Nov. 14, 1961 E. MIHALEK 3,008,636

REGISTERING DEVICE FOR DISPENSING MACHINES

Filed Aug. 24, 1959 2 Sheets-Sheet 1

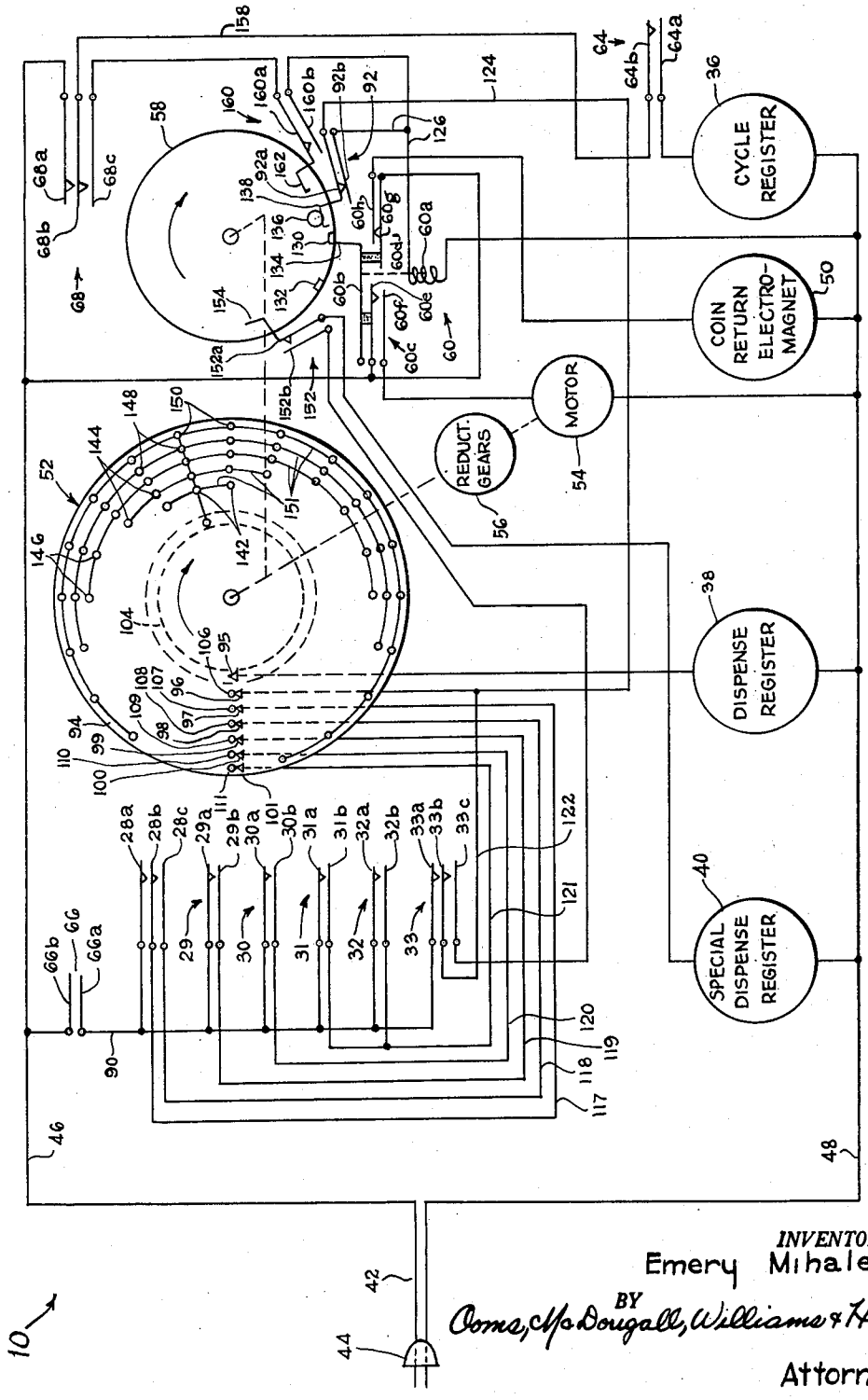


Fig. 1

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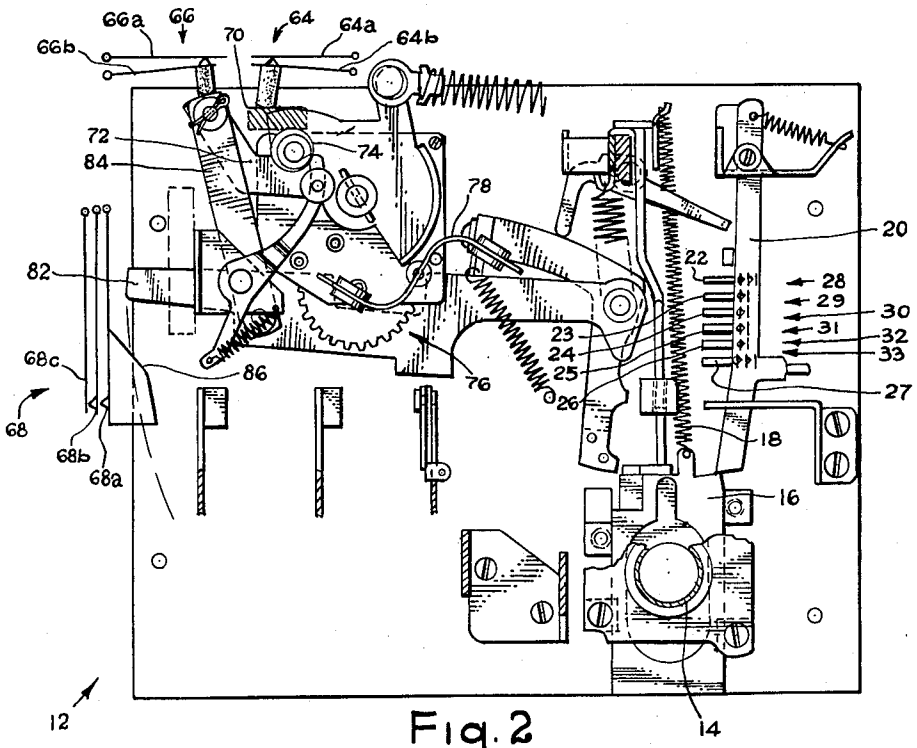


Fig. 2

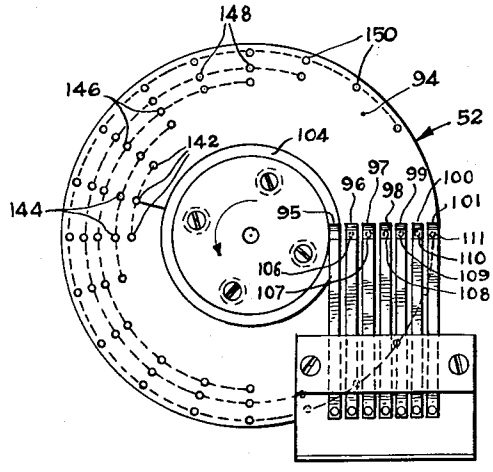


Fig. 3

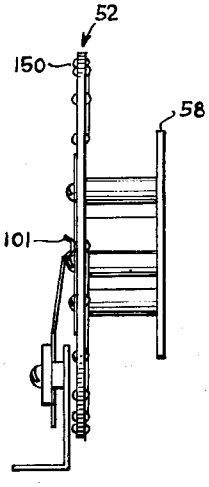


Fig. 4

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United States Patent Office 3,008,636 Patented Nov. 14, 1961

3,008,636

REGISTERING DEVICE FOR DISPENSING MACHINES

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Filed Aug. 24, 1959, Ser. No. 835,565
6 Claims. (Cl. 235—92)

This invention relates to a new and improved device for registering the number of articles dispensed by a coin operated dispensing machine.

One object of the present invention is to provide a new and improved device which is adapted to register the output of a dispensing machine of the type which may dispense a variable number of articles, differing between different cycles of the machine.

Thus, for example, it is an object of the present invention to provide a new and improved device adapted to register the output of dispensing machines of the type disclosed in the following United States patents: 1,562,771, 1,586,455, 1,570,910, 1,677,647, 1,697,537, 1,706,896, 1,798,416, 1,923,945, 2,477,137, and 2,886,207.

It will be understood that the present invention is applicable to other types of dispensing machines, such as machines equipped with change making mechanisms, adapted to dispense different numbers of coins for different cycles of the machine.

Another object of the present invention is to provide a new and improved device adapted to register the number of cycles of the dispensing machine, as well as the number of dispensed articles.

A further object is to provide a registering device which is versatile and dependable in operation, yet is remarkably simple and low in cost.

Further objects and advantages of the present invention will appear from the following description, taken with the accompanying drawings, in which:

FIG. 1 is a schematic diagram showing a registering device to be described as an illustrative embodiment of the present invention.

FIG. 2 is a horizontal sectional view showing the manner in which the registering device may be connected to a particular dispensing machine.

