R. D. MAILEY.

SUPPORT FOR ELECTRIC LAMP FILAMENTS.

APPLICATION FILED JUNE 27, 1914.

1,270,856.

Patented July 2, 1918.

Fig. 1

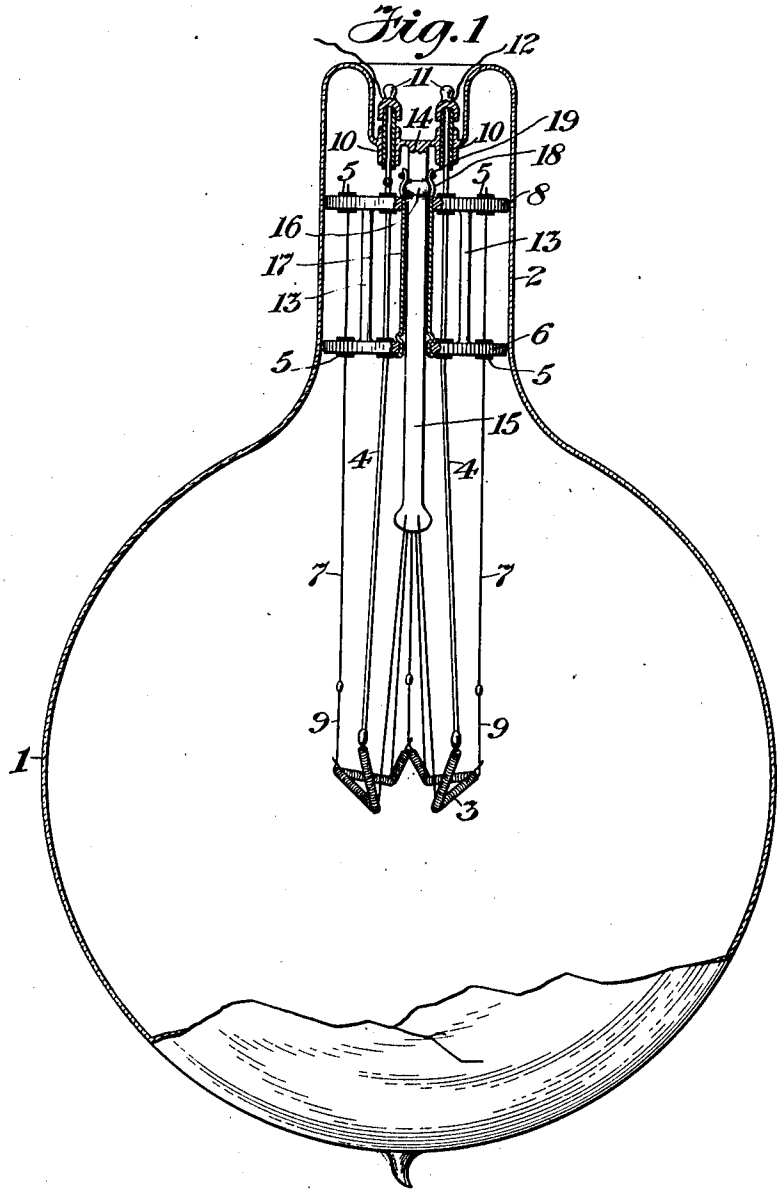
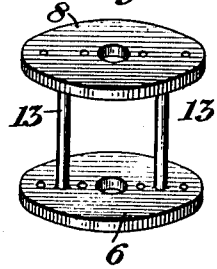


Fig. 2



WITNESSES

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ROY D. MAILEY, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO COOPER HEWITT ELECTRIC COMPANY, OF HOBOKEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SUPPORT FOR ELECTRIC-LAMP FILAMENTS.

1,270,856. Specification of Letters Patent. Patented July 2, 1918.

Application filed June 27, 1914. Serial No. 847,601.

To all whom it may concern:

Be it known that I, ROY D. MAILEY, 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 Supports for Electric-Lamp Filaments, of which the following is a specification.

My invention is designed as an improvement on an invention of Frederick G. Keyes covered by an application filed June 26th, 1914, Serial Number 847,403. It relates broadly to the support of a heavy tungsten filament in a so-called tungsten lamp. The filament is supported within a globe having a reduced extension and it has been the practice to Keyes to mount within the mouth of the extension a disk of aluminum or other suitable metal constituting an intermediate support for the main leads from the filament terminals and the direct support for angular rods or wires adapted to hold up the filament at various points along its length. Owing to the fact that the filament is of comparatively large size and heavy weight, the support through the anchors and leads are an important feature of the lamp as a whole.

I have carried the Keyes invention a step further by employing two disks of aluminum or other metal, the same being rigidly connected with each other and both lying within the reduced extension of the main lamp globe. It will be seen that by these means all danger to seals and filament by the tipping or displacement of the filament leads and anchor is removed and the filament and leads are steadily supported and held as rigidly as is necessary for long continued operation.

