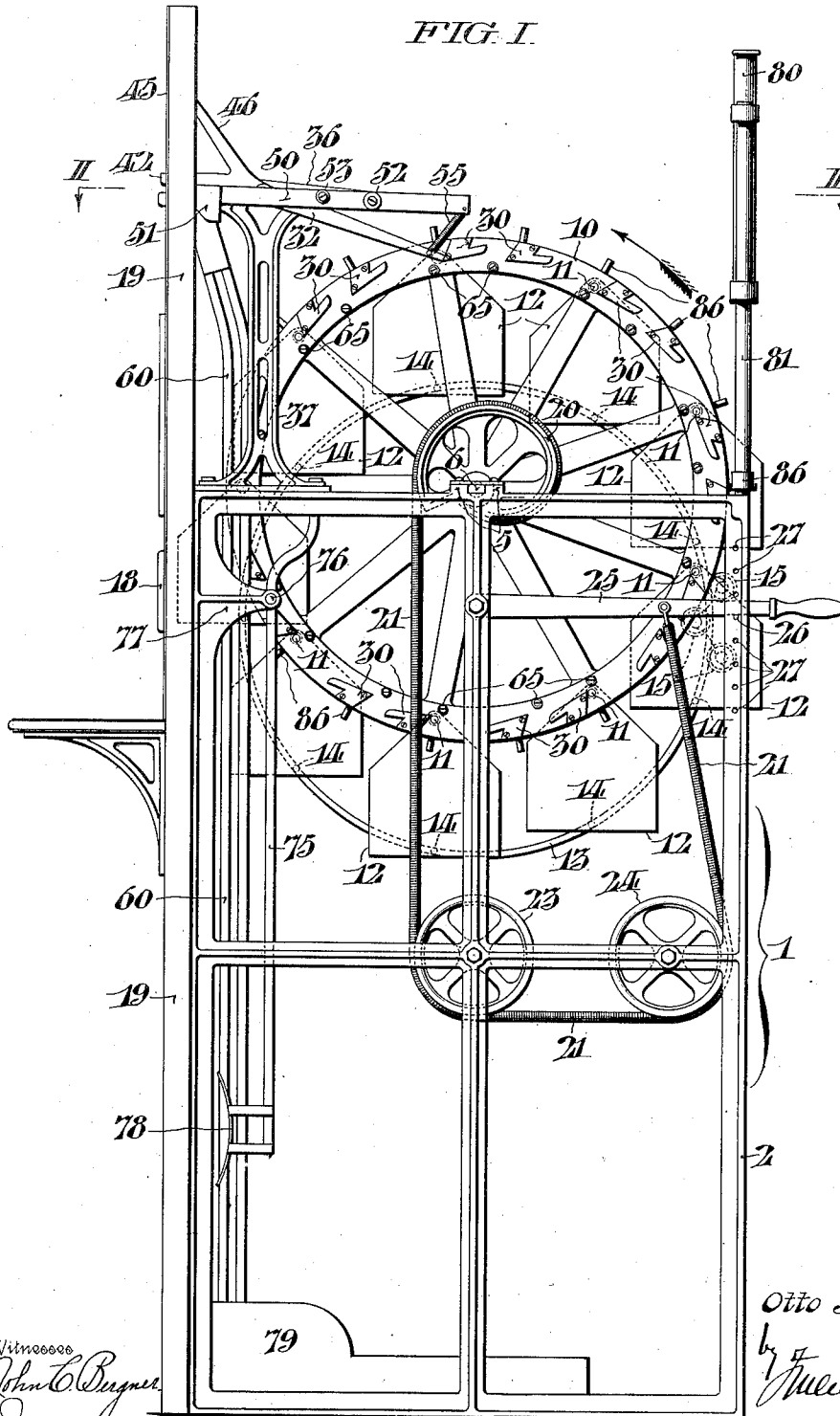


1,007,873.

Patented Nov. 7, 1911.
 5 SHEETS—SHEET 1.

FIG. I.

