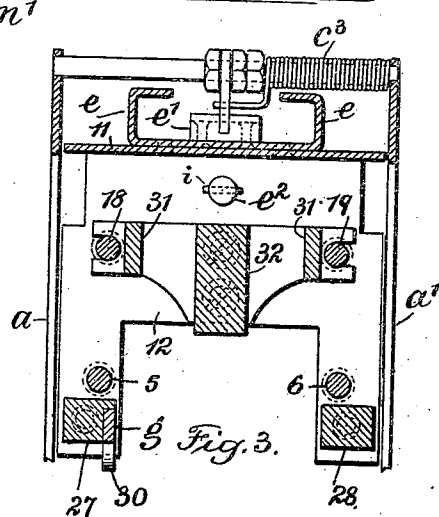
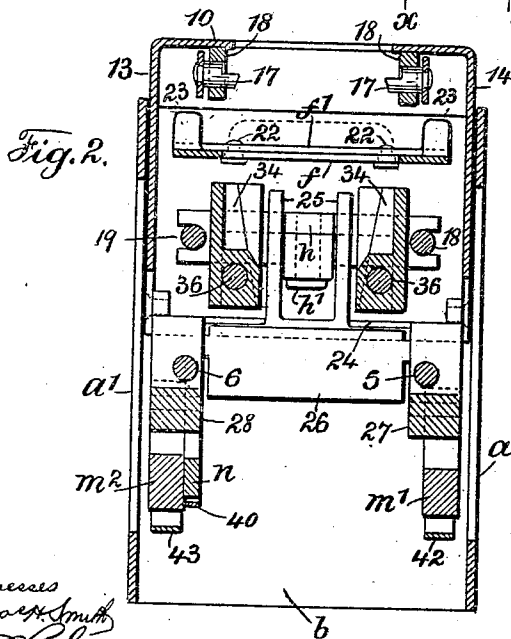
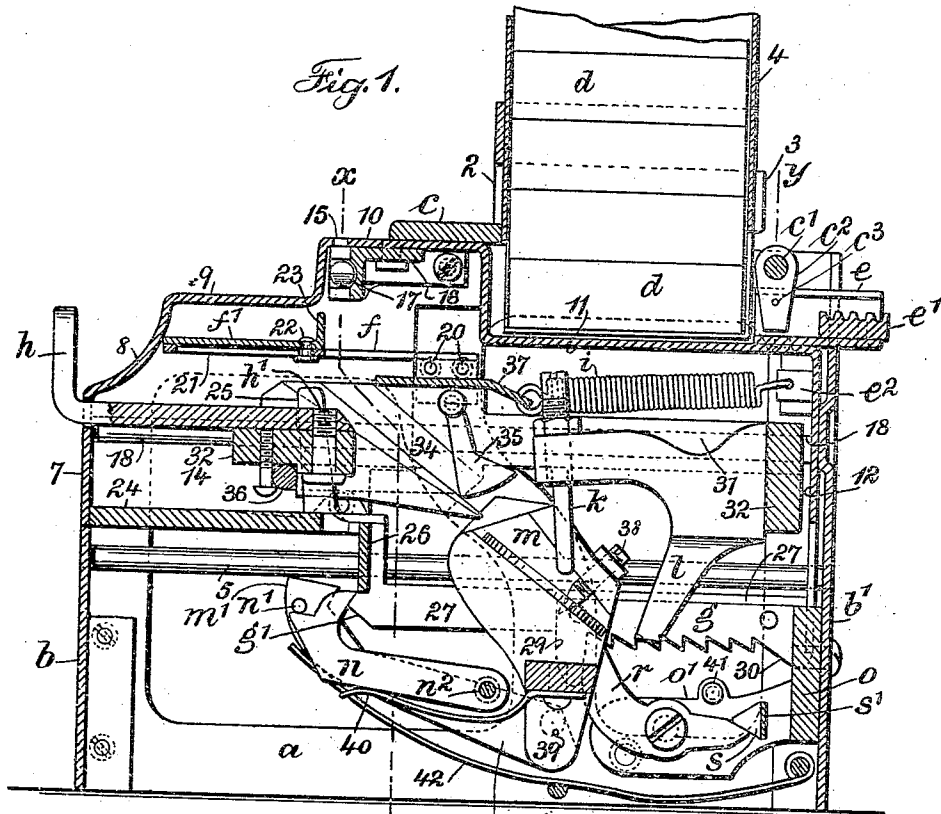


E. H. COOK.
 COIN CONTROLLED VENDING MACHINE.
 APPLICATION FILED FEB. 20, 1909.

945,699.

