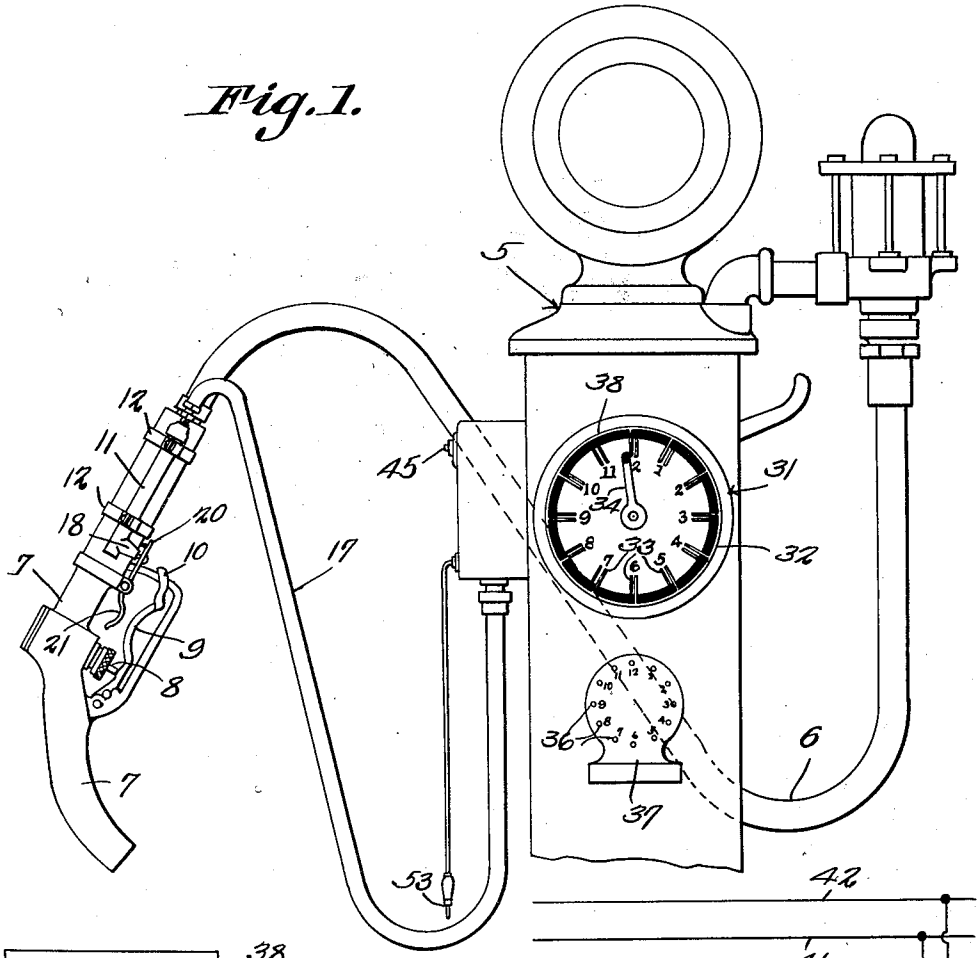
May 18, 1937. C. DEVERS 2,080,535

GASOLINE DISPENSING PUMP CONTROL DEVICE

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Fig. 1.