FIGS. 3 and 4 are front and side elevational views of a commutator assembly employed in the registering device of FIG. 1.

As already indicated, FIG. 1 illustrates a registering device **10** adapted to register the output of any suitable dispensing machine of the type which may dispense different numbers of articles in different cycles of the machine. In a general sort of way, FIG. 2 illustrates such a dispensing machine **12**. However, it should be understood that the present invention is not concerned with the details of the dispensing machine, but only with the arrangement for registering the operation of the dispensing machine.

Merely by way of background, it may be helpful to note that the dispensing machine **12** is of the type adapted to dispense variable numbers of disk shaped articles from a tubular magazine **14**. The dispensing of the articles is controlled by apertured gate plates **16**, disposed under the magazine **14**. Biasing springs **18** tend to move the plates or slides **16** rearwardly, so as to dispense the articles, but such rearward movement of the plates is normally prevented by latch levers **20**. In the operation of the dispensing machine **12**, the latch levers **20** are selectively released by selector levers **22, 23, 24, 25** and **26**. These selector levers **22—26** are under the control of a special selector mechanism, the details of which form no part of the present invention. For detailed disclosures of the type of dispensing machine shown in

FIG. 2, reference may be had to the United States patents listed in the introduction to this application.

In a typical machine, the operation of the first selector lever **22** may result in the dispensing of either 3 or 5 articles. Thus, partial movement of the lever **22** may cause 3 articles to be dispensed, while full movement of the lever may cause 5 articles to be dispensed. The movement of the levers **22—26** is to the right, as seen in FIG. 2. Operation of the selector lever **23** may cause 11 articles to be dispensed. 13 articles may be dispensed by the operation of the lever **24**. If either of the levers **25** and **26** is operated, the machine may dispense 18 articles.

The illustrated machine **12** is provided with an additional selector **27**, the operation of which may cause the machine to dispense an indefinite number of articles, the number being determined from time to time by the operator of the machine.

In order that the operation of the registering device **10** may be responsive to the movement of the selector levers **22—27**, it is preferred to provide the levers with corresponding control switches **28, 29, 30, 31, 32** and **33**. These switches are shown in greater detail in FIG. 1. Thus, the first switch **28** comprises 3 spring contacts **28*a***, **28*b*** and **28*c***. These contacts are normally out of engagement, but are adapted to be engaged with one another by the movement of the selector lever **22**. Partial movement of the lever **22** moves the contact **28*a*** against the contact **28*b***. Full movement of the lever **22** moves the contact **28*b*** against the contact **28*c***.

The switch **29** has normally open contact springs **29*a*** and **29*b***. Similarly, the switches **30, 31** and **32** have normally open pairs of contact springs **30*a*, 30*b*, 31*a*, 31*b*, 32*a*** and **32*b***. The switch **33** has 3 contact springs **33*a*, 33*b*** and **33*c***, which are normally out of engagement, but are adapted to be engaged by the movement of the lever **33**.

The registering device **10** has 3 electrically operable registers, a cycle register **36**, a dispense register **38**, and a special dispense register **40**. Each of these registers is of the well-known type which records one unit for each time that the register is energized. The arrangement of the device **10** is such that the cycle register **36** records the number of operating cycles of the machine. Thus, each time that a coin is deposited in the dispensing machine, the machine goes through one complete cycle. This cycle is recorded on the cycle register **36**. In effect, the cycle register **36** counts the number of coins deposited in the dispensing machine.

The dispense register **38** records the number of articles dispensed by the machine **12**. This makes it possible to establish a definite inventory of the articles in the machine, so that all of the articles will be accounted for.

The special dispense register **40** counts the number of groups of articles which are dispensed by the operation of the selector lever **27**. As already indicated, the number of articles in each group is determined by the operator of the machine.

The illustrated registering device **10** is electrically operated, and thus is adapted to receive electrical current from a suitable source. As shown, the device **10** has a conventional power cord **42**, which terminates in a plug **44**, adapted to be inserted into any commercial receptacle, usually energized with alternating current at a suitable voltage and frequency, such as 110 volts and 60 cycles per second. The power cord or line **42** comprises power leads **46** and **48**.

It will be apparent that the registering device **10** will not operate unless it is supplied with electrical current. To insure that all operations of the dispensing machine **12** will be registered, the machine is so arranged that it will not operate or retain coins unless it is supplied

with electrical current. Thus, the dispensing machine 12 is provided with a coin mechanism of the well-known type having an electromagnet 50 which must be energized before the coin mechanism will retain coins. If the electromagnet 50 is not energized, the coins will simply be returned through the usual coin return chute. The electromagnet 50 is energized in a manner to be described in detail shortly.

