

[54] **POST-PAY FUEL DISPENSING SYSTEMS**

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[58] **Field of Search**..... **222/14-20, 222/32-35; 235/94 A, 151.34**

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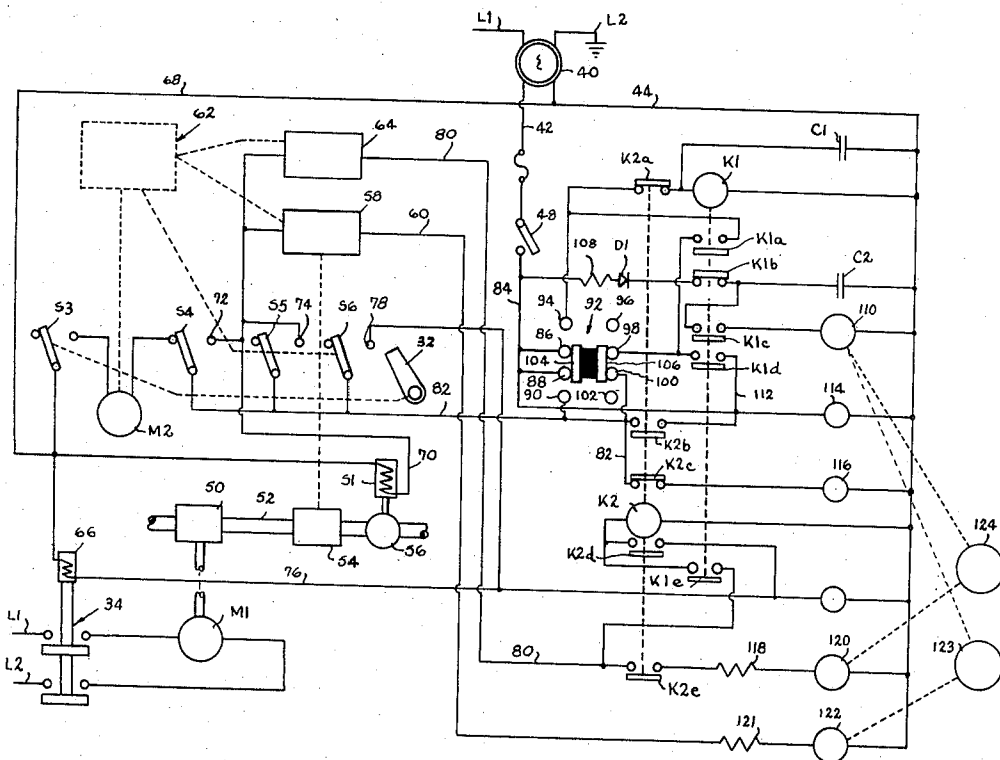
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[57]

ABSTRACT

A post-pay fuel dispensing system in which a fuel dispensing unit is under the remote control of a control console. The dispensing unit is operated by the customer and payment for the fuel dispensed is made after the fuel has been received. Data concerning the amount of fuel dispensed and the cost thereof is transmitted from the dispensing unit to the control console and payment is made at that point. According to the present invention, the dispensing unit is prepared for operation by the taking of certain enabling steps at the control console and thereafter fuel can be withdrawn from the dispensing unit. A particular feature of the present invention is to be found in the fact that the control system for the dispensing unit is not locked-in until the dispensing of fuel is commenced. Thus, if there is improper operation of the switches at the dispensing unit, the operator at the control console does not need again to enable the unit until after the dispensing of fuel commences. Once the dispensing of fuel commences the unit becomes locked-in and becomes disabled upon the individual at the dispensing pump again returning the control switch thereon to "off" position and hanging up the dispensing nozzle.

