H. L. MORRISON.

COIN CONTROLLED VENDING MACHINE.

APPLICATION FILED SEPT. 7, 1915.

1,178,935.

Patented Apr. 11, 1916.

3 SHEETS—SHEET 1.

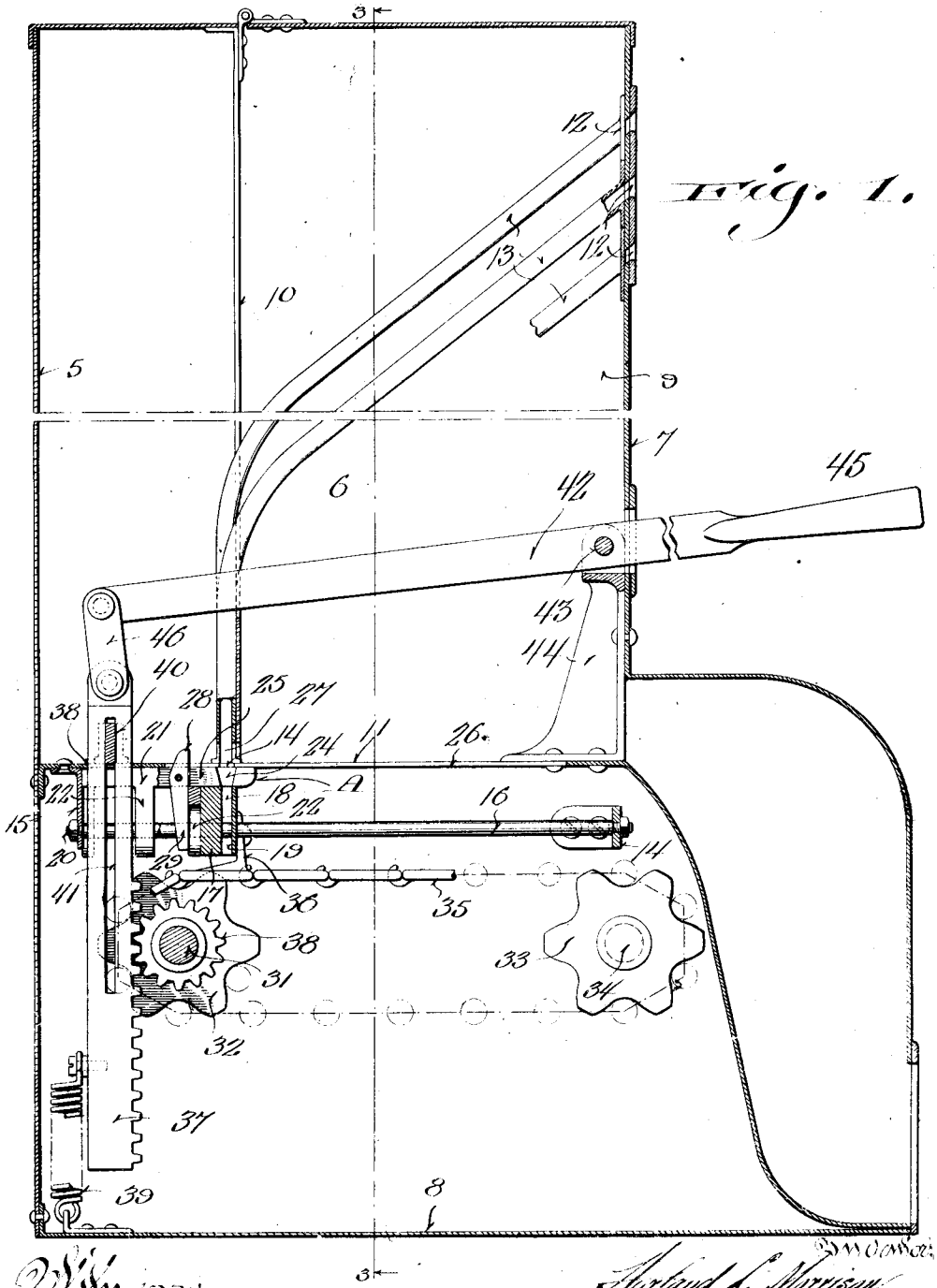


Fig. 1.

