

R. R. HERBST.
CORED CARBON ELECTRODE FOR ARC LAMPS.
APPLICATION FILED JAN. 27, 1911.

1,042,554.

Patented Oct. 29, 1912.

FIG. 1.

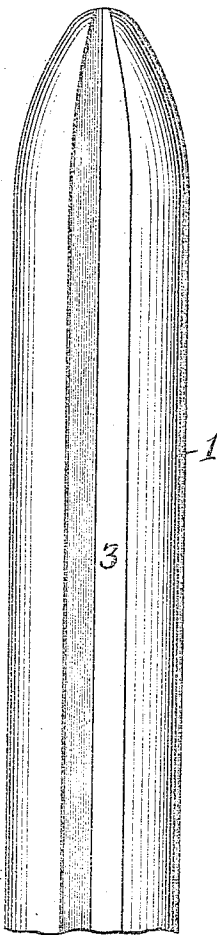


FIG. 3.

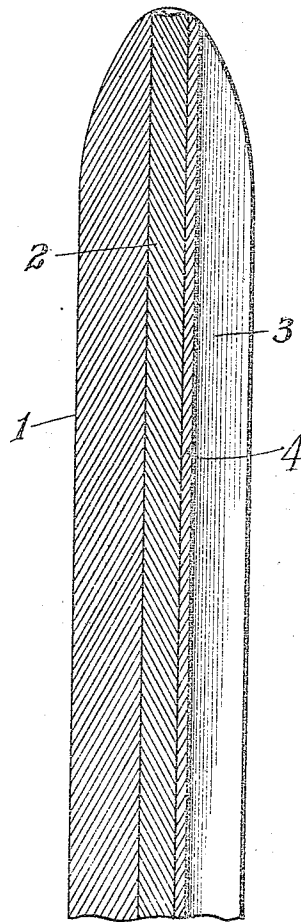
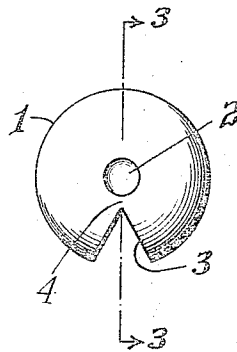


FIG. 2.



WITNESSES
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CORED CARBON ELECTRODE FOR ARC-LAMPS.

1,042,554.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed January 27, 1911. Serial No. 605,072.

To all whom it may concern:

Be it known that I, ROGER R. HERBST, a citizen of the United States, residing in Freeland, Luzerne county, State of Pennsylvania, have invented certain new and useful Improvements in Cored Carbon Electrodes for Arc-Lamps, of which the following is a specification.

My invention relates to carbon electrodes for arc lamps which are provided with a central core of relatively soft carbon.

In the employment of arc lamps for the projection of shadow pictures upon a screen, it is necessary in order to obtain the best results that the light shall be steady and shall occupy a constant position, and the desire of those who heretofore have suggested the using of cored carbon electrodes has been the production of an electrode which would produce a steady light. But as far as I am aware, the various constructions of cored electrodes of the character above stated have not been satisfactory. In some of the proposed structures, the arc from which the light radiates travels or moves to different positions with respect to the transverse area of the carbon, whereas in other proposed forms of construction the soft central portion of the carbon is permitted to vaporize or disintegrate too rapidly with the result that the end of the carbon is left ragged and with the further result that the intensity and sharpness of the light at the point where it is most desired is decreased.

The purpose of my invention is to construct a carbon of the character stated which is provided with means for maintaining the electric arc in a constant position with respect to the transverse area of the carbon whereby the light which radiates therefrom is steady and stationary.

The further purpose of my invention is to cause an even disintegration or vaporization of the end of the carbon electrode which is necessary to secure the best results.

In order that my invention may be more readily understood and comprehended, I have illustrated a convenient form of embodiment thereof in the accompanying drawings, in which,—

Figure 1 is a side elevation of a portion of a carbon electrode provided with my invention; Fig. 2 is a top plan view thereof;

and Fig. 3 is a section on the line 3—3 of Fig. 2.

Referring to the drawings:—1 designates a cylindrical carbon electrode having a central core 2 of relatively soft carbon and a groove 3 which extends longitudinally of the electrode and the bottom of which is located a short distance from the periphery of the core 2 of relatively soft carbon or other suitable material. The groove 3, as illustrated, is V-shaped but it will be understood that the shape of the said groove may be varied as desired. The essential feature or characteristic of construction is that the bottom of the said groove shall not extend to the core 2 of relatively soft carbon but shall be located a short distance therefrom. The thickness of the strip 4 of relatively hard carbon between the bottom of the groove 3 and the core 2 may be varied as desired and as may be necessary, although I have obtained good results with carbons in which such strips were approximately three-sixteenths of an inch in thickness. It has been found that when the bottom of the groove is located a short distance from the core of soft carbon 2 the electric arc is maintained at a constant position with respect to the transverse area of the electrode 1. It has been found also that disintegration or vaporization of the soft core of the carbon takes place less rapidly in proportion to the disintegration or vaporization of the surrounding portion thereof so that the end of the core is maintained at a point but slightly below the end surface of the surrounding carbon, whereby the light is maintained more steadily and is more nearly constant than if the groove 3 extended entirely to the core 2. If the carbon electrode were not provided with a groove the electric arc would move from one position to another with respect to the core 2 and in consequence the light would be unsteady and undesirable.

Having thus described my invention, I claim:—

1. A carbon electrode for arc lamps having a core of relatively soft carbon and a groove or opening extending longitudinally of said carbon and also having a narrow strip of the relatively hard carbon located between the bottom of the said groove or opening and the said core.

2. A carbon electrode for arc lamps having a core of relatively soft material and also having a groove extending longitudinally of said carbon, the bottom of which
5 groove is located a distance from said core so as to leave a strip of relatively hard carbon between the bottom of said groove and said core.

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this 24th day of January, A. D. 1911.

ROGER R. HERBST.

In the presence of—

GEO. H. WEIDNER,

CARRIE E. KLEINFELDER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
