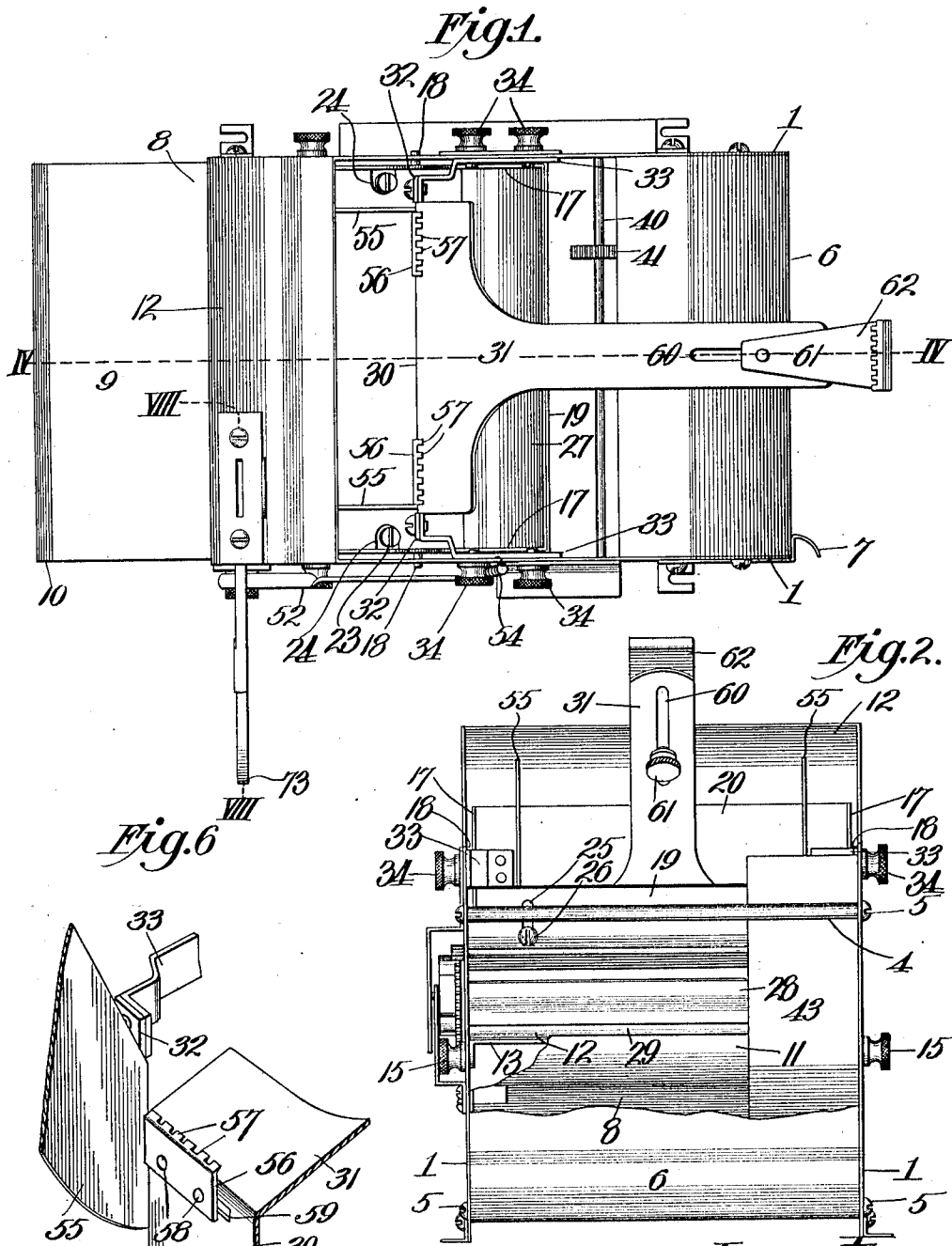


G. L. VAN BUREN.  
 COIN CONTROLLED VENDING MACHINE.  
 APPLICATION FILED MAY 6, 1910.

1,020,000.

Patented Mar. 12, 1912.

