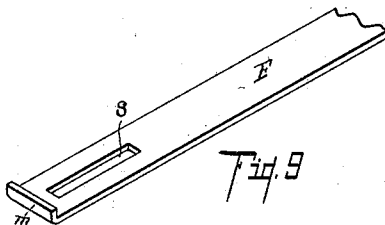
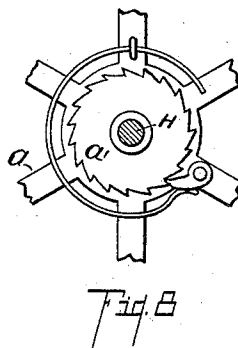
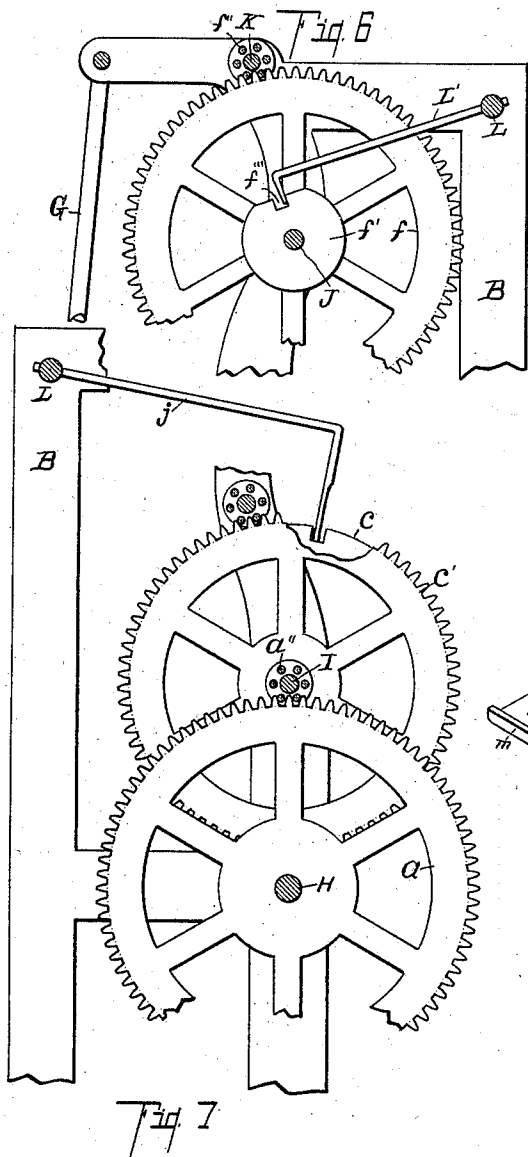
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APPLICATION FILED APR. 27, 1903.

NO MODEL.

4 SHEETS—SHEET 4.



Witnesses:

Estel A. Teller
Otis A. Earl

Inventor,

Morris S. Tyler
By *Fred L. Chappell*
Att'y.

UNITED STATES PATENT OFFICE.

MORRIS S. TYLER, OF LANSING, MICHIGAN.

COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 744,824, dated November 24, 1903.

Application filed April 27, 1903. Serial No. 154,485. (No model.)

To all whom it may concern:

Be it known that I, MORRIS S. TYLER, a citizen of the United States, residing at the city of Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification.

This invention relates to improvements in coin-controlled vending-machines.

The objects of the invention are, first, to provide an improved coin-controlled vending-machine by which the articles vended are automatically delivered upon the introduction of a coin; second, to provide an improved coin-controlled automatic vending-machine by which two or more articles or classes of articles may be vended and delivered simultaneously or successively, according to the introduction of the coins; third, to provide an improved coin-controlled vending-machine which is simple in its construction and operation, economical to produce, and durable in use.

Further objects will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a detail side elevation view taken on a line corresponding to line 1 1 of Fig. 2. Fig. 2 is a detail rear elevation view taken on a line corresponding to line 2 2 of Fig. 1. Fig. 3 is a detail cross-sectional view taken on line 3 3 of Fig. 1. Fig. 4 is a detail sectional view taken on line 4 4 of Fig. 3, showing the details of the coin-connecting mechanism. Fig. 5 is a detail sectional view taken on line 5 5 of Fig. 3, showing the details of construction of the plunger mechanism. Fig. 6 is a detail sectional view taken on line 6 6 of Fig. 2, illustrating the details of the operating mechanism. Fig. 7 is a detail sectional view taken on the broken line 7 7 of Fig. 2, showing the details of the operating mechanism. Fig. 8 is a detail sectional view taken on line 8 8 of Fig. 2, showing the details of

construction of the operating-gear. Fig. 9 is a detail plan view of one of the plunger-bars F. Fig. 10 is an inverted detail plan view of the coin connecting or engaging device for the plunger F.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, the casing A is of any desired construction and is preferably provided with a glass front A', which is preferably a door to afford access to the merchandise-magazines C and to the operating mechanism. Through the glass the purchaser may inspect the goods to be vended, which are represented in the drawings at r. Supported within the casing by a suitable frame B is a clockwork mechanism which is arranged to be released by the introduction of a coin, and the coin serves as the connecting means for the operating mechanism to the plunger F, which passes across the bottom of the magazine and pushes a package from the magazine.

