

UNITED STATES PATENT OFFICE.

BERTHOLD MONASCH, OF BERLIN, GERMANY, ASSIGNOR TO GENERAL ELECTRIC COMPANY,
A CORPORATION OF NEW YORK.

ARC-LIGHT ELECTRODE.

No. 905,557.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed May 16, 1906. Serial No. 317,168.

To all whom it may concern:

Be it known that I, BERTHOLD MONASCH, a subject of the King of Prussia, residing at Berlin, Germany, have invented certain new and useful Improvements in Arc-Light Electrodes, of which the following is a specification.

My present invention relates to arc light electrodes composed principally or in part of one or more metallic compounds, such as magnetite, titanium oxid, titanium carbid, and the like. Such compounds form highly desirable constituents for arc light electrodes, and particularly for electrodes used as the negative electrodes of direct current arc lamps, as suitably formed electrodes containing such compounds in suitable amounts yield highly efficient flaming or luminous arcs. The materials specified above are characterized, however, by the fact that they become fluid at a temperature appreciably lower than that at which they vaporize. As a result electrodes containing them tend to have formed on their arcing ends pools of melted material. Such a pool may be objectionable especially when such an electrode is employed as a negative where if the pool is large the arc extending from it may be very unstable,—the end of the arc continually wandering about on the surface of the pool, thus producing an undesirable flickering.

I have discovered that by adding silicon carbid preferably in a finely powdered state, to an electrode containing one or more of the metallic compounds specified, this flickering may be greatly reduced or entirely done away with. To produce the best results the silicon carbid should be thoroughly commingled with the metallic compound or com-

pounds throughout the electrode which may be formed in the usual manner. I attribute the results arising from the use of silicon carbid in this manner, to the great heat capacity of the silicon carbid whereby without fusing itself it takes up heat from the melted metal compounds. The presence of silicon carbid insures that the arcing end of such an electrode is at all times covered by a network or bridge, so to speak, of unfused silicon carbid, which results in a quietly burning arc. The silicon carbid content of such an electrode may vary between quite wide limits depending on the circumstances of the case.

I have obtained excellent results with electrodes containing from 5 to 90 per cent. of silicon carbid, though ordinarily I prefer to keep the silicon carbid content materially below the higher limit mentioned.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. An arc light electrode composed of one or more metallic compounds with 5 to 90 per cent. of silicon carbid.

2. An arc light electrode composed of one or more metallic compounds mixed with several per cent. of silicon carbid.

3. An arc light electrode composed of one or more metallic compounds intimately mixed with several per cent. of finely powdered silicon carbid.

In witness whereof, I have hereunto set my hand this 24th day of April, 1906.

BERTHOLD MONASCH.

Witnesses:

JULIUS RUMLAND,
OSKAR SINGER.