

March 16, 1965

N. B. HENRY
CONTROL ASSEMBLY

3,173,576

Filed Aug. 23, 1962

2 Sheets-Sheet 1

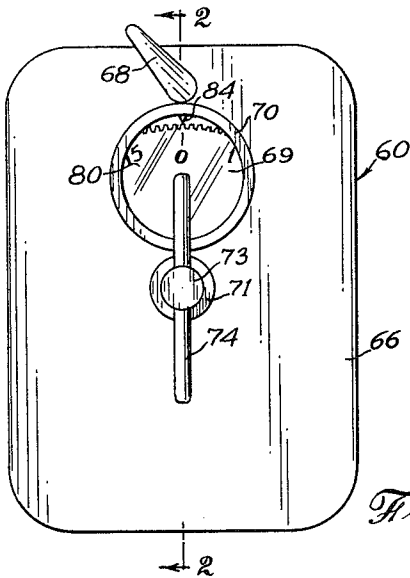


Fig. 1

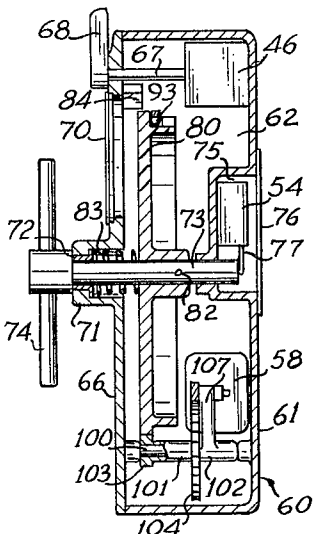


Fig. 2

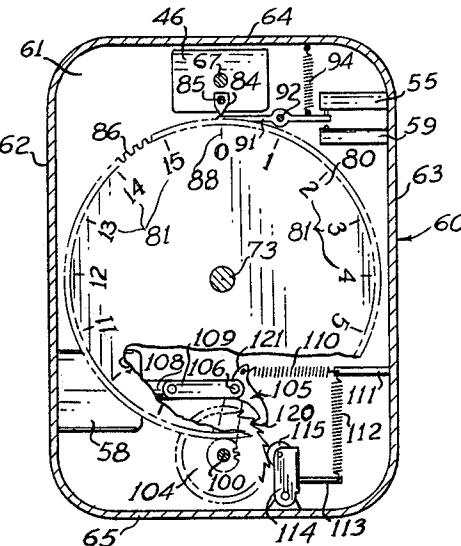


Fig. 3

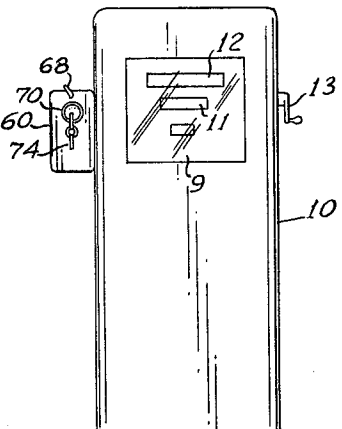
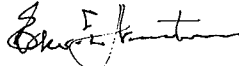