13 Claims, 2 Drawing Figures



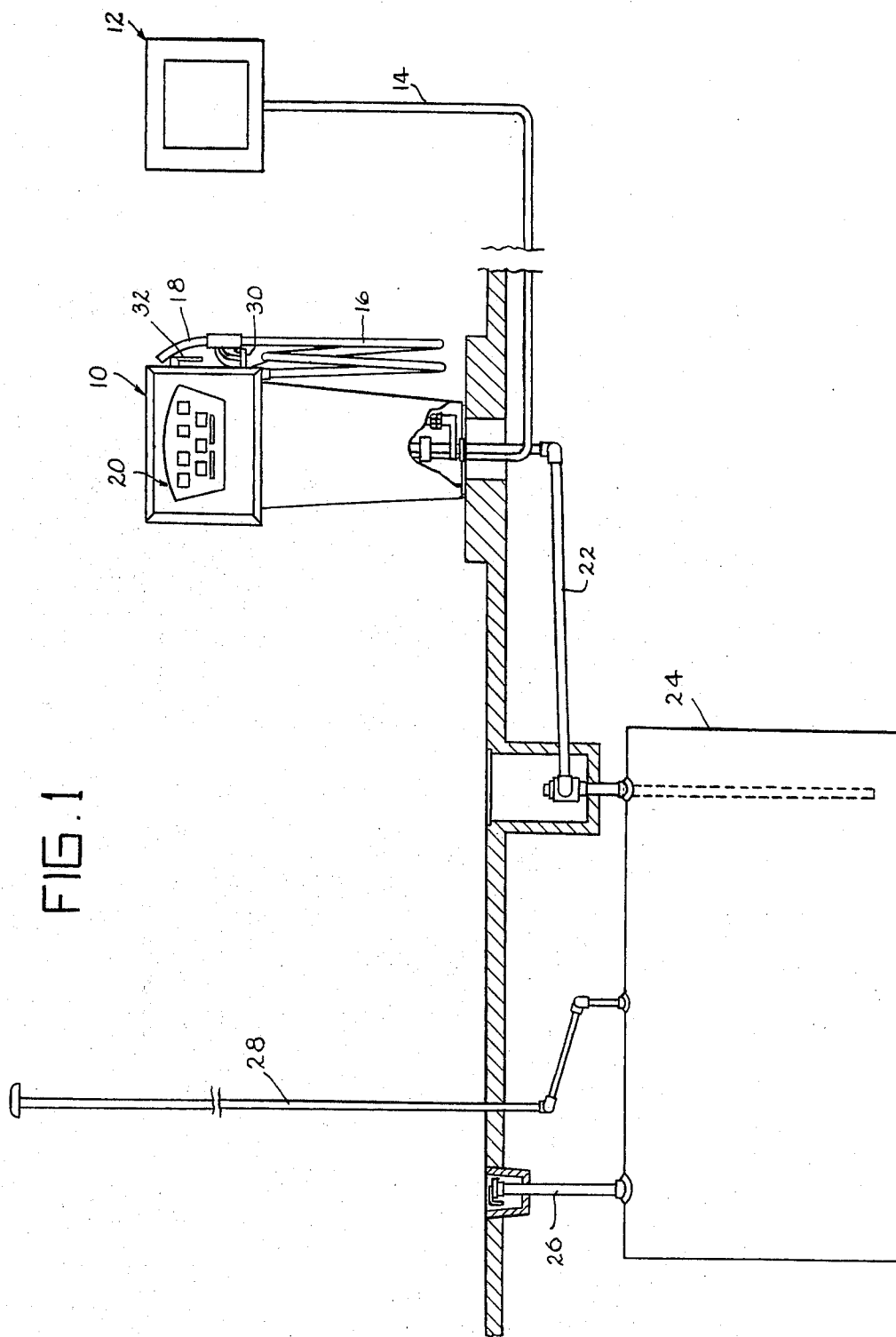
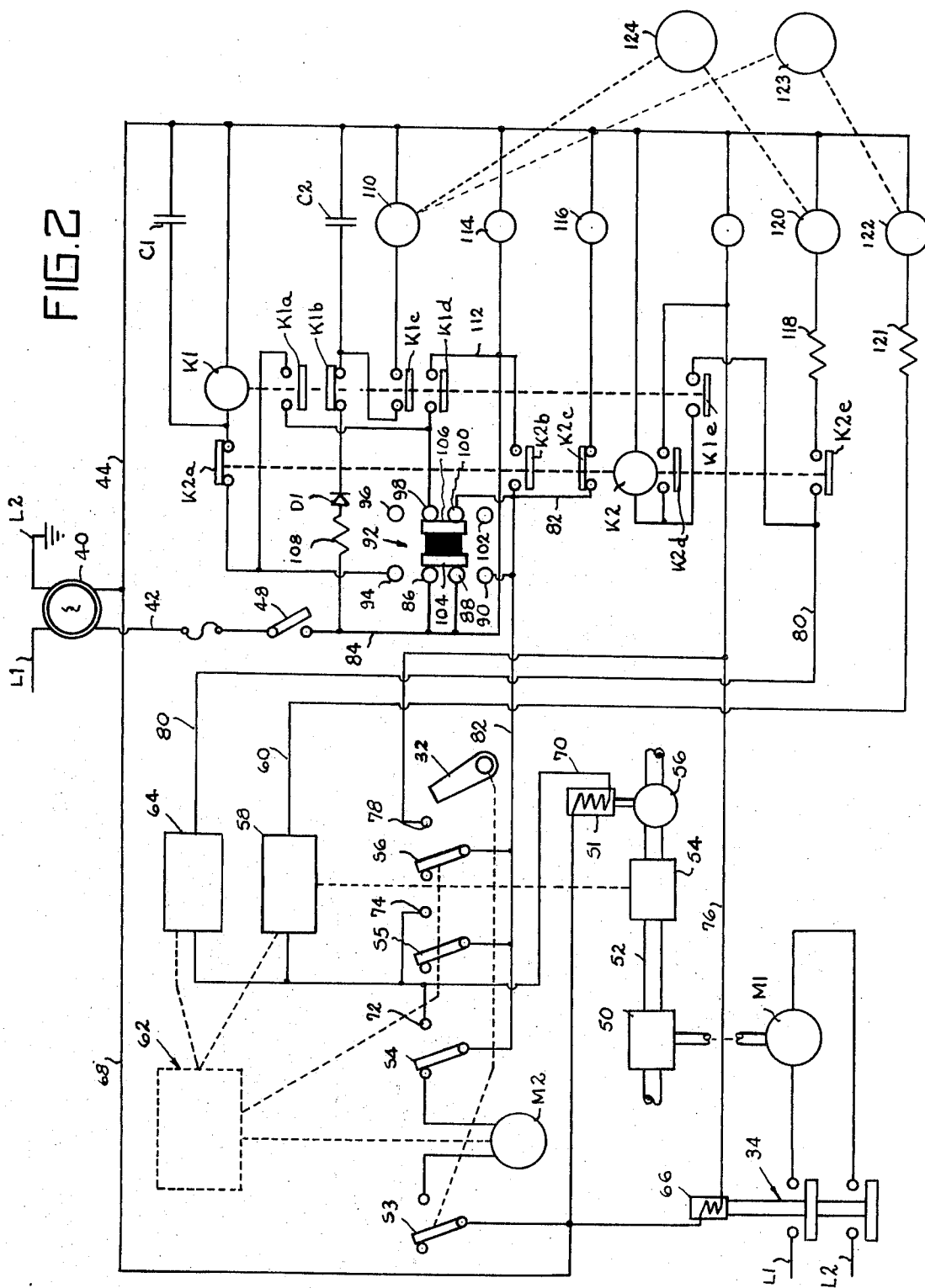