Patented Jan. 4, 1910.

3 SHEETS—SHEET 1.



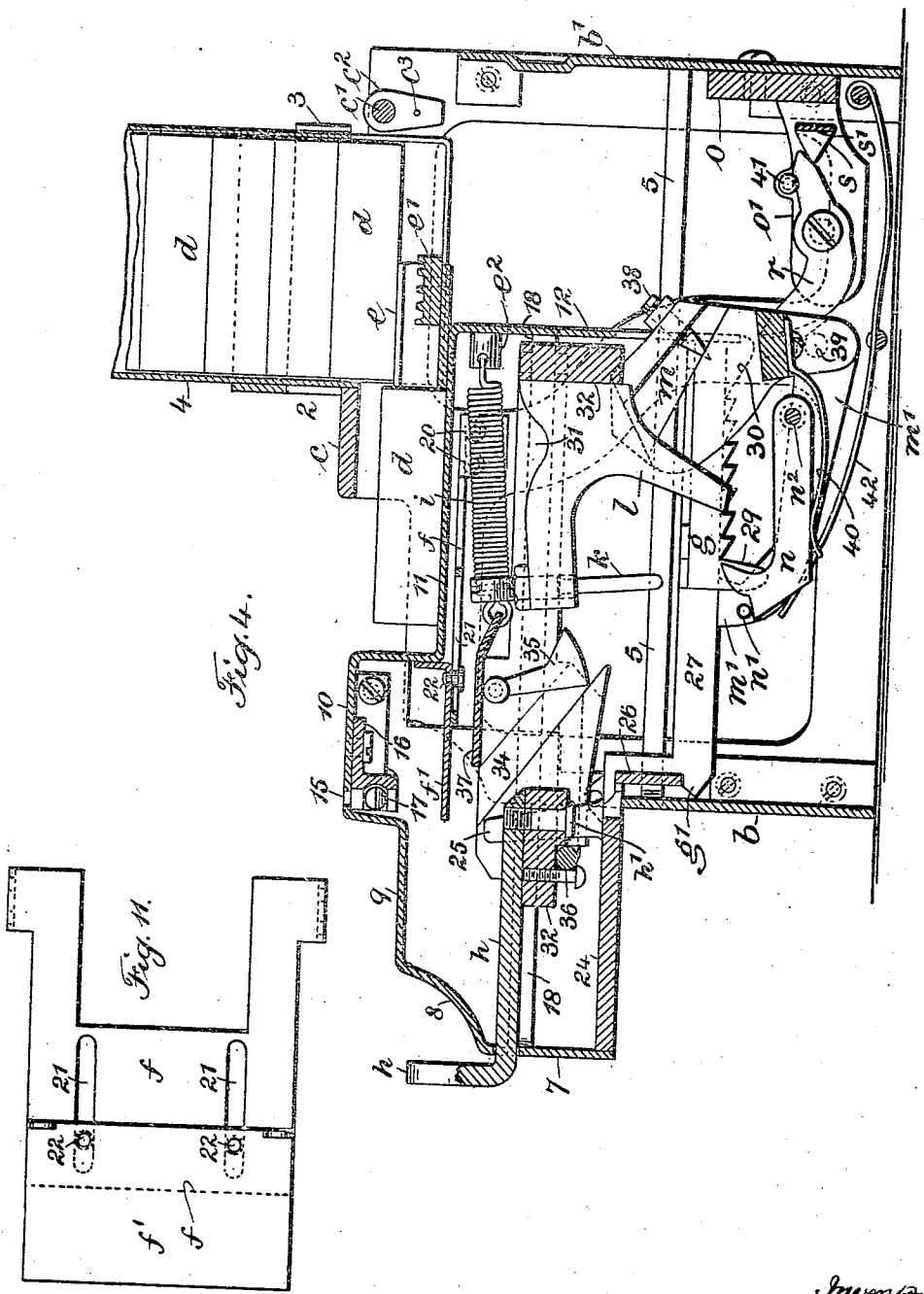
Witnesses
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Inventor
 Edgar H. Cook
 by Harold Serrell
 his atty.