Fig. 4

INVENTOR.
Nelson B. Henry
BY 
ATTORNEY

March 16, 1965

N. B. HENRY
CONTROL ASSEMBLY

3,173,576

Filed Aug. 23, 1962

2 Sheets-Sheet 2

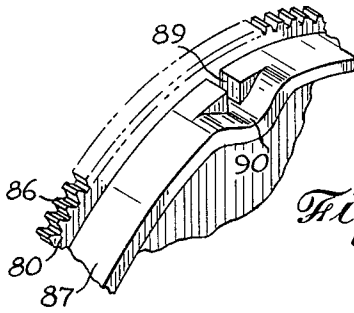


Fig. 5

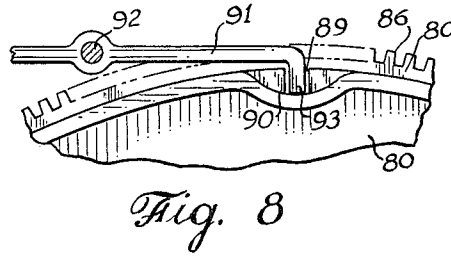


Fig. 8

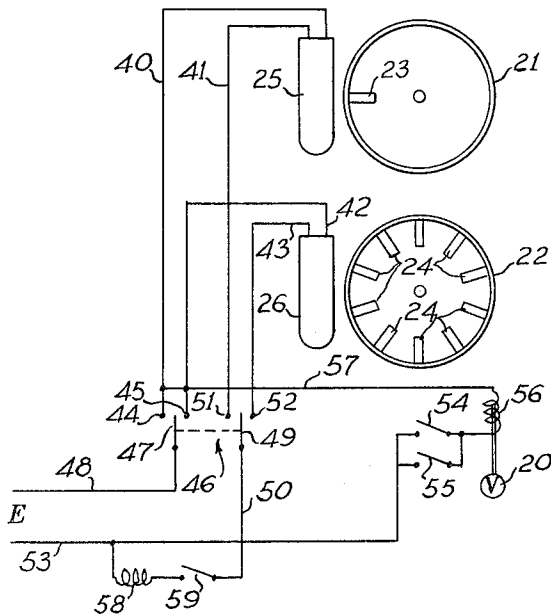


Fig. 6

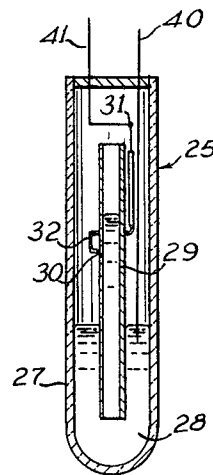


Fig. 7

INVENTOR
Nelson B. Henry
BY *[Signature]*
ATTORNEY

1

3,173,576

CONTROL ASSEMBLY

Nelson B. Henry, Decatur, Ga., assignor to

Robert Feldser, Atlanta, Ga.

Filed Aug. 23, 1962, Ser. No. 219,019

10 Claims. (Cl. 222—20)

This invention relates to a control assembly for a dispensing device, and is more particularly concerned with a control assembly for automatically controlling the dispensing of fluid from a dispenser to deliver a selected volume of fluid.

In the past, control devices have been suggested for gasoline dispensers; however, such control devices have been complicated and expensive and have usually been calibrated for delivering an amount corresponding to the number of coins placed in the mechanism and hence are not readily adaptable to deliver a preselected number of gallons of product.

Briefly, the present invention which overcomes the objections described above includes a selector dial which is calibrated in numerals corresponding to the monetary value of the liquid to be dispensed and also calibrated to correspond to the volume to be dispensed. A selector lever determines whether the numerals represent dollars or gallons. An indexing mechanism in the form of a pawl and ratchet is adapted to index the dial, the mechanism being electrically actuated selectively from the cents dial or the tenth gallon dial of the gasoline dispenser.

The dial is provided with a handle arranged so that axial movement thereof disengages the dial from the indexing mechanism whereby the dial may be set for a preselected numerical value. The axial movement of the dial also actuates a switch to close a check valve in the dispenser. Associated with the dial is a second switch which also closes the check valve when the dial has been indexed to its zero position.

Accordingly, it is an object of the present invention to provide a control for dispensing devices which is inexpensive to manufacture, durable in structure and efficient in operation.

Another object of the present invention is to provide a control for dispensing devices which will permit the selection of the quantity of fluid to be delivered by the dispensing devices based upon two separate forms of measurement.

Another object of the present invention is to provide a control for a gasoline pump which may be readily and easily attached to existing pumps and when so attached will permit a customer to select and preset the quantity of gasoline to be delivered from the pump, based either upon the volume or upon the monetary value of the gasoline.

Another object of the present invention is to provide a control for dispensing devices which when operating may be stopped and reset for additional amounts or less amounts to be delivered by the dispensing device after the same has delivered a portion of the fluid.

Other objects, features and advantages will become apparent from the following description when taken in conjunction with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views and wherein:

FIG. 1 is a front elevational view of a portion of the control constructed in accordance with the present invention.