3 SHEETS—SHEET 1.



Witnesses  
 Frank R. Horn  
 H. C. Rodgers.

Inventor  
 G. L. Van Buren

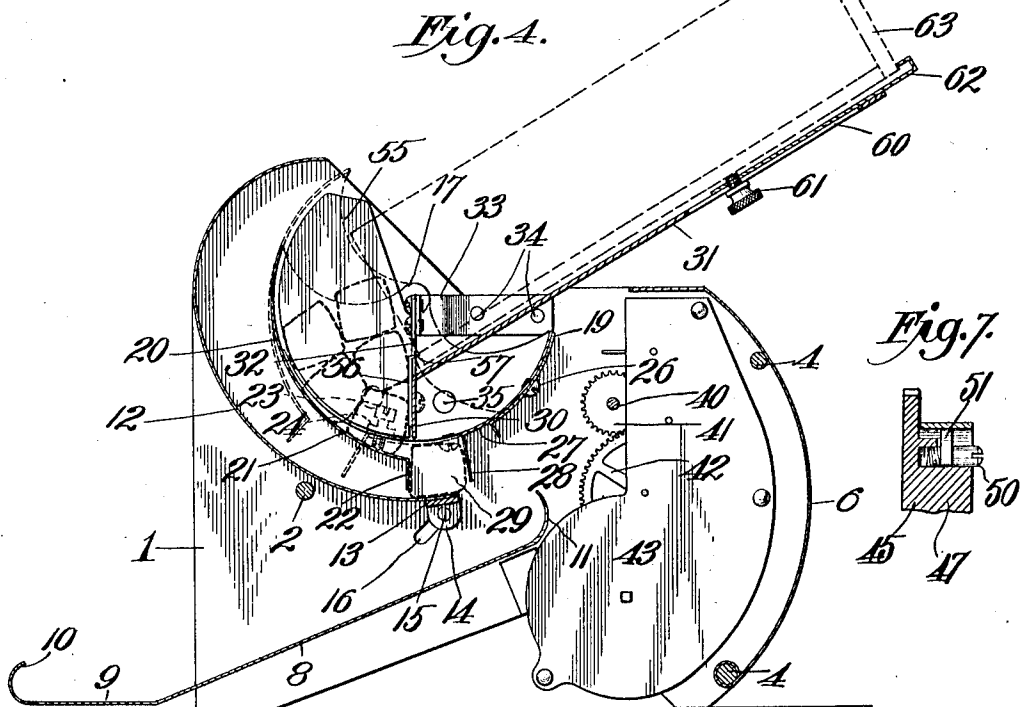
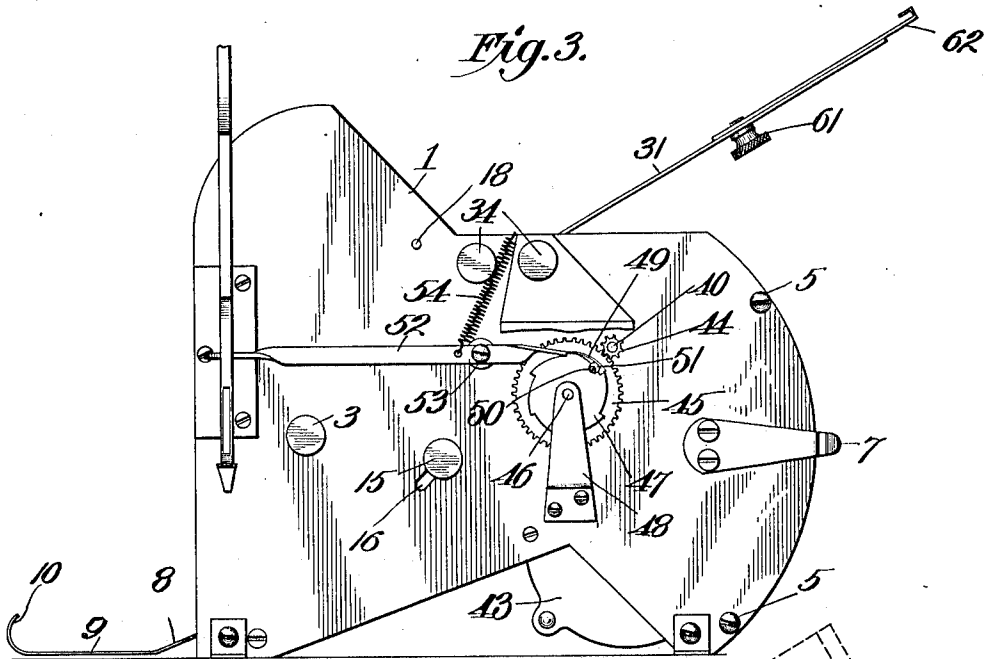
