No. 708,653. Patented Sept. 9, 1902.

A. W. W. MILLER.

INCANDESCENT ELECTRIC LAMP.

(Application filed Oct. 17, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1

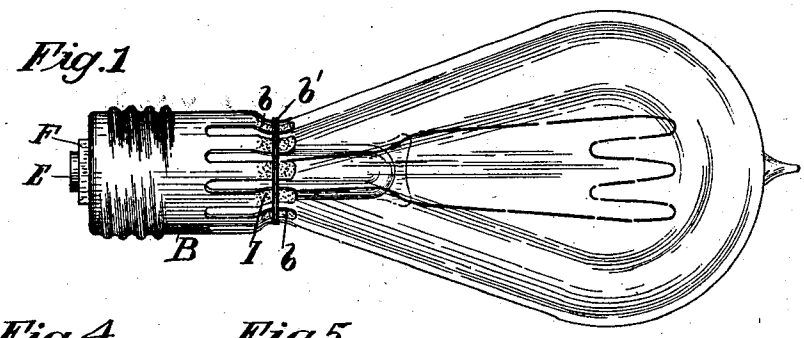


Fig. 4

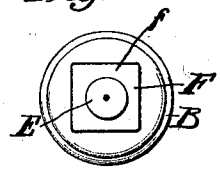


Fig. 5

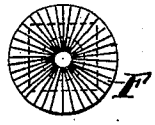


Fig. 2

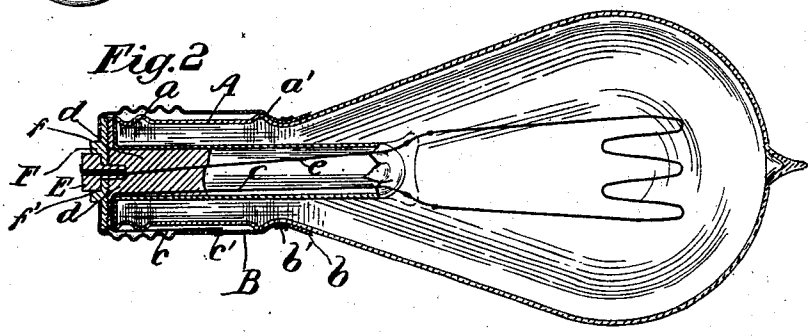
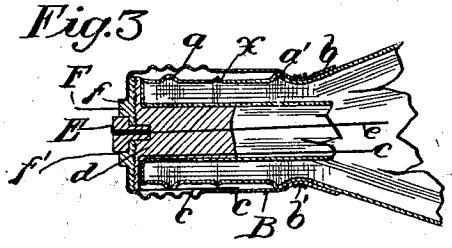


Fig. 3



Witnesses
Geo. B. Rowley
W. A. Baldwin

Albert W. W. Miller Inventor
By his Attorneys
Baldwin, Davidson & Wright

No. 708,653. Patented Sept. 9, 1902.

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Fig. 12

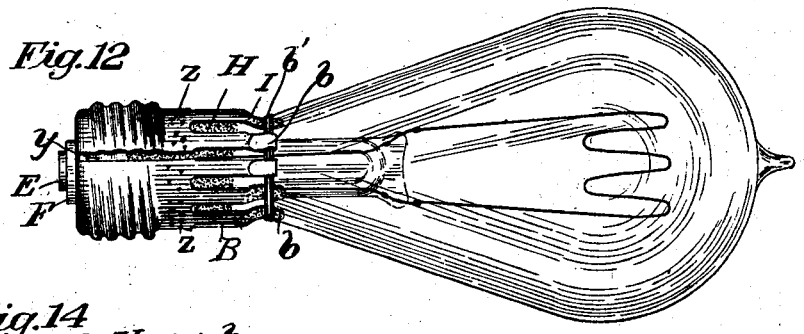


Fig. 14

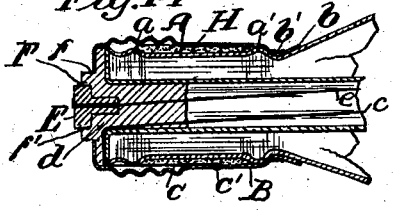


Fig. 13

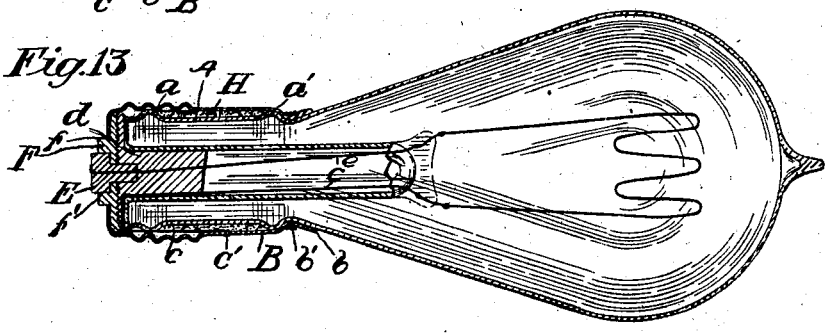


Fig. 6

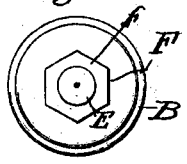


Fig. 7

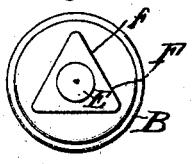


Fig. 8

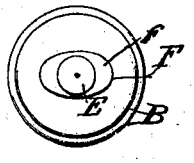


Fig. 9

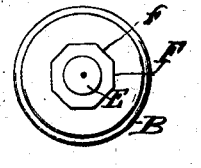


Fig. 10

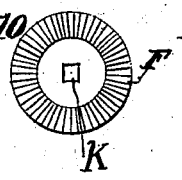
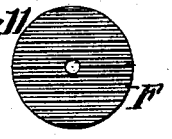