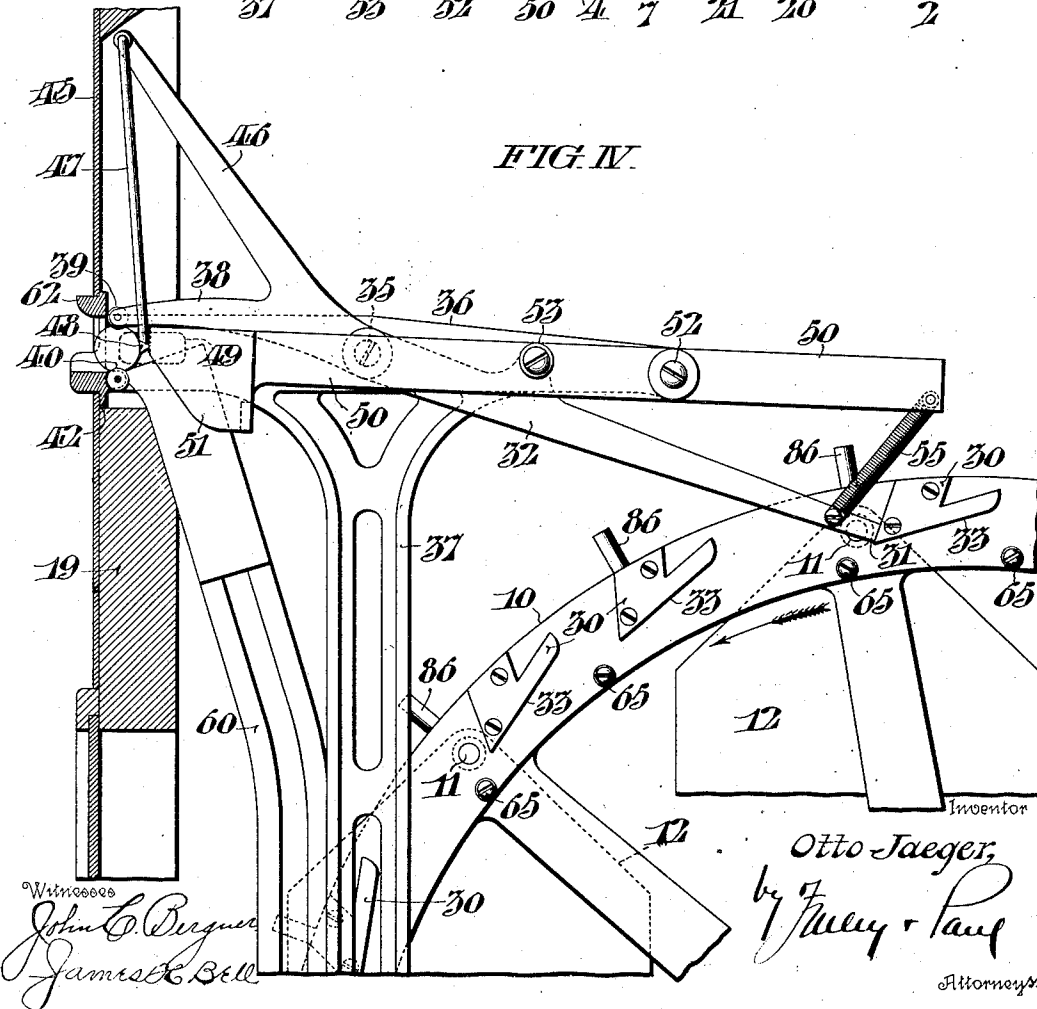
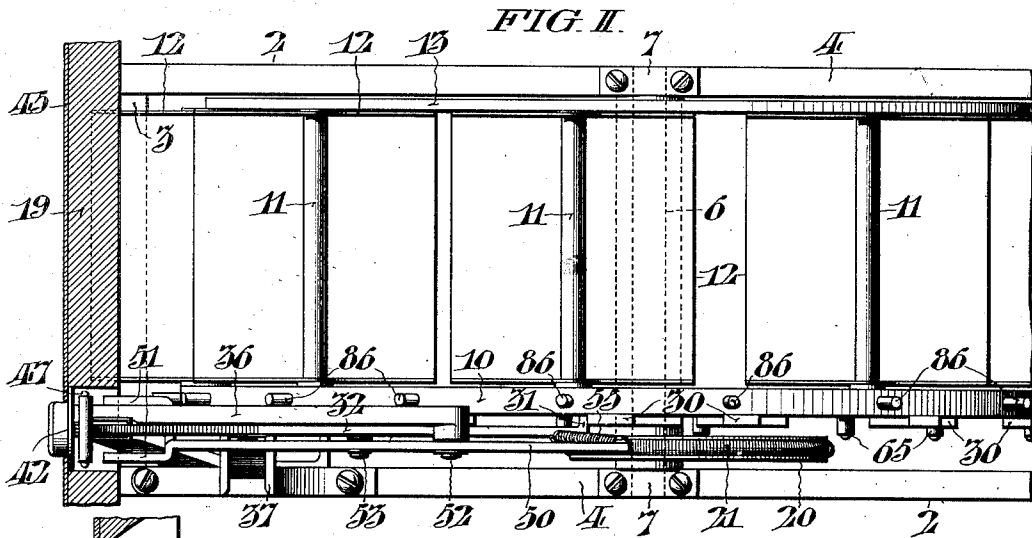


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1,007,873.

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5 SHEETS—SHEET 2.

