F. CONRAD.

VAPOR ELECTRIC DEVICE.

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1,101,523.

Patented June 30, 1914.

Fig. 1.

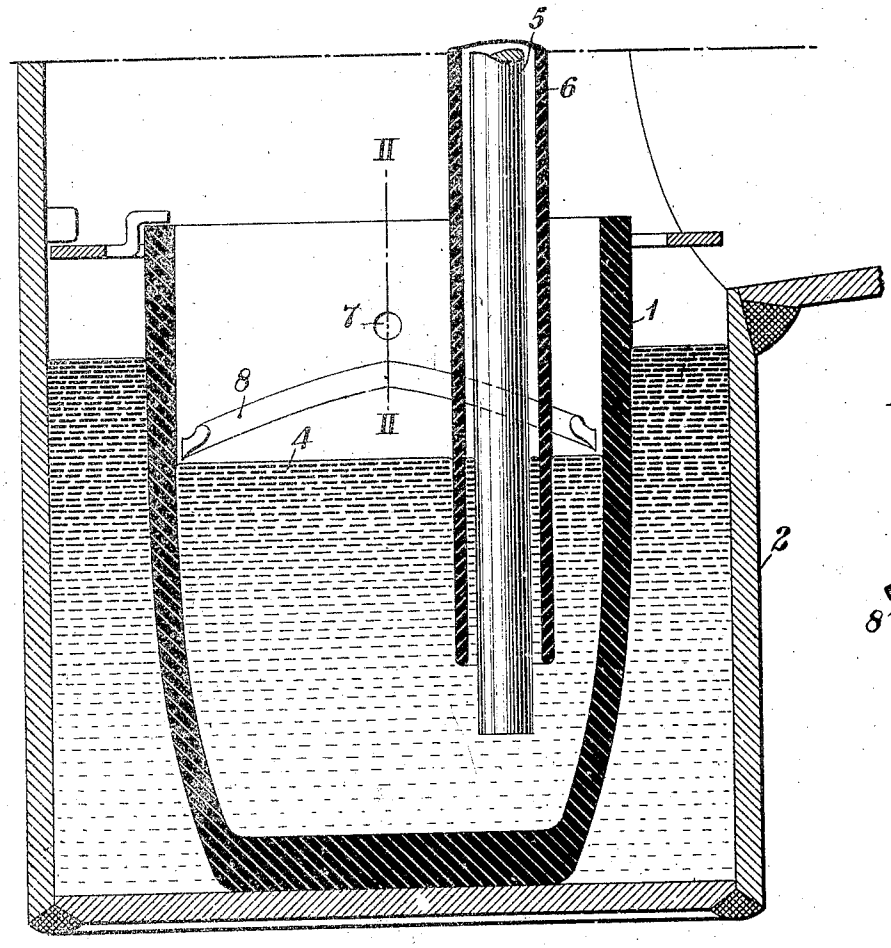
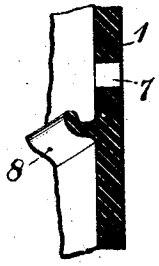


Fig. 2.



WITNESSES:

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VAPOR ELECTRIC DEVICE.

1,101,523. Specification of Letters Patent. Patented June 30, 1914.

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To all whom it may concern:

Be it known that I, FRANK CONRAD, a citizen of the United States, and a resident of Swissvale, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Vapor Electric Devices, of which the following is a specification.

My invention relates to vapor electric apparatus, and it has for its object to provide a cup or container for the mercury or other vaporizable electrode of such apparatus which shall be so constructed as to prevent the completion of an electrical connection of the vaporizable electrode with parts external to the cup or container when the condensed vapor of the electrode overflows into the cup.

Figure 1 of the accompanying drawing is a vertical sectional view, through a part of a rectifier that embodies my invention, and Fig. 2 is a sectional view of a part of the container along the line II—II of Fig. 1.

The cup or container 1 constituting the present invention is adapted for use in vapor electric apparatus, such as a rectifying device having an iron or other metallic or conducting casing 2 upon the bottom of which the cup or container rests, a suitable amount of space being left between the sides of the cup and the sides of the container into which condensed vapor of the mercury drains and in which it is collected. The cup or container 1 is preferably composed of quartz, porcelain, or any other suitable insulating material, in order that the mercury 4, which it contains and which constitutes the vaporizable electrode, may be insulated from parts exterior thereto. The mercury within the cup is adapted to be connected to a circuit by means of a lead 5 that extends into the same and is surrounded by an insulating sleeve 6. Mercury that collects in the space surrounding the cup is admitted to the interior of the cup through an aperture or inlet 7 whenever it attains a height slightly above the said inlet which is located at a suitable distance below the top of the cup. The inlet 7 may, if desired, be simply a notch in the top of the cup or any other means for permitting the mercury to flow into the cup only at predetermined points, and more than one may be provided, preferably at diametrically opposite points.

Formed integral with, or otherwise suitably secured to, the inner sides of the cup, with its middle or highest point directly and somewhat below the inlet 7, is a trough 8 that is inclined downwardly in oppposite directions from its middle point. The trough serves to divide the stream of mercury that overflows into the cup and to conduct it around the sides of the cup, thereby providing a relatively long path for its return into the cup, over the entire length of which it is highly improbable that a continuous stream of mercury will extend. The streams of mercury being thus broken up, there is little or no possibility of an electrical connection being effected between that within the cup and that without, by reason of its overflow. Of course, if the cup is provided with more than one inlet, a corresponding number of troughs will also be provided, though two inlets will usually be found sufficient.

I claim as my invention:

1. A vapor electric device comprising a casing, a vaporizable electrode and an electrode-containing cup having a side inlet and internal means located below the inlet for conducting condensed vapors from the inlet around the inner side surface of the cup.

2. A vapor electric device comprising a casing, a vaporizable electrode, and an electrode-containing cup located within the casing and having an inlet below its top and an inclined trough upon its inner side surface below the inlet.

3. A vapor electric device comprising a casing, a vaporizable electrode, and an electrode-containing cup located within the casing and having an inlet below its top and a trough located upon its inner side surface below the inlet and inclined downwardly in opposite directions therefrom.

4. A vapor electric device comprising a metal casing and an insulating cup located within said casing and containing a vaporizable electrode and provided with a side inlet and with a trough below the inlet.

5. A vapor electric device comprising a

metal casing, a vaporizable electrode and an insulating electrode-containing cup having a side inlet and a deflecting trough located below the inlet.

6. A vapor electric device comprising a metal casing, a vaporizable electrode, and an insulating electrode-containing cup located in said casing and provided with a side inlet and with a trough located below said inlet and inclined downwardly in opposite directions therefrom.

In testimony whereof, I have hereunto subscribed my name this 30th day of Dec. 1910.

FRANK CONRAD.

Witnesses:
A. W. COPLEY,
B. B. HINES.