

959,133.

Patented May 24, 1910.

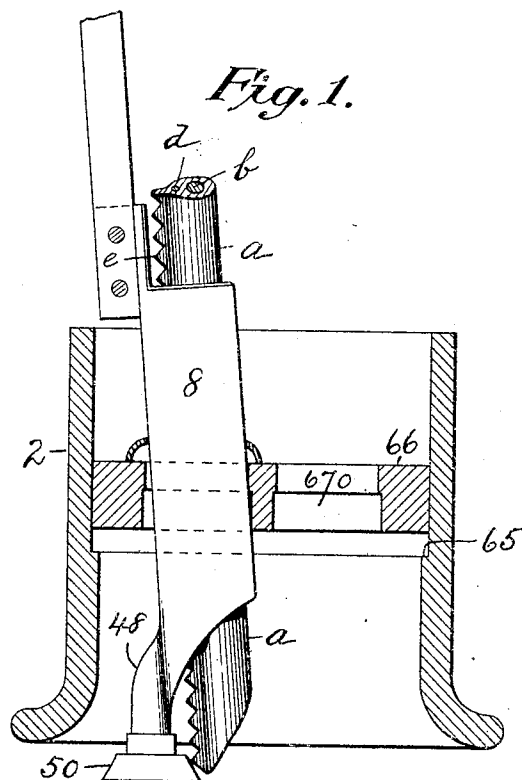


Fig. 2.

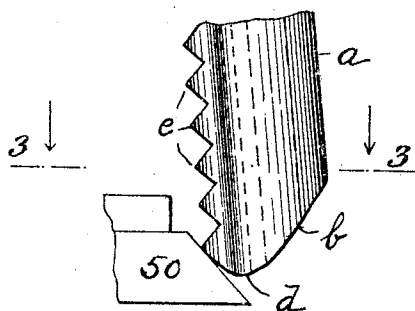
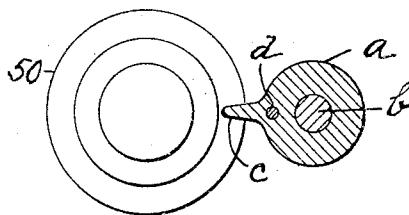


Fig. 3.



Attest:

Sarah S. Alenke
Stephen S. Newton

Josef H. Hallberg, Inventor:
by William R. Baird
his Att'y.

UNITED STATES PATENT OFFICE.

JOSEF H. HALLBERG, OF NEW YORK, N. Y., ASSIGNOR TO THE BECK FLAMING LAMP COMPANY, OF CANTON, NEW YORK, A CORPORATION OF NEW YORK.

ARC-LAMP ELECTRODE.

959,133.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed April 26, 1907. Serial No. 370,348.

To all whom it may concern:

Be it known that I, JOSEF H. HALLBERG, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Arc-Lamp Electrodes, of which the following is a specification.

My invention relates to electric arc lamps and particularly to certain improvements in the electrodes thereof of that type embodying a rib to engage a support.

In lamps of this character, in which the electrodes to be burned are composed of columns of material of different degrees of fusibility, there results at times an unsteadiness of the light due to the movement of the arc with respect to the longitudinal center of the electrode because of the fact that the arc will leave the core of the electrode, or the place where the more fusible salts are located, and moving elsewhere will vary the resistance and make the light unsteady. The tendency of the arc is to move to the point of lowest resistance and the purpose of my invention is so to locate this point with respect to the fusible core that a practically uniform consumption of the electrode will result. I accomplish this by furnishing the electrode with a metallic conductor embedded either in the rib or in the body of the electrode between the core and the rib. The arc naturally seeks the point of least resistance which is, of course, the lower terminal of the metallic conductor. This brings the arc to a point where the flame is always in contact with the body of the electrode near the core and causes a substantially uniform consumption of the entire electrode, because the indirect heat of the arc assists in the consumption of the electrode around the metallic conductor. I also provide the rib of the electrode with serrations along its rear edge. As each one of the teeth is consumed the electrode at once drops so that the next tooth above is brought to rest upon the support.

In the drawings, Figure 1 is a central vertical section and partial elevation of the lower part of an arc lamp embodying one of the electrodes of my invention, the other electrode not being shown; Fig. 2 is an enlarged detail of the lower end of the electrode and its support; Fig. 3 is a section

on the plane of the line 3—3 in Fig. 2; and Fig. 4 is a transverse section through the form of electrode in which the conductor is embedded in the rib.

In the drawings 2 is a base preferably cylindrical in form and suitably supported. 66 is a transverse apertured plate of non-conducting material adapted to rest in its lowermost position upon a shoulder around the inner wall of the base 2.

Hangers 6 are suitably supported from the upper part of the lamp and terminate at the bottom in sleeves 8 adapted to support and encircle the electrodes which move through them. The sleeves 8 pass through suitable apertures 670 in the plate 66 and are each provided with brackets 48 to the lower extremities of which are secured conical permanent supports 50 upon which the ribs of the electrodes rest.

Each electrode comprises a body *a* made of carbon in the usual manner and preferably cylindrical or polyhedral in form. At or near the central of the body is a core *b* made of suitable fusible salts of the alkaline metals in a manner well known to the art. At the rear of the body *a* and preferably made integral with it, and made of the same material as the body *a* is a longitudinal rib *c* and longitudinally arranged either within the rib or in the body *a* between the rib and the core *b* is a metallic conductor *d* in the form of a wire.

The rear edge of the rib *c* is preferably provided with teeth *e* arranged in series and presenting the appearance of a saw edge. The angle of the lower edges of the teeth should be substantially the same as the angle of the edge of the permanent support 50 with the horizon, so as to afford as much supporting surface to the rib as possible.

The mode of operation of my improved electrode is readily understood. When the lamp is energized and the arc is formed it seeks the wire *d* and draws the flame across the body of the carbon *a* and past the lower extremity of the core *b*. It also assists in the combustion of the rib *c*, by its indirect heat. As one of the teeth *e* burns away and finally crumbles the electrode drops until the next tooth above rests upon the support 50.

The electrode herein described and claimed is well adapted for use in a lamp of the construction exemplified by the application for

United States patent which was filed by me March 9, 1907, and is numbered, serially, 361,465.

What I claim as new is:—

- 5 1. An electrode for arc lamps, comprising a body of carbon having a core, a radially projecting external rib, and a longitudinal conductor arranged in the electrode in a plane which is approximately between the
- 10 core and the outer surface of the rib.
2. A cored electrode for arc lamps, having an external longitudinally extending rib and provided with a longitudinal metallic conductor which is arranged in the elec-
- 15 trode in substantially the same radial plane as the rib.
3. A carbon electrode for arc lamps, comprising a body of carbon, a core, a radially

projecting external rib and a longitudinal metallic conductor embedded in the rib. 20

4. A carbon electrode for arc lamps, having a radially projecting external rib, and a longitudinal metallic conductor embedded in the rib.

5. A cored electrode for electric arc lamps, 25 having its body portion provided with an external serrated rib, said electrode also provided with a longitudinal metallic conductor which is arranged between the core and the serrated edge of the rib.

In testimony whereof I affix my signature 30 in presence of two witnesses.

JOSEF H. HALLBERG.

Witnesses:

STEPHEN S. NEWTON,
WM. R. BAIRD.