

May 4, 1937.

J. SIEGEL

2,079,427

COIN CONTROLLED GASOLINE FILLING STATION

Filed April 16, 1936

2 Sheets-Sheet 1

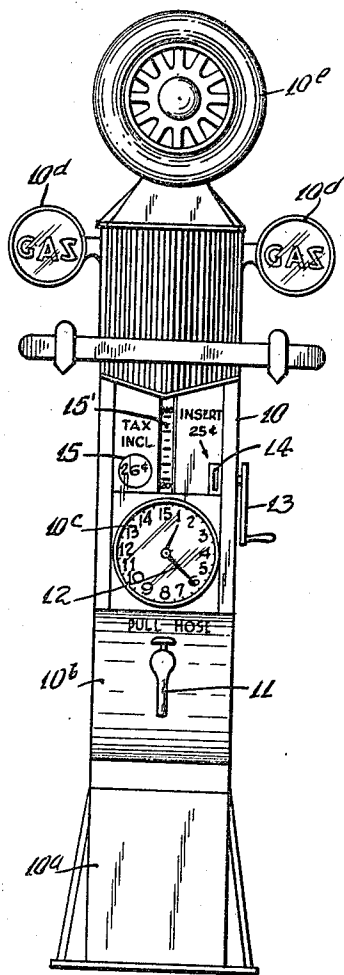


Fig. 1.

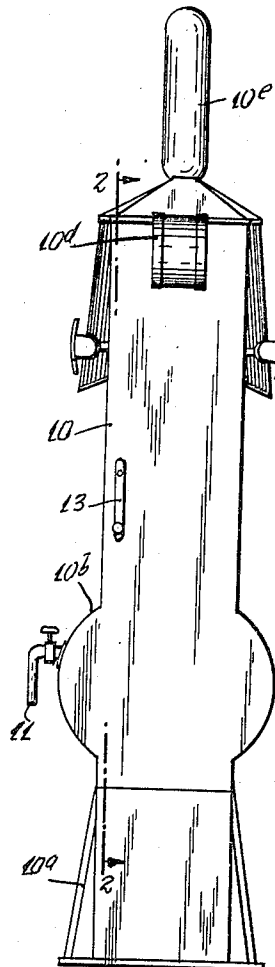


Fig. 5.