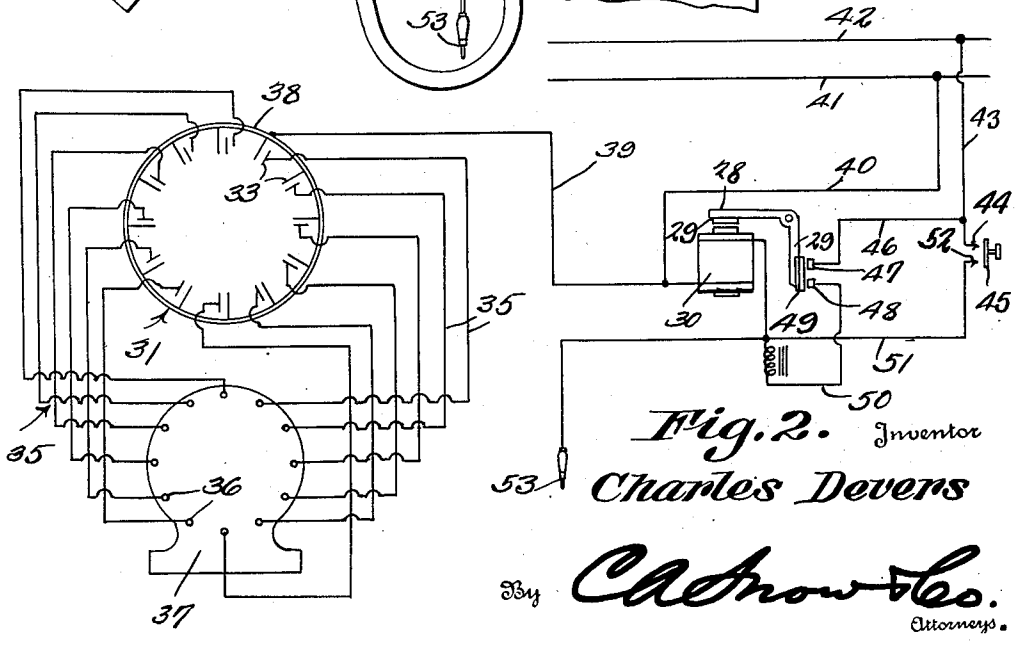


Fig. 2.

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GASOLINE DISPENSING PUMP CONTROL DEVICE

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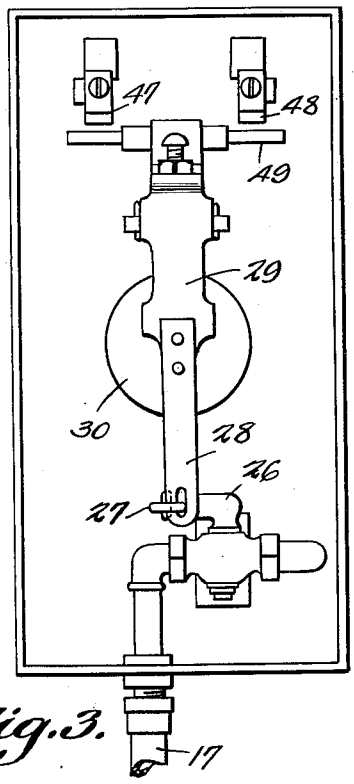


Fig. 3.

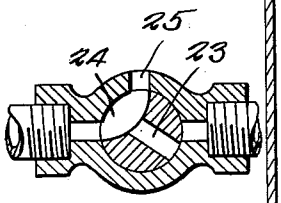


Fig. 5.

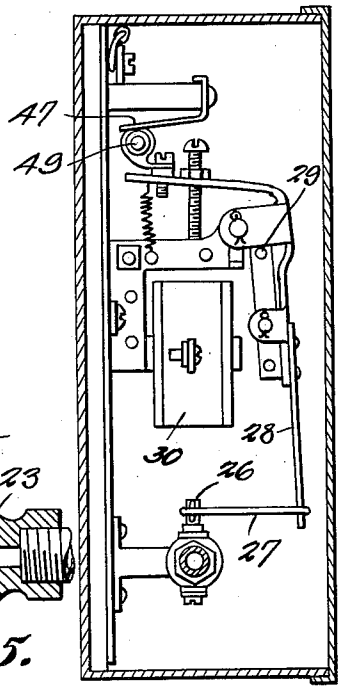


Fig. 4.

Fig. 6.

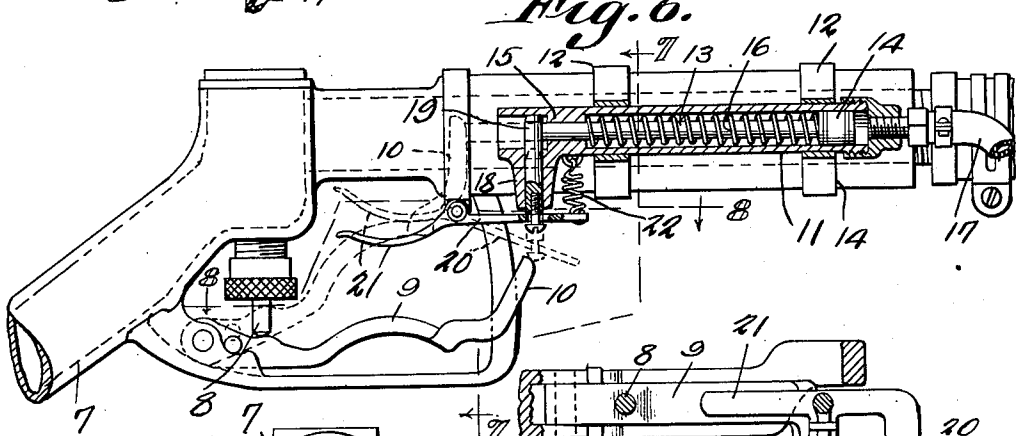


Fig. 8.

