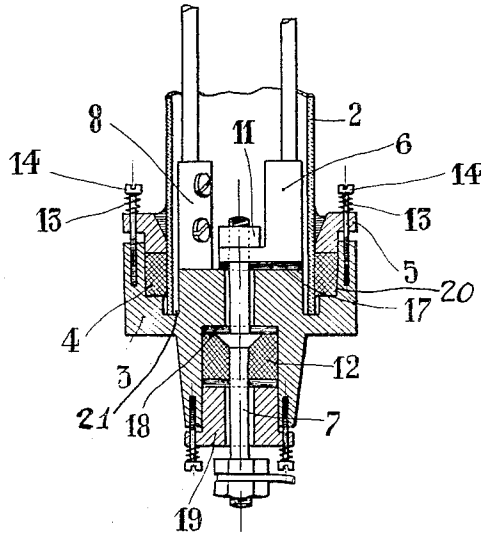
June 17, 1924. 1,498,321

F. H. L. HOLWECK

LEAKAGE PROOF ELECTRICAL APPARATUS

Filed Feb. 7, 1922



INVENTOR:

Fernand Hippolyte Louis Holweck

BY

Louis Bonnevay Jne

ATTORNEY

Patented June 17, 1924. 1,498,321

UNITED STATES PATENT OFFICE.

FERNAND HIPPOLYTE LOUIS HOLWECK, OF PARIS, FRANCE, ASSIGNOR TO THE MULLARD RADIO VALVE COMPANY, LIMITED, OF LONDON, ENGLAND.

LEAKAGEPROOF ELECTRICAL APPARATUS.

Application filed February 7, 1922. Serial No. 534,779.

To all whom it may concern:

Be it known that I, FERNAND HIPPOLYTE LOUIS HOLWECK, citizen of the Republic of France, and resident of Paris, France, (post-office address 6 Rue Ad. Focillon), have invented new and useful Improvements to Leakageproof Electrical Apparatus, which improvements are fully set forth in the following specification.

With all apparatus requiring a leakage-proof envelope or cover through which electric conductors or wires run and especially with the manufacture of high power glow lamps, great difficulties are found in making the passage for the conductors strong and, at the same time, leakage-proof, especially when such conductors are of large section and when the apparatus is subject to temperature variations.

With the apparatus hitherto built the passage for the conductors is obtained either by soldering some suitable metal (platinum of such like) to the glass, or by means of an assembled, ground or tightened joint covered over by a liquid to ensure a perfect seal.

The object of my invention is to provide a device applicable to all leakage-proof electrical apparatus (vacuum apparatus generally, apparatus working in a gas other than air or under a pressure different from atmosphere pressure) and especially to glow lamps; such device being designed to permit an absolutely leakage-proof and reliable passage to be made for the conductors through the neck of the envelope. My device is essentially characterized by a "take down" part joined to the envelope by a plastic joint which is leakage-proof without any grinding or liquid being required. The electrodes are also rendered leakage-proof by means of a plastic joint.

In order to make my invention more clearly understood, I have appended hereto a drawing, the single figure of which represents a fragmental, sectional view of a glow-lamp illustrating, by way of example, one manner in which my said invention is to be performed.

As shown, the lower end or neck 2 of the glow lamp is let into a socket part 3 made of metal or other material and provided with an annular recess 20, in the bottom of which there is formed an annular groove 21. This groove receives the end of the lamp neck 2, and it has a diameter which is only slightly larger than that of the said neck end, as shown. Leakage proofness or tightness between the lamp neck and the socket is ensured by a plastic joint 4, made of india-rubber for instance, which is disposed in the recess 20 and tightened or caused to expand radially therein by a stuffing box or gland 5 or any other means. This gland may be held applied on joint 4 by any suitable device, for instance by means of screws 14 passing through the flange of the gland and extending directly into holes in the corresponding flange of part 3. A coil spring 13 or any substitute device (say a pile of Belleville washers) may be interposed between the gland and the head of each screw 14 in order to prevent the latter from getting loosened due to temperature variations or the action of any other external causes.

If the socket part 3 is metallic, it may be connected with one of the terminals of the source of electricity and so lead the current to the electrode 8.

The second electrode 6 receives current through a rod 7, the insulation and fixation of which are effected by means of two joints 17, 18 made of mica or such like and tightened against the metal by a nut 11 or any other device.

The electrodes may be made leakage-proof by a plastic joint 12 of the same sort, for instance, as joint 4. Said joint may also be tightened by means of a stuffing box or gland 19 which may or may not be provided with a spring-loaded screw or the like.

The joints are so arranged that only a very small surface thereof is in contact with the gas contained within the lamp bulb or other envelope, in order to interfere as little as possible with the purity of such gas.

The plastic joints allowing dilatation variations, the base or neck of the lamp can become heated without any trouble ensuing, a feature that does away with the chief cause of breakage found with lamps of usual make.

In certain cases, the metallic body 3 may be replaced by a body of any other material, porcelain or china for instance, and a plurality of electrodes such as 7 may be fitted on.

As will be apparent, the above described arrangement allows the apparatus to be readily dismantled or "taken down" and in the particular case of a glow or incandescent lamp the filament to be easily replaced.

I claim as my invention:

In electrical apparatus, the combination with an envelope having a neck to be closed fluid-tight, of a socket having an annular recess, and an annular groove at the bottom of said recess and into which the said neck extends; the diameter of said groove being only slightly greater than that of the portion of the neck extending into it; annular elastic packing in said recess, and an annular gland movable axially in said recess and tending to cause said packing to expand radially therein; substantially as described.

In testimony whereof I have signed this specification in the presence of a subscribing witness.

FERNAND HIPPOLYTE LOUIS HOLWECK.

Witness:

CHARLES LEON LOISE.