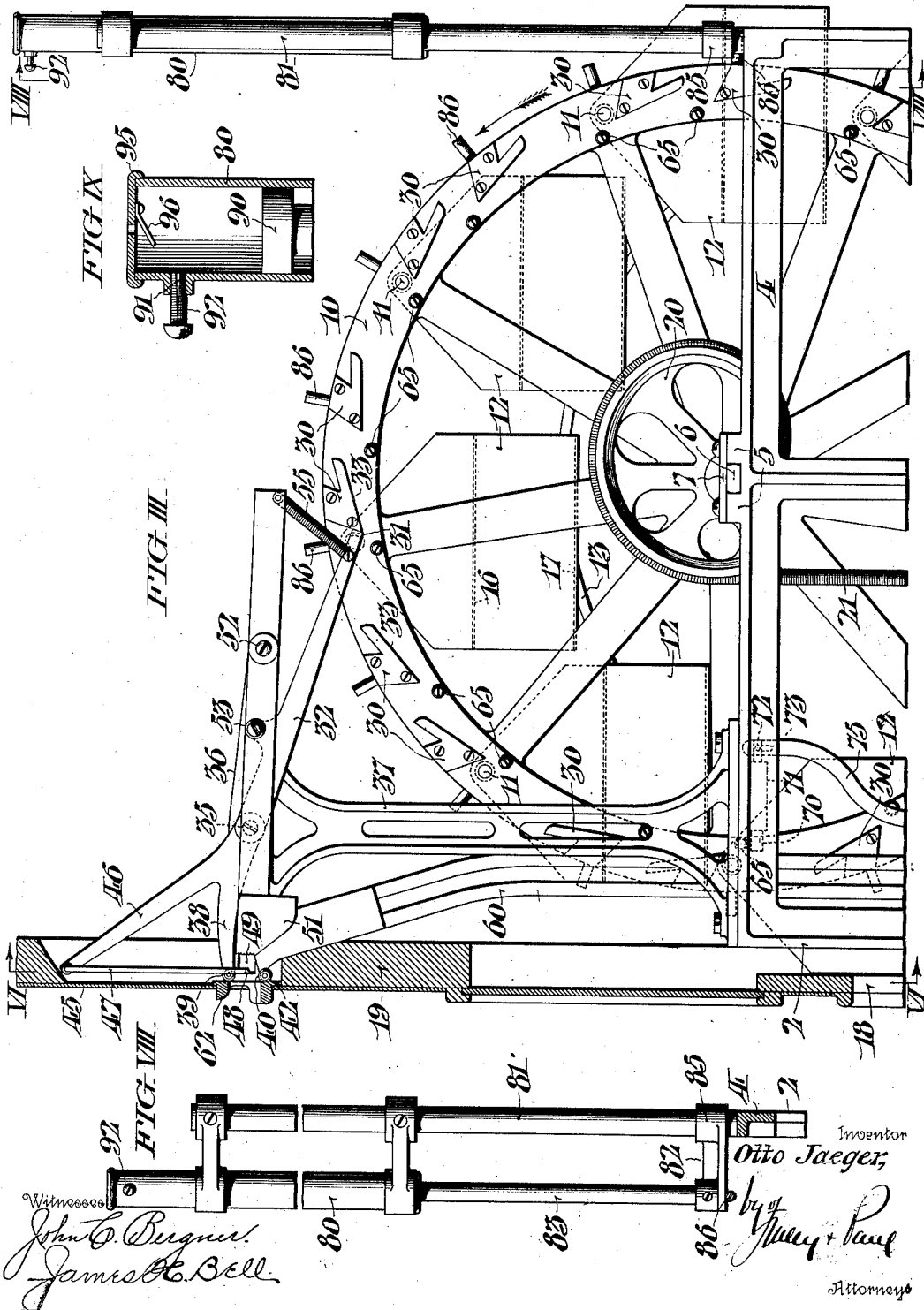


O. JAEGER.
 VENDING APPARATUS.
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1,007,873.

Patented Nov. 7, 1911.

