No. 782,691. PATENTED FEB. 14, 1905.

R. E. PAYNE.

AUTOMATIC VENDING APPARATUS.

APPLICATION FILED OCT. 6, 1902.

2 SHEETS—SHEET 1.

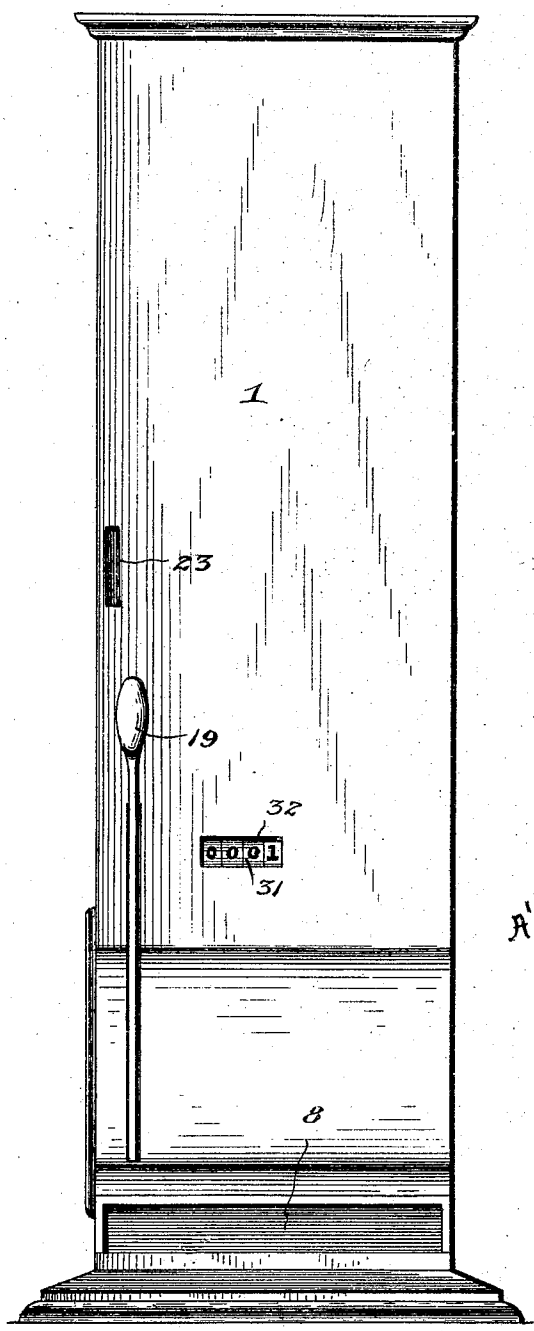


FIG. 1

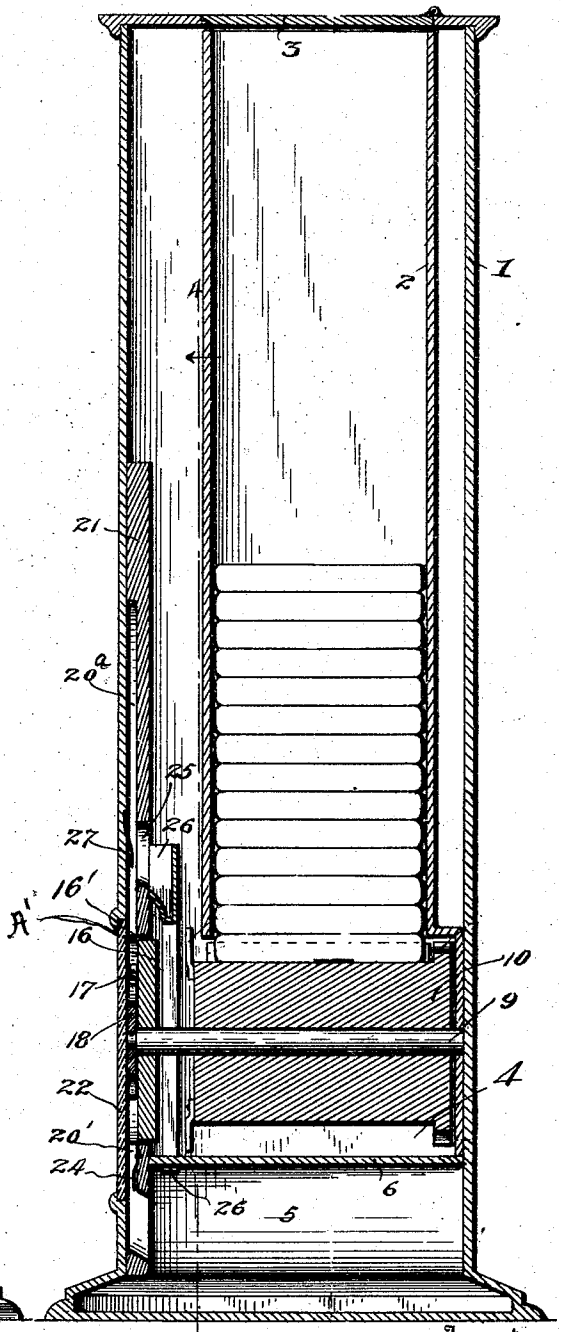


FIG. 2

Inventor

R. E. Payne

Witnesses

J. A. Gruebauer Jr.

E. Emerson

By A. R. Williamson & Co.

Attorneys

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2 SHEETS—SHEET 2

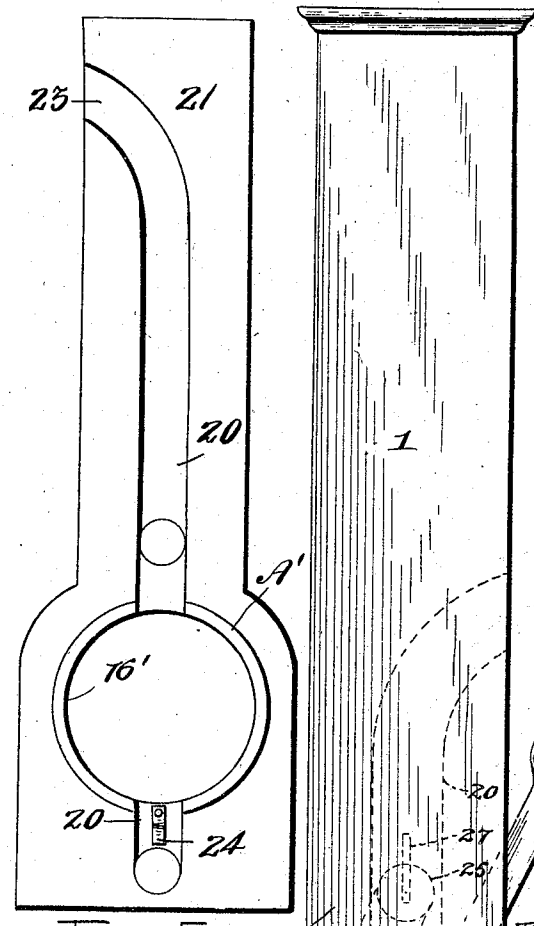


FIG. 6.

FIG. 3.

FIG. 4.

FIG. 5.

Inventor

R. E. Payne

Witnesses

J. A. Griesbauer Jr.

E. Cameron

By H. B. Williamson & Co.

Attorneys

No. 782,691. Patented February 14, 1905.

UNITED STATES PATENT OFFICE.

ROBERT E. PAYNE, OF NEW YORK, N. Y.

AUTOMATIC VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 782,691, dated February 14, 1905.

Application filed October 6, 1902. Serial No. 126,197.

To all whom it may concern:

Be it known that I, ROBERT E. PAYNE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Vending Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in coin-actuated vending mechanism of that type employing an oscillatory feed device, such as a pocketed drum or cylinder for controlling the discharge of the goods.

The object of the invention is to provide improved clutch mechanism for controlling the feed device and means coacting therewith to deter fraud.

To this end the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation of a vending apparatus embodying my invention. Fig. 2 is a vertical transverse section of the same on the line of the drum-shaft. Fig. 3 is an end elevation. Fig. 4 is a section on line 4 4 of Fig. 2. Fig. 5 is a horizontal section through the observation-chamber on line 5 5 of Fig. 3, and Fig. 6 is a detail view of the partition 21.

