

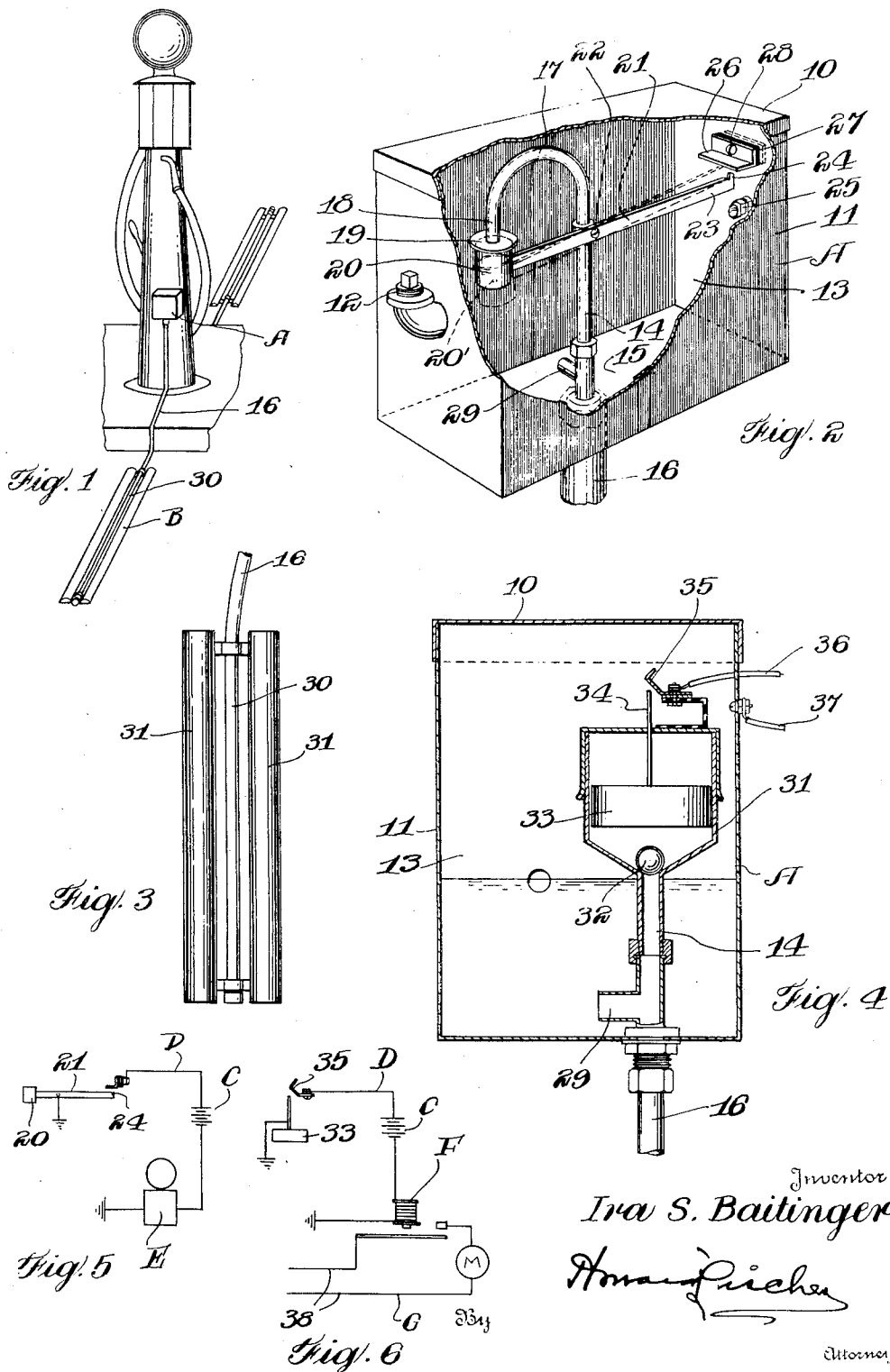
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VEHICLE ACTUATED ELECTRIC CONTROL

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VEHICLE ACTUATED ELECTRIC CONTROL

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7 Claims. (Cl. 200—85)

This invention relates to a vehicle actuated electric control. The control operates automatically when a vehicle passes over a drive plate connected to the control to provide a signal for a predetermined period of time. The control may be used for various purposes, a primary feature being to provide a service alarm at filling stations to indicate to the attendant that a vehicle has entered the filling station and desires service. The moment the vehicle passes over the operating vehicle plate, the control operates automatically to sound an alarm or to signal the attendant of the filling station. For filling stations several of the driveway plates may be installed and connected to one or more of the controller devices, thus adequately equipping the filling station so that the attendant may always be advised of a vehicle entering the station.

The controller may be used equally well for garages and other places where it is desired to operate the garage door by the passing of the vehicle over the driveway plate, or the vehicle actuated control may be used as a simple timer to control and operate a traffic signal, or for any other device where a sustained or timed operation is desired to maintain an electric circuit in closed position and wherein the circuit will be automatically opened after a predetermined period of time.