FIG. 2



POST-PAY FUEL DISPENSING SYSTEMS

The present invention relates to fuel dispensing systems and, in particular, to remotely controlled fuel dispensing systems, especially, of the post-pay type. In fuel dispensing systems of the post-pay type, a remote control console is provided which controls a number of fuel dispensing units. A unit is enabled for dispensing fuel by the manipulation of switches in the control console and, after fuel is withdrawn from a given dispensing unit and the dispensing operation is terminated, the unit becomes disabled until again enabled at the control console. The cost of the fuel dispensed, and the quantity thereof, is transmitted to the control console and payment is made at the control console, or some other suitable station. This arrangement permits a great many fuel dispensing units to be controlled by a single operator and also provides security for the operator.

A particular defect with post-pay systems according to the prior art was that once a unit was enabled for dispensing fuel by the operator in the control console, an error in placing the unit in operation by the individual drawing fuel therefrom could disrupt the interlock between the console and the respective dispensing unit thus requiring the operator at the control console to take steps again to enable the dispensing unit. This proved to be a substantial disadvantage in the operation of such systems and the present invention is directed particularly to controls to prevent this occurrence.

The counters at the control console which register cost and quantity in such a system are automatically reset when a dispensing unit is enabled. The enabling is accomplished by actuation of a momentary switch and it has been the case, at times, that the momentary switch was actuated so rapidly that, although the respective dispensing unit was enabled, the counters were not returned to zero. The present invention is also concerned with an arrangement for insuring that the counters at the control console will go to zero whenever the respective dispensing unit is enabled.

With the foregoing in mind, a particular object of the present invention is a provision of a post-pay fuel dispensing system which requires reduced attention on the part of the controlling operator at the console of the system.

Another object of the present invention is the provision of a post-pay fuel dispensing system operated from a central console in which a dispensing unit, once enabled by the operator at the console, will remain enabled until the dispensing of fuel therefrom is commenced and will then become interlocked with the control elements in the console in such a manner that the unit will become disabled at the end of the fuel dispensing operation.

