

No. 685,512.

Patented Oct. 29, 1901.

M. W. HANKS,
METHOD OF TREATING NERNST LAMP GLOWERS.

(Application filed Apr. 24, 1900.)

(No Model.)

Fig. 1.

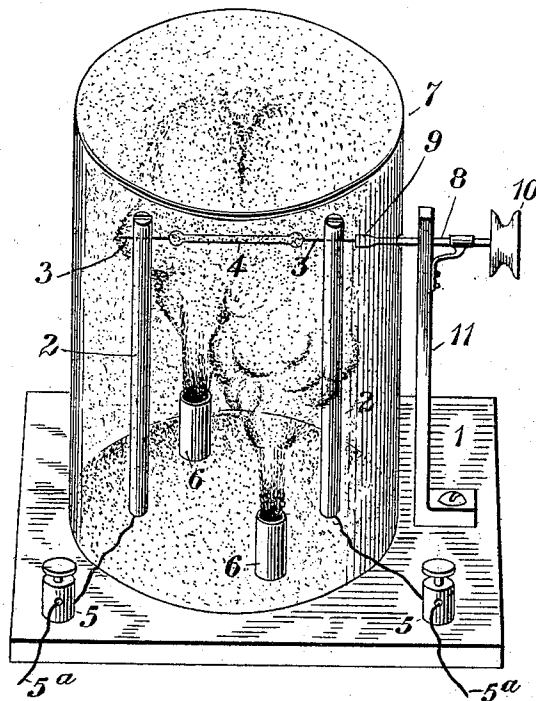


Fig. 2.

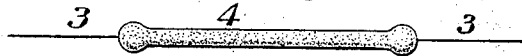


Fig. 3.



Fig. 4.



Fig. 5.



WITNESSES:

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METHOD OF TREATING NERNST-LAMP GLOWERS.

SPECIFICATION forming part of Letters Patent No. 685,512, dated October 29, 1901.

Application filed April 24, 1900. Serial No. 14,173. (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 Methods of Treating Nernst-Lamp Glowlers, of which the following is a specification.

My invention relates to electric lamps of the Nernst type, and particularly to the light-emitting bodies, generally termed "glowers," which are employed in connection with such lamps.

The object of my invention is to provide an effective and easily-practiced method for treating Nernst-lamp glowers whereby they may be adapted to circuits of a given voltage.

To this end my invention consists of the steps which will be hereinafter described in connection with suitable means for carrying them into effect.

The adaptability of glowers to any given voltage is determined by one or by all of three factors—to wit, length, cross-section, and position—and it has generally been the practice to make the glowers for use with circuits of any given voltage as nearly as possible of the same composition, the same diameter, and the same length; but however much care may be exercised in the manufacture more or less variation from the condition desired is likely to be found when the glowers are actually placed in service. After the glowers have been completed it is obviously not feasible to change the composition or to decrease either the diameter or the length. I propose, therefore, to provide glowers which actually require higher voltages than that for which they were originally intended, with coatings of material the composition of which is the same as or similar to that of the material of which the glower-body is formed.

In treating glowers by my method it is usually found desirable to give them a movement of rotation in order that the coating may be uniformly applied to the surface, and it is also found advantageous to maintain the glowers at an elevated temperature while applying the coating thereto.

In the accompanying drawings, Figure 1 is a perspective view of an apparatus suitable

for practicing the invention. Figs. 2 and 3 are respectively a side elevation and a transverse section of a glower before treatment, and Figs. 4 and 5 are respectively a side elevation and transverse section of a glower after treatment.

Assuming that the glowers to be treated are actually adapted for higher voltages than that for which they are desired, I propose to subject such glowers while in a heated condition to a cloud of powdered material the composition of which is the same as or similar to that of the body of the glower, and if the glower is treated while hot and is rotated during treatment the powder will be deposited thereon in a substantially uniform layer, the treatment being continued until a voltmeter connected across the circuit which is supplying the energy for heating the glower indicates that the desired increase in cross-section has been attained.

In order to practice my invention, I propose to provide a suitable base 1 with vertical posts or standards 2 or suitable conducting material which shall have supporting-bearings for the terminal wires 3 of a glower 4. The current for heating the glower may be transmitted from suitable binding-posts 5, to which are connected conductors 5^a, leading to a source of energy having the desired electromotive force. Any suitable heating means may be obviously employed for raising the temperature of the glower to a conducting temperature, such means being well known in the art.

The powdered material to be deposited upon the glower is blown through tubes 6, projecting through the base 1, by means of any suitable blowing device. (Not shown.) In order to confine the powdered material within suitable limits, I inclose the standards 2, the glower supported thereby, and the tubes 6 within a suitable casing 7. In case it is desired to rotate the glower during treatment, a shaft 8, provided with a suitable clamping device 9 at one end and with a pulley 10 at the other, may be mounted in a bearing-bracket 11, supported on the base 1. The end of the shaft having the clamping device may project through a suitable opening in the side of the casing 7, so as to receive the

adjacent terminal wire 3 of the glower. By applying a suitably-driven belt to the pulley 10 the desired rotation of the glower may be effected. After the glower has been treated 5 in the manner set forth it may be removed and another substituted therefor and subjected to the same treatment, the coated glower 4^a being shown in Figs. 4 and 5. It will probably be found convenient in practice 10 to provide the casing 7 with a removable cover in order that the glowers may be inserted and removed without disturbing the body of the casing.

I desire it to be understood that different 15 apparatus from what is shown may be employed in practicing my invention and that more than one glower may be treated at the same time if found convenient and desirable. In fact, I desire it to be understood that my 20 method is not limited except to the application of coatings to glowers by sprinkling or blowing powdered material thereon.

I claim as my invention—

1. The method of treating glowers for use 25 in electric lamps of the type described which consists in maintaining them at an elevated temperature in an atmosphere charged with powdered material the composition of which is like or similar to that of the glower-bodies.

30 2. The method of treating glowers for use in electric lamps of the type described which consists in subjecting them to a cloud of powdered material when in a heated condition.

3. The method of treating glowers for use

in electric lamps of the type described which 35 consists in maintaining such glowers at an elevated temperature by passing an electric current therethrough and at the same time subjecting them to a cloud of powdered material the composition of which is the same 40 as or similar to that of the glower-bodies.

4. The method of treating glowers for use in electric lamps of the type described which consists in rotating them and at the same 45 time subjecting them to a cloud of powdered material the composition of which is the same as or similar to that of the glower-bodies.

5. The method of treating glowers for use in electric lamps of the type described which consists in maintaining them at an elevated 50 temperature and at the same time rotating them within a cloud of powdered material the composition of which is the same as or similar to that of the glower-bodies.

6. The method of treating lamp-glowers 55 which consists in maintaining them at an elevated temperature by passing electric currents therethrough and at the same time rotating them within a cloud of powdered material the composition of which is the same as 60 or similar to that of the glower-bodies.

In testimony whereof I have hereunto subscribed my name this 21st day of April, 1900.

MARSHALL W. HANKS.

Witnesses:

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JAMES B. YOUNG.