It is a feature to provide a controller having a tank member which is adapted to contain a liquid which may be of a non-freezing character for cold weather. The liquid in the tank operates the mechanism when a vehicle passes over the driveway plate. The mechanism in the tank is of a simple character, positive in its operation, and operated automatically to close a circuit by the passage of the vehicle over the drive plate, and after a predetermined period the mechanism of the controller automatically opens the circuit so that the operation may be repeated.

It is also a feature to provide a drive plate which is simple and which may be positioned in the driveway so that the vehicle may pass over the same. The drive plate is provided with a flexible member which connects directly with the controller and causes a quantity of liquid in the controller to be elevated into a cup-like member which causes the controller to operate to close an electric circuit. This flexible member may be of a tubular or hose-like nature, which is easily replaced and the simple passing of the vehicle wheel over the same operates to pump a portion of the liquid in the controller to operate the same.

These features, together with other details and objects will be fully set forth.

In the drawing forming part of this specification:

Figure 1 is a perspective view, showing the use of my vehicle actuated electric control with a gas filling station for automobiles.

Figure 2 is a perspective view of the control box, part of which is broken away.

Figure 3 is a plan view of one of the driveway plates.

Figure 4 illustrates a sectional view through the control box, showing a variation in the construction of the same.

Figure 5 is a diagrammatic plan view of the electric wiring and system used with my control.

Figure 6 is a diagrammatic wiring system which may be used with my control where the same operates a motor for controlling the operation of a garage door or a similar device.

The vehicle actuated electric control is provided with a controller box A which may be of a suitable size and nature so as to hold a quantity of liquid within the same. The controller box A can be square or of any other suitable shape, so that it may be conveniently mounted upon a support. It is preferred that the controller box A be placed where it is accessible so that the liquid from time to time may be replaced, if it is desired, to maintain liquid within the same.

The controller is formed with a cover 10 and a body portion 11, the cover 10 fitting tightly to the body 11 so as to virtually seal the liquid in the same and prevent evaporation of the liquid from the controller A. On one side of the container A I provide a filler plug 12 which is positioned so that liquid may be readily filled into the chamber 13 of the container 11 and the height of the filler plug 12 acts to gauge the height of the liquid filled into the body 11 so as to prevent over-filling of the same.

The controller A is formed with a tubular standard 14 which is supported in the chamber 13 and projects upwardly from the bottom of the container 11 to provide a hollow tube within the chamber 13. This tubular standard is connected by means of a pipe or hose 16 to the drive plate B which is located at any desired position in the driveway of the filling station or adjacent a garage door or in a highway where the wheels of vehicles may pass over the same. The upper end 17 of the tubular standard 14 is bent to form the downwardly depending por-

tion 13 which carries the washer end member 19 to act as a closure for the cup 20.

The cup 20 is held by the arm 21 which is pivotally attached to the tube 14 at 22 so that the cup 20 normally is held by the weight of the outer free end 23 of the arm 21 bearing up against the closure washer 19 supported on the end 18 of the tube 14. In this position the cup is held adjacent the open end of the tube 14 so that liquid may be elevated into the cup in the operation of the controller as will be later set forth.

The outer free end 23 of the arm 21 is formed with a contact point 24. An electrical connector 25 provides a means of connecting electric current to the body of the controller A which may pass through the arm 20 to the point 24. Adjacent the end 24 in the chamber 13 and normally above the same, I provide an electric contact member 26 which is held by the insulating block 27 to the side wall inside of the chamber 13 and from which leads an electrical connecting bolt 28. Thus one of the electrical connections for a circuit may be connected to the bolt 25 and the other to the bolt 29 so as to provide an electrical connection in the controller A.

The tube 14 is provided with a feeder nipple 29 so that the liquid within the chamber 13 may freely enter into the hollow tubular standard 14 to a height equal to the height of the liquid in the chamber 13. This maintains an operating column of liquid within the tube 14 at all times. When the flexible tube 30 which extends between the plates 31 is operated to compress the same by a vehicle wheel passing thereover, the column of liquid in the tube 14 will be pumped into the cup 20 causing the cup to be weighed down sufficiently to raise the contact end 24 to make an electric contact with the member 26, closing an electric circuit. The plates 30 may be of quarter or half round material so that the vehicle wheel may drop slightly onto the flexible tube 30 between the same as the wheel passes thereover. The flexible tube 30 may lie directly on the pavement of the driveway or street or may be reinforced in the back by a flat plate extending along under the same. The flexible tube 30 is preferably made easily replaceable so that it may be replaced when worn out and it is connected to the pipe 16 which leads to the standard 14, as illustrated in Figures 1 and 2.

The cup 20 is provided with a small hole 20' in the bottom of the same so that the liquid which has been pumped into the cup may drain out of the cup within a predetermined period. While sufficient liquid remains in the cup 20 to balance the arm 21 to hold the end 24 against the connector 26, the electric circuit connected to the bolts 25 and 28 is closed. When this circuit is in the form illustrated in Figure 5 and a suitable source of electric current such as C is connected in the circuit D, the alarm E will be operated as long as the circuit D is closed. When the cup 20 has drained out through the opening 20', the cup will automatically elevate and the end 24 will automatically disengage from the plate 26, thereby automatically opening the circuit D and stopping the alarm.

