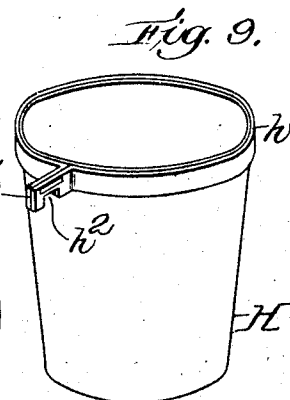
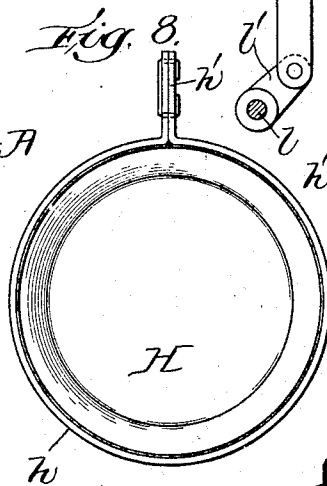
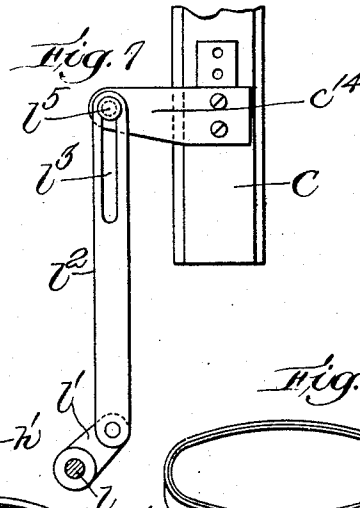
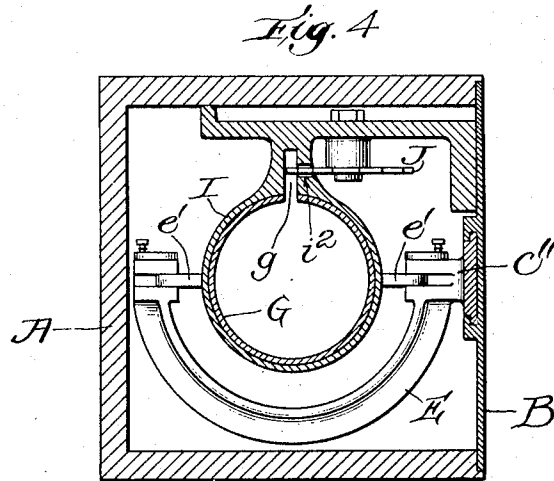
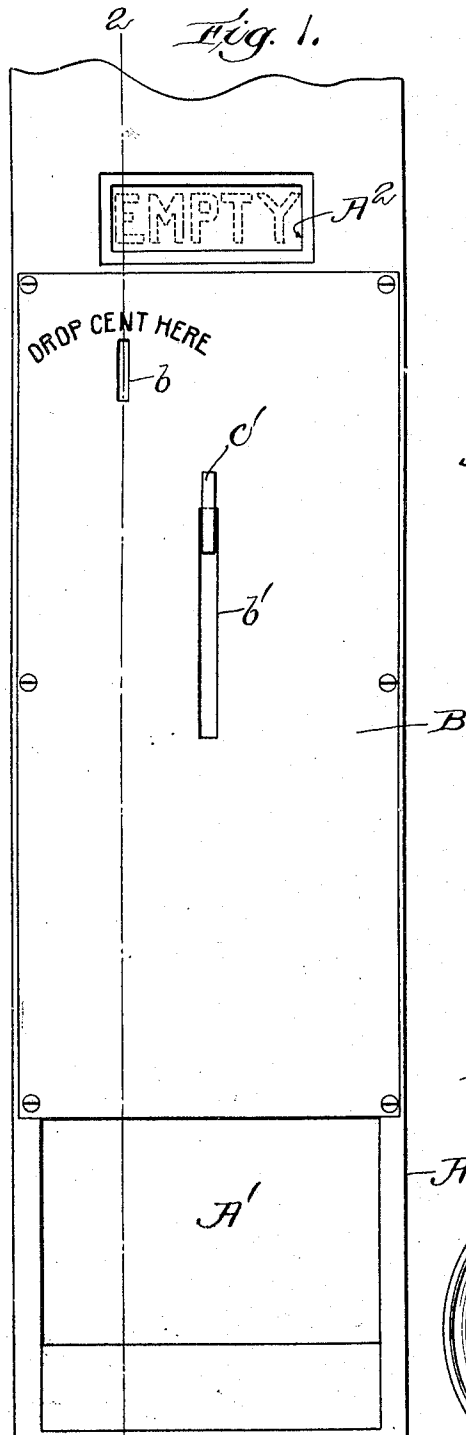