The registering device 10 is arranged so that each closure of the switches 28–32 will operate the main dispense register 38 a plurality of times. This is accomplished by providing a commutator or contractor 52 which generates a series of distinct impulses in response to the closure of each of the switches 28–32. The commutator 52 is adapted to be rotated through its cycle by an electric motor 54 which is coupled to the commutator 52 by a set of speed reduction gears 56. Thus, the commutator 52 rotates at a relatively slow speed compared to that of the motor 54. In this case, a control cam 58 is connected directly to the commutator, so as to be rotated therewith.

The operation of the motor 54 is subject to the control of a relay 60, which preferably has a coil 60*a*, an armature 60*b* and two sets of contacts 60*c* and 60*d*, operable by the armature 60*b*. The illustrated contacts at 60*c* comprise normally open spring contacts 60*e* and 60*f*, which are adapted to be closed when the coil 60*a* is energized. The set 60*d* comprises normally closed spring contacts 60*g* and 60*h*, adapted to be opened by the energization of the coil 60*a*. It will be seen that the contacts 60*e* and 60*f* are connected in series with the motor 54 between the power lines 46 and 48. Thus, actuation of the relay armature 60*b* will energize the motor 54.

One or more switches may be provided in order to coordinate the operation of the registering device 10 with the operation of the dispensing machine 12. The exact arrangement of these switches will depend upon the construction of the particular dispensing machine with which the registering device is to be used. In general, it is usually desirable to operate the registering device 10 after the dispensing machine has completed its cycle, but before the next cycle of the dispensing machine can begin. In the illustrated embodiment, it is preferred to employ 3 switches 64, 66 and 68 to coordinate the registering device 10 with the dispensing machine 12. The switches 64, 66 and 68 are mounted on the dispensing machine so as to be operated at different stages in the operation of the machine.

As shown, the switch 64 comprises a pair of spring contacts 64*a* and 64*b* which are adapted to be closed by an operating component 70 of the dispensing machine 12. The component 70 is often known as the fork arm of the machine. The operation of the machine 12 is initiated by forward movement of the arm 70. However, it should again be emphasized that the details of the dispensing machine 12 form no part of the present invention. Such details are described herein merely by way of example. In the operation of the machine 12, the arm 70 is moved forwardly and then is returned to the position shown in FIG. 2.

The forward movement of the fork arm 70 causes forward movement of an arm 72, often known as the clock arm. The arm 72 carries a roller 74 which is adapted to be engaged by the fork arm 70. The clock arm 72 is spring biased rearwardly toward its original position, but it is retarded in its rearward movement by a retarding mechanism or clock 76. As shown, the clock 76 comprises an air vane 78 which is rotated at a high speed through a set of gears, by the rearward return movement of the clock arm 72.

The illustrated switch 66 comprises a pair of spring contacts 66*a* and 66*b* which are adapted to be closed by the rearward return movement of the clock arm 72.

The contacts 66*a* and 66*b* open when the clock arm 72 is swung forwardly.

In the illustrated machine 12, the clock arm 72 is connected to a timing arm or bar 82 by a link 84. Thus, the timing arm 82 is swung forwardly along with the clock arm 72. The switch 68 is adapted to be operated by the forward movement of the timing arm 82. Thus, the switch 68 comprises 3 normally open spring contacts 68*a*, 68*b*, and 68*c*. As shown, a cam 86 is mounted on the contact spring 68*a* for engagement by the end of the timing arm 82. Thus, the timing arm 82 moves the contact 68*a* against the contact 68*b*, which in turn is moved against the contact 68*c*.

Thus, the contacts 68*a*, 68*b* and 68*c* are closed by the initial forward movement of the arm 82, and remain closed as the arm makes its slow return movement. The switch 64 is opened initially, as the arm 70 moves forwardly, but is closed by the early return of the arm 70. The switch 66 is open during most of the cycle of the machine 12, but is closed by the return of the clock arm 72 at the end of the cycle.

In the illustrated registering device 10, the operation of the relay 60 is under the joint control of the switch 66 and the switches 28—33. Before the relay 60 can be energized, the switch 66 must be closed. In addition, one of the switches 28—33 must be closed. As just described, the switch 66 is closed at the end of the operating cycle of the dispensing machine 12. Thus, the relay 60 will be energized at the end of the dispensing cycle, provided one of the switches 28—33 is closed.

