

No. 693,157.

Patented Feb. 11, 1902.

A. C. ROEBUCK & F. McMILLAN.
COIN CONTROLLED MECHANISM.

(Application filed July 27, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

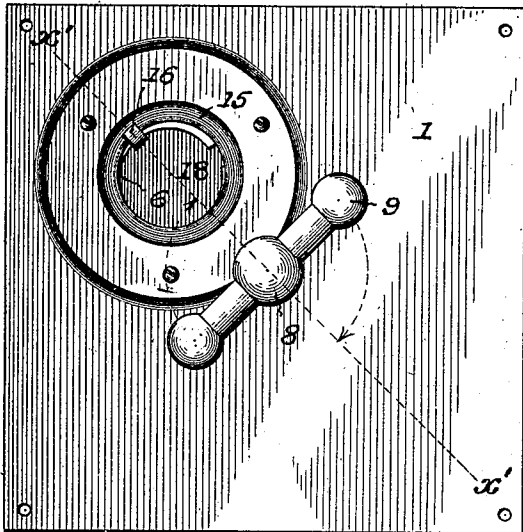


Fig. 2.

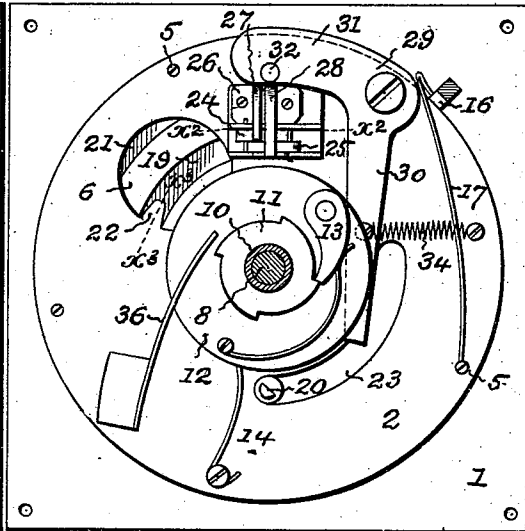


Fig. 3.

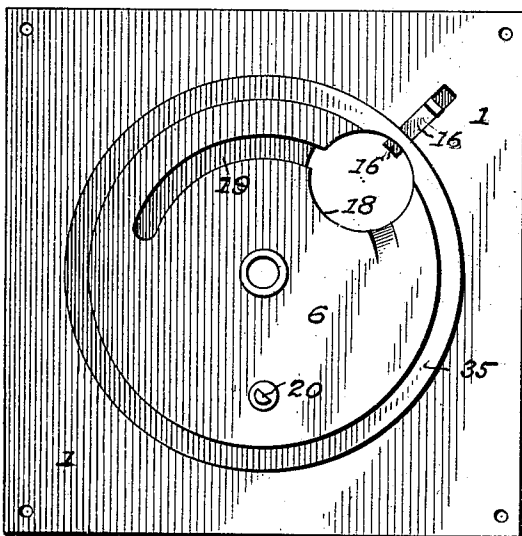
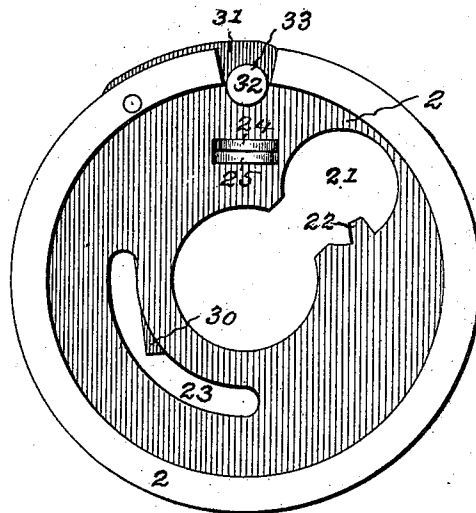


Fig. 4.