5 SHEETS—SHEET 3.

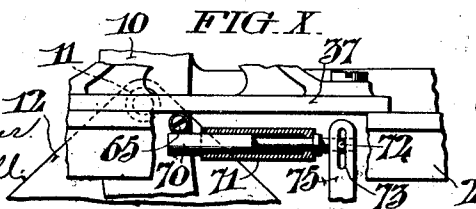
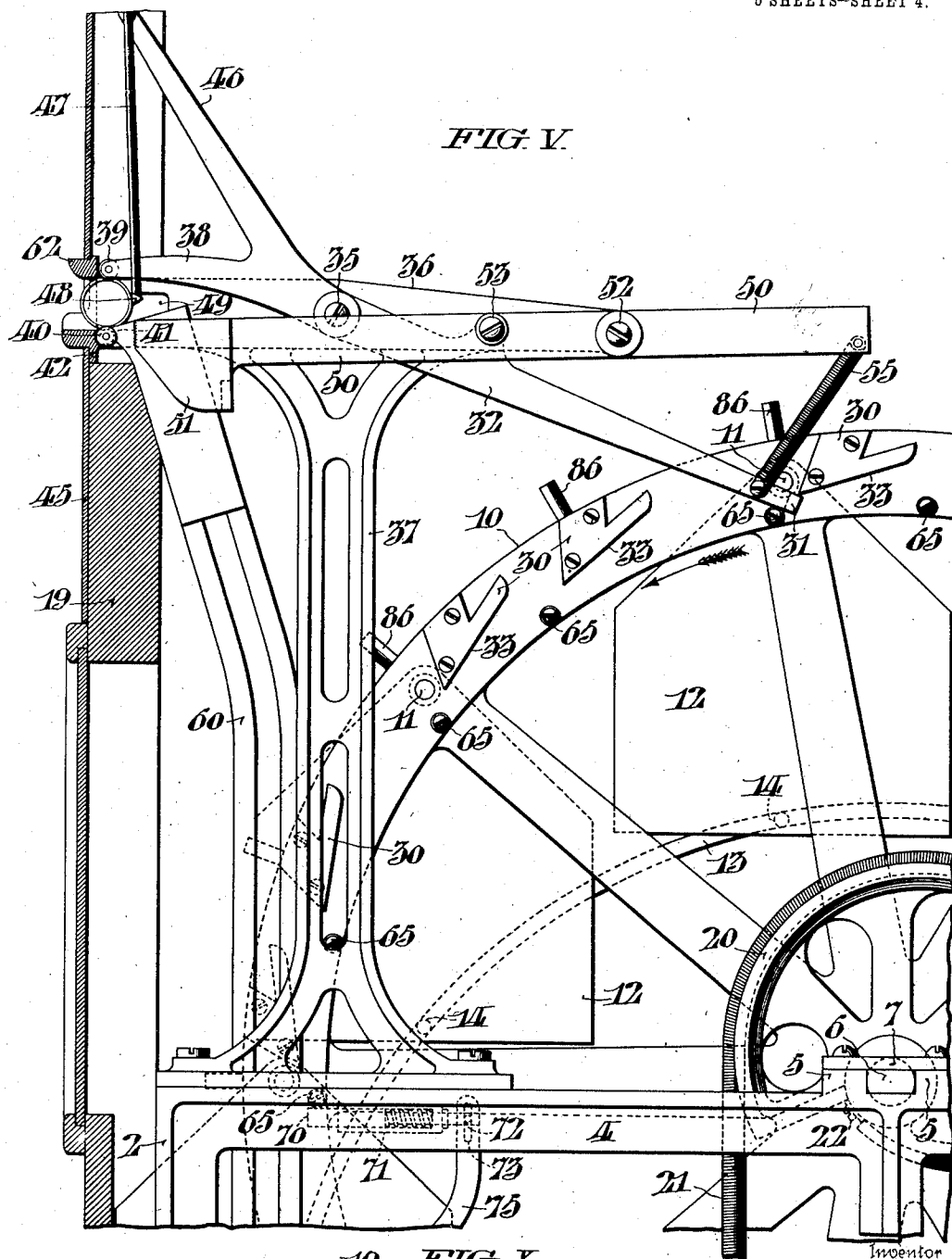


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5 SHEETS-SHEET 4.



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1,007,873.

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6 SHEETS—SHEET 5.

FIG. VII.

