Sept. 28, 1937. C. DEVERS 2,094,003

GASOLINE DISPENSING PUMP CONTROL

Filed May 15, 1936 2 Sheets-Sheet 1

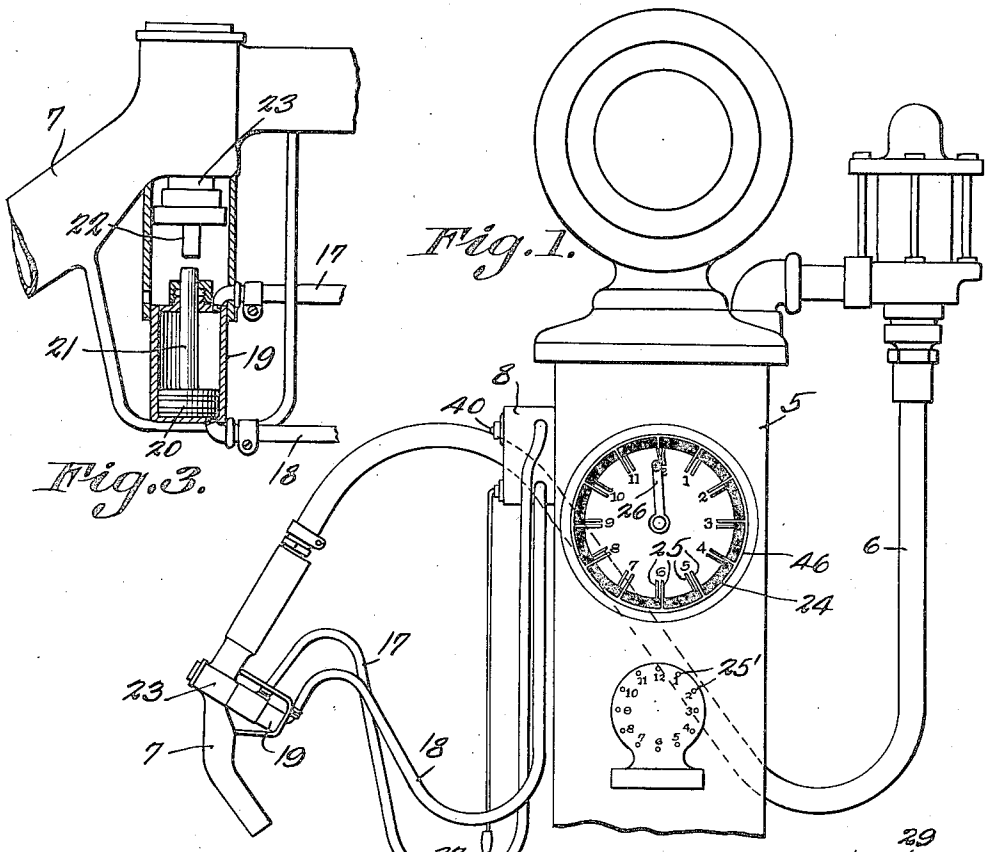


Fig. 2.

Inventor

Charles Devers

By Cushman & Co.

Attorneys.

Sept. 28, 1937. C. DEVERS 2,094,003

GASOLINE DISPENSING PUMP CONTROL

Filed May 15, 1936 2 Sheets-Sheet 2

Fig. 4.

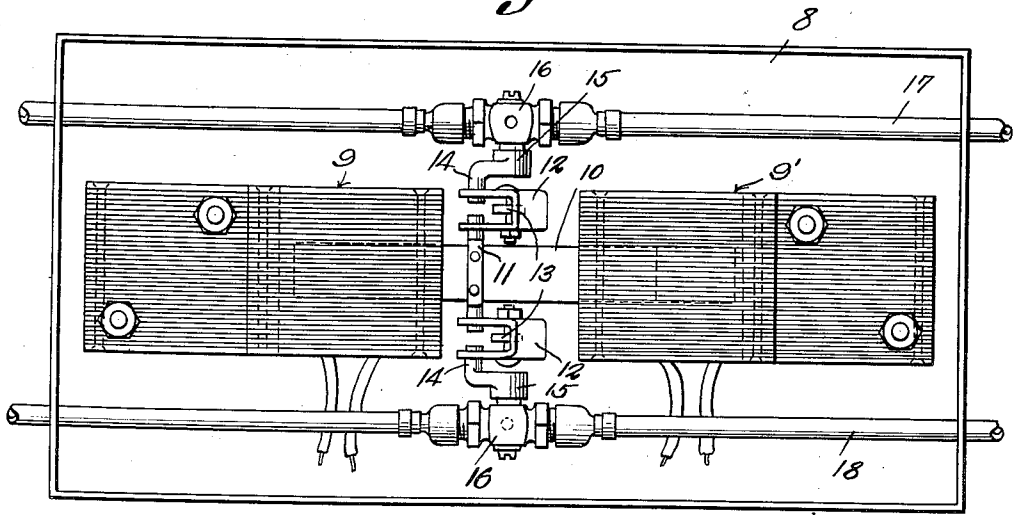


Fig. 5.