A further object of the present invention is a provision of a post-pay system under the control of a remote console in which, once a dispensing unit is enabled for dispensing fuel, it will remain enabled even though the individual at the dispensing pump commits errors in respect of adjusting switches and the like prior to commencing the dispensing operation.

Still another object of the present invention is the provision of an arrangement which will prevent the cost and quantity indicators at the control console from developing false readings.

BRIEF SUMMARY OF THE INVENTION

According to the present invention, one, or more, dispensing units for fuel are provided and are interconnected with a remote control console by an electrical control system. A dispensing unit is enabled for dispensing fuel by the manipulation of a respective momentary control switch at the control console when the operator at the console determines that it is desired to withdraw fuel from a respective unit. Thereafter, the customer desiring to withdraw fuel at the respective dispensing unit operates a switch on the unit and also makes a connection from the dispensing unit to the receiving tank as by placing the dispensing nozzle of the unit in the fill opening of the tank. According to the present invention, any error in manipulating the switch on the unit such as accidentally turning the switch "off" after it is turned "on" does not destroy the enabling of the respective unit but, rather, the unit will remain in enabled condition until the dispensing of fuel therefrom is initiated.

Once the dispensing of fuel is initiated, the cost of the fuel, and, preferably, the quantity thereof is fed back to the control console in the form of electric pulses which actuate respective counters at the control console. The initial pulse of the value amount of the fuel being dispensed at the dispensing unit adjusts the control circuit in the console in such a manner that interruption of the fuel delivery and movement of the switch on the unit to "off" position will disable the dispensing unit. The unit cannot thereafter again be enabled until the respective enabling switch in the control console is again operated by the remote operator.

The arrangement of the present invention prevents accidental disabling of the dispensing unit by the individual withdrawing fuel therefrom and thus relieves the operator in the control console from continuously observing all of the dispensing units and taking steps to re-enable dispensing units which are accidentally disabled.

It has proved to be of considerable advantage to control the dispensing units in the described manner because, heretofore, it has often been the case that an individual withdrawing fuel from a dispensing unit could accidentally manipulate the control switch at the dispensing unit in an improper manner. By the arrangement of the present invention all such improper manipulations of the switch are compensated for because the interlock of the dispensing pump with the control system at the console is adjusted at the time the first money pulse is received at the console to 'lock-in' the respective unit. The adjustment of the control elements of the console by the first value, or money pulse is such that once the dispensing of fuel from the respective dispensing unit is interrupted, the dispensing unit must again be enabled by the operator at the console to permit further fuel dispensing therefrom.

The value of the fuel dispensed from a respective dispensing unit and, preferably, the quantity are registered on counters at the control console by electric pulses received from the unit. A reset coil in the control console resets the counters to zero when the respective dispensing unit is enabled. To insure energization of the reset coil for ample length of time to effect resetting of the counters, a capacitor is provided which is connected to a source of charging voltage prior to enabling of a dispensing unit, and which is connected across the reset

coil when the unit is again enabled. False readings on the counters at the control console are thus prevented.

The nature of the present invention and the various objects and advantages thereof will become more apparent upon reference to the following detailed specification taken in connection with the accompanying drawings in which:

FIG. 1 is a schematic view of a fuel dispensing installation according to the present invention showing a single dispensing unit.

FIG. 2 is a schematic representation of the electric control system which connects the control console with a respective dispensing unit.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 schematically illustrates an installation according to the present invention. In FIG. 1 there is shown a single dispensing unit at 10 although it will be understood that, in general, there would be several dispensing units distributed in the dispensing region. The dispensing units are connected with a remote console or control station 12 which is connected to the respective dispensing units by conduits 14 through which electric wires pass which operatively relate the console to the dispensing units.

Each dispensing unit has therein a pump driven by an electric motor and a conduit connects the pump with the hose 16 which terminates in a dispensing nozzle 18. The conduit for each dispensing unit has a meter therein and the meter drives a quantity indicator and, via a computer or gear change mechanism, operates a cost indicator. The quantity indicator and cost indicator, together with a price per unit quantity indicator are mounted in the dispensing unit, for example, in a panel generally indicated at 20.

The suction side of the pump is connected by piping 22 with a supply tank 24 which may, in the usual manner, be provided with a filling opening 26 and a vent pipe 28.

The control circuit for the electric motor in each dispensing unit is under the control of the console and the indicators in the dispensing unit actuate corresponding indicators in the console by supplying electric pulses thereto and which pulses are conveyed from the respective unit to the control station by wires passing through the conduits 14.