J. J. SHEA.
 COIN CONTROLLED VENDING MACHINE.
 APPLICATION FILED JUNE 11, 1910.

1,037,552.

Patented Sept. 3, 1912.

3 SHEETS—SHEET 1.

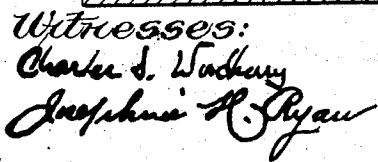


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1,037,552.

3 SHEETS—SHEET 2.



In witness whereof
 I have hereunto set my hand and seal
 at New York, this 10th day of June, 1864.
 John J. Shea
 By Robert R. R. Cushman,
 Atty.

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COIN CONTROLLED VENDING MACHINE.
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3 SHEETS—SHEET 3.

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Fig. 5.

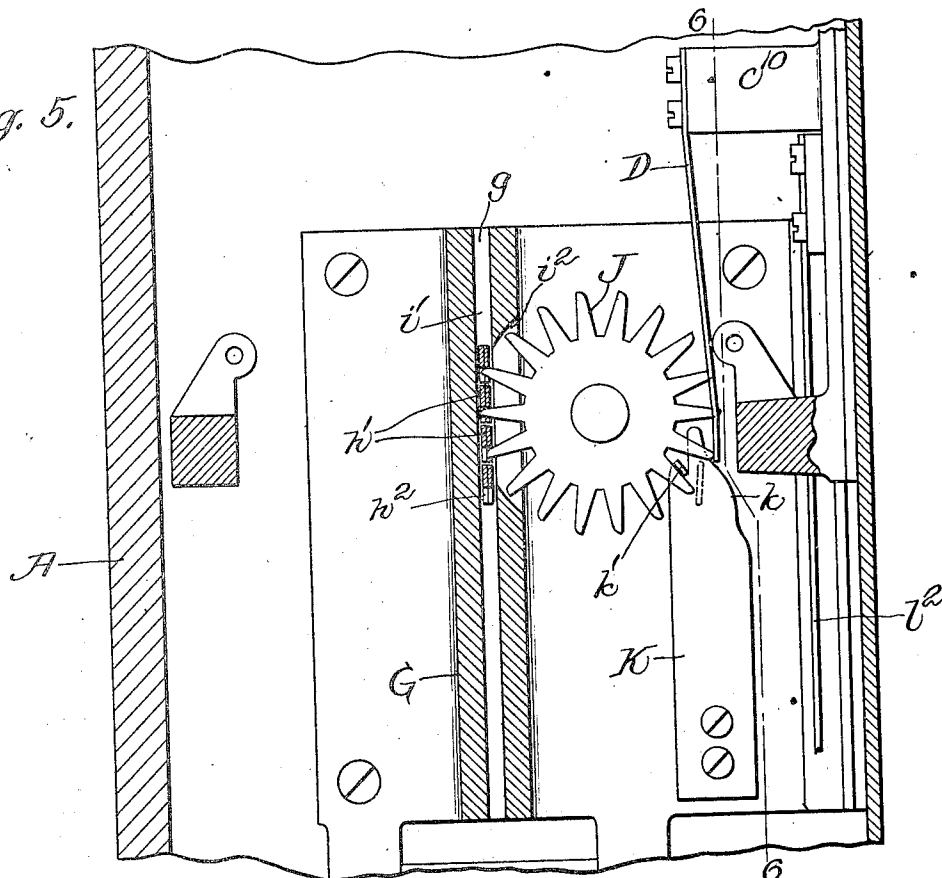
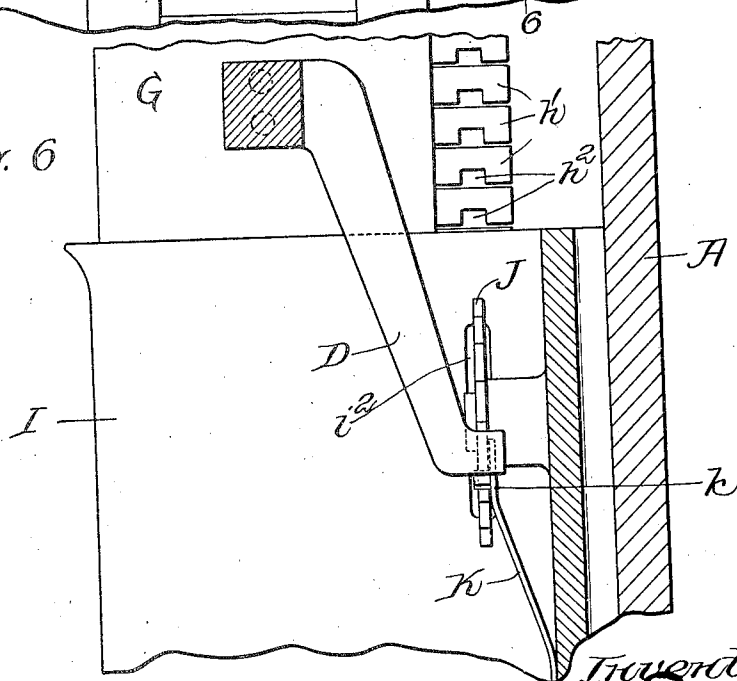