FIG. 2 is a cross sectional view taken along line 2—2 in FIG. 1.

FIG. 3 is a view similar to FIG. 1 but with portions removed to expose the interior thereof.

FIG. 4 is a side elevational view of a conventional

2

pump to which the control of the present invention is attached.

FIG. 5 is an enlarged fragmentary perspective view of a portion of the dial of the present invention.

FIG. 6 is a schematic wiring diagram of the electrical circuit of the present invention.

FIG. 7 is an enlarged vertical sectional view of the mercury switch employed in the circuit of the present invention.

FIG. 8 is a fragmentary side elevational view of the rear side of the dial camming ring and detent finger of the control shown in FIG. 1.

Referring now in detail to the embodiment chosen for the purpose of illustrating the present invention, numeral 10 denotes generally a dispensing device such as a conventional gasoline pump which has a discharge pipe (not shown) through which fluid, such as gasoline, is delivered. The pump 10 has a window 9 within which are the usual volumetric counters for indicating volume and the monetary value of the gasoline dispensed, these counters being in the form of groups of disks 11 and 12 which are manually reset to zero by a hand crank 13 after each sale of gasoline. The gasoline pump 10 also has the usual hose and nozzle (not shown), the hose being connected to the discharge pipe (not shown) in the usual way.

To modify this conventional pump 10 to adapt it for the control of the present invention, a solenoid controlled check valve 20 is disposed in the discharge pipe thereof so that when valve 20 is closed no gasoline can be delivered by the pump 10. Also, the conventional disk which indicates the number of cents in the group of disks 12 is removed and a disk 21 is substituted therefor. Likewise, disk 22 is substituted for the one-tenth gallon disk of the group of disks 11.

It will be understood that with each revolution of disk 22, an additional ten cents is totaled on the disks 11 while, with each revolution of the disk 21, an additional gallon of gasoline is totaled on disks 12. As seen in FIG. 6, the disk 21 is unique in that a bar magnet 23 is disposed radially within the disk 21 whereby the end of the magnet 23 is essentially flush with the periphery of disk 21. The disk 22 in similar fashion is provided with ten equally spaced radially disposed bar magnets 24, the ends of which are flush with the periphery of disk 22.

Disposed respectively adjacent the peripheries of disks 21 and 22 are a pair of sealed magnetically controlled, actuator switches 25 and 26. Switch 25 is identical to switch 26, the switch 25, as illustrated in FIG. 7, including a sealed casing 27 carrying a pool of mercury 28. A capillary tube 29 is disposed within casing 27 with one end in the pool of mercury 28 so that the mercury 28 rises therein to a height above a small hole 30 in the side of the capillary tube 29. Depending from a pivot pin 31 carried by casing 27 is an oscillatory contact finger 32, the end of which is normally out of engagement with the mercury 28 within the capillary tube 29 but upon pivotal movement of finger 32 will be thrust through hole 30 to make electrical contact with the mercury 28. Carried by the finger 32 is a metal plate which is actuable by the magnets 23. Hence, upon each revolution of disk 21, the magnets 23 will cause the switch 25 to be closed and opened. In like fashion, each revolution of disk 22 will cause switch 26 to be closed and opened ten times.

Wire 40 is connected through casing 27 to the pool of mercury 28 and wire 41 is connected through the casing 27 to finger 32. In like manner, wires 42 and 43 are connected to the terminals of switch 26. The wires 40 and 42 lead to the two terminals 44 and 45 respectively of a double pole, double throw selector switch 46, the switch arm 47 of which is connected to wire 48. Similarly, the other switch arm 40 of switch 46 is connected to a wire 50 and is selectively connectable with terminals

51 and 52. Wires 41 and 43 are respectively connected to terminals 51 and 52.

By such an arrangement, when selector switch 46 is in one extreme position (to the left in FIG. 6), the wires 40 and 41 are connected to wires 48 and 50 while, when the switch 46 is in the other extreme position (to the right in FIG. 6), wires 42 and 43 are connected to wires 48 and 50. In the midposition of switch 46, all wires 40, 41, 42 and 43 are disconnected from wires 48 and 50.