Referring now more particularly to the drawings, the numeral 1 represents the casing of the machine, which may be of any preferred form and size and which is provided upon its interior with a vertical compartment or magazine 2 for containing the goods to be vended and at its top with a door 3, through which the said compartment is filled. Below the goods compartment or magazine 2 the casing is provided with a drum-chamber 4 and below said drum-chamber with a money drawer or compartment 5, separated from said chamber by a horizontal partition 6. Journaled in the casing is a transverse shaft 9, carrying a rotary or oscillatory feed device in the form of a drum 10, which is disposed in the chamber 4 at the base of the magazine 2 and controls the feed of goods from said magazine. This drum is provided around its periphery with pockets 11, adapted to receive one article of goods at a time from the magazine 2 and rotates in the direction of the arrow, Fig. 4.

The drum 10 is fixed upon the shaft 9, and loosely mounted upon one end of said shaft is a disk 16, provided upon its outer face with a pin 17, coöperating with a smaller recessed or pocketed disk 18, keyed or otherwise fixed upon one end of the said shaft outside of said disk 16. The recesses or pockets in the disk 18 (four in the present instance, denoted a, a', a^2, and a^3) are of such size as to receive a prescribed denomination of coin, and the pin 17 is so arranged that when a coin drops into the uppermost recess or pocket a movement of the disk 16 in the proper direction will cause the pin to bear against the edge of the coin, whereby the disk 16 will be locked to the disk 18 and movement imparted to the first-named disk will transfer motion to the drum 10. The disk 16 is adapted to be turned or oscillated by means of an operating-lever 19, projected to the exterior through a slot in the front wall of the casing 1. The disks 16 and 18 are disposed in an observation-chamber A, located at one point along the line of a coin guideway or chute 20, the said observation-chamber and coin-guideway being formed by the end wall 1^a of the casing 1 and a contiguous partition-plate 21. As shown, the partition-plate 21 is disposed upon the inner side of the wall 1^a and is provided with an opening 16′, within which turns the disk 16, and is also formed in its outer face with an annular recess or concavity A′ of greater diameter than and concentric with said opening and within which turns the disk 18, the two disks 16 and 18 being exposed upon the side of the casing through a glass panel 22, fitted in the wall 1^a, which panel closes the recess A′, and thus forms the chamber A. The chute 20 is divided by the opening, and consequently by the chamber A into two sections or passages 20^a and 20′, which sections or passages are formed by grooves or recesses of a depth corresponding approximately to one-half the

thickness of the partition 21. The passage 20^a, which for convenience of description may be termed a "coin-inlet" passage, extends from a coin-receiving slot 23, located in the front wall of the casing to the upper portion of the chamber A. The passage 20′, which may be termed a "coin-delivery" passage, as it conveys the coin from the chamber A to the coin-receptacle, communicates with the lower portion of the chamber A diametrically opposite the passage 20 and opens at its lower end through the partition 21 into the coin-compartment 5.