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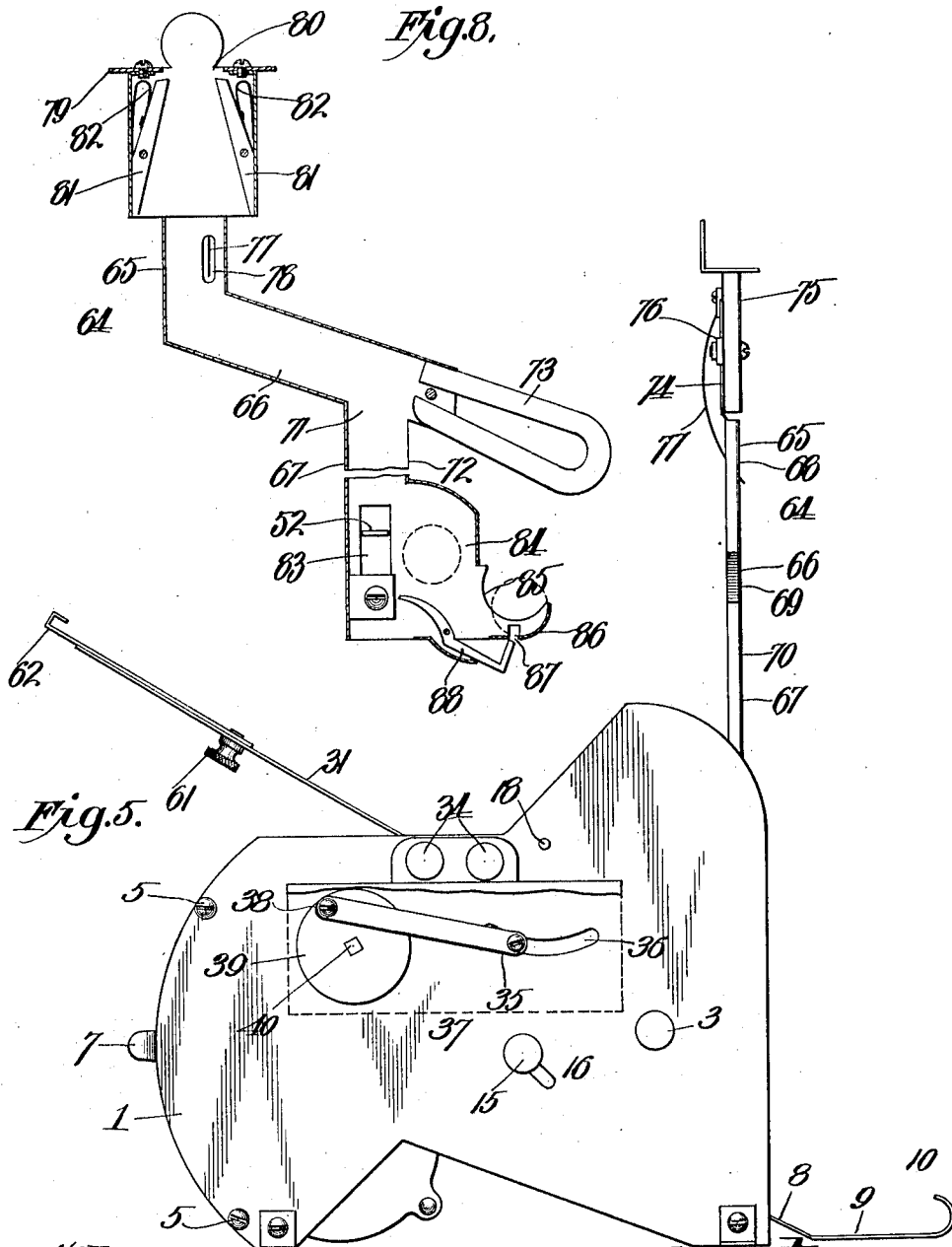
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# UNITED STATES PATENT OFFICE.

