

949,153.

Fig. 1.

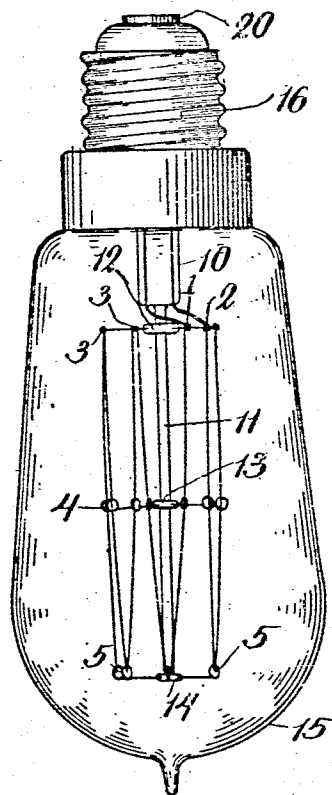


Fig. 2.

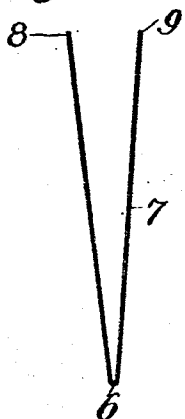


Fig. 3.

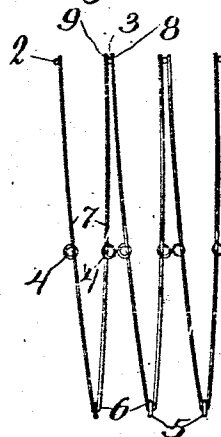
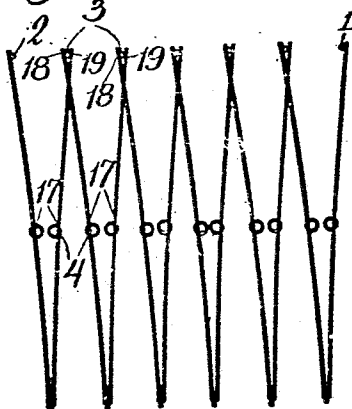


Fig. 4.



Robert C. Thayer.
Florence E. Thayer.

BY *Wilhelm Majert*

Donnan & Green ATTORNEYS

UNITED STATES PATENT OFFICE.

WILHELM MAJERT, OF BERLIN, GERMANY.

METALLIC-FILAMENT INCANDESCENT LAMP.

949,153.

Specification of Letters Patent.

Patented Feb. 15, 1910

Application filed May 15, 1909. Serial No. 496,221.

To all whom it may concern:

Be it known that I, WILHELM MAJERT, a subject of the German Emperor, and resident of Berlin, Germany, have made certain new and useful Inventions Relating to Metallic-Filament Incandescent Lamps, of which the following is a specification, taken in connection with the accompanying drawing.

This invention relates to metallic filament incandescent lamps and relates especially to incandescent lamps having filaments of brittle high fusing metals in which the filament member or loops are laterally sprung and held elastically by middle supports engaging their intermediate portions.

In the accompanying drawing showing in a diagrammatic way several illustrative embodiments of this invention, Figure 1 is an elevation of a lamp. Fig. 2 shows a filament element before assembly. Fig. 3 is a projection indicating the filament arrangement in the lamp. Fig. 4 is a similar projection showing another filament arrangement.

Suitable supports may be mounted in any desired way within the lamp bulb as for instance in the illustrative embodiment of this invention shown in Fig. 1 the bridge 10 and connected stem 11 within the bulb 15 may be of glass or other suitable material, the stem having a suitable crown 12 in which the base supports 3 of suitable high fusing metal may be mounted. The crown 13 of glass or similar material may carry the similar resilient middle supports 4 having terminal eyes to encircle the filaments at their intermediate portions and the crown 14 may be formed on the end of the stem 11 and have similar tip supports 5 fused or otherwise mounted therein which may be provided with substantially axially aligned eyes to engage the filament tips. The lamp may of course be provided with the usual central contact 20 connected to the terminal 1 and the metallic base or socket member 16 connected to the terminal 2 issuing from the bridge.

While of course the filament elements may be of varied form, such as single straight elements, V or U-shaped loops, the substantially V-shaped filament loops indicated in Figs. 1 and 2 may be used with advantage, the bend 6 at the tip being given sufficient curvature to avoid undesirable strain. These filament members may be mounted by passing the free end 8 for example through one of the tip supports 5 and through the

corresponding middle support 4, while the other end 9 of the filament member is passed through the adjacent middle support as the filament is moved into position. The filament ends may then be bent inward toward each other and placed inside the adjacent base supports 3 against which they are held by the resiliency of the filament which as indicated in Figs. 1 and 3 is sprung laterally at its intermediate portions so as to be elastically held by the resilient middle supports 4. The other filament members are similarly assembled in the supports and then the ends of the members cemented and soldered or united to each other and to the base supports 3 so as to form a substantially cylindrical filament structure in which the single layer of filament members are substantially uniformly arranged to give a desirable lighting distribution, none of the filaments intersecting or crossing adjacent their mid portions.

Of course the filament members of a lamp may be sprung laterally toward or from each other and if desired the filament loops may be sprung inward at their intermediate portions as indicated in Fig. 4, one of the filament ends being passed through the tip support 5 and through the proper middle support 4 while the other filament end is passed through the corresponding middle support, these ends being then separated so that they may if desired be locked around the outside of the base supports 3 to which they can be cemented and soldered. The tips 19 of the assembled filaments are thus engaged by the tip supports 3 while the intermediate portions 17 of the filaments are sprung inward, the filament ends 18, 19 being in contact with each other and with the base supports 3. The filaments can in these ways be readily and quickly assembled and after the filaments have been placed in position they can more readily be united or soldered to the supports and thereafter are much less liable to breakage because elastically held at their intermediate portions by the resilient supports.

Having described this invention in connection with a number of illustrative embodiments thereof, to the details of which disclosure the invention is not of course to be limited, what is claimed as new and what is desired to be secured by Letters Patent is set forth in the appended claims.

1. The incandescent lamp comprising a

stem having resilient base supports, middle supports and tip supports mounted thereon, V-shaped filament loops of high fusing brittle metal having their tips encircled by

5 said tip supports having their intermediate portions encircled by said middle supports and thereby sprung outward and having their ends resiliently held against said base supports and soldered thereto to form a sub-
10 stantially cylindrical single layer of non-intersecting filaments elastically held in laterally sprung condition.

2. The incandescent lamp comprising a substantially axial stem having base sup-
15 ports, resilient middle supports and tip supports provided with eyes in substantially axial planes and filament loops of high fusing brittle metal having their tips encircled by said tip supports having their
20 intermediate portions engaged by said middle supports and thereby sprung laterally and having their ends engaged by and united with said base supports to form a substantially circular single layer
25 of non-intersecting filaments held in laterally sprung condition.

3. The incandescent lamp comprising a stem having resilient base supports, middle supports and tip supports mounted thereon
30 and substantially V-shaped filament loops of high fusing brittle metal having their tips encircled by said tip supports having their intermediate portions encircled by said middle supports and thereby sprung out-
35 ward laterally and having their ends resiliently held against said base supports and soldered thereto to be thereby joined in series and form a substantially cylindrical single layer of non-intersecting filaments
0 elastically held in laterally sprung condition.

4. The incandescent lamp comprising a stem having base supports, tip supports and resilient middle supports mounted thereon
45 and substantially V-shaped filament loops of high fusing brittle metal having their tips engaged by said tip supports having their intermediate portions engaged by said middle supports and thereby sprung later-

ally and having their ends engaged by and
50 united to said base supports to form a substantially circular single layer of non-intersecting filaments in elastically sprung condition.

5. The incandescent lamp comprising base
55 supports, tip supports and resilient middle supports, filament loops of high fusing brittle metal having their tips engaged by said tip supports having their intermediate portions engaged by said middle supports
60 and thereby sprung laterally and their ends engaged by said base supports to form a single layer of non-intersecting filaments in elastically sprung condition.

6. The incandescent lamp comprising base
65 supports, tip supports and middle supports and filament loops of high fusing brittle metal having their tip portions engaged by said tip supports having their intermediate portions engaged by said middle supports
70 and thereby sprung laterally and having their ends engaged by said base supports to form a substantially circular layer of elastically sprung filaments.

7. The incandescent lamp comprising base
75 supports, tip supports and middle supports and filament members of high fusing brittle metal engaged by said tip supports having their intermediate portions engaged by said middle supports and thereby sprung laterally
80 and having their ends engaged by said base supports to form a substantially cylindrical single layer of non-intersecting filaments in laterally sprung condition.

8. The incandescent lamp comprising base
85 supports, tip supports and middle supports and filament members of high fusing brittle metal engaged by said tip supports having their intermediate portions engaged by said middle supports and thereby sprung later-
90 ally and engaged by said base supports to form a single layer of non-intersecting laterally sprung filaments.

WILHELM MAJERT.

Witnesses:

HARRY L. DUNCAN,
JESSIE B. KAY.