(No Model.)

X. WERTZ.

ELECTRIC ARC LAMP.

No. 457,141. Patented Aug. 4, 1891.

Fig. 1.

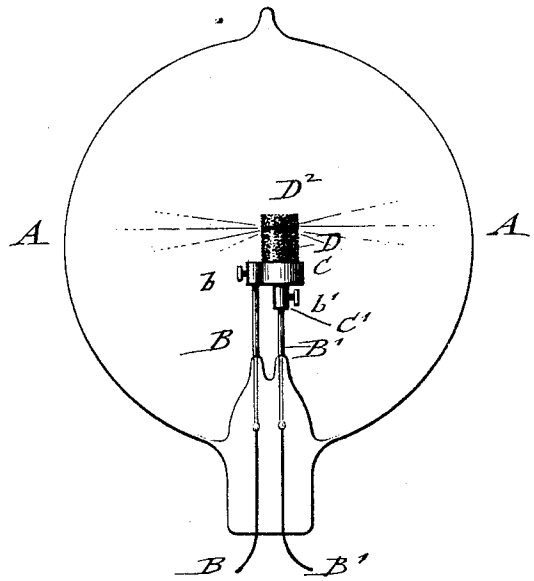


Fig. 3.

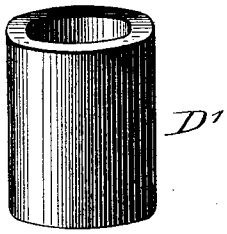


Fig. 4.

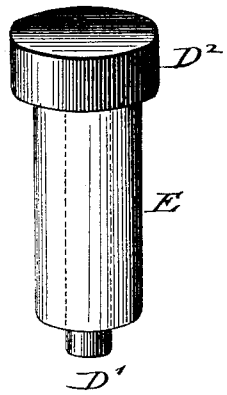
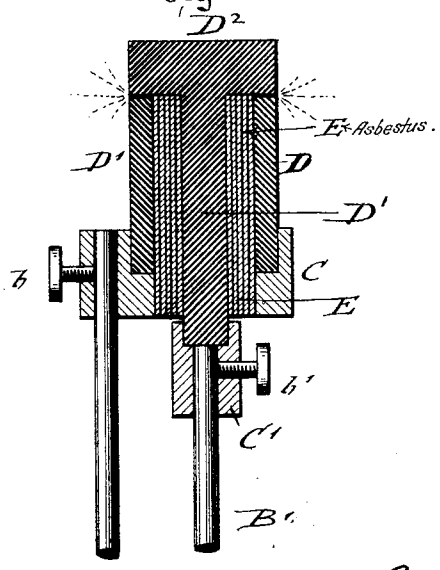


Fig. 2.



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UNITED STATES PATENT OFFICE.

XAVIER WERTZ, OF NEW YORK, N. Y.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 457,141, dated August 4, 1891.

Application filed December 5, 1889. Serial No. 332,717. (No model.)

To all whom it may concern:

Be it known that I, XAVIER WERTZ, of the city, county, and State of New York, a citizen of the United States, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification.

This invention relates to certain improvements in the construction of electric lamps, which is based on the formation of a voltaic arc located in a glass bulb or globe in which a vacuum has been established, so that the carbon will burn for a considerable length of time and the lamp be applicable for use in the same manner of electric-glow lamps without requiring any forward feeding of the carbons.

The invention consists of an electric lamp composed of a closed glass bulb or globe from which the air has been exhausted, conducting-wires leading into the globe, and of two carbon pencils which are supported by suitable holders on said conducting-wires in such a manner that a voltaic arc is formed by the contact-faces of said pencils when the current passes through the carbons. The inner carbon pencil is preferably provided with a disk-shaped head, which rests on the edge of the outer cylindrical carbon, which latter surrounds the shank of the inner carbon and is separated from the same by a layer of suitable insulating material.

In the accompanying drawings, Figure 1 represents a side elevation of my improved electric lamp. Fig. 2 is a vertical transverse section of the carbons by which the arc is formed, said figure being drawn on a larger scale, and Figs. 3 and 4 are perspective views, respectively, of the outer and inner carbon pencils, said figures being also drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a closed glass bulb or globe of my improved electric lamp, which globe is closed in the usual manner and the air exhausted therefrom after the conducting-wires have been sealed into the neck of the same. The conducting-wires B B′ pass through the neck of the lamp to the interior of the same and are attached by clamp-screws *b b′*, respectively, to cup-shaped sockets C C′, which serve for supporting the inner and outer carbon pencils D D′ by the contact of which the voltaic arc is obtained. The outer carbon D is made in cylindrical shape and supported in the cup-shaped socket C. The inner carbon D′ is made with a cylindrical shank having an enlarged or disk-shaped head D^2, which latter rests on the upper edge of the outer cylindrical carbon. The space between the shank of the inner carbon D′ and the tubular outer carbon D is filled with an insulating-layer E, of asbestus or other suitable material, which latter prevents the current from passing from one carbon to the other, except at the contact-faces of the same. The shank of the inner carbon D′ is in contact with the conducting-wire B′ and supporting-socket C. The sockets C C′ are made of brass, steel, or other suitable metal, which serve to conduct the current to the outer and inner carbons. Owing to the contact of the upper edge of the outer carbon D with the head of the inner carbon D′ a voltaic arc is formed at the point of contact, which arc is of sufficient size to produce a light of considerable power. As the carbons are burned *in vacuo*, they are consumed at a very slow rate, so that the lamp will burn for a great length of time before giving out. My electric lamp is intended to be worked with a high-tension current, such as is used in operating arc lamps. It may be placed in circuit with the same.

The candle-power is intended to be considerably higher than that of the ordinary incandescent lamps at present in general use, which candle-power may be increased by increasing the size of the carbons and of the glass globe.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An electric lamp, consisting of an evacuated glass globe or bulb, conducting-wires passing to the interior of the globe, sockets attached to said conducting-wires, contacting-carbons supported in said sockets arranged with a space between them, and a layer of insulating material in said space, substantially as described.

2. An electric lamp, consisting of an evacuated glass bulb or globe, conducting-wires passing to the interior of the globe, sockets attached to said conducting-wires, a tubular carbon secured to one socket, a cylindrical carbon having an enlarged head and a shank inserted into said tubular carbon and secured to the other socket, and a separating-layer of insulating material between the outer tubular carbon and the shank of the inner carbon, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

XAVIER WERTZ.

Witnesses:
PAUL GOEPEL,
T. W. REIMHERR.