

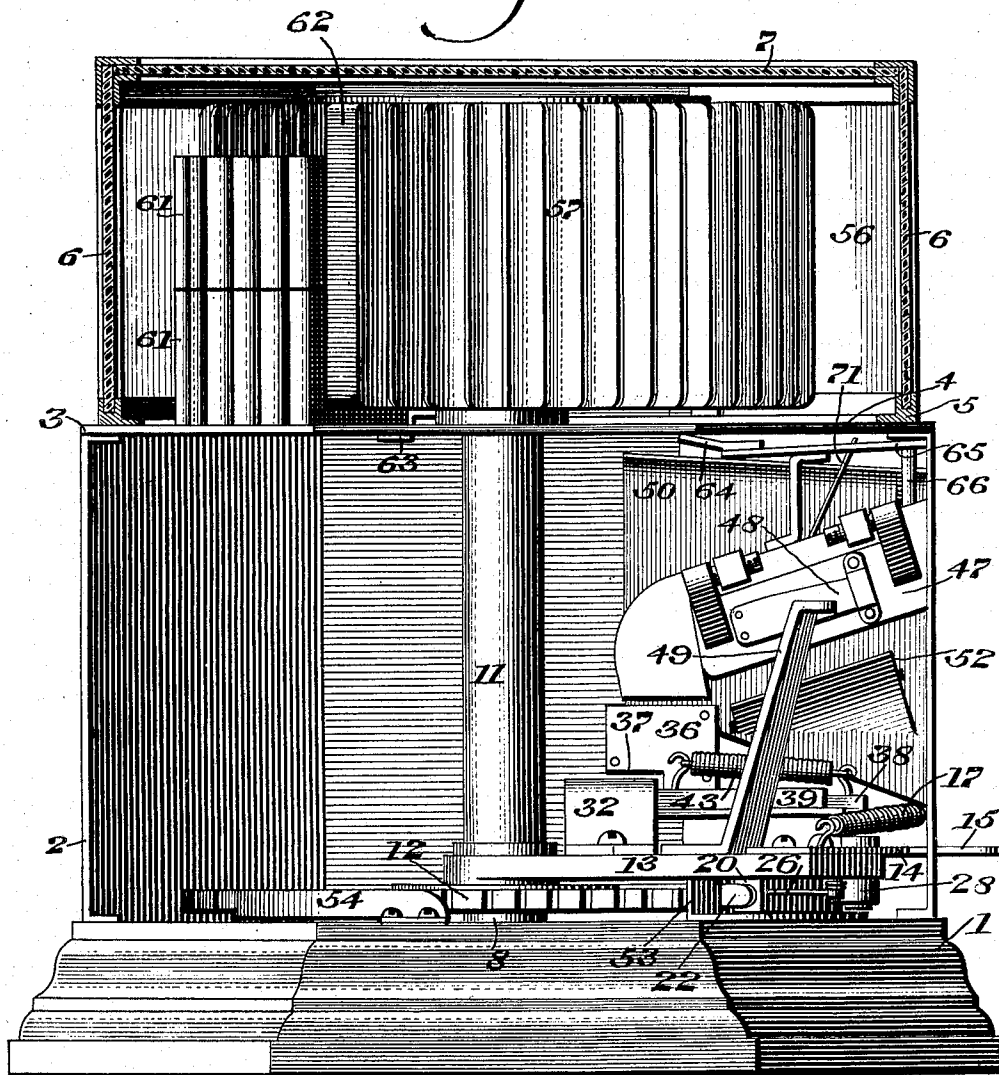
J. FRITSCHÉ.  
 VENDING MACHINE FOR MATCHES.  
 APPLICATION FILED JUNE 19, 1907.

901,091.

Patented Oct. 13, 1908.