By the above description of the construction and arrangement of the parts and as shown in Figs. 2 and 5 the disk 18 is located in the path of the coin traveling from the slot 23 to the compartment 5 and between the disk 16 and the glass panel 22, which respectively close the inner and outer sides of the chamber A. The disks 16 and 18, however, respectively turn within the opening 16′ and within the chamber A, the intersection of the recesses 20^a 20′ with said chamber A causing the disk 18 to lie in the line of the coin-chute, as will be readily understood. As the coin passes down the chute-passage 20^a it is conducted into the uppermost pocket or recess of the disk 18, so that a movement of the disk 16 in one direction will cause the pin 17, which normally lies to one side of the line of said passage 20^a, to come in contact with the coin seated in the pocket, whereby the coin forms a locking or clutch connection between the two disks and permits movement to be transmitted to the drum 10. As shown in Fig. 3, the disk 18 turns to the right or in the direction of the arrow, and the delivery end 20′ of the chute 20 is so arranged as to lie immediately below the pocket which is diametrically opposite the one in position to receive a deposited coin, whereby upon the deposit of a coin that coin and the preceding coin will be visible through the panel 22, and in order to enable the coin previously inserted in the pocket a^2 in the disk 18, which is lowermost in Fig. 2, to be also visible through the panel 22 I provide within the passage 20′ a spring-detent 24, which will hold the coin dropping out of said pocket a^2 pressed against the glass panel 22, so that three coins in the machine will be simultaneously exposed through said panel. Upon the rotation of the drum to the right in Fig. 3 and the insertion of another or fourth coin in the chute 20, which fourth coin will be received by the pocket a^3, the coin retained by the spring 24 will be displaced by the falling coin and will drop down into the coin chamber or compartment 5. It will be observed that as the disk 18 is disposed upon the outside of disk 16 and concentric with the wall A^2 of the recess A′ the said wall A^2 will form a guide to retain the coins in the pockets of the disk 18 in the course of travel of the same from a point in line with the passage 20^a to a point above the passage 20′, so that the coins in such movement will not become displaced from the pockets, but will be retained by the wall A^2 in position to be viewed from the outside through the panel 22. Thus it will be seen that in the normal position of the machine when in operation two coins b b' will be held within the pockets a a', while the third coin b^2 will be retained in exposed position by the detent 24, and each coin on its passage from the upper pocket to the passage 20′ will engage the wall A^2 and move in contact with said wall and be retained thereby against outward movement until the passage 20′ is reached. It will be apparent that by this construction, which secures the exposure of a number of coins placed one after the other in the machine for the purchase of goods through the panel 22, those evilly disposed will be deterred from fear of detection from putting bad coin or other than the proper kind of coin into the slot 23 and attempting to make the same operate the machine.

The disk 16, in addition to serving as a closure for the rear of the chamber A, closes the opening 16′, so that the operation of the drum cannot be observed through the panel 22. The object of thus concealing the drum is to deter persons from attempting to operate the machine more than once upon the deposit of a coin, which undue familiarity with the interior delivery mechanism is apt to invite.

The coin-chute 20 is of a size to receive a coin of a prescribed denomination—say a nickel—and it is desirable to provide means to prevent smaller coins when inserted from dropping down into the recesses or pockets of the disk 18. To this end I provide the partition 21 at a point above the disk 18 with an opening 25, which communicates with a shunt-chute or by-pass chute 26, leading into the compartment 5. This opening 25 is of a size to receive coins smaller than that designed to pass down the chute 20, and disposed opposite the same upon the end wall of the casing is a spring 27, whose free end projects toward said opening 25. When a coin smaller than that intended to be inserted in the chute 20 is placed in the slot 23 and passes down into the chute, it is pressed toward the opening 25 on coming in line therewith by spring 27 and forced by said spring through the opening into the chute 26, by which it is conducted to the coin chamber or compartment 5. A coin of the proper denomination, however, forces the spring 27 back and being too large to pass through the opening 25 drops down into the receiving-pocket of the disk 18 and permits of the proper manipulation of the machine.

From the construction as before described it will be seen that the insertion of a coin of the proper denomination brings the disks 16 and 18 into interlocking engagement upon the outward movement of the operating-lever

19, so that motion may be transmitted to turn the drum to discharge one of the packages of goods from the magazine 2. Upon the release of the lever 19 after the discharge of the package the lever is returned to its normal position by a suitably-arranged retracting-spring 28.

