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PREMIUM INDICATING DEVICE

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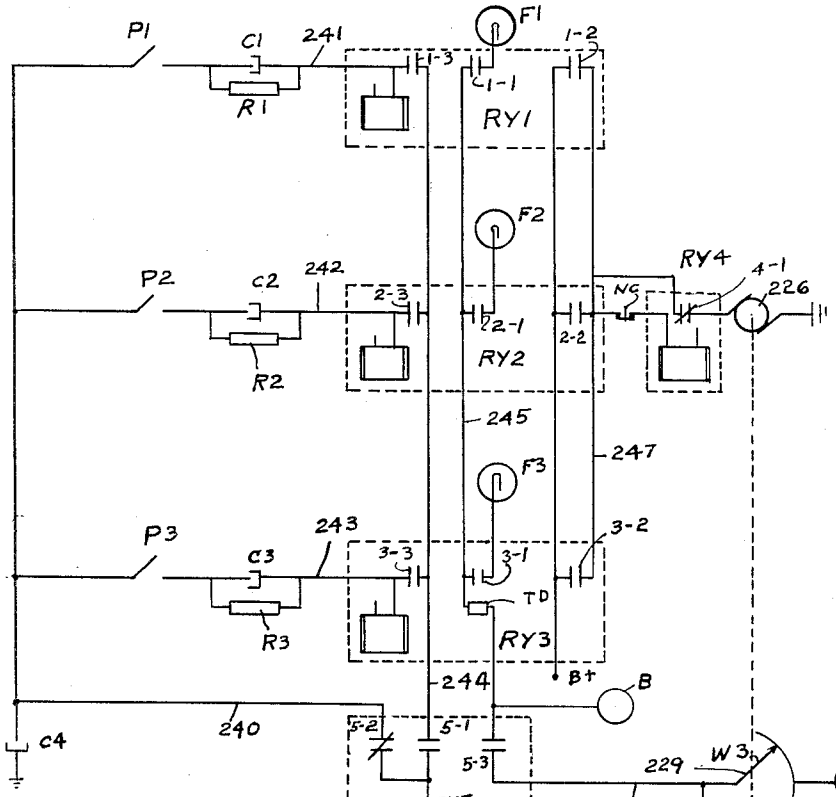

Fig. 1.

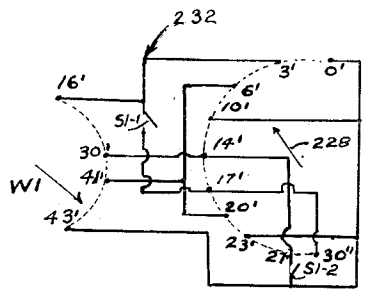

Fig. 2

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PREMIUM INDICATING DEVICE

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This invention relates to premium indicating devices and, more particularly, to devices for use in connection with dispensing mechanisms such as gasoline filling station pumps, supermarket cash registers, and the like.

Various means for attracting customers have been used such as premium stamps, number drawings, and the like; however, each of these methods involves the customer carrying with him cards, stamps, and papers and collecting these cards, stamps, and papers which becomes laborious and inconvenient. Further, any premium is not granted to the customer on the spot of the purchase. Therefore, much of the appeal of the premium is lost.

It is, accordingly, an object of this invention to provide a premium indicating device for use in connection with a dispensing device which will indicate at a random time a particular sale when a customer is entitled to a premium. This invention has particular utility in connection with gasoline pumps wherein a customer will be awarded a premium, for example, a free tank of gasoline, if his turn at the pump should be the winning turn. The device also has utility in connection with cash registers which are broadly termed dispensing devices herein where such cash registers are used in grocery stores, supermarkets or the like to indicate when a customer is entitled to a premium and, therefore, attract the attention and interest of customers.

Another object of the invention is to provide an improved premium indicating device.

Still another object of the invention is to provide a premium indicating device which will operate at random at a predictable frequency.

A further object of the invention is to provide a premium indicating device which is simple in construction, economical to manufacture and simple and reliable to use.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportions, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

FIG. 1 is a view of a wiring diagram for a premium indicating device for use with gasoline pumps or the like; and

FIG. 2 is an enlarged view of the stepping switch connection.