Witnesses:

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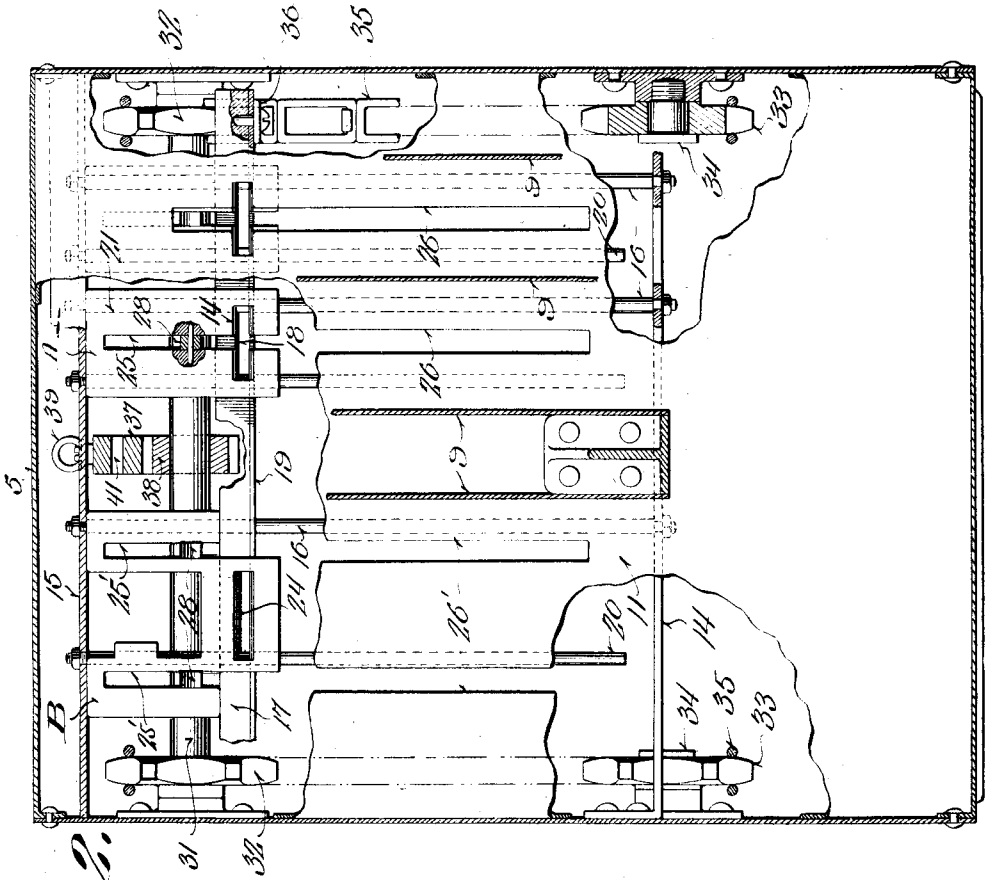


Fig. 2.

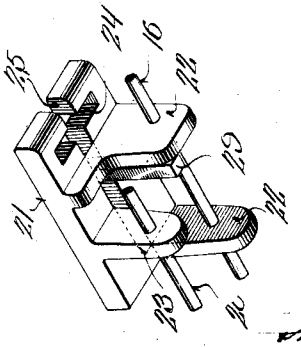


Fig. 11.