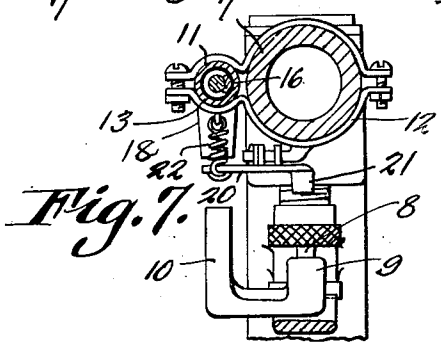


Fig. 7.

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Patented May 18, 1937 2,080,535

UNITED STATES PATENT OFFICE

2,080,535

GASOLINE DISPENSING PUMP CONTROL DEVICE

Charles Devers, Pittsburgh, Pa.

Application April 21, 1936, Serial No. 75,637

8 Claims. (Cl. 221—101)

This invention relates to gasoline dispensing pumps, the primary object of the invention being to provide a device which may be installed on the usual gasoline dispensing pump for automatically controlling the flow of gasoline from the pump, to the end that a predetermined quantity of gasoline may be dispensed and the flow of gasoline automatically shut off.

An object of the invention is to provide a device of this character which will be especially adapted for filling the gasoline tanks of busses, trucks and the like wherein large quantities of gasoline are required to fill the tanks, thereby eliminating the necessity of an attendant watching and checking the filling of the tanks to cut off the flow of gasoline when the required number of gallons of gasoline have been dispensed.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings

Figure 1 is an elevational view illustrating a gasoline pump equipped with a control device constructed in accordance with the invention.

Figure 2 is a diagram illustrating the electric circuits controlling the operation of the device.

Figure 3 is a plan view illustrating the magnet and valve operating link.

Figure 4 is a sectional view through the housing for the electromagnet, the magnet being shown in side elevation.

Figure 5 is a sectional view through the three-way valve, forming a part of the control device.

Figure 6 is a view illustrating a filling nozzle equipped with a device constructed in accordance with the invention, the cylinder in which the locking plunger operates, being shown in section.

Figure 7 is a sectional view taken on line 7—7 of Figure 6.

Figure 8 is a sectional view taken on line 8—8 of Figure 6.

Referring to the drawings in detail, the reference character 5 designates the usual gasoline dispensing pump, and the reference character 6 designates the usual hose to which the nozzle 7 is connected, the hose and nozzle affording means whereby the gasoline may pass from the pump 5, into the tank or receptacle being filled.

This nozzle 7 is of the usual construction and embodies the valve 8 and valve control lever 9 which engages the valve 8, moving the valve 8 to its open position to allow gasoline to flow through the nozzle.

Secured to the lever 9 and extending upwardly from the free end thereof, is an arm 10 which moves to the position shown in dotted lines in Figure 6 of the drawings, when the lever 9 is operated to open the valve.

The attachment, forming the subject matter of the present invention, comprises a cylinder 11 which is secured to the nozzle, by means of the bands 12, which bands support the cylinder 11 in parallel relation with the nozzle.

Operating within the nozzle is a plunger 13 formed with a piston 14 at one end thereof, the opposite end of the plunger 13 operating through the bearing 15 mounted within the cylinder 11, near the open end thereof. Positioned on the plunger 13, is a coiled spring 16 which has one of its ends resting against the piston 14, while the opposite end thereof engages the bearing 15. Connected with one end of the cylinder 11 is an air hose 17 which establishes communication between the cylinder 11 and a source of compressed air supply so that when air is admitted to the cylinder 11 through the hose 17, the plunger 13 will be moved forwardly and extended beyond the end of the cylinder 11, where it will contact with the arm 10 of the lever 9, as shown in dotted lines in Figure 6 of the drawings, holding the lever 9 in a position to cause the valve 8 to remain open until the lever 9 has been released.