Current is supplied via wires 48 and 53 from a source of current E, through the usual on-off switch (not shown) of the pump 10, the wire 53 being connected by parallel switches 54 and 55 through a solenoid 56 and thence via wire 57 to wires 40 and 52. The switch 54 serves as an interlock switch while the switch 55 serves as an on-off switch, as will be understood more fully later. When the solenoid 56 is energized, valve 20 is closed; and when solenoid 56 is deenergized, valve 20 is opened.

The indexing solenoid 58, which will be discussed in more detail hereinafter, is connected between wires 53 and 50, and is in series with an index solenoid switch 59.

It is now seen that when switch 46 is thrown to the left or right in FIG. 6 and either switch 54 or 55 is closed, solenoid 56 will be energized to close valve 20 and interrupt the flow of gasoline from pump 10. Otherwise, valve 20 will remain open. Furthermore, with switch 46 thrown to the left and switch 59 closed, a circuit is momentarily made via switch 25 to energize solenoid 58 upon each revolution of disk 21; while, with switch 46 thrown to the right and switch 59 closed, a circuit via switch 26 is made momentarily energizing solenoid 58 ten times for each revolution of disk 22.

Referring now to FIGS. 2 and 3, it will be seen that the switch 46 is disposed in the upper central portion of a box like housing 60, the housing 60 including a back 61, a pair of sides 62 and 63, a top 64, a bottom 65 and a removable front cover plate 66. Preferably switch 46 is secured to back 61 and has a control arm or shaft 67 which passes outwardly through an appropriate opening in cover plate 66. The end of shaft 67 is provided with a selector lever 68 whereby the switch 46 may be manually positioned in any one of its three positions.

Below the lever 68 is a port hole or window in the cover plate 66 which is closed by a transparent pane 69 carried in a frame 70. Below the frame 70 the cover plate 66 protrudes outwardly to provide a hub 71, as seen in FIG. 2, having a bearing insert 72 which journals a central shaft 73. Outwardly of hub 71, the outer end of shaft 73 has a cross bar handle 74 radially passing therethrough. The handle 74 permits the axial movement and the manual rotation of shaft 74, as will be explained later.

The inner end portion of shaft 73 is journaled by an inwardly protruding portion of back 61, this inwardly protruding portion forming a switch receiving recess 75 within which switch 54 is disposed. A plate 76 closes the recess 75. Protruding downwardly from switch 54 is a switch arm 77 which is spring urged into engagement with the inner end of shaft 73. When shaft 73 is moved outwardly, switch arm 77 closes switch 54 and, conversely, when shaft 73 is moved inwardly, the switch arm 77 opens switch 54. With shaft 73 in its normal position the switch 54 is opened thereby.

Intermediate the ends concentrically on shaft 73 and within housing 60 is a large flat circular dial 80 having numerals 81, for example from 0 to 15, equally spaced therearound in a clockwise direction. The numerals are adjacent the periphery of dial 80 so that the uppermost numerals may be read through pane 69. The dial 80 is fixed on shaft 73 by a pin 82. A coiled spring 83 surrounding shaft 73 is compressed between dial 80 and hub 72 so as to urge dial 80 and shaft 73 rearwardly to its normal position shown in FIG. 2.

A pointer 84, disposed for viewing through pane 69 along the vertical centerline of housing 60, is secured to

the inside of cover plate 66 by a bolt 85, the pointed end of pointer 84 terminating adjacent the periphery of dial 80 for indicating the numeral 81 to be read.

The dial 80 is provided with evenly spaced teeth 86 along its periphery, there being ten teeth 86 between adjacent numerals 81. Since the pointer 84 is also adjacent the teeth 86, the teeth 86 may be used for indicating one-tenth of a unit.

Extending from the rear surface of dial 80 in side-by-side relationship is an annular camming ring 87 which is concentric with shaft 73 and dial 80 throughout substantially its entire periphery. The diameter of ring 87 is slightly less than the diameter of dial 80 so that ring 87 does not interfere with teeth 86. Aligned with the "zero" numeral scribe mark 88 is a U-shaped recess 89 in the front portion of the annular ring 87, as best seen in FIG. 5. Aligned with the recess but along the rear portion of annular ring 87 is a smoothly curved recess 90 of essentially the same depth as recess 89. In more detail, the recess 89 has essentially radial parallel sides while the recess 90 has outwardly diverging sides.