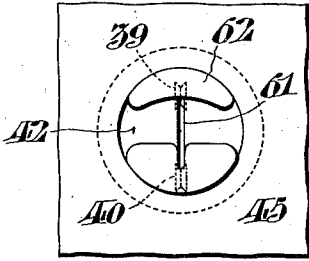
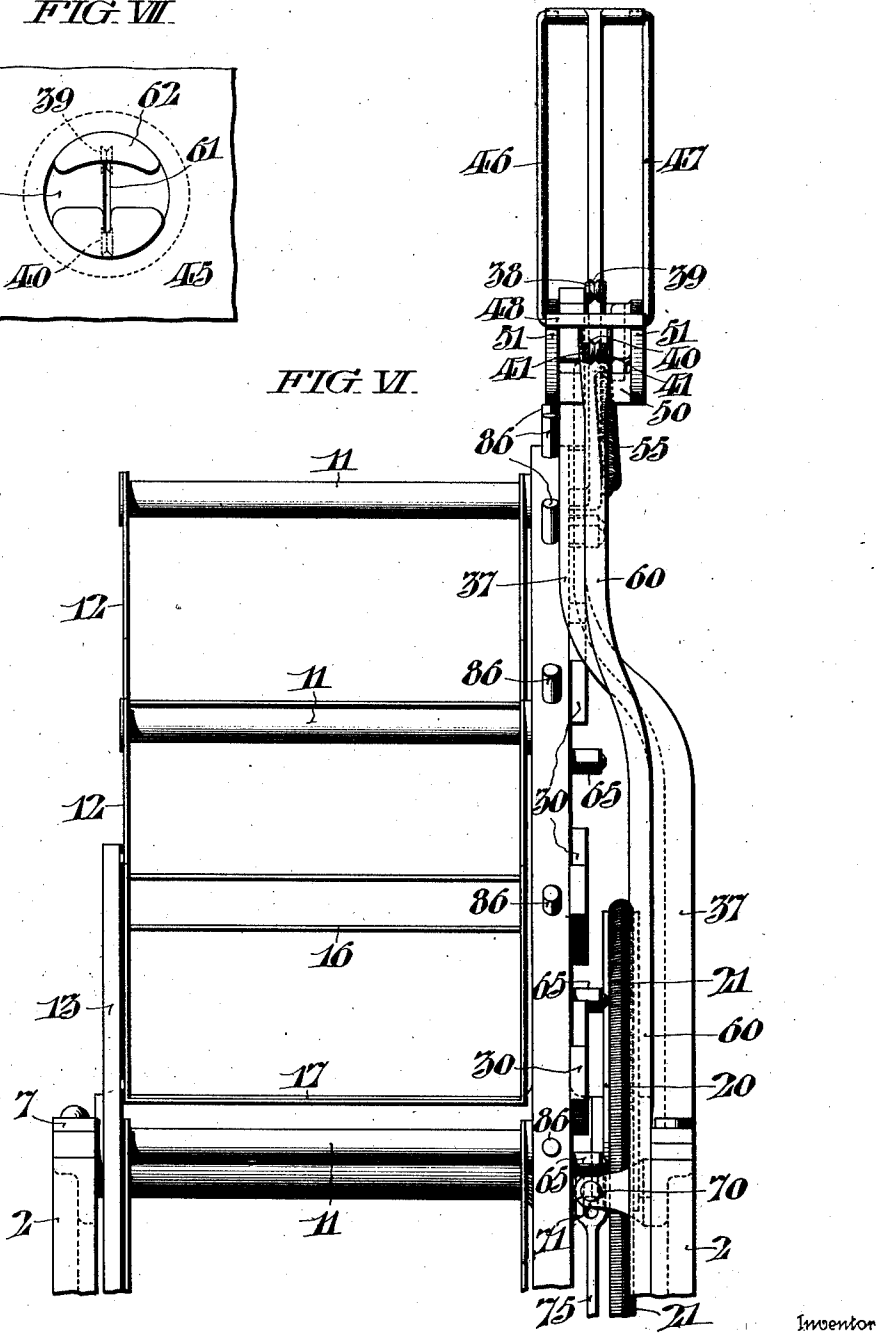


FIG. VI.



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UNITED STATES PATENT OFFICE.

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VENDING APPARATUS.

1,007,873.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed January 12, 1911. Serial No. 602,229.

To all whom it may concern:

Be it known that I, OTTO JAEGER, of Norristown, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Vending Apparatus, whereof the following is a specification, reference being had to the accompanying drawings.

The invention relates to new and useful improvements in vending machines, and more especially to machines of this type wherein a movable conveyer delivers the articles being vended.

An object of the invention is to provide coin-controlled mechanism for controlling the operation of the carrier, which coin-controlled mechanism includes independent means operated in succession by the passage of the coin through the receiving parts of the vending machine.

A further object of the invention is to provide means whereby the insertion of improper coins or slugs into the receiving slot, is prevented.

These and other objects will in part be obvious, and will in part be hereinafter more fully disclosed.

In the drawings, which show by way of illustration one embodiment of the invention—Figure I, is a side elevation of a vending machine embodying my improvements. Fig. II, is a sectional view on the line II, II of Fig. I. Fig. III, is a partial side elevation, and partial sectional view on a larger scale of a carrier and the parts for operating the same. Fig. IV, is a similar view showing an improper sized coin inserted in the receiving slot. Fig. V, is a view similar to Fig. III and on a larger scale, showing the coin having operated the first releasing means for the carrier. Fig. VI, is a vertical section on the line VI, VI, of Fig. III. Fig. VII, is a face view of the coin-receiving plates. Figs. VIII and IX, are details of the retarding device for the carrier, and Fig. X, is a detail showing the second releasing device for the carrier.

In the drawings, I have shown a vending machine comprising a main frame 1, which includes side frames 2, 2, which are united by transverse frames 3. The top bars 4, of the side frames 2, are provided with spaced lugs 5, between which are located the flat ends of the axle 6. A bridge plate 7, serves to secure the axle 6, in position.