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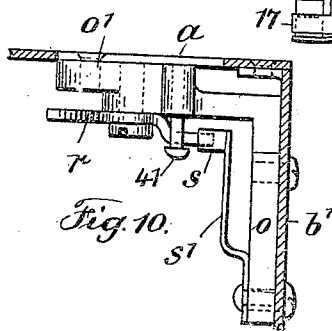
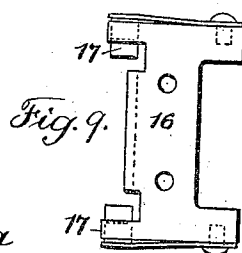
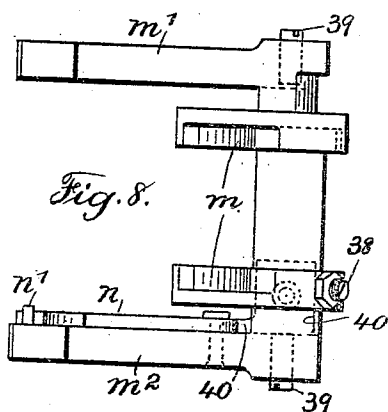
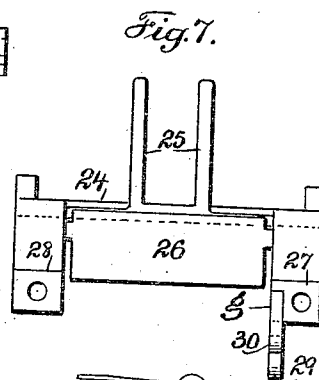
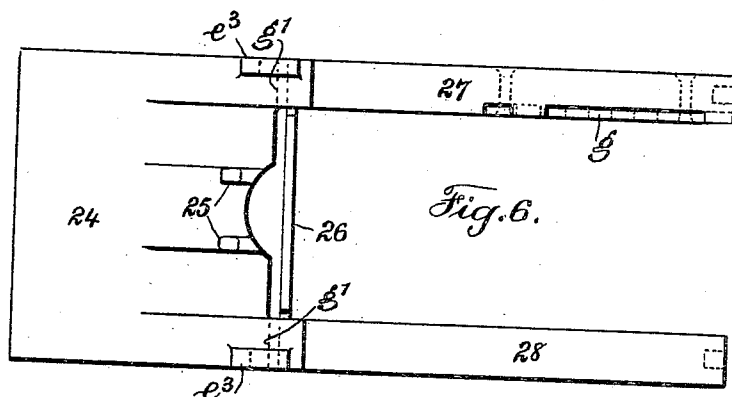
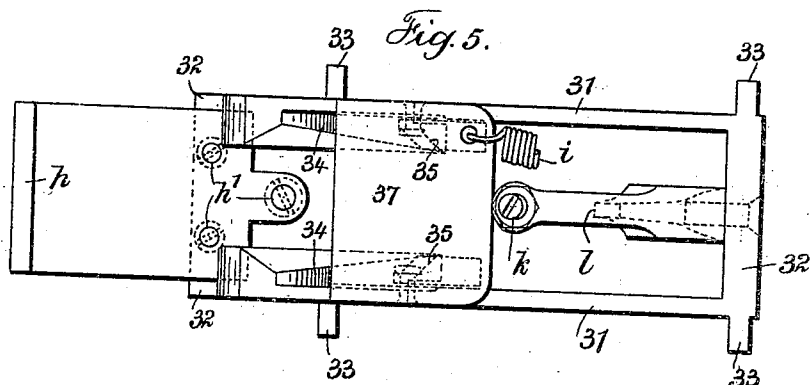


Witness
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945,699.

3 SHEETS—SHEET 3.



46 losses

Chas. H. Smith
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Edgar H. Cook
by Harold Terrell

his atty.

UNITED STATES PATENT OFFICE.

EDGAR H. COOK, OF GREAT NECK, NEW YORK.

COIN-CONTROLLED VENDING-MACHINE.

945,699.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed February 20, 1909. Serial No. 479,181.

To all whom it may concern:

Be it known that I, EDGAR H. COOK, a citizen of the United States, residing at Great Neck, in the county of Nassau and State of New York, have invented an Improvement in Coin-Controlled Vending-Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in vending machines for merchandise such as confections of various kinds obtainable after the insertion of a coin of predetermined character and denomination by manually actuating a particular part of the machine.

In the device of my invention, I employ a reciprocal pull carriage manually actuated and spring returned and having formed therewith a coin carrier, tilting finger and coin pushing finger. This carrier is independent of the other mechanical parts and is only operatively connected therewith upon the introduction and interposition of a coin of predetermined and suitable denomination. I employ a merchandise carriage connected by a spring with the pull carriage which is released by the intervention of a coin and consequent operation of the coin carrier.

The coin carrier is provided with devices for engaging and holding the reciprocating merchandise carriage against fool movements and in fact against any movement except that when a coin of proper predetermined denomination is inserted.

I employ devices for compelling complete movement of the merchandise carriage by preventing any return movement until after the completion of the full movement thereof.