In operation, when fuel is to be drawn from a dispensing unit, the operator at the console, or control station, prepares an energizing circuit for the dispensing unit and then, when the nozzle 18 is removed from its support hook 30, an on-off switch 32 on the unit can be turned to "on" position and the dispensing of fuel commenced. After the fuel dispensing is completed the switch 32 is returned to its "off" position and the nozzle is replaced on its hook 30 and the fuel can then be paid for in accordance with the amount registered on the appropriate indicating device at the console. Further fuel cannot be withdrawn from any particular dispensing unit after switch 32 is returned to "off" position until the unit is again enabled by the operator at the remote control station or console 12.

As mentioned, a particular feature of the present invention resides in the arrangement whereby, once a dispensing unit is enabled from the console 12, turning of the switch 32 back into "off" position after once having turned it "on" will not effect enabling of the dispensing unit. It is only when the dispensing of fuel is initiated

by opening the nozzle 12 that the dispensing unit becomes 'locked-in' and, thereafter, the enabling of the dispensing unit continues only so long as fuel is being dispensed. When the dispensing of fuel is interrupted and the switch 32 is again turned to "off" position, the respective dispensing unit will be disabled until it is again enabled from the console for a new fuel dispensing operation.

The circuit by means of which the dispensing unit is controlled is schematically illustrated in FIG. 2 in which the components of the dispensing unit are at the left side and the components pertaining to the console are at the right side. The power lines which supply power for the system are indicated at L1 and L2 at the top of FIG. 2 and these lines lead through a key operated switch 40 from which passes a first line 42 and a second line 44 corresponding to power lines L1 and L2 respectively.

Line 42 has therein a fuse 46 and a manual power on-power off switch 48 which, after the key operated switch 40 is operated can be closed to enable the entire system.

Turning for the moment to the dispensing unit, the pump thereof is indicated at 50 and is connected for being driven by the electric motor M1. A conduit 52 leads from the pump to the nozzle and disposed in conduit 52 is a meter 54 and a normally closed valve 56 adapted for being operated into open position by energization of a solenoid S1. Valve 56 is not essential when a pump supplies a single dispenser because deenergization of the pump motor will halt delivery from the dispenser. When a pump supplies more than one dispenser then a valve is included in each dispenser and the control of the discharge from each dispenser is effected by the respective valve.

The meter is mechanically connected to the quantity indicator 58 to drive the indicator when the meter is driven by fuel pumped therethrough. Indicator 58 is operable for supplying electric pulses to a wire 60 in conformity with the quantity of fuel passing through meter 54. Meter 54 is also drivingly connected to a computer mechanism 62 and which, in turn, drives a money pulser 64 which supplies an electric pulse for each unit of fuel dispensed which is worth a predetermined amount. Money pulser 64 may be embodied directly in a cost indicator.

The cost and quantity indicators may, for example, comprise rotary drum-like members bearing indicia and the pulses may comprise magnets on the rotary members which coact with stationary magnetically operated switches as the rotary members rotate.

The computer is connected with a reset motor M2 which is operable when energized for resetting the computer to a zero position.

The aforementioned on-off switch 32 has associated therewith switch blades S3, S4, S5, and S6. The blades are not positively connected to the switch lever but are indirectly controlled thereby.

The motor M1 is connected to power lines L1 and L2 by a relay 34 having an energizing coil 66. Connected to wire 44 is another wire 68 which is connected to the blade of switch S3 and also to one side of energizing coil 66 of the motor relay 34 and also to one side of solenoid S1 pertaining to valve 56. The other side of solenoid S1 is connected by a wire 70 with one side of each of the quantity pulser 58 and money pulser 64 and also with a terminal 72 on which switch blade S4 closes

when actuated to "on" position and with a terminal 74 on which switch blade S5 closes when actuated to "on" position. The side of relay coil 66 opposite its connection to wire 68 is connected to a wire 76 which leads to the control console to be described hereinafter. Wire 76 is also connected with a terminal 78 pertaining to switch blade S6 on which switch blade S6 closes when switch 32 is in its "on" position.

The money pulser when energized and operating supplies pulses to a wire 80 leading to the console unit.

A further connection is made by a wire 82 to the blades of switches S4, S5, and S6 and leads back to the control console.