The carrier 10, for the articles being vended is rotatably mounted on the axle 6, between the side frames 2, of the machine, and said carrier, as herein shown, consists of a wheel carrying a plurality of laterally extending pins 11, on each of which is pivotally supported a swinging tray 12. These trays consist of side members and connected shelves 16, and 17, which as illustrated, are two in number, although it is obvious that any number of shelves may be employed, and if desired one shelf may be used. The articles to be vended are placed on the trays, and carried with the rotating carrier. Each of the trays is pivoted at the upper end, so as to swing freely beneath the pivotal support. As a means for keeping the trays in upright position, I have provided a ring 13, to which each tray is pivoted by means of screws 14. This ring 13, is disposed eccentrically with respect to the axis of the carrier 10, and rotates in unison therewith. Said ring is guided between rollers 15, mounted upon a bracket projecting laterally from one of the side frames 2. As the carrier rotates, the trays are moved so as to bring the shelves in succession to a delivery aperture 18, in the front panel 19, of the vending machine.

As a means for rotating the carrier, I have secured to the wheel thereof a cam 20, which is provided with a peripheral groove, and in said groove is a coiled spring 21. One end of this spring is fastened by means of a screw 22, to the cam, and said spring after passing over the periphery of the cam extends around the sheaves 23; and 24, and thence upwardly, where it is secured to a lever 25. The cam 20, is so formed that the radius thereof increases from the free side of the cam, so that as the carrier rotates, the leverage of the spring on the carrier will be increased. It will, therefore, be seen that the cam 20, serves to equalize the rotating effect of the spring 21, upon the carrier, and as the trays are successively freed of the articles being vended, the carrier will be still given a smooth and easy rotation by the spring. In order to allow for varying weights of articles to be vended, I have provided means for adjusting the lever 25. Said lever is held in adjusted position by a pin 26, which may be inserted in any one of a series of apertures 27, in the side frame 2.

As a means for causing the carrier to ro-

tate intermittently, and for controlling said intermittent rotation by coins of a predetermined character, I have provided one of the supporting wheels of the carrier with a plurality of spaced cam plates 30. These cam plates are so disposed relative to the carrier as to hold the same locked against movement of the spring with the various trays in front of the delivering aperture of the vending machine.

Coöperating with the cam plates for preventing the rotation of the carrier, is a lever 32, which has a projecting end 31, normally held in the path of the cam plates. The lever 32, is fulcrumed at 35, on an arm 36, of a bracket 37, which is bolted to the top rail 4, of the side frame 2, and extends upwardly therefrom. Said lever 32, at its upper end has two arms 38, and 46. The arm 38, carries a roller 39, which is formed with a V-shaped groove. Said arm is so disposed that the grooved roller 39, is in front of the entrance slot for receiving the coin. A similar grooved roller 40, is mounted between suitable lugs 41, on the coin plate 42, which is secured to the left hand end of the arm 36, of the bracket 37, above referred to. Said coin plate 42, extends through an aperture in the facing plate 45, of the panel 19, of the vending machine, and is slotted at 61, to receive the coin. The arm 46, of the lever 32, carries a yoke 47, which is pivoted to said arm and normally hangs in front of the coin-receiving slot in the coin plate 42. Said yoke 47, carries a cross bar 48, that extends across the slot, and when said yoke is in the position shown in Fig. III, said cross bar will prevent the forcing of a coin through the slot in the coin plate. Said cross bar, as herein shown, is triangular in cross section, so as to form a knife edge at the rear face thereof. A locking lever 50, coöperates with said yoke to hold the same from swinging away from the slot to allow the insertion of the coin. Said lever 50, is formed with spaced jaws 51, 51. The lever 50, is fulcrumed on the arm 36, at the point 52. Said lever is also pivotally connected to the arm 32, at 53. A coiled spring 55, connects the inner end of the lever 32, to the inner end of the lever 50, and serves to hold said levers in their normal position.

When a coin is inserted in the slot 61, and pressed between the grooved rollers, the arm 38, of the lever 32, will be raised, and as this arm is raised, the connection 53, between the lever 32, and the lever 50, will cause the front end of the lever 50, to swing downwardly. If the movement of the arm 38, is sufficient, the jaws 51, of the lever 50, will be lowered to a position below the cross bar on the yoke 47, and allow said cross bar to swing backwardly in the slot 49, and about its pivotal connection with the arm 46. This will allow the coin to pass through