I provide devices which must be pushed aside on inserting the coin and which act to prevent the pulling out of the coin or any inserted device, and a shield plate covering the coin slot against the insertion of a slug or metal disk, or washer, while the merchandise carriage is fully extended, all of which is hereinafter more fully described.

In the drawings Figure 1 is a longitudinal section and partial elevation representing the device of my improvement in a state of rest. Fig. 2 is a vertical cross section and partial elevation on the dotted line x, x , of Fig. 1, in a direction toward the left hand of Fig. 1. Fig. 3 is a vertical cross section on the dotted line y , Fig. 1, looking toward

the left hand; the lower portion of the frame in Fig. 3 being broken away. Fig. 4 is a vertical section and partial elevation through the device of my improvement similar to Fig. 1, but with the parts extended or drawn out to the full limit of their movement and the pull carriage released. Fig. 5 is a plan view of the reciprocating pull carriage. Fig. 6 is a view of the bottom plate or frame to the merchandise carriage. Fig. 7 is an end-wise view toward the left hand of Fig. 6. Fig. 8 is a plan of the coin carrier. Fig. 9 is a plan of the devices pushed aside by and upon the insertion of a coin. Fig. 10 is a plan view of part of the mechanism preventing any return movement of the reciprocating merchandise carriage until after the completion of the full movement thereof, and Fig. 11 is a plan of the shield plate and its support plate.

The frame for the vending machine proper comprises essentially the side plates a a^1 preferably of open work metal, the front plate b and the back plate b^1 . A top plate c extends across between these side plates and is secured thereto, and the side plates are also connected by and with a frame rod c^1 upon which is mounted a pawl c^2 and there is a spring c^3 with one end connected with the frame, the spring surrounding the rod c^1 and the other end of the spring secured to the pawl c^2 ; (see especially Fig. 3).

The side plates of the frame are provided with lugs 2 3 adapted to receive the merchandise receptacle 4 and extending through the frame between the front and back plates are the guide rods 5 6 upon which the bottom frame of the merchandise carriage is guided in its reciprocating movement. The merchandise carriage comprises essentially a bent top plate of connecting parts 7 8 9 10 11 and 12; the parts 7 8 9 and 10 composing the normally exposed parts of the merchandise carriage, and the parts 10 and 11 upon opposite sides being connected by substantially vertical parts. The side plates 13 and 14 (see especially Fig. 2), are preferably formed integral with the parts 7 to 12 inclusive. The back plate 13 is provided with openings for the guide rods 5 6.

d represents packages of merchandise in the receptacle 4 and one also upon the plate 11 of the merchandise carriage. The superposed packages are supported on the flanges d^1 at the base of the receptacle 4.

The coin slot 15 is formed in the part 10 of the connected parts forming the bent top plate of the carriage, and I employ a frame 16, (see Figs. 1, 4 and 9), secured to the under surface of the part 10 and having oppositely disposed spring dogs 17 which are located directly below and adjacent to the respective ends of the coin slot, and when a coin of proper denomination is passed down through the slot it contacts with the forward ends of the dogs 17 and the coin must be pushed down and forced between the spring dogs; this action separating the spring dogs to allow the coin to pass; therefore as soon as the coin is passed, the spring dogs return to an initial position. A coin of copper or other coin metal is hard enough to force the dogs apart without injury, but a slug of lead or soft metal corresponding in size with a coin will be cut into by the dogs and held and cannot be inserted into the machine.

I provide push frame *e*,—(see especially Figs. 1, 3 and 4), of bent metal securely fastened to the part 11 of the top plate of the merchandise carriage. This pusher as illustrated in Fig. 4, pushes out the lowermost merchandise package and under-runs the superposed merchandise packages in the merchandise receptacle 4 holding the same up during the forward and return movement of the merchandise carriage. In this frame *e* is a rack *e*¹ and as the merchandise carriage is drawn forward the pawl *e*² over-runs the rack *e*¹ and is adapted to engage the same in the forward motion to prevent the return of the merchandise carriage before its full movement is completed. Within this merchandise carriage and secured to the back plate 12 is a post *e*³, and guide rods 18 and 19 connect the forward plate 7 and back plate 12 and extend lengthwise of the carriage and they serve as guides for the pull carriage hereinafter described.

The frame *f* in the form of a flat plate is connected in a fixed relation to the side plates *a* *a*¹ of the vending machine case by screws 20, and this frame is provided with two slots 21. A sliding shield plate *f*¹ overlies the frame *f* and it is provided with pins 22 which pass through the slots of the frame *f*. These pins prevent the accidental separation of the plates *f* *f*¹ yet provide for a forward and backward sliding action of the plate *f*¹, which latter is provided with ears 23 at opposite corners.

