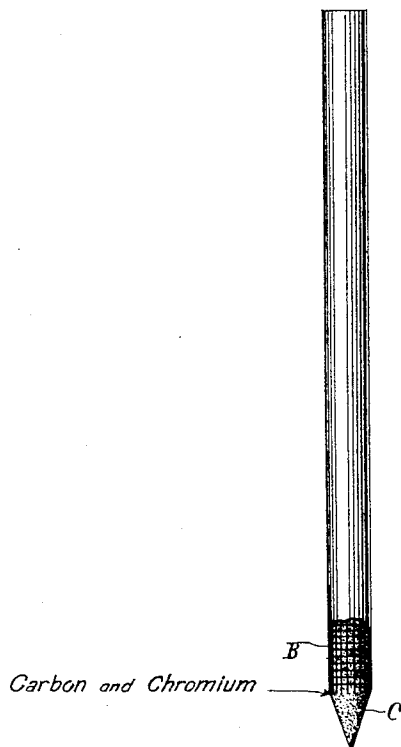


(No Model.)

I. L. ROBERTS.
ELECTRODE FOR ARC LAMPS.

No. 460,596.

Patented Oct. 6, 1891.



WITNESSES:

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ISAIAH L. ROBERTS, OF BROOKLYN, NEW YORK.

ELECTRODE FOR ARC LAMPS.

SPECIFICATION forming part of Letters Patent No. 460,596, dated October 6, 1891.

Application filed March 6, 1891. Serial No. 383,941. (No model.)

To all whom it may concern:

Be it known that I, ISAIAH L. ROBERTS, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Arc-Lamp Pencils, of which the following is a specification, reference being had to the drawing accompanying and forming part of the same.

The subject of my present invention is a pencil or electrode for arc lamps which is an improvement on the carbon and other pencils in general use in the particulars hereinafter pointed out.

This invention is an improvement on the form of arc-light pencil shown and described in my application filed March 10, 1890, Serial No. 343,315, and which consists, broadly, of a pencil composed of a metallic holder, with which is associated a refractory substance containing chromium or some of its compounds.

According to my present invention I employ as the refractory substance a compound of conducting-carbon and a substance containing chromium, finding that by so doing I obtain a superior light and a more durable carbon, which, particularly after the extinguishment of the arc, offers a lower resistance and relights more readily. I also employ as the metallic holder a cylinder rod or tube of wire-gauze, the use of which contributes very greatly to reducing the cost of manufacture.

In carrying out my invention I use, generally, a wire net or gauze of about twelve meshes to the inch. Strips of this are rolled up into rods or tubes of the desired diameter, which are pressed down into a mixture of about ten per cent. of plumbago or some conducting

carbon, as gas-retort carbon, and ninety per cent. of pulverized chrome iron ore or other compound of or containing chromium. The chrome-iron ore should be as free from earthy matters as possible, and it is made into a mud by a solution of caustic soda of about 10° Baumé. If a perforated tube or cylinder, such as is made of wire-gauze, be forced down into such a mixture and rapped repeatedly, the mud rapidly works in through the perforations or meshes and completely fills it. This material dries rapidly and becomes hard and solid, and when so dried a coating of the same compound is applied over the tube.

In the accompanying drawing a pencil constructed in the manner above described is shown partly in section.

B is the wire-gauze, and C the chromium compound and carbon.

Having now described my invention, what I claim is—

1. A pencil for arc lamps, composed, essentially, of carbon and a substance containing chromium, in combination with a metallic conductor or holder with which it is associated, as set forth.

2. A pencil for arc lamps, composed of a refractory compound containing chromium, in combination with a tube or cylinder of perforated metal, such as wire-gauze.

3. A pencil for arc lamps, composed of a mixture of carbon, a substance containing chromium, and caustic potash, in combination with a holder of wire-gauze.

ISAIAH L. ROBERTS.

Witnesses.

ROBT. F. GAYLORD,
PARKER W. PAGE.