Witnesses:
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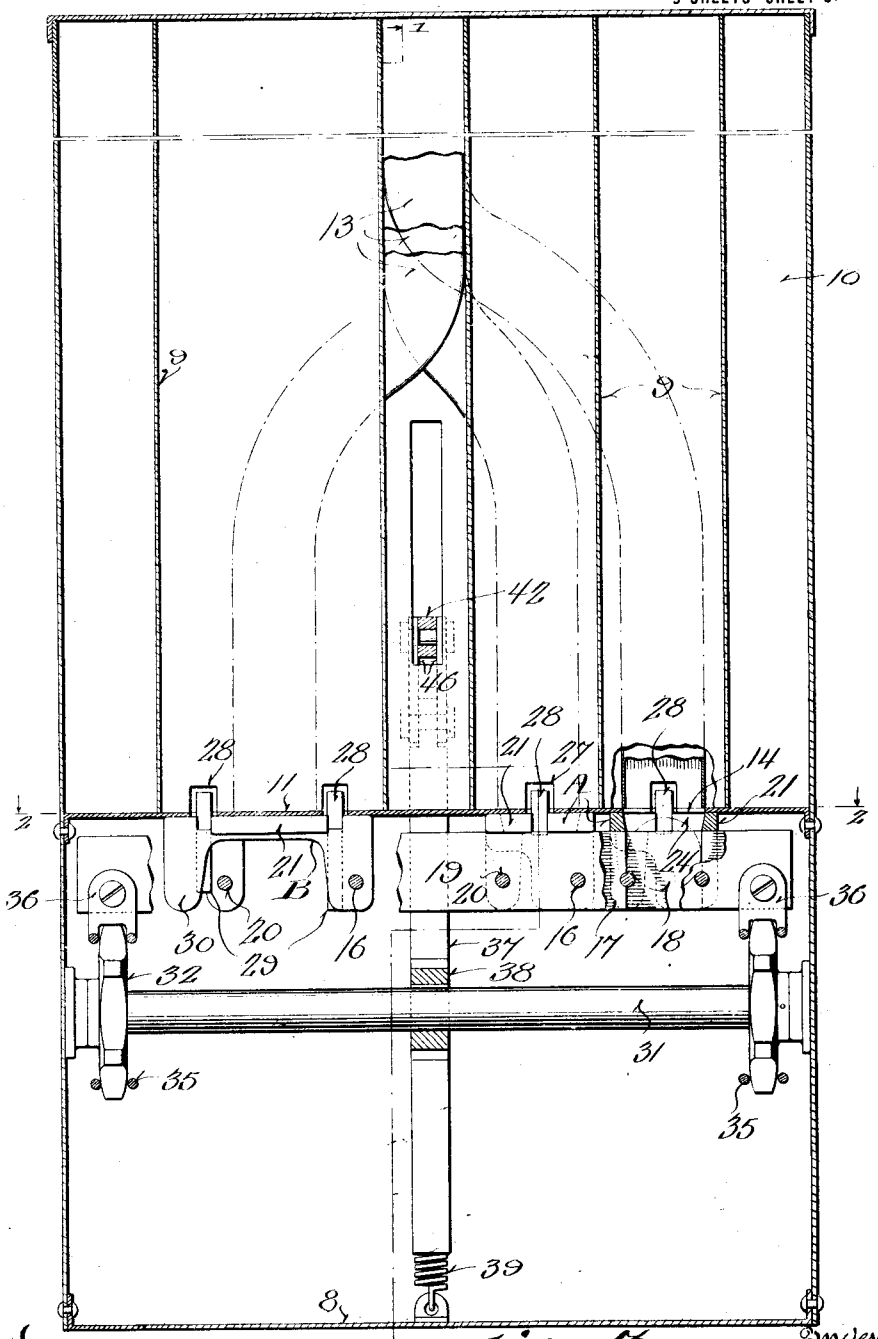


Fig. 5.

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UNITED STATES PATENT OFFICE.

HARLAND L. MORRISON, OF BELOIT, WISCONSIN.

COIN-CONTROLLED VENDING-MACHINE.

1,178,935. Specification of Letters Patent. Patented Apr. 11, 1916.

Application filed September 7, 1915. Serial No. 49,264.

To all whom it may concern.

Be it known that I, HARLAND L. MORRISON, a citizen of the United States, and resident of Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to new and useful improvements in coin-controlled vending machines. It is in general the object of the present invention to simplify the structure and improve the efficiency of machines of this character.

An important and more specific object is to provide an exceedingly simple coin lock between the ejecting carriage of a machine of this character and the members for ejecting the contents of the machine whereby upon the carriage reaching its ejecting position the coin will be automatically released and allowed to drop from locking position into the coin receptacle.

Another object is to incorporate the above coin lock in a machine including a plurality of compartments and a plurality of ejecting members co-acting therewith whereby upon a single movement of the ejecting carriage all of the ejecting members which are locked thereto by the proper insertion of a coin in the machine may be simultaneously actuated to eject articles from the machine.

With the above and other objects and advantages in view, the invention resides more particularly in the novel combination, arrangement and formation of parts more particularly hereinafter described and particularly pointed out in the appended claims.

Reference is had to the accompanying drawings wherein similar characters of reference designate corresponding parts throughout the several views and in which:

Figure 1 is a vertical sectional view taken centrally through a vending machine constructed in accordance with the present invention; Fig. 2 is a horizontal view taken through the machine on a plane adjacent the bottoms of the article compartments and showing said bottoms broken away in parts to more clearly disclose the ejecting mechanism, this view being taken on line 2—2 of Fig. 3; Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 1, and Fig. 4 is a detailed perspective view showing one of the ejecting members and the supporting rods therefor.