Fig. 1 shows the condition of inaction of the plates *f* *f*¹ wherein the superposed parts of these plates come below the part 9 of the top plate of the carriage and the ears 23 come forward of the coin slot so that a coin can be passed through the slot 15 without coming in contact with either plate, whereas in the position shown in Fig. 4, with the coin carrier fully extended and the sliding plate *f*¹ pulled forward by the contact

of its ears 23 against the forward edge of the part 11 of the top plate of the carrier, it will be noticed that this plate *f*¹ comes directly below the coin slot 15, preventing the entrance into the machine of a coin or other member inserted through the coin slot in order to effect any operation of the machine, and also that the forward end of the plate *f*¹ comes over the coin-way down which an inserted coin is adapted to pass to the coin carrier also hereinafter described.

To the bottom portion of the bent top and side plates forming part of the merchandise carriage, I connect a bottom frame, (see especially Figs. 6 and 7), which is composed of the forward plate portion 24 fitting into the forward portion of the carriage, with its front edge coming up to the back of the part 7. This bottom frame is provided with posts 25 with a vertical plate 26, with longitudinal bars 27 and 28, with a rack-bar *g* secured to the inner surface of one of the longitudinal bars and provided with a long forward tooth 29 and a back incline 30. This bottom frame is also provided with apertures to receive the guide rods 5 6 of the frame of the case of the vending machine; the parts shown in Figs. 6 and 7, being connected to and forming part of the merchandise carriage and having a reciprocating motion on the rods 5 6, and the longitudinal bars 27 28 are provided with hook ends *g*¹. (See especially Figs. 1 and 4).

The bottom frame is secured to the merchandise carriage by screws passing through the side plates 13 14 into the lugs *e*³ of the plate 24.

The spring returned pull carriage is slidable through the merchandise carriage. It is freely slidable without in any sense of the word affecting the merchandise carriage or the goods in the vending machine until a coin of predetermined and proper denomination is inserted in the machine. This carriage freely movable in the hands of a mischievous person will perform no function or operation upon the other parts of the mechanism and will deliver no goods until a coin of the proper denomination is inserted. This movement will however clean out the machine of washers, papers, etc. Therefore any fool movements of the machine can hardly injure the machine at all, for they will not move the merchandise carriage or deliver any goods. The parts of this slidable carriage consist of the side members 31, the end member 32, a finger plate *h* which passes through a slot in the plate member 7 of the merchandise carriage and rises therefrom at its forward end to be engaged by the finger. It is secured to the forward end of the plate 32 by screws *h*¹ and the lugs 33 on opposite sides of this

slidable carriage are in pairs and receive between them the guide rods 18 19 which extend through the merchandise carriage and direct a true reciprocating motion of this slidable carriage. The forward part of this carriage is provided with coin ways 34 and with gravity pawls 35, which in this art serve to prevent the retraction of a coin, and a magnet 36 also located adjacent to the coin ways 34 attracts and holds an iron disk or other piece inserted in the hope of operating the machine. The carriage is provided with a top plate 37 connecting the side members 31 and acting to stiffen the frame, and a helical spring i is connected at its forward end to a hole in the plate 37 and at its back end to a hole in the post c^3 of the merchandise carriage; the tendency of the spring i being to maintain the relation of the slidable carriage with the merchandise carriage in the position shown in Fig. 1; therefore when the slidable carriage is pulled by the finger piece h it pulls upon the merchandise carriage and the latter is held from any movement by the parts hereinafter described except when released by the insertion of the coin.

In my present application I provide a tilting finger k and a push finger l . The tilting push fingers employed by me in the device of my improvement are substantially the same and perform the same function as similar fingers described and shown in an application for Letters Patent of the United States, filed by me August 5, 1907, Serial #387,015, and the coin carrier hereinafter described, for receiving the coin after its passage through the coin-ways, is also very similar to the coin carriers described and shown in said application.

This coin carrier, (see particularly Figs. 1, 4 and 8) includes the coin-ways m oppositely disposed, and a stop pin 38. These are supported by a cross member mounted by pivots 39 in the side frames of the vending machine, and this coin carrier is also provided with oppositely disposed arms $m^1 m^2$, with hook ends and with a pawl n pivoted to the arm m^2 by a pivot pin n^1 and actuated by a spring 40. The said end hooks stand in advance of but are adapted to engage the hook ends g^1 of the bars 27 28 of the bottom frame of the merchandise carriage in case of the failure of the pawl n to act and prevent a false movement of said carriage. The pawl n may be connected to the inner face of either one of the arms $m^1 m^2$, but preferably the arm m^2 , and it is limited in its upward movement by a stop pin n^1 . The office of the said pawl is to engage one hook end g^1 in the initial position of the several devices as shown in Fig. 1 and prevent the movement of the merchandise carriage until moved down with the swinging of the coin carrier and the arms $m^1 m^2$ by

the pressure of the stop pin against the shoulder of the pawl in such swinging movement.