GEORGE L. VAN BUREN, OF KANSAS CITY, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS, TO JOSEPH M. JONES, OF KANSAS CITY, MISSOURI.

## COIN-CONTROLLED VENDING-MACHINE.

1,020,000.

Specification of Letters Patent.

Patented Mar. 12, 1912.

Application filed May 6, 1910. Serial No. 560,393.

*To all whom it may concern:*

Be it known that I, GEORGE L. VAN BUREN, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification.

This invention relates to coin-controlled vending machines and my object is to produce an efficient and reliable machine of this character which will vend with equal facility and reliability candy or cigars.

With this general object in view and others as hereinafter appear the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which:—

Figure 1, is a top plan view of a vending machine embodying my invention. Fig. 2, is a rear view of the same, partly broken away. Fig. 3, is a side elevation of the machine with a part broken away. Fig. 4, is a section on the line IV—IV of Fig. 1. Fig. 5, is a view of the opposite side of the machine. Fig. 6, is a sectional perspective view of a part of the machine. Fig. 7 is a detail sectional view of a cam-equipped screw forming a part of the machine. Fig. 8, is a vertical section through the coin-chute on the line VIII—VIII of Fig. 1.

In the said drawings where like reference characters identify corresponding parts in all the figures, 1—1 indicate the side walls of the machine and securing the same in rigid relation are cross rods 2 and 4, screws 3 extending through the walls into the ends of the rods 2, and screws 5 through the walls into the ends of the rods the undermost of the last-named rods forming the hinge rod of a door 6 for closing the rear end of the machine, a spring catch 7 carried by one of the said walls being adapted to hold the door 6 normally closed.

8 indicates a downwardly and forwardly inclined plate or chute suitably secured between the side walls and terminating forward of the same in a shelf 9 upturned at its front end to provide a stop 10, the rear end of the chute being likewise upturned to provide a guard wall 11 for a purpose which hereinafter appears.

12 indicates a curved shelf the upper part being rigid and curving upwardly and rearwardly to form a hood and the lower part being free for adjustment upward and downward for a purpose which hereinafter appears, the lower end of the shelf which terminates forward of the wall 11 of the chute a distance considerably exceeding the diameter of a cigar, being equipped with a cross bar 13 having depending ears 14, engaged by clamping screws 15, extending through the side walls 1, and the slots 16 thereof. By loosening the set screws the lower portion of the shelf may be disposed in different vertical planes so as to accommodate cigars of different size, as hereinafter explained.

Arranged between the side walls 1 is an oscillatory hopper consisting of substantially semi-circular end walls 17 provided with alined trunnions 18 journaled in the side walls, and a pair of segmental plates 19 and 20, connecting said walls, the plate 20 being of resilient material and free at its lower end to spring snugly against the end walls, and flanged downward at its lower extremity to form a sweep 22 for pushing cigars or candy off the rear end of the shelf as hereinafter explained, set screws 23 extending through ears 24 being utilized to force the lower portion 21 of plate 20 downward and hold it at the desired point of adjustment as indicated in Fig. 4, this depression of the lower end of said plate 20 being necessary when the machine is adapted for vending cigars as hereinafter more particularly explained. Plate 19 is provided with parallel slots 25, one only appearing (see Fig. 2) through which extend clamping screws 26 which engage at their inner ends an adjustable plate 27, terminating at its front edge in a depending wall 28, which wall through the adjustable means described, may be disposed the proper distance from flange 22 to permit a cigar of any desired size to drop between them from the hopper onto the underlying shelf 12, the space between the said sweep 22 and guard wall 28 being hereinafter termed a pocket and identified by the reference character 29.