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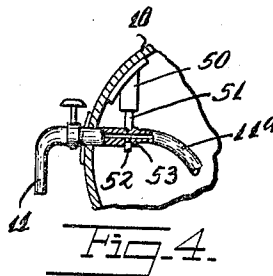
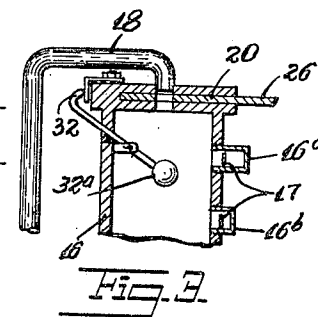
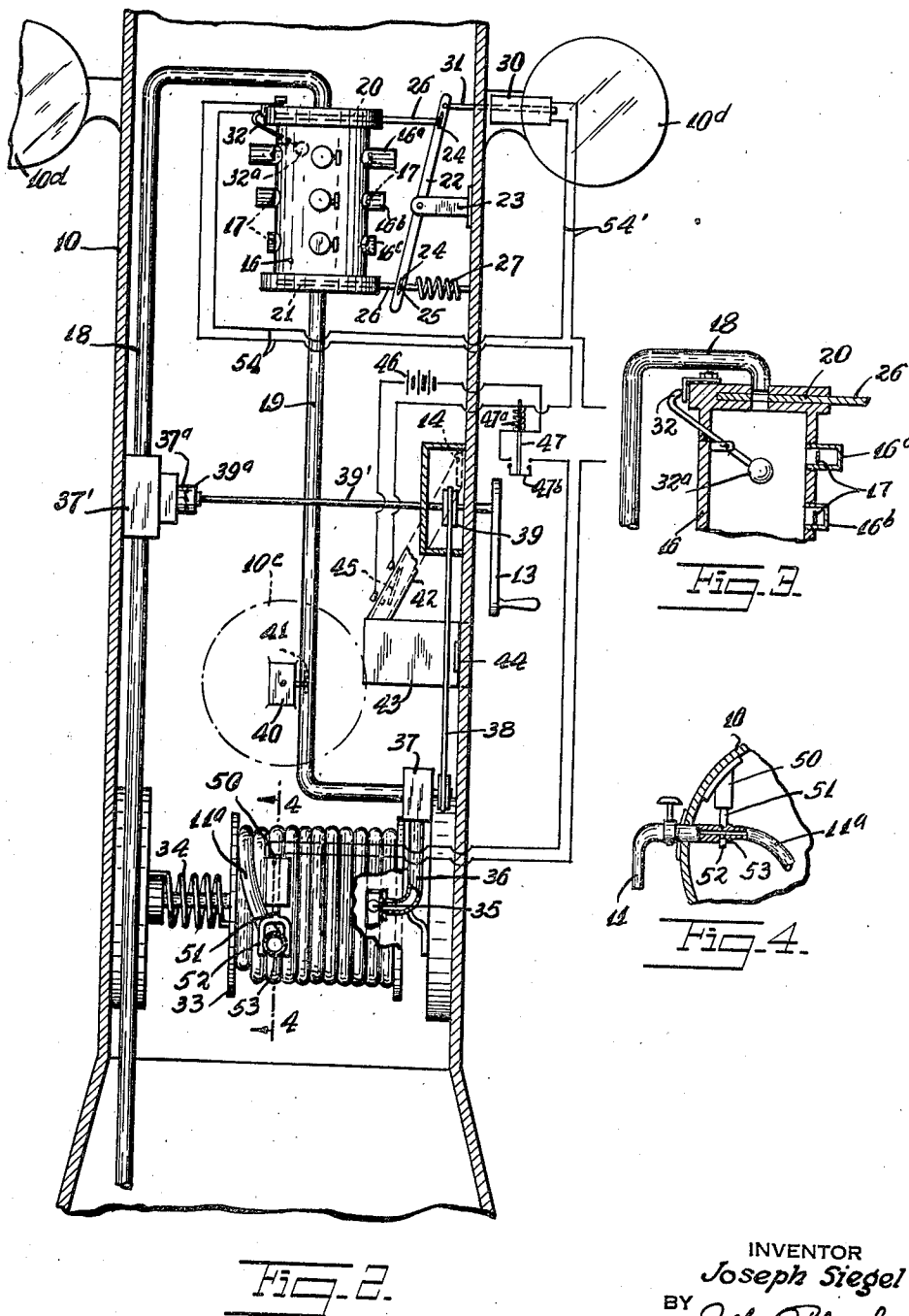
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COIN CONTROLLED GASOLINE FILLING STATION

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2 Sheets-Sheet 2



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COIN CONTROLLED GASOLINE FILLING
STATION

Joseph Siegel, Brooklyn, N. Y.

Application April 16, 1936, Serial No. 74,609

4 Claims. (Cl. 221-100)

This invention relates to new and useful improvements in a device for dispensing gasoline.

The invention has for an object the construction of a coin-controlled gasoline dispensing device which is entirely automatic. It is contemplated to construct a gasoline dispenser which may be placed at stations along the highway and from which motorists may obtain gasoline by depositing coins therein. Thus, the necessity of station men is entirely eliminated.

More specifically, the invention proposes constructing the device so that it receives quarters or coins of other denominations. It is further proposed to arrange the device adjustable so that various quantities of gasoline may be dispensed by the insertion of one particular coin. This is necessary as the price of gasoline fluctuates frequently. For example, the device may be set to dispense a gallon and a half for the twenty five cent piece, or a gallon and three quarters, etc.

A still further object of the invention resides in the association of a meter with the device so that the motorist may note the quantity of gasoline he has received for his money.

Another object of the invention is to provide an extendable hose which is automatically retractable and which the motorist may extend and place the nozzle end thereof into his gas tank.

The invention also proposes the provision of an automatic catch for latching the hose retracted so that persons may not play with it, except if a coin for gasoline has been deposited.

Another object is the construction of a device as described which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:—

Fig. 1 is a front elevational view of a device constructed according to this invention.

Fig. 2 is a fragmentary transverse vertical sectional view taken on the line 2-2 of Fig. 5.

Fig. 3 is a fragmentary sectional view of the measuring container shown in Fig. 2.

Fig. 4 is a fragmentary sectional view taken on the line 4-4 of Fig. 2.

Fig. 5 is a side view of Fig. 1.

The gasoline dispenser, according to this in-

vention, includes a body 10 which is provided with a pedestal 10^a mounted on the ground. The body 10 has a cylindrical portion 10^b above the pedestal 10^a in which a drum for a hose, as hereinafter further explained, is stored. This hose is provided with an extended end having a valve control nozzle 11. Located above the portion 10^b of the body there is a dial portion 10^c which is equipped with a meter 12. A crank 13 is disposed on one side of the body 10 and connects with a pump mechanism as hereinafter described, by which the gasoline may be pumped through the hose.