From Figs. 1 and 2, it will be noticed that the forward higher ends of the arms $m^1 m^2$ are flat and adapted to occupy a horizontal plane during the reciprocating movement of the merchandise carriage and during which reciprocating movements, these outer ends of the arms under-run the longitudinal bars 27 28 of the bottom frame to the merchandise carriage; the arm m^1 passing outside of the rack bar g as shown in Fig. 4; the forward end hooks of the arms m^1 and m^2 being slightly in advance of the position of the engaging end of the pawl n and hook ends g^1 of the bars 27 28,—(see Fig. 1), there is consequently a slight play and provision for the purpose of clearance in getting away from the hook ends g^1 of the bars 27 28. With the initial swinging movement of the coin carrier and the longitudinal movement of the merchandise carriage the said bars 27 28 swing in the arc of a circle struck from the pivot 39 of the coin carrier.

According to Fig. 1, the parts are in their inoperative position, in which the coin carrier has been swung on its pivot by the action of the springs 42 43, elevating the forward ends of the locking arms $m^1 m^2$ so that they come in contact with the under surface of the guide rods 5 6 in which position the coin-ways 34 and the coin-ways of the coin carrier are substantially in line.

Figs. 1 and 4 indicate that the pawl n and its stop pin are connected to the locking arm m^1 , but this is shown in this manner simply for clearness with reference to the operation of the structure; Figs. 2 to 8 however showing the correct position of the pawl pin, its spring 40 and the stop pin n^1 as upon the other side of the machine and connected to the locking arm m^2 , where its efficiency is apparent upon the opposite side to that occupied by the rack bar g and the pawl device bearing thereon.

I employ a back member o secured to the back plate b^1 of the case and a side member o^1 secured to the side member a of the case. A pawl r is pivoted to the member o^1 . The member o is provided with a spring plate s^1 secured at one end to the member o and bent for horizontal movement and provided at its free end with a triangular catch adapted to hold the pawl r either in the position shown in Fig. 1, or in the position shown in Fig. 4. In the position shown in Fig. 1, the free upturned end of the pawl r is in engagement with the rack bar g , while in the position Fig. 4, the engaging end of the pawl is in its lowermost position entirely free from contact with the rack bar g so as to permit of the return movement of the merchandise carriage and other parts.

In the operation of the device of my im-

provement and without the insertion of a coin of proper denomination the reciprocating carriage may be actuated by taking hold of the finger plate *h* and be pulled forward against the power of the spring *i* and released to a normal position and the movement repeated without in any wise actuating the merchandise carriage or the coin carrier or disturbing the merchandise in its receptacle. The insertion of a coin of predetermined and proper denomination through the coin slot 15 and past the spring friction dogs 17, through the coin-ways 34 and into the coin-ways of the coin carrier *m* against the stop pin *r*, provides that in the forward movement of the reciprocating pull carriage the tilting finger *k* will almost immediately come in contact with the coin and more power will be required at once to swing the coin carrier with the forward movement of the pull carriage; this swinging movement of the coin carrier on its pivots 39 will move the free ends of the locking arms *m*¹ *m*² and the free end of the pawl *n* downward out of line with the hook ends of the longitudinal bars 27 and 28 of the bottom frame of the merchandise carriage, at once releasing the merchandise carriage, and this released position is maintained with the forward movement of the pull carriage. With the forward movement of the pull carriage the member 32 strikes the frame part 7 and at once the merchandise carriage moves along with the pull carriage to the extreme limit of the movement thereof, at which time the merchandise is projected and delivered to the hand of the purchaser. The reciprocating pull carriage and the merchandise carriage with the goods all move together from the position Fig. 1 toward the position Fig. 4 during which the push-finger *l* will push the coin out of the coin carrier. Any intermediate return movement is prevented as herein described.

