

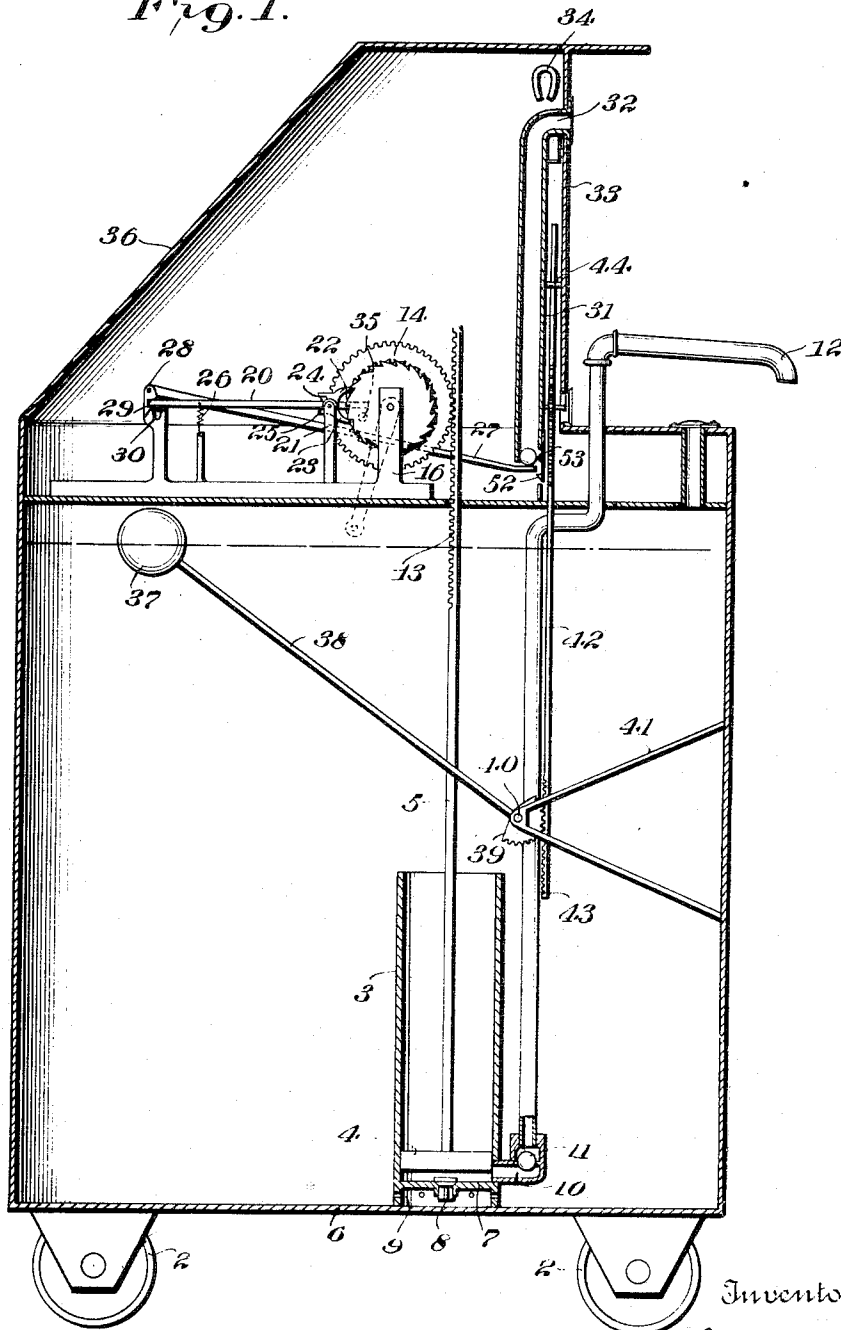
R. SHAFFER.
AUTOMATIC GASOLINE VENDING MACHINE.
APPLICATION FILED SEPT. 16, 1911.

1,019,372.

Patented Mar. 5, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



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Fig. 2.

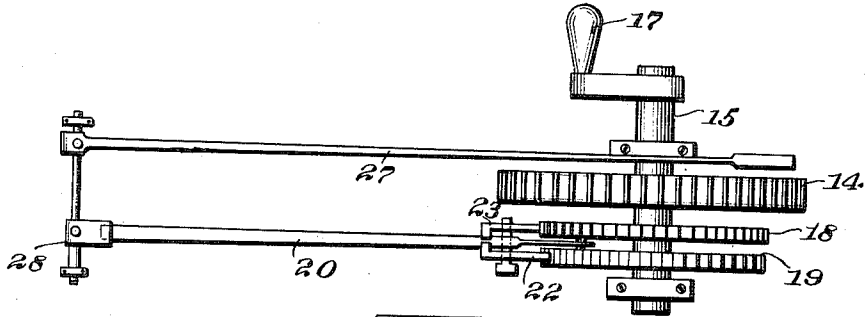


Fig. 4.