4 SHEETS—SHEET 1.

*Fig. 1.*



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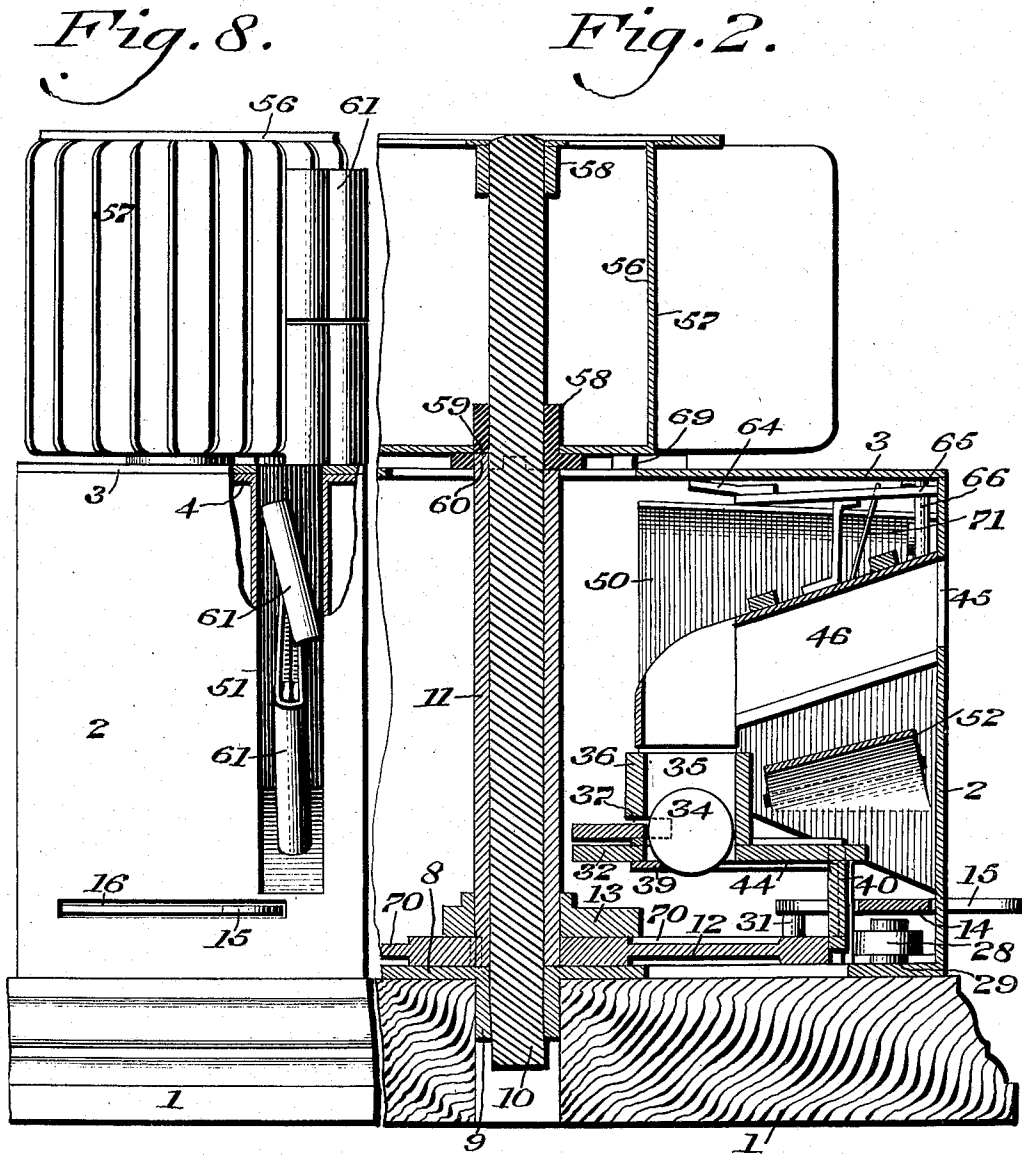
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

