(No Model.)

H. S. MAXIM.

ELECTRIC LAMP.

No. 252,391. Patented Jan. 17, 1882.

Fig. 1.

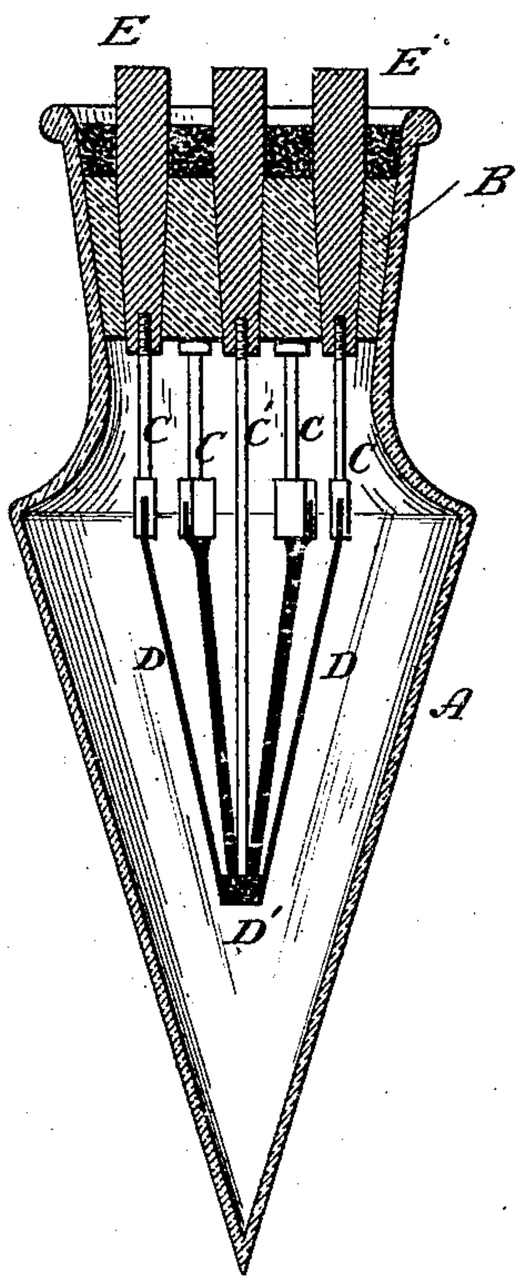
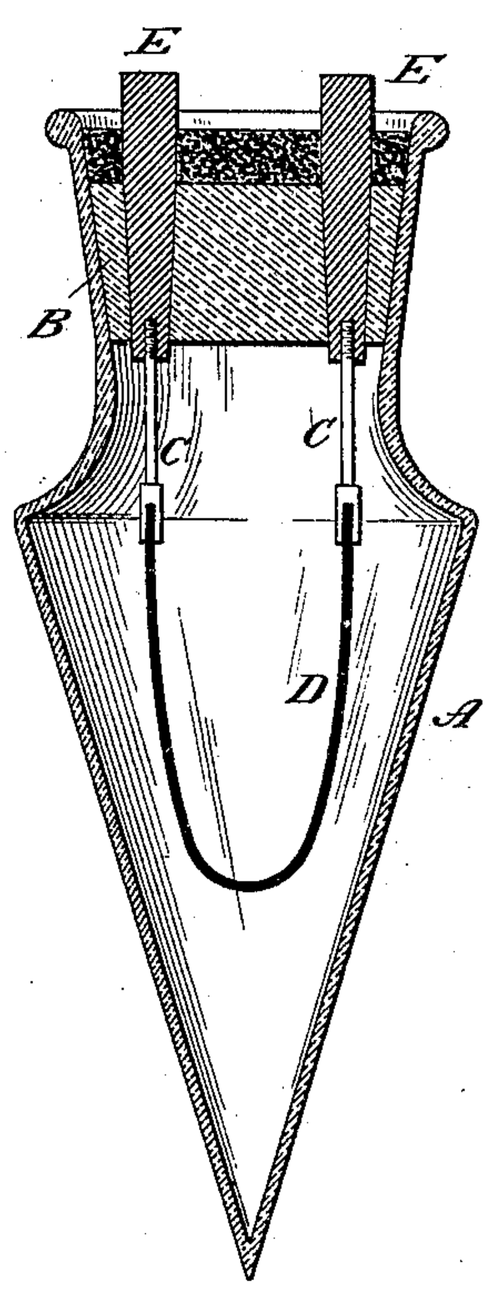


Fig. 2.



