

(No Model.)

W. E. NICKERSON.
INCANDESCENT ELECTRIC LAMP.

No. 503,669.

Patented Aug. 22, 1893.

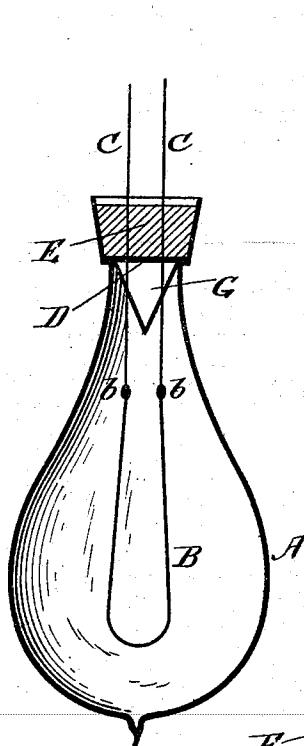


Fig. 1.

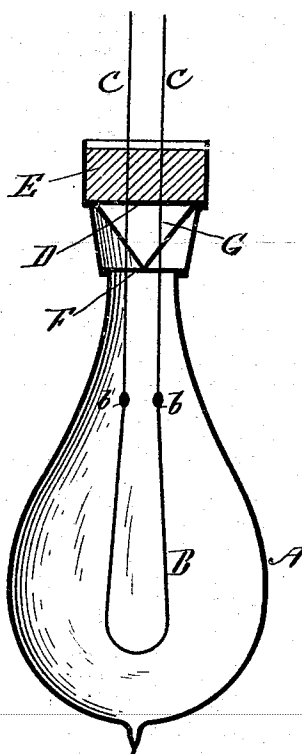


Fig. 2.

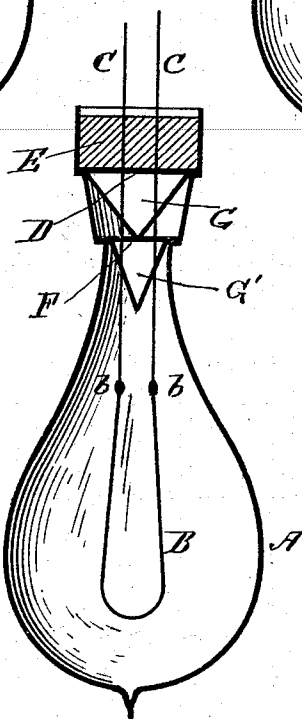


Fig. 3.

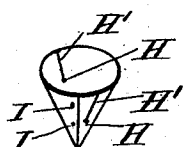


Fig. 5.



Fig. 6.



Fig. 4.

WITNESSES

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INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 503,669, dated August 22, 1893.

Application filed April 7, 1893. Serial No. 469,404. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EMERY NICKERSON, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Incandescent Electric Lamps, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to that class of incandescent electric lamps in which the glass globe is not continuous, but in which a fusible cement, either in connection with a glass stopper or as a plug by itself, is used for the purpose of sealing or closing the neck of the lamp air tight.

It consists in a device by which the heat of the filament is prevented from reaching the neck of the lamp and softening the cement.

The accompanying drawings illustrate the application of my invention.

Figure 1, shows in section an incandescent electric lamp embodying my device. Fig. 2, shows my device in connection with a supporting disk. Fig. 3, shows a method of duplication. Figs. 4, 5 and 6, show steps in the manufacture of my device.

In the drawings A represents the glass globe of an incandescent electric lamp, and B the filament attached at *b b* to the leading-in wires C C.

D is a disk of mica or other suitable substance adapted to support the plug of fusible cement E by which the lamp globe is rendered air tight. The plug of cement E is protected, from the radiant heat of the filament, (see Fig. 1,) by the hollow cone G, made of mica or other suitable substance. Owing to the reflection of the curved surfaces of the interior of the globe the heat of the filament tends to be largely concentrated into the neck of the lamp, and upon the cement plug E, unless the plug be protected. The cone G is located in the neck of the lamp with its apex toward the filament and its base to the disk D. The base of the cone is of such a diameter as to fit the neck of the lamp and be thereby maintained in position. The leading-in wires C C pass through small holes in the sides of the cone and also tend to hold it in place. The angle of the cone is such that the heat rays from the filament and the interior surface of the globe strike its sides at an inclination at

which they are nearly all reflected outward instead of passing through and striking the disk D. When the cement plug E is unprotected and the heat rays are allowed to strike it they are liable to heat and soften it.

In Fig. 2, a supplementary disk F is shown located in the neck of the lamp at the apex of the cone. This disk serves as a firm support for the cone.

Fig. 3, shows a method by which a second cone G' may be used.

Fig. 4, shows the shape in which the sheet of mica or other substance may be cut, previous to forming it into a cone.

Fig. 5, shows the sheet formed into a cone and held in shape by small rivets I I. Instead of using the rivets I I the cone may be held together by having a small quantity of borax or boracic acid fused into the seam. H H are two small holes located in the sides of the cone, (see Fig. 5,) through which the leading-in wires pass. The wires may be inserted into the holes H H by means of cuts H' H' extending from the holes H H to the edge of the cone.

Fig. 6, shows the cone in plan with the base uppermost.

The gist of my invention consists in the use in an incandescent electric lamp of a cone of mica or other suitable substance located in the neck of the lamp, for the purpose of reflecting the radiant heat of the filament outward in order to prevent the softening of a fusible cement by which the neck of the lamp is rendered air tight.

My device is equally applicable to lamps in which the neck is closed by a glass stopper rendered air tight by any viscous substance or cement.

I claim—

1. In an incandescent electric lamp, the combination of the glass globe A, filament B, leading-in wires C C, fusible cement plug E and cement-supporting disk D, said disk being located between the cement plug and the vacuum portion of the lamp and forming a part of the inclosing walls of the vacuum chamber and adapted to prevent the cement from running into the lamp when soft; with a coned reflector G, located within the neck of the lamp with its apex toward the filament, adapted to protect the cement supporting

disk D from the heat rays of the filament substantially as and for the purpose set forth.

2. In an incandescent electric lamp, the combination of the glass globe A, filament B
5 and cement plug E; with a supplemental disk F, having a chamber between it and the cement plug E and a reflecting cone G', substantially as and for the purpose set forth.

3. In combination with an incandescent
10 electric lamp; a heat reflector made in the form of a cone, with its apex centrally located between the leading-in wires and having holes in its conical surface for the passage of the leading-in wires, substantially as and for the
15 purpose set forth.

4. In an incandescent electric lamp, a heat-reflecting cone having holes located in its sides for the passage of the leading-in wires, and cuts or slots from said holes to the base of the cone, substantially as and for the purpose set forth. 20

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 5th day of April, A. D. 1892.

WILLIAM EMERY NICKERSON.

Witnesses:

FRANK G. PARKER,
FRANK G. HATTIE.