Turning now to the remote control console, when switch 48 is closed, after key switch 40 is in closed position power line L1 will be connected to wire 84 via wire 42, fuse 46, and switch 48. Wire 84 leads to contacts 86, 88, on one side of a two-sided manual switch generally designated 92 and which also has contacts 90 and 94 on the same side as contacts 86 and 88. On the opposite side the switch comprises contacts 96, 98, 100, and 102. The switch has a first contact bar 104 that normally bridges between contacts 86 and 88 but which is moveable upwardly to bridge between contacts 86 and 94 and is moveable downwardly to bridge between contacts 88 and 90. On the other side of the switch there is a contact bar 106 which normally bridges between contact 98 and 100 but interrupts the interconnection of these contacts when moved in either direction away from the rest position in which it is illustrated.

Contact 94 is connected with one side of a normally closed blade K2a of a relay K2 and also with one side of a normally open blade K1a of a relay K1. The opposite side of blade K2a is connected with one side of a capacitor C1, the opposite side of which is connected to wire 44, and with one side of the energizing coil of relay K1, the other side of which is also connected to wire 44.

Preceding on down the diagram of FIG. 2, wire 84 is connected through a resistor 108 with the one side of a diode D1, the other side of which is connected with one side of the normally closed blade K1b of relay K1, the other side of which is connected with one side of a normally open blade K1c of relay K1. The other side of blade K1c is connected with one side of a reset coil 110 and the other side of which is connected with line 44. The side of blade K1b opposite D1 is also connected with one side of the capacitor C2, the other side with which is connected with line 44.

Contacts 86 and 88 on the left side of switch 92 are interconnected and both are connected with power line 84. On the other side of the switch, contact 98 is connected with the side of blade K1a opposite contact 94 and also with one side of a normally open blade K1d of relay K1, the other side of which is connected to a wire 112 which is connected to power line 84 and which is also connected to one side of a "power on" signal lamp 114. The other side of lamp 114 is connected to wire 44.

Wire 112 is also connected to one side of a normally open blade K2b of relay K2, the other side of which is connected to line 82 leading to the respective dispensing unit and also to terminal 90 and also to contact 100 of switch 92. Still further, contact 100 of switch 92 is connected to one side of a normally closed blade K2c

of relay K2, the other side of which is connected through a "ready" lamp 116 with line 44.

The aforementioned wire 76 leading from the dispensing unit is connected to one side of a normally open blade K2d of relay K2 with the other side of the blade being connected to one side of the energizing coil of relay K2, the other side of which is connected with line 44. The side of relay K2 opposite line 44 is also connected to one side of a normally open blade K1e of relay K1, the other side of which is connected to wire 80 leading from the money pulser 64 in the dispensing unit. Wire 80 is also connected to one side of a still further blade K2e of relay K2, the other side of which is connected through a resistor 118 which one side of a count coil 120, the other side of which is connected to line 44.

Wire 60 leading from the quantity pulser 58 is connected via a resistor 121 to one side of a quantity indicator actuating coil 122, the other side of which is connected to line 44. Coil 122 controls a counter 123.

The count coil 120 is connected to an indicator or counter 124 and this counter is operatively connected to the aforementioned reset coil 110 and which is also connected to the counter 123 pertaining to count coil 122 so that energization of reset coil 110 will reset both of the counters pertaining to the quantity of fuel dispensed and the cost thereof back to zero.

A particular feature of the present invention is to be found in the provision of capacitor C2 which, while the circuit is in the condition illustrated and with switch 48 closed, will charge up through diode D1. Upon energization of relay K1, however, blade K1b thereof will open thus interrupting the charging circuit to the capacitor while blade K1c will close to connect capacitor C2 across reset coil 110. The capacitor is of ample size to insure that the reset coil will remain energized for ample time completely to reset both the money counter and the quantity counter in the console to zero. Heretofore, actuation of the enabling switch effected energization of the reset coil and, on occasion, the enabling switch was operated so quickly that the reset coil was not energized for a long enough time to effect complete resetting of the counter. The circuit of the present invention completely avoids this and insures that whenever a dispensing unit is enabled, the counters in the control console which pertain thereto will be reset to zero.

OPERATION

In operation, assuming that switch 40 is in closed position and switch 48 is in closed position, a fuel dispensing unit is enabled by the operator in the control console moving the moveable element of the pertaining switch 92 upwardly and then releasing the switch element where upon it will return to the position indicated in FIG. 2.

When the switch element is moved upwardly, power is supplied from contact 86 thereof to contact 94 and this will effect energization of relay K1 which will bring about closing of its blades K1a, K1c, K1d, and K1e with simultaneous opening of its blade K1b. As mentioned previously, the opening of blade K1b to interrupt the charging circuit to capacitor C2, and the closing of blade K1c to connect the capacitor C2 across reset coil 110 will energize reset coil 110 and effect setting of the money value and quantity counters or indicators in the console station to zero.