Depending from the cylinder 11, is an enlargement 18 which has an opening communicating with the cylinder 11, the opening accommodating the locking pin 19 which is of a length to extend across the cylinder 11 to lie within the path of travel of the plunger 13, to prevent movement of the plunger, under normal conditions.

This locking pin is moved to its inactive position by means of the lever 20 which is pivotally connected to the nozzle, the end of the lever indicated by the reference character 21 lying in the path of travel of the valve control lever 9 so that when the lever 9 moves upwardly it will contact with the end 21 of the lever 20 moving the outer end of the lever 20 downwardly and consequently moving the locking pin 19 to a position releasing the plunger. This movement of lever 20 places the spring 22 under tension which automatically returns lever 20, when the plunger 13 has been retracted by the coiled spring 16.

The valve which controls the passage of air through the air hose 17, is shown in detail by Figure 5 of the drawings and is provided with an opening 23 adapted to establish communication between the sections of the air hose 17, to admit air under pressure to the cylinder 11. The valve is also formed with an opening 24 which is adapted to establish communication between the air hose 17, cylinder 11 and atmosphere, when the opening registers with the bleed opening 25.

The valve is provided with a handle 26 to which the link 27 is connected, which link connects with the arm 28 that in turn connects with the armature 29 of the electromagnet 30. Thus it will be seen that due to this construction, movement of the armature of the electromagnet, will operate to move the valve to admit air to the cylinder 11, or exhaust air therefrom.

In connection with the apparatus described, a contact member indicated generally by reference character 31 is mounted on the dial of the gasoline dispensing pump and comprises a ring 32 constructed of suitable insulating material, which ring is provided with pairs of contact members 33, which are arranged opposite to the various numbers of the dial, the contact members being of lengths so that they lie in the path of travel of the indicator hand 34 with the result that as the indicator hand 34 rotates, it will move the contact members of each pair, into engagement with each other. Leading from one contact member of each pair, is a wire 35, which wires 35 connect with sockets 36 of the master switch 37, the sockets being numbered correspondingly with the numbers of the dial of the pump proper. The other wire of each pair of contact members connects with the wire 38 that in turn is in circuit with the wire 39 that leads to the magnet 30. The wire 39 connects with the wire 40 which connects with wire 41 that is in circuit with a suitable source of electricity supply.

Wire 42 also connects with the source of electricity supply through which wire electricity passes to the wire 43 that connects with the contact 44 of the switch 45. Wire 43 connects with the wire 46 that leads to the contact member 47. Associated with the contact member 47, is a contact member 48 which are bridged by the contact member 49 carried by the armature 29. The wire 50 connects with the contact member 48 and electromagnet 30 so that when the contact member 48 bridges the contact members 47 and 48, electric current will pass through the magnet, holding the armature 29 against the magnet with the result that the valve is maintained open.

The wire 51 connects with the switch member 52 and carries the plug 53 at its free end, to be plugged into any one of the sockets 36 of the master switch.

The operation of the device is as follows:

Assuming that ten gallons of gasoline are to be transferred to the tank of a car, the operator will insert the plug 53 into the socket of the master switch 37, opposite to the number 10. This will place the contact members 33 opposite to the number 10 of the dial of the gasoline dispensing pump, in circuit with the magnet 30. The operator now completes the circuit between the contact members 44 and 52, by moving the switch member 45 into contact therewith. The electric current now passes through the magnet 30 energizing the magnet and attracting the armature 29 which moves the contact member 49 into engagement with contact members 47 and 48. With this movement of the armature 29, the opening 23 of the air valve is moved to establish communication between the source of compressed air supply and cylinder 11 which acts against the piston 14 of the plunger, forcing the plunger outwardly.

The lever 9 is now operated to move the valve 8 to its open position, and with this movement of the lever 9, the lever 9 contacts with the end 21 of the lever 20, retracting the locking pin 19. With the lever 9 in the dotted line position as shown by Figure 6, the plunger 13 having been released by the pin 19, is forced against the arm 10 of the lever 9, holding the lever 9 to the limit of its upward movement, the valve 8 being held in its open position by the lever 9.