30 is a cut-off arranged within the oscillatory hopper, the same being preferably in the form of a vertically arranged plate extending across the lower part of the hopper and formed integrally with said cut-

off is a forwardly and downwardly inclined T-shaped arm or support 31. At its opposite ends the cut-off is provided with upwardly projecting arms 32 rigidly secured to the lower ends of a pair of brackets 33 secured to the inner sides of the side walls 1 by screws 34, it being noticed that the upper edges of the end walls of the hopper are so shaped that they may swing rearwardly without conflict with the brackets 33 until sweep 22 stands vertically above the rear end of the shelf. In normal or inoperative position the oscillatory hopper stands as substantially as shown in Fig. 4, that is with the pocket 29 rearward of the cut-off and closed at its lower end by the underlying rear end of the shelf, at which time said pocket is adapted to contain a cigar or other commodity.

35 are screws projecting from one of the end walls of the hopper through a segmental slot 36 in the adjacent side wall 1, and 37 is a pitman pivotally connecting said screw or pin with a wrist pin 38 on disk 39 secured on a transverse shaft 40 journaled in the side walls and provided with a gear wheel 41 meshing with a gear wheel 42 of a clock-work 43 arranged between the rear ends of the side walls. At the opposite side of the machine from disk 39 shaft 40 is equipped with a small gear pinion 44 meshing with a gear wheel 45 journaled upon a stub shaft 46 projecting from the adjacent side wall 1, the ratio between said gear pinion and gear wheel being one to six so that it will require six revolutions of wheel 44 to impart one revolution to wheel 45. Bearing a rigid relation to wheel 45 is a six toothed ratchet wheel 47 and retaining said wheels in proper relation upon the stub shaft is a bracket 48 secured to the adjacent side wall 1. Secured to the periphery of one tooth of the ratchet wheel is a flat spring 49, said spring being adapted to fit snugly against the edge of said tooth when not opposed and mounted in the ratchet wheel inward of said spring is a set screw 50 having a cam enlargement 51 so that when the screw is turned to dispose the enlargement away from the axis of the wheel it will force the spring 49 outward until its free end is substantially flush with the periphery of the adjacent tooth, which tooth at such time is blind and therefore inoperative.

52 is a dog pivoted at 53 to the adjacent side wall 1, and held by a retractile spring 54 attached at its opposite ends to the dog and to a fixed point on the side wall, in peripheral engagement with the ratchet wheel to hold the machine inoperative.

The space between the arms 32 of the cut-off extends the width of the diameter of any ordinary cigar box and to prevent endwise movement of cigars as they enter

the hopper in a manner hereinafter explained, I arrange within the hopper a pair of vertical partitions 55, the same lying substantially in the plane of the inner edges of the arms 32, provided with inwardly projecting ears 56 fitting against the front face of the cut-off and projecting upwardly beyond the upper edge of the same and terminating in rearwardly projecting teeth 57, said ears being engaged by clamping screws 58 extending through horizontal slots 59 in the cut-off. By this arrangement it will be apparent that the partitions may be adjusted nearer together to accommodate shorter cigars.

The rear end of the substantially T-shaped arm 31 is provided with a longitudinal slot 60 through which extends a clamping screw 61 and engaged and clamped by said screw upon said arm is an adjustable claw 62. The arm 31 is adapted as a support for a cigar box 63 from which the lower front end wall and by preference the cover has been removed, the front edge of the bottom engaging the toothed upper edges of the ears 56 and the rear edge of the bottom by the claw 62. It will be apparent that by this arrangement the cigar box is held reliably in such position that the cigars will gravitate into the oscillatory hopper.