Referring now more particularly to the accompanying drawings, the improved machine is shown as including a casing formed of the back wall 5, the side walls 6, the front wall 7 and the bottom wall 8. Disposed in the upper forward portion of the casing are a plurality of partition walls 9 dividing the casing into compartments for receiving various articles to be vended, these partitions being connected at their rears by a vertical transverse partition wall 10 and at their bottoms by a bottom partition wall 11 which extends entirely across the casing and serves at its rear portion as a support for the ejecting mechanism. Disposed in vertical alinement in the front of the casing are a plurality of coin openings 12 and coin chutes 13 extend from these openings diagonally downward to a position behind the partition wall 10, from whence they are directed laterally and vertically downward, each to a respective one of a series of horizontally alined coin slots 14 formed in the bottom partition 11 and disposed immediately rearwardly of the partition 10 of the article compartments.

Depending from the rear portion of the partition 11 is a flange 15 and disposed transversely across the front portion of the casing is a bar 14. This bar and flange serve to carry a plurality of supporting rods 16 which slidably support the ejecting carriage of the machine and which comprises track members therefor. This carriage comprises a bar 17, which lies transversely of the machine and through the lower side of which is passed the rods 16. It is noted that one of these rods 16 is provided adjacent one side of each article compartment. The carriage bar is provided in its front face with vertical relatively wide grooves 18 each corresponding to a respective coin slot 14 and a cover-plate 19 is disposed across the front of the carriage bar to cover the grooves and form slots thereof.

For slidably supporting the various ejecting members to be described, and for providing at the same time a holding means for coins in the slot 18, rods 20 are secured to the flange 13 and are slidably passed through the carriage bar and cover-plate 19, these rods terminating short of the bar 14. Each

of these rods normally intersects a respective slot 18 in such manner that a coin placed in said slot would be prevented from dropping therethrough. However, when the carriage is moved to a forward or ejecting position abutting against the bar 14, the forward end of each rod 20 will lie inwardly of the slot to free the slot, although the rod will still have bearing in and be supported by the bar.

It will be noted that the ejecting carriage is spaced slightly below the partition 11. Each of the ejecting members comprises a plate 21 which is slidable immediately under the partition 11 and which is supported in its position and held for such sliding movement by a pair of lugs 22 depending therefrom and slidable on a respective bar 16, and a lug 23 depending therefrom and slidable on the rod 20. When in retracted position the ejecting member abuts against the flange 15 and it is provided with a transverse slot 24 which when the member is in such retracted position alines with the slot 14 which is the discharge mouth of the respective coin chute and with the respective slot 18 of the ejecting carriage when such carriage is in retracted position and lies under the forward end of the ejecting member.

The distance which each rod 20 is positioned below the top of the carriage is such that a coin dropped into one of the slots 18 would be held in a manner projecting above the slot 18 and into the slot 14 of the ejecting member. Thus upon dropping a coin through a respective chute and into respective slots 24 and 18, the ejecting member would be locked to the carriage and would be drawn forwardly thereby upon forward movement of the carriage to an ejecting position. Upon such ejecting position being reached the coin would drop through the slot 18 due to its being released by moving past the end of the respective rod 20, and the carriage and ejecting member will thus be released from their locked relation. The forward lug 17 of the ejecting member is so positioned as to abut against the carriage when both are retracted, and thus upon retracting the carriage member any or all of the ejecting members which may have been moved to ejecting position will be moved back to initial position.

In the drawings there is shown one type of ejecting member adapted for use in connection with relatively narrow articles to be ejected, and another type of ejecting member adapted for use with relatively wide packages. The operation of both members is the same with respect to the ejecting carriage, and the numerals heretofore applied to the ejecting members are applicable to both. One type of ejecting member designated now generally at A is relatively narrow and is provided centrally with a longitudinal slot 25 and the respective article compartment with which this member coacts is centrally longitudinally slotted at 26, this slot extending in the partition 11 rearwardly of the wall 10 and the respective coin chute being also slotted at its lower end as at 27. An ejecting finger 28 is pivoted in the slot 25 and adapted to project into and slide through the slot 26, this finger having a depending portion 29 whose weight normally holds it in a vertical position and which normally abuts against the forward lug 22 which is for that purpose relatively wide. Upon the ejecting member being moved from ejecting position to a retracted position, the finger rocks on its pivot to ride under the articles in the respective compartment. In the other type of ejecting member, designated now at B slots 25′ are provided in its side portions similar to the slots 25 of the other member and the respective compartment is provided with a pair of slots 26′. Pivotally mounted in the slots 25′ are ejecting fingers 28′ similar to the fingers 28, one of these fingers at its lower end abutting against the forward lug 22 of the ejecting member and the other finger having its lower end engageable with a lug 30 provided for that purpose on the under face of the member.