The motor mechanism consists of a spring wheel b, which is secured to the shaft H. The gear-wheel a is provided with a suitable ratchet-pawl which is adapted to engage the ratchet-wheel a', carried by the shaft, so that the gear a is driven in one direction. The gear a engages a pinion a'' on the shaft I, so that the shaft I is driven thereby. On the outer ends of the shaft I are wheels d, to which the yoke G, which is pivotally secured to the frame B at its upper end, is secured by the links or pitmen e. On the lower side of the yoke G are coin-holders E, having base portions E', adapted to slidably engage the plungers F. The coin-holders E are connected together by a bar E'', so that they are operated together and held steadily in position. The plunger F is slotted at s to receive the coin, and the coin-holder E is slotted at s', these slots being adapted to register when the parts are in their initial position. These slots are about the same length as the diameter of the coin, so that when a coin is in position therein they are connected thereby, and upon the operation of the yoke the plungers are operated. When not connected thereto by coins, the

coin-holders are free to reciprocate on the plunger. The coin-chute D is adapted to deliver the coin into the holders E. The coin-chute D is arranged across the motor mechanism and open at the top, so that a coin in passing down the same will engage the arms *i*, which are bent to extend across the same, and pass under and lift the same. The arms *i* are carried by a rock-shaft L. On the rock-shaft L is a projecting arm or dog *j*, adapted to engage a notch in the periphery of the wheel *c*, secured to the shaft I, so that when the coin passes under the arm or lever *i* the dog *j* is lifted from the notch in the wheel *c* and the motor mechanism released. The coin passing on down into the holder locks the plunger thereto, and the plunger is operated to deliver a package of merchandise. As the plunger is moved forward in its actuation the coin is carried off from the support M, upon which it rests, and allowed to drop as the forward stroke of the plunger is completed. The rear end of the plunger F is turned upwardly at *m* to engage the holder, so that the plunger is returned thereby. On the forward end of the plunger F is a head F', which is preferably of the same thickness as the package of merchandise. (See Fig. 1.) Stops *n* on the rear of the bottom C' of the merchandise-magazine limit the backward stroke of the plungers.

To prevent clogging by the introduction of more than one coin or of a coin while the machine is in operation, I provide a coin-stop *h*, which is pivotally supported at *h'* and has its end bent inward to extend across the top of the coin-chute. The other end of the stop *h* rests upon the periphery of the wheel *d*, which is provided with a notch *d'*, into which it drops when the mechanism is in its initial position. When the mechanism is in its normal or initial position, the stop *h* is supported above the coin-tube, so that a coin passes under the same without contacting therewith. When, however, the mechanism is released by the downward passage of a coin, the revolution of the wheel *d* throws the upper end of the stop *h* downwardly as its lower end is forced from the notch *d'*, and it is retained in this position until the mechanism returns and is locked in its initial position, when the stop drops into the notch and the coin-tube is again opened. If a coin has been introduced while the machine is in actuation, it is held by the stop until the actuation is completed, when it is released, and it in turn releases the motor, as described.

I provide a fan *g* to serve as a speed-regulator. This is connected to the motor mechanism by a suitable gear-train consisting of a gear *c'* on the shaft I, which is adapted to engage a suitable pinion *c''* on the shaft J. The shaft J in turn carries a gear *f*, and this engages the pinion *f''* on the shaft K of the fan. I desire to remark that in practice the coin connects the plunger before the mechanism has time to move the same. The fan

g may assist somewhat in this retarding movement; but its principal object is to serve the purpose of a speed-regulator.

On the rock-shaft L is a second locking-dog L', which is adapted to engage a suitable notch in the periphery of the wheel *f* on the shaft J. This relieves some of the strain on the dog *j*.

It is apparent that as the stops *h* are operated simultaneously both coin-chutes are locked upon the introduction of a coin into one of them, or if the coins are introduced simultaneously both of the plungers F will be operated.