An automatic register is provided for indicating upon the exterior the amount or number of sales made. This may be of any approved construction and may consist, as shown in the present instance, of an ordinary Veeder cyclometer, of that type in which the movement in one direction of an oscillatory shaft imparts motion to suitable indicator devices, the movement of the shaft in the reverse direction being accomplished by a spring which restores the shaft to its normal position to be again operated. As shown clearly in Fig. 4, the registering device 31 is disposed so as to be viewed through an observation-opening 32 in the front wall of the casing and has connected to its oscillatory shaft a vibrating arm 33, which is adapted to be moved in one direction by tappet-pieces 34 on the drum, which tappet-pieces are equal in number to the pockets 11 and are arranged so that upon each partial rotation of the drum to discharge a package the arm 33 will be operated to actuate the mechanism of the register to indicate a sale. As soon as the arm 33 has been moved by a tappet 34 to operate the indicating mechanism and the tappet has passed the arm the latter will be automatically restored to its normal position in readiness to be again operated by the succeeding tappet when another sale is made.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a vending apparatus, the combination of a casing having a goods-compartment, a coin-slot, a delivery-chamber at the base of the goods-compartment, an observation space or chamber at one side of the delivery-chamber, said observation-chamber being closed at its outer side by a transparent panel, a coin-compartment below the delivery-chamber, and a coin-chute divided by said observation-chamber and comprising an inlet-passage leading from the coin-slot to the upper portion of the observation-chamber and a delivery-passage leading from the lower portion of the observation-chamber to the coin-compartment, and feed mechanism comprising a rotary feed device disposed within the delivery-compartment, a horizontal shaft carrying said feed device and having one end projecting into the observation-chamber, a clutch-disk loose upon the projecting end of said shaft within the observation-chamber in rear of the plane of the coin-chute, said disk having a projection upon its outer face normally lying in a plane at one side of the line of the inlet-passage of said chute, a second disk smaller than the loose disk fixed to the said projecting end of the shaft within the observation-chamber in front of the loose disk and having a series of peripheral coin-pockets lying in the plane of the coin-chute and arranged so that the uppermost pocket will lie beneath and receive a coin from the inlet-passage of the chute and lie between the loose disk and transparent panel, means extending through the casing at an angle to the shaft for turning the inner or loose disk, whereby, upon the dropping of a coin into the upper pocket of the outer or fixed disk, the projection upon said inner or loose disk will engage the projecting edge of the coin beyond the pocket and rotate said fixed disk and thereby rotate said shaft and delivery device, and a fixed guide upon the casing extending concentric with the outer or fixed disk in the plane of motion of the coins passing from the inlet-passage to the delivery-passage of the chute, said guide thereby forming with said disk a channel for the retention of a coin for the current purchase and one or more preceding coins, the entire acting surfaces of the disks being exposed in all phases of operation through the transparent panel, whereby the coin coupling the disks and all the preceding coins in said channel are exposed at one and the same time, substantially as described.

2. In a vending apparatus, the combination of a casing having a goods-compartment, a coin-slot, a delivery-chamber at the base of the goods-compartment, a coin-compartment below the delivery-chamber, and a partition arranged between one end of the delivery-chamber and the contiguous side wall of the casing, said partition having an opening therein and vertical grooves intersecting the upper and lower portions of said opening and forming inlet and delivery coin-passages communicating with the coin-slot and coin-compartment, a transparent panel in the wall of the casing opposite said opening in the partition, a rotary feed device located in the delivery-compartment, a shaft connected to said feed device and extending at one end through said opening into the observation-chamber between the partition and transparent panel, a clutch-disk loose upon the shaft in rear of the plane of the coin-chute, said disk turning in and closing the opening in the partition and forming with the same and transparent panel an observation-chamber, said disk having a projection upon its outer face normally lying in a plane at one side of the line of the inlet-

passage of said chute, a second disk smaller than the loose disk fixed to the said projecting end of the shaft within the observation-chamber in front of the loose disk and having a series of peripheral coin-pockets lying in the plane of the coin-chute and arranged so that the uppermost pocket will lie beneath and receive a coin from the inlet-passage of the chute and retain the same between the loose disk and transparent panel, means extending through the casing at an angle to the shaft for turning the inner or loose disk, whereby, upon the dropping of a coin into the upper pocket of the outer or fixed disk, the projection upon said inner or loose disk will engage the projecting edge of the coin beyond the pocket and rotate said fixed disk and thereby rotate said shaft and delivery device, and a fixed guide at one side of the opening in the partition concentric with the outer or fixed disk in the plane of motion of the coins passing from the inlet-passage to the delivery-passage of the chute, said guide thereby forming with said disk a channel for the retention of a coin for the current purchase and one or more preceding coins, the entire acting surfaces of the disks being exposed in all phases of operation through the transparent panel, whereby the coin coupling the disks and all the preceding coins in said channel are exposed at one and the same time, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBT. E. PAYNE.

Witnesses:
BENJ. G. COWL,
H. B. WILLSON.