Fig. 11



Witnesses
Geo. B. Rowley
W. A. Stallcup

Albert W. W. Miller Inventor
By his Attorneys
Dallcup, Davidson & Smith

UNITED STATES PATENT OFFICE.

ALBERT W. W. MILLER, OF SOUTH ORANGE, NEW JERSEY, ASSIGNOR TO AMERICAN ELECTRIC COMPANY, A CORPORATION OF NEW JERSEY.

INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 708,653, dated September 9, 1902.

Application filed October 17, 1901. Serial No. 79,000. (No model.)

To all whom it may concern:

Be it known that I, ALBERT W. W. MILLER, a citizen of the United States, residing in South Orange, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Incandescent Electric Lamps, of which the following is a specification.

The object of this invention is to provide a lamp which may be readily opened at the neck or base end for cleaning and inserting a new filament, reclosed, exhausted, and sealed. To this end I construct or organize the lamp in the novel manner hereinafter set forth.

In the accompanying drawings, Figure 1 is a side elevation; Fig. 2, a longitudinal section; Fig. 3, a like view of the base end of a lamp that has been opened, repaired, and closed again. Figs. 4 and 5 are respectively a top and bottom elevation of one form of insulating block or washer that may be used at the base of the lamp. Figs. 6, 7, 8, and 9 are respectively top plans of still other forms. Figs. 10 and 11 are respectively bottom plans showing how the bottom of such washers or blocks may be corrugated. Fig. 12 is a side elevation of a lamp embodying a modification of structure; Fig. 13, a longitudinal section therethrough; and Fig. 14, a longitudinal section of the base end of a lamp, showing another modification.

The globe is made in the ordinary way and has the usual interior tube through which the leading-in wires pass and in the lower end of which they are sealed. The neck A may be of the exterior contour shown or may be otherwise formed, but has preferably annular flanges or shoulders a a' respectively at or adjacent the upper and lower ends of the neck. The threaded sleeve B slips endwise over the neck, and being slotted longitudinally at its lower edge the tongues b thereby formed are drawn down and secured, as by a wire b', at the lower side of the annular flange a'. One terminal or leading-in wire c is carried out through the plaster filling d, usually employed, and then between the neck and sleeve, through an aperture in the latter, and secured by solder at c'. The other wire e is carried to the central insulated contact E in the base of the lamp. A characteristic feature of this invention is an interlocking connection between the sleeve and the insulation about the contact E, whereby the sleeve is prevented from turning upon the neck. This may be accomplished in a variety of ways without departing from the invention.

In Fig. 2 a circular washer F is seated upon or in the plaster d, its lower face, Fig. 5, being radially grooved to prevent its turning. Its upper face is formed with a square boss f, having a central socket f' and aperture for the accommodation of the contact E. The opening in the head of the sleeve is shaped to fit against the straight sides of the boss. When a lamp is to be repaired, the sleeve is removed and the neck severed by a circumferential cut. The edges are afterward brought together and fused by a blowpipe or otherwise, the sleeve replaced, and the terminal connections reëstablished. The lamp is then exhausted and resealed.

Fig. 3 shows a lamp that has been repaired, x indicating the place where the neck has been cut and reunited.

Figs. 6 to 9 show bosses f of different cross-section. The sleeve-opening should correspond.

Figs. 10 and 11 show different arrangements of grooves or corrugations in the under faces of the washers F.

As shown in Fig. 14, the contact E is mounted directly in the plaster d, which is molded with a square or angular boss about which the removable sleeve fits.

In Figs. 12 and 13 the threaded sleeve is slotted longitudinally at y throughout its length. This is to give it a certain amount of radial expansibility to facilitate its being placed in position about the neck. Experience has demonstrated, however, that such a construction is not necessary if proper care is exercised in blowing the glass and spinning or otherwise forming the sleeves. Whether the sleeve is so slotted or not, I may place between it and the neck a layer of asbestos or other suitable material H, which may be attached to the neck by cement and forms a cushion-support for the sleeve between the flanges a a'. In such case frictional contact between the sleeve and packing H tends to prevent a twist-

ing torsion of the lower part of the sleeve. Such friction may be increased by puncturing the sleeve, as at *z*, thus forming burs on its inner face. As shown in Fig. 12, one or more of the tongues *b* may be turned up after the wiring *b'* is applied, and to increase frictional contact between such wiring and the tongues *b* the surfaces of the latter may be slightly roughened, as indicated at I, Figs. 1 and 12.