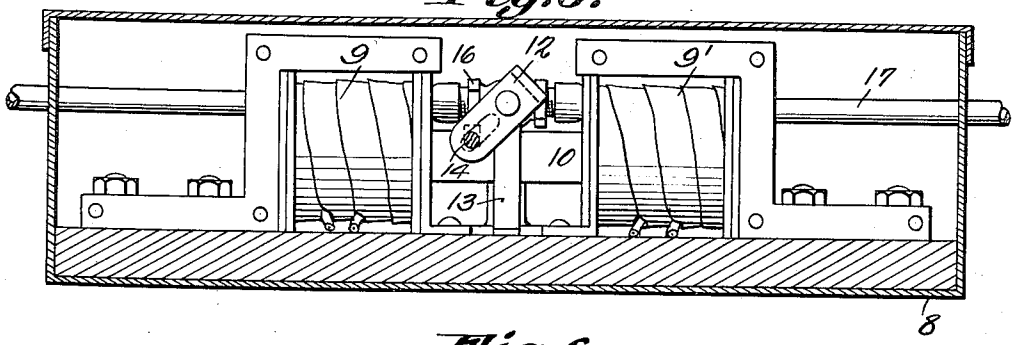


Fig. 6.

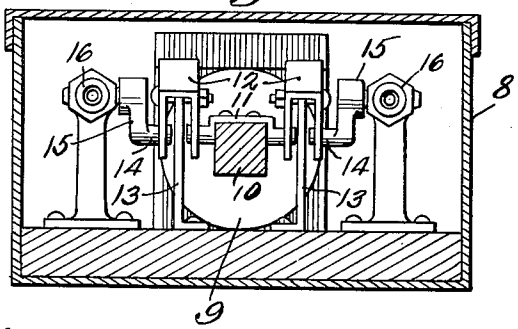
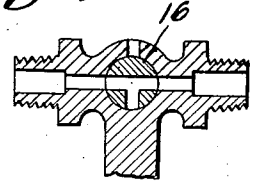


Fig. 7.



Inventor

Charles Devers

By C. A. Snow & Co.

Attorneys.

Patented Sept. 28, 1937 2,094,003

UNITED STATES PATENT OFFICE

2,094,003

GASOLINE DISPENSING PUMP CONTROL

Charles Devers, Pittsburgh, Pa.

Application May 15, 1936, Serial No. 80,005

2 Claims. (Cl. 221—101)

This invention has reference to dispensing pumps designed for dispensing gasoline, the primary object of the invention being to provide novel means for controlling the operation of the usual valve of the dispensing nozzle of the pump, whereby predetermined quantities of gasoline may be dispensed automatically.

An important object of the invention is to provide a device of this character which may be employed in garages or filling stations wherein buses, trucks or the like vehicles using large quantities of gasoline, are supplied with gasoline, the device rendering it unnecessary for an attendant to watch the dispensing operation to cut off the flow of gasoline through the nozzle at a predetermined interval.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is an elevational view of a gasoline dispensing pump constructed in accordance with the invention.

Figure 2 is a diagrammatic view illustrating the circuits and means for controlling the circuits to the automatic cut off.

Figure 3 is a sectional view through the control cylinder used in connection with the filling nozzle of the pump.

Figure 4 is a plan view illustrating the magnetic coils and valve operating armature thereof.

Figure 5 is a longitudinal sectional view through the housing in which the coils and armature are mounted.

Figure 6 is a transverse sectional view through the housing.

Figure 7 is a sectional view through a three-way valve, forming a part of the invention.

Referring to the drawings in detail, the reference character 5 designates a gasoline dispensing pump of the usual and well known visible dispensing type, which is provided with the usual dispensing hose 6, and filling nozzle 7.

The reference character 8 designates the valve box or housing in which the magnetic coils 9 and 9' are mounted, the coils 9 and 9' having their adjacent inner ends spaced apart as clearly shown by Figure 4 of the drawings. The armature forming a part of the electric operating means, is indicated by the reference character 10 and operates in the adjacent ends of the coils 9 and 9'. Connected with the armature 10, is a bar 11 which has its ends positioned in openings formed in the plates 12, which plates are pivotally mounted on the bars 13 that rise from the bottom of the housing 8.

These plates 12 are substantially U-shaped and have openings to receive the ends 14 of the valve operating arms 15, that operate the three way valves 16 shown by Figure 7 of the drawings, with the result that as the armature 10 moves, these plates and valves will move correspondingly, opening or closing the valves, to control the passage of air therethrough.

