

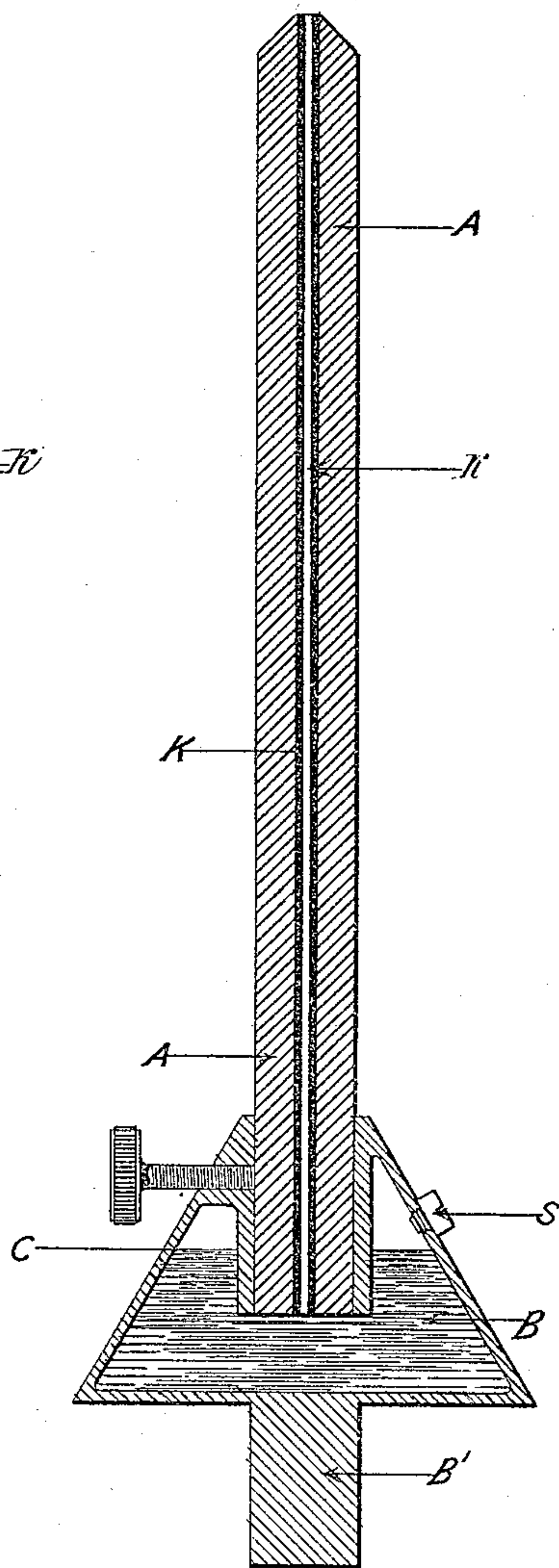
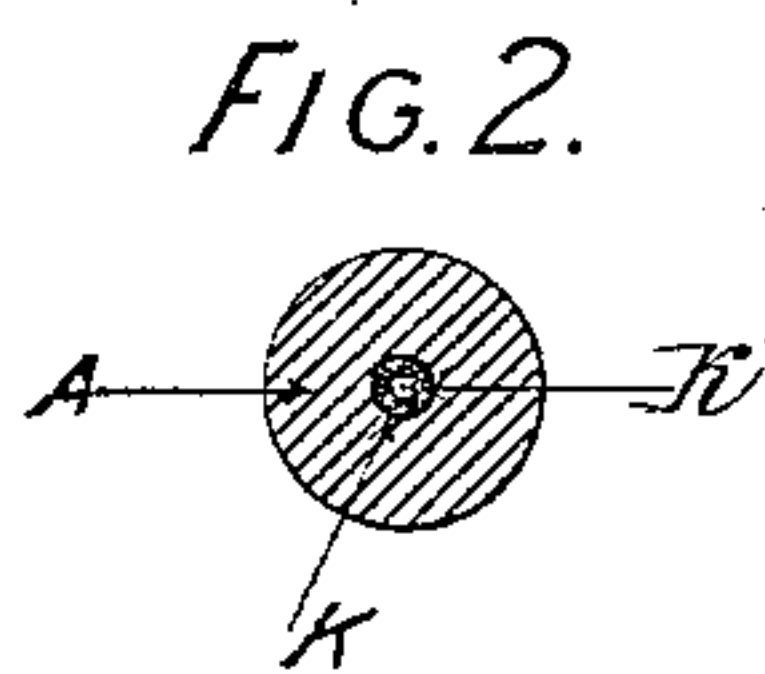
(No Model.)