Referring now to the coin-controlled mechanism, 64 indicates a chute consisting of an upper portion 65, an inclined portion 66 and a lower portion 67, the upper portion having inturned flanges 68 and the inclined and lower portions corresponding flanges 69 and 70 respectively, the lower flange of the inclined portion having an opening 71 through which a coin of proper size to operate the device may pass and adjacent to said opening the outer edge of the lower portion of the chute is provided with an opening 72 through which iron or steel disks shall be ejected through the influence of a permanent magnet 73 secured in the outer end of the inclined portion of the chute and adapted to check the downward movement of the coins or disks and cause them to start downward through the opening 71 into the lower portion of the chute. The upper portion of the chute is provided with an offset extension 74 to fit between a flattened tubular head 75 of the chute and a clamp bar 76 secured thereto and secured to the rear side of said head is a spring 77 which projects forwardly through an opening 78 into the upper portion of the chute for a purpose of ejecting therefrom coins of smaller diameter than those adapted to operate the machine. The head of the chute is provided with a cap 79 having a coin-receiving slot 80 and pivoted within said head is a pair of upwardly converging prongs 81 held normally by springs 82 in such position that it will be impossible to

force a lead or other soft metal disk into the head, an iron or other hard metal disk or coin being adapted to force said prongs apart and pass between them as will be readily understood. The lower end of the lower portion of the chute is provided with a slot 83 through which the front end of the pivoted dog 52 projects and at one side of said slot the lower portion of the chute is provided with an enlargement 84 into which the coin after striking and tripping the dog is deflected. The enlargement 84 is provided at its lower end with an opening 85 and at the bottom is curved upward and outward as at 86, the bottom being provided with an opening 87 through which one end of a rock lever 88 pivoted in the lower end of the enlargement is adapted to be swung upward through the dropping of the coin which enters said enlargement, on the opposite end of the lever. If at the time said lever is thus operated a coin is resting upon the upward and outward portion 86, such coin will be ejected and as the lever gravitates to its original position, the coin which last operated it will occupy the portion 86 of the enlargement of the chute, it being desirable that the last coin introduced shall always remain upon the said portion 86 as in such position it may be observed, the desirability of having it in view being to provide a check against persons who may operate the machine by means of a brass slug which cannot be ejected from the chute by the magnet and which corresponds exactly in size to the coins designed to operate the machine.

The clockwork is adapted for operating the machine a sufficient number of times to vend a full box of cigars, each time the dog being tripped by a coin as explained, the ratchet wheel being turned one-sixth of a revolution except when the spring 49 of the ratchet wheel is held outward by the screw 50 in which event the ratchet wheel makes five intermittent movements in each revolution. With each turning movement of the ratchet wheel shaft 40 is turned one revolution except when the spring 49 is held outward by the screw, at which time the shaft 40 moves two complete revolutions. At the beginning of each revolution of shaft 40, the oscillatory hopper will be swung rearward until sweep 22 is in radial alignment substantially with the rear margin of shelf 12, and cause the cigar or other article or commodity occupying the pocket to drop down upon the chute 8, upon which it rolls or slides downward onto the shelf 9, upon which it is retained by the upturned end 10. As the sweep reaches the position mentioned, the oscillation of the hopper is reversed and the same swings forward to the position shown by dotted lines Fig. 4, and as the pocket passes forward of the cut-off

the undermost cigar or other object or objects in the hopper drops down into the pocket and is carried forward upon the shelf until the forward movement of the hopper ends and the same again reverses its movement and starts rearwardly, such movement ending by the engagement of the dog with the next tooth of the wheel as the hopper again attains the position shown in full lines Fig. 4, and in this connection it will be noticed that there is no possible chance of the undermost cigar in the hopper being squeezed or pinched between the cut-off and the sweep because the upper edge of the latter is disposed a considerable distance below the lower edge of the cut-off. Each subsequent operation is a repetition of that described and in this connection it will be noticed that the cigar in the pocket is delivered almost instantly after the coin trips the dog and that the major portion of the operation of the hopper occurs thereafter. If the machine is arranged to deliver small candies or salted peanuts, the set screw 56 is withdrawn to permit the lower end 21 of the hopper plate 20 to spring upward so that when the device is at rest, communication between the hopper forward of the cut-off and the pocket is closed against the passage of the candy and peanuts into the pocket, it being obvious that it would be impracticable to vend small candies or salted peanuts with the free end of the bottom portion 21 of the hopper depressed, and therefore spaced from the cut-off, as such small candies and peanuts would pass through such space into the pocket and a greater quantity would be vended than the capacity of the latter warranted. In each forward oscillatory movement of the hopper, the flanged end of the adjustable bottom plate 27 will engage the undermost cigar in the hopper and tend to force the same forwardly and upwardly and thus agitate all of the cigars therein to such an extent that they will be disposed in parallel relation if they do not assume such position in passing from the box into the hopper this agitation serving to make positive and reliable the feed of the cigars into the pocket each time the latter attains a position forward of the cut-off.

