Dec. 22, 1925. 1,566,446

M. T. TANNER

COIN CONTROLLED LIQUID VENDING MACHINE

Filed Oct. 28, 1924 2 Sheets-Sheet 1

Fig. 1.

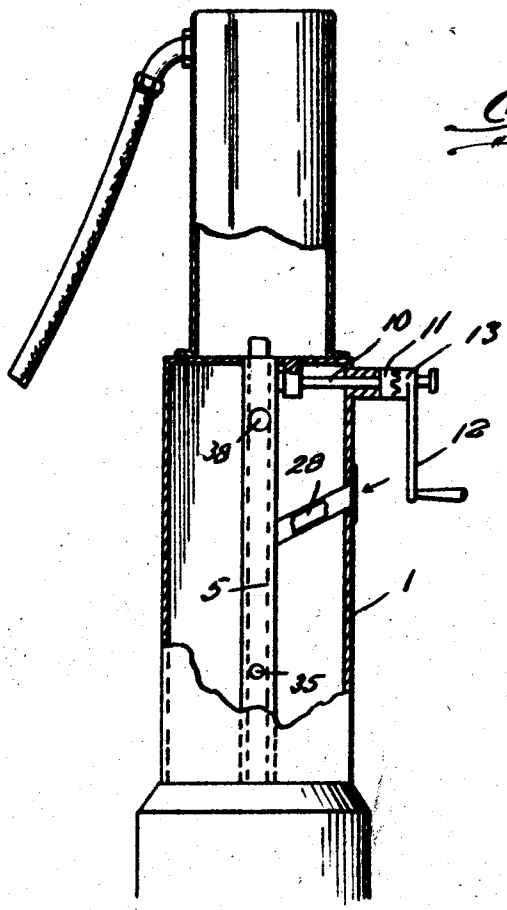


Fig. 5.

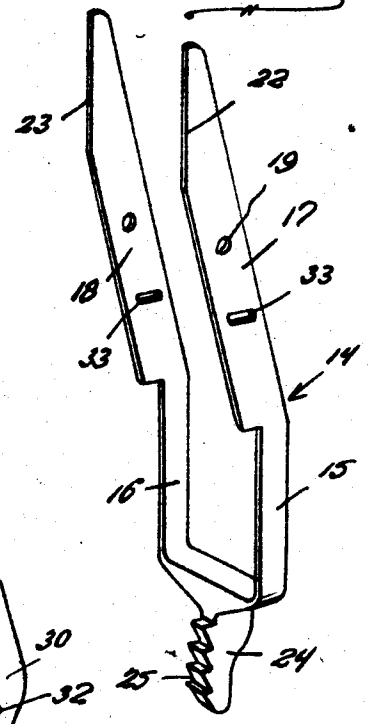


Fig. 7.



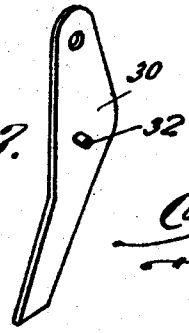


Fig. 6.

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COIN CONTROLLED LIQUID VENDING MACHINE

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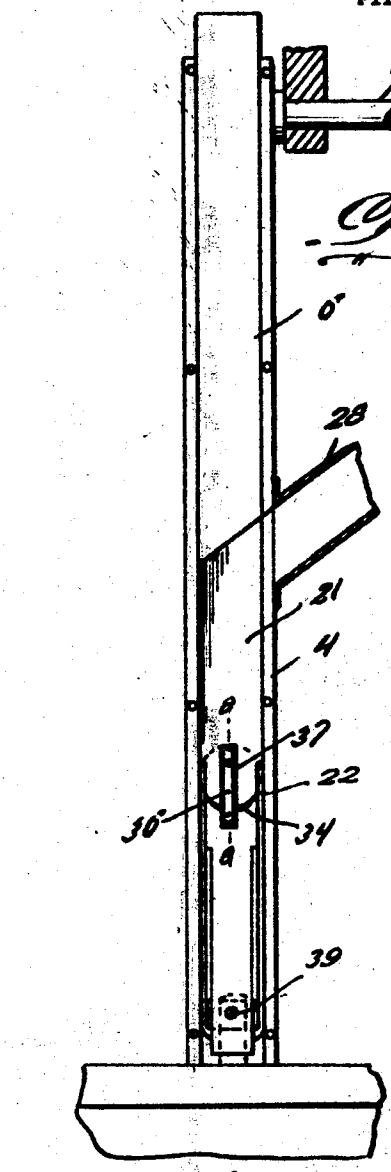


Fig. 2.

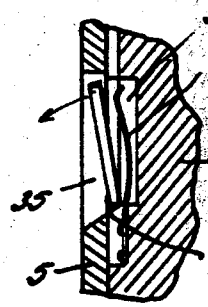


Fig. 8.