A gauge 15 is provided above meter 12 and is suitably connected to the supply tank to indicate the amount of gasoline in the said tank.

Immediately adjacent the handle there is a coin entrance opening 14 into which the coin may be deposited. A rate card 15 is posted near the coin entrance 14 giving the rate to which the machine is set. For example, 17c per gallon. The body 10 is ornamented with suitable advertising matter such as the signs 10^d and 10^e.

Supported within the body 10 there is a measuring container 16. This measuring container is of a certain predetermined size. It has a plurality of auxiliary containers 16^a, 16^b, 16^c, etc., along the sides thereof which are normally separated from the main portion by butterfly valves or other types of valves 17. When the body is opened up these valves may be set as desired to control the capacity of the container.

A supply line 18 extends from the ground tank (not shown on the drawings) upwards through the body 10 and discharges into the top of the container 16. From the bottom of the container there is an outlet 19. Solenoid control valves 20 and 21 are arranged across the top and bottom ends of the container 16 for controlling the passage of the gasoline. These valves are synchronized with each other and set so that when one is opened the other is closed. This is accomplished by an arm 22 which is pivotally mounted intermediate of its ends upon a stationary bracket 23. The ends of this arm 22 are formed with slots 24 which are engaged by pins 25 mounted upon the stems 26 connected with the valves 20 and 21. A spring 27 is connected between the arm 22 and the body 10 for normally pivoting the lever 22 so that the bottom valve 21 is open and the top valve is closed.

A solenoid 30 is mounted on the body 10 and has a core 31 which connects with the arm 22 and is adapted to pivot the arm, when energized, so that the top valve 20 is opened and the bottom

valve 21 is closed. A float controlled switch 32 is mounted in the top of the container 16 and normally, when the container is empty, is closed. This switch has a float portion 32^a which is adapted to be lifted by the float and pivot one of the switch contacts to open the switch.

The nozzle 11 is connected with a supply hose 11^a which is wound upon a drum 33 rotatively supported in the body. A spring 34 is arranged coaxially with the drum and acts to normally rotate the drum into a pre-determined neutral position. The hose 11^a is wound upon the drum and the arrangement allows the hose to be extended by manually drawing it against the action of the spring 34. Then, when the hose is released the spring will wind it upon the drum.

The inner end of the hose 11^a connects with a passage 35 coaxially with the drum with which a pipe 36 is swivelly connected. This pipe 36 connects with a pump 37. The outlet 19 connects with the inlet of the pump. The pump 37 is driven by a chain 38 which connects with a pinion 39 upon a rotatively supported shaft 39' provided with the crank 13.

The meter 12 has a housing portion 40 attached upon the pipe line 18 and a measuring propeller 41 disposed within the pipe line 18. Thus, when the gasoline passes the propeller 41 will rotate and the meter will operate.

The shaft 39' is also provided with a clutch 39^a which engages a corresponding clutch member 37^a for the purpose of operating a suitable main pump 37' connected in the supply pipe 18. The pump 37' may be disconnected if the pressure of the ground pump is sufficient to raise the gasoline into the container 16.

The coin slot 14 connects with a coin chute 42 which discharges into a coin receptacle 43 releasably held in position by a lock 44. A momentary switch 45 is mounted upon the chute 42 and is adapted to be closed momentarily when a coin passes. This switch 45 is arranged in a circuit which includes a battery 46 and the coil 47^a of a relay 47. In place of the battery the circuit may be connected to the usual house supply. This relay has a switch portion 47^b. This switch portion is connected in series with a solenoid 50 which has a movable core 51 formed with a forked portion 52. This forked portion normally engages a groove 53 in the inner end of the nozzle 11 to latch the nozzle against motion, except if the solenoid is energized; then the fork 52 will be automatically raised.

The relay 47 is so connected in the circuit that once it is closed the main circuit passes through the coil and maintains it in the closed position. The main circuit includes the leads 54 and the leads 54' which connect the switch 32 and the solenoid 30 in series in the main circuit.

The operation of the device is as follows: The measuring container 16 is set to receive a pre-determined quantity of gasoline by operating the valves 17. In the neutral position of the device the valve 20 is closed and the valve 21 open. When a coin is deposited into the slot 14 it passes the switch 45 and momentarily closes this switch. Instantly, the circuit through the coil 47^a of the relay is closed and the relay closes. The relay will maintain its closed position even though the switch 45 instantly opens. This is so because the main circuit passes through the coil of the relay. The main circuit now energizes the solenoids 30 and 50. The solenoid 50 operates to release the hose 11^a. The solenoid 30 operates to

close the valve 21 and open the valve 20. A supply of gasoline is now discharged into the container 16 from an underground tank with necessary pressure or supply means not shown on the drawings and forming no part of this invention.