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN J. SHEA, OF BEVERLY, MASSACHUSETTS.

COIN-CONTROLLED VENDING-MACHINE.

1,037,552.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed June 11, 1910. Serial No. 566,317.

To all whom it may concern:

Be it known that I, JOHN J. SHEA, a citizen of the United States, and resident of Beverly, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification.

My invention relates to coin controlled vending machines, and more particularly to a coin controlled vending machine for the sale of aseptic or prophylactic paper drinking cups adapted for individual use at public drinking places, such as railroad depots and cars, public fountains, etc. The commercial success of cups of this general character depends in large measure upon the ease with which they can be obtained at the drinking place itself; for experience has demonstrated that while people generally recognize the value of an individual aseptic cup for use at a public drinking place, and are ready and willing to pay a small sum therefor, they will not trouble themselves to obtain such a cup unless it is readily accessible. Consequently, at all public drinking places, and particularly at those where attendants or salesmen are not provided, a coin controlled vending machine furnishes the most efficient means for providing a supply from which the public can readily obtain an aseptic cup.

It is the object of this invention to provide a coin controlled cup vending machine for this purpose.

In the drawings hereto annexed, which illustrate an embodiment of my invention,—Figure 1 is a front elevation of my improved machine; Fig. 2 is a longitudinal section on the line 2—2 Fig. 1; Fig. 3 is a longitudinal section on the line 3—3 Fig. 2 looking from the right, certain parts being broken away for the purpose of better illustration; Fig. 4 is a sectional view on the line 4—4 Fig. 2; Fig. 5 is a detail sectional view showing the feeding mechanism; Fig. 6 is a sectional view on the line 6—6 Fig. 5; Fig. 7 is a detail of part of the door operating mechanism; Fig. 8 is a plan view of a cup adapted for use in my improved machine; and Fig. 9 is a perspective view of the same.

