K. FARKAS.

METALLIC FILAMENT LAMP.

APPLICATION FILED DEC. 9, 1910.

1,029,350.

Patented June 11, 1912.

Fig: 1

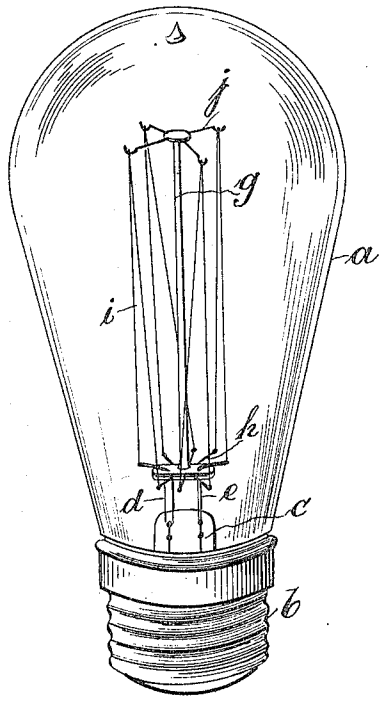


Fig: 2.

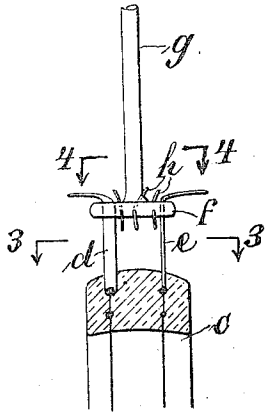


Fig: 3.

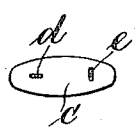
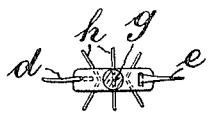


Fig: 4.



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UNITED STATES PATENT OFFICE.

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METALLIC-FILAMENT LAMP.

1,029,350. Specification of Letters Patent. Patented June 11, 1912.

Application filed December 9, 1910. Serial No. 596,410.

To all whom it may concern:

Be it known that I, KARL FARKAS, a citizen of the Kingdom of Hungary, and a resident of Glen Ridge, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Metallic-Filament Lamps, of which the following is a specification.

This invention has reference to improvements in metallic filament lamps and pertains particularly to such lamps which are provided with elastic filament supports. As is well known metallic filaments are rather fragile and therefore great care has to be taken in handling such lamps during manufacture and packing as well as transportation. Owing to the delicate nature of the metallic filaments same are suspended in elastic anchors fused to the top portion of a glass rod or arbor which in turn is fused to the stem. The free ends of the filaments are carried by supports fused to the lower portion of the glass rod or arbor. Accordingly the stem and the glass rod or arbor are in rigid connection and any rough handling of the lamp, a slight jerk, or dropping a lamp accidentally from even a moderate height will cause the delicate filament to break. Likewise during packing the delicate filaments are easily broken by careless handling and in transportation the lamps are subject to jolts as for instance in a railroad car because the glass rod or arbor is fused to the stem and therefore in rigid connection therewith. Any irregular motion imparted to the lamp is transmitted to the filaments by virtue of the rigid connection above referred to.

It is the special object of this invention to produce a metallic filament lamp with elastic filament support by means of which any irregular motion or violent vibration imparted to the lamp is equalized and thereby the filament is protected. This has been primarily attained by the use of an intermediary device located between the filament support carrying glass rim and the solid glass top portion of the stem. This intermediary device takes up irregular motion or vibrations imparted to the lamp and equalizes them or, so to speak, allows them to die away without doing damage to the delicate filament. The arrangement of the device is such that the waves of the vibration practically neutralize each other. Furthermore the glass rim at the top end of the device carries the glass rod or arbor which therefore is not in rigid connection with the stem. The construction of this device is so simple that it does not add to the cost of producing the lamp. As above stated the supports for the free ends of the filaments are located in the glass rim carrying the rod or arbor and therefore vibrations are not transmitted thereto in a destructive manner.

The invention is illustrated in the accompanying drawings in which:

Figure 1 represents in elevation slightly in perspective view an incandescent metallic filament lamp embodying in desirable form the present improvements. Fig. 2 is a detail view partly in section of a portion of the stem, elastic filament support and the glass rim with arbor and supports for the filament ends. Fig. 3 is a section on line 3—3 of Fig. 2, and Fig. 4 is a section on line 4—4 of Fig. 2.

Similar characters of reference denote like parts in all the figures.

In the drawing *a* represents the lamp globe, *b* is the socket and *c* is the stem which carries the leads. The lower portion of the leads consists of the usual copper wires and the short pieces of platinum fused into the solid top portion of the stem. The continuation of the leads however consists of small flat metal strips *d*, *e* fused to the end of the platinum wire in such a manner that they are at a right angle to each other. The top portion of the leads is bent and somewhat reduced so that a filament end may conveniently be cemented thereto. Right below the bent portion of the leads a glass rim *f* is provided through which the leads pass as shown. This glass rim *f* also carries the glass rod or arbor *g* which is centrally fused thereto. This rim further carries the supports *h* for the free ends of the filaments *i* whose loops rest in the elastic anchors *j* fused to the top portion of the glass rod or arbor *g* in the usual manner.

It is clearly understood from the above that the glass rod *g* is not fused to the top portion of the stem as customary. On the contrary the glass rod *g* is fused to the separate and independent glass rim *f* together with the supports for the free ends of the filaments while the flat ends of the leads also pass through said rim and are fused therein.

As above stated the continuation of the leads from the platinum wire upward consists each of a thin flat metal strip which stand at a right angle to each other. The portions of the flat leads which are above the stem *c* and the rim *f* constitute an elastic device which takes up vibrations imparted to the lamp and equalizes same or allows them to die out. If the lamp is subject to various kinds of vibrations same are equalized by virtue of the arrangement of the flat lead portions *d* and *e* which are at a right angle to each other. The flat lead portion *d* yields like a spring in certain directions while the flat lead portion *e* yields in other directions at a right angle thereto. Thus the arrangement of the lead portions between the glass rim *f* and the stem *c* is one feature of this invention and their arrangement at a right angle to each other is another one. The arrangement of the flat lead portions at a right angle to each other further tends to increase the stability of the filament carrying parts. If both flat leads *d* and *e* would be arranged in one plane it might happen that the filament supporting parts would bend in one or another direction and come too close toward the glass walls of the globe. In the described manner a metallic filament lamp is produced that can be handled conveniently and may safely be transported whereby a great saving is effected.

I claim as my invention:

1. In a metallic filament lamp of the type described, leads having each an enlarged flat portion arranged at a right angle to each other and located between the stem and filament carrying support proper.

2. In a metallic filament lamp of the type described, leads having each an enlarged flat portion arranged at a right angle to each other, and a glass rim fused to the upper portion of said flat leads.

3. A metallic filament lamp comprising a vacuum chamber with stem and leads, said leads having each an enlarged flat portion so arranged that they stand at a right angle to each other extending beyond the stem, a glass rim on the upper portion of the flat leads, a glass rod or arbor fused centrally to said rim, supports in said rim insulated by the glass, metallic filaments whose free ends are secured to the supports of the glass rim, and means for suspending the filaments.

4. In a metallic filament lamp, a filament supporting device consisting of a stem, leads therein having each an enlarged flat portion that extends beyond the stem, a glass rim on the upper portion of the enlarged lead portions, a glass rod or arbor fused centrally to said glass rim, and supports for the free ends of the filament fused into said rim and insulated by the glass thereof.

5. In a metallic filament lamp, a filament supporting device consisting of a stem, leads therein having each an enlarged flat portion that extends beyond the stem, a glass rim on the upper portion of the flat lead portions, and supports for the free ends of the filament fused into said rim and insulated by the glass thereof.

6. In a metallic filament lamp, a filament supporting device consisting of a stem, leads therein having flat portions so arranged that they stand at a right angle to each other extending beyond the stem, a glass rim on the upper portion of the flat lead portions, a glass rod or arbor fused centrally to said glass rim, and supports for the free ends of the filament fused into said rim and insulated by the glass thereof.

Signed at New York, N. Y., this 7th day of December, 1910.

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