For cooperating with the annular ring 87 is a tangentially disposed switch actuating lever 91 which is pivotally carried by its central portion on a pivot pin 92, the pin 92 extending through the lever 91 parallel to shaft 73 and adjacent the ring 87. The ends of pin 92 are supported by the back 61 and the cover plate 66 respectively. The lever 91 is so arranged that a detent finger 93, on the end of one arm of lever 91, is adapted to cooperate with recess 89. The end of the other arm of lever 91 protrudes between a pair of normally opened switches 55 and 59 which are supported from side 63. A spring 94 connected between this other arm of lever 91 and 64 urges the lever 91 in a counterclockwise direction, as viewed in FIG. 3, so as to urge the detent finger 93 against the periphery of ring 87 at all times.

When dial 80 is on zero, i.e. scribe 88 is aligned with pointer 84, the detent finger 93 is riding in either recess 89 or 90. Hence, spring 94 rotates the lever 91 sufficiently that lever 91 closes switch 55 and opens switch 59. When detent finger 93 is riding on any other portion of ring 87, the lever 91 is rotated clockwise sufficiently that it permits switch 55 to open and close switch 59.

Below the dial 80 is the indexing mechanism which includes a shaft 100 supported by its ends between the cover plate 66 and the back 61 in a position parallel to shaft 73. The shaft 100 supports for individual rotation a pair of abutting sleeves 101 and 102, the forward sleeve 101 carrying at its forward end a gear 103 and at its rear end a ratchet wheel 104. The gear 103 is smaller than ratchet 104 and its teeth mesh with the teeth 86 of dial 80, when the dial 80 is in its normal position as shown in FIG. 2.

The serrated periphery of ratchet wheel 104 is adapted to be engaged by the indexing finger 120 of a pawl 105 pivotally mounted on a pin 106 at the end of an arm 107 extending radially from sleeve 102. The solenoid 58 is mounted on side 62 so that its plunger 108 extends toward pawl 105, there being provided a pivotally mounted link 109 at the end of plunger 108 which is pivotally connected to pin 106. The pawl 105 has an outer arm 121 outwardly of pin 106, the arm 121 being connected to a spring 110 which urges pawl 105 in a clockwise direction for yieldably moving finger 120 into engagement with the ratchet wheel 104, as seen in FIG. 3. The spring 110 is anchored by anchor arm 111 to side 63 in parallel relationship to plunger 108.

A second spring 112, which extends vertically downwardly from anchor arm 111, engages the end of a lever arm 113, urging the same in a counterclockwise direction. The other end of lever arm 113 is connected to an intermediate portion of an upstanding rocker arm 114, the lower end of arm 114 being pivotally mounted to bottom 65 and the upper end thereof rotatably carrying a keeper wheel 115 which engages the periphery of ratchet

5

wheel 104. Thus, the spring tension of spring 112 yieldably urges wheel 115 into engagement with the serrations on ratchet wheel 104.

It is now seen that upon energization of solenoid 58, the plunger 108 will be retracted to pivot the pawl 105 and pivot arm 107 in an arcuate path counterclockwise so that pawl 105 rotates the ratchet wheel 104 by a prescribed amount. When the solenoid 58 is deenergized, spring 110 urges the arm 104 in a clockwise direction the full extent to which the plunger 108 may be extended. When, however, the arm is so rotated, the keeper wheel, 115 prevents the pawl 105 from rotating the ratchet wheel 104 clockwise in FIG. 3.

In FIG. 4 it is seen that preferably the housing 60 is mounted in side-by-side relationship on the pump 10 at about the same level as the window 9 thereof.