In the drawings, A is a casing provided with the usual opening A' at the bottom, and an indicator opening A². To said casing there is secured in any suitable manner a plate B (Fig. 1) having a coin aperture b

and a slot b'. Upon the inside of said plate there is provided an actuator or slide C adapted to slide in guide ways c. A handle c' secured to said actuator C projects through the slot b' in the plate B; and a spring c² is secured at one end to a wall of the casing A and at the other end to a post c³ on the actuator C. Secured to said actuator C, and located at an internal edge of the coin aperture b, is a plate c⁴ provided with a slot c⁵; and at the opposite edge of the coin aperture b is a plate c¹³ secured to the plate B and provided with a cam surface c¹⁵. To said slotted plate c⁴ there is pivoted a latch c⁶ connected by a spring c⁸ with a post c⁹ on the actuator C. Said latch c⁶ is normally locked against downward movement by a catch c¹² upon the plate B. The actuator C also carries two posts c¹⁰ and c¹¹. To the post c¹⁰ there is secured the spring arm D; and to the post c¹¹ is secured the cup ejector consisting of a yoke E (Fig. 4) provided at its opposite ends with spring fingers e' (Fig. 2). Upon the plate B below and preferably at one side of the plates c⁴ and c¹³ there is secured a suitable coin receptacle F.

G is a removable cylindrical container adapted to hold the cups to be sold in a nested column and provided with a groove g into which the guide tabs h' of the cups H loosely fit. When in operative position, the container is open at its lower or delivery end and fitted into a holder I, the latter being provided with oppositely disposed slots i through which project the spring fingers e'. Said holder I is also provided with a groove i' similar to the groove g of the container G and forming a continuation thereof. Upon a wall of the casing A and preferably upon a plate, as shown, there is secured the cup feeding mechanism consisting of a star wheel J and a spring pawl K, the latter provided with a cam surface k and a lug k' adapted normally to hold said star wheel against rotation. An opening i² in the groove i of the holder I permits the spurs of the star wheel J to project into the groove i.

L is a door mounted on a shaft l journaled in ears l⁴ and adapted normally to close the lower or delivery opening of the holder I. The door L is connected by a crank l' and a link l² with a post c¹⁴ upon the actuator C, the link l² being provided with a slot l³ in which the stud l⁵ may slide.

M is a shutter slidably mounted upon a wall of the casing A and adapted normally to close the indicator opening A².

N is a cover for the container G to which is pivoted the lever O. One end of the lever O passes through the wall of the container and engages the shutter M and the opposite end is connected by a cord *p* with a weight P adapted to rest upon the top of the column of cups H, H, in the container.

In Figs. 8 and 9 there is shown a cup peculiarly adapted for use in my cup vending machine, said cup being made the subject of a separate application for patent filed June 11, 1910, Serial No. 566,318. The cup shown in said figures has a tapering body and a band *h* about the rim. The relative proportions of the body and band are such that the external circumference of the band at its lower edge is greater than the internal circumference of the mouth of the cup whereby the lower edge of the band forms a shoulder. When a plurality of similar cups are nested, the shoulders thus formed rest upon the upper edge of the cup next below, the bands *h* thus constituting spacers for the several cups in the nested column and preventing said cups from nesting too closely together. The band *h* is provided with a guide tab *h'* preferably formed integral therewith and having a notch *h*² whereby when a plurality of similar cups are nested there is a clearance between the adjacent guide tabs.

In use, a container G is filled under sanitary conditions at the cup manufactory, with a column of nested cups having their guide tabs *h'* fitting loosely in the groove *g*. The container is then transported to the drinking place where the cup vending machine is located and placed in the holder I. The feeding mechanism is then operated in the manner presently to be described a sufficient number of times to feed and advance the column of nested cups into the position shown in Fig. 2, the bottom cup of said column being advanced into the holder I in position to be engaged by the spring fingers *e'* when the actuator is operated. The spurs on the star wheel J, which project into the groove *i'* of the holder I, engage the notches *h*² of the guide tabs *h'* and support the column of nested cups, said star wheel being held against rotation by the pawl *h'*. The machine is then ready for use.