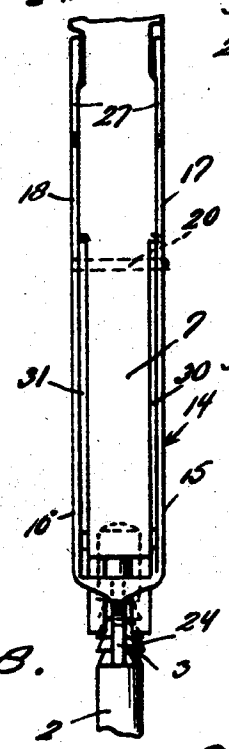


Fig. 4.

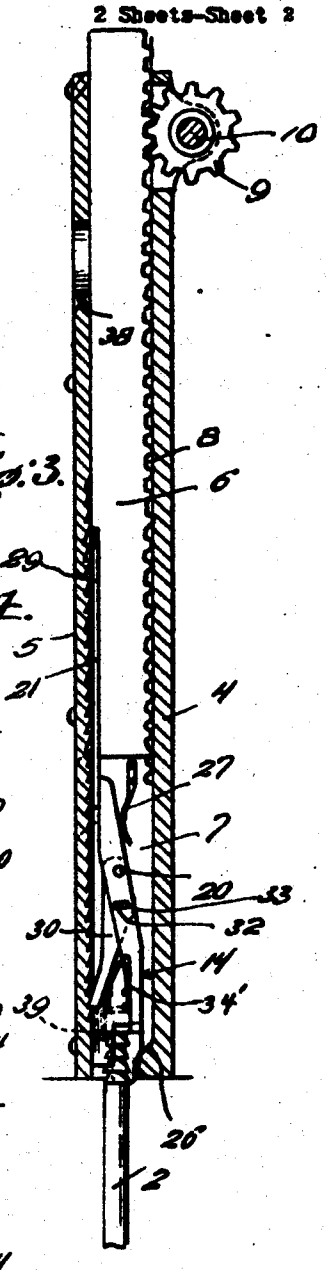


Fig. 3.

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UNITED STATES PATENT OFFICE.

MATTHIAS T. TANNER, OF RICH SQUARE, NORTH CAROLINA.

COIN-CONTROLLED LIQUID-VENDING MACHINE.

Application filed October 28, 1924. Serial No. 746,389.

To all whom it may concern:

Be it known that I, MATTHIAS THOMAS TANNER, a citizen of the United States, residing at Rich Square, in the county of Northampton and State of North Carolina, have invented certain new and useful Improvements in Coin-Controlled Liquid-Vending Machines, of which the following is a specification.

This invention relates to improvements in coin controlled liquid vending machines, and has for its principal object to provide a simple and efficient means whereby the liquid dispensed from the pump may be obtained by the insertion of the proper coin, without necessitating the loss of any considerable length of time or labor.

One of the important objects of the present invention is to provide a coin controlled liquid vending machine for use principally in the vending of gasoline, whereby the employment of an attendant is eliminated, the liquid being adapted to be obtained by the purchaser upon the deposit of the proper coin in the machine, the amount of gasoline which is dispensed depending upon the denomination of the coin inserted.

A further object of the invention is to provide a coin controlled liquid vending machine of the above mentioned character, which will, at all times, be positive and efficient in its operation, means being provided for preventing the operation of the dispensing apparatus when the improper coin is deposited.

A further object is to provide a coin controlled liquid vending machine of the above mentioned character, which is simple in construction, inexpensive, strong and durable, and further well adapted for the purpose for which the same is designated.

Another important object is to provide a coin controlled liquid vending machine of the above mentioned character, wherein means is provided for preventing or enabling the dispensing apparatus to be operated, without the necessity of depositing a coin, a device of this character being especially adapted for use in garages where attendants are employed during the day, to take care of the gasoline vending machines.

Other objects and advantages of this invention will become apparent during the course of the following description.

In the accompanying drawing, forming a part of this specification, and in which like numerals designate like parts throughout the same:

Figure 1 is a view partly in side elevation, and partly in section of a gasoline dispensing apparatus, showing my invention associated therewith.

Figure 2 is a front elevation of the casing and plunger mounted therein, with the cover plate for the casing removed.

Figure 3 is a vertical sectional view through the casing and cover showing the plunger in side elevation.

Figure 4 is a fragmentary enlarged rear elevation of the plunger and the pump rod engaging means.

Figure 5 is a detail perspective view of the forked lever.

Figure 6 is a detail perspective view of one of the locking pawls.

Figure 7 is a detail view of the upper portion of the pump rod, and

Figure 8 is a sectional view, taken approximately on the line 8—8 of Figure 2.

