No. 725,703. PATENTED APR. 21, 1903.

M. W. HANKS.

ELECTRIC LAMP GLOWER AND METHOD OF ATTACHING TERMINAL WIRES THERETO.

APPLICATION FILED OCT. 31, 1902.

NO MODEL.

Fig. 1.



Fig. 2.

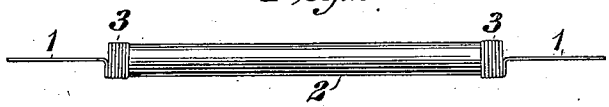


Fig. 3.

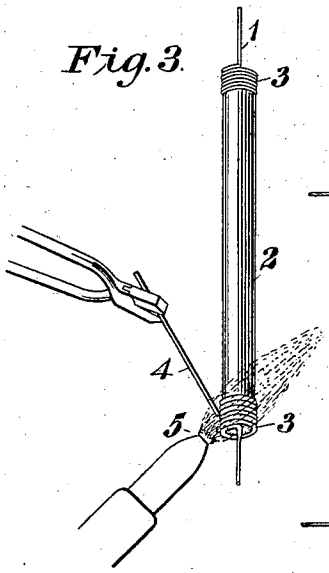


Fig. 4.

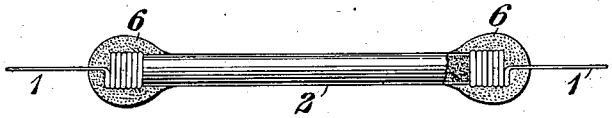
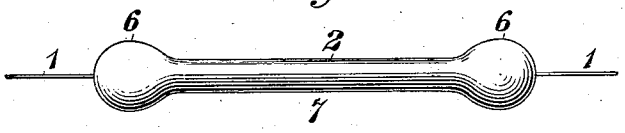


Fig. 5.



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ELECTRIC-LAMP GLOWER AND METHOD OF ATTACHING TERMINAL WIRES THERETO.

SPECIFICATION forming part of Letters Patent No. 725,703, dated April 21, 1903.

Application filed October 31, 1902. Serial No. 129,626. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL W. HANKS, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electric-Lamp Glowers and Methods of Attaching Terminal Wires Thereto, of which the following is a specification.

My invention relates to electric lamps of the type in which the light-emitting member is composed of one or more dry electrolytes and is a conductor only when heated to a comparatively high temperature.

The object of my invention is to provide glowers of the character indicated with terminal wires which shall be attached to the ends of the glower-bodies in such manner as to insure permanent rigid engagement therewith.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a glower-blank. Fig. 2 is a similar view of a glower-blank having terminal wires wound around the ends thereof. Fig. 3 is a perspective view of the parts shown in Fig. 2 and means for applying alloying or fluxing material to one of the terminal-wire coils. Fig. 4 is a view, partially in side elevation and partially in section, of a completed glower; and Fig. 5 is a side elevation of a completed glower.

In the manufacture of glowers for electric lamps of the character above referred to it has been attempted to provide wire-terminals for attachment to the circuit-terminals of the lamp by winding a platinum wire or twisted strands of such wire about each end of the glower-body, then twisting together the free ends of the wires, and finally covering the turns of wire with a coating of cement, like or similar to that constituting the body of the glower. Difficulty has been experienced with this form of terminal by reason of its tendency to become loosened in service, particularly unless extreme care were taken in winding the wire around the glower-rod and also in thoroughly shrinking the rod before applying the wire. These difficulties were particularly marked in cases where the glowers were manufactured in large numbers. In order to obviate these difficulties, I have devised the method and product which constitute my present invention and which will be now described.

I first wind a portion of a platinum wire or cable 1 around each end of a length of glower-rod 2 in the form of a coil 3, the rod being first baked or roasted and subjected to such other treatment as may be necessary in order to thoroughly shrink it. I then apply to each coil 3 a small quantity of copper or other material which will flux or alloy with the platinum and heat the same to a high temperature by means of a suitable flame.

As indicated in Fig. 3, the copper is applied by holding one end of a copper rod or wire 4 in contact with the different portions of the coils 3 and simultaneously subjecting the said parts to the flame of an oxyhydrogen-burner 5. After the turns of wire 3 have been thus treated they are coated with a body of paste 6 of a material like or similar to that of the rod 2 and then baked and roasted in accordance with the usual practice, the complete glower 7 being then ready for service.

The intense heat produced by the glower in service apparently volatilizes out the alloying material which has been applied to the turns 3 and leaves a spongy platinum contact between that portion of the platinum which is not alloyed with the copper and the glower-rod, and this contact is so close and firm that it is peculiarly efficient in service.

Instead of applying the copper as indicated in the drawings it may be applied to the terminal in powdered or comminuted form prior to the application of the flame thereto to effect the fusing. Only a small amount of copper is necessary, since it is desirable to have the alloy extend only a short distance into the glower-rod and the coil of the platinum wire.

My invention is not limited to the use of copper as an alloying material, since nickel, silver, iron, emery, manganoxid, chrome-iron, and other materials may be utilized for this purpose with good results.

I claim as my invention—

1. The method of forming glower-terminals which consists in winding terminal wires

around the glower ends, then applying an alloying material to the turns of wire and subjecting the same to a high degree of heat.

2. The method of forming glower-terminals which consists in winding platinum terminal wires around the glower ends, then applying copper to the turns of wire and subjecting the same to a flame the heat of which is sufficient to alloy the copper and platinum.

3. The method of forming glower-terminals which consists in winding platinum terminal wires around the glower ends, then applying an alloying material to the turns of wire and fusing or volatilizing the same and finally coating said wire-turns with a suitable paste.

4. An electric-lamp glower comprising a body composed of one or more dry electrolytes, platinum terminals wound about the glower ends and fastened thereto by material alloyed therewith and coatings of material like or similar to that of which the glower-body is composed.

5. An electric-lamp glower comprising a body composed of one or more dry electrolytes, wire terminals coiled about the ends of said body and fastened thereto by material alloyed therewith and coatings of material like or similar to that of which the glower-body is composed.

In testimony whereof I have hereunto subscribed my name this 23d day of October, 1902.

MARSHALL W. HANKS.

Witnesses:
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