P. H. THOMAS.

PROTECTING DEVICE FOR VAPOR CONVERTERS.

APPLICATION FILED MAY 25, 1904.

946,812. **Patented Jan. 18, 1910.**

Fig. 1

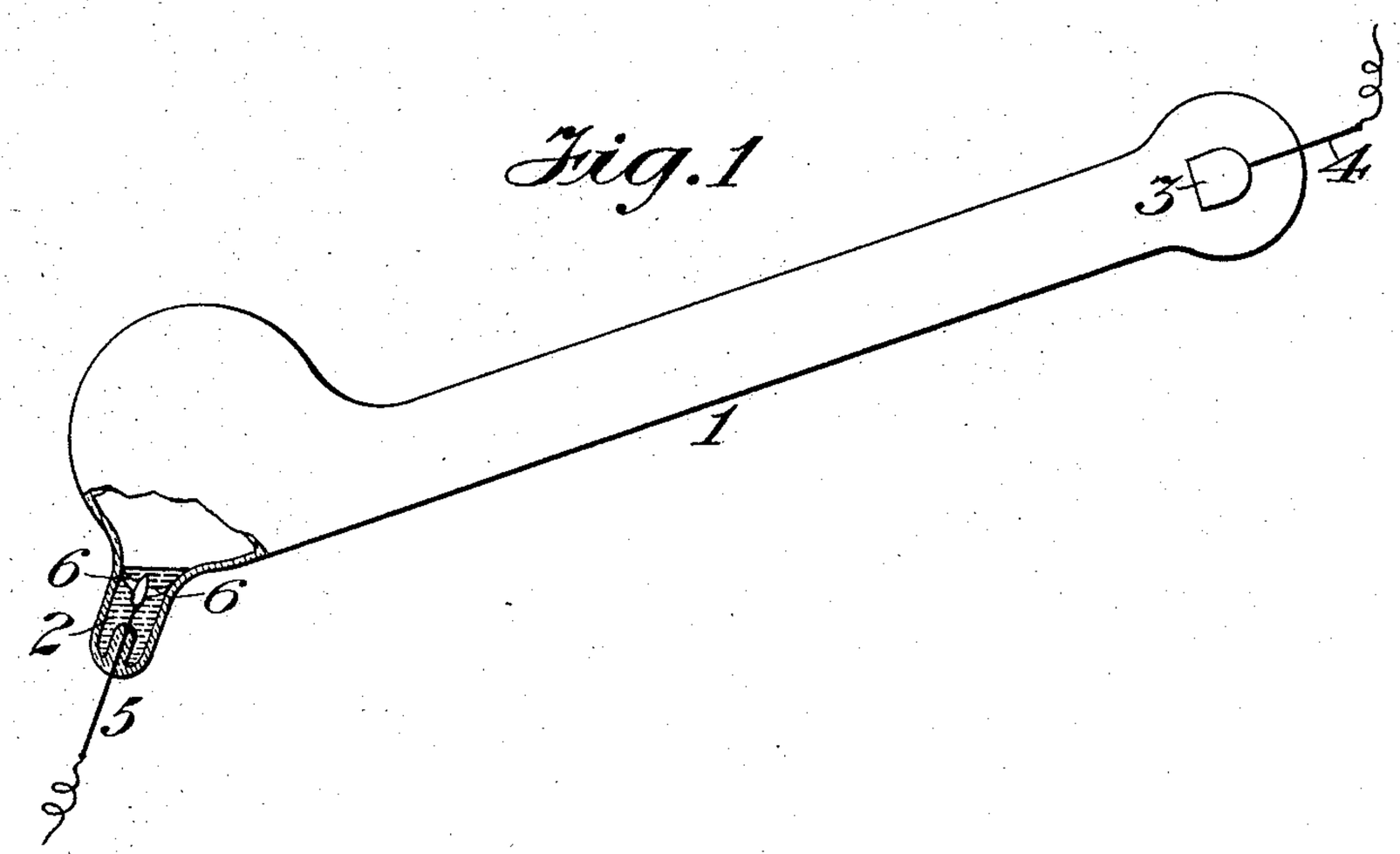


Fig. 2

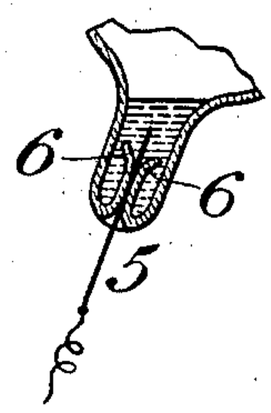
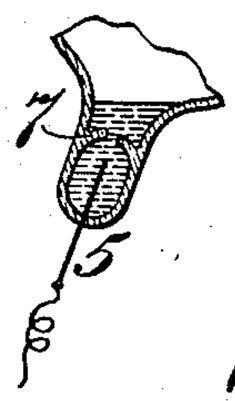


Fig. 3



Witnesses
Chas. F. Clagett
Wm. H. Capel

Inventor
Percy H. Thomas
By his Attorney
Charles A. Perry

UNITED STATES PATENT OFFICE.