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HIRAM S. MAXIM, OF BROOKLYN, NEW YORK.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 252,391, dated January 17, 1882.

Application filed May 12, 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 drawings accompanying and forming a part thereof.

In former applications filed by me I have shown incandescent electric lamps composed of a transparent exhausted receiver surrounding one or more strips of carbon, which are included in the electric circuit by attachment to the metal conductors introducing the current into the said receiver. One of the methods proposed by me for bringing these wires into the globe may be stated in general terms to consist in sealing or otherwise embedding the same in a plug or stopper, which fits the open neck of a glass globe by a ground joint. Over this method my present invention is designed as an improvement, inasmuch as by it I am enabled to construct a better and more durable lamp at a greatly reduced cost.

According to my present invention the globe is furnished with a stopper, which fits tightly into the open neck. The stopper, which is of glass, is pierced at two or more points by slightly-tapering holes formed during the course of molding or by subsequent drilling. In the holes are fitted steel plugs, of corresponding shape, and of such length that the ends project on either side of the stopper. The plugs are fitted to the glass by ground joints, and to their inner or smaller ends the supporting-conductors are attached, while the outer ends serve as circuit-connections for a suitable switch operating to close or break the circuit through the lamp.

The accompanying drawings are referred to for an understanding of the invention.

Figures 1 and 2 represent in central vertical section lamps to which my invention is applied.

Similar letters in both figures refer to corresponding parts.

The lamp illustrated in Fig. 1 consists of an inclosing-globe, A, in which are several carbons, D D, whose ends are united to the same mass of conducting material, D'. Into the open mouth of the globe A is fitted, by grinding, a stopper, B, of glass or equivalent material. Through the stopper are formed as many conical perforations as the number of carbon conductors requires, and into these the steel plugs E are fitted by grinding, so that the joints formed shall be perfectly air-tight. To the smaller ends of the plugs the conductors, of platinum or copper, C C', are attached in any way to secure a good electrical contact. In the present instance they are screwed into threaded holes in the ends of the plugs. To the conductors C C' the carbons D D are clamped, their free ends being united to a small block of carbon or metal, D', from which a conductor, C', leads to one of the steel plugs. From the shape of the plugs and the manner in which they are fitted to the stopper it follows that as the air is exhausted from the globe in the usual way the atmospheric pressure tends to draw them in the tighter. As an additional precaution the spaces about the projecting ends of the plugs on the outside of the stopper are filled in with cement, wax, or a similar substance.

The projecting ends of the steel plugs may be utilized as circuit-connections in conjunction with any suitable circuit-maker or switch, and it is evident from the number and disposition of the plugs and conductors attached thereto that one, all, or any desired portion of the conductors, may be rendered incandescent at a time by making the proper connections. The apparatus which I design using for accomplishing this purpose is not illustrated herein, as I intend making a separate application therefor.

The ground steel plugs as a means of conveying the current through a stopper into an air-tight lamp-globe, though described in connection with a lamp of peculiar kind, are applicable to any form of lamp in which the globe inclosing the light-giving part is closed by a plug or stopper of vitreous material, and this I have illustrated in Fig. 2, where the lamp is shown as containing a single and continuous conductor with two plugs, the arrangement being substantially that of the ordinary forms of lamp now in use; nor is it essential to this part of my invention in what manner the carbons or their supporting-conductors are connected with the steel plugs, nor by what means

the circuit is completed from the line-wires to the steel plugs, as it is obviously possible to vary the construction of the lamp in these particulars almost indefinitely.

Having now described my invention, what I claim is—

1. The combination, in an electric lamp, of a transparent globe surrounding the source of light and an air-tight non-conducting plug or stopper closing the same and containing two or more conical steel wires or plugs ground into perforations through the material of which said stopper is composed, and in electrical connection with the carbon conductors, as described.

2. The combination, with the transparent globe of an incandescent electric lamp, of a glass stopper fitting the same by a ground joint and containing two or more conical steel wires or plugs ground into and passing through correspondingly-shaped perforations in the said stopper and suitably connected to the supporting-conductors of the carbon strip, as described.

In testimony whereof I have hereunto affixed my signature this 10th day of May, 1881.

HIRAM S. MAXIM.

Witnesses:

W. M. ALLAIRE,

PARKER W. PAGE.