

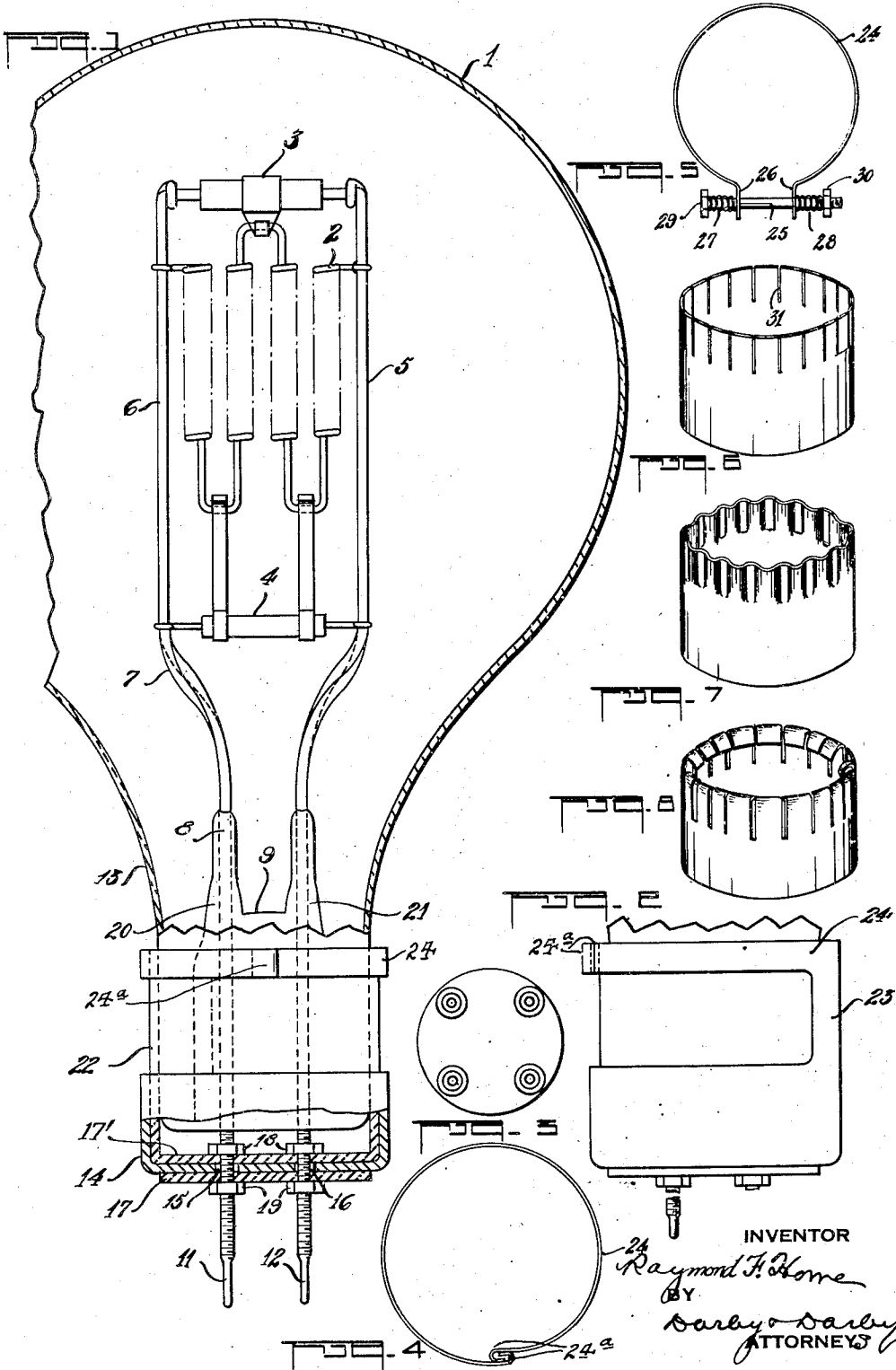
Aug. 6, 1935.

R. F. HOWE

2,010,084

LAMP BASE

Filed July 9, 1932



INVENTOR

Raymond F. Howe

BY

Barry Barry
ATTORNEYS

UNITED STATES PATENT OFFICE

2,010,084

LAMP BASE

Raymond F. Howe, New York, N. Y., assignor of
one-half to Maude Adams, New York, N. Y.

Application July 9, 1932, Serial No. 621,632

7 Claims. (Cl. 176—32)

This invention relates to electric lamps, and with particularity to base structures therefor.