The valves control the passage of air through the hose 17 and 18 respectively, the hose 17 leading to the bottom of the cylinder 18 mounted on the filling nozzle, while the hose 18, connects with the opposite end of the cylinder 19, as shown by Figure 3.

Operating within the cylinder 19, is a piston 20 that carries the valve control pin 21, the valve control pin operating through one end of the cylinder 19, where it may contact with the pin 22 of the valve 24 that controls the passage of gasoline through the nozzle.

Thus it will be seen that when air passes through the hose 17, the air will contact with the piston 20 moving it upwardly and consequently moving the valve of the filling nozzle, to its open position. When air in the hose 17 is exhausted, and air is admitted to the cylinder 19, through the hose 18, the piston 20 will be returned to its normal inactive position at the bottom of the cylinder 19, allowing the filling nozzle valve to automatically return to its inoperative position, whereupon the flow of gasoline through the nozzle is stopped. The reference character 24 designates an insulating ring adapted to be mounted on the dial of the dispensing pump, the insulating ring 24 being provided with pairs of contact fingers 25 disposed opposite to the indicia formed on the dial to indicate the number of gallons dispensed. These contact fingers are of such lengths that they lie in the path of travel of the hand 26 that rotates over the dial to indicate the number of gallons dispensed.

These contact fingers 25 are in circuit with the sockets 25', through the wires 28, there being provided a socket and circuit for each indicia appearing on the pump dial.

The power line is indicated by the reference character 29, the coils 9 and 9' being in circuit

with the power line 29 through the wires 30 and 31 respectively. Connected in the circuit with the wires 30 and 21 are resistance coils 32 and 33 respectively, the coil 32 being connected with the wire 34 that is in circuit with the coil 9, while the wire 42 provides a circuit between the coil 33 and coil 9'. Wire 35 provides a circuit between the coil 9 and wire 36, which constitutes the negative wire of the power circuit. On one end of the wire 42, is a plug 37 adapted to be plugged into any one of the sockets 25, placing the socket in circuit with the coil 9'.

The reference character 38 indicates a wire leading from the negative wire 36 and connects with the contact point 39 of the switch 40. Coil 9' is in circuit with the wire 36, through the wire 45. As clearly shown by the drawings, one of the contact fingers 25 of each pair of fingers, connects with the contact ring 46 mounted on the insulating ring 24, the contact ring 40 being in circuit with the wire 36, through the wire 47.

The operation of the device is as follows:

In the diagram, both coils 9 and 9' are energized in a parallel circuit, under normal conditions, and when it is desired to dispense a given quantity of gasoline, as for example five gallons, the plug 37 is inserted in the socket 25' which is in circuit with the contact fingers 25 disposed opposite to the number 5 on the pump dial. The switch member 40 is now moved to complete a circuit through the contact members 39 and 44, and since the coils 9 and 9' are normally energized in a parallel circuit, it will be seen that the coil 9 will be shorted, and discharged through the coil 32. The armature 10 will now move into coil 9', moving the valve member 16 into a position allowing air to pass to the cylinder 19, and moving the piston 20 upwardly, operating the valve 23, to the end that gasoline may pass through the filling nozzle.

As the hand 26 rotates indicating the number of gallons of gasoline being dispensed, the hand wipes the contact fingers 25, and when the hand 26 moves the contact fingers opposite to the numeral 5 of the dial into engagement with each other, the circuit to the coil 9' is shorted, and discharged through resistance coil 33, whereupon the valve 16 moves to shut off the flow of gasoline through the nozzle.

The three way valves 16 are so designed that in one position of the armature 10, one of these valves allows air to pass from an air supply tank, to the cylinder 19, admitting air at the bottom thereof, the other valve 16 acting to shut off the supply of air from the air supply tank to the top of the cylinder 19 exhausting air pressure that was in the cylinder 19 against the top of the piston, to the atmosphere.

Upon the reverse movement of the armature 10 air enters the cylinder 19 at the top thereof, moving the piston 20 to its normal inactive position.

I claim:—

1. The combination with the dial indicating hand and nozzle valve of a gasoline filling pump, of a valve operating device comprising pneumatically controlled means including a valve, electrical means operating the latter valve, and controlled by the action of the dial indicating hand, a selective master switch controlling the operation of the dial indicating hand, and means for completing a circuit between the selective master switch and electrical means operating the second mentioned valve, whereby the valve and nozzle may be operated to cut off the flow of liquid through the nozzle at predetermined intervals.

2. The combination with the dial indicating hand and filling nozzle valve of a gasoline filling pump, of a valve controlling device comprising an air operated piston, electrical means operating the latter valve and including contact members on the dial, the contact members being controlled by the action of the dial indicating hand, a selective master switch, wires providing a circuit between the electrical valve operating means, wires providing an electrical circuit between the selective master switch, contact members and electrical operating means, whereby the valve controlling device may be operated at predetermined intervals dispensing a predetermined quantity of gasoline.

CHARLES DEVERS.