In the practical operation of the machine, six cigars are delivered for each five nickels deposited in the machine, the deposit of the nickel which trips the dog from engagement with the tooth in advance of the blind tooth resulting in the deliverance of two cigars. When the dog is tripped from the tooth named, the ratchet wheel will revolve one third of a revolution and thus result in permitting shaft 40 to make two complete revolutions and hence impart a double oscillatory movement to the hopper, the initial part of each of said movements effecting the discharge of the contents of the pocket onto

the chute 8 as will be readily understood. It will be understood of course that this machine like others of its class, will be inclosed in a casing or cabinet of that character which is accessible to the purchaser only for the insertion of a nickel in the chute and the withdrawal of the commodity vended from the shelf 9, this cabinet being omitted because it is of common and well-known construction and forms no part of the operative mechanism.

From the above description it will be apparent that I have produced a coin controlled vending machine possessing the features of advantage enumerated as desirable and I wish it to be understood that I do not desire to be restricted to the exact details of construction shown and described as obvious modifications will suggest themselves to one skilled in the art.

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

1. A vending machine, comprising a shelf, an oscillatory hopper above the same and provided with a pocket of which the shelf normally forms the bottom, a sweep movable with the hopper and forming the front wall of said pocket and adapted for sweeping the object or objects vended off the end of the shelf, a cut off within the hopper and disposed in substantially the same plane as the sweep when the hopper is at rest and adapted to prevent the contents of the hopper from entering the pocket when the hopper is at rest, and provided with an arm extending upwardly and rearwardly out of the hopper as a support for a box for charging the hopper with objects to be vended, and means for oscillating the hopper.

2. A vending machine, comprising a shelf, an oscillatory hopper above the same and provided with a pocket of which the shelf normally forms the bottom, a sweep movable with the hopper and forming the front wall of said pocket and adapted for sweeping the object or objects vended off the end of the shelf, a cut off within the hopper and disposed in substantially the same plane as the sweep when the hopper is at rest and adapted to prevent the contents of the hopper from entering the pocket when the hopper is at rest, and provided with an arm extending upwardly and rearwardly out of the hopper, means for clamping in rigid relation to and upon said arm a box for charging the hopper with objects to be vended, and means for oscillating the hopper.

3. In a vending machine, a shelf, an oscillatory hopper above the same and provided with a pocket of which the shelf normally forms the bottom, a sweep movable with the hopper and forming the front wall of said pocket and adapted for sweeping the object

or objects vended off the end of the shelf, a cut-off within the hopper and disposed in substantially the same plane as the sweep when the hopper is at rest and adapted to prevent the contents of the hopper from entering the pocket when the hopper is at rest, parallel upright partitions within the hopper and bearing a rigid relation to the cut off, and means for oscillating the hopper.

4. A vending machine, comprising a shelf, an oscillatory hopper above the same and provided with a pocket of which the shelf normally forms the bottom, a sweep movable with the hopper and forming the front wall of said pocket and adapted for sweeping the object or objects vended off the end of the shelf, a cut-off within the hopper and disposed in substantially the same plane as the sweep when the hopper is at rest and adapted to prevent the contents of the hopper from entering the pocket when the hopper is at rest, brackets suitably supported and projecting into the upper central portion of the hopper at opposite ends of the cut-off, arms projecting upward from the ends of the cut-off and secured to said brackets to secure the former rigidly in position, and means for oscillating the hopper.