I have described but one of the delivery devices, as they are duplicates. I have illustrated my improved vending-machine as having two delivery mechanisms, although it is apparent that any number might be used. Two, however, are found sufficient for ordinary means.

I have illustrated and described my improved vending-machine in the form preferred by me on account of its simplicity and economy in manufacture and durability and convenience in use. I am aware, however, that it is capable of very great variations in structural details without departing from my invention.

While I have described the use of a coin as the actuating means, it is evident that checks or the like would accomplish the same purpose.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a vending-machine, the combination of a casing; merchandise-magazines C therein; a motor; coin-chutes open along their upper sides; coin-holders E adapted to receive coins from said coin-chutes, having slots *s'* therethrough; a plunger F upon which said holders are adapted to reciprocate, having slots *s* adapted to register with said slots *s'* when said coin-holders are in their initial position, whereby said holders and plungers are connected by the introduction of a coin; a pivoted yoke G to which said holders E are secured; a driven shaft I; wheels *d* with notches *d'* in their peripheries on said shaft; links *e* connecting said wheels *d* to said yoke; a rock-shaft L; arms *i* on said rock-shaft, adapted to project across said coin-chutes to be engaged by coins passing therethrough; a wheel *c* on said shaft I having a peripheral notch therein; a locking-dog on said rock-shaft L adapted to engage said notch; pivoted coin-stops *h* adapted to project across said coin-chutes and to engage the periphery of said wheels *d* whereby they are controlled; a speed-regulating fan *g*; and a suitable gear-train connecting to said motor, all coacting for the purpose specified.

2. In a vending-machine, the combination of a casing; merchandise-magazines C therein; a motor; coin-chutes open along their upper sides; coin-holders E adapted to receive

coins from said coin-chutes, having slots *s'* therethrough; a plunger *F* upon which said holders are adapted to reciprocate, having slots *s* adapted to register with said slots *s'* when said coin-holders are in their initial position, whereby said holders and plungers are connected by the introduction of a coin; a pivoted yoke *G* to which said holders *E* are secured; a driven shaft *I*; wheels *d* on said shaft; links *e* connecting said wheels *d* to said yoke; a rock-shaft *L*; arms *i* on said rock-shaft, adapted to project across said coin-chutes to be engaged by coins passing therethrough; a wheel *c* on said shaft *I*, having a peripheral notch therein; a locking-dog on said rock-shaft *L* adapted to engage said notch; a speed-regulating fan *g*; and a suitable gear-train connecting to said motor, all coacting for the purpose specified.

3. In a vending-machine, the combination of a casing; merchandise-magazines *C* therein; a motor; coin-chutes open along their upper sides; coin-holders *E* adapted to receive coins from said coin-chutes, having slots *s'* therethrough; a plunger *F* upon which said holders are adapted to reciprocate, having slots *s* adapted to register with said slots *s'* when said coin-holders are in their initial position, whereby said holders and plungers are connected by the introduction of a coin; a pivoted yoke *G* to which said holders *E* are secured; a driven shaft *I*; wheels *d* with notches *d'* in their peripheries on said shaft; links *e* connecting said wheels *d* to said yoke; a rock-shaft *L*; arms *i* on said rock-shaft, adapted to project across said coin-chutes to be engaged by coins passing therethrough; a wheel *c* on said shaft *I* having a peripheral notch therein; a locking-dog on said rock-shaft *L* adapted to engage said notch; pivoted coin-stops *h* adapted to project across said coin-chutes and to engage the periphery of said wheels *d* whereby they are controlled, all coacting for the purpose specified.

4. In a vending-machine, the combination of a casing; merchandise-magazines *C* therein; a motor; coin-chutes open along their upper sides; coin-holders *E* adapted to receive coins from said coin-chutes, having slots *s'* therethrough; a plunger *F* upon which said holders are adapted to reciprocate, having slots *s* adapted to register with said slots *s'* when said coin-holders are in their initial position, whereby said holders and plungers are connected by the introduction of a coin; a pivoted yoke *G* to which said holders *E* are secured; a driven shaft *I*; wheels *d* on said shaft; links *e* connecting said wheels *d* to said yoke; a rock-shaft *L*; arms *i* on said rock-shaft, adapted to project across said coin-chutes to be engaged by coins passing therethrough; a wheel *c* on said shaft *I* having a peripheral notch therein; a locking-dog on said rock-shaft *L* adapted to engage said notch; all coacting for the purpose specified.

