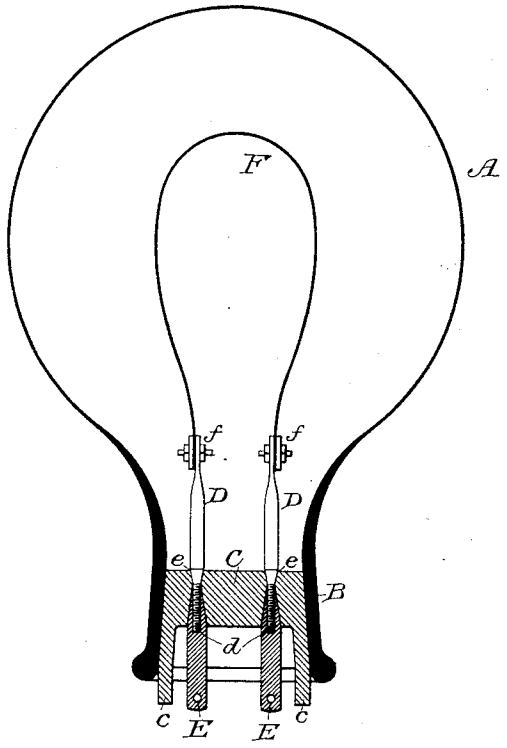
(No Model.)

H. S. MAXIM.

ELECTRIC LAMP.

No. 255,304. Patented Mar. 21, 1882.



WITNESSES

Wm A. Skinkle

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UNITED STATES PATENT OFFICE.

HIRAM S. MAXIM, OF BROOKLYN, ASSIGNOR TO THE UNITED STATES ELECTRIC LIGHTING COMPANY, OF NEW YORK, N. Y.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 255,304, dated March 21, 1882.

Application filed September 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, HIRAM S. MAXIM, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification, reference being had to the drawing accompanying and forming a part thereof.

In a previous application I have shown and described a method of introducing the conductors into an incandescent lamp-globe composed entirely of glass by grinding into a tightly-fitting plug or stopper conical steel plugs and attaching the supporting-conductors to the ends projecting from the stopper into the interior of the lamp. In this lamp the steel plugs are retained in position mainly by atmospheric pressure, and no provision other than this pressure is made to prevent them from working loose in their sockets under the effects of expansion, to which they are sometimes liable by the heat conducted to them through the supporting-conductors from the incandescent strip.

My present invention is an improvement specially applicable to lamps sealed in this way, designed to prevent any tendency of the plugs to work loose by forming both the steel plugs and the supporting-conductors with tapered ends and screwing them together within the glass stopper in perforations specially adapted for this purpose, as will be more fully set forth and claimed.

In the drawing the figure represents my improvement as applied to an ordinary lamp, the view being that of a central vertical section.

A is an inclosing-globe, having neck B.

C is a stopper of glass, which is fitted to the neck by the ordinary process of grinding, *c c* being ears for holding the stopper when grinding it in. During the molding, or by subsequent drilling, perforations are formed through the body of the plug or stopper, which are reamed out to form conical sockets, the depth of the upper ones being about one-third the thickness of the plug, that of the others two-thirds.

E E are steel plugs, conical in shape, which are ground into the lower sockets.

D D are the supporting-conductors, of copper, formed with screw-threaded ends *d d* and tapering shoulders *e e*. The ends of plugs E are drilled out and screw-threaded.

In putting the lamp together the several parts are ground and fitted to one another. The steel plugs and supporting-conductors are then screwed together in the stopper until they bind in their respective sockets as tightly as possible. A carbon, F, is then attached to the conductors D D by clamps *f f* and the stopper inserted in the neck, and the globe exhausted in the usual manner.

It is generally advisable to use a small quantity of balsam or copal cement between both the ground surfaces of the stopper and the globe and between the metal plugs and the stopper a film of these substances, as is well known, forming under the above-stated conditions a perfectly air-tight seal.

In a lamp constructed as above it will therefore be seen that the steel plugs cannot work loose, for under the normal conditions of temperature they are held perfectly tight, while when heated they are caused to bind, even more than when cold, in their sockets, from the fact that the copper has a greater coefficient of expansion than the steel, and tends to draw the plugs up when heated.

I do not claim in this application, broadly, the method of introducing the current into an electric lamp by grinding steel plugs serving as conductors into a tight-fitting stopper and attaching the supporting-conductors thereto; but

What I claim as new, and desire to secure by Letters Patent, is—

1. In an incandescent electric lamp, the combination, with a plug or stopper, of metallic plugs E and conductors D, having conical enlargements or shoulders, as shown, and adapted to be screwed together in perforations having conical openings in the stopper for forming a tight joint between the metal and the glass, substantially as shown and described.

2. In an incandescent electric lamp, the combination, with a perforated plug or stopper, of steel plugs E and copper conducting rods or wires D, having conical enlargements, as shown, and adapted to be screwed together in the perforations and clamped against the stopper on opposite sides, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 5th day of August, 1881.

HIRAM S. MAXIM.

Witnesses:
PARKER W. PAGE,
CLAYTON KNEELAND.