In the drawings, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates generally a gasoline dispensing pump of the well known construction, and a pump rod thereof is designated by the numeral 2. The upper portion of the pump rod is provided with a series of notches 3, the construction of which is more clearly illustrated in Figure 7 of the drawings. Arranged within the pump 1 is the stationary casing 4, the front face thereof being open and adapted to be covered by the cover plate 5. The lower portion of the casing is adapted to extend over the upper notched end of the pump rod 2, as is clearly illustrated in Figure 3.

Adapted for reciprocatory movement within the casing 4, is the plunger 6, the lower portion thereof being cut away as illustrated at 7, for the purposes hereinafter to be more fully described. The rear face of the plunger 6 is provided with the rack teeth 8, the same being arranged between the reduced portion of the plunger and the upper end thereof. A pinion 9 mounted on the transverse shaft 10 meshes with the rack teeth 8, for the purpose of reciprocating the plunger, and the shaft 10 extends laterally of the outer casing of the pump and has mounted on the outer end thereof

the clutch 11. An operating handle 12 is loosely supported on the outer end of the shaft 10 and carries thereon the clutch 13 for engagement with the clutch 11, whereby the shaft 10 may be rotated for causing the plunger to be raised upwardly within the casing 4, when the liquid is being dispensed from the pump.

Supported on the reduced lower portion 7 of the plunger 6 is the fork shaped lever designated generally at 14, in Figure 5 of the drawings. The arms 15 and 16 of the fork shaped lever are disposed on the opposite sides of the reduced portion 7 of the plunger 6, and the upper ends of these arms are provided with upwardly disposed and forwardly inclined extensions, such as are shown at 17 and 18 respectively in the drawings. These extensions afford a means for pivotally supporting the fork shaped levers on the reduced portion 11, by providing the openings 19 in the extensions, for receiving the pivotal supporting pins 20.

The front face of the plunger 6 is also cut away as is illustrated at 21, and the purpose of this construction will be presently described. The upper portions of the extensions 17 and 18 have their forward edges 22 and 23 substantially parallel with the front cut away face 21 of the plunger 6, as is clearly illustrated in Figure 3. The shank portion 24 of the fork shaped lever 14 is provided on its forward edge with the rack teeth 25, the same being adapted to come into locking engagement with the notches 3 formed in the upper end of the pump rod 2. The lower portion of the casing 4 is provided on its inner rear wall with the abutment or cam 26 for cooperation with the rear edge of the shank 24 of the fork shaped lever, whereby the rack teeth 25 are interlocked in engagement with the notches 3 in the upper end of the pump rod 2, when the plunger is in its lowermost position within the casing, as is illustrated in Figure 3.

For the purpose of normally holding the fork shaped lever out of interlocked engagement with the upper end of the pump rod, so that the liquid in the pump will be prevented from being dispensed therefrom, the spring element 27 is secured to the opposite side faces of the reduced portion 7, of the plunger 6 and engages the rear edges of the upper portions of the extensions 17 and 18. The cut away face 21 arranged in the front of the lower portion of the plunger 6 provides a channel between the lower portion of the plunger and the cover plate 5 of the casing, for receiving a coin of a predetermined denomination, which is deposited therein through the coin chute 28, the latter being inclined upwardly and extending into an opening provided in the outer casing of the pump 1.

The inner face of the cover plate 1 is provided with the rack teeth 29 and cooperating therewith are the pivoted pawls 30 and 31 respectively, the same being swivelly supported at their upper ends on the pins 20 which support the lever 14. Each of the pawls is provided with a laterally extending projection or pin 32, which is adapted for cooperation with a slot 33 provided in each of the extensions of the arms of the fork shaped members. A spring, such as is shown at 34′ is associated with the lower free end of each of the pawls and the adjacent arm of the fork shaped lever for normally urging the pawls into engagement with the ratchet teeth 29, formed on the inner face of the cover plate 5. The purpose of the provision of the pawl and ratchet arrangement will also be hereinafter more fully described.

A ledge or shoulder 34 is formed on the front face of the cut away portion of the plunger 6, for receiving and supporting the coins when the same has been deposited into the space between the front portion of the plunger and the cover plate as is clearly illustrated in Figure 2. An opening 35 is formed in the cover plate 5 adjacent the coin seat 34, for the purpose of enabling coins of a denomination less than that necessary to operate the device may be discharged, each spring 36 being arranged in a suitable pocket 37 formed in the front face of the plunger 6 to facilitate the forcing of the improper coin or slug out through the opening 35. The upper portion of the cover plate 5 of the casing has provided therein, in a predetermined position, the opening 38, the purpose of which will be presently apparent.