the slot, and into the coin chute 60. It will readily be seen that if the coin which is being inserted in the slot is of less diameter than the normal coin, for which the machine is intended, the lever 32, will not be swung sufficiently on its fulcrum to withdraw the jaws 51, from the path of the cross bar 48. If also the coin is of the proper diameter, but of less width than the coin for which the machine was intended, said coin will pass farther into the V-slot in the rollers 39, and 40, and will move the arm 38, a less distance than the normal coin of proper thickness, and, therefore, the jaws 51, will not be withdrawn from the path of movement of the cross bar on the yoke 47. In other words, unless the coin is of proper diameter and of proper thickness, the lever 32, would not be swung sufficiently to release the yoke, so that the coin may be pushed forward into the receiving chute. This movement of the lever 32, by the coin not only serves to release the yoke to allow the further insertion of the coin, but also releases the lever 32, from the cam plate 30, on the carrier, so as to release the carrier and allow the same to turn through the action of the spring 21. This is caused by the upward swinging of the arm 38, and the downward swinging of the lateral projection 31, on the arm 32, until it is moved out of the path of the cam plate. It will be noticed that the grooved roller 40, moving about the fixed axis in the coin plate, is on a level slightly higher than the bottom of the coin slot 61, so that gravity co-acting with the yoke 47, will effect an ejection of the coin from the machine.

As a further means for protecting the coin slot and for preventing the manipulation of the coin in the slot, I have provided a hood 62, which overhangs the top of the slot in the coin plate 42, and also slotted projecting portions at the lower side of the slot, which leave sufficient space between said hood and said projections, for the proper pushing in of the coin by the thumb and finger, but which also prevents any improper manipulation of the coin in the slot.

In order that the carrier may not be released so as to deliver the article being bended by a pushing in of the coin, so as to operate the lever 32, and then the withdrawing of the coin, I have provided a second auxiliary release for the carrier, which is only operated by the passage of the coin through the coin chute, and said second release as herein shown, is controlled by the coin as it reaches the delivery end of the chute. Said second release consists of a series of rollers 65, which correspond in number to the cam plates 30, and said rollers are adapted to engage a spring pressed bolt 70, which is supported in a suitable housing 71, secured to the inner

face of the near side frame 2. The inner end of the bolt 70, is reduced in diameter, and is provided with a pin 72, which is engaged within a slot 73, in the upper end of a pendulum arm 75. The arm 75, is fulcrumed at 76, on a bracket 77, attached to the side frame 2, and is provided at its lower end with a curved plate 78, which normally extends across the path of the coin as it falls through the coin chute 60, leading from the coin slot to the coin-receiving box 79 (see Fig. I). When the pendulum arm 75, is moved to the left, as viewed in Fig. I, the bolt 70, will be retracted from the path of movement of the roller 65, and allow the carrier to complete its movement, so as to position the article being vended in front of the aperture in the vending machine.

The operation of the coin-releasing means will be obvious from the above description. When a coin of the proper size is inserted in the coin slot, the yoke is released, so that the coin may be pushed forward into the chute, and at the same time the lever 32, is moved from the path of the cam plate, so that the operating spring or other operating means for the carrier will start the carrier rotating, carrying the cam plate by the end of the projecting stop on the lever 32, and bringing one of the rollers 65, into contact with the auxiliary holding means; that is, the bolt 70. If the coin should be withdrawn from the slot, the carrier would not rotate farther, and the article would not be positioned so as to be removed through the aperture in the front of the vending machine. If, however, the coin passes down through the coin chute, then the pendulum arm 75, will be swung, withdrawing the bolt or the auxiliary locking means and allowing the carrier to complete its movement until a second cam plate 50, engages the stop on the lever 32, which has been returned to normal position by the spring 55, as soon as the previous cam plate passed the same. In order that the carrier may be rotated in the opposite direction for filling and for storing power in the operating spring, I have formed the cam plates 30, with their lower faces inclined as at 33, so that the carrier may be readily moved, and said plates passed over the projecting stop on the lever 32. In order to retard the motion of the carrier 30, under the influence of the spring 21, so that a slow even movement may be given to the carrier, I have provided a dash pot 80, which is secured to a post 81, extending vertically from the upper rail 4, of the machine. An arm 82, is secured to the lower end of the dash pot piston 83, and is provided with a boss 85, which embraces the supporting rod 81, and is thereby guided in its motion. The carrier has a series of projecting pins 86, which successively en-

gage the arm 82, on the lower end of the piston rod 83. As the piston rod 90, is thus raised, the air within the dash pot 80, is compressed and slowly allowed to escape through a bleed slot 91, in an adjustable screw 92, secured adjacent the top of the dash pot 80 (see Fig. IV). By the adjusting of the screw 92, the timing of the motion of the piston may be controlled, and thereby the movement of the carrier. In order to permit a quick return of the piston 90, to its normal position, I have provided the top plate 95, of the dash pot with an opening which is controlled by a valve 96. This valve will remain closed during the upward stroke of the piston, and will open to allow the free downward movement of the piston.