When my vehicle actuated electric control is operated as just described, and illustrated, connected to a filling station tank, as in Figure 1, the alarm E may be placed in the filling station or several alarms may be placed about the filling station so that the attendant may be quickly advised of a vehicle having entered the filling station for service. The operation of the controller

A is entirely automatic and continues to operate without any attention in a very desirable manner.

The controller box A may be made as illustrated in Figure 4, with the hollow standard 14 connected to an operating cup 31 at the upper end of the same. This cup 31 is provided with a ball check 32 to prevent the column of liquid which is pumped from the hollow standard 14 into the cup 31 by the vehicle passing over the drive plate B, draining too fast out of the same. Within the cup 31 I provide a float 33 which carries a contact rod 34 in position so as to contact with the electrical connector 35 when the float 33 is elevated in the cup 31 by liquid being pumped up into the same. Conductors 36 and 37 lead from the control box A to make the desired electrical connections with the circuit with which the control box is connected.

In Figure 6 I have diagrammatically illustrated the control box mechanism of Figure 4 connected with the circuit D so as to operate the relay F when the float 33 is elevated to contact with the plate 35. The relay in turn is connected with an auxiliary circuit G which is fed by the line current wires 38 and the circuit G is connected to the motor M which may be used for operating the opening and closing of a garage door, or the motor M may be used to operate a traffic signal if it is desired. Thus while the relay F is in operation, the circuit G will be closed to operate the motor M. As soon as the relay has been released, the circuit G will be opened and the motor M will cease to function.

The vehicle actuated electric control or box A and the drive plate B operate in a simple and effective manner. I have illustrated some simple applications in the use of the same and it is apparent that many other different applications or uses may be found for this simple device which is operated by vehicles passing over the same. There are no parts to get out of order in the controller A and the same is automatic in operation so that it requires little or no attention. The time of sustained operation may be varied in accordance with the proportions of the cup 20, the hole 20', or the structure like illustrated in Figure 4, however, the operation is positive and each time pressure is exerted against the flexible tube 30 liquid is pumped virtually instantly and automatically to the operating parts of the controller A. These parts in turn function automatically and thus this vehicle actuated electric control is very desirable for the purposes specified.

In accordance with the patent statutes, I have described the principles and uses of the invention. I desire to have the same interpreted within the scope of the following claims irrespective of the particular adaptation shown in the drawing.

I claim:

1. An electric control including a controller box adapted to form a liquid storage tank, a tubular standard extending within said tank, a fluid passage between said tank and said standard for maintaining liquid within said standard, a movably mounted cup mounted in said tank in position to receive liquid from said standard, the weight of a predetermined amount of liquid moving said cup, and electrical switch means secured to said cup to be actuated thereby into closed position when said predetermined amount of liquid flows into said cup.

2. An electric circuit closer including a container in which liquid is adapted to be supported,

5 a hollow standard projecting upwardly in said container and having a fluid passage connecting said standard and said container for maintaining liquid in said standard, a movably mounted cup in said container positioned to receive liquid flowing from said standard and to be moved thereby, a small drain provided within said cup, and an electric switch connected to and operated by movement of said cup to close the switch.

10 3. An electric circuit controller including a container adapted to provide a source of supply of liquid, a hollow standard within said container, an open nipple projecting from the side of said standard to maintain liquid within said standard, an operating cup in said container positioned to receive liquid from the upper end of said standard, means sensitive to the weight of a predetermined quantity of liquid for closing an electric circuit when liquid is forced from said standard into said cup, and means for causing the liquid to drain slowly out of said cup where-
20 by an electric circuit is held closed for a predetermined period.

25 4. A circuit closer including a tank partially filled with liquid, a hollow standard in said tank extending above said liquid, a cup mounted for movement above the liquid level to receive liquid flowing through said standard, said cup being

movable by the weight of said liquid therein, and switch means connected to, and operated by, said cup, and vent means from said tank to said standard beneath the level of said liquid to maintain liquid in said standard to said liquid level. 5

5. A circuit closer including a tank, a standard within said tank, said standard being hollow to transmit a flow of liquid, a lever pivoted to said standard intermediate the ends thereof, a cup secured to said lever on one side of said standard positioned to receive liquid from said standard, and a switch on said lever on the other side of said standard. 10

6. A circuit closer including a tank, a standard mounted in said tank, an arcuated upper end on said standard, said standard being hollow to provide an inverted J-shaped passage therethrough, a lever pivoted to said standard, a cup on said lever positioned beneath the extremity of said arcuated end, and a switch mounted on said lever for actuation by movement of said cup. 15 20

7. A circuit closer including a tank, a standard upstanding in said tank, means pivotally mounted on said standard and operable by the flow of liquid through said standard and switch means operated by said pivotally mounted means. 25

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