Feb. 28, 1933. J. QUESSEQUE 1,899,587

INCANDESCENT ELECTRIC LAMP

Filed Sept. 24, 1931

Fig. 1.

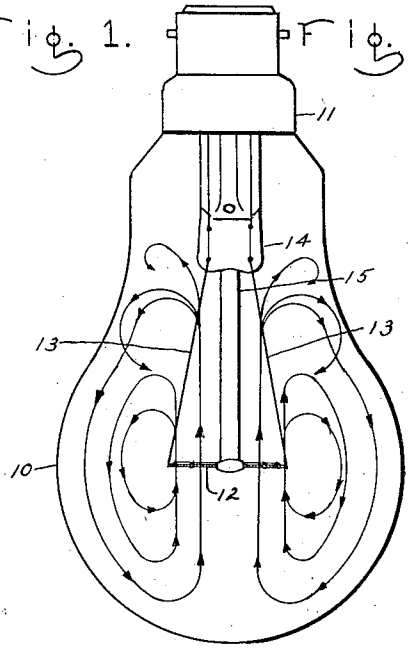


Fig. 3.

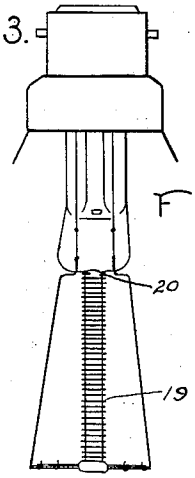


Fig. 2.

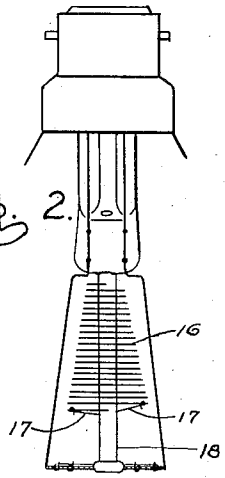


Fig. 4.

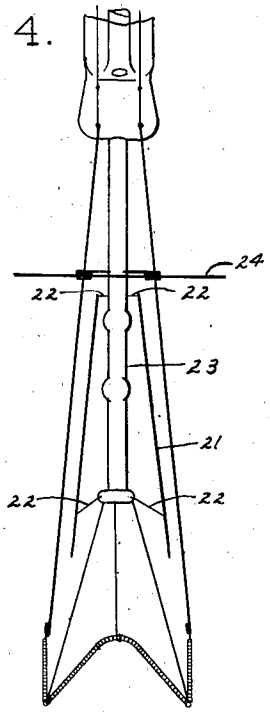


Fig. 5.

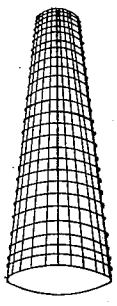
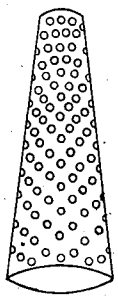


Fig. 6.



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UNITED STATES PATENT OFFICE

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INCANDESCENT ELECTRIC LAMP

Application filed September 24, 1931, Serial No. 564,888, and in France October 31, 1930.

My invention relates to incandescent electric lamps and more particularly to such lamps provided with a gas filling.

The object of my invention is to provide a simple and effective means of preventing the blackening of the bulbs of such lamps.

After a lamp has been burning one thousand hours, blackening of the bulb, with a resulting loss of luminous efficiency, becomes noticeable. Said blackening is due to the disintegration of the filament, whereby tungsten particles, torn from the hot filament, are carried by the convection currents to the walls of the bulb, where they are deposited. Due to the loss of luminous efficiency, it may be more economical to replace a lamp thus blackened with a new one before the filament is broken. Blackening of the bulb becomes an increasingly greater problem in the higher power lamps.

The appearance of a lamp is also impaired by the blackening of the bulb, which is an especially important objection in lamps which are used for decorative purposes.

Electric and magnetic systems have been proposed to obviate the blackening of the bulb, but they are relatively complicated and difficult to utilize in practice. Another method consists of placing a powder in the bulb with which the walls are cleaned by revolving the bulb. This method, of course, requires a special manipulation of the bulb by the user.

According to my invention, blackening of the bulb is prevented by the interposition, in the path of the convection currents, of a screen upon which the particles will be deposited, rather than upon the wall of the bulb. This provides a simple and effective means which does not require special apparatus or manipulation or the use of a specially shaped bulb.

Other features and advantages of my invention will appear from the following description of species thereof.

In the drawing, Fig. 1 is an elevation of an incandescent electric lamp showing the convection currents therein; Figs. 2, 3 and 4 show variations in the arrangement of the screens within the bulb; and Figs. 5 and 6 show different forms of screens.

Referring to Fig. 1, the lamp comprises a bulb 10 and base 11. A filament 12 is connected to inner lead wires 13 sealed into a stem press 14. An arbor 15 is sealed to the stem press 14. The arrows show the direction of the convection currents inside of the bulb. These currents rise vertically from the filament to the neck of the bulb, then follow the walls of the bulb down to the bottom thereof. Referring to Fig. 2, the screen 16 comprises a conically wound spiral of wire consisting of a metal such as tungsten, molybdenum, nickel or iron, which is supported by wires 17 sealed into an arbor 18. In their upward travel, the particles breaking off the filament, come in contact with the screen 16 to which they adhere, thereby preventing their deposit upon the walls of the bulb. Referring to Fig. 3, a spiral of wire 19, forming the screen, is simply wound upon an arbor 20 of a lamp.

Referring to Fig. 4, a screen 21, of the form shown in Figs. 5 or 6, is shown supported on wires 22 sealed into an arbor 23. A piece of mica 24 deflects the upward rising current of gas so as to protect the base of the bulb from the intense heat.

As shown in Fig. 5, the screens may take the form of a wire cloth consisting of a metal such as tungsten, molybdenum, nickel or iron. Another form, shown in Fig. 6, comprises a perforated foil which may consist of a metal, such as hereinbefore mentioned, or of a non-metallic substance such as glass or mica.

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

1. In a gas-filled electric lamp, the combination of a light source comprising a refractory metal adapted to be heated and a screen member comprising a hollow body having a

multiplicity of openings in the sides thereof located above said light source when said lamp is in use and extending longitudinally of said lamp.

2. In a gas-filled electric lamp, the combination of a light source comprising a filament distributed about the longitudinal axis of said lamp and a screen member comprising a hollow body having a multiplicity of openings in the sides thereof located above said light source when said lamp is in use and extending longitudinally of said lamp and having its axis substantially coinciding with the said longitudinal axis of the said lamp.

In witness whereof, I have hereunto set my hand.

JEAN QUESSEQUE.