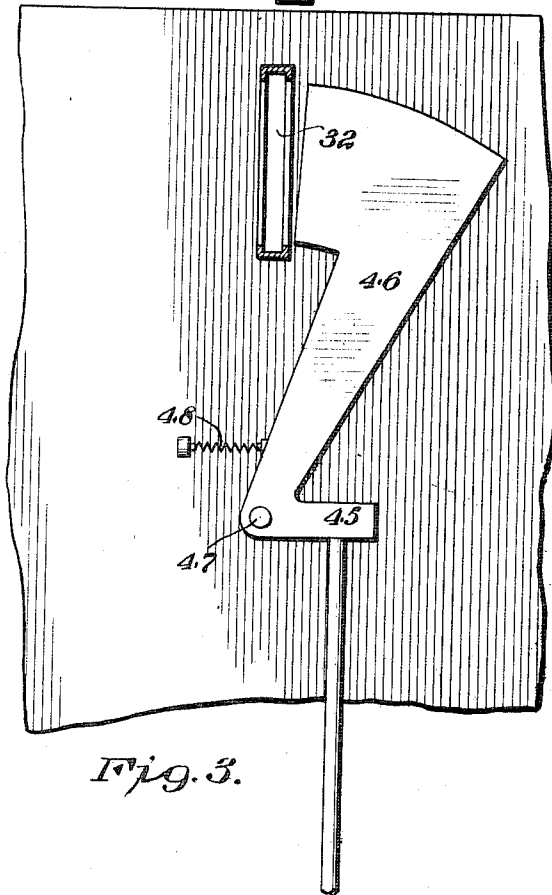
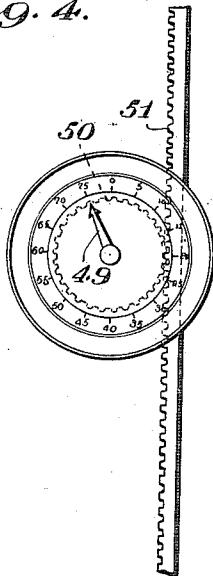


Fig. 3.

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RANDOLPH SHAFFER, OF ALBANY, GEORGIA.

AUTOMATIC GASOLENE-VENDING MACHINE.

1,019,372.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed September 16, 1911. Serial No. 649,663.

To all whom it may concern:

Be it known that I, RANDOLPH SHAFFER, a citizen of the United States, and resident of Albany, county of Dougherty, State of Georgia, have invented certain new and useful Improvements in Automatic Gasolene-Vending Machines, of which the following is a specification.

This invention relates to means for delivering a limited quantity of the liquid, such as gasolene, automatically upon the deposit by the customer of a coin in the machine.

My invention has been especially designed for delivering gasolene and it is particularly useful in places where automobiles pass since one of the machines may be placed in position and it is not necessary that there should be an attendant in order to supply the gasolene to those who need it and all that is necessary is for the customer to deposit a coin in the slot and operate the machine to get a limited quantity of the gasolene.

It has been my purpose to make such a vending machine of simple construction which will operate easily, accurately and efficiently.

The novel features will be apparent from the following description taken in connection with the drawings.

In the drawings, Figure 1 is a cross section of an apparatus embodying my invention; Fig. 2 is a detail plan view of the operating and controlling mechanism; Fig. 3 is an enlarged detail view of the means for closing the coin slot when the supply of gasolene is exhausted; Fig. 4 is a face view of a register device for indicating the amount of gasolene in the tank.

In Fig. 1 I have shown a portable tank 1 for containing gasolene and it is mounted on wheels 2 so that it can be conveniently moved but it will of course be understood that my invention is not limited to the use of a portable tank above ground, but is applicable to a tank in any position. Within the tank I place pumping mechanism for supplying a limited quantity of gasolene and as shown my pump embodies a pump cylinder 3 having a piston 4 working therein carried by the piston rod 5. The cylinder is mounted on the bottom 6 of the tank and has its own bottom 7 slightly separated therefrom and provided with the check valve 8 for admitting gasolene from the tank but preventing the discharge of gasolene. There are holes 9 for allowing the passage of gasolene to the valve

8. An outlet pipe 10 provided with a check valve 11 serves to permit the discharge of the gasolene which is drawn into the pump and the upper end 12 of this pipe may be carried to any convenient position for discharging the gasolene at the proper point.