In the position Fig. 1 it will be noticed that the up-turned free end of the pawl *r* comes against the forward tooth 29 of the rack bar, consequently as the rack bar is moved forward with the other parts in the operation, it takes a tooth at a time and throughout its continuity of teeth acts to prevent any return of the merchandise carriage or pull carriage until after the delivery of the goods has been effected. To further insure this condition the pawl *c*² in the frame rod *c* swings into engagement with the teeth of the rack *e*¹ further holding the merchandise carriage against any return action until its full movement into the position Fig. 4 is completed. When such full movement is completed the up-turned end of the pawl *r* under-runs the back incline 30 of the rack bar *g* and the opposite end of the pawl *r* is raised from the position Fig. 1 into the

position Fig. 4, at which the engaging end of this pawl is held downward until with the return of the merchandise carriage and parts connected therewith, the forward tooth 29 of the rack bar *g* strikes the end of the pawl *r* and swings the same back into the position Fig. 1.

I claim as my invention:

1. In a coin controlled vending machine, the combination with a goods receptacle, a reciprocating merchandise carriage and coin carrier, of a reciprocating pull carriage freely movable in opposite directions and inert in its movement to actuate any part of the mechanism until after the introduction of a coin of proper denomination.

2. In a coin controlled vending machine, the combination with a goods receptacle, a reciprocating merchandise carriage and coin carrier, of a reciprocating pull carriage manually actuated in one direction and spring returned and inert in its movements to actuate any part of the mechanism until after the introduction of a coin of proper denomination.

3. In a coin controlled vending machine, the combination with a goods receptacle, a reciprocating merchandise carriage and coin carrier, of a reciprocating pull carriage freely movable in opposite directions, devices connected therewith and adapted upon the introduction of a coin of proper denomination to swing the coin carrier and release the merchandise carriage, and devices associated with the movable parts and adapted to prevent any return to an initial position of the merchandise carriage during any part of its movement for the delivery of the goods.

4. In a coin controlled vending machine, the combination with a goods receptacle, a reciprocating merchandise carriage and coin carrier, of a reciprocating pull carriage freely movable in opposite directions, devices connected therewith and adapted upon the introduction of a coin of proper denomination to swing the coin carrier and release the merchandise carriage, a rack bar connected to the lower portion of the merchandise carriage and movable therewith and a pawl adapted to under-run said rack bar and to hold the merchandise carriage and prevent any return movement thereof during the forward movement for the delivery of the goods.

5. In a coin controlled vending machine, the combination with a goods receptacle, a reciprocating merchandise carriage and coin carrier, of a reciprocating pull carriage freely movable in opposite directions, devices connected therewith and adapted upon the introduction of a coin of proper denomination to swing the coin carrier and release the merchandise carriage, and a rack bar se-

cured to the upper part of the merchandise carriage, and a spring actuated pawl adapted to engage the same to prevent any return movement of the merchandise carriage during its forward movement in delivering the goods.

6. In a coin controlled vending machine, the combination with a goods receptacle, a reciprocating merchandise carriage and coin carrier, of a reciprocating pull carriage freely movable in opposite directions, devices connected therewith and adapted upon the introduction of a coin of proper denomination to swing the coin carrier and release the merchandise carriage, and similar independent rack and pawl devices adapted to prevent any return movement of the merchandise carriage to its initial position until after the finish of the entire forward movement of the same in delivering the goods.

7. In a coin controlled vending machine, the combination with a reciprocating merchandise carriage having a coin slot in the upper part thereof, of a frame secured to the under side of the carriage adjacent to the coin slot and notched, forwardly pointed and spring actuated friction dogs mounted in said frame and coming at the ends of the coin slot and past which the coin must be forced with its introduction into the carriage and which dogs act to prevent a deliberate attempt to withdraw the coin.

8. In a coin controlled vending machine, the combination with a reciprocating merchandise carriage having a coin slot in the upper part, of a movable device actuated by the longitudinal movement of the said carriage which in the condition of rest of said carriage permits the insertion of a coin of proper denomination through the coin slot and which in the withdrawn or distended position of the carriage prevents the introduction into the mechanism of a coin or other article through the coin slot.

9. In a coin controlled vending machine, the combination with a merchandise carriage having a coin slot in the upper part thereof, of a frame positioned within the merchandise carriage and adjacent to the upper part thereof and provided with slots running in the direction of the movement of the said carriage, and a shield plate adapted to slide over said frame and having connecting members in said slots, said plate being actuated and sliding by and with the movement of the merchandise carriage, whereby when the carriage is in its initial position the coin may be introduced, and when it is in its distended or withdrawn position said shield plate comes below the coin slot and acts to prevent the introduction of a coin or any other device adapted to effect a false movement of the machine.