In Fig. 10 the aperture K, through which the stem of the contact E passes, is square in cross-section. The stem should be correspondingly shaped. This further insures stability of the contact against turning movement.

Lamps such as I have described are cheap in construction and afford facilities for repair not possessed, so far as I know, by any other lamps and are at the same time of usual appearance and substantially standard dimensions.

In my improved construction the interlocking connection between the sleeve and insulation at the base is a loose one, permitting ready removal of the sleeve, as distinguished from the ordinary permanent cemented seating of the sleeve.

I claim as my invention—

1. An incandescent electric lamp comprising a bulb having a neck, a removable sleeve enveloping the neck, means for clamping the sleeve against endwise withdrawal from the neck, the base-terminal of the lamp and its insulating medium, the opening in the base end of the sleeve being other than circular and loosely embracing a correspondingly-shaped insulating medium to lock the sleeve against rotation.

2. An incandescent electric lamp having a neck, insulation applied at the end thereof, the base-terminal seated in or upon such insulation, a sleeve adapted to be passed endwise over the neck and means for clamping it thereupon, the base end of the sleeve being loosely interlocked with said insulation to prevent rotation of the sleeve and at the same time permit of its ready removal.

3. An incandescent electric lamp comprising a bulb having a neck, the base-terminal of the lamp, insulation in which it is seated having a raised portion of other than circular cross-section, a removable sleeve adapted to pass endwise over the neck and having an opening conforming to and embracing the raised part of said insulation and means for clamping the sleeve against endwise withdrawal from the neck.

4. An incandescent electric lamp comprising a bulb having a neck, the base-terminal of the lamp, its insulation, a removable sleeve adapted to be passed endwise over the neck and means for detachably securing it in position, said insulation and the base end of the sleeve being so formed as to loosely interlock and prevent rotation of the sleeve.

5. An incandescent electric lamp comprising a bulb having a neck, the base-terminal of the lamp, its insulation, a removable sleeve formed at its base end to interlock the said insulation to prevent rotation of the sleeve and slotted at its other end to form a number of tongues or projections and a binding-wire applied around said tongues to clamp them to the lamp.

6. An incandescent electric lamp comprising a bulb having a neck, a removable sleeve enveloping the neck, a packing interposed between the neck and sleeve, means for clamping the sleeve against endwise withdrawal from the neck, the base-terminal of the lamp and its insulating medium, the opening in the base end of the sleeve being other than circular and embracing the correspondingly-shaped insulating medium of the base-terminal to lock the sleeve against rotation.

7. An incandescent electric lamp having a neck, insulation applied at the end thereof, the base-terminal seated in or upon such insulation, a sleeve adapted to be passed endwise over the neck, means for clamping it thereupon, the base end of the sleeve being loosely interlocked with said insulation to prevent rotation of the sleeve and at the same time permit of its ready removal, and a packing interposed between the neck and sleeve.

8. An incandescent electric lamp comprising a bulb having a neck, the base-terminal of the lamp, insulation in which it is seated having a raised portion of other than circular cross-section, a removable sleeve adapted to pass endwise over the neck and having an opening conforming to and embracing the raised part of said insulation, a packing interposed between the neck and sleeve and means for clamping the sleeve against endwise withdrawal from the neck.

9. An incandescent electric lamp comprising a bulb having a neck, the base-terminal of the lamp, its insulation, a removable sleeve adapted to be passed endwise over the neck and means for clamping it in position, said insulation and the base end of the sleeve being so formed as to interlock and prevent rotation of the sleeve, and a packing interposed between the neck and sleeve.

10. An incandescent electric lamp comprising a bulb having a neck, the base-terminal of the lamp, its insulation, a removable sleeve formed at its base end to interlock with the said insulation to prevent rotation of the sleeve and slotted at its other end to form a number of tongues or projections, a binding-wire applied around said tongues to clamp them to the lamp and a packing interposed between the neck and sleeve.

11. An incandescent electric lamp comprising a bulb having a neck, an insulating-filling of cement or plaster applied at the base end of the lamp, an insulating-button seated upon said filling and having a raised boss of irregular contour in cross-section, the base-terminal of the lamp seated in said button, a sleeve adapted to be slipped over the neck and having an opening at its base end conforming to and embracing the raised boss of

the button and means for clamping the sleeve upon the neck to prevent its endwise withdrawal therefrom.

12. An incandescent electric lamp comprising a bulb having a neck, an insulating-filling of cement or plaster applied at the base end of the lamp, an insulating-button seated upon said filling and having a raised boss of irregular contour in cross-section, the base-terminal of the lamp seated in said button, a sleeve adapted to be slipped over the neck and having an opening at its base end conforming to and embracing the raised boss of the button, a packing interposed between the neck and sleeve and means for clamping the sleeve upon the neck to prevent its endwise withdrawal therefrom.

In testimony whereof I have hereunto subscribed my name.

A. W. W. MILLER.

Witnesses:
KATHARINE MACMAHON,
WILLIAM A. STAHLIN.