It will be seen that the switch 66 is connected between the power lead 46 and a lead 90, to which the contacts 28*a*, 29*a*, 30*a*, 31*a*, 32*a*, and 33*a* are connected. One end of the relay winding 60*a* is connected to the power lead 48. The other end of the relay coil 68 is adapted to be connected through a switch 92 and the commutator 52 to the switch contacts 28*b*, 28*c*, 29*b*, 30*b*, 31*b*, 32*b* and 33*b*, so that closure of any of the switches 28—33 will energize the relay 60. The function of the switch 92 will be described shortly. For the moment it will be sufficient to indicate that it is closed in the initial condition of the registering device 10.

The illustrated commutator 52 comprises a circular insulating member 94, preferably in the form of a disk. The disk 94 carries a large number of spaced contacts, adapted to be engaged by brushes 95, 96, 97, 98, 99, 100, and 101. As shown, the brushes 95—101 are spaced apart along a radial line. The innermost brush 95 is adapted to engage a continuous conductive slip ring 104 on the disk 94. In the home or initial position of the commutator 52, the brushes 96—101 are adapted to engage contacts 106—111 on the disk 94. All of the contacts 106—111 are arranged along a radial line and are connected together. Thus, all of the brushes 96—101 are initially connected together.

It will be seen that the brushes 97—100 are connected to the contacts 28*b*, 28*c*, 29*b* and 30*b*, by corresponding leads 117—120. The brush 101 is connected to a lead 121, which in turn is connected to both of the contacts 31*b* and 32*b*. A lead 122 extends between the contact 33*b* and the brush 96.

It will be seen that the main dispense register 38 is connected between the innermost brush 95 and the power lead 48. Thus, the dispense register 38 will be actuated by each impulse that may be supplied to the slip ring 104.

The illustrated switch 92 comprises spring contacts 92*a* and 92*b*. A lead 124 extends between the brush 96 and the contact 92*a*. It will be seen that a lead 126 extends between the contact 92*b* and the relay coil 60*a*.

At the end of the cycle of the dispensing machine 12, the switch 66 is closed. This energizes the switch contacts 28*a*, 29*a*, 30*a*, 31*a*, 32*a* and 33*a*. If any of the switches 28—32 is closed, the lead 124 will be energized through the corresponding brush and contact on the com-

mutator 52. Thus, for example, closure of the switch 30 will energize the contact 30*b*, the lead 120, the brush 100, the contact 110, the contact 106, the brush 96 and the lead 124. Through the switch 92, the relay coil 60*a* is energized. Closure of the switch 33 will energize the contact 33*b*, the lead 122, and thence the lead 124.

The energization of the relay coil 60*a* pulls down the relay armature 60*b* and closes the contacts 60*e* and 60*f*. This energizes the electric motor 54.

It will be seen that the switch contacts 60*g* and 60*h* are connected between the power line 46 and the coin return electromagnet 50. The other side of the electromagnet 50 is connected to the power line 48. When the relay armature 60*b* is pulled down the contacts 60*g* and 60*h* are opened, so as to de-energize the electromagnet 50. This disables the coin mechanism so that the mechanism will return any coin that may be deposited during the operation of the registering device 10.

Through the reduction gears 56, the motor 54 rotates the commutator 52 and the cam 58. In effect, the cam 58 serves as a mechanical holding device for the motor relay 60. Thus, the illustrated cam 58 comprises a circular disk having two indexing notches 130 and 132 therein. In the initial position of the cam 58, the notch 130 is adapted to receive a cam rider 134 which extends upwardly from the relay armature 60*b*. The initial rotation of the cam 58 moves the notch 130 out of registration with the rider 134, whereupon the circular edge of the cam 58 prevents the return movement of the relay armature 60*b*. This makes it possible to de-energize the relay coil 60*a*, while maintaining the motor contacts 60*e* and 60*f* in a closed position.

The relay coil 60*a* is de-energized by the opening of the switch 92, which is controlled by an isolated camming element 136 on the cam disk 58. As shown, the camming element 136 takes the form of a bar or pin. In the initial position of the disk 58, the pin 136 engages a rider or shoe 138 which is formed or mounted on the switch contact 92*a*. Thus, the pin 136 holds the switch 92 in a closed position. The initial rotation of the cam 58 moves the pin 136 away from the shoe 138. This permits the contacts 92*a* and 92*b* to open.

The motor 54 continues to operate until the cam rider 134 falls into the second notch 132. The relay armature 60*b* then returns to its original position, and permits the motor contacts 60*e* and 60*f* to open. As a result the motor 54 is de-energized.