For operating the ejecting carriage, a shaft 31 is journaled transversely in the rear portion of the casing and carried by the end portions of the shaft are sprocket wheels 32 which coact with sprocket-wheels 33 carried on stub-shafts 34 at the forward side portion of the casing to support sprocket chains 35. Each of these chains carries an upstanding lug 36 secured to the carriage bar 17. A rack-bar 37 is vertically slidable through a slot 38 in the rear portion of the partition wall 11 and this rack-bar meshes with a gear pinion 38 on the shaft 31 whereby oscillation of the rack-bar will oscillate the ejecting carriage.

The rack-bar is normally drawn downwardly to a position wherein the carriage is held in a retracted position by a retractile spring 39 secured to the lower end of said rack-bar and to the bottom 8 of the casing. The rack-bar is held for proper vertical sliding movement by a bar 40 which is carried on the partition 11 and which projects across the slot 38 and is slidable in a longitudinal slot 41 in the rack-bar. For actuating this rack-bar to move the carriage to ejecting position, a lever 42 is intermediately pivoted at 43 on a bracket 44 carried at the forward portion of the casing and projects outwardly of the casing to provide an operating handle 45. The inner end of this lever is pivoted to a link 46 which is in turn pivoted to the upper end of the rack-bar.

From the foregoing description it is seen

that an exceedingly simple structure has been provided which is positive in operation.

It will be noted that the means for holding and releasing the coins with respect to the ejecting carriage and the various ejecting members also serves as the means whereby said members are supported for their sliding movement.

By this structure an exceeding economy of parts is had without in any manner detracting from the effectiveness of the device, in fact, the effectiveness of the device being enhanced by providing a more positive operation.

I claim:

1. A vending machine including a casing, track members in the casing, a carriage member slidable on said track members and provided with a slot, a rod secured to the casing and slidably connected with the carriage and adapted during the major portion of movement of the carriage to close the slot against passage of a coin, an ejecting member provided with a slot adapted to aline with the slot of the carriage and slidably supported by said last named rod and one of the track members and means for moving the carriage.

2. A vending machine including a casing, a plurality of spaced rods carried in the casing, an ejecting carriage slidably carried by the rods and provided between said rods with coin slots, a plurality of other rods adapted to intersect said slots to hold a coin therein, said rods terminating short of the limit of movement of the carriage to free said slots, a plurality of ejecting members each slidably mounted on one of the first mentioned rods and one of the second mentioned rods and provided with a slot adapted to aline with a respective slot of the carriage, and means for moving the carriage.

3. A vending machine including a casing, a plurality of spaced rods carried in the casing, a carriage mounted on said rods and provided therebetween with coin slots, a plurality of other rods disposed between the first rods and having slidable connection with the carriage and normally disposed to intersect said slots to hold a coin therein, said second mentioned rods terminating short of one limit of movement of the carriage to free said slots, an ejecting member slidably mounted on one of said first mentioned rods and one of the second mentioned rods and provided with a slot adapted to aline with a respective slot of the carriage, and means for moving the carriage.

4. A vending machine including a slidable ejecting carriage, a plurality of ejecting members, means adapted in conjunction with a coin for selectively locking said members to the carriage, said carriage being operable to move the members to and from ejecting position, a shaft, a second shaft, an endless chain carried on said shafts and extending in a direction parallel to the path of movement of the carriage, means connecting the chain with the carriage, and means for imparting reverse rotary movements to one of the shafts.

5. A vending machine including a casing divided into article compartments and an intermediate compartment, an ejecting mechanism disposed below each article compartment, a vertical series of coin slots in the upper portion of the intermediate compartment chutes extending from said slots through the intermediate compartment and diverged rearwardly thereof and extended each to a respective ejecting mechanism, an operating lever extended through the intermediate compartment below the chute portions disposed therein and pivotally mounted for vertical swinging movement, and means operatively connecting the said lever with the ejecting mechanism.

6. A vending machine including a casing, article compartments therein, ejecting means movable under the compartments, a transverse shaft disposed under said means at the rear thereof and connected operatively thereto, a gear on the shaft, a slidably mounted rack bar meshing therewith, and an intermediately pivoted lever connected with the rack bar and extended outwardly of the casing.

In testimony that I claim the foregoing I have hereunto set my hand at Beloit, in the county of Rock and State of Wisconsin, in the presence of two witnesses.

HARLAND L. MORRISON.

Witnesses:
OWEN RITLAND,
MAUDE E. SCHUMAKER.