June 8, 1965 F. J. HAYES 3,187,939

COIN OPERATED CONVERTIBLE GAS PUMP AND DEVICE FOR VENDING PACKAGED GASOLINE

Filed Feb. 19, 1962 2 Sheets-Sheet 1

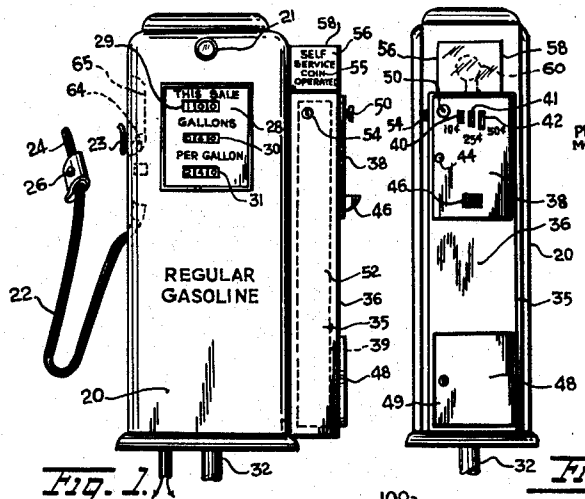


Fig. 1.

Fig. 2.

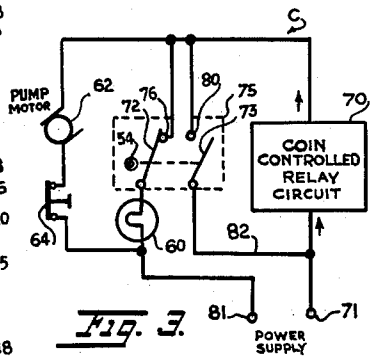


Fig. 3.

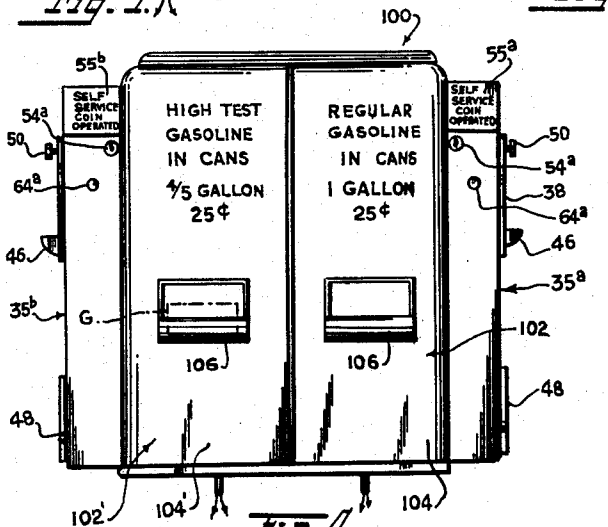


Fig. 4.

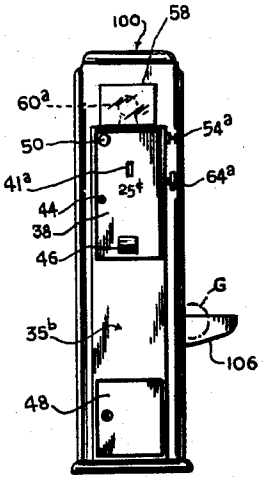


Fig. 5.

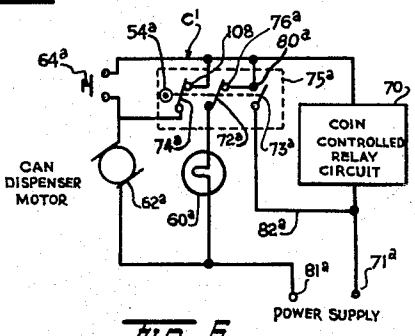


Fig. 6.