5. In a vending machine an oscillatory hopper comprising substantially semi-circular ends, and a segmental bottom consisting of two sections spaced apart to provide an opening between them and provided at their adjacent edges with depending flanges; the front portion of the bottom being capable of movement toward and from the center of the hopper.

6. In a vending machine, an oscillatory hopper comprising substantially semi-circular ends, and a segmental bottom consisting of two sections spaced apart to provide an opening between them and provided at their adjacent edges with depending flanges; the front portion of the bottom being capable of movement toward and from the center of the hopper, the rear portion of the bottom capable of adjustment toward and from the front portion to vary the width of the opening.

7. In a vending machine, an oscillatory hopper comprising substantially semi-circular ends, and a segmental bottom consisting of two sections spaced apart to provide an opening between them and provided at their adjacent edges with depending flanges; the front portion of the bottom being capable of movement toward and from the center of the hopper, in combination with a shelf underlying the opening of the hopper when the latter is at rest.

8. In a vending machine, an oscillatory hopper comprising substantially semi-circular ends, and a segmental bottom consisting of two sections spaced apart to provide an opening between them and provided at their

adjacent edges with depending flanges; the front portion of the bottom being capable of movement toward and from the center of the pocket, in combination with a shelf underlying the opening of the hopper when the latter is at rest, and capable of adjustment toward and from the center of the hopper.

9. In a vending machine, an oscillatory hopper comprising substantially semi-circular ends, and a segmental bottom consisting of two sections spaced apart to provide an opening between them and provided at their adjacent edges with depending flanges; the front portion of the bottom being capable of movement toward and from the center of the pocket, in combination with a shelf underlying the opening of the hopper when the latter is at rest, and means for clamping the shelf at the desired point of adjustment with respect to the hopper.

10. A vending machine, comprising a shelf, an oscillatory hopper above the same and provided with a pocket of which the shelf normally forms the bottom, a sweep movable with the hopper and forming the front wall of said pocket and adapted for sweeping the object or objects vended off the end of the shelf, a cut-off within the hopper and disposed in substantially the same plane as the sweep when the hopper is at rest and adapted to prevent the contents of the hopper from entering the pocket when the hopper is at rest, a shaft, means for rotating the shaft when unopposed, means actuated by said shaft for oscillating the hopper, a ratchet wheel rotatable by said shaft, a dog normally engaging the ratchet wheel to prevent the operation of the shaft, and movable means secured to the ratchet wheel for rendering one of its teeth blind.

11. A vending machine comprising a shelf, an oscillatory hopper above the same and provided with a pocket of which the shelf normally forms the bottom, a sweep

movable with the hopper and forming the front wall of said pocket and adapted for sweeping the object or objects vended off the end of the shelf, a cut-off within the hopper and disposed in substantially the same plane as the sweep when the hopper is at rest and adapted to prevent the contents of the hopper from entering the pocket when the hopper is at rest, a shaft, means for rotating the shaft when unopposed, means actuated by said shaft for oscillating the hopper, a ratchet wheel rotatable by said shaft, a dog normally engaging the ratchet wheel to prevent the operation of the shaft, a spring secured to the ratchet wheel and extending along the space between a pair of its teeth, and a rotary pin mounted in the ratchet wheel and provided with a cam for forcing said spring outward to render blind one of the teeth of the wheel.

12. A vending machine, comprising a shelf, an oscillatory hopper above the same and provided with a pocket of which the shelf normally forms the bottom, a sweep movable with the hopper and forming the front wall of said pocket and adapted for sweeping the object or objects vended off the end of the shelf, a cut-off within the hopper and disposed in substantially the same plane as the sweep when the hopper is at rest and adapted to prevent the contents of the hopper from entering the pocket when the hopper is at rest, a shaft, means for rotating the shaft when unopposed, a disk carried by the shaft and provided with a wrist pin, a pitman pivoted to the wrist-pin, and a pin pivotally connecting the pitman with the hopper.

In testimony whereof I affix my signature, in the presence of two witnesses.

GEORGE L. VAN BUREN.

Witnesses:

HELEN C. RODGERS,  
G. Y. THORPE.