Attest:

John Enders Jr.
Henry A. Rott

Inventors:

A. C. Roebuck & F. M. Millan,

by Robert Burns

Attorney

No. 693 157.

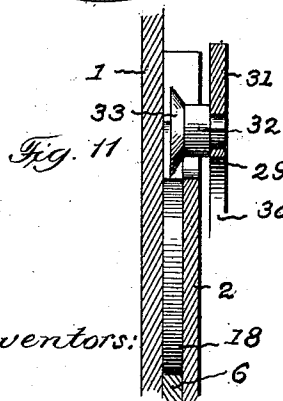
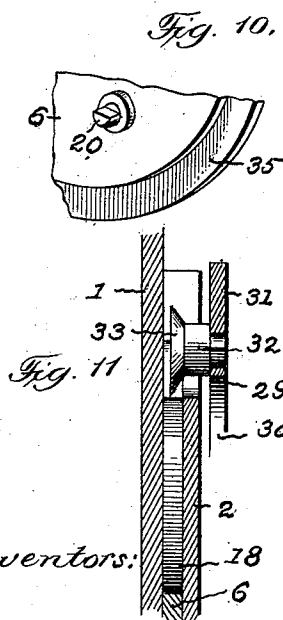
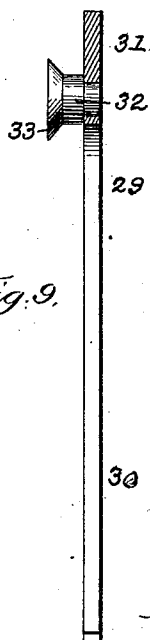
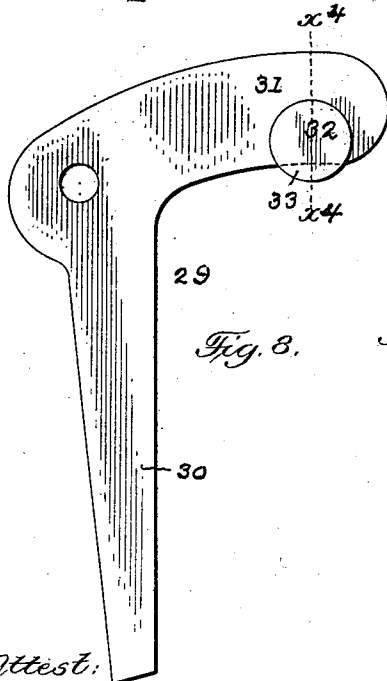
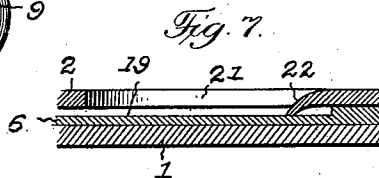
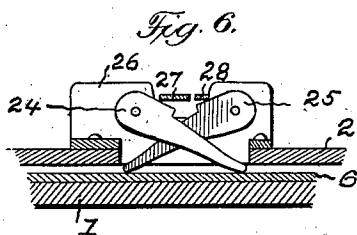
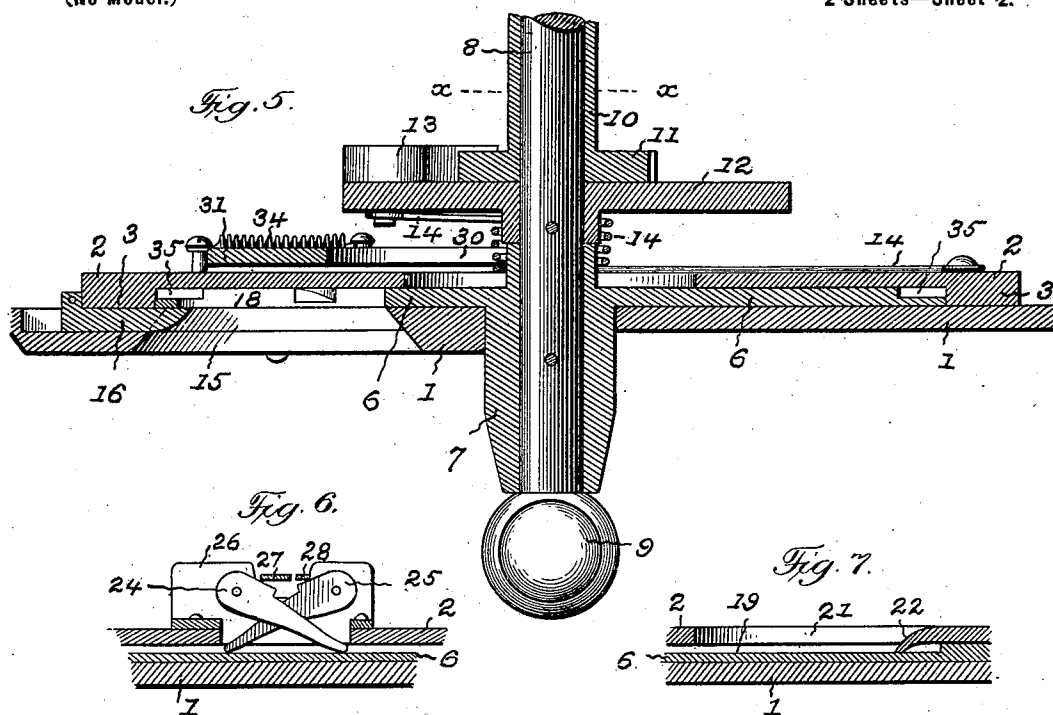
Patented Feb. 11, 1902.