The closing of blade K1d establishes a supply of power from wire 84 and wire 112 through blade K1d to contact 98 of switch 92 and therefrom to contact 100 of the said switch and then to wire 82 which is, as mentioned, connected to the blades of switches S4, S5, and S6.

Simultaneously, there is a supply of power through relay blade K2c to the ready lamp 116 indicating that the dispensing unit can now be operated. The adjusting of the switch element of switch 92 has thus established, or prepared, an energizing circuit for the dispensing unit via wires 68 and 82. A ready lamp can be provided on the dispensing unit, if so desired, to indicate to the user thereof that the dispensing unit is ready for operation.

The user of the dispensing unit now removes the nozzle from the hose hook and then operates switch 32 into "on" position. When switch 32 is operated to "on" position, switch S3 is closed and this brings about energization of motor M2 by the supply of current from wire 68 through the blade of switch S3, motor M2, the blade of switch S4 and back to energized wire 82. The computer now operates to set all of the mechanisms pertaining thereto, such as the cost and quantity indicators, back to zero and when this is accomplished switch S4 is actuated into the position wherein it will rest on contact 72 while simultaneously interrupting the energizing circuit to motor M2. When switch S4 closes on contact 72, power becomes available from wire 82 to switch blade S2, to the money pulser, to the gallons pulser, and also to one side of solenoid S1 of valve 56.

At the same time that switch blade S4 was operated into engagement with contact 72, switch blades S5 and S6 were operated into engagement with their respective contacts 78 and 74. Contact 74 is interconnected with contact 72 of switch S4, while contact 78 of switch S5 is connected to wire 76 which, as mentioned, leads to one side of the relay coil 66 for the main motor relay. When switch S5 closes on contact 78 the relay will be energized and motor M1 will be energized and the pump will commence to rotate and thereby develop pressure on the downstream side thereof.

Since the pump motor M1 and valve solenoid S1 are energized at the same time, either one is effective for controlling delivery from the respective dispenser. Thus, when a dispenser has a respective pump, a control valve is not essential and when a single pump supplies more than one dispenser, each dispenser has a control valve and the pump is not necessarily started and stopped when a dispenser operates.

From the foregoing it will be seen that opening and closing of switch 32 will have no effect whatsoever on the condition of readiness of the dispenser. This is in contrast with previously known arrangements where improper movement of the switch would interrupt the prepared energizing circuit and require resetting of the system by the operator at the control console. With the arrangement of the present invention this never occurs and the energizing circuit for a respective dispensing unit will remain in prepared condition until the dispensing of fuel from the unit is commenced.

Assuming now that the nozzle is placed in a tank and is opened, fuel will commence to flow from the pump through meter 54 and valve 56 to the nozzle. When meter 54 commences to rotate the computer 62 is driven and this, in turn, drives the money pulser 64. The first money pulse supplied to wire 80 by pulser 64

will be routed through the closed blade K1e of relay K1 to one side of the coil of relay K2, the other side of which, as mentioned, is connected to wire 44. This will immediately energize relay K2 and being about opening of its blades K2a and K2c and the simultaneous closing of its blades K2b, K2d, and K2e. When blade K2e closes, the remainder of the first pulse supplied to wire 80 is supplied to count coil 120 and registers a count on counter 124. Closing of blade K2d establishes a holding circuit for the coil of relay K2 and which holding circuit, it will be evident, leads to contact 78 of switch S5 so that whenever the blade of switch S5 moves to open position, relay K2 will drop out. The opening of blade K2c of relay K2 extinguishes the ready light 116 showing that the respective dispensing unit is in operation.

Opening of blade K2a interrupts the energizing circuit for relay K1 permitting its blades K1a, K1c, K1d, and K1e to open while closing its blade K1b. The deenergization of the relay K1 would normally interrupt the supply of energy to wire 82 but, due to the provision of capacitor C1, the energization of relay K2 brings about closing of its blade K2b before blade K1d opens so that, through blade K2b, wire 82 is connected to wire 112 and, therethrough, to wire 84 thus maintaining the energizing circuit to the respective dispensing unit without interruption.