My invention is illustrated in the accompanying drawings in which Figure 1 is a vertical section of a lamp embodying my invention, a portion of the lamp globe being shown in full lines; and Fig. 2 is a detail perspective of the aluminum disk support.

The globe is shown at 1 and the reduced extension at 2. The filament 3 is supported at its ends by leads 4, 4, passing up through insulating sleeves 5, 5, in a disk 6 of aluminum or other suitable metal. To prevent the sagging of the filament, anchor rods or wires 7, 7, are secured to, but insulated from the disk 6 and carried up to a corresponding disk 8 and is insulated by insulating sleeves 5, 5, as in the case of the main lead wires 4, 4. The anchor wires 7, 7, may be made of nickel steel provided with tip portions 9, 9, of tungsten or other refractory metal in the form of wire. By bending the wire around the filament the same is supported at the point of contact.

The seals of the lamp are shown at 10, 10, within a reëntrant portion of the extension 2 and the leads 4, 4, are directly connected through a suitable core material with the seals and with caps 11, 11, in which the seals terminate. Connection with the outer circuit is made by means of wires 12, 12. The disks 6 and 8 are rigidly joined together by means of posts 13, 13, or other of the mechanical supports. When the disk is employed, the thrust due to lateral vibration is taken up at the plate rather than at the seals and a tendency of the plate 6 to cant is removed by the use of the second plate. Moreover, the added plate serves as a protection against thermal radiation from the first plate which might otherwise deleteriously affect the seals. In this way the seals are kept perfectly cool. It will be understood that the anchors and leads are insulated from the plates, and are attached to the upper or added plate 8.

The two disks 6 and 8, together with the posts 13, 13, form, as stated above, a structure calculated to resist lateral vibration and, this structure, being supported within the extension 2 receives support from the walls thereof tending to maintain the disk in an unchanged, lateral position. Depending from a reëntrant portion, 14, of the extension, 2, is an arbor, 15, either sealed to or formed in one piece with the said reëntrant portion. The arbor is provided with an upset portion, 16, while the two disks are provided with a sleeve, 17, having a split expanded portion, 18, the latter being adapted to cover and engage the upset portion of the arbor. The disks with their sleeve may be passed over the arbor and the engagement of the expanded portion of the sleeve with the upset portion of the arbor having taken place the whole may be firmly fixed in position by a wire, 19, securely twisted around the fingers of the split expanded portion.

To recapitulate, the advantages of the structure composed of two disks are (*a*) greater rigidity (*b*) relieving the effects of vibration (*c*) taking up the thrust by the leads at the added plate rather than at the seals (*d*) relieving the tendency to cant

which exists when a single disk or plate is employed and (*e*) keeping the seals cool by preventing the effects of thermal radiation from the single plate used by Keyes.

I claim as my invention:

1. In an electric lamp, a container and a tubular extension thereof, a heavy filament of tungsten supported within the container, the supporting means consisting of disks spaced apart and rigidly secured together within the said extension, and the filament being supported at its ends by the said disks as intermediate means of support, and anchors holding up the filament at various points, the said anchors being directly supported by the said disks.

2. In an electric lamp, a container and a tubular extension thereof, a heavy filament of tungsten supported within the container, a nonconducting arbor centrally disposed within the tubular extension and anchor wires connected with different parts of the filament and disks spaced apart but rigidly connected with each other and jointly supporting the said anchor wires, said disks being provided with a sleeve, and means for attaching the sleeve to the arbor.

3. In an electric lamp, a container and a tubular extension thereof, a heavy filament of tungsten supported within the container, a nonconducting arbor centrally disposed within the tubular extension and anchor wires connected with different parts of the filament, and insulated disks spaced apart but rigidly connected with each other within the said extension, the said arbor being provided with an up-set portion and the said disks being provided with a sleeve surrounding the arbor and adapted to engage the said up-set portion.

4. In an electric lamp, a container and a tubular extension thereof, a heavy filament of tungsten supported within the container, a nonconducting arbor centrally disposed within the tubular extension and anchor wires connected with different parts of the filament, and insulated disks spaced apart but rigidly connected with each other within the said extension, the said arbor being provided with an up-set portion and the said disks being provided with a sleeve surrounding the arbor and adapted to engage the said up-set portion, and means for binding the upper end of the sleeve to the arbor about the up-set portion.

5. In an electric device, a heavy filament of tungsten, a container surrounding the filament and having a reduced extension, leads for conveying current to the filament, disks in said extension and anchor wires for said filament jointly supported by said disks, the said disks being spaced apart and rigidly connected together to form a long bearing and reduce the liability to lateral displacement thereof with relation to the extension of the container.

6. A heavy filament of tungsten, a globe surrounding the same, a reduced extension of the said globe, in combination with filament-carrying disks spaced apart and rigidly connected with each other within the said extension and seals at the terminus of the extension, whereby the effects of high temperature on the seals are lessened and the filament is held secure from lateral displacement.

Signed at New York in the county of New York and State of New York this 25th day of June A. D. 1914.

ROY D. MAILEY.

Witnesses:
THOS. H. BROWN,
H. B. WOODWARD.