Operation

From the foregoing description, the operation of the present device is apparent. First, the selector lever 68 is positioned to the right or to the left. In the left position as viewed in FIG. 1, the lever 68 positions switch 46 (FIG. 6) to the left so as to arrange in series across the line, the mercury switch 25, switch 59 and solenoid 58. In the right position, the lever 68 positions switch 46 to the right whereby mercury switch 26, rather than switch 25, is in series with switch 59 and solenoid 58. In either extreme position of switch 46, current is supplied via switch 54 or 55, when closed, to solenoid 56.

When the mechanism here described has completed a preceding cycle, the dial 80 is at zero and hence the finger 93 is within recess 89, thereby closing switch 55. Thus, solenoid 56 is energized to close valve 20 and prevent the delivery of any liquid or fluid, i.e. gasoline, by pump 10.

To set the dial 80, the handle 74 is grasped, pulled outwardly and rotated in either direction until the appropriate numeral 81 is disposed below the pointer 84. The handle 74 is then released. The pulling forward of handle 74 shifts shaft 73 axially forward, closing switch 54 and shifting the dial 80 and ring 87 forwardly whereby recess 90 is moved beneath the detent finger 93. This forward movement of dial 80 removes the teeth 86 from meshing engagement with gear 103 so that it is free for rotation.

The subsequent rotation of shaft 73 by handle 74 rotates the dial 80 and ring 87 whereby the detent finger 93 rides along the curved surface of recess 90 and along the periphery of ring 87 as it is rotated. As the recess 90 is moved from beneath the detent finger 93, the lever arm 91 is pivoted clockwise in FIG. 3, thereby shifting switches 55 and 59 to open switch 55 and close switch 59. However, since switch 54 remains closed the circuit to solenoid 56 remains energized, even though switch 55 is opened.

When the handle 74 is released, after, a preselected numeral 81 is arranged below pointer 84, the shaft 73 is moved inwardly by spring 83 to open switch 54 whereby the circuit to solenoid 56 is broken and valve 20 is opened. Thereafter, gasoline may be delivered in the customary way from the pump 10, when the pump 10 is cut on and its usual nozzle (not shown) is opened. Furthermore, since switch 59 was closed by lever 91, the circuit to solenoid 58 is now under the control of mercury switch 25 or 26, depending upon which extreme position switch 46 is in.

The releasing of handle 74 and the inward movement of shaft 73 again meshes the teeth 86 with the teeth of gear 103. Hence, rotation of dial 80 must now result from rotation of the gear 103. When the pump 10 is actuated to deliver gasoline, via valve 20, the disks 21 and 22 are rotated in proportion to the amount of gasoline delivered. Thus, every revolution of disk 21 brings magnet 23 into actuating proximity, once, with mercury switch 25. Likewise, every revolution of disk 22 brings the ten magnets 24 successively into actuating proximity with mercury switch 26.

6

If switch 46 is to the left, in FIG. 6, one revolution of disk 21 will close mercury switch 25 once and hence energize solenoid 58 once. If switch 46 is to the right in FIG. 6, one revolution of disk 22 will close mercury switch 26 ten times and hence successively energize the solenoid 58 ten times for each revolution of disk 22. In turn, each time the solenoid 58 is energized it withdraws plunger 108 so as to rotate ratchet wheel 104 sufficiently that it rotates, via sleeve 101 and gear 103, the dial 80 by the distance of one tooth 86.

It will be remembered that there are ten teeth 86 between each numeral 81. Hence, assuming that switch 46 is to the left, the revolution once of disk 21 advances the dial 80 clockwise in FIGS. 1 and 3 by one-tenth of a unit. This means that with each one dollar's worth of gasoline delivered, as represented by the revolutions of disk 21, the dial 80 has been indexed through an arc the distance between adjacent numerals 81 and hence equivalent to one unit on dial 80. Similarly, with switch 46 to the right in FIG. 6, the delivery of one gallon of gasoline will cause the rotation of disk 22 through one revolution to index dial 80 through an arc equivalent to one unit on dial 80.

As the dial 80 is rotated and the zero unit or numeral 81 is positioned below pointer 85, the detent finger 93 will drop into recess 89, thereby shifting switches 59 and 55, switch 59 being opened and switch 55 being closed. This causes switch 59 to break the circuit to solenoid 58 and prevents further rotation of dial 80 via pawl 105. At the same time, the closing of switch 55 makes the circuit to solenoid 56 which closes valve 20. Therefore, the delivery of gasoline via valve 20 is stopped.