While I have shown and described herein the rotating carrier and the means for rotating the same, this structure forms no part of the present invention, but is shown, described and claimed in my co-pending application Serial No. 603,221 filed of even date herewith.

It is obvious that minor changes in the details of construction may be made without departing from the spirit of my invention, as set forth in the appended claims.

Having thus described my invention, I claim:

1. In a vending machine, having a movable carrier and a driving mechanism therefor, the combination of a main releasing mechanism and an auxiliary releasing mechanism for said carrier, means whereby said main releasing mechanism and said auxiliary mechanism may be operated in succession by a coin.

2. In a vending machine having a movable carrier and a driving mechanism therefor, the combination of a main releasing mechanism, an auxiliary releasing mechanism, a coin chute, and means controlled by the passage of the coin through said chute for releasing first the main releasing mechanism and subsequently the auxiliary releasing mechanism for the carrier.

3. In a vending machine having a movable carrier, and a driving mechanism therefor, the combination of a coin chute, a lever for holding the carrier from movement, one end of said lever being located adjacent the upper end of said coin chute and movable by the coin for releasing said carrier, auxiliary means for stopping the movement of the carrier after released by said lever, and means near the lower end of said chute operated by the coin for releasing said auxiliary means.

4. In a vending machine having a movable carrier and a driving mechanism therefor, the combination of a coin chute, a lever for holding the carrier from movement, one end of said lever being located adjacent the

receiving end of said chute and operated by the coin for releasing said carrier, means for stopping the movement of the carrier after released by said lever, and a device adjacent the discharge end of said chute for releasing said stopping means.

5. In a vending machine having a movable carrier and a driving mechanism therefor, the combination of a coin chute, means for preventing the insertion of improper sized coins, means for preventing the rotation of the carrier which means is controlled by a coin, and devices operated by the movement of the last named means for rendering ineffective said first named means for preventing the insertion of the coin.

6. In a vending machine having a movable carrier and a driving mechanism therefor, the combination of a main releasing means, an auxiliary releasing means for said carrier, means whereby said main releasing means and said auxiliary releasing means may be operated in succession by a coin, means for preventing the insertion of coins of improper sizes said means being rendered ineffective by a proper movement of the main releasing means.

7. In a vending machine having a movable carrier and a driving mechanism therefor, the combination of a coin chute, a V-shaped roller adjacent the upper end of said chute and the receiving slot, a pivoted lever, a second V-shaped roller located above said first named roller, said rollers being adapted to receive the edges of the coin as it is passed through said slot, a device extending across the path of movement of the coin for preventing the insertion therein of the coin, said device being released and rendered ineffective by a movement of said pivoted lever when the proper sized coin is pushed between said grooved rollers.

8. In a vending machine having a movable carrier and a driving mechanism therefor, the combination of a main releasing means, a coin chute located adjacent the receiving slot for the coins, a yoke extending across the slot, a lever for preventing the movement of said yoke, said lever being connected to said releasing means whereby a proper movement of the releasing means will move said lever from the path of movement of the yoke and allow the insertion of the coin.

9. A vending machine including in combination, a coin chute, a coin plate having a slot formed therein, a grooved roller adja-

cent one end of said slot, a second grooved roller adjacent the other end of said slot, a movable member carried by said second grooved roller, a device extending across the slot for preventing the insertion of the coin, said device being connected to said movable member, whereby a proper movement of said movable member will render said device ineffective.

10. A vending machine including in combination, a casing having a coin slot therein, a coin chute adjacent said slot, a bar extending across said slot for preventing the insertion of the coin, means for locking said bar from movement away from said slot, a V-shaped roller at one end of said slot, and devices connected with said roller and with said locking means whereby the insertion of a coin in the slot of proper size, will operate through said V-shaped roller to release the locking means holding said bar and allow the coin to pass through the slot.

11. A vending machine including in combination, a coin chute, a coin plate having a slot therein, a pivoted yoke extending across said slot, a pivoted lever having a serrated end normally in the path of said yoke, a lever extending across the upper end of said slot and adapted to be raised by the coin, connections between said last named lever and said first named lever, whereby a proper movement of said last named lever will move said first named lever out of the path of said yoke, so as to allow the free insertion of the coin.

12. A vending machine including in combination, a coin chute, a coin plate adjacent the receiving end thereof and having a slot therein, a pivoted yoke extending across said slot, a pivoted lever, having a serrated end normally in the path of movement of said yoke, a second lever having a pivotal connection with said first named lever, and one end thereof extending to a point adjacent to the upper edge of said slot, a grooved roller carried by the end of said lever for receiving the edge of the coin, and a spring for connecting said levers for holding the same in normal position.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this ninth day of January 1911.

OTTO JAEGER.

Witnesses:

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