

