An object of the invention is to provide a novel form of base for high powered lamps. In certain types of lamps, for example high powered incandescent lamps employing very heavy filaments and bulbs, considerable difficulty has heretofore been encountered in providing a base which is capable of adjusting itself to the lamp when the lamp is in a non-vertical position. For example, the ordinary type of lamp base is rigidly united to the lamp bulb by cement or other similar fastening, so that the base forms in effect a rigid unit with the lamp proper. While for very low voltage lamps, or lamps which are not very heavy, this type of base is good enough for ordinary purposes, it is impractical for high powered lamps. Thus in certain types of high powered lamps it is necessary to employ a relatively heavy multi-coil filament, and because of the heat of the filament it is also necessary to employ correspondingly enlarged and heavy globes or bulbs.

In consequence of the high temperatures involved during the operation of the lamp, ordinary cement fillings for the base are useless since they crack and eventually become dislodged from the lamp wall. Under these conditions, therefore, the lamp becomes loose in its base and eventually causes breakage of the glass.

Accordingly one of the principal objects of the present invention is to provide what may be termed a semi-rigid base for a lamp by means of which the lamp is capable of limited movement in the base without affecting the efficiency of the base support.

Another object of the invention is to provide a base for a lamp which has a rigid cup-like portion and a flexible or resilient rim portion.

Another object of the invention is to provide a base for a lamp which is capable of expansion and contraction as a result of the varying lamp temperatures without affecting the efficiency of the base as a support for the lamp.

Another object of the invention is to provide a base for a lamp which base is capable of supporting the lamp in substantially any angular position, the base being designed to prevent breakage of the glass due to variations in operating temperature.

Other features and advantages of the invention not specifically enumerated will be apparent after a consideration of the following detail descriptions and the appended claims.

In the drawing,

Fig. 1 is a partial sectional view of a lamp and base embodying features of the invention;

Fig. 2 is another view of the base of Fig. 1;

Fig. 3 is a bottom plan view of the base of Figs. 1 and 2;

Fig. 4 is a detail view of the manner of locking the resilient portion of the base of Figs. 1 and 2;

Fig. 5 represents a modified manner of coupling the ends of the spring portion of the base of Figs. 1 and 2;

Fig. 6 is a view of a modified form of base employing a slitted rim;

Fig. 7 represents another form of base employing a corrugated rim;

Fig. 8 represents a still further modification of the base of Figs. 6 and 7.

Referring more particularly to Figs. 1 and 2, the numeral 1 represents a bulb or globe for enclosing the incandescent filament 2. In the case of high powered lamps the filament 2 may take the form of a convoluted multi-coil filament, such for example as disclosed in my Patent No. 1,936,762, issued November 28, 1933. The filament 2 is supported at its upper and lower ends by insulation blocks 3 and 4, which in turn are supported by a suitable framework comprising the uprights 5 and 6. These uprights are preferably of the type disclosed in Patent No. 1,936,762 referred to above, each upright comprising a pair of wires which cross each other at the point 7, and are sealed into corresponding shoulders or projections 8, formed on the reentrant portion 9 of the bulb 1. As described in said patent, the members 5 and 6 are preferably of tungsten rod material and extend through the projections 8 to provide terminal prongs or lugs 11 and 12. It will be understood, however, that the invention is not limited to this particular manner of supporting the filament, and that other well known filament structures and methods of support may be employed. In accordance with standard practice the bulb 1 terminates at its lower end in the restricted or neck portion 13, to which is fastened the base according to the invention.

As above pointed out it is necessary to provide a base which is capable not only of supporting the lamp and prongs 11 and 12 in a substantially rigid relation, but it is also necessary to provide a base structure which is capable of adapting itself to variations in temperature of the lamp proper, as well as to limited tilting movement of the lamp.

One preferred type of base for this purpose is shown in Figs. 1 and 2 comprising a cup-shaped metal member which may be made out of any suitable material, such as pressed steel, brass or

the like. The lower portion 14 of this base is cup-shaped to receive the lower end of the lamp neck 13. The bottom of the base 14 is provided with enlarged holes 15, 16, through which the contact prongs 11 and 12 are adapted to pass with sufficient clearance to prevent short-circuiting of these prongs on the metal of the base. If desired, of course, suitable insulating bushings may be provided around the prongs 11 and 12, where they pass through the base 14. For the purpose of rigidly fastening the prongs 11 and 12 in the base the said base is provided on opposite faces with discs of insulating material 17', 17, these discs being preferably of asbestos, asbestos board or similar heat resisting material. Preferably the lower ends of the members 11 and 12 are threaded to receive the locking nuts 18 and 19. Consequently by tightening the nuts 18 and 19 the base is rigidly fastened to the prongs 11 and 12. For the purpose of securing a better support it is preferable to bring out the four wires 5 and 6, as indicated in Fig. 3. It will be obvious, of course, that instead of extending the supports 5 and 6 entirely through the base, these supports may terminate for example at the points 20, 21, and may be fastened to support rods which constitute the contact prongs 11 and 12.

In order to insulate the metal of the base from the glass of the neck portion 13, there is preferably provided a wrapping or layer 22 of heat resisting material, such as a layer of asbestos or other similar packing. The layer 22 may be integral with the disc 17' as shown or may be separate therefrom. This packing not only provides the necessary heat insulation to prevent cracking of the glass due to the unequal heat conductivity of the metal and glass, but it also provides a somewhat flexible or resilient cushion between the neck 13 and the metal of the base. However, the main resiliency is provided by the structure of the base itself. Thus as shown in Figs. 1 and 2, the metal base is provided with an upwardly extending portion 23 which terminates in a split ring portion 24, which portion 24 is adapted to surround the lamp neck, as shown clearly in Figs. 1 and 2. The ends of the split ring portion 24 overlap each other, and thus provide a semi-resilient support between the lamp and the base, enabling the lamp to tilt in either direction, or to expand without damage to the glass of the bulb. If desired the overlapping ends of the ring 24 may be provided with overlapping lugs as indicated in Fig. 4, to prevent disengagement thereof due to excess movement of the lamp in the base. Instead of overlapping the ends of the ring portion 24, these portions may be resiliently coupled together in the manner indicated in Fig. 5, by means of a bolt 25, which passes through the straight portions 26 of the ring 24. The portions 26 are normally pressed together by means of springs 27 and 28. Spring 27 is positioned between the head 29 of the bolt and the cooperating member 26, whereas the spring 28 is located between the adjustable nut 30 and the cooperating member 26. By turning the nut 30 the varying degrees of resiliency may be given to the ring support for the lamp.

Instead of employing the ring portion 24 to provide the necessary resiliency for the lamp base, the said base may be completely cup-shaped as indicated in Fig. 6, with the upper rim provided with a plurality of slits 31 to provide the necessary resiliency to the base and allow it to expand and contract for different operating temperatures. It will be understood of course that

a layer of asbestos or other similar heat insulating material is provided between the base of Fig. 6 and the neck portion of the lamp similar to the packing 22 shown in Fig. 1.

Instead of employing a slitted rim base the base may have its rim corrugated, as indicated in Fig. 7, to impart the necessary flexibility to its upper portion.

As a modification the slitted rim of Fig. 6 may have the upper ends of the slitted portions turned backwardly and inwardly to provide a resilient contact against the lamp neck. With this structure, therefore, the turned over ends provide the necessary support for the lamp by directly contacting therewith, and at the same time the slitting of the rim provides the necessary resiliency therefor.

From the foregoing it will be seen that there is provided a base which has its lower portion capable of being rigidly fastened to the lamp wires or prongs 11 and 12, and at the same time the upper portion of this base is capable of adjusting itself due to its inherent resiliency to movement of the lamp bulb. This structure therefore eliminates the usual cement between the base and the lamp, and reduces the liability of cracking of the lamp bulb due to sudden changes in temperature.

While specific embodiments have been disclosed herein, various changes and modifications may be made without departing from the spirit and scope of the invention.

This application is a division and continuation in part of application Serial No. 362,977, filed May 14, 1929, issued November 28, 1933, as Patent No. 1,936,762, and is related to Adams et al., Patent No. 1,884,957, issued October 25, 1932.

What is claimed is:

1. In combination a lamp having a bulb portion and a neck portion, a plurality of metallic rods sealed into said neck portion, and a base for the lamp comprising a cylindrical metallic member adapted to surround said neck portion, means for rigidly clamping said rods to the lower portion of said cylindrical member, the upper edge of said cylindrical member being split to provide a resilient engagement with the neck.

2. In combination a lamp having a bulb portion and a neck portion, a plurality of metallic rods sealed into said neck portion, a cylindrical metallic member surrounding said neck portion, a disc of insulation carried by said cylindrical member through which said rods pass, means for fastening said rods to said insulator disc, and extensions on said metallic member adapted to flexibly engage the said neck portion.

3. In combination a lamp having a bulb portion and a neck portion, a plurality of metallic rods sealed into said neck portion, a base for said neck portion comprising a metallic cup member having a plurality of enlarged openings in the bottom thereof to receive said rods, an insulator disc adapted to be fastened to the bottom of said cup shaped member, means for clamping said rods to said disc, said cup shaped member having an upper rim which resiliently engages the said neck portion.

4. The combination according to claim 3 in which a packing of heat resisting material is provided between the neck portion and the cup shaped member.

5. In combination a lamp having a bulb portion and a neck portion, a base for said neck portion comprising a metallic cup having a plurality of openings in the bottom thereof, a pair

of insulator discs in engagement with opposite faces of the bottom of said cup, said discs having openings in alignment with the openings in said bottom, a plurality of metallic rods sealed into said neck portion, and passing through said openings, and means for rigidly clamping said rods to said discs.

6. The combination according to claim 5 in which the discs are of asbestos.

7. The combination according to claim 5 in which the cup shaped member has a flexible upper rim to engage the said neck portion and the lamp.

RAYMOND F. HOWE.