Now with more particular reference to the drawing, the premium indicating system shown in FIGS. 1 and 2 is shown by way of example for use with three gasoline pumps or three cash registers and is made up basically of three pumps or device relays RY1, RY2, and RY3, a reset relay RY4, and a win relay RY5. A first stepping switch S1 is of the type commonly found in telephone switchboard offices having three stages and a second stepping switch S2 is of similar kind but having a single stage.

The stepping switch S1 may have thirty-three points and the stepping switch S2 may have fifty-two points. The three stages of the first stepping switch have wiper arms W1, W2, and W3, respectively. For an example of a combination for a given probability setup, switch S1 may have fixed contact 16' connected to fixed contacts 3', 17', and 30'' of switch S2; contact 30' on switch S1 will be connected to S2 contacts 14' and 27'; S1 contact 41 may be connected to contacts 6' and 20' on S2; and S1 contacts 43' may be connected to 0', 23', and 10' on S2; S1 contact 43' is also connected to contacts 27' and 14' through switch S1–2. Switches S1–1 and S1–2 may be opened or closed to vary this arrangement.

Relays RY1, RY2, and RY3 have three normally open contacts 1–1, 1–2, and 1–3; 2–1, 2–2, and 2–3; and 3–1, 3–2, and 3–3, respectively. Relay RY4 has a single normally closed contact 4–1 and relay RY5 has two normally open contacts 5–1 and 5–3 and a single normally closed contact 5–2.

Switches P1, P2, and P3 indicate limit switches which are closed when the operator lifts the gasoline delivery hose from the pump to dispense gasoline. One side of these switches P1, P2, and P3 is connected together and to normally closed contact 5–2 through a wire 240. The other side of contact 5–2 is connected to one side of normally open contact 5–1, to the wire 231 and to the intermittent contact INT on switch S1 through an OFF–ON switch to the motor 224 and to a source of D.C. voltage indicated at B+. Contact INT closes once at the end of each complete rotation of the wiper arms of switch S1. Timing circuits indicated by C1, R1; C2, R2; and C3, R3; are connected to the solenoids of the relays RY1, RY2, and RY3, respectively, and to one side of their normally open contacts 1–3, 2–3, and 3–3, respectively, through wires 241, 242, and 243. The other sides of the normally open contacts 1–3, 2–3, and 3–3 are connected through a wire 244 to one side of the normally open contact 5–1.

One side of the normally open contacts 1–1, 2–1, and 3–1 are connected through a wire 245 and through a time relay TD to one side of relay contact 5–3 and to a buzzer B. The other side of contact 5–3 is connected through a wire 246 to the wiper arms W2 and W3 on the stepping switch S1. The other sides of the relay contacts 1–1, 2–1, and 3–1 are connected to the respective free indicating lights F1, F2 and F3.

One side of contacts 1–2, 2–2 and 3–2 are connected together and to B+. The other sides are connected together through a wire 247 and through a reset button NC to the solenoid of relay RY4. The wire 247 is also connected through normally closed contact 4–1 to a motor 226 of stepping switch S1.

All of the odd fixed contacts plus contacts numbered 4, 16, 20, 24, 30, 46, 48 and 50 on stage 229 are connected to the green light G through common wires so that any time the wiper arm W2 rests on one of these contacts, the green light G will light. In like manner all even contacts plus contacts 35, 41, 43, 47, and 49 on the stage having wiper arm W3 may be connected to the red light R so that when the wiper arm 230 rests on one of these contacts, the red light R will light.

The various connections can be varied on the stepping switches to change the probability of winning combinations.

The operation of the device is as follows: Suppose, for example, the No. 2 pump connected to actuate limit switch P2 has a customer. When the operator lifts the hose to deliver the gasoline, switch P2 will close and will remain closed until the operator replaces the hose. This will actuate the relay RY2 and close contacts 2–1, 2–2 and 2–3 for a limited time, for instance, two seconds, through the C2–R2 circuit. This will connect the power from B+ through contacts 2–2 and 4–1 to motor 226 which will cause the switch S1 to step and advance

its wiper arms one position. Relay RY4 will be energized through reset NC. It will open contact 4–1 and de-energize motor 226. When relay RY2 drops out after the predetermined two second period, for example, relay RY4 will be de-energized and contact 4–1 will again close, ready for the next customer.

In this example, an instance is assumed where the contacts on the stepping switches S1 and S2 do not complete a circuit from B+ to wire 228 and, therefore, winning relay RY5 will not close. Contact INT is closed by stepping switch S1 each time its wiper arm makes one complete cycle to all of its contacts. When INT closes, it actuates M2 and advances switch S2 one position. The INT contact of switch S1 opens and closes each time switch S1 is energized. After a winning combination, it is necessary to manually open reset NC to open relay RY4 and close contact 4–1 so that the circuit will again operate.