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June 8, 1965 F. J. HAYES 3,187,939

COIN OPERATED CONVERTIBLE GAS PUMP AND DEVICE FOR VENDING PACKAGED GASOLINE

Filed Feb. 19, 1962 2 Sheets-Sheet 2

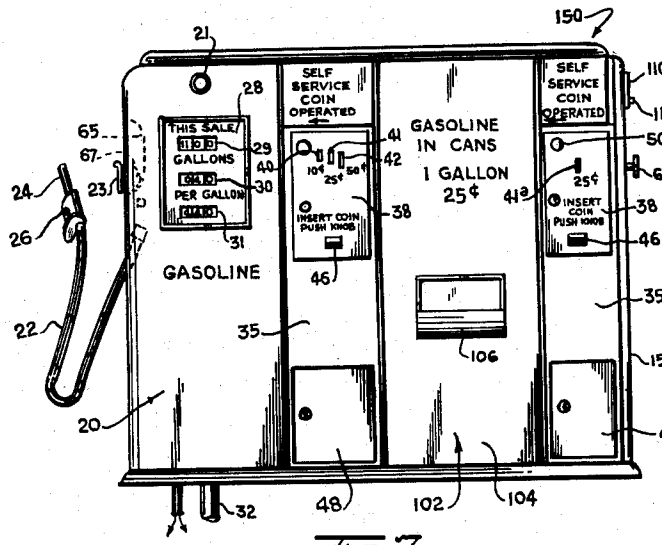


Fig. 7.

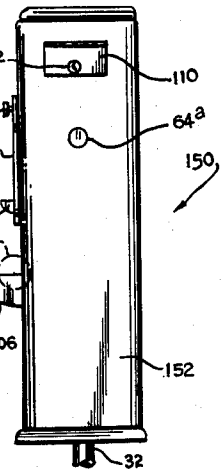


Fig. 8.

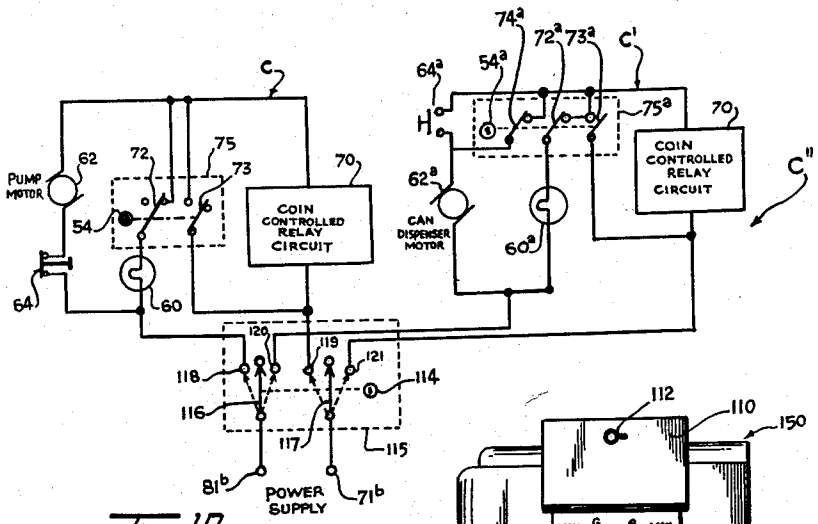


Fig. 10.

Fig. 9.

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United States Patent Office 3,187,939 Patented June 8, 1965

3,187,939

COIN OPERATED CONVERTIBLE GAS PUMP AND DEVICE FOR VENDING PACKAGED GASOLINE

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Filed Feb. 19, 1962, Ser. No. 174,034
2 Claims. (Cl. 221—4)

This invention relates to the art of gasoline vending and dispensing devices and more particularly concerns a device for dispensing gasoline in liquid form or in cans under control of a deposited coin or coins or under manual control of an operator.

It is one object of the invention to provide facilities for vending and dispensing gasoline to motorists from conventional types of liquid and gas dispensing machines provided with coin controlled devices and lock switches for converting the vending and dispensing facilities from manual operator control to automatic coin control.

A further object is to provide vending and dispensing facilities as described with lock and switch means for converting the facilities selectively to dispense gasoline in liquid form or in cans.