The operation of the machine is as follows: The purchaser drops his coin R into the coin aperture *b* where it falls between the plates *c*⁴ and *c*¹³ and rests between the latch *c*⁶ and the cam surface *c*¹⁵. The purchaser then depresses the handle *c'* with the following result. The actuator C slides downward causing the coin to ride up on the cam surface *c*¹⁵ and push the latch rearward so that it is lifted free of the catch *c*¹².

The rearward movement of the latch continues until in the downward movement of the actuator which carries with it the coin and the latch, the coin in passing over the cam surface *c*¹⁵ presses the latch far enough to the rear to permit the coin to drop out from between the latch and the cam surface into the coin receptacle F, whereupon the spring *c*⁸ causes the latch *c*⁶ to spring back. As soon as the downward movement of the actuator begins, the door L which is supported in closed position by the link connection with the actuator, falls by gravity and as the actuator continues its downward movement, the stud *l*⁵ slides downward in the slot *l*³ of the link *l*², so that the striking of the door against the casing when fully opened does not interfere with the full downward movement of the actuator. Simultaneously with the downward movement of the actuator and opening of the door in the manner described, the spring fingers *e'* engage the bottom cup of the column and travel downward in the slots *i*. eject said cup from the holder I, said cup falling into the opening A'. During said downward movement of said actuator, the nose of the spring arm D which rests on the edge of the pawl K, travels along the cam surface *h* thereof lifting said nose clear of the spurs of the star wheel J and when said nose has passed below said star wheel, slips from said cam surface, so that at the finish of said downward movement of said actuator, the nose of said spring arm D rests against the face of said pawl K. When the purchaser releases the handle *c'* the spring *c*² causes the actuator to move upward into normal locked position, the upward movement of said actuator being attended by the following results. The nose of the spring arm D passes over the face of the spring pawl K and presses the latter back so that the lug *h'* slips off the star wheel thus unlocking it. Continued upward movement of the actuator causes the nose of said spring arm to turn said star wheel a distance of one spur and then to slip from said pawl permitting said pawl to spring back into normal position, so that the lug *h'* engages the star wheel and locks it against rotation. The rotation thus given to the star wheel causes the latter to feed the column of cups forward and advance the bottom cup into position to be ejected by the spring fingers *e'* at the next operation of the actuator in the manner already described. The upward movement of the actuator carries the stud *l*⁵ upward to the end of the slot *l*³ and thereafter lifts the connection between the actuator and the door L causing the latter to swing into closed position; and when in the upward movement of the actuator the nose of the latch *c*⁶ reaches the catch *c*¹², it rides over said catch

and locks the actuator in normal position. When all the cups in the container have been sold the weight P lifts the lever O thus raising the shutter M and disclosing the word "Empty" in the indicator opening A². The empty container is then removed from the machine and replaced by a full container and the machine again prepared for use as already described.

10 I claim:

1. In a machine of the class described, a container having a delivery opening, said container adapted to hold the articles to be sold, a feeder comprising a star wheel adapted to present said articles one by one at said delivery opening, a spring pawl normally holding said star wheel against rotation, an actuator, means carried by said actuator adapted to pass idly by said star wheel and pawl when said actuator is depressed and to rotate said star wheel when said actuator returns to normal position, and means to eject the articles thus presented from the container.

2. In a machine of the class described, a container having a delivery opening, said container adapted to hold the articles to be sold, a feeder to present said articles one by one at said delivery opening, an actuator, a yoke secured to said actuator and having oppositely arranged means secured thereto adapted to eject the articles thus presented from the container when said actuator is operated.

3. In a machine of the class described, a container having a delivery opening, said container adapted to hold the articles to be sold, a feeder to present said articles one by one at said delivery opening, an actuator, a yoke secured to said actuator provided with spring fingers at its opposite ends adapted to eject the articles thus presented from the container when said actuator is operated.