10. In a coin controlled vending machine,

the combination with a reciprocating merchandise carriage, of a reciprocating pull carriage adapted to freely move in opposite directions through the body of the merchandise carriage, a spring connecting the said pull carriage with the rear portion of the merchandise carriage, a tilting coin contacting finger and a push finger adjacent to one another and forming part of said pull carriage.

11. In a coin controlled vending machine, the combination with a reciprocating merchandise carriage and guide rods extending through the same from front to back, and a slot in the forward part thereof, of a reciprocating pull carriage and members connected therewith engaging said guide rods, a finger plate connected therewith and passing out through the slot of said carriage and beyond for engagement with the finger, coin-ways formed in said pull carriage, a helical spring connecting with the same at one end and with the back portion of the merchandise carriage at the other end, and means acting upon a coin for the operation of the mechanism of the vending machine and the delivery of the goods with the movement of said pull carriage.

12. In a coin controlled vending machine, the combination with a merchandise carriage and guide rods extending through the same from front to back, and a slot in the forward part thereof, of a reciprocating pull carriage and members connected therewith engaging said guide rods, a finger plate connected therewith and passing out through the slot of said carriage and beyond for engagement with the finger, coin-ways formed in said pull carriage, a helical spring connecting with the same at one end and with the back portion of the merchandise carriage at the other end, a pivotally mounted coin carrier, devices forming part of said coin carrier, and other devices forming part of the merchandise carriage adapted for interlocking connection, and other devices connected with said pull carriage and adapted to contact with a coin of proper denomination when in the coin carrier for tilting the same for releasing the interlocking devices, and other means for pushing the coin out of the coin carrier.

13. In a coin controlled vending machine, the combination with a merchandise carriage, of a member adapted to be received in and secured to the forward part of said merchandise carriage, guide rods connected to the case of the vending machine and passing through apertures in said member and upon which the merchandise carriage is adapted to slide, longitudinal bars formed on opposite sides of said member and having forward hook ends, a rack bar with depending teeth on the lower edge thereof, a piv-

otally mounted coin carrier, means connect-
ed therewith and adapted to engage the for-
ward hook ends of the longitudinal bars and
a spring controlled pawl adapted to engage
5 said rack bar.

14. In a coin controlled vending machine,
the combination with a merchandise car-
riage, of a member adapted to be received
in and secured to the forward part of said
10 merchandise carriage, guide rods connected
to the case of the vending machine and
passing through apertures in said member
and upon which the merchandise carriage
is adapted to slide, longitudinal bars formed
15 on opposite sides of said member and having
forward hook ends, a pivotally mounted
coin carrier having means adapted to come
in advance of said hook ends, a rack bar
with depending teeth on the lower edge
20 thereof, a forward tooth of appreciable size
to said rack bar and a back or end incline
thereto, and a spring-held pawl adapted in
the initial position of the vending machine
devices to come against a back edge of the
25 forward tooth and to under-run the teeth of
the rack bar with the forward movement of
the merchandise carriage and to be shifted
by the back incline so as to provide for the
free return movement of the merchandise
30 carriage.

15. In a coin controlled vending machine, the
combination with a merchandise carriage, of
a member adapted to be inserted in and se-
cured to the forward part of said merchandise
35 carriage, guide rods connected to the case
of the vending machine and passing through
apertures in said member and upon which
the merchandise carriage is adapted to slide,
longitudinal bars formed on opposite sides

of said member and having forward hook 40
ends, a rack bar with depending teeth on the
lower edge thereof, a pawl adapted to en-
gage the rack bar, a pivotally mounted coin
carrier, swinging arms formed with the coin 45
carrier and adapted to come into the path of
the aforesaid hook ends of the longitudinal
bar, and a spring actuated pawl mounted
upon one of the arms of the coin carrier and
adapted initially to engage one of said hook
ends. 50

16. In a coin controlled vending machine,
the combination with a pivotally mounted
coin carrier, a merchandise carriage and a
rack bar on the lower portion thereof, of a
back member and a side member respectively 55
connected to the back and one side frame of
the case of the vending machine, a pawl
pivotally mounted to the side member and
having an up-turned forward end adapted
to engage the teeth of said rack bar, and an 60
opposite engaging end oppositely tapering,
a stop pin upon the side member limiting
the movement of the pawl in one direction,
a spring plate secured to the back member
and having a triangular shaped catch at the 65
free end thereof engaging the oppositely
tapering end of the pawl, whereby said
spring catch structure is adapted to engage
and to hold the said pawl in either of its
two positions for the performance of the 70
functions thereof.

Signed by me this 10th day of February
1909.

EDGAR H. COOK.

Witnesses:

ARTHUR H. SERRELL,
E. ZACHARIASEN.