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 liquid gasoline dispensing device according to the invention.

FIG. 2 is a side elevational view of the device of FIG. 1.

FIG. 3 is a diagram of a control circuit embodied in the device of FIGS. 1 and 2.

FIG. 4 is a front elevational view of a gasoline can dispensing device.

FIG. 5 is a side elevational view of the device of FIG. 4.

FIG. 6 is a diagram of a control circuit embodied in the device of FIGS. 4 and 5.

FIG. 7 is a front elevational view of a combined liquid and canned gasoline dispensing device.

FIG. 8 is a side elevational view of the device of FIG. 7.

FIG. 9 is a side elevational view of part of the device of FIGS. 7 and 8, on an enlarged scale, with a control door opened to show control lock switches of the device.

FIG. 10 is a diagram of a control circuit employed in the devices of FIGS. 7–9.

Referring first to FIGS. 1 and 2, there is shown a gasoline dispensing pump 20 having a liquid gasoline dispensing hose 22 provided at its free end with a nozzle 24 and manually operable trigger valve 26. The pump has a computer 28 provided with counter scales 29, 30 and 31 indicating respectively the amount of the last sale of gasoline in dollars and cents, the number of gallons dispensed in gallons and tenths of gallons, and the price of the gasoline in cents and tenths of a cent per gallon. On the front of the pump is a viewing window 21 to show when gasoline is flowing out of the pump. A crank handle 23 is provided for resetting the sale and quantity scales 29, 30 of the computer to zero indications. Gasoline is supplied to the pump via pipe 32 from an underground tank. To the extent described, the pump 20 is entirely conventional and reference may be made to U.S. Patent 2,995,229 for a description of internal working parts.

Mounted on one side of the pump opposite to the hose 22 is a cabinet 35 containing a coin controlling mechanism. On side wall 36 of the casing is a door 38 supporting a coin receiving apparatus 39 inside the cabinet. In

door 38 are three slots 40, 41 and 42 of successively larger sizes for receiving coins of different denominations such as dimes, quarters and half dollars. The door has a key operated lock 44 at one edge. Beneath the slots 40–42 is a coin return trough 46 for returning and collecting defective coins which may be deposited in the slots. At the bottom of side wall 36 is a door 48 providing access to the interior of the cabinet. This door has a suitable lock 49. Adjacent to the slots is an operating knob 50. On the front wall 52 of the cabinet is lock 54 for operating a control circuit C of the device. This circuit C is shown in FIG. 3 to which reference will be made. Above the cabinet is a sign 55 marked on the transparent wall 56 of a lamp housing 58 containing lamp 50. When the lamp 60 is energized, the legend "SELF SERVICE COIN OPERATED" of the sign is illuminated.

Referring now to FIG. 3, it will be noted that there is provided a motor 62 which operates the pump for dispensing gasoline in liquid form. The motor is connected in series with normally closed push-button switch 64. Swith 64 may be located in the hose supporting receptacle 65 on the side of the pump. The switch opens when valve 26 is installed in the receptacle to press the button 66. The switch closes when the valve 26 is removed from the receptacle.

The motor 62 is connected in series with a coin controlled relay circuit 70 and terminal 71 of a power supply. Lock 54 controls ganged poles 72, 73 of a double pole-double throw switch 75. Pole 72 closes with fixed contact 76 in one position of the switch. Lamp 60 is connected in series with pole 72, contact 76 and power supply terminal 81. Pole 73 closes with fixed contact 80 in another position of the switch. Pole 73 and contact 80 are connected in a shorting circuit 82 for short circuiting the relay circuit 70 when the device is set for manual control. The relay circuit is operated by a coin or coins of suitable denomination deposited in slots 40–42, and by pressing of operating knob 50. Reference should be made to the above-mentioned Patent 2,995,229 for details of the circuit 70 and associated mechanical parts.