A. APPS.
ELECTRIC ARC LAMP.

No. 438,134.

Patented Oct. 14, 1890.

FIG. 1.



Witnesses:
Wm. M. Andrew,
Ernest C. Barker,

Inventor:
Alfred Apps
by Fairfax & Wetter
Attorneys

UNITED STATES PATENT OFFICE.

ALFRED APPS, OF LONDON, ENGLAND.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 438,134, dated October 14, 1890.

Application filed June 17, 1890. Serial No. 356,790. (No model.)

To all whom it may concern:

Be it known that I, ALFRED APPS, a subject of the Queen of England, residing at 433 Strand, London, in the county of London, England, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

My invention has for its object to increase the intensity, improve the color, and augment the steadiness of the electric-arc light obtainable from a given amount of energy.

I am aware that for this purpose hydrocarbon vapors have been conducted through the interior of the carbon, and that a special method of using hydrocarbon vapors and preventing the stoppage of the bore-hole through which the vapors pass consists in inserting a wick made of asbestos. I have discovered, however, that no wick is necessary for keeping the bore-hole open and allowing the hydrocarbon vapor to pass.

Instead of using a wick I line the bore-hole of the carbon with a suitable insulating (otherwise refractory) material—such as kaolin, lime, plaster-of-paris, vitreous paint, japan, stone, or earthenware—so as to form a thin capillary tube, which varies in size with the size or length of the carbon, and which in the case of ordinary carbons has from one-hundredth to one-fiftieth of an inch clear width or diameter for the passage of the vapors. The cross-section of the vapor duct or tube may be circular or of other suitable shape. In making this capillary tube or lining the lime, plaster, or other mineral matter is introduced in a plastic condition, so that it adheres readily to the interior of the carbon, and a thin wire or other core is inserted and afterward withdrawn in order to preserve the necessary aperture. As the tube or lining is very thin, and therefore the quantity of mineral matter very small, it burns or falls away in proportion as the carbon is consumed, thus keeping the hole open for the easy pas-

sage of the vapors from the lower parts of the carbon or from the vessel containing oil or other source of hydrocarbon vapor.

Another object of the lining or tube is to prevent the deposit of carbon from the vapor on the walls of the passage, which deposit would form an obstruction to the flow of vapors.

In the further description reference will be made to the accompanying drawings, in which—

Figure 1 is a vertical section, and Fig. 2 a cross-section, of a carbon embodying my invention.

The carbon A is fitted into a vessel B, containing oil up to the level C, which oil ascends by capillary attraction through the small axial perforation *k*. This passage *k* is formed by the tube or lining K, of kaolin, plaster-of-paris, or other suitable refractory material. B' is a brass rod or tube, by means of which the vessel B can be fixed in the lamp-holder. The part B may, however, be placed in any other convenient position.

The vessel is provided with an opening, which can be plugged by a screw S, and serves to admit air to the interior when required.

Instead of using a vessel B, the hydrocarbon oil may be supplied by a separate reservoir placed in any suitable position and connected with the inlet end of the carbon by a wick.

What I claim is—

A carbon for electric-arc lamps, having an axial perforation provided with a lining or tube adapted to supply liquid by capillary attraction, substantially as described.

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

ALFRED APPS.

Witnesses:

J. WETTER,
ERNEST C. BARKER.