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VAPOR ELECTRIC DEVICE.

APPLICATION FILED JAN. 7, 1911.

1,101,665. Patented June 30, 1914.

Fig. 1.

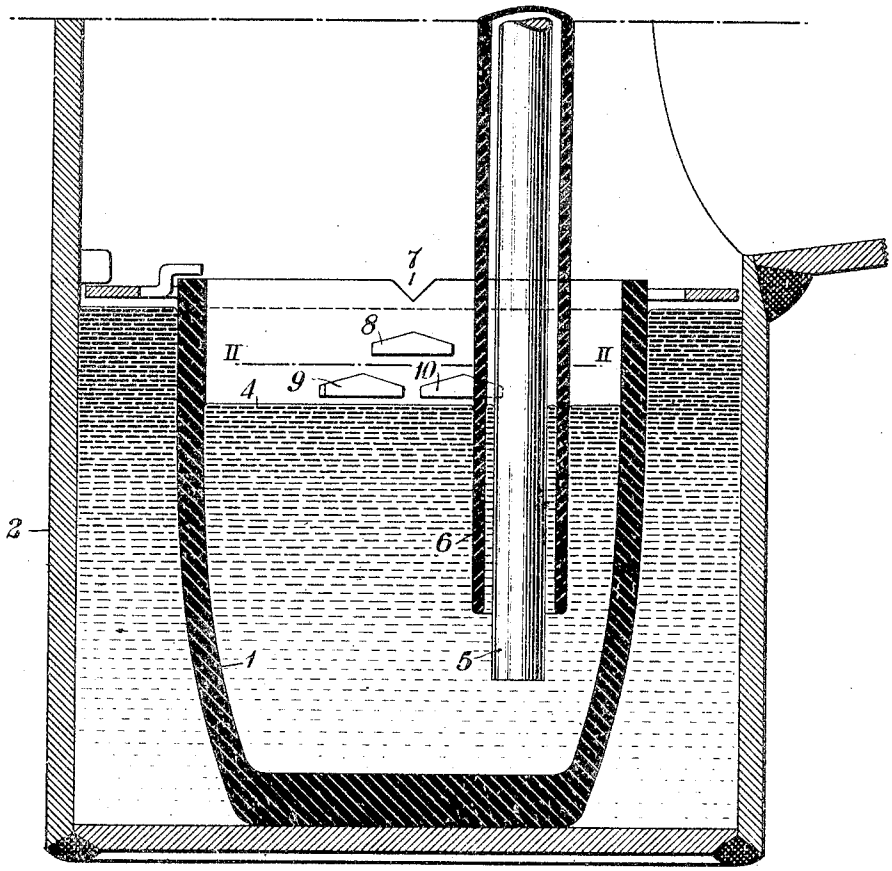
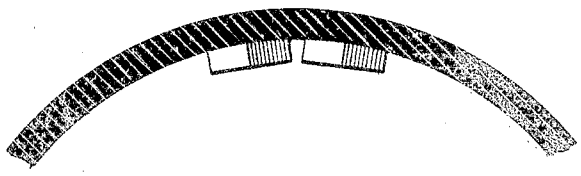


Fig. 2.



WITNESSES:

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YASUDIRO SAKAI, OF EAST PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

VAPOR ELECTRIC DEVICE.

1,101,665. Specification of Letters Patent. Patented June 30, 1914.

Application filed January 7, 1911. Serial No. 601,552.

To all whom it may concern:

Be it known that I, YASUDIRO SAKAI, a subject of the Emperor of Japan, and a resident of East Pittsburgh, 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 rectifying devices having 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 some 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 a notch 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 an aperture in the cup near its top or any other means for causing the mercury to flow into the cup only at predetermined points, and more than one may be provided preferably at two diametrically opposite points.

Formed integral with, or otherwise suitably secured to, the inner sides of the cup, at short distances below each inlet, are a plurality of lugs or barriers 8, 9 and 10, the upper faces of which are inclined downwardly in opposite directions from substantially the middle points thereof, the lug or barrier 8 being located somewhat above and staggered with reference to the lugs or barriers 9 and 10. As the streams of mercury enter the cup through the inlets, they fall upon the crests of the lugs 8 and are thereby divided and deflected, part going to the right and part to the left, and as the streams leave the lugs 8, they fall upon the crests of the lugs 9 and 10 and are again divided and deflected thereby. Thus, the streams of mercury flowing into the cup are effectually broken up, so that they cannot provide continuous electrical paths between the mercury within the cup and that which is outside of it.

I claim as my invention:

1. A vapor electric device comprising a casing, a vaporizable electrode and an electrode-containing cup having an inlet and internal means located below the inlet for interrupting the inflow of condensed vapor.

2. A vapor electric device comprising a casing, a vaporizable electrode and an electrode-containing cup provided with an inlet and with an internal barrier below the inlet having an upper surface which is inclined downwardly in opposite directions therefrom.

3. A vapor electric device comprising a casing, a vaporizable electrode and an electrode-containing cup having an inlet and a plurality of superposed and staggered internal barriers below the inlet.

4. A vapor electric device comprising a casing, a vaporizable electrode and an electrode-containing cup provided with an inlet and with a plurality of superposed and staggered internal barriers below the inlet having upper surfaces which are inclined downwardly in opposite directions from intermediate points thereof.

5. A vapor electric device comprising a casing, a vaporizable electrode, and a cup

within the casing for the vaporizable electrode having means for directing thereinto condensed vapor of the said electrode and for attenuating and breaking streams thereof.

6. A vapor electric device comprising a metal casing, a vaporizable electrode and an insulating electrode-containing cup having an inlet and a plurality of superposed and staggered internal barriers below the inlet.

7. A vapor electric device comprising a metal casing, a vaporizable electrode and an insulating electrode-containing cup having an inlet and internal means located below the inlet for interrupting the inflow of condensed vapor.

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

YASUDIRO SAKAI.

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