In operation of circuit C, the operator may turn lock 54 with a suitable key to set switch 75 for manual or coin control of the device. In FIG. 3, the circuit is set for coin controlled operation. A direct electrical connection will exist between terminal 71 and motor 62 if a suitable coin or coins are deposited in slots 40–42, so that the motor 62 operates when switch 64 is closed. If the nozzle valve 26 is placed in receptacle 65, the switch 64 will open to shut off the motor. Lamp 60 is energized and the sign 55 is illuminated indicating to a customer that the device is under coin control. By depositing suitable coins in the slots 40, 41, 42 and pressing knob 50, all according to the arrangement of the above-mentioned patent, a quantity of gasoline will be dispensed from hose 22 depending on the dollar amount of the coins deposited.

The coin control arrangement will be effective while the device is unattended by an operator so that motorists can serve themselves. Suppose now that an attendant becomes available. The operator will insert the control key in lock 54 and will turn the lock to set switch 75 to manual operation position. Pole 73 will close with contact 80 short circuiting the relay control circuit, so that motor 62 will be energized even though no coins are deposited in the coin receiving apparatus 39 associated with circuit 70. The operator can then operate the pump in conventional manner independently of the coin receiving apparatus 39 and control circuit 70.

In FIGS. 4 and 5 is shown a dual can dispensing apparatus 100 provided with two identical devices 102', 102

for dispensing cans of high test or high octane gasoline and cans of regular or low octane gasoline, respectively. Coin cabinets 35ª and 35ᵇ, similar to cabinet 35, are mounted on opposite sides of cabinets 104, 104'. Signs 55ª and 55ᵇ above the cabinets 35ª, 35ᵇ have lamps 60ª. Each lamp lights when its associated device 102 or 102' is arranged for coin operation. A push-button switch 64ª is mounted on the front of each cabinet 35ª and 35ᵇ for manual operation when the lock 54ª is set to manual operating position. Two identical control circuits C' are provided for the devices. Since the circuits are identical and each circuit controls its own can dispensing device, only a single circuit C' is shown in FIG. 6. A can receiving trough 106 is provided at the front of each cabinet for retaining a can of gasoline G discharged therein when the device is operated under coin control. Other parts of the devices 102, 102' corresponding to those of device 20 are identically numbered. A single coin receiving slot 41ª is provided in each coin receiving cabinet 35ª, 35ᵇ.

Referring now to FIG. 6, it will be noted that switch 75ª, which is controlled by lock 54ª, is a triple pole-double throw switch. The coin controlled relay 70 connects can dispenser motor 62ª directly to power supply terminals 71ª, 81ª when poles 72ª, 73ª, 74ª are in the right or coin control position as shown in the drawing. Push-button switch 64ª is short circuited since pole 74ª is closed with fixed switch contact 108. Lamp 60ª is illuminated since pole 72ª is closed with contact 76ª. The shorting circuit 82ª is open since pole 73ª is open with respect to fixed contact 80ª. The device can operate unattended as each coin is deposited in slot 41ª by a motorist who serves himself upon discharge of a can G.

Suppose that the device is to be attended by an operator. The operator will insert the suitable key in lock 54ª and set switch 75ª for manual operation. Pole 73ª closes with contact 80ª and the circuit 70 is short circuited. Pole 72ª opens with respect to contact 76ª and lamp 60ª is extinguished. Pole 74ª opens with respect to contact 108 so that switch 64ª is activated. The operator can now manually close switch 64ª each time a can is to be dispensed from the device without having to deposit a coin in slot 41ª.

In FIGS. 7 and 8 is shown an apparatus 150 including both liquid dispensing pump 20 and can dispensing device 102. Coin receiving cabinets 35, 35ª are associated with and attached to sides of the pump and can dispensing cabinet 104, respectively. The coin receiving cabinets 35, 35ª are turned 90° from their positions in FIGS. 1 and 4, but are otherwise identical in structure and corresponding parts are identically numbered. On side wall 152 of the device 150 is a door 110 closed by a lock 112. Inside this door, as shown in FIG. 9, are three key operated locks 54, 54ª and 114.

