

(No Model.)

H. W. LIBBEY.
ARC LAMP ELECTRODE.

No. 460,680.

Patented Oct. 6, 1891.

Fig. 1.

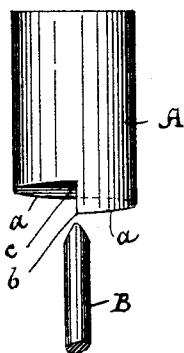


Fig. 2.

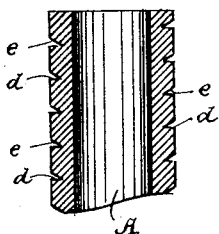


Fig. 3.

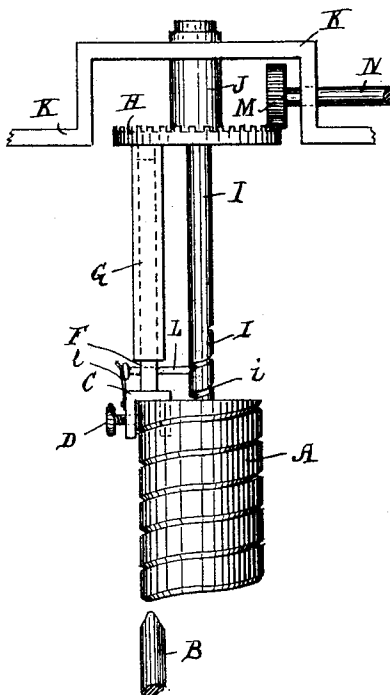
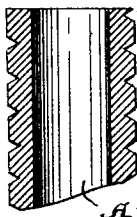


Fig. 4.



Witnesses.

Frederick G. Kierwin.
John J. Moore.

Inventor.

Hosea W. Libbey.
by Edwin Blanton.
Attorney.

UNITED STATES PATENT OFFICE.

HOSEA W. LIBBEY, OF BOSTON, MASSACHUSETTS.

ARC-LAMP ELECTRODE.

SPECIFICATION forming part of Letters Patent No. 460,680, dated October 6, 1891.

Application filed October 17, 1890. Serial No. 368,446. (No model.)

To all whom it may concern:

Be it known that I, HOSEA W. LIBBEY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Cylinder Carbons, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to produce a positive carbon electrode for arc lamps that can be used with the ordinary negative pencil electrode, but which will burn for a much greater length of time than positive electrodes now in use.

The invention consists of a cylindrical carbon which may be plain on its exterior or formed with a spiral groove, the distance between the spiral being equal to the amount of carbon consumed by one revolution of the cylindrical carbon.

Referring to the accompanying drawings, Figure 1 represents a cylindrical-carbon electrode embodying my invention. Fig. 2 is a vertical section through a cylindrical-carbon electrode having a spiral groove formed in its outer periphery. Fig. 3 is a view of the same and means for rotating and lowering it as its lower edge is consumed. Fig. 4 is a vertical section of a cylindrical carbon, showing a V-shaped spiral groove cut therein.

A represents a cylindrical-carbon electrode embodying my invention, the lower edge *a* of which is of spiral form, the distance between the point *b* and the point *c* being equal to the amount of carbon that is consumed in one revolution of the cylindrical carbon.

B represents the end of the negative electrode, which may be of the ordinary pencil form now in use.

I prefer to form the cylindrical-carbon electrode with a spiral groove, as shown in Figs. 2 and 3, the space between the spirals being equal to the amount of carbon consumed in one revolution. This groove I prefer to form as shown—that is, with a straight portion *d* and a slanting portion *e*—so as to form, as it were, a line to which the carbon will be consumed and yet present a comparatively-

pointed portion to be in contact with a negative electrode.

In Fig. 3 I have shown one means of imparting a rotary and at the same time a downward feed motion to the cylindrical carbon. A is the carbon attached at its upper edge by a screw D in a saddle C on the end of a square rod F, that is free to slide in a bar G, having a square aperture to receive the said rod F. The bar G is connected to a cog-wheel H, mounted upon a shaft I, that is carried by a bearing J, attached to or formed in one with the base-plate K. This shaft I is at its lower end formed with a screw-thread *i*, in which works a tracer L, that passes through the square shaft F and is kept pressed forward by a spring *l*. The pitch of the screw-thread *i* corresponds to the spiral recess in the face of the carbon, so that when the carbon has made one revolution it will by the screw-thread *i* and tracer L be fed forward an amount equal to the distance between the spirals.

The wheel H is rotated by a pinion M on shaft N, which may be operated by clock-work, electro-magnet and clutch, or any suitable means.

In Fig. 4 I have shown a cylindrical carbon with a V-shaped groove.

What I claim as my invention is—

1. A carbon electrode for arc lamps, consisting of a hollow cylindrical carbon, the upper end of which is at right angles to its side and its lower end of spiral form, substantially as set forth.

2. A carbon electrode for arc lamps, consisting of a hollow cylindrical carbon adapted to be supported by a clamp at its upper straight end, its lower end being of spiral form, and means for rotating and lowering the same as it is consumed, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 19th day of September, A. D. 1890.

HOSEA W. LIBBEY.

Witnesses:

CHAS. STEERE,
EDWIN PLANTA.