PERCY H. THOMAS, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO COOPER HEWITT ELECTRIC COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PROTECTING DEVICE FOR VAPOR-CONVERTERS.

946,812. Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed May 25, 1904. Serial No. 209,656.

To all whom it may concern:

Be it known that I, PERCY H. THOMAS, a citizen of the United States, and resident of East Orange, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Protecting Devices for Vapor Apparatus, of which the following is a specification.

I am aware that it has been proposed to protect vapor electric apparatus comprising a glass container and electrodes, one of which may be of mercury or similar conducting vaporizable material, by providing one or more cushions at a point or points in the apparatus, which are particularly subject to shock, said cushion or cushions being either independent of the glass container or attached thereto. Such cushions may act as distributers or deflectors and relieve the naturally unprotected parts from the danger of cracking or breakage. The most exposed parts are those which generally constitute the receptacle or receptacles for the mercury or other conducting liquid and into which the lead-wires are sealed.

To avoid the difficulty of attaching the distributers or deflectors in the form of cushions, which have usually been made of glass-wool or similar material, I have devised a protecting device which consists of a glass disk or prongs or similar devices attached to one or more of the lead-wires and extending into the path which is naturally taken by the mercury or other liquid when the container is reversed in position, either in the process of manufacture or in transportation. The disk or prongs may be of glass and they may be secured to the inner end of the lead-wire or wires, or they may be bent over, forming continuous pieces with the glass of the container itself. In either case, the disk or prongs serve to provide a constriction of the path through which the mercury or other liquid would naturally pass, the said constriction being such as to prevent the free passage of the liquid from one part of the apparatus to another, but permitting the passage of a certain amount of liquid, whereby a vent is formed which relieves the hammer effect which would otherwise result from a sudden stoppage of the liquid. The disk or prongs placed as described have the further effect of holding a considerable portion of the liquid constituting the electrode from displacement by reason of any momentary agitation of the apparatus. Accordingly, such an agitation does not result in leaving the lead-wires exposed nor in emptying the pocket containing the electrode. In other words, the presence of the disk or prongs is a safeguard against the sudden exposure of the lead-wire and the formation of a destructive arc at this point, and at the same time serves to retard the outflow of liquid from the electrode.

In Figure 1 of the drawing I show a disk of glass secured to the inner end of a lead-wire; and in Figs. 2 and 3 I illustrate modifications.

In the drawings, 1 is a container of a vapor apparatus showing at 2 an electrode of mercury or other suitable conducting liquid. For convenience I illustrate my protective device solely in the neighborhood of this electrode, it being understood that other parts of the apparatus might be similarly protected.

The positive electrode is shown at 3, and the same may be either of mercury, protected as in the case of the negative electrode 2 or it may be of iron, the back beyond the electrode being protected by similar means.

The lead-wire for the positive electrode is shown at 4 and that for the negative electrode at 5.

In Fig. 1 I show a disk, 6, of glass sealed to the inner end of the lead-wire, 5, and extending out therefrom nearly to the walls of the pocket in which the negative electrode 2 is contained. It is found in practice that these prongs serve to reduce the shock of the mercury or other conducting liquid when the position of the apparatus is shifted so that there is no danger of cracking or breaking the apparatus by reason of the shock. At the same time a sufficient surface of electrode material is left above or beyond the disk to constitute an electrode without the development of undue heating thereat.

In Fig. 2 the lead-wire 5 is sealed into the glass as before, but the glass itself is bent over and formed into prongs 6, 6, as shown. The principle is the same as before.

In Fig. 3 the constriction of the passage for the mercury or other liquid is formed at the middle of the pocket instead of at the sides or edges thereof. In this figure, a ring 7 is formed in one piece with the glass of the pocket and is provided with a central opening, at 8.

In a divisional application, filed by me December 14, 1909, Serial Number 533,027, claims are made upon certain other features of the apparatus described herein.

I claim as my invention:—

1. The combination with an exhausted fragile container and a heavy liquid therein of a pocket in said container adapted to be filled with a liquid, a central leading in wire in said pocket supported by and surrounded by the material of the container and a shield surrounding said leading in wire as a part of the material of the container supported independently of said sealed wire.

2. In a cylindrical glass pocket adapted to contain a mercury electrode of an exhausted container, the combination with a central leading in wire sealed to the glass pocket and supported centrally in said pocket, of an extension of the glass sealed around the leading in wire adapted to block the flow of mercury directly to said pocket said extension lying centrally in the pocket.

Signed at New York, in the county of New York, and State of New York, this 21st day of May, A. D. 1904.

PERCY H. THOMAS.

Witnesses:

WM. H. CAPEL,

GEORGE H. STOCKBRIDGE.