At this point, the condenser C2 pertaining to reset coil 100 is charging and the dispensing of fuel will continue until interrupted by closing of the nozzle. Thereafter, when switch 32 is turned to its off position, a supply of power is again initiated to computer reset motor M2 and this mechanism operates until switch S3 again opens. At this time the blades of switches S5 and S6 also return to the position in which they are illustrated in FIG. 2 thereby removing power from the quantity pulser 58 and from the money pulser 64 and from the solenoid S1 of valve 56. The holding circuit to relay K2 is also interrupted by the movement of switch blade S5 off contact 78 and also the main motor relay coil 66 is at this time de-energized. The dispensing unit is now in idle and disabled condition and cannot be actuated until the operator at the console again adjusts the moveable element of switch 92 in the aforementioned manner.

The arrangement also provides for manual operation of the dispensing unit under emergency conditions and this can be effected by moving the adjustable element of switch 92 downwardly to bridge contacts 88 and 90 and to interrupt the connection between contacts 98 and 100. When a connection is established between contacts 88 and 90, wire 84 will be connected directly with wire 82 and this will permit operation of the dispensing unit without availing of the interlock means made up of relays K1 and K2 and the blades pertaining thereto.

Modifications may be made within the scope of the appended claims.

What is claimed is:

1. In a post-pay fuel dispensing system; and electrically operated dispenser unit and a control station remote therefrom, a momentary manual switch in said control station operable to prepare an energizing circuit for said unit thereby to enable said unit to dispense fuel, an on-off switch on the unit connected into said energizing circuit and operable into "on" position to complete said energizing circuit prior to fuel dispensing

and into "off" position to interrupt said energizing circuit and disable said unit at the end of fuel dispensing, a money pulser in said unit operable to develop an electric pulse for each unit of fuel dispensed of a predetermined value, and interlock means in said control station connected in said energizing circuit and actuated by the first pulse from said money pulser and operable when so actuated to make said manual switch ineffective in respect of enabling said energizing circuit prior to return of said on-off switch to "off" position.

2. A dispensing system according to claim 1 in which said interlock means includes a first relay energized by operation of said manual switch and operable when energized to prepare said energizing circuit while also closing a holding circuit for itself, and a second relay energized by said first money pulse and operable when energized to deenergize said first relay while simultaneously maintaining the energizing circuit prepared by said first relay.

3. A dispensing system according to claim 2 which includes a holding circuit for said second relay which is prepared by movement of said on-off switch on said unit to "on" position and which is completed by said second relay upon energization thereof.

4. A dispensing system according to claim 2 which includes a value indicator at said control station adapted for actuation by pulses from said money pulser, and means operated by energization of said second relay for connecting said value indicator to said money pulser.

5. A dispensing system according to claim 4 which includes resetting means responsive to the enabling of said dispensing unit for resetting the value indicating means at said control station to zero.

6. A dispensing system according to claim 5 in which said resetting means comprises a coil energizable for effecting said resetting, a capacitor, means for connecting the capacitor to a source of charging voltage prior

to the enabling of the dispensing unit, and means for connecting the capacitor across the coil at the time of enabling the dispensing unit.

7. A dispensing system according to claim 6 in which said capacitor is connected to said source of charging voltage via a diode poled toward said capacitor.

8. A dispensing system according to claim 2 which includes means operable to delay opening of said first relay upon deenergization thereof to provide ample time for said second relay to close and thereby insure that said energizing circuit will be maintained.

9. A dispensing system according to claim 8 in which said flow control means comprises a normally closed valve, and a solenoid energizable to open said valve, said solenoid also being connected to said energizing circuit.

10. A dispensing system according to claim 8 which includes means responsive to movement of said on-off switch to "on" position when said energizing circuit is prepared for setting said computer to zero position, and means responsive to the computer reading the zero position thereof for completing said energizing circuit to said flow control means.

11. A dispensing system according to claim 8 in which said dispensing unit comprises a quantity pulser driven by said meter and operable to develop electric pulses in conformity with the amount of fuel passing through said meter, a quantity indicator in said control station connected to be actuated by pulses from said quantity pulser, said quantity pulser being connected to said energizing circuit so as to become effective upon completion of said energizing circuit.

12. A dispensing system according to claim 1 in which said manual switch includes a 'manual' position wherein said energizing circuit is prepared directly without the intervention of said interlock means.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,858,758 Dated January 7, 1975

Inventor(s) Larry A. May

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

The following claim was omitted from the patent:

"A dispensing system according to Claim 1 in which said dispensing unit comprises flow control means in the form of at least one of an electrically operated pump and an electrically operated valve, a meter through which the pumped fuel passes, a computer driven by the meter, said money pulser being driven by said computer, an energizing circuit for said flow control means, said energizing circuit being connected to and under the control of said money pulser."

Signed and Sealed this

ninth Day of September 1975

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
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