Oct. 21, 1952 A. J. WEAVER 2,615,100

DELAYED ELECTRIC MERCURY SWITCH

Filed Aug. 16, 1950

Fig. 1.

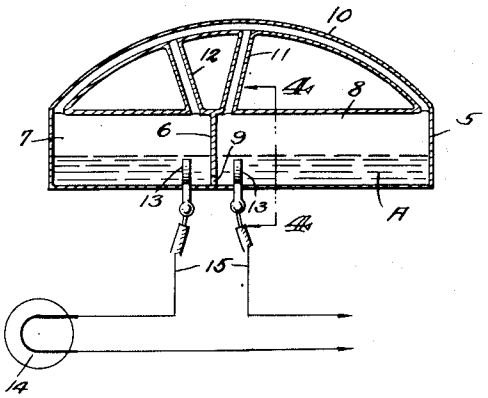


Fig. 2.

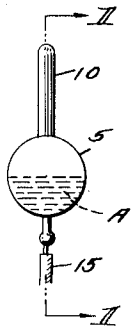


Fig. 4.

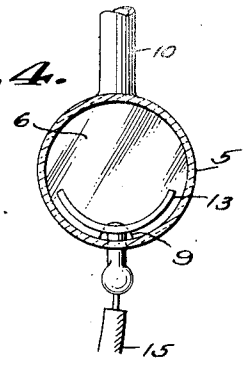
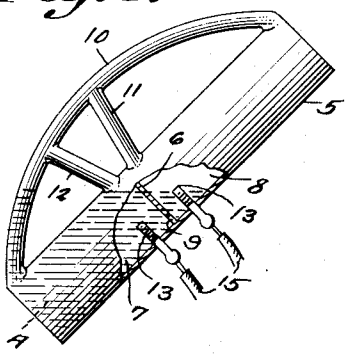


Fig. 3.



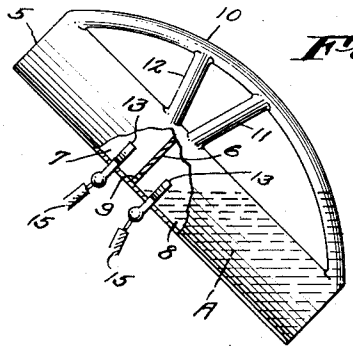


Fig. 5.

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DELAYED ELECTRIC MERCURY SWITCH

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2 Claims. (Cl. 200—33)

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This invention relates to electric switch construction, and particularly to electric switches of the mercury type.

The primary object of the invention is to provide a mercury switch so constructed and arranged that the mercury which engages the contact points of the switch to complete the circuit, will be delayed in its action to the end that the switch may be operated to break the electric circuit to an electric lamp in such a way that the lamp will remain lit for a period of time, depending on the construction of the switch, before operating to cut off the circuit to the lamp.

An important object of the invention is to provide a switch of this character which may be moved to a position to maintain the circuit between the contact points of the switch, closed for ordinary usage.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing

Figure 1 is a longitudinal sectional view taken on line 1—1 of Fig. 2.

Fig. 2 is an end elevational view of the switch.

Fig. 3 is a side elevational view of the switch a portion of the wall of the switch having been broken away illustrating the contacts therein.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is an elevational view illustrating the switch as tilted in a direction opposite to the direction tilted in Fig. 3, illustrating the switch in its delayed "off" position.

Referring to the drawing in detail, the switch comprises a tube 5 which may be supported in a suitable support not shown, which will permit of longitudinal tilting of the tube.

As shown, the tube is provided with a partition 6 which divides the interior of the tube into a short compartment 7 and a substantially long compartment 8, the partition having an opening 9 therein, the opening 9 being disposed at the bottom of the tube 5, so that the mercury, which is indicated by the reference character A and which is contained in the tube 5, may flow from one compartment to the other.

The reference character 10 indicates a curved tube which extends between the ends of the main

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tube 5, and communicates with the main tube 5, at the ends thereof, the tube 10 being connected with the upper side of the tube 5, as clearly shown by Fig. 1 of the drawing.

Communicating with the compartment 8 at a point adjacent to the partition 6 at one side of the partition 6, is the tube 11, while at the opposite side of the partition 6, is the tube 12 which establishes communication with the compartment 7 and the curved tube 10.

Extending into the main tube 5, and disposed at opposite sides of the partition 6, are the curved contact members 13 which are connected in the circuit between the switch and lamp 14, through the wires 15.

From the foregoing it will be seen that when the main tube 5 has been moved to the position as shown by Fig. 1 of the drawing, the mercury will contact the contact members 13, completing the circuit to the lamp.

It is obvious that when the main tube is tilted to the position shown by Fig. 3 of the drawing, the circuit will also be completed to the lamp. However, when the main tube is tilted in the opposite direction or to the position as shown by Fig. 5 of the drawing, the mercury will remain in contact with the contact members 13, until the mercury has flowed from the compartment 7, to the compartment 8, through the opening 9, to the end that after the switch has been operated to break the circuit to the lamp, the lamp will remain lighted until the person operating the switch has had ample time to, for example, get into bed, or pass from a garage or room before the lamp will actually be extinguished.

By varying the size of the opening in the partition, it is obvious that the period of time for which the lamp will remain lit after having been operated to cut off the light, may be varied to meet various requirements of use.

It will also be noted that because of the tubes which are in communication with opposite sides of the main tube, the air will be vented from one compartment to the other to allow for the movement of the mercury from one compartment to the other.

Having thus described the invention, what is claimed is:

1. In a delayed mercury switch, a tiltable main switch tube, a partition dividing the switch tube into compartments, said partition having an opening adjacent to the bottom thereof through which mercury gradually flows from one compartment to the other, contact members mounted within the compartments at opposite sides of

the partition and adjacent to the partition, said tube containing mercury adapted to contact with said contact members simultaneously, a curved tube connecting the outer ends of the compartments and being in communication with said compartments, and tubes establishing communication between the inner ends of the compartments and said curved tube, at a point intermediate the ends of the curved tube.

2. In a delayed mercury switch, a tiltable main switch tube, a partition dividing the switch tube into compartments, said partition having an opening disposed adjacent to the bottom of the partition through which mercury in said tube gradually flows from one compartment to the other, contact members extending into the compartments at opposite sides of the partition, a quantity of mercury in said compartment adapted to flow from one compartment to the other breaking the circuit when the supply of mercury exhausts from one of said compartments, and a tube having its ends connected with said compartments into which air passes from the compartments as the mercury displaces the air in the compartments.

ALBERT JOHN WEAVER.

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The following references are of record in the file of this patent:

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