A. C. ROEBUCK & F. McMILLAN.
COIN CONTROLLED MECHANISM.

(Application filed July 27, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Attest:

John Anders Jr.
Henry A. Roth

Inventors:

A.C. Roebuck & F. M. Millan,
by Robert Burns Attorney.

UNITED STATES PATENT OFFICE.

ALVAH C. ROEBUCK AND FRANK McMILLAN, OF CHICAGO, ILLINOIS,
ASSIGNORS TO ENTERPRISE VENDING MACHINE COMPANY, A COR-
PORATION OF ILLINOIS.

COIN-CONTROLLED MECHANISM.

SPECIFICATION forming part of Letters Patent No. 693,157, dated February 11, 1902.

Application filed July 27, 1901. Serial No. 69,892. (No model.)

To all whom it may concern:

Be it known that we, ALVAH C. ROEBUCK and FRANK McMILLAN, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Controlled Mechanisms, of which the following is a specification.

This invention relates to that type of operating mechanisms for vending and other analogous machines in which the use of a coin of the proper dimensions and hardness is required in order to render such mechanism operative.

The objects of the present improvement are to provide a simple, effective, and durable operating mechanism for such uses in which the clogging up or unauthorized tampering with the mechanism is guarded against in a very perfect manner and with which the full movement of such mechanism to effect a delivery operation of the vending apparatus can only be attained when a coin of the proper size is introduced and which with the introduction of an improper blank or an excessively-worn coin will permit of only a partial or incomplete movement of the mechanism, after which the parts will return to their normal and starting position and in so doing bring the spurious means employed back to its point of introduction, from which it can drop outside the apparatus within reach of the would-be patron of the vending apparatus, all as will hereinafter more fully appear and be more particularly pointed out in the claims. We attain such objects by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the present improved mechanism; Fig. 2, a rear elevation of the same with parts in section at line $x x$, Fig. 5; Fig. 3, a detached rear elevation of semirotary coin-carrying disk and the main or front plate of the mechanism; Fig. 4, a detached front elevation of the rear plate of such mechanism with the detector-lever and safety-dogs in place. Fig. 5 is an enlarged general section of the mechanism at line $x' x'$, Fig. 1. Fig. 6 is an enlarged detail sectional eleva-

tion at line $x x$, Fig. 2, illustrating the safety dogs or pawls of the present mechanism; Fig. 7, a similar view at line $x x$, Fig. 2; Fig. 8, an enlarged rear elevation of the detector-lever in a detached condition; Fig. 9, a transverse sectional elevation of same at line $x x$, Fig. 8; Fig. 10, a fragmentary perspective view of the semirotary coin-carrying disk, illustrating the stop-stud upon the same; Fig. 11, a fragmentary transverse section illustrating the position of the bearing-point of the detector-lever with relation to the coin contained in the coin-receiving orifice or cavity of the semirotary disk.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the outer or face plate of the present mechanism, of a flat, rectangular, or other suitable form and adapted for attachment by screws or other usual means to the casing of the vending or other apparatus.

2 is a back plate secured in separated relation to the back of the face-plate 1 by means of distance blocks or projections 3 and screws 5, so as to form a receiving-chamber for the semirotary coin-carrying disk 6, hereinafter described.

6 is the coin-carrying disk of the present mechanism arranged between the face and back plates 1 and 2 and provided with a central hub 7, by which it is journaled in a journal opening or bearing of the face-plate, as shown. 8 is an operating-shaft which in the construction shown extends through the hub portion 7 of such coin-carrying disk 6 and fixedly secured therein by means of transverse pins or other equivalent fastening means. At its outer end such shaft is provided with an operating-handle 9, by which it can be turned by hand, while its inner end is extended backward for operative connection in any usual manner with the delivery mechanism of the vending or other like apparatus. In the special construction shown in Figs. 2 and 5 of the drawings such connecting means will comprise a construction as follows:

10 is a tubular shaft mounted loosely on the

inner end of the operating-shaft 8 and connected directly with any usual intermittently-revoluble delivery mechanism.

11 is a ratchet-disk fixed at one end of the tubular shaft 10 aforesaid.

12 is an arm or disk carried by the operating-shaft 8 and provided with a spring dog or pawl 13, which is adapted to have operative engagement with the ratchet-disk 11, as shown.

14 is a spring preferably formed with a coiled body portion which encircles the shaft 8 and its immediate attachments and with outwardly-extending ends which are connected, respectively, with the arm or disk 12 and with the fixed rear plate 2 of the mechanism, the arrangement being such that such spring will tend to return the arm 14, shaft 8, and coin-carrying disk 6 back to a normal position after a positive operation of the same in an opposite direction has been effected by hand and immediately upon the release of the operating-handle 9 by the operator.

15 is an entrance-orifice formed in the outer or face plate 1 to one side of the pivot-axis oscillatory coin-carrying disk 6, which orifice is preferably of the flaring form shown to permit of an easy insertion of the coin into the mechanism.

16 is a radially-moving detent arranged at the margin of the entrance-orifice 15 and having movement in a groove or channel formed in the front plate 1, as shown.

17 is a spring the tendency of which is to force the detent 16 inwardly, so as to engage outside one edge of the coin and maintain the same in place against a tendency to drop out as the finger used in inserting the same is removed.

18 is a coin-receiving orifice in the coin-carrying disk 6 arranged to one side of the pivot-axis of the same and so positioned as to register with the entrance-orifice 15 of the stationary front plate 1 when the parts are in their normal position.

19 is a segmental cavity in the coin-carrying disk having a concentric arrangement with relation to the axis of such disk and communicating at one end with the coin-receiving orifice 18. Such cavity will have a depth approximately equal to one-half the thickness of the disk and is adapted to receive the point of the coin-dislodging prong as well as form a bearing track or surface for the points of the safety dogs or pawls, as hereinafter described.

20 is a rearwardly-projecting stud on the coin-carrying disk, which is preferably of a semicylindrical form, with its flattened side adapted to constitute the contact-surface of such stud with the detector-lever hereinafter described.

21 is an exit-orifice formed in the stationary back plate 2 of the mechanism to one side of the pivot-axis of the coin-carrying disk 6 and positioned in the path of the coin-receiving orifice 18 of the same. Such exit-orifice

is adapted to register with the receiving-orifice as the carrying-disk 6 and the other oscillatory portions of the mechanism completes an active movement and a delivery movement of the vending mechanism and with the completion of such movement permit the coin to drop into a proper receptacle therefor within the closed casing of the apparatus. Such exit-orifice 21 will accordingly be spaced away from the entrance-orifice 15 a distance equal to the oscillatory movement of the disk 6 and its moving connections and which in the construction illustrated in the drawings will be equal to ninety degrees.

22 is an inclined prong projecting inwardly from the margin of the exit-orifice 21, with its point bearing upon the bottom surface of the segmental cavity 19, heretofore described, and adapted to effect a positive dislodgment of the coin as the coin-carrying disk 6 nears the end of its active oscillating movement.

23 is a curved slot in the stationary back plate 2, in which the stud 20 of the coin-carrying disk 6 has movement and which is adapted to restrict the oscillatory movements of such disk and its connections within the required bounds.

24 and 25 are a pair of oppositely-projecting pawls or dogs pivoted to the stationary back plate 2 by means of a pivot-bracket 26 thereon, with their points extending through an opening in said back plate to have bearing in the segmental cavity 19, heretofore described.

27 and 28 are individual springs by which the dogs or pawls 24 and 25 are yieldingly held with their points bearing against the bottom surface of the segmental cavity 19 aforesaid.

The dog or pawl 24 aforesaid will extend in a direction opposite to that in which the coin-carrying disk 6 moves to effect a delivery movement of the vending mechanism, and said dog is adapted to drop into the coin-receiving orifice 18 thereof in cases where an attempt is made to oscillate the same without the presence of a coin, in which case the dog will engage in said orifice to prevent a full or delivery movement of such disk. Another function of said pawl or dog is, with the use of a metal washer of a size corresponding to that of the coin, to engage in the central orifice of such washer and prevent a full or delivery movement of the mechanism. The companion dog or pawl 25 will extend in a direction opposite to that described in connection with the dog 24 and is adapted to engage behind the coin after the same has been carried past the point of said pawl and prevent a return movement of the coin-carrying disk 6 until the coin is discharged therefrom into its proper receptacle with the closed casing of the apparatus.

29 is an angular or bell-crank detector-lever pivoted to the stationary rear plate 2 of the mechanism. The vertical arm 30 of such lever is provided with a squared end, which

in the normal position of the lever is adapted to lie in the path of the inwardly-projecting stud 20 of the coin-carrying disk 6 to stop the same from a full or operative movement, so that such movement can only be effected with the arm 30 of the detector-lever moved out of the path of the stud 20.

The horizontal arm 31 of the detector-lever is provided with a forwardly-extending projection or stud 32, the outer end of which in turn is formed with a beveled head or point 33, which in the normal position of such lever projects into the path of the coin carried by the coin-carrying disk 6, so as to be moved outwardly or in a direction away from the axis of rotation of such disk with a passage of such coin beneath said point or head 33. In the preferred construction of the present invention, as illustrated more particularly in Fig. 11, such point or head 33 will have a transverse arrangement with relation to the disk 6, so as to bear upon a coin of the normal thickness at a point adjacent to the forward edge thereof, so that with the use of less thickness than the normal such beveled point, will not properly engage upon the edge of such blank, and consequently the arm 31 of the lever will not receive the necessary outward movement, as would be the case where a coin of normal thickness was used. A further function of such beveled formation of the point 33 is to cut into a spurious blank of soft material—such as paper, lead, &c.—and thus prevent an outward or unlocking movement of the lever with the use of such class of blanks. It follows that with the described construction the vertical arm 30 of the detector-lever will only be moved out of the path of the stud 20 to permit an operative movement of the mechanism when a coin or blank of the proper thickness, diameter, and hardness is used.

34 is a spring tending to hold the lever 29 in its normal position heretofore described.

35 is a marginal offset on the coin-carrying disk 6, forming a space in which the stud 32 of the detector-lever is adapted to have its movements, as before described.

With the present improved mechanism any spurious blank or excessively worn coin when used in an attempt to operate the vending mechanism is returned outside the mechanism, so that there can be no dispute as to the nature of the attempt or the reason for a failure of the apparatus to make a delivery of the article or goods.

36 is a detector plate or chute adapted to direct the coin into the proper receptacle within the closed casing of the apparatus.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a coin-operated mechanism, the combination of a movable coin-carrier provided with a coin-receiving orifice and a stop lug or projection, a stationary front plate or cover for said coin-carrier, means for operating said

carrier, and a detector-lever having one arm arranged in the path of the coin-receiving orifice aforesaid, and the other arm in the path of the stop-lug aforesaid, substantially as set forth.

2. In a coin-operated mechanism, the combination of a movable coin-carrier provided with a coin-receiving orifice and a stop lug or projection, a stationary front plate or cover for said coin-carrier, means for operating said carrier, a detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said lever arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

3. In a coin-operated mechanism, the combination of a movable coin-carrier provided with a coin-receiving orifice and a stop lug or projection, a stationary front plate or cover for said coin-carrier, means for operating said carrier, a detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said lever, the said stud having a head on its outer end arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

4. In a coin-operated mechanism, the combination of a movable coin-carrier provided with a coin-receiving orifice and a stop lug or projection, a stationary front plate or cover for said coin-carrier, means for operating said carrier, a detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said lever, the said stud having a beveled head or point at its outer end arranged in the path of the coin-receiving orifice, substantially as set forth.

5. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said coin-carrier, means for operating said carrier, and an angular detector-lever having one arm arranged in the path of the coin-receiving orifice aforesaid, and the other arm in the path of the stop-lug aforesaid, substantially as set forth.

6. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said coin-carrier, means for operating said carrier, an angular detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said lever arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

7. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said coin-carrier, means for operating said carrier, an angular detector-lever having one arm ar-

ranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said lever, the said stud having a head on its outer end arranged in the path of the coin-receiving

5 orifice aforesaid, substantially as set forth.

8. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said
10 coin-carrier, means for operating said carrier, an angular detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said lever, the said stud having a beveled
15 head or point at its outer end arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

9. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said
20 coin-carrier, a handled operating-shaft secured to said carrier, and an angular detector-lever having one arm arranged in the path of the coin-receiving orifice aforesaid, and the
25 other arm in the path of the stop-lug aforesaid, substantially as set forth.

10. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said
30 coin-carrier, a handled operating-shaft secured to said carrier, an angular detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on
35 the other arm of said lever arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

11. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said
40 coin-carrier, a handled operating-shaft secured to said carrier, an angular detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on
45 the other arm of said lever, the said stud having a head on its outer end arranged in the path of the coin-receiving orifice aforesaid,
50 substantially as set forth.

12. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said
55 coin-carrier, a handled operating-shaft secured to said carrier, an angular detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on
60 the other arm of said lever, the said stud having a beveled head or point at its outer end arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

13. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving-orifice, housing-
65 plates at opposite sides of the carrier having entrance and exit orifices for the coin, means

for operating said carrier, and a pawl or dog pivoted to one of the housing-plates and adapted to engage behind the coin contained
70 in the carrier and prevent the return of said carrier until the coin is discharged therefrom, substantially as set forth.

14. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice, housing-
75 plates at opposite sides of the carrier having entrance and exit orifices for the coin, a handled operating-shaft secured to said carrier, and a spring-pawl on one of the housing-
80 plates adapted to engage behind the coin contained in the carrier and prevent the return of said carrier until the coin is discharged therefrom, substantially as set forth.

15. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a segmental cavity, housing-plates at opposite
85 sides of the carrier having entrance and exit orifices for the coin, means for operating the carrier, and a curved prong fixed on one side of the housing-plates with its curved end projecting into such segmental cavity to deflect
90 the coin out of such cavity as the carrier nears the end of its active movement, substantially
95 as set forth.

16. In a coin-operated mechanism, the combination of a movable coin-carrier provided with a coin-receiving orifice, a stationary front
100 plate or cover provided with an entrance-orifice for the coin, and a spring-dog moving in said front plate at the margin of said orifice with its point adapted to engage outside the coin after an insertion of the same, substantially
105 as set forth.

17. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice, a stationary front plate or cover provided with an entrance-orifice for the coin, means for operating
110 the carrier, and a spring-dog moving in said front plate at the margin of said orifice with its point adapted to engage outside the coin after an insertion of the same, substantially
115 as set forth.

18. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice, a stationary front plate or cover provided with an entrance-orifice for the same, a handled operating-shaft secured to said carrier and a spring-dog moving in said front plate at the margin
120 of said orifice with its point adapted to engage outside the coin after an insertion of the same, substantially as set forth.

19. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said
125 coin-carrier, a handled operating-shaft secured to said carrier and adapted to oscillate the same in one direction, a spring for moving the carrier in the opposite direction, and an angular detector-lever having one arm ar-

ranged in the path of the coin-receiving orifice aforesaid, and the other arm in the path of the stop-lug, aforesaid, substantially as set forth.

20. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said coin-carrier, a handled operating-shaft secured to said carrier and adapted to oscillate the same in one direction, a spring for moving the carrier in the opposite direction, an angular detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said lever arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

21. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said coin-carrier, a handled operating-shaft secured to said carrier and adapted to oscillate the same in one direction, a spring for moving the carrier in an opposite direction, an angular detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said lever, the said stud having a head on its outer end arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

22. In a coin-operated mechanism, the combination of an oscillatory coin-carrier provided with a coin-receiving orifice and a stop-lug, a stationary front plate or cover for said coin-carrier, a handled operating-shaft secured to said carrier and adapted to oscillate the same in one direction, a spring for moving the carrier in an opposite direction, an angular detector-lever having one arm arranged in the path of the stop-lug aforesaid, and a lateral stud on the other arm of said le-

ver, the said stud having a beveled head or point at its outer end arranged in the path of the coin-receiving orifice aforesaid, substantially as set forth.

23. In a coin-operated mechanism, the combination of stationary front and rear plates arranged in separated relation and provided with entrance and exit orifices arranged in separated relation on a common plane, an oscillatory carrier-disk arranged between said plates and provided with a coin-receiving orifice arranged on the common plane aforesaid, means for oscillating said carrier-disk, means for limiting the oscillation of said disk, the same comprising a stud on the disk and a segmental slot in the rear plate, and a detector-lever pivoted to the rear plate with one arm arranged in the path of the coin-orifice of the disk, and the other arm arranged in the path of a stud on said disk, substantially as set forth.

24. In a coin-operated mechanism, the combination of stationary front and rear plates arranged in separated relation and provided with entrance and exit orifices arranged in separated relation on a common plane, an oscillatory carrier-disk arranged between said plates and provided with a coin-receiving orifice arranged on the common plane aforesaid, means for limiting the oscillation of said disk, an operating-shaft for the vending mechanism, a ratchet-wheel on said shaft, an operating ratchet-dog, and a handled operating-shaft carrying said carrier-disk and said dog, substantially as set forth.

In testimony whereof witness our hands this 23d day of July, 1901, at Chicago, Illinois.

ALVAH C. ROEBUCK.

FRANK McMILLAN.

In presence of—

ROBERT BURNS,

HENRY A. NOTT.