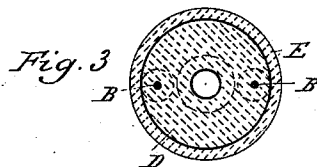
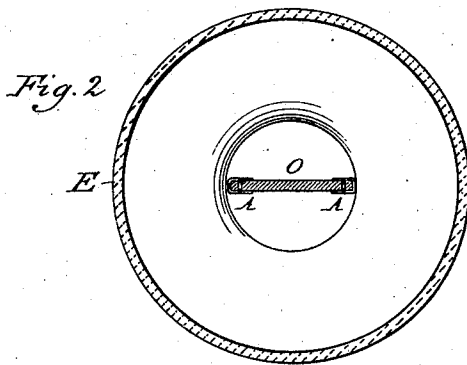
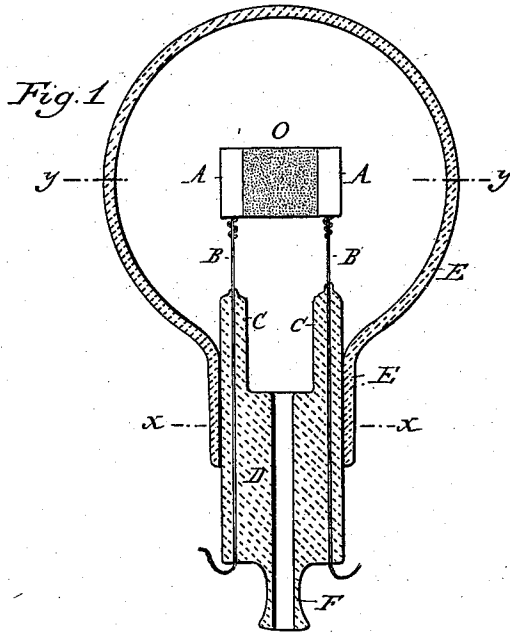


(No Model.)

C. J. VAN DEPOELE.
ELECTRIC LAMP.

No. 259,062.

Patented June 6, 1882.



Attest:
H. Barthel
C. Scully.

Inventor:
Chas. J. Van Depoele
by *Wm. S. Sprague*
Atty

UNITED STATES PATENT OFFICE.

CHARLES J. VAN DEPOELE, OF CHICAGO, ILLINOIS.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 259,062, dated June 6, 1882.

Application filed February 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. VAN DEPOELE, of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Electric Lamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of my invention relates to certain new and useful improvements in electric lamps wherein the current of electricity employed is of such high potential (high tension) that the electric spark will pass without bringing the opposite terminals into contact, which can remain at all times a certain distance apart.

It will be noticed that my improved lamp is neither an arc lamp nor an incandescent one.

Figure 1 is a vertical central section. Fig. 2 is a cross-section on the line *y y* in Fig. 1. Fig. 3 is a cross-section on the line *xx* in Fig. 1.

In the accompanying drawings, O represents a non-conducting medium placed between the two terminals A A. This medium is composed of some non-conducting substance—such as asbestos fiber, clay, plaster, or other non-conducting substance—being covered with a paste made of water and lamp-black, or provided with small particles of carbon pressed into the surface, and so arranged that such particles shall not be in continuous contact with each other, but so that an electric current—such as is used in arc or incandescent lamps—will not pass, and will have no effect on such medium.

In order to operate said medium, a current of very high potential or tension is employed, sufficient to pass without making actual electrical contact between the two terminals when said terminals are placed, say, one-sixteenth of an inch apart. The edges of this medium are embraced by the platinum plates A A, bent over such edges, and the platinum wires B B, so as to form perfect contacts. The wires B B are bent around the ends of the medium to convey the current thereto.

C C are glass prolongations projecting from plug D, through which the wires B B are car-

ried. This plug snugly fits into the inverted neck of the glass bulb E, and an orifice or opening, F, through said plug is intended to afford means for allowing the necessary vacuum to be created in the bulb, or to allow the introduction of such gases as may be expedient to prevent combustion.

After the parts are constructed and connected with the plug D said plug is inserted into the neck of the bulb and secured therein, so as to form an air-tight joint. Now, if the plug is properly secured to a vacuum-pump, all the air in the bulb may be removed, so far as is practicable. When this has been done the bulb is filled with carbonic or other gas which will not readily attack the carbon particles of the medium when brought to a certain heat. Now, the current is allowed to pass between the terminals A A, over the medium O, over which the current passes in irregular streams, jumping from one particle of carbon to another. To render the flow of the current steady and to make the light emitted clear and brilliant, a partial vacuum must be again created in the bulb until the extreme whiteness of the spark and the irregular waves have become softer and steady, presenting a beautiful glow of light, when the end of the orifice or hole F through the plug is finally closed in any of the known ways.

I am aware of the United States Patent No. 194,563, of 1877, and the English Patent No. 4,774 of 1874, and I do not therefore broadly claim an electric lamp wherein a current of high tension is used to jump from point to point of an insulated holding device to produce the light.

What I claim is—

1. In an electric lamp, the combination, with a confining-globe, a holding device, and conducting-wires, of a non-conducting medium connected with the wires, and provided upon its surface with small particles of finely-divided conducting medium secured close together, but not in electrical contact, substantially as described.

2. In an electric lamp, and in combination with the terminals A A, conductors B B, a confining-globe, and a suitable support, the non-

conducting medium O, provided with small particles of carbon not in electrical contact, substantially as described.

3. In an electric lamp, the combination, with
5 a non-conducting medium provided superficially with small particles of finely-divided conducting material not in electrical contact, of a glass globe inclosing said conducting and non-conducting mediums, and from which the

air has been abstracted and replaced by some 10 non-supporting gas, and suitable electrical connections leading from the mediums within the globe, substantially as described.

CHARLES J. VAN DEPOELE.

Witnesses:

H. S. SPRAGUE,
E. SCULLY.