It will be understood that at any stage of delivery, if an additional monetary or volumetric amount of gasoline is desired, the dial 80 may be reset to provide for the delivery of this added amount. On the other hand, if less gasoline is desired, the dial 80 may be reset to provide for the delivery of a lesser amount of gasoline.

It will be obvious to those skilled in the art that many variations may be made in the embodiment chosen for the purpose of illustrating the present invention without departing from the scope thereof as defined in the appended claims.

I claim:

1. In a control for a dispensing device of the class wherein a pair of disks in the dispensing device are rotated in response to the flow of material from the dispensing machine to respectively indicate the monetary value of the material being dispensed and the volumetric amount of such material, a rotatable dial having a zero position, means for setting said dial in a selected radial position, electro-mechanical means for indexing said dial in response to rotation of either of said disks, a selector switch for selectively connecting said electro-mechanical means to either of said disks, a source of current connected via said selector switch to said electro-mechanical means for energizing said electro-mechanical means when connected to either of said disks, a valve connected to said dispensing device for preventing delivery of material therefrom when said valve is closed, means for opening said valve when said dial is moved from its zero position and for closing said valve when said dial is returned to its zero position.

2. In a control for a dispensing device of the class wherein a pair of disks in the dispensing device are rotated in response to the flow of material from the dispensing machine, to respectively indicate the monetary value of the material being dispensed and the volumetric amount of such material, a housing, a rotatable shaft within said housing, a dial carried by said shaft within said housing and having a zero position, solenoid means for rotating said dial by a prescribed amount upon each energization thereof, actuator switches associated with each of said disks and respectively actuated upon rotation of said

disks, a selector switch for selectively connecting said actuator switches and said solenoid means, a source of current connected via said selector switch to said solenoid means for energizing said solenoid means when connected to one of said actuator switches, a valve connected to said dispensing device for preventing delivery of material therefrom when said valve is closed, means for opening said valve when said dial is moved from its zero position and for closing said valve when said dial is returned to its zero position.

3. A control for a dispensing device of the class wherein a pair of disks in the dispensing device are rotated in response to the flow of material from the dispensing machine, to respectively indicate the monetary value of the material being dispensed and the volumetric amount of such material, comprising a housing, a rotatable shaft movable axially within said housing from a normal position to a shifted position, spring means for urging said shaft into said normal position, a dial carried by said shaft within said housing and having a zero position, a handle outside said housing for manually moving said shaft in an axial direction and for rotating said shaft, solenoid means for rotating said dial by a prescribed amount upon each energization thereof, actuator switches associated with each of said disks and respectively actuated upon rotation of said disks, a selector switch for selectively connecting said actuator switches and said solenoid means, a source of current connected via said selector switch to said solenoid means for energizing said solenoid means when connected to one of said actuator switches, a valve connected to said dispensing device for preventing delivery of material therefrom when said valve is closed, means for opening said valve when said dial is moved from its zero position and for closing said valve when said dial is returned to its zero position, and interlock means for closing said valve during a period in which said shaft is in its shifted position.

4. A control for a dispensing device wherein a pair of disks in the dispensing device are rotated as liquid is dispensed therefrom to indicate respectively the monetary value of the liquid being dispensed and the volumetric amount of such material, comprising a housing, a rotatable shaft movable axially within said housing from a normal position to a shifted position, a spring means for urging said shaft into said normal position, a dial carried by said shaft within said housing and having a zero position, a handle outside said housing for moving said shaft in an axial direction and for rotating said shaft, electro-mechanical means for rotating said dial when said electro-mechanical means is energized, actuator switches associated with each of said disks and respectively actuated upon rotation of said disks, a selector switch for selectively connecting said actuator switches and said electro-mechanical means for rotating said dial, said dial being disengageable from said electro-mechanical means when said shaft is moved in its shifted position, a source of current connected via said selector switch to said electro-mechanical means for energizing said electro-mechanical means when connected to one of said actuator switches, a valve connected to said dispensing device for preventing delivery of material therefrom when said valve is closed, control means for opening said valve when said dial is rotated from its zero position and for closing said valve when said dial is returned to its zero position, and interlock means for closing said valve during a period in which said shaft is in its shifted position.

