

W. T. CONN.
ELECTRODE FOR ARC LAMPS.
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1,002,645.

Patented Sept. 5, 1911.

Fig. 1.

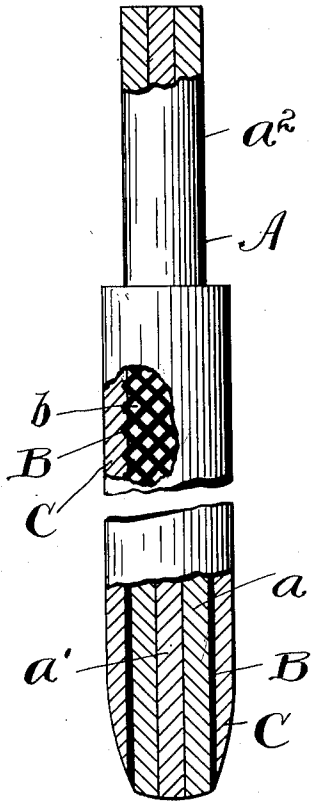
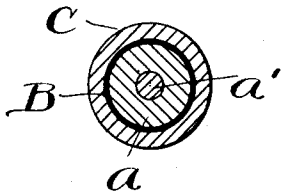


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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ELECTRODE FOR ARC-LAMPS.

1,002,645.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALLACE T. CONN, a citizen of the United States, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Electrodes for Arc-Lamps, of which the following is a full, clear, and exact description.

This invention relates to improvements in the construction of electrodes adapted especially for use as negative electrodes in the so-called vertical flaming arc lamps,—that is to say, flaming arc lamps in which the negative electrode is placed directly over and in alinement with the positive electrode. In lamps of this character, using these electrodes as they have heretofore been made, the light is unsteady and the consumption of the negative electrodes is unduly rapid because the arc does not remain steadily between the ends of the positive and negative electrodes, but, on the contrary, shifts about, sometimes springing from the end of the negative electrode and sometimes from the sides thereof at various and sometimes considerable distances from the end thereof.

The object of the present invention is to steady the light and prevent the waste of the negative electrodes, by providing a negative electrode adapted especially for the stated use, and so constructed that the arc will always spring from the end instead of sometimes from the side thereof.

The invention consists of an electrode having secured around it a covering of insulating material; and also in the construction, substantially as described, whereby this insulating coating may be made very thin so as to minimize the production of slag and ash within the lamp,—all of which will be hereinafter described and pointed out definitely in the claim.

In the drawing, Figure 1 is a side view partly broken away in section of an electrode embodying the invention. Fig. 2 is a transverse sectional view of the same.

Referring to the parts by letters, A represents the electrode proper, or conductor; and this part of the structure may be of any ordinary or suitable construction. Usually they consist of a shell of carbon a , and a core a' made of carbon dust and water glass. Sometimes these electrodes are made of homogeneous mixture of carbon dust and

water glass. Sometimes a color imparting salt is incorporated into the mixture of carbon and water glass. The specific construction of the conductor or electrode proper is, however, immaterial to the present invention, and, as stated, this part may be of any ordinary or suitable construction. Applied externally to this conductor is a coating of insulating material—that is to say, material which is an insulator to the current when the electrode is in use and therefore subject to the heat incident to such use. This material may be fire clay or asbestos or some mixture of these, or any other suitable material. It is, of course, desirable that the quantity of this insulating material used shall be reduced to the minimum, because when an electrode coated with such material is used the material will be disintegrated and a slag or ash or both will be produced, which may drop into the lamp. In order that the quantity of insulating material may be so minimized a shell C of carbon is secured tightly, preferably molded over the thin coating of insulating material. When this external supporting shell C is employed it is not necessary that the insulating coating B shall be unbroken. It may be, but it may also be made of any desired form which will produce air cells b in which air will be imprisoned; and in that event the thin layer of air in these cells may serve as a part of the insulating covering of the electrode A. As shown in the drawing, the insulated coating of the electrode proper does not extend to the upper end thereof. A short section a^2 of the upper end of the electrode A is left uncovered so that it may conveniently be grasped by the clasp provided in the lamp for this purpose.

The shell C may be of any thickness required to properly support the insulating covering B, and to so withstand the heat of use that its consumption will practically be equal in rate to the consumption of the conductor or electrode A, and so also that its presence will prevent the fusion and disintegration of the insulating coating back from the end of the electrode. The carbon coating when it is consumed produces very little ash or slag and therefore is not objectionable from that view point.

In using the described electrode it will be

found that the arc will always spring from
 the end of the electrode A, and not from
 the side thereof. This will, of course,
 steady the light and will prevent that waste-
 5 ful consumption of the negative electrode
 which is common in lamps of this character
 where the negative electrodes are not coated
 with insulated material and wherein, there-
 fore, the arc shifts about from the end to the
 10 side of said electrode.

While the described electrode will find
 its greatest field of usefulness as a negative
 electrode in the vertical flaming arc lamps,
 there may be other uses in which it will be
 15 valuable.

Having described my invention, I claim:
 A negative electrode for flaming arc lamps
 having a main electrode portion, and means
 for maintaining the arc at the end of the
 electrode comprising a coating of insulating 20
 material about said main portion, and a
 shell of carbon surrounding the insulating
 coating.

In testimony whereof, I hereunto affix my
 signature in the presence of two witnesses. 25

WALLACE T. CONN.

Witnesses:

GEO. M. SMITH,
 C. W. SANFORD.