FIG. 10 shows the control circuit C'' of the apparatus 150. Parts corresponding to those of circuits C and C' are identically numbered and operate in the same ways as previously described. Lock 114 controls a double pole-three position switch 115. The center position is the OFF position and the poles 116, 117 are open circuited. At the left or GAS position of switch 115, power supply terminals 71ᵇ, 81ᵇ are connected to fixed contacts 118, 119 so that the left circuit portion C is activated. Then the operator can set switch 75 controlled by lock 54 to either manual or coin control positions as above described in connection with circuit C. If switch 115 is set to the right or CAN position, then circuit C is deactivated and circuit C' is activated as poles 116, 117 close with contacts 120, 121 and connect terminals 71ᵇ, 81ᵇ to circuit C'. Now the operator can set switch 75ª to either coin or manual control by appropriate setting of lock 54ª. Three different keys are required to operate the several locks 54, 54ª and 114 of apparatus 150. In addition, a fourth key is required for opening lock 112 to gain access to the circuit control locks. This arrangement insures security against tampering by unauthorized persons.

The apparatus described can be installed at gasoline stations in association with conventional manually operated liquid gasoline dispensing pumps, to provide gasoline dispensing service to motorists when the station is closed or otherwise unattended. Alternatively, the apparatus can be installed at locations such as along roadsides where it may not be economically feasible to maintain a full-time attendant.

The cabinets are provided with any type of locked hinged doors for refilling the cabinets.

It is to be understood that a suitable refrigerating unit may be installed in the cabinet to keep it in cool condition during hot weather.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made 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 gasoline-filled can dispensing apparatus convertible from coin control to manual operation, a device for dispensing gasoline-filled cans, a motor actuating said device to dispense said filled cans, a coin controlled relay circuit, a power supply connected in series with said motor and relay circuit, a switch having three poles and three fixed contacts, a first shorting circuit connected in series with a first pole and one fixed contact of the switch across thes relay circuit, a lamp connected in series circuit with a second pole and a second contact of the switch, a push-button switch connected in series with said motor and power supply, a second shorting circuit connected across said push-button switch in series with a third pole and a third contact of the switch, the one pole being open with respect to the one contact when the second and third poles are closed with respect to the second and third contacts respectively, the one pole being closed with the one contact when the second and third poles are open with respect to the second and third contacts respectively, and a key operated lock operatively connected to the poles to move the same simulaneously between first and second positions, whereby the motor is energized by the power supply to actuate said device for dispensing gasoline-filled cans independently of the relay circuit under manual control of the push-button switch while the second shorting circuit is open, and the lamp is extinguished, in one position of the poles; and whereby the motor is energized by the power supply to actuate said device for dispensing gasoline-filled cans under control of the relay circuit, while the lamp lights, the first shorting circuit opens, and the second shorting circuit is closed to deactivate the push-button switch, in the second position of the poles, and means for releasably receiving the dispensing cans.

2. In a gasoline-filled can dispensing apparatus convertible from coin control to manual operation, a device for dispensing gasoline in cans, a motor actuating said device to dispense said gasoline-filled cans, a coin controlled relay circuit, a power supply connected in series with said motor and relay circuit, a switch having two poles and two fixed contacts, a first shorting circuit connected in series with a first pole and one fixed contact of the switch across the relay circuit, a push-button switch connected in series with the motor and power supply, a second shorting circuit connected across said push-button switch in series with a second pole and a second contact of the switch, the first pole being open with respect to the one contact when the second pole is closed with respect to the second conact, the first pole being closed with the one conact when the second pole is open with respect to the second contact, and a key operated lock operatively connected to the poles to move the same simultaneously between first and second

positions, whereby the motor is energized by the power supply to actuate the device for dispensing gasoline-filled cans independently of the relay circuit under manual control of the push-button switch while the second shorting switch is open, in one position of the poles; and whereby the motor is energized by the power supply to actuate said device for dispensing gasoline-filled cans under control of the relay circuit while the first shorting circuit is open, and the second shorting circuit is closed to deactivate the push-button switch, in the second position of the poles, and means for releasably receiving the disposed cans.

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