Jan. 22, 1935. F. E. NEHMERT 1,988,955

METHOD OF AND APPARATUS FOR COATING INCANDESCENT LAMP FILAMENTS AND SIMILAR ARTICLES

Filed Jan. 19, 1932

Fig. 1.

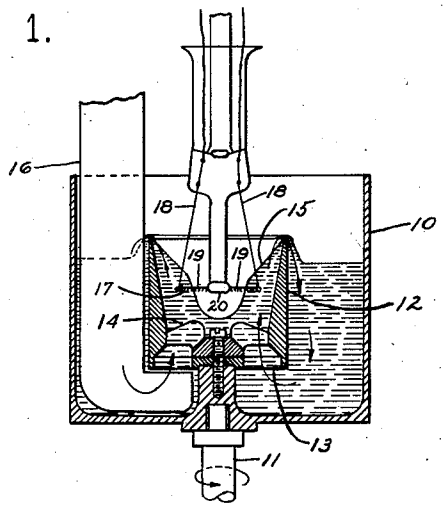



Fig. 2.

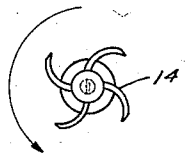



Fig. 3.

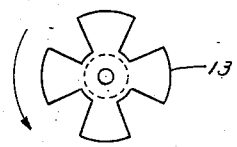



Fig. 4.




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# UNITED STATES PATENT OFFICE

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## METHOD OF AND APPARATUS FOR COATING INCANDESCENT LAMP FILAMENTS AND SIMILAR ARTICLES

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Application January 19, 1932, Serial No. 587,596
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4 Claims. (Cl. 91—46)

My invention relates to methods of and apparatus for coating incandescent lamp filaments and similar articles. More particularly, my invention relates to methods of and apparatus for applying the so-called "getter" to coiled metal filaments. Getters are materials, usually non-metallic, which are used in incandescent lamps and similar devices for the purpose of improving the performance of the lamp as by improving the vacuum in the case of vacuum devices, or by combining with metallic vapors and preventing injurious discoloring of the bulb.

It is possible to dip the mounted filament into a getter solution but, as ordinarily performed, this method imparts a coating of said solution to the support wires and the button at the end of the arbor when said button and the filament are in substantially the same plane. Such coating of the button and support wires has a detrimental effect on the light output and current consumption of the lamp which may be due to gases formed by a chemical reaction between the getter material and the glass covered by it. One of the objects of my invention is to provide a method of and apparatus for applying getter by which only the filament and a comparatively small portion of the support wires adjacent thereto are coated. According to my invention, this is accomplished by imparting a desired shape to the surface of the getter solution which is obtained by making the vessel for the getter bath rotatable. According to a principle of hydro-mechanics, the surface of a liquid in a vessel which is rotated with a uniform velocity will assume the shape of a paraboloid. This shape would be satisfactory in the case of some incandescent lamps. However, directing elements are preferably provided in the getter vessel for the purpose of imparting a more desirable shape to the surface of the solution. Further features and advantages of my invention will appear from the following description of species thereof.

In the drawing Fig. 1 is an elevation in section of a device comprising my invention; Fig. 2 is a top view of a directing element; and Figs. 3 and 4 are top and side views respectively of another directing element included therein.

Referring to Fig. 1, my invention comprises a vessel 10 mounted on a shaft 11. A directing element 12 comprising a tube which preferably has an upward sloping inner wall to prevent sticking of solid particles thereto, is located inside of the vessel 10 and is affixed thereto through another directing element comprising a pick-up wheel 13 (Figs. 3 and 4), while another directing wheel 14 (Fig. 2) is mounted directly above said wheel 13.

The whole assembly is rapidly rotated with the result that the surface 15 of the solution in the tube 12, instead of assuming a simple paraboloidal shape, takes on the shape shown in Fig. 1 due to the action of wheels 13 and 14. The wheel 14 forces the solution up through the tube 12 while a stationary blade 16 located in the vessel 10 but outside the tube 12 prevents a paraboloidal shape of the solution in the vessel 10 and by impeding the whirling of the solution in said container outside of the cylinder 12, assists the wheel 13 in forcing said solution up through said tube 12. Thus a circulation is effected, the direction of which is indicated by the arrows in Fig. 1. An electric lamp mount is lowered into this device as shown in Fig. 1, and a horse-shoe shaped filament 17 and small portions of leading-in wires 18 and support wires 19 comprised in said mount are immersed in the solution while a button 20 of said mount remains clear thereof.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. The method of coating filaments which consists in rotating a vessel containing a body of getter solution about its axis to cause said solution to have a concave upper surface and then dipping a mount comprising a filament arranged around a central axial support so that said filament is immersed in said solution and said support remains clear thereof.

2. The method of coating filaments which consists in agitating a solution to cause it to have a curved upper surface and then dipping a mounted filament therein so that only the filament and portions of support wires adjacent thereto will be coated.

3. An apparatus for coating filaments comprising a vessel, a fluid in said vessel, a tube vertically disposed in said vessel, the lower end of said tube extending into said fluid, means for rotating said tube, and a vertically extending stationary blade disposed outside of and adjacent to said tube and having an end portion extending laterally under the lower edge of said tube.

4. An apparatus for coating filaments comprising a vessel, a fluid in said vessel, a tube vertically disposed in said vessel, the lower end of said tube extending into said fluid, upwardly directing blades mounted in the lower end of said tube, means for rotating said tube, and a vertically extending stationary blade disposed outside of and adjacent to said tube and having an end portion extending laterally under the lower edge of said tube.

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