As the indicator hand 34 rotates in a clockwise direction indicating the number of gallons of gasoline passing from the tank, the indicator hand will engage the various pairs of contact members 33. When the indicator hand 34 engages the contact members which are in circuit with the magnet 30 the circuit to the magnet will be shorted, whereby the armature of the magnet will move away from the magnet, turning the air valve to a position as shown by Figure 5 of the drawings, releasing the air in cylinder 11. The coiled spring 16 now forces the plunger to its inactive position, the locking pin 19 moving into the cylinder 11 to lie in the path of travel of the plunger 13, holding the plunger in its inactive position. The lever 9 and valve 8 now automatically move to cut off the passage of gasoline through the filling nozzle.

It will thus be seen that due to this construction, an attendant may position the nozzle 7 in a tank to be filled, and the mechanism set to cause the valve to be cut off or moved to its closed position when the desired number of gallons of gasoline have passed through the nozzle, thereby eliminating the necessity of an attendant watching the gauge on the gasoline pump, to operate the valve when the desired quantity of gasoline has been dispensed.

Having thus described the invention, what is claimed is:

1. The combination with the valve operating lever of a gasoline filling nozzle, of a means for holding the lever in position to open the valve, said means comprising a plunger adapted to move into engagement with the lever holding the lever in a position to hold the valve open, and electrically controlled means for moving the plunger out of contact with the lever, whereby the valve moves to its closed position.

2. A valve control device comprising a lever adapted to move the valve to its open position, a plunger adapted to frictionally engage the lever and hold the lever into engagement with the valve whereby the valve is held open, and means for returning the plunger to its inactive position releasing the lever and valve to close the valve.

3. The combination with a sliding valve and valve operating lever of a nozzle, of a valve controlled device comprising a cylinder, a plunger operating in the cylinder, means for releasing air to the cylinder moving the plunger into engagement with the lever, holding the valve in its open position, means controlled by the gasoline passing through the nozzle for releasing the air in the cylinder, and means for returning the plunger to its inactive position releasing the valve, whereby the valve moves to its closed position.

4. The combination with the valve operating lever of a filling nozzle, of a valve controlled

means comprising a plunger adapted to move into engagement with the lever holding the lever in its active position to hold the valve open, and electrically controlled means operating to release the lever and valve whereby the valve moves to its closed position.

5. An attachment for gasoline filling nozzles having operating levers, comprising a cylinder adapted to be mounted on the nozzle, a plunger operating in the cylinder, a hose leading to the cylinder, a valve controlling the passage of air under pressure through the hose to the cylinder moving the plunger into engagement with the lever and holding the lever in its active position, electrically controlled means for operating the last mentioned valve releasing the air in the cylinder, and a spring adapted to return the plunger to its inactive position releasing the lever and closing the valve operated thereby.

6. An attachment for controlling the valves of gasoline filling nozzles having operating levers, comprising a cylinder adapted to be secured to the nozzle, a plunger operating in the cylinder, an arm carrying a locking pin, mounted on the cylinder, said locking pin adapted to move into the cylinder and engage the plunger, normally holding the plunger in its inactive position, said arm lying in the path of travel of the operating lever whereby the locking pin moves to release the plunger, said plunger adapted to engage the lever holding the lever in its active position to hold the valve open, and means for returning the plunger to its inactive position, releasing the valve.

7. The combination with the valve operating lever of a filling nozzle, of a valve controlled device comprising a cylinder mounted on the valve nozzle, a plunger within the cylinder and adapted to extend beyond the end of the cylinder engaging the lever holding the lever against the valve to hold the valve open, and means for releasing the plunger whereby the valve is released, cutting off the flow of gasoline through the nozzle.

8. The combination with the valve operating lever of a filling nozzle, of a valve controlled device comprising a cylinder adapted to be attached to a filling nozzle, a plunger operating in the cylinder, an arm pivotally mounted adjacent to one end of the cylinder, a locking pin carried by the arm and adapted to engage one end of the plunger restricting movement of the plunger, said arm lying in the path of travel of the valve operating lever whereby the locking pin is moved out of contact with the plunger when the valve operating lever is moved to open the valve, and said plunger adapted to move into engagement with the valve operating lever holding the valve operating lever in a position to maintain the valve open.

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