During the rotation of the commutator 52, it transmits a plurality of impulses to the dispense register 38. The impulses are generated by circular rows of contacts on the commutator 52. Each circular row has a different number of contacts therein, to generate a different number of impulses. Thus, the commutator 52 carries an inner row of three contacts 142 which are engageable by the brush 97. All three of the contacts 142 are connected together and are connected to the slip ring 104. It will be evident that the engagement of the brush 97 with the three successive contacts 142 will generate three impulses, if the contacts 28*a* and 28*b* are closed to energize the brush 97. The three impulses will advance the register 38 by three units.

Similarly, the next circular row on the commutator 52 comprises five contacts 144, all of which are connected together, and in turn are connected to the slip ring 104. The contacts 144 are adapted to be engaged by the brush 98. When the contacts 28*a*, 28*b* and 28*c* are closed, the brush 98 transmits five impulses to the register 38, by way of the contacts 144. The next row of contacts on the commutator 52 contains eleven contacts 146, which are engageable by the brush 99. When the switch 29 is closed, the brush 99 transmits eleven impulses to the register 38, by way of the eleven contacts 146.

The next row contains thirteen contacts 148, which are engageable by the brush 100. Thus, thirteen impulses are transmitted to the register 38 when the switch 30 is closed.

Finally, the outermost row on the commutator 52 contains eighteen contacts 150 which are engageable by the brush 101. As before, all of the contacts 150 are connected to the slip ring 104. Thus, eighteen impulses are transmitted to the register 38 when either the switch 31 or the switch 32 is closed.

It will be seen from FIGS. 1, 3 and 4 that the contacts 142, 144, 146, 148 and 150 extend through the insulating disk 94 and are exposed on both sides thereof. The brushes 97—101 are adapted to engage the contacts 142—150 on the front side of the disk. In FIG. 1, the rear side of the disk 94 is shown. The slip ring 104 and all of the contacts 142—150 are connected together by a network of conductors 151 on the rear side of the disk 94. It will be apparent that the brushes 97—101 are engageable with the contacts 142—150, but not with the conductors 151, which are on the opposite side of the disk 94 from the brushes.

During the rotation of the cam 58, the special dispense register 40 is actuated, if the switch 33 is closed. This is brought about by a switch 152, which is connected between the contact 33*c* and one side of the register 40, the other side of the register being connected to the power line 48. As illustrated, the switch 152 comprises normally open spring contacts 152*a* and 152*b*, which are adapted to be closed momentarily by the pin 136 as the cam 58 rotates. Thus, the contact 152*a* is equipped with a shoe 154 which is adapted to be engaged by the pin 136. The arrangement of the switch 152 insures that only a single impulse will be transmitted to the register 40.

The cycle register 36 is under the joint control of the switches 64 and 68. Thus, both of the switches 64 and 68 must be closed to energize the register 36. In this case, the switch contact 68*a* is connected to the power line 46. A lead 158 extends between the contact 68*b* and the contact 64*b*. One side of the register 36 is connected to the contact 64*a*, while the other side is connected to the power line 48. It will be evident that the register 36 is energized after the fork arm 70 has returned to its original position and has closed the switch 64, but while the timing arm 82 remains in its forwardly displaced position, in which it closes the switch 68. This arrangement insures that only one impulse will be transmitted to the register 36 for each cycle of the dispensing machine 12.

It has already been indicated that the motor 54 is de-energized when the cam rider 134 drops into the notch 132. Thus, the effect of the notch 132 is to index the cam 58 and the commutator 52 to a preliminary stopping position, slightly in advance of the home position, represented by the notch 130. The cam 58 remains in this position until the next cycle of the dispensing machine. Then, the operation of the switch 68 re-energizes the motor 54, so as to advance the cam 58 and the commutator 52 to their home positions. This is brought about by connecting the switch contact 68*c* to the lead 126 through a switch 160, which is closed by the pin 136 when the cam 58 is in its preliminary stopping position. Thus, the switch 160 comprises normally open spring contacts 160*a* and 160*b*. The contact 160*a* is connected to the contact 68*c*, while the contact 160*b* is connected to the lead 126. The contact 160*a* carries a shoe 162 which is adapted to be engaged by the pin 136 when the cam rider 134 enters the notch 132.

When the switch 68 is closed, the relay winding 60*a* is energized, so as to start the motor 54. The relay armature 60*b* pulls the rider 134 out of the notch 132. The rotation of the cam 58 moves the notch 132 away from the rider 134, so that the relay armature 60*b* is held in its displaced position by the circular periphery of the cam 58. Thus, the motor 54 continues to run,

even though the pin 136 moves away from the shoe 162 so as to cause the switch 160 to open. The motor 54 continues to run until the cam rider 134 drops into the notch 130. The cam 58 and the commutator 52 are then in their home positions. The homing movement of the cam 58 requires only a short time and is completed before the completion of the cycle of the dispensing machine 12.