5. The structure defined in claim 4 including detent means for locking said dial in its zero position until said shaft is moved to its shifted position.

6. The structure defined in claim 5 wherein said control means includes a solenoid connected to said valve and a switch connected to said solenoid and to a source of current, said last mentioned switch being actuated by said detent means, and wherein said interlock means in-

cludes a switch actuated by movement of said shaft axially.

7. The structure defined in claim 6 wherein said electro-mechanical means includes a solenoid, a pawl operated by said solenoid, a ratchet rotated by said pawl and a gear, and wherein said dial has teeth for meshing with said gear when said shaft is in its normal position, said last mentioned solenoid being connected to said selector switch.

8. In a control for a dispensing machine for dispensing material, a housing, a dial rotatably carried by said housing, a cam on said dial, a lever actuated by said cam when said dial is indexed to its zero position, indexing means for indexing said dial in response to electrical impulses, means for disengaging said dial from said indexing means when said dial is to be reset, means for supplying said electrical impulses to said indexing means in response to the amount of material delivered by said dispensing machine, and means controlled by said lever for interrupting the flow of said material when said dial has been indexed to its zero position and when said dial is being reset.

9. The structure defined in claim 8 wherein said cam includes a cam ring having a pair of aligned recesses, one of said recess having essentially parallel sides and the other of said recesses having curved sides, and a finger on said lever for riding on said ring dial for falling into said one of said recesses when said dial approaches its zero position, said dial moving said ring to position the other of said recesses in registry with said finger when said dial is disengaged from said indexing means.

10. In a dispensing machine of the class wherein a pair of disks are rotated in response to the flow of material in a path of travel from said dispensing machine, one disk indicating the monetary value of the material being dispensed and the other disk indicating the volumetric amount of the material, the combination therewith of a housing mounted on said dispensing device, a rotatable first shaft mounted within said housing and movable axially therein, a handle secured to said shaft outside said housing for manually rotating said shaft and for manually moving said shaft axially, a dial concentrically mounted on said shaft for movement therewith and having a zero position, a cam carried by said shaft, a lever on said housing movable by said cam when said dial approaches its zero position, a second shaft in said housing parallel to said first shaft, said dial having evenly spaced teeth around the periphery thereof, a gear on said second shaft, the teeth of said gear meshing with said teeth of said dial in one axial position of said first shaft, said dial being movable upon axial movement of said first shaft to remove said teeth of said dial from meshing engagement with said teeth of said gear, a ratchet wheel for rotating said gear to index said dial, a pawl for rotating said ratchet wheel, a first solenoid for actuating said pawl, an interlock switch closeable when said teeth of said dial are moved out of engagement with said gear, a valve in said path of travel of said material, said valve being normally open, a second solenoid for closing said valve, a source of current, said second solenoid being connected to said source of current through said interlock switch whereby said valve is closed when said teeth of said dial are moved out of engagement with said teeth of said gear, a pair of control switches controlled by said lever, one of said control switches being connected to said source of current through said second solenoid whereby said second solenoid is energized when said dial is in a position other than its zero position, a circuit for said first solenoid, the other of said control switches being connected to said source of current through said circuit for said first solenoid, a selector switch in said circuit for said first solenoid, and a pair of actuator switches connected to said selector switch for selectively being placed in series in said circuit by said selector

switch, said actuator switches being respectively actuated in response to rotation of said disks whereby when the teeth of said dial are meshing with the teeth of said gear said first solenoid rotates said dial in response to the actuation of the selected one of said actuator switches so long 5 as said other of said control switches is closed.

References Cited in the file of this patent

UNITED STATES PATENTS

2,925,936	Whitefield et al. -----	Feb. 23, 1960
3,053,414	Rapisardo -----	Sept. 11, 1962
3,079,045	Kimball et al. -----	Feb. 26, 1963