(No Model.)

E. THOMSON.

CARBON FOR ARC LAMPS.

No. 533,932. Patented Feb. 12, 1895.

FIG. 1.

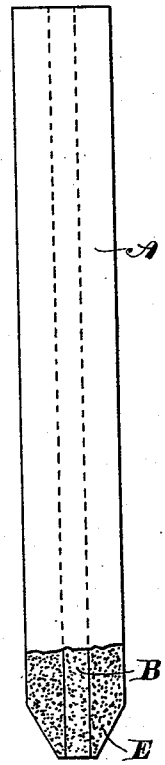


FIG. 2.

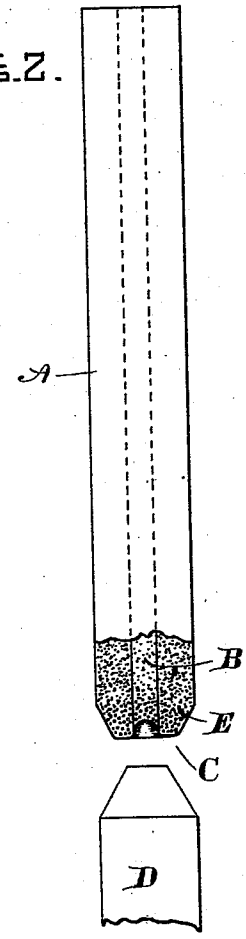
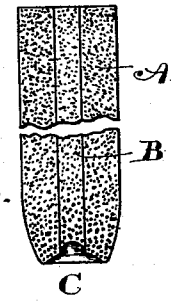


FIG. 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ELIHU THOMSON, OF SWAMPSCOTT, ASSIGNOR TO THE THOMSON-HOUSTON ELECTRIC COMPANY, OF BOSTON, MASSACHUSETTS.

CARBON FOR ARC LAMPS.

SPECIFICATION forming part of Letters Patent No. 533,932, dated February 12, 1895.

Application filed November 26, 1894. Serial No. 529,913. (No model.)

To all whom it may concern:

Be it known that I, ELIHU THOMSON, a citizen of the United States, residing at Swampscott, in the county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Carbons for Arc Lamps, of which the following is a specification.

My invention relates to the carbon electrodes for arc lamps; and has for its object to provide a simple means of preventing overloading of dynamos or transformers by excessive current in such lamps at starting.

With alternating current arc lamps it has been found imperative to use the so-called "cored" carbons having a cylindrical shell of hard carbon and an inner core of soft material readily volatilized. When this core extends into the tip of the carbon it volatilizes very easily when the current is first turned on, as it forms the principal conducting path, and the body of heated gas thus formed reduces the resistance of the arc so greatly that where many lamps are turned on at once, it is a frequent source of overload to the generator, although it may be capable of running the lamps readily after they have once been started. It is a remedy for this trouble which forms the object of my invention, and this I attain by boring out the core or end of the carbon before it is inserted in the lamp, thus bringing the hard parts of the carbon together. The lamps thus start with approximately normal current and the dynamos are not overloaded.

An illustration of my invention is shown in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of a cored carbon as ordinarily constructed. Fig. 2 is a similar view of a carbon constructed according to my invention, and Fig. 3 is a view, showing a modification.

A is the outer shell of hard carbon, and B is the core.

In Fig. 2, C is a circular cup bored out of the end of the carbon, which has the effect of preventing the too great volitalization of the cored part on starting.

In Fig. 3, the cup C extends partly across the body of the carbon A, and this is the form ordinarily taken by the carbon after the point or cone E has been burned away.

It is of course immaterial what form of carbon is employed in the practice of my invention, it being only necessary that the end of it should be formed with the little cup, for the purpose set out.

The object of my invention is to approximate in the initial shape of the carbon the form which it will have after being in use or after burning for a considerable time. The core being soft will burn away into a deep cup and in my invention I form this deep cup by mechanical means, removing that part of the core, or a little more than it, which would be removed in the first burning of the new carbon not prepared as above described.

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

1. The method of preventing excess of current at starting in arc lamps employing cored carbons, which consists in removing the core for a short distance from the tip of the carbon, substantially as described.

2. As a new article of manufacture, a carbon for arc lamps, comprising an outer casing or shell of hard carbon, and an inner core of softer material, the inner core being cut away from the tip of the electrode, substantially as described.

3. As a new article of manufacture, a carbon electrode for an arc lamp, comprising an outer shell of hard carbon and an inner core of softer material, the electrode having a cup at its tip, whereby the inner core is cut away from the end of the carbon.

In witness whereof I have hereunto set my hand this 23d day of November, 1894.

ELIHU THOMSON.

Witnesses:
JOHN W. GIBBONEY,
DANIEL B. GAUCHET.