Thus, the motor relay 60 is energized at the end of the cycle of the dispensing machine 12, by the closure of the switch 66, provided that one of the switches 28—33 is operated. These switches are adapted to be operated by the levers 22—27 which control the dispensing of articles from the machine 12. The motor 54 rotates the commutator 52 which transmits impulses from the switches 28—32 to the main dispense register 38. The impulses correspond in number to the number of articles dispensed by the machine 12 in response to operation of the levers 22—26.

The cam 58 and the commutator 52 stop in the preliminary stopping position, when the cam rider 134 drops into the notch 132. During the next operating cycle of the dispensing machine, the cam 58 and the commutator 52 advance to their home positions, where the rider 134 drops into the notch 130. This arrangement insures that the cam 58 and the commutator 52 will rotate through only one revolution for each dispensing cycle of the machine 12.

During each cycle of the machine 12, the cycle register 36 is operated by the switches 64 and 68. If the switch 33 is closed by the operation of the lever 27, the special register 40 is energized during the rotary cycle of the cam 58, by the closure of the switch 152 when the pin 136 engages the shoe 154.

It will be apparent that the registering device records the number of coins deposited in the dispensing machine, and also the number of articles dispensed by the machine. Thus, the registering device establishes definite inventories of the deposited coins and the dispensed articles, so that all of the coins and articles will be accounted for.

Various modifications, alternative constructions and equivalents may be employed without departing from the true spirit and scope of the invention, as exemplified in the foregoing description and defined in the following claims.

I claim:

1. In a registering device for dispensing machines, the combination comprising a plurality of actuating switches operable in response to the dispensing operations of the dispensing machine, a first control switch operable at the conclusion of the dispensing cycle of the machine, a commutator having a plurality of rows of contacts thereon, said rows having different numbers of contacts therein, a plurality of brushes engageable with the respective rows of contacts on said commutator, an electric motor for rotating said commutator, a relay for energizing said motor, a control circuit connecting said relay to said actuating switches and said control switch for energizing said relay in response to the joint operation of said control switch and one of said actuating switches, a register, means connecting said contacts to said register for transmitting impulses from said contacts to said register, means connecting said actuating switches to said brushes for energizing said brushes in response to operation of said actuating switches, a cam rotatable with said commutator, said relay having means for engaging said cam to maintain said relay in an actuated position after initial energization of said relay, said cam having means for de-energizing said relay after initial movement of said cam, a formation on said cam for returning said relay to its initial position after rotation of said cam through less than one revolution, an additional control switch operable during the operating cycle of the dispensing machine, means responsive to the operation of said additional control switch for re-energizing said relay, and an additional formation on said cam for returning said relay to its original position at the original position of said cam.

2. In a registering device for a dispensing machine, the combination comprising a first control switch operable near the end of the dispensing cycle of the machine, a plurality of actuating switches operable in response to the dispensing operations of the machine, means connecting said control switch to said actuating switches for energizing said actuating switches in response to operation of said control switch, a commutator having a plurality of circular rows of contacts thereon, said rows having different numbers of contacts therein, a plurality of brushes engageable with said contacts in the respective rows, means connecting said brushes to the respective actuating switches for energizing each brush in response to the operation of the corresponding actuating switch, an additional brush engageable with said commutator, an additional row of contacts for connecting said first mentioned brushes to said additional brush in the initial position of said commutator, a motor for rotating said commutator, a register connected to said first mentioned contacts on said commutator for receiving impulses from said contacts, a relay for energizing said motor, means connecting said relay to said additional brush for energizing said relay in response to operation of any of said actuating switches, a cam rotatable with said commutator, said cam having a circular periphery with first and second notches therein, said relay having an armature with a cam rider thereon adapted to be received in said notches, said rider being received in said first notch in the initial position of said cam, the circular periphery of said cam being effective to hold said relay in its actuating position after initial movement of said cam, said rider being adapted to be received in said second notch to stop said motor after slightly less than one revolution of said cam, a second control switch operable during the dispensing cycle of the dispensing machine, a third control switch adjacent said cam, said cam having an element thereon for operating said third control switch when said rider engages said second notch in said cam, and means connecting said relay to said second and third control switches for reenergizing said relay in response to joint operation of said second and third control switches so as to return said cam to its initial position with said rider engaging said first notch.

