Oct. 10, 1933. C. HATAY 1,930,092

MERCURY SWITCH

Filed May 1, 1929

Fig. 1.

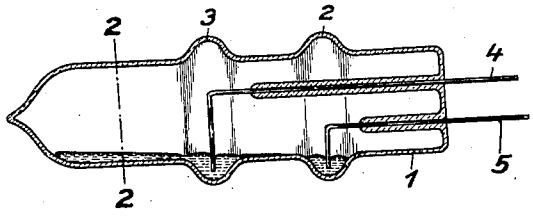
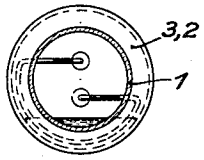


Fig. 2.



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UNITED STATES PATENT OFFICE

1,930,092

MERCURY SWITCH

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Application May 1, 1929, Serial No. 359,652, and in Germany May 7, 1928

1 Claim. (Cl. 200—152)

My invention refers to mercury switches and has for its particular purpose to provide means whereby such switches are rendered more resistive and more efficient than similar switches hitherto devised.

In the switch according to this invention the outer tube, which may be a closed glass tube, and into which extend two electrodes, is formed with two bulging portions or circumferential enlargements, designed to replace the small cups filled with mercury, into which dip the electrodes of mercury switches as hitherto designed.

The new form of glass tube offers quite a number of advantages. The circumferential enlargements of the tube act after the manner of stiffening or reinforcing ribs and all inner strains resulting at the points where the cups were formerly fixed to the glass tube are avoided. In operation these enlargements offer the advantage that a mercury body of considerable width is formed therein, which offers a large contact surface. The electrodes are in contact with the mercury in these enlargements over a considerable part of their length, whereby the resistance is reduced. The electrodes can further be introduced into these enlargements at a point, which is not covered by mercury, and in consequence thereof the movements of the mercury are not impeded by the electrodes so that switching can be effected at a smaller angle.

In the drawing affixed to the specification and forming part thereof a switch embodying my invention is illustrated diagrammatically by way of example.

In the drawing,

Fig. 1 is an axial section, while

Fig. 2 is a cross section on the line 2—2 in Fig. 1.

Referring to the drawing, 1 is the glass tube and 2 and 3 are two circumferential enlargements formed in the wall of the tube. 4 and 5 are the two electrodes extending into the tube from one end thereof. The free ends of the electrodes are bent through part of a circle as shown in Fig. 2, and are substantially immersed in the mercury filling these enlargements.

On the tube being tilted, that part of the mercury which is intended to flow from electrode 5 towards electrode 4 is not in any way impeded by the electrodes.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described for obvious modifications will occur to a person skilled in the art.

I claim:—

A tilting mercury switch comprising a tube having a substantially horizontal axis, mercury in said tube, two inleads sealed through one end of said tube, a circumferential enlargement in the wall of said tube near said end, and a second circumferential enlargement in the wall of said tube, near the midpoint thereof, each of said enlargements having a depth such that a pool of said mercury is retained thereby at all operative positions of said switch, each of said inleads extending circumferentially into one of said enlargements and terminating in one of said pools.

CHARLES HATAY.