When a locking screw 39 is threaded through a suitable opening provided therefor in the lower portion 7 of the plunger 6 and engages the notched upper end of the pump rod 2 in the manner as shown in Figure 3. The rack teeth 25 of the shank 24 of the lever 14 will at all times be held in locked engagement with the notched upper end of the pump rod and by operating the handle 12, the pinion 9 will engage the rack teeth 8 of the plunger 6, and enable the same to be raised upwardly in the casing 4, thereby enabling a person to obtain a predetermined quantity of gasoline. By disengaging the clutch 13 from the clutch 11, the weight of the plunger will cause the same to return to its normal position, together with the return of the pump rod, and again enable the pump rods to be raised when the clutch elements are in engagement with each other for further dispensing gasoline. The locking screw 39 is employed, only when an attendant for the vending machine operates the same, and no coin is necessary, but when there is no attendant

for the machine, the screw 39 is removed from engagement with the upper end of the pump rod.

The operation of the vending machine after the screw 39 has been removed, may be briefly stated as follows: A coin of the proper denomination is inserted in the coin chute 28, where by gravity the same will fall between the front cut away space 21 of the lower portion of the plunger and the cover plate 5, until the same is supported on the seat 34 and in engagement with the forward edges of the upper portions of the extensions of the arms of the fork shaped lever 14. This locks the rack teeth and the shank of the fork shaped lever into engagement with the notched upper end of the pump rod, and by operating the shaft 10 in the manner as above set forth, the plunger is raised in the casing simultaneously raising the pump rod 2 laterally therein to cause the dispensing of the gasoline from the pump. As soon as the coin reaches the opening 38, a spring 27 will urge the upper end of the extensions on the arms of the fork shaped lever, causing the coin to be discharged out through the opening 38, and deposited into the outer casing of the pump. As soon as the upper forward edges of the extensions are out of engagement with the coin, due to the action of the springs 27, the ratchet teeth on the shank 24 will be moved out of engagement with the pump rod, causing the latter to return to its normal position and by gravity the plunger will also return to its normal position within the lower portion of the casing.

The cam 26 formed on the inner face of the rear wall of the casing will force the rack teeth of the shank 24 of the lever 14 into engagement with the notched upper end of the pump rod, so that the latter may be again operated when the proper coin is inserted. The amount of gasoline which is dispensed from the pump depends upon the location of the openings 38 in the upper portion of the cover plate 5 and the location of the opening in the cover plate depends upon the denomination of the coin which is to be inserted. Thus, if a coin of a large denomination is inserted, the opening in the cover plate will naturally be in the cover plate adjacent the upper end thereof, while should a coin of small denomination be deposited, the opening in the cover plate would necessarily be in the intermediate portion of the cover plate. Therefore, the cover plate may be removed from the casing, and interchanged, depending upon the value of the liquid contents which are to be sold.

The provision of the pawl and ratchet arrangement will prevent any possibility of a person obtaining more gasoline than he is entitled to, and the operation thereof is obvious from the construction illustrated in the drawings. Furthermore, the provision of the spring 36 provides a means for preventing gasoline from being obtained by the insertion of the improper coin or a slug, the opening 35 in the cover plate, permitting the same to be discharged from the coin seat 34, so as not to interfere with the proper operation of the dispensing apparatus.

It will thus be seen from the foregoing description, that a coin controlled liquid dispensing apparatus has been provided, which will save considerable time and labor, and will enable the purchaser to obtain his own gasoline, without having to wait for the attendant of the gasoline vending apparatus to serve him.

Furthermore, the simplicity in which the present device is constructed enables the same to be easily and efficiently operated.

While I have shown the preferred embodiment of my invention, it is to be understood that various changes in the size, shape and arrangement of parts may be resorted to, without departing from the spirit of the invention and the scope of the appended claims.

Having thus described my invention, what I claim is:

1. In combination with the pump rod of a liquid vending machine, a casing, a plunger adapted to reciprocate therein, a fork shaped lever pivotally supported on the lower end of the plunger, means associated with the lower portion of the fork shaped lever adapted for interlocking engagement with the upper end of the pump rod, means in the casing for moving the aforementioned means into locked engagement with the pump rod, coin engaging means for holding the lever in locked engagement with the pump rod, means for operating the plunger, and means for facilitating the releasing of the lever from engagement with said plunger upon the plunger reaching a predetermined position.

2. In combination with the pump rod of a liquid vending machine, a casing, a plunger adapted for reciprocatory movement in the casing, a lever pivotally mounted on the lower end of the plunger, means for moving the lever into locked engagement with the pump rod, a coin controlled device for holding the means in an engaged position, means for normally holding the lever out of locked engagement with the pump rod, and means for actuating the plunger.

In testimony whereof I affix my signature.

MATTHIAS T. TANNER.