5. In a vending-machine, the combination of a casing; merchandise-magazines *C* there-

in; a motor; coin-chutes open along their upper sides; coin-holders *E* adapted to receive coins from said coin-chutes, having slots *s'* therethrough; a plunger *F* upon which said holders are adapted to reciprocate, having slots *s* adapted to register with said slots *s'* when said coin-holders are in their initial position, whereby said holders and plungers are connected by the introduction of a coin; a pivoted yoke *G* to which said holders *E* are secured; a driven shaft *I*; wheels *d* on said shaft; links *e* connecting said wheels *d* to said yoke; a rock-shaft *L*; locking-dogs for said motor adapted to be actuated by the passage of a coin through said coin-chutes; and coin-stops adapted to be actuated by said motor, all coacting for the purpose specified.

6. In a vending-machine, the combination of a casing; merchandise-magazines *C* therein; a motor; coin-chutes open along their upper sides; coin-holders *E* adapted to receive coins from said coin-chutes, having slots *s'* therethrough; a plunger *F* upon which said holders are adapted to reciprocate, having slots *s* adapted to register with said slots *s'* when said coin-holders are in their initial position, whereby said holders and plungers are connected by the introduction of a coin; a pivoted yoke *G* to which said holders *E* are secured; a driven shaft *I*; wheels *d* on said shaft; links *e* connecting said wheels *d* to said yoke; rock-shaft *L*; and locking-dogs for said motor, adapted to be actuated by the passage of a coin through said coin-chutes, as specified.

7. In a vending-machine, the combination of a casing; merchandise-magazines therein; a motor; coin-chutes open along their upper sides; coin-holders adapted to receive coins from said coin-chutes, having slots therethrough; a plunger upon which said holders are adapted to reciprocate, having slots adapted to register with the said slots in said coin-holders when the coin-holders are in their initial position, whereby said holders and plungers are connected by the introduction of a coin; a pivoted support for said coin-holders; a shaft; wheels having notched peripheries on the said shaft; a link connecting said wheels to said holder-supports; releasing-dogs for said motor, projecting across said coin-chutes to be engaged by the coins passing therethrough; and pivoted coin-stops adapted to engage the periphery of said wheels and be controlled thereby, as specified.

8. In a vending-machine, the combination of a casing; merchandise-magazines therein; a motor; coin-chutes open along their upper sides; coin-holders adapted to receive coins from the said coin-chutes, having slots therethrough; a plunger upon which said holders are adapted to reciprocate having slots adapted to register with the said slots in said coin-holders when the coin-holders are in their initial position, whereby said holders and plunger are connected by the introduction of

a coin; a pivoted support for said coin-holder; a shaft; wheels on the said shaft; a link connecting said wheels to said holder-supports; and releasing-dogs for said motor, projecting
5 across said coin-chutes to be engaged by the coins passing therethrough, as specified.

9. In a vending-machine, the combination of a suitable frame; a motor; a coin-chute; a coin-holder adapted to receive the coins there-
10 from; a plunger adapted to be connected to said holder by the introduction of a coin; a pivoted arm connected to said holder; con-
nections from said motor to said arm whereby the same is reciprocated; a locking-dog for
15 said motor adapted to be released by the pas-
sage of a coin in the said chute; and a coin-
stop controlled by the said motor, as specified.

10. In a vending-machine, the combination of a suitable frame; a motor; a coin-chute; a
20 coin-holder adapted to receive the coins there-
from; a plunger adapted to be connected to said holder by the introduction of a coin; a pivoted arm connected to said holder; con-
nections from said motor to said arm whereby
25 the same is reciprocated; and a locking-dog
for said motor, adapted to be released by the
passage of a coin, as specified.

11. In a vending-machine, the combination of a casing; a motor; a coin-chute; a coin-
holder adapted to receive the coins therefrom; 30
a plunger adapted to be connected to said coin-
holder by the introduction of a coin; connec-
tions from said motor to said coin-holder
whereby it is reciprocated; means for releas-
ing said motor adapted to be actuated by the 35
passage of a coin through said coin-chute; and
a coin-stop actuated by said motor, for the
purpose specified.

12. In a vending-machine, the combination of a casing; a motor; a coin-chute; a coin- 40
holder adapted to receive the coins therefrom;
a plunger adapted to be connected to said
coin-holder by the introduction of a coin; con-
nections from said motor to said coin-holder,
whereby the same is reciprocated; and means 45
for releasing said motor adapted to be actuated
by the passage of a coin through said coin-
chute, for the purpose specified.

In witness whereof I have hereunto set my
hand and seal in the presence of two witnesses. 50

MORRIS S. TYLER. [L. S.]

Witnesses:

P. H. DOLAN,
JOSEPHINE CLARK.