

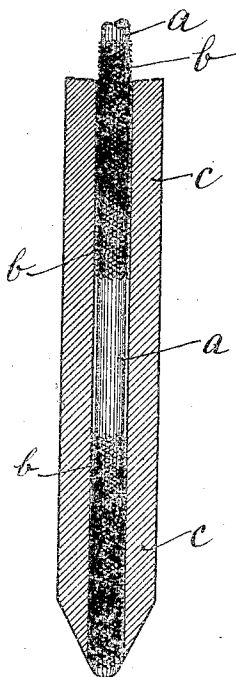
No. 880,055.

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H. VIERTTEL.

ARC LIGHT ELECTRODE CONTAINING METAL WITHIN THE SAME.

APPLICATION FILED APR. 16, 1907.



Witnesses:

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by
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UNITED STATES PATENT OFFICE.

HERMANN VIERTTEL, OF CHARLOTTENBURG, GERMANY, ASSIGNOR TO GEBRÜDER SIEMENS & CO., OF CHARLOTTENBURG, GERMANY, A CORPORATION OF GERMANY.

ARC-LIGHT ELECTRODE CONTAINING METAL WITHIN THE SAME.

No. 880,055.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed April 16, 1907. Serial No. 368,594.

To all whom it may concern:

Be it known that I, HERMANN VIERTTEL, a subject of the German Emperor, and resident of Charlottenburg, near Berlin, Germany, have invented a certain new and useful Improvement in Arc-Light Electrodes Containing Metal Within the Same, of which the following is a specification.

The present invention relates to arc-light electrodes and an important object is to provide an arc-light electrode containing metal within the same.

Metal has hitherto frequently been employed in arc-light electrodes for reducing the resistance of the same, but in the method in accordance with the present invention metal in the form of woven or laced net-like pipes or tubes is inserted into the carbons for the electrodes. The meshes of these reticulated metallic tubes are as completely as possible filled up with conducting carbon cement or with core material as is used for the cores of carbons for electric arc lamps. When finished hard cores are employed in making arc-light electrodes, it is preferable to place the metallic tube between the outer carbon casing and the core, thus concentrically with the core. The manufacture of such arc-light electrodes may, for example, be effected by the metal tube being pushed on to the hard core in the form of a rod. By pulling in the direction of the longitudinal axis of the tube, the latter is readily brought into intimate contact with the core, as tubes of such a kind become diminished in cross-section when pulled longitudinally. The core covered over with the tube is now dipped into a suitable cement such as is used, for example, for cores. In this way the meshes of the tube become filled up as completely as possible with the cement, in order to bring about a perfect cementing between the outer casing, the metal tube and the core. The core-rod with its metal covering thus prepared is now inserted in the carbon casing which is likewise filled with core-cement, the superfluous core-material being pressed out. In this manner a deficient filling up of the intermediate space between the core-rod and the casing is avoided. The carbons are then dried in the usual manner.

In the accompanying drawing I have shown in vertical section an arc light electrode made in accordance with my invention.

In said drawing *a* represents the core, *b* the reticulated metal fabric tube, of which the interstices are entirely filled with core material and *c* the outer casing of the electrode.

If, instead of finished cores being employed, the known plastic core-material only is to be used, it is preferable to insert the metal tube into the hollow carbon tube which serves as a casing and bring it into as intimate contact as possible with the casing by compression in the longitudinal direction, the casing being filled up afterward in the usual manner with core-material. In this case also the meshes of the metallic net are very perfectly filled up and a certain and good cementing between the core and casing is brought about and an excellent contact between the metallic tube and the core-material.

Besides the advantage of a good and certain contact which is particularly obtained through the large surface and the reticular construction of the tube, the arc-light electrode according to the present invention has the advantage that the arc is maintained on the core very much better than in other arrangements, and the metal is prevented from being melted out very much better. Particularly as opposed to forms of electrodes with cores which are copper-plated, besides the advantage of the intimate cementing as described above, arc-light electrodes which are made in accordance with the method of the present invention have the very substantial further advantage that the core is not permeated by the electrolytic liquid, which would be unavoidable in the case of the electrolytic production of coats of metal. Copper is suitable in a particularly high degree for employment as the metallic insertion for arc-light electrodes of the kind made according to the present invention. Electrodes which are made as above described burn exceedingly well with high current densities, and are particularly suitable for reflectors on account of the great stillness of the arc. When burning with alternating current they have the advantage that the considerable noises which arise with other carbons when burning with high current densities are infinitesimally small.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A method of manufacturing arc light

electrodes, consisting in filling the interstices of a reticulated metal tube with core material and inserting said tube into a hollow carbon casing and drying the same.

5 2. A method of manufacturing arc-light electrodes, consisting in covering a core with a reticulated metal tube, in impregnating the same with core-material, and in inserting the core-rod thus obtained into a carbon casing
10 containing core-material, and in drying the same.

3. An arc-light electrode, comprising in combination a core, a reticulated metallic tube and a carbon casing inclosing the same,

the spaces and interstices within said casing 15 being filled with core-material.

4. An arc-light electrode comprising in combination a core, a reticulated metallic tube cemented thereto whereby a core-rod is formed, and a carbon casing cemented to the 20 latter.

In testimony whereof I have signed my name to this specification in the presence of the two subscribing witnesses.

HERMANN VIERTEL.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.