*Fig. 3*

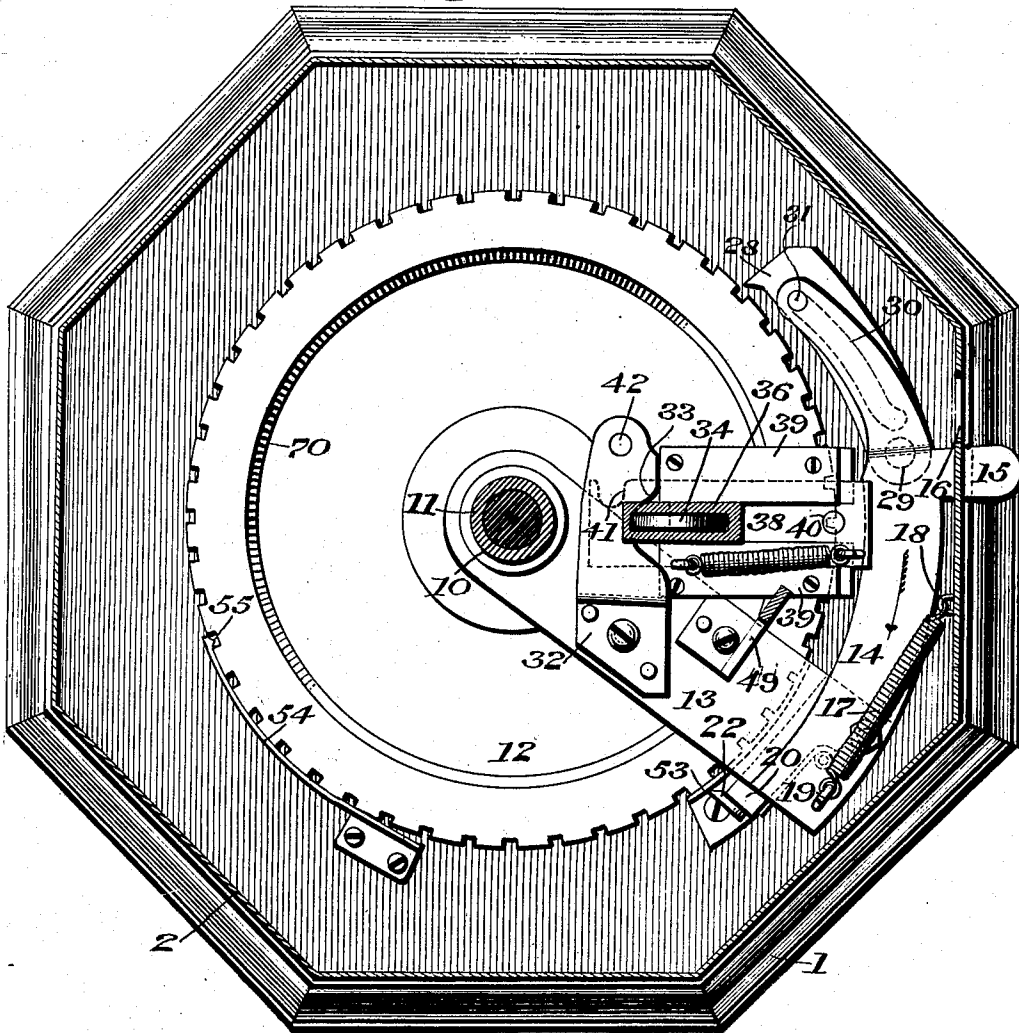
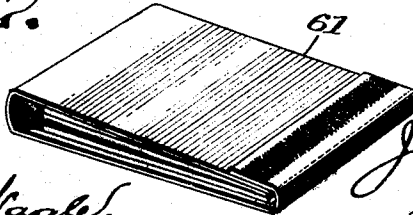


*Fig. 7.*



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4 SHEETS—SHEET 4.

*Fig. 4.*

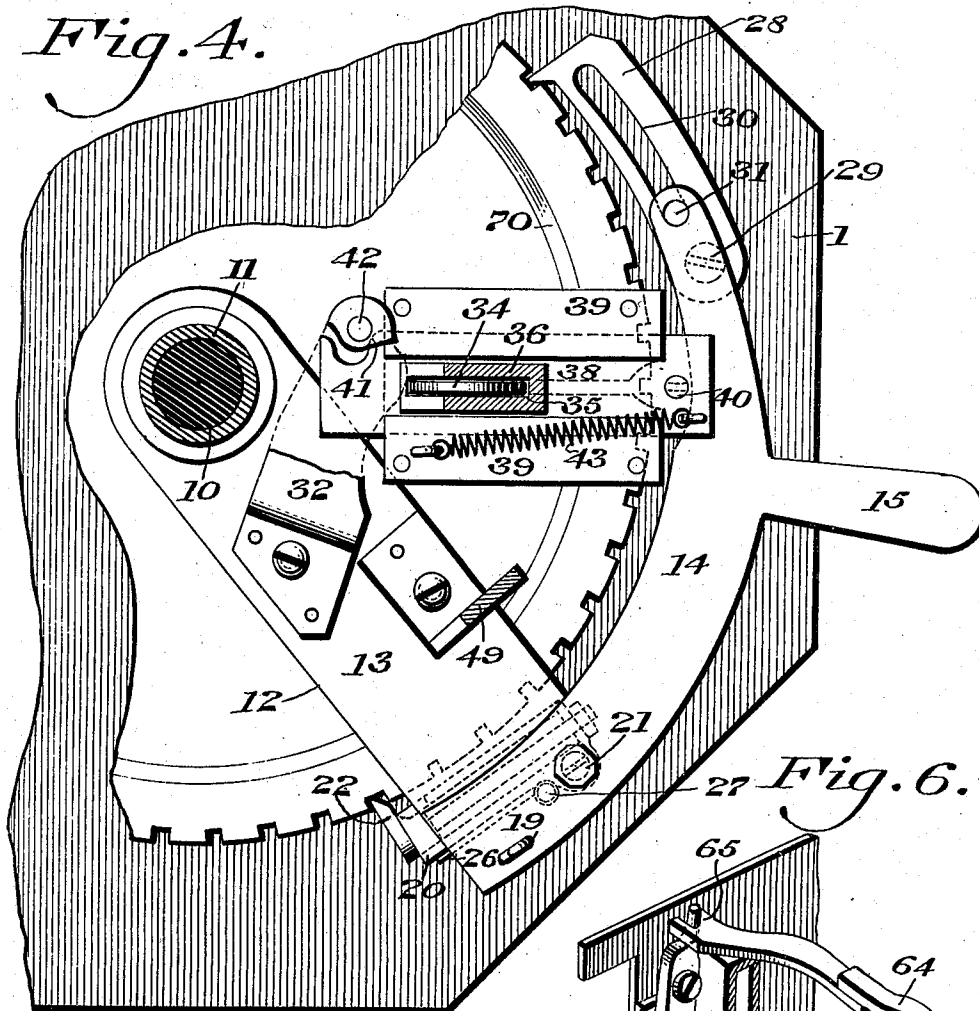


*Fig. 6.*

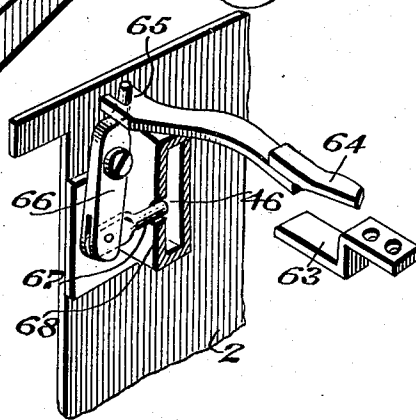
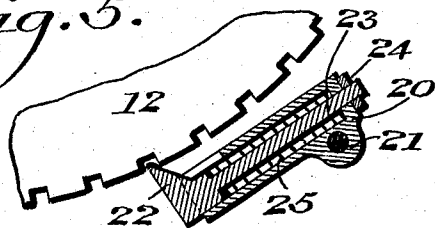


*Fig. 5.*



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# UNITED STATES PATENT OFFICE

JOHN FRITSCHÉ, OF PHILADELPHIA, PENNSYLVANIA.

## VENDING-MACHINE FOR MATCHES.

No. 901,091.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed June 19, 1907. Serial No. 379,695.

*To all whom it may concern:*

Be it known that I, JOHN FRITSCHÉ, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Vending-Machine for Matches, of which the following is a specification.

In the vending of matches and articles having a tapered contour, especially the ordinary form of matches which are put out in book form and employed for advertising purposes, there has heretofore been great difficulty in constructing a satisfactory machine in which such articles may be sold by coin-controlled apparatus.

My present invention, while especially designed for the selling of matches in book form, the packages of which have a tapered contour, is not limited to such a use but may be employed for the vending of any desired articles.

To the above ends my invention consists in a novel construction of a container provided with a plurality of compartments and a novel construction of coin controlled mechanism for bringing the different compartments successively into such a position that the articles retained within the different compartments will be automatically discharged therefrom.

It further consists of a novel construction of a disk or gear mounted on the container shaft and novel means for moving this disk step by step.

It further consists of a novel construction of a coin retainer which is adapted to lock said disk or gear in position when the parts are in their normal condition and to release said disk or gear after a coin has been placed in the machine and the actuating lever is being operated.

It further consists of a novel construction of a spring pressed pawl adapted to co-act with the toothed disk which is operatively connected with the package container whereby any injury to the operating mechanism is prevented when the actuating lever is moved without a coin being first introduced into the machine.

It further consists of a novel construction of a stationary cam which automatically discharges the matches or other articles from the machine on the rotation of the container.

It further consists of novel means co-acting with the package container for automatically closing the coin slot when the container is empty.

It further consists of a novel construction of locking mechanism which is automatically thrown into engagement with the rotatable disk when said disk has been advanced to its forward limit in order to prevent any improper rearward movement of the container when the actuating lever is being returned to its normal position.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since this embodiment best illustrates the principle of the invention and gives in practice satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown.

Figure 1 represents a sectional elevation partly broken away of a vending machine embodying my invention. Fig. 2 represents a sectional elevation thereof, partly broken away showing more clearly certain parts of the operating mechanism. Fig. 3 represents a sectional plan view of my device. Fig. 4 represents a sectional plan view on an enlarged scale similar to Fig. 3, but showing the parts in a different relation to each other. Fig. 5 represents a sectional plan view of a portion of the device showing more clearly the construction of the actuating pawl for the rotatable gear. Fig. 6 represents a perspective view showing more particularly the mechanism for closing the coin slot. Fig. 7 represents a perspective view of a book of matches which my invention is especially adapted to vend. Fig. 8 represents a front elevation, partly broken away, of my device, certain parts having been removed for the sake of clearness of illustration.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates

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the base of the machine on which is mounted, in any suitable manner, the casing 2, provided with a cover 3 having an aperture 4 therethrough, the purpose of which will hereinafter appear.

5 5 designates a show case mounted on the top 4 in any suitable manner and having the sides 6 and the top 7 thereof formed of suitable transparent material, whereby the goods which are to be vended may be readily seen by the prospective purchasers.

8 designates a bearing plate having a depending flange 9 extending into the apertured base 1 in which is mounted a stationary shaft 10, the upper end of which is journaled in the casing 5, as is clearly indicated in Fig. 2. The shaft 10 has loosely mounted thereon, a sleeve 11 on which is keyed a toothed disk or gear 12, said disk or gear having a bearing on the bearing plate 8.

13 designates a lever or arm, one end of which is loosely mounted on the sleeve 11, the outer end thereof having secured thereto or integral therewith, a segment or arc 14 provided with an outward extension or handle 15, which extends through a laterally extending aperture or slot 16 in the casing 2.

17 designates a spring, one end of which is secured to a fixed portion of the device as at 18 to a portion of the casing 2, the other end thereof being secured at 19 to the segment 14 or lever 13, as seen in Figs. 1 and 3.

20 designates a sleeve or casing pivoted at 21 to the segment 14.

22 designates a pawl which is adapted to co-act at certain times with the teeth on the gear 12, said pawl having extending therefrom, a stem 23 which extends through the closed end of the casing 20 and is provided with a nut or washer 24.

25 25 designate a spring interposed between one end of the casing 20 and the pawl 22.

26 designates a spring pivoted, at one end, as at 27 to the member 14 and having its free end abutting against the casing 20 whereby the pawl 22 normally tends to engage with a tooth of the gear 12.

28 designates a pawl pivoted at 29 to the casing 1 and having its free end adapted to engage with one of the teeth on the gear 12, said pawl being provided with a cam slot 30 with which a pin 31 carried by the arm or segment 14 is adapted to co-act.

32 designates an arm, one end of which is fixed to the lever 13 and having on one side thereof near its outer end, a cam face 33 which is adapted to engage with a coin 34, which has passed into the slot 35 of the coin retainer 36, it being understood from Figs. 1 and 2 that one side of the coin retainer 36 is slotted or cut away as indicated at 37 in order that the end of the arm 32 may engage with the coin. The coin retainer 36 has secured thereto, a bottom member 38 which is

mounted in the guides or ways 39, which latter are suitably supported by the base of the machine.

40 designates a pin or lug depending from the member 38 and adapted to engage with a tooth on the gear 12 when the parts are in their normal position to prevent any improper rotation of said gear. The rear end of the member 38 is cut away to form a cam face 41 with which a pin 42 carried by the arm 32 is adapted to engage when the handle lever 15 has been moved towards the left, so that the stop 40 is maintained out of engagement with the gear 12 and thus permit the latter to be rotated at certain times.

The coin retainer 36 and the member 38 secured thereto is normally maintained in its rearmost position by means of a spring 43, one end of which is secured to one of the guides 39, the other end thereof being secured to the member 38 of the coin retainer.

The lower portion of the guides 39 are provided with a longitudinally extending slot 44 which begins near the rear end of said guide members and extends to substantially the forward end thereof, as best seen in Fig. 2, so that when the parts are in the position seen in Fig. 2, the coin cannot pass directly through the slot 35.

45 designates an aperture in the casing 2 through which the coin is adapted to be inserted, said aperture communicating with the coin slot 46, which is adapted to guide the coin into the coin retainer 35. In the present instance, I have shown the coin slot as being constructed in accordance with my prior patent for fraud preventative devices for coin mechanisms, granted April 30, 1907, No. 852,111, and in this construction one side of the coin slot 42 is pivoted to the other or stationary side and provided with a spring 48, and in my present construction, a lever 49 is provided, one end of which is secured to the arm 13, the other end thereof being adapted to contact with the spring 48 whereby the movable member 47 of the coin slot is maintained in closed position when the parts are in their normal positions.

50 designates a guide or deflector through which the packages dropping through the aperture 4 in the top plate may pass and be discharged through the discharge opening 51 from the machine. A portion of this guide casing 50 is cut away and deflected outwardly as indicated at 52 in order that coins of improper size which are held in the coin slot 46 or coins which have been inserted in the machine when the machine is empty or inoperative will drop therefrom when the actuating handle 15 is moved to the left which permits the movable member 47 of the coin slot to open, so that the coins which have been retained in the coin slot 46 may drop therefrom into the guide or deflector 50 and

pass out of the machine through the discharge opening 51.

53 designates a guide secured to the base 1, as seen in Fig. 3 which holds the pawl 22 when the parts are in normal position out of engagement with the gear 12.

54 designates a spring arm, one end of which is fixed to the base 1, the free end thereof being provided with a lug or extension 55, which is adapted to engage with a tooth of the gear 12 and tend to prevent the rotation of said gear more than one tooth, it being noted that this extension is preferably rounded or V-shaped in order that the gear may rotate when the machine is properly actuated.

56 designates a container which, in the present instance, is shown as being composed of blades 57 which are secured to the collars 58, which latter are mounted on the shaft 10. The lower collar 58 is provided with a slot or recess 59 in which a tongue or lug 60 on the sleeve 11 is adapted to interlock when the parts are in assembled position.

Any desired number of the blades 57 may be employed and in the present instance since these blades are radially mounted, angular shaped compartments will be formed between the blades which are adapted to contain any desired article which it is desired to vend and in the present instance I have shown the same as being adapted to receive a package of matches 61, such as is shown in detached position in Fig. 7. My present invention is adapted to vend a plurality of these matches at a time and as indicated in Figs. 1 and 8, two different books of matches being shown as retained in a single compartment, it being noted that the lower book of matches rests on the top 3 of the casing 2.

62 designates a blank compartment or blade of enlarged dimension which is carried by the collars 58 in a similar manner to the other blades 57.

In my present invention, I have devised means for closing the coin slot when the machine is empty. In order to accomplish this result, I secure to the lower collar 58 of the container, an arm 63, the top plate 3 being apertured at a suitable point, so that the lower end of this arm may travel beneath the top plate 3. As the container 56 is rotated the arm 63 moves therewith and when the last book of matches or other articles has been discharged from the machine, this arm 63 abuts against one end of a lever 64 and causes said lever to turn on its fulcrum against the tension of the spring 11, thereby causing the bifurcated end 65 of said lever which co-acts with one end of the lever 66 to rock said lever and cause the plunger or pin 67 pivoted thereto to pass through the aperture 68 in the coin slot and close said

slot so that when a coin is inserted in the coin aperture 45 it will not pass through the coin slot 46, but will be retained therein owing to its engagement with the pin or stop 67.

It will be seen that in Fig. 1 the slot 4 through which the packages of matches or other articles pass is located, in the present instance, near the periphery of the casing cover 3 and in order that the packages will be guided in an accurate manner to said opening, I employ a cam member 69 located on the cover 3 and having an inclined or cam face whereby the matches as they are rotated by the container will be deflected outwardly, so that they will in every case fall through the aperture 4 in said top plate 3 as will be understood by reference to Fig. 8.

The gear 12 is recessed or cut away as indicated at 70 in order to form a receptacle or chamber for the retention of the coins which are placed in the machine.

The operation is as follows:—The casing 5 is first removed and the compartments formed between the blades or apertures 57 are filled with any package which it is desired to vend and when the machine is full the blank compartment 62 is in alinement with the discharge opening 51. A coin is now inserted by the prospective buyer in the coin aperture 45 and if the coin is of the proper dimensions it will pass through the coin slot 46 and fall into the coin retainer 36, assuming the position such as is indicated in Fig. 2, wherein it will be seen that the slot 35 does not register with the slot 44 so that the coin cannot pass therethrough but is retained in the position indicated in Fig. 2, in which position it is to be remembered the pin or stop 40 is in engagement with the gear 12. As the actuating handle 15 is moved to the left, the arm 13 loosely mounted on the sleeve 11 will be moved to the left, thereby carrying with it the arm 32, and the cam face 33 carried by said arm, co-acting with the coin 34 in the coin slot 35 will cause the coin container 36 and the member 38 to be moved towards the front of the machine against the tension of the spring 43. This will cause the pin or stop 40 to be disengaged from the gear 12 so that the same may rotate. As the segment 14 which is secured to or forms part of the lever arm is moved to the left, it carries with it, the casing 20 pivoted thereto and as the pawl 22 mounted in said casing passes beyond the guide 53, it will fall into one of the teeth on the gear wheel 12 owing to the provision of the spring 26. On the further movement to the left of the handle 15, the pawl 22 will cause the gear 12 and thereby the sleeve 11 to rotate one notch to the left, so that the container 56 is also rotated, thereby bringing

one of the compartments formed between the two blades 57 into register with the slot 4 in the casing cover 3, and owing to the provision of the cam member 69, the packages 5 in said compartment will be deflected into said aperture 4 and falling into the container 50 will pass therefrom through the discharge opening 51 as will be clearly understood from the drawings. As the cam 14 moves towards 10 the left, the pin 31 carried thereby and co-acting with the cam slot 30 in the pawl, said pawl 28 will be rocked towards the gear wheel 12 so that as the gear wheel 12 is moved one space to the left, the pawl 28 will engage with one of the teeth of the gear 12, 15 as is indicated in Fig. 4, thus preventing any improper rotation of the gear and thereby the container 56. As the operator releases his pressure on the actuating lever 15, the segment 14 and the lever 13 will be returned to their normal position by means 20 of the spring 17, thereby causing the pin 41 to travel in a reverse direction in the cam slot 30, which will cause the pawl 28 to be moved out of engagement with the gear 25 wheel 12.

It will be understood that after the coin 34 has dropped through the slot 35 and opening 44 on to the receptacle 70 formed by the recessing of the gear 12 that the member 38 30 will be maintained in its forward position towards the front of the machine by the engagement of the pin 42 with the cam face 41 on said member. As the lever 13 returns to 35 its normal position, the pin 42 will move out of engagement with the cam face 41 of the coin retainer member 38, so that the spring 43 will cause said member to be returned to its normal position and cause the stop 40 to 40 engage with a tooth of the gear 12 so that the same cannot be rotated until another coin has been deposited in the coin retainer 36. When the package container 56 has been rotated so that the last compartment therein is 45 in such a position that the packages in said compartment may be discharged from the container arm 63, which it is understood travels beneath the casing cover 3, will abut against the end of the lever 64 causing the 50 same to be turned on its fulcrum, thereby causing the forked end 65 thereof to rock the lever 66 and cause the plunger or stop 67 to pass through the aperture 68 and close the coin slot 46 as will be readily understood 55 from Fig. 6 and by reference to my prior patent to which I have hereinbefore referred.

It will be apparent that if a coin is now inserted in the aperture 45, it cannot pass through the coin slot 46, but will abut against 60 the stop 67 and when the handle 15 is actuated towards the left, the lever 49 will move away from the pivoted member 47 of the coin slot, thereby permitting said pivoted member to move away from the stationary part

of the coin slot and the coin or coins which 65 have been stopped therein will fall therefrom and be guided by the deflected portion 52 of the guide or deflector 50 and will pass from the machine through the discharge opening 51, as will be clearly understood by reference 70 to Figs. 1 and 8.

I wish to call special attention to the spring pressed pawl 22, by means of which the gear or toothed disk 12 is actuated, since it will be apparent that unless a coin is de- 75 posited in the coin retainer 36, the stop 40 carried by the bottom member 38 will be in engagement with said gear, so that the latter cannot rotate until said stop 40 has been moved out of engagement with said gear 80 by the engagement of the lever 32 with a coin 34, so that when there is not a coin in the coin slot 35 and the lever 15 is actuated, the members 13 and 14 will be moved to the left, but the pawl 22 will not advance the gear 12 85 since the same is held, as just explained, by the stop 40.

The casing 20 is cut away on one side in order to permit the relative movement of the pawl 22 with respect to said casing, so that if 90 anyone actuates the lever 15 without depositing a coin in the machine, there will be no injury or strain on the parts owing to the provision of the spring 25 as will be understood by reference to Fig. 5 and others of the 95 drawings.

I wish also to call special attention to my novel construction of gear 12, the upper face of which is recessed or chambered to form a coin receptacle 70 of sufficient size that the 100 coins which have been passed into the machine will be retained therein without coming into contact with any of the moving parts such as for example the lever 13 and its ad- 105 juncts.

It will now be apparent to those skilled in this art that I have devised a novel and useful construction of a vending machine which embodies the features of advantage enumerated as desirable in the statement of invention and the above description and while I have, in the present instance, shown and described the preferred embodiment thereof which gives in practice satisfactory and reliable results, it is to be understood that it is 115 susceptible of modification in various particulars without departing from the spirit and scope of the invention or sacrificing any of its advantages.

Having thus described my invention what 120 I claim as new and desire to secure by Letters Patent, is:—

1. In a vending machine, the combination with a rotatable member of a package container actuated thereby, an actuating lever, 125 a spring actuated pawl carried thereby, and means for normally maintaining said pawl out of engagement with said member. .

2. In a vending machine, the combination with a rotatable member of a rotatable package container actuated thereby, means for rotating said member, and means actuated by said rotating means for preventing improper rotation of said member when the same reaches the forward limit of one of its step by step movement.

3. In a vending machine, the combination with a rotatable member of an actuating lever, a pawl carried by said lever and adapted to coact with said member, a tension device for said pawl, and a guard for normally maintaining said pawl out of engagement with said member.

4. In a vending machine, the combination with a rotatable member of a package container operatively connected therewith, an actuating lever, a pin carried thereby, a stop pawl pivoted at one end and having its other end adapted to engage said member, said pawl having a cam slot therein and a pin carried by said lever coacting with said cam slot.

5. In a vending machine, the combination with a rotatable member of a package container operatively connected therewith, an actuating lever, a pin carried thereby, a stop pawl pivoted at one end and having its other end adapted to engage said member, said pawl having a cam slot therein, a pin carried

by said lever coacting with said cam slot, a second pawl carried by said lever and adapted to coact with said member to rotate the latter, and a tension device for said second pawl.

6. In a vending machine, the combination with a rotatable member having a chamber on its upper face of a package container operatively connected with and located above said member, a cam for deflecting packages from said container on its rotation, a stop for said member, means including an actuating lever for controlling the engagement and disengagement of said stop with said member, and means carried by said lever for rotating said member.

7. In a vending machine, the combination with a gear having a chamber on its upper face of a package container operatively connected with said gear, an actuating lever, a casing pivoted thereto, a spring-pressed pawl carried by said casing, a tension device co-acting with said casing for moving said pawl toward said gear, and means for normally preventing engagement of said pawl with said gear.

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