Now assume that stepping switch S1 steps to a position where it will complete a circuit from B+, wire 231 and one of the wires 232 to W4, wire 228, and to relay RY5 when the operator lifts the hose from limit switch P3. This time, relay RY3 will close, connecting power to motor 226 which will advance stepping switch S1 to the position to complete the circuit to relay RY5 through the winning combination. This will connect B+ through wiper arm W1 and one of the wires 232, W4, and wire 228, to relay RY5. Contact 5–2 will break the circuit to the wire 240 and contacts 5–1 and 5–3 will connect power to the solenoid of relay RY3 as well as to the winning light F3, indicating that the customer wins. Condenser C4 will hold relay RY3 energized by imposing, say, a one hundred and fifty volt potential thereon during the transient interval during which relay RY5 is operating since, during this transient period, contact 5–1 will be closed and B+ disconnected from relay RY3. Condenser C4 may be, for example, 80 mfd. This condenser C4 holds the wire 240 at a potential of one hundred fifty volts during the transient interval of RY5 contact's operation.

The win relay RY5 connects the one hundred and ten volt power through wire 246 and through circuit 5–3 through the time relay TD to the winning indicator, in this example, F3. The time delay is for the purpose of providing a time between the start of gas delivery and the signal, thus providing more interest to the customer.

The buzzer B also is actuated when any of the three indicators F1, F2, or F3 is actuated to add additional interest. The probability that any one actuation of a switch P1, P2 or P3 will result in moving switch S1 to a position that will connect wire 231 to wire 238 is mathematically predictable.

The foregoing examples show a device for indicating when a premium should be paid in connection with a dispensing machine such as a cash register or a filling station gasoline pump and this invention will increase sales and cause considerable customer interest in the device.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A premium indicating device having indicating device members thereon comprising a plurality of connecting means for disconnecting said device members from an electrical signal actuated by the actuation of dispensing device members, a circuit having a plurality of device relays connected therein for said dispensing devices, means on each of said indicating device members whereby said device relays are actuated when said dispensing devices connected thereto are actuated, a source of power, a signal device, a reset relay, a first and a second stepping switch, said device relays connecting said first stepping switch to a source of power each time a said device relay is actuated, means on said first stepping switch actuating said second stepping switch each time said first stepping switch is actuated through a complete cycle, said reset relay disconnecting said first stepping switch from said source of power each time one of said device relays is actuated, and means connected to said stepping switches to actuate said signal to indicate a winner when both said stepping switches reach a predetermined position.

2. The device recited in claim 1 wherein said second stepping switch has a predetermined number of fixed contacts thereon connected to a predetermined number of fixed contacts on said first stepping switch whereby said winner is indicated, said stepping switches being actuated intermittently from a source of electrical energy.

3. A device for indicating a premium in connection with a dispensing device comprising a source of power actuated when said device is dispensing, said device comprising a circuit connected to said source of power, said circuit including a device relay, means connected to said device relay whereby said device relay is actuated by said dispensing device, said device relay having a first, a second, and a third normally open contact, a first stepping switch and a second stepping switch each having a motor, a win relay, the first said contact on said device relay being connected to said first stepping switch through a contact on said win relay, a second contact on said device relay connecting a source of power to said first stepping switch, said first stepping switch having a plurality of its fixed contacts connected to a plurality of the fixed contacts on said second stepping switch, said second stepping switch fixed contacts connecting a source of electrical power to said win relay actuating means when predetermined contacts on said stepping switches are connected together, said win relay having means thereon for connecting a win signal to a source of electrical power when closed, said win relay having a contact thereon connecting electrical power to said device relay actuating means, and a normally closed contact on said win relay disconnecting said electrical power from said device relay when said win relay is actuated.

4. The device recited in claim 3 wherein a capacitor is connected to said device relay whereby electrical power is applied to said device relay while said win relay is operating.

5. The device recited in claim 4 wherein a plurality of said device relays are provided for connecting to a plurality of dispensing devices, each said device relay having three contacts, one of said contacts being connected to a signal device, another said contact being connected through a reset relay, and a third said contact interlocking said device relays through one contact on said win relay when said win relay is actuated.

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