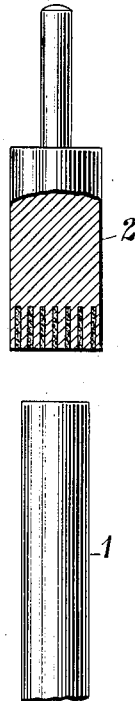


G. M. DYOTT.
ELECTRODE FOR ARC LAMPS.
APPLICATION FILED APR. 28, 1906.

956,519.

Patented May 3, 1910.



WITNESSES:

C. L. Belcher
Otto S. Schairer

INVENTOR

George M. Dyott

BY

Leslie S. Carr
ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE M. DYOTT, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE
ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

ELECTRODE FOR ARC-LAMPS.

956,519.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed April 28, 1906. Serial No. 314,213.

To all whom it may concern:

Be it known that I, GEORGE M. DYOTT, a subject of the King of Great Britain, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electrodes for Arc-Lamps, of which the following is a specification.

My invention relates to arc lamps and particularly to those in which the electrodes are composed of materials which render the arc "flaming" or "luminous".

The object of my invention is to provide an electrode for lamps of the character indicated which shall not be readily consumed and which shall insure the production of a steady, uniform light of good quality.

Arc lamps are now frequently provided with electrodes, the compositions of which are such that the arcs are rendered more luminous than those produced by the ordinary carbon electrodes and also such that they are very much less rapidly consumed. An electrode of this character which has been found suitable in practice has been composed of a mixture of the magnetic oxid of iron, which is a conductor whether hot or cold, and which gives conductivity to the electrode, the oxid of titanium which imparts appropriate color and brilliancy to the arc, and the oxid of chromium which steadies the arc and prevents the electrodes from being rapidly consumed, these substances being combined in varying and suitable proportions. Other compositions of these materials or of others having similar or suitable properties may also be employed. Such an electrode has heretofore been employed as the cathode usually in combination with a copper positive electrode. It has been found, under certain conditions, however, that globules of slag form on the copper electrode containing a considerable amount of copper oxid, which is an insulating material, when cold, and which frequently prevents the arc from starting after the lamp has been in use. For this reason it has been proposed to employ iron, silver or some other metal, the oxid of which is a conductor. Iron, however, is more readily consumed than copper and causes the arc to become very unsteady. According to the present invention I propose to combine with iron another substance or substances of such character that the fusing point of the com-

bination will be higher than that of iron alone and which will therefore steady the arc and render the electrode less readily destructible. By the use of suitable substances, desired and appropriate color characteristics may also be imparted to the arc.

The single figure of the accompanying drawing illustrates the electrodes of an arc lamp that embodies my invention.

The negative electrode 1 of the lamp is preferably composed, as before described, of the magnetic oxid of iron and the oxids of titanium and chromium though it may also be composed of other substances having similar or suitable properties. The upper electrode or anode 2 comprises a block of iron having the end which is presented to the other electrode, drilled or slotted so as to provide holes or recesses in which other materials may be placed. Such other materials as have been found suitable and preferable are titanium oxid, chromous oxid, manganese di-oxid or a mixture of two or more of these oxids with each other or with iron oxid, though other substances may also be employed. The oxids of titanium, chromium and manganese have higher fusing points than iron and serve to prevent rapid consumption of the electrode. Titanium oxid may also impart desirable color characteristics to the arc. The oxid of iron being a conductor, the slag which forms upon the end of the anode, when in use, will not prevent ready starting of the lamp after it has been in use for a time. It has also been found that globules of molten metal adhere less readily to an anode that is constructed as described than to one which is composed of copper. The recesses or holes in the electrode may also be filled with metals instead of the oxids of metals, if desired, chromium, titanium and manganese having been found useful, though other metals having higher fusing points than iron or other metal of which the body of the electrode is composed may be employed.

The electrode may be constructed in any other suitable manner than that shown, and, if desired, may be composed of alloys of two or more of the metals specified.

I claim as my invention:

1. An electrode comprising a block of iron having a plurality of end recesses and titanic material contained within the recesses.

2. An electrode comprising a block of

metal having a low fusing point, said block having a plurality of recesses, and material having a higher fusing point contained within the recesses.

- 5 3. An electrode comprising a block of iron having a plurality of end recesses and the oxid of a metal having a higher fusing point contained within the recesses.

In testimony whereof, I have hereunto subscribed my name this 13th day of April 10 1906.

GEORGE M. DYOTT.

Witnesses:

OTTO S. SCHAIRER,
BIRNEY HINES.