3. In a registering device for dispensing machines, the combination comprising a plurality of actuating switches operable in response to the dispensing operations of the dispensing machine, a commutator having a plurality of rows of contacts thereon, said rows having different numbers of contacts therein, a plurality of brushes engageable with the respective rows of contacts on said commutator, an electric motor for rotating said commutator, a relay for energizing said motor, a control circuit connecting said relay to said actuating switches for energizing said relay in response to the operation of any one of said actuating switches, a register, means connecting said contacts to said register for transmitting impulses from said contacts to said register, means connecting said actuating switches to said brushes for energizing said brushes in response to operation of said actuating switches, a cam rotatable with said commutator, said relay having means for engaging said cam to maintain said relay in its actuated position after initial energization of said relay, said cam having means for de-energizing said relay after initial movement of said cam, a formation on said cam for returning said relay to its initial position after rotation of said cam through less than one revolution, a control switch operable during the operating cycle of the dispensing machine, means responsive to the operation of said control switch for re-energizing said relay, and an additional formation on said cam for returning said relay to its original position at the original position of said cam.

4. In a registering device for dispensing machines, the

combination comprising a plurality of actuating switches operable in response to the dispensing operations of the dispensing machine, an additional actuating switch, a first control switch operable at the conclusion of the dispensing cycle of the machine, a commutator having a plurality of rows of contacts thereon, said rows having different numbers of contacts therein, a plurality of brushes engageable with the respective rows of contacts on said commutator, an electric motor for rotating said commutator, a relay for energizing said motor, a control circuit connecting said relay to said actuating switches and said control switch for energizing said relay in response to the joint operation of said control switch and one of said actuating switches, a register, means connecting said contacts to said register for transmitting impulses from said contacts to said register, means connecting said first mentioned actuating switches to said brushes for energizing said brushes in response to operation of said actuating switches, a cam rotatable with said commutator, said relay having means for engaging said cam to maintain said relay in its actuated position after initial energization of said relay, said cam having means for de-energizing said relay after initial movement of said cam, a formation on said cam for returning said relay to its initial position after rotation of said cam through less than one revolution, a second control switch operable during the operating cycle of the dispensing machine, means responsive to the operation of said second control switch for re-energizing said relay, an additional formation on said cam for returning said relay to its original position at the original position of said cam, an additional register, a third control switch connected in circuit with said additional actuating switch and said additional register and means on said cam to operate said third control switch so as to actuate said additional register when said additional actuating switch is operated.

5. In a registering device for dispensing machines, the combination comprising a plurality of actuating switches operable in response to the dispensing operations of the dispensing machine, a commutator having a plurality of rows of contacts thereon, said rows having different numbers of contacts therein, a plurality of brushes engageable with the respective rows of contacts on said commutator, a rotatable cam, an electric motor, means operable by said motor for effecting relative rotation between said commutator and said brushes while simultaneously rotating said cam, a relay for energizing said motor, a control circuit connecting said relay to said actuating switches for energizing said relay in response to the operation of any one of said actuating switches, a register, a plurality of impulse transmitting circuits connecting said actuating switches to said register through said rows of contacts and said brushes, each of said impulse transmitting circuits comprising one of said rows of contacts and the corresponding brush connected between one of said actuating switches and said register for supplying impulses thereto, said relay having means for engaging said cam to maintain said relay in its actuated position after initial energization of said relay, said cam having means for de-energizing said relay after initial movement of said cam, a formation on said cam for returning said relay to its initial position after rotation of said cam through less than one revolution, a control switch operable during the operating cycle of the dispensing machine, means responsive to the operation of said control switch for re-energizing said relay, and an additional formation on said cam for returning said relay to its original position at the original position of said cam.

6. In a registering device for a dispensing machine, the combination comprising a control switch operable near the conclusion of the dispensing cycle of the machine, a plurality of actuating switches operable in response to the dispensing operations of the machine, a commutator having a plurality of rows of contacts thereon, said rows containing different numbers of contacts, a plurality of brushes engageable with the contacts in the respective rows, an electric motor, a register, means responsive to joint operation of said control switch and any one of said actuating switches for energizing said motor to effect relative rotation of said commutator and said brushes through a portion of one revolution, said contacts being engageable with said brushes during said portion of such revolution, a plurality of impulse transmitting circuits connecting said actuating switches to said register through said rows of contacts and said brushes, each of said circuits comprising one of said rows of contacts and the corresponding brush and being connected between one of said actuating switches and said register for supplying impulses thereto, and means operable at the beginning of the next dispensing cycle of the machine for again energizing said motor to effect relative rotation of said commutator and said brushes through the remainder of such one revolution so as to bring said commutator and said brushes to their original relationship.

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