The piston rod 5 is provided with teeth 13 which mesh with the teeth on a gear 14 rigidly secured on a shaft 15 which is mounted in bearings in the supports 16. The shaft 15 and the gear 14 are turned in any suitable way, as by the handle 17 which may be used to rotate the shaft in either direction so as to raise or lower the piston rod 5. The handle 17 being at all times accessible to any one approaching the machine, it is necessary to provide means for controlling the operation of this handle so as to prevent the unauthorized delivery of gasolene by the operation of the pump. The particular controlling mechanism shown embodies the reversely arranged ratchet teeth 18 and 19 which may be placed on two separate disks secured to the shaft 15, as shown in Fig. 2. When two such disks are used I mount a pivoted arm 20 so as to turn on a support 21 adjacent the edges of the disks and the inner end of this pivoted arm extends in between the two disks, as more clearly shown in Fig. 2. Pawls 22, 23, are mounted on opposite sides of the pivoted arm at the pivot point, one of those pawls engaging the ratchet teeth 18 and the other reversely arranged pawl engaging the teeth 19. These pawls are pivotally secured and are supported at their rear ends by springs 24, 25, which permit the outer points of the pawls to be moved when the ratchet teeth are rotated in the reverse direction. The arm 20 and the two pawls are so arranged that one of the pawls is always in engagement with one set of ratchet teeth, but when the arm 20 is changed in position, one pawl is engaged and the other released and by this means it is never possible to turn the handle 17 except in one direction and that direction is controlled by the position of the pawls. There is a coiled spring 26 which tends to turn the outer end of the arm 20 downward so as to throw the pawl 23 into engagement but the arm 20 is normally held in its elevated position with the pawl 22 in engagement by means of the trip arm 27 which is pivoted at 28 and has the depending finger 29 provided with a shoulder fitting under the end of the arm 20 so as to prevent its downward move-

ment. The face of the finger 29 below the shoulder is inclined so that when the arm 20 strikes it the finger is pushed out of the way until the arm is up above the shoulder.

5 A spring 30 tends normally to hold the finger 29 and the trip arm 27 in the position shown in Fig. 1, with the pivoted arm 20 held in its upper position. The end of the trip arm 27 extends beneath the lower end of the coin chute 31 and there is a slot 32 at the upper part of the front wall 33 for the admission of a coin for operating the trip. There may be a magnet 34 used adjacent the coin slot for preventing the operation of the machine by imitation coins and other usual means may be employed for preventing the use of counterfeit coins or dummies. A pin 35 is secured to one or both of the disks carrying the ratchet teeth 18 and 19 in such a position that when those disks are rotated by the handle 17 a predetermined distance the pin will engage the inner end of the pivoted arm 20 bearing down on it so as to elevate the outer end of the arm 20 against the tension of the spring 26 until it is engaged by the shoulder on the finger 29 and is automatically held in place. A casing 36 is placed over the working parts above mentioned and joins the front wall 33 so as to protect those parts from being tampered with by any person operating the machine and it will be understood that the handle 17 is on the outside of this casing, while the operative parts carried by the shaft 15 are within the casing.

Within the tank 1 I place a float 37 connected by an arm 38 to a toothed segment 39 pivoted at 40 in the bracket 41. I also place a vertical rod 42 in position extending down into the tank with its lower end provided with gear teeth 43 engaging the teeth on the segment 39 and this rod is preferably guided in the bracket 41. The upper end of the rod passes up behind the wall 33 through a guide bearing 44 to a point adjacent the coin slot 32. The upper end of the rod is immediately below the arm 45 of the angular piece 46 adapted to serve as a closure for the coin slot. This closure is pivoted at 47 and the compression spring 48 tends to push it to the right in Fig. 3 so as to clear the coin slot. It will be understood from the above construction that as the level of the liquid falls the float will descend and the segment 39 will raise the rod 42 and when the liquid is exhausted the upper end of the rod will strike the arm 45, turning the closure so as to obstruct the coin inlet 32 and thus the insertion of the coin will be prevented. In order that the amount of liquid in the tank can be determined easily, I make use of the register shown in Fig. 4, which embodies the pointer 49 mounted on a shaft carrying the gear 50, which meshes with the teeth 51 on the rod 42. At the

lower end of the coin slot I place a spring catch 52 which engages the end of the trip arm 27 so as to hold it firmly against releasing the operating mechanism. This spring catch has a projection 53 on its inner face which will be engaged by the proper coin descending in the coin slot and the catch will thus be pushed out of the way so as to release the trip 27. The weight of the coin will then be sufficient to lower the trip arm 27 releasing the pivoted arm 20.

In operation a customer desiring gasoline will deposit a coin in the slot 32 and as above stated this coin will in descending release the spring catch 52 and press down the trip arm 27 releasing the pivoted arm 20, which under the influence of the spring 26 will descend, making the pawl 23 engage the ratchet teeth 18 which will permit the shaft 15 to be rotated in the direction of the arrow in Fig. 1, so as to elevate the piston 4 and piston rod 5, it being understood that the pawl 22 is then out of engagement. When the piston reaches a predetermined height, the pin 35 strikes the inner end of the pivoted arm 20 throwing it back into the position shown in Fig. 1, so that the ratchet teeth 19 are engaged by the pawl 22 and it is impossible to turn the handle 17 any farther. The operation of the handle is then reversed and by the rotation of the shaft the piston 4 is made to descend forcing the gasoline out through the pipe 10 to the discharge 12 and this is continued until the piston reaches the bottom of the cylinder 3. It will have discharged a predetermined amount of gasoline and at that time the ratchet engagement will prevent again raising the piston 4 by the operation of the shaft 15 until another coin has been deposited in the coin slot.

Having described my invention what I claim and desire to secure by Letters-Patent is,

1. In a liquid vending machine, the combination with dispensing mechanism, of means for operating the dispensing mechanism, releasable locking means for the operating means, a coin operated means including a coin slot and a trip for releasing said locking means, and means for locking said operating means after a predetermined operation of the dispensing mechanism.

2. In a liquid vending machine, the combination with a tank of a dispensing device, means for operating said dispensing device, releasable locking means for said operating means, a coin operated means including a coin slot and a trip for releasing said locking means, means for locking said operating means after a predetermined operation of said dispensing device, and means for preventing the insertion of a coin in said operating means to throw said trip when the liquid in the tank is exhausted.

3. In a liquid vending machine, the combination with a tank of a dispensing device, means for operating said dispensing device, releasable locking means for said operating means, a coin operated means including a coin slot and a trip for releasing said locking means, means for locking said operating means after a predetermined operation of said dispensing device, a rod extending upwardly from said tank adjacent said coin operated means, a float in said tank operatively connected to said rod to raise it as the level of the liquid falls, means operated by the rod to close the coin inlet when the liquid falls to a predetermined level, and a gage operated by said rod to indicate the level of the liquid.

4. In a liquid vending machine, the combination with a tank, of coin operated means for permitting the delivery of a predetermined quantity of liquid including a coin slot, a rod in the tank extending from a point adjacent said slot, a float pivotally mounted in said tank and operatively connected with said rod and means operated by said rod for obstructing the inlet to said coin slot when the float falls to a predetermined level.

5. In a liquid vending machine, the combination with a tank, of coin operated means for permitting the delivery of a predetermined quantity of liquid including a coin slot, a rod extending from a point adjacent said slot down into said tank and provided with teeth, a float in said tank, a pivoted segment secured to said float having teeth engaging the teeth of said rod to raise it, a pivoted closure for said coin slot, adapted to be engaged and turned to closed position by said rod when it rises a predetermined extent, and a spring for normally holding said closure in open position.

6. In a liquid vending machine, the combination of a dispensing mechanism, a rotary shaft provided with an operating handle, operating means connecting said shaft and dispensing mechanism, reversely arranged ratchets on said shaft, coin-controlled means including a coin slot and a trip for releasing one ratchet and throwing into operation the other ratchet, and means operated by said rotary shaft for reversing

the operated position of said ratchets at the end of a predetermined operation of the dispensing mechanism.

7. In a device of the class described, the combination with a liquid vending mechanism, of means for operating said mechanism, a rotary shaft, means connecting said shaft and operating means, reversely arranged ratchets for controlling the direction of movement of said shaft, coin-controlled means including a coin chute and a trip for reversing the operative position of said ratchets at a certain position of the operating means and means operated by the rotary shaft for reversing the ratchets at another position of the operating means.

8. In a vending machine for liquids, the combination with dispensing mechanism, of means for controlling said mechanism embodying reversely operative ratchet teeth, reversely arranged pawls for engaging said teeth, a pivoted arm carrying said pawls so mounted that one of said pawls is held in operative position, a coin slot, a trip arm adjacent the slot for holding said pivoted arm with one pawl operative, and coin controlled means for releasing said trip and turning said pivoted arm to reverse the operative positions of said pawls.

9. In a vending machine for liquids, the combination with dispensing mechanism, of means for controlling said mechanism embodying reversely operative ratchet teeth, reversely arranged pawls for engaging said teeth, a pivoted arm carrying said pawls so mounted that one of said pawls is held in operative position, a coin slot, a trip arm adjacent the slot for holding said pivoted arm with one pawl operative, and coin controlled means for releasing said trip, a spring for turning said pivoted arm when released to reverse the operative positions of said pawls, and means for returning said arm to normal position in engagement with said trip at the end of a predetermined operation of said mechanism.

In testimony whereof I affix my signature in presence of two witnesses.

RANDOLPH SHAFFER.

Witnesses:

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ROY J. GEOGHEGAN.