When the gasoline in the container 16 reaches a predetermined level the float 32^a is lifted and the switch 32 will be opened. The main circuit is now broken and the relay 47 instantly opens. When the main circuit is broken the solenoids 30 and 50 become de-energized. Before this instant it is necessary that the purchaser of gasoline draw out the hose 11^a. He has plenty of time from the time he deposits the coin to this instant, because it takes some time for the container 16 to fill up.

When the solenoid 30 de-energizes, the spring 27 will open the valve 21 and close the valve 20. The purchaser may then rotate the crank 13 to operate the pump 37 and pump the gasoline from the container 16 to the various outlet lines through the hose 11^a and the nozzle 11 into the gasoline tank of his automobile. The meter 12 will indicate the quantity of gasoline which has passed. The motorist may buy several quarters' worth of gasoline. When the hose 11^a is released it will be drawn and wound upon the drum 33. Automatically, the inner ends of the nozzle 11 will be caught by the forked member 52 so that it is now held until another coin is deposited.

It is to be understood that the shape and size of this automatic filling station, also the coin value and the corresponding dispensed gasoline may be changed as desired.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. In a coin-controlled gasoline dispenser, a body, a gasoline measuring container within said body, a gasoline supply line to said container, an outlet pipe from said container, a means on said container for controlling the amount of gasoline to be delivered, a bracket mounted on said body, an arm pivotally mounted on said bracket, an inlet valve for said container and connected to one end of said arm, an outlet valve for said container and connected to the other end of said arm and adapted to be closed when said inlet valve is open and vice versa, a spring connected to said body and said arm to normally urge said outlet valve open, and a circuit for operating a solenoid connected to said arm to pivot said arm and close said outlet valve against the normal action of said spring.

2. In a coin-controlled gasoline dispenser, a body, a gasoline measuring container within said body, a gasoline supply line to said container, an outlet pipe from said container, a means on said container for controlling the amount of gasoline to be delivered, a bracket mounted on said body, an arm pivotally mounted on said bracket, an inlet valve for said container and connected to one end of said arm, an outlet valve for said container and connected to the other end of said arm and adapted to be closed when said inlet valve is open and vice versa, a spring connected to said body and said arm to nor-

mally urge said outlet valve open, and a circuit
 for operating a solenoid connected to said arm
 to pivot said arm and close said outlet valve
 against the normal action of said spring, com-
 5 prising in series a momentary switch, a source
 of power for said circuit, a pivotally mounted
 float switch adapted to be normally closed when
 said container is open, a relay having a switch
 connected thereto and adapted to be energized
 10 when said momentary switch is closed to close
 said switch allowing the electric power to ener-
 gize said solenoid to open said inlet valve and
 close said outlet valve to allow gasoline to be
 pumped into said container until said float switch
 15 is pivoted opening said float switch and prevent-
 ing the electric power from passing to said sole-
 noid and allowing said spring to close said inlet
 valve and open said outlet valve to allow the
 gasoline to be pumped through said outlet pipe
 20 to the gasoline tank of a vehicle.

3. In a coin-controlled gasoline dispenser, a
 gasoline measuring container, a gasoline supply
 line to said container, an inlet valve at the inlet
 to said container, an outlet pipe from said con-
 25 tainer, an outlet valve at the outlet of said con-

tainer, a plurality of supplementary containers
 along the sides of said container, and valves sep-
 arating said supplementary containers from said
 container and adapted to be opened or closed
 to increase or decrease the capacity of said con-
 5 tainer, whereby a pre-determined capacity may
 be selected for said gasoline container and gaso-
 line measured and dispensed by operating said
 inlet and outlet valves.

4. In a coin-controlled gasoline dispenser, a 10
 gasoline measuring container, a gasoline supply
 line to said container, an inlet valve at the inlet
 to said container, an outlet pipe from said con-
 tainer, an outlet valve at the outlet of said con-
 15 tainer, a plurality of supplementary containers
 along the sides of said container, and valves
 separating said supplementary containers from
 said container and adapted to be opened or closed
 to increase or decrease the capacity of said con-
 20 tainer, whereby a pre-determined capacity may
 be selected for said gasoline container and gaso-
 line measured and dispensed by operating said
 inlet and outlet valves, said supplementary con-
 tainers being of different sizes.

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