4. In a machine of the class described, a container having a delivery opening, said container adapted to hold the articles to be sold, a feeder comprising a star wheel adapted to present said articles one by one at said delivery opening, a spring pawl normally holding said star wheel against rotation, an actuator, means carried by said actuator adapted to pass idly by said star wheel and pawl when said actuator is depressed and to rotate said star wheel when said actuator returns to normal position, a yoke secured to said actuator and having oppositely arranged means secured thereto adapted to eject the articles thus presented from the container when said actuator is operated.

5. In a machine of the class described, a container having a delivery opening, said container adapted to hold the articles to be sold, a feeder comprising a star wheel adapted to present said articles one by one at said delivery opening, a spring pawl normally

holding said star wheel against rotation, an actuator, means carried by said actuator adapted to pass idly by said star wheel and pawl when said actuator is depressed and to rotate said star wheel when said actuator returns to normal position, a yoke secured to said actuator provided with spring fingers at its opposite ends adapted to eject the articles thus presented from the container when said actuator is operated.

6. In a machine of the class described, a removable container having a delivery opening, a slotted holder for said container having a delivery opening, said container adapted to hold the articles to be sold, a feeder to present said articles one by one at said delivery opening and to advance the same one by one into said holder, an actuator, a yoke secured thereto provided with spring fingers at its opposite ends projecting through said slots and adapted to eject said articles from said holder when said actuator is operated.

7. In a cup-vending machine, a tubular container provided with a longitudinal groove adapted to hold a column of nested cups with their guide tabs in said groove, an ejector, and a star wheel adapted to engage said guide tabs and to feed said cups one by one to said ejector.

8. In a cup-vending machine, a tubular container provided with a longitudinal groove adapted to hold a column of nested cups with their guide tabs in said groove, cup-controlling mechanism comprising a feeder and an ejector, a door normally closing the delivery end of said container, an actuator, connections between said actuator and said cup-controlling mechanism and said door whereby said cup-controlling mechanism and said door will be actuated at each operation of said actuator.

9. In a cup-vending machine, a tubular container provided with a longitudinal groove adapted to hold a column of nested cups with their guide tabs in said groove, cup-controlling mechanism comprising a yoke provided with means to eject the cups one by one from the container, and a star wheel adapted to feed the cups one by one to said ejector, a door adapted normally to close the delivery end of said container, an actuator, connections between said actuator and said cup-controlling mechanism and said door whereby when said actuator is operated said door is opened and the end cup removed from the container, and thereafter said star wheel feeds the end cup of the column and said door is returned to normal position.

10. In a cup vending machine, a container provided with a longitudinal groove adapted to hold a column of nested cups with their guide tabs in said groove, mechanism to engage and eject said cups one by one

from said container, and a feeder adapted to feed said cups one by one to said ejecting mechanism.

11. In a cup vending machine, a container provided with a longitudinal groove adapted to hold a column of nested cups with their guide tabs in said groove, mechanism to engage and eject said cups one by one from said container, and a feeder adapted to support said column and positively to feed said cups one by one to said ejecting mechanism.

12. In a machine of the class described, a container having a delivery opening, said container adapted to hold the articles to be sold, a feeder to present said articles one by one at said delivery opening, means to eject the articles thus presented from the container, a door pivoted on said container and normally closing said delivery opening, an actuator and connections between said door and said actuator whereby when said actuator is depressed the door is opened and is

returned to closed position when said actuator returns to normal position.

13. In a machine of the class described, a container having a delivery opening, said container adapted to hold the articles to be sold, a feeder to present said articles one by one at said delivery opening, means to eject the articles thus presented from the container, a shaft mounted on said container, a door fast to said shaft and normally closing said delivery opening, an actuator and an articulated connection between said shaft and said actuator whereby when said actuator is depressed said door is opened and is returned to closed position when said actuator is returned to normal position.

Signed by me at Boston, Massachusetts, this sixth day of June, 1910.

JOHN J. SHEA.

Witnesses:

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JOSEPHINE H. RYAN.