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Patented Sept. 2, 1902.

G. C. WEBSTER.
INCANDESCENT ELECTRIC LAMP.

(Application filed Dec. 30, 1901.)

(No Model.)

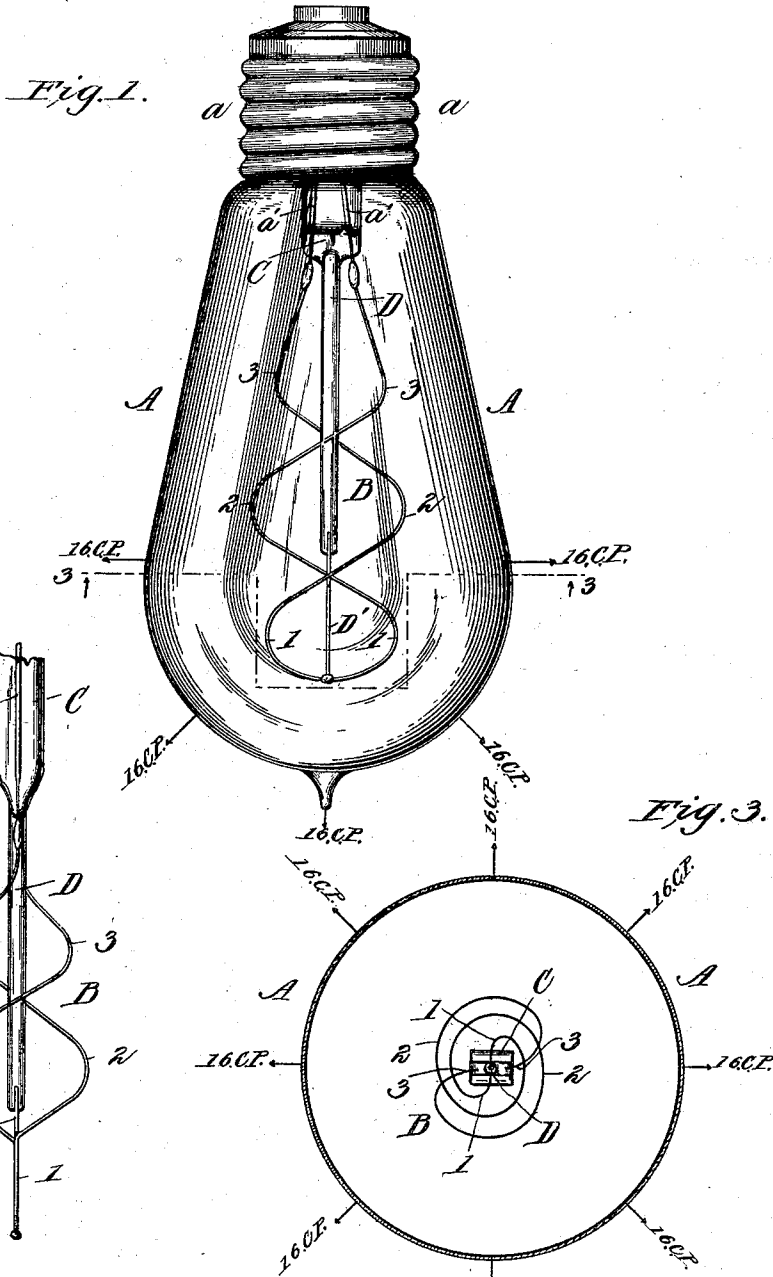


Fig. 2.

Fig. 3.

WITNESSES:
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GLENN CANNON WEBSTER, OF WARREN, OHIO, ASSIGNOR TO THE STERLING ELECTRICAL MANUFACTURING COMPANY, OF WARREN, OHIO, A CORPORATION OF OHIO.

INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 708,432, dated September 2, 1902.

Application filed December 30, 1901. Serial No. 87,724. (No model.)

To all whom it may concern:

Be it known that I, GLENN CANNON WEBSTER, a citizen of the United States, and a resident of Warren, in the county of Trumbull and State of Ohio, have made certain new and useful Improvements in Incandescent Electric Lamps, of which the following is a specification.

It is the object of my invention to provide an incandescent lamp whose filament shall be so constructed and arranged as to produce a maximum and symmetrical distribution of light-rays, or, in other words, the same measurement of maximum candle-power at every point in a horizontal and vertical plane.

The invention is hereinafter set forth and shown in the accompanying drawings, in which—

Figure 1 is a side view of an incandescent bulb provided with my invention. Fig. 2 is a side view of the filament and anchor. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1.

The glass bulb A has the usual form. The pendent glass mount C is sealed within the top a , and conducting-wires a' pass through and project from the same, as shown. To these wires a' the ends of the carbon filament B are attached, as usual in this class of lamps. The filament B is wound spirally, there being three convolutions 1 2 3. There are in fact two spirals, which are alike in form and arrangement. Thus the lower bend 1 of the double spiral merges into the two central convolutions 2, and these again into the upper convolutions 3, whose terminals connect with the wire conductors a' . It will be seen that the spirals are wound in opposite directions and the convolutions 1 2 3 are symmetrically arranged one exactly opposite another horizontally. An important characteristic is the relative diameters of the several convolutions 1 2 3, the same differing, as shown, so that when seen in end view, as in Fig. 3, the convolutions appear in different horizontal planes. The upper convolutions 3 are narrower than the lower ones 1, and the central ones 2 are wider than the latter, and hence

each set of opposite convolutions is so placed that it is seen from below, and hence throws light downward independently of the other two, whereby a maximum aggregation of light-rays and the highest degree of illumination are obtained in a downward direction. The side or lateral distribution of light-rays is also uniform or sixteen-candle power, and thus perfectly uniform or symmetrical light effects are obtained. Filaments have been heretofore so constructed as to produce superior illumination in a vertical plane or downward direction and others have given a superior lateral distribution; but in my invention I have attained both effects by the arrangement of spirals with reference to each other.

To steady and support the filament B, I employ the glass anchor D, which depends from the mount a' and is formed integrally therewith. It is provided with a wire extension D', which is rigidly attached to the center of the lower bend or convolution 1 of the filament B. This anchor D serves another important function in that it draws to itself by static induction the carbon-dust or fine particles of carbon which are given off from the filament as it grows old and which are ordinarily deposited on the bulb, and thereby obscure the transmission of light to a considerable extent.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The improved electric incandescent lamp, comprising the glass bulb, a central, pendent, translucent anchor and the double spiral filament having a bottom loop attached to said anchor and a series of convolutions symmetrically arranged opposite each other and placed at different distances from the anchor, as shown and described for the purpose specified.

GLENN CANNON WEBSTER.

Witnesses:

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