

G. J. TUBERGEN.

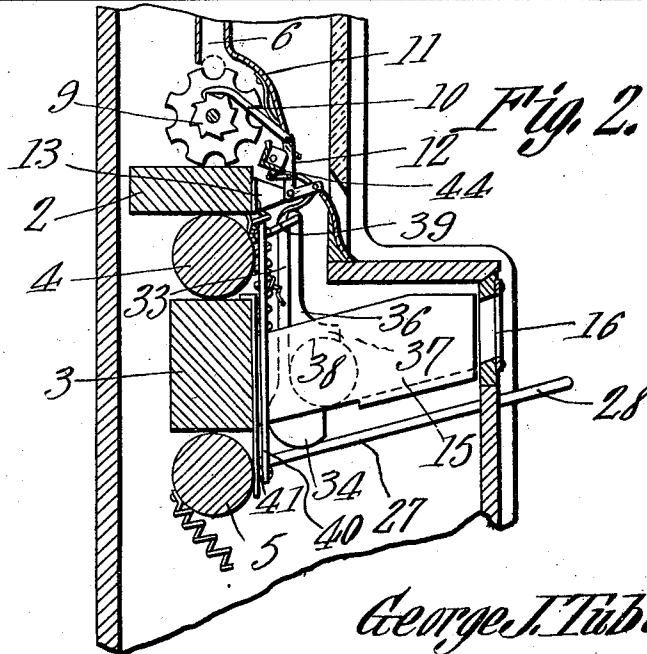
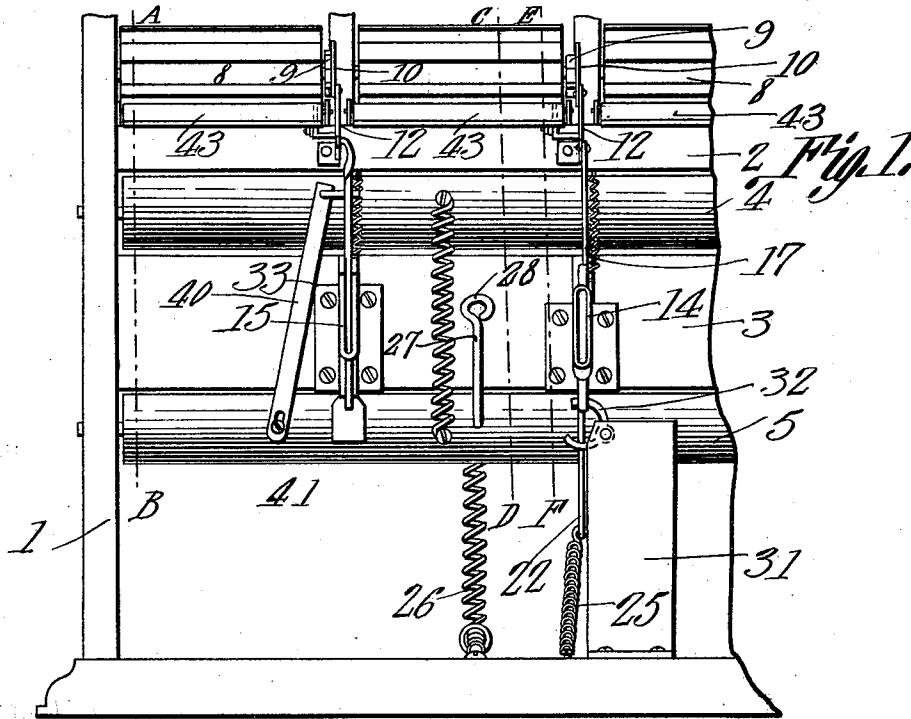
VENDING MACHINE.

APPLICATION FILED MAY 12, 1910.

1,000,857.

Patented Aug. 15, 1911.

2 SHEETS-SHEET 1.



Witnesses

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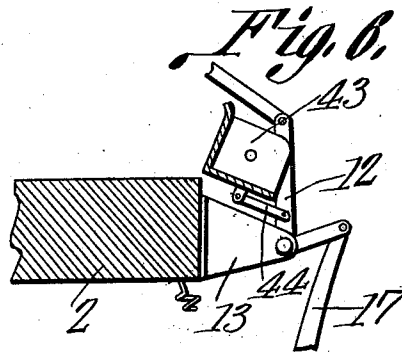
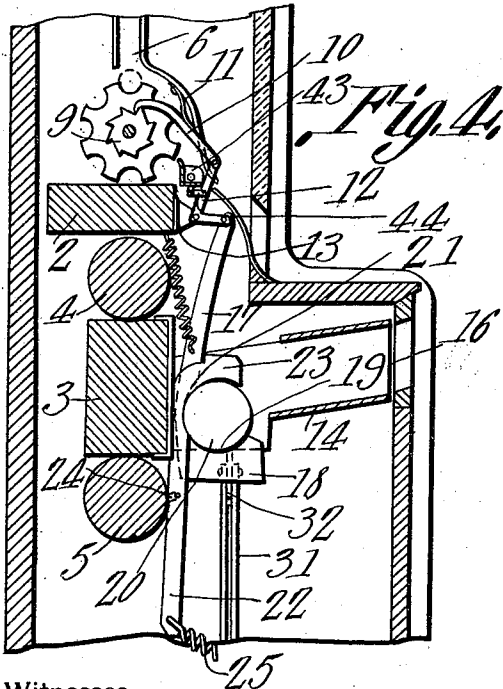
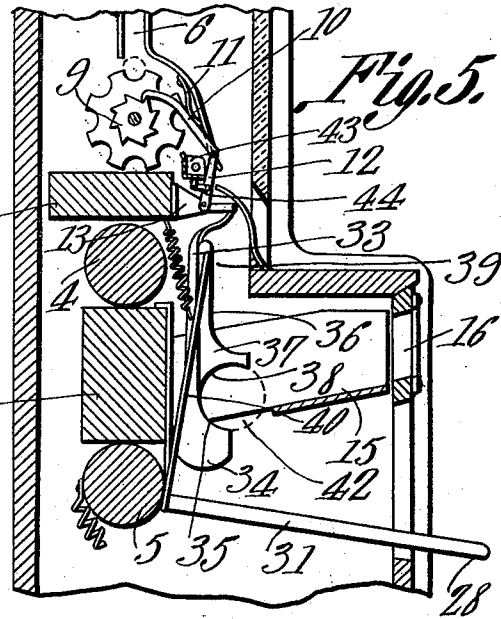
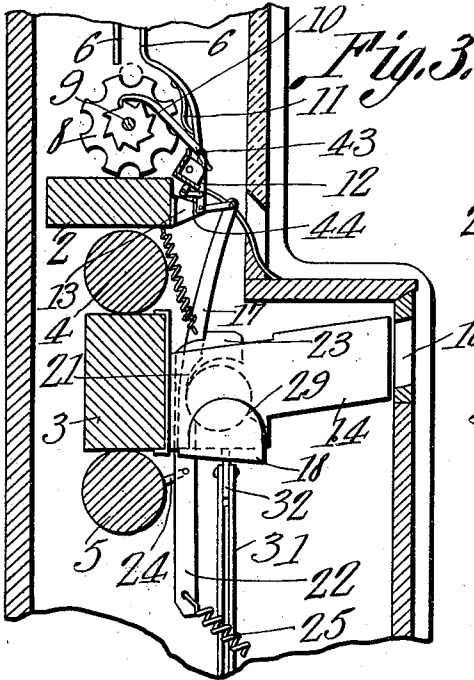
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UNITED STATES PATENT OFFICE.

GEORGE J. TUBERGEN, OF GRAND RAPIDS, MICHIGAN.

VENDING-MACHINE.

1,000,857.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed May 12, 1910. Serial No. 560,938.

To all whom it may concern:

Be it known that I, GEORGE J. TUBERGEN, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Vending-Machine, of which the following is a specification.

This invention has reference to improvements in vending machines and is designed to cause the delivery of an article on there being deposited in the machine a coin of suitable character to cause the operation of the vending side of the machine.

Further the machine is designed to operate with coins of different values, the actuating side of the machine being common to the several different vending mechanisms which are coupled to the machine by the proper coin inserted in the machine at the proper point.

The invention will be best understood from the following description taken in connection with the accompanying drawings forming a part of this specification, in which drawings:—

Figure 1 is a front elevation of so much of the machine as is necessary for an understanding of the present invention, the front of the machine being removed to expose the interior part. Fig. 2 is a section on the line A—B of Fig. 1. Fig. 3 is a section on the line C—D of Fig. 1. Fig. 4 is a section on the line E—F of Fig. 1 with the parts in different position than shown in Fig. 3. Fig. 5 is a section similar to that of Fig. 2 and showing the coin chute also in section. Fig. 6 is a detail view of the anti-repeating device.

Referring to the drawings there is shown a casing 1 which may be of any type or form adapted to the purposes of the present invention. At the lower end of the casing are cross pieces 2, 3 adapted to sustain portions of the operating mechanism. Traversing the casing between the cross pieces 2 and 3 is a roller 4 and below the partition 3 is another roller 5. It will be understood that these rollers are indicative of any shaft like structures. The cross pieces 2 sustain a number of uprights or strips 6 for the reception of the articles to be vended, that portion of the casing occupied by the strips 6 constituting the magazine part of the casing.

Immediately above the cross piece 2 at the bottom of each magazine as defined by

the space between two uprights 6 is a delivery drum with a circumferential series of longitudinal grooves for receiving the articles and delivering them one at a time. Each drum carries a ratchet 9 engaged by a finger 10 held thereto by a spring 11. The finger 10 is carried by one end of a bell crank lever 12 pivotally supported by a bracket 13 fast on the cross piece 2.

Fast to the cross piece 3 between the two shafts or rollers 4, 5 are coin chutes 14, 15, there being two distinct chutes shown in the drawings. One of these chutes, say the chute 14 is designed to receive coins of a certain denomination, say five cents, while the chute 15 is designed to receive coins of another denomination, say one cent, the machine being intended to provide means for the delivery of goods of different values on the insertion in the proper coin chute of the proper coin. The chutes 14 and 15 are each provided with a coin receiving mouth 16 of proper size at the exterior of the machine so as to be accessible to the user.

Near the cross piece 3 the chute 14 is slotted top and bottom for the passage of an arm 17 carried by one arm of the respective bell crank lever 12. The lower end of the arm 17 is formed with a lateral off-set 18 concaved on the upper edge as indicated at 19 in order to receive a coin rolling down the chute 14, the latter being inclined so that a coin will readily gravitate toward the arm 17. Such a coin is indicated at 20 in Fig. 4. The lateral diameter of the interior of the coin chute 14 is such as to maintain a coin introduced thereinto on edge and this coin will ride down the chute and ultimately lodge in the concave 19 still in the upright position, and the front edge of the arm 17 may also be concaved as indicated at 21 so that the coin lodges readily in the concave 19. The arm 17 is not as thick as the lateral diameter of the interior of the coin chute 16 so that another arm 22 may move into the coin chute and this arm has a lateral projection or head 23 in substantial overhanging relation to the projection 18 of the arm 17. The relative positions of the extension 18 and head 23 is such as to grasp a coin introduced between them.

The arm 22 is carried by the shaft 5 by means of a pin 24 projecting therefrom and this arm 22 is under the normal control of a spring 25 fast at one end to the lower end

of the arm and at the other end to some fixed point of the casing, the tendency of the spring being to pull the arm downward.

The shaft 5 has attached thereto one end 5 of a spring 26 the other end of which is fast to a fixed part of the casing and the tendency of the spring 26 is to rotate the shaft 5 in a direction to elevate the arm 22. The spring 26 is stronger than the spring 25 so the arm 10 22 is normally maintained in the elevated position.

Fast to the shaft 5 is a manipulating arm 27 extending through the casing to the exterior thereof and there provided with a 15 handle 28 so that a customer by grasping the handle may turn the shaft 5 by depressing the arm 27.

When no coin is present between the projection 18 and the head 23 then a turning of 20 the shaft 5 while causing a movement of the arm 22 will have no effect on the arm 17, but if a coin be present then the arm 17 is caused to participate in the movement of the arm 22 and the bell crank lever connected to the arm 17 will be rocked on its 25 pivot support and the corresponding drum 8 will be moved toward the delivery position thus causing the discharge of an article from the magazine.

One side of the chute 14 is cut away as 30 shown at 29 and when a coin 30 is in the lowermost position it assumes on the active movement of the delivery side of the machine, such coin is opposite the cut-away 35 portion 29.

Mounted on the frame 1 of the machine is a post or standard 31 on the upper end of which is pivotally supported a lever 32 with its arms curved one toward the other in ap- 40 proaching relation.

The lever 32 is so related to the chute 14 and end 18 of the arm 17 that one end of this lever is normally in the path of the end 18 of the arm 17 so that when the arm 45 17 is moved downward through the intermediary of a coin it will engage one end of the lever 32 and the other end of this lever will move beneath the chute 14 in a direction transverse to the length thereof until 50 it is brought into contact with the coin 30 in a manner to push this coin from engaging relation to the extension 18 and head 23, the coin falling into a suitable receptacle and the arm 17 rising and the finger 10 controlled by said arm moving to engage the 55 next tooth of the ratchet 9.

The chute 15 is similar to the chute 14 except that there is no cut-away portion. Instead of the arm 17 the chute 15 is trav- 60 ersed by an arm 33 terminating at the lower end in a head 34 and having one face curved as shown at 35, the end of the curve at the end of the head being the lowermost point of the curve. In this case the arm 33 is of sub- 65 stantially the same thickness as the internal

diameter of the chute 15. In front of the arm 33 is another arm 36 terminating in a lateral projection 37 having its under surface curved as indicated at 38, the curvature 38 matching the curvature 35 and these 70 curved portions are together adapted to include a little more than one half the circumference of a coin lodged between them, such coin being in the particular instance under consideration a one cent piece. 75

The arm 36 is carried by a pin or finger 39 projecting from the shaft or roller 4 and this same pin 39 may constitute a means for connecting the shaft 4 to the shaft 5 through the intermediary of a link 40 trav- 80 ersed at one end by the pin 39 and at the other end by another pin or like fastening device 41 on the shaft or roller 5.

When a coin is introduced between the head 34 and the end 37 of the arm 36, such 85 coin being indicated 42 in Fig. 5, the coin is ultimately carried through the bottom of the chute 15 and then being no longer resisted by the adjacent edge of the bottom of the chute the coin will be forced out from 90 between the head 34 and the extension 38 of the arm 37 by the pressure of the arm 36 on the coin and because of the curve 35, the two parts then acting to discharge the coin so that the arm 36 and the arm 33 are no 95 longer connected by the coin, whereupon the arm 34 will return to its upper position, and the corresponding finger 10 will be returned to its normal position.

The same manipulating member 27 is 100 used for both coin operated structures and either or both of these structures may be operated on the introduction into the machine of a proper coin or coins, but neither structure will operate without the presence 105 of the appropriate coin.

To prevent the machine from repeating, there is provided a stop member 43 in the path of articles escaping from each drum 8 so that such article cannot reach the cus- 110 tomer until the coin has escaped and the parts are returning to normal position.

The member 43 is in the form of a ledge or shelf rockable on pivots and connected by a link 44 to the bell crank lever 12 so that 115 when the lever is rocked by a coin the shelf will be moved to an approximately horizontal position in the path of the article escaping from the drum 8 and prevents it from escaping from the machine. 120

When, however, the parts return to normal position the shelf 43 is pitched forward so as to discharge the article lodged thereon to the exterior of the machine.

What is claimed is:— 125

1. In a vending machine, a coin chute having a coin outlet in the bottom thereof, arms mounted for movement across the chute and toward or away from the outlet, said arms having cooperating projections 130

for the reception therebetween of a coin introduced into the chute, an elastic support for one of the arms, a revoluble actuating element, and means operated by said element for shifting the other arm relative to the yieldingly supported arm to grip the coin between the extensions and to convey the coin through the outlet opening.

2. In a vending machine, a coin chute having an outlet in the bottom thereof, arms movable within the chute and upwardly and downwardly relative thereto, a spring support for one of the arms, vending mechanism, said mechanism including an oscillatory element connected to and adapted to be actuated by said spring supported arm, a revoluble actuating member, a connection between said member and the other arm, and projections upon the arms for the reception of a coin therebetween, said projections cooperating to grip upon the coin and convey it through the outlet, said coin constituting means for transmitting motion from one arm to the other.

3. In a vending machine, a coin chute having an outlet, arms movable along lines intersecting the longitudinal center of the chute, projections on the arms for the reception of a coin therebetween, a yielding support for one of the arms, a vending mechanism, a tiltable intercepting shelf in the path of an article escaping from said mechanism,

means operated by said arm when movable in one direction for shifting the shelf to intercepting position, a revoluble operating member, and means for transmitting motion from said member to the other arm to grip the coin between the projections and to shift the arm to convey said coin through the outlet.

4. In a vending machine, a coin chute having an outlet, separate arms movable along lines intersecting the longitudinal center of the chute, projections on the arms for receiving a coin therebetween, vending mechanism, a tiltable intercepting member connected to and movable with one of the arms, a revoluble actuating element, a connection between said element and the other arm, for shifting the arm to grip a coin between the projections, and conveying said coin through the outlet, said coin constituting means for transmitting motion from one arm to the other to move the intercepting member to active position, and elastic means for returning said member and the arms to their initial positions.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE J. TUBERGEN.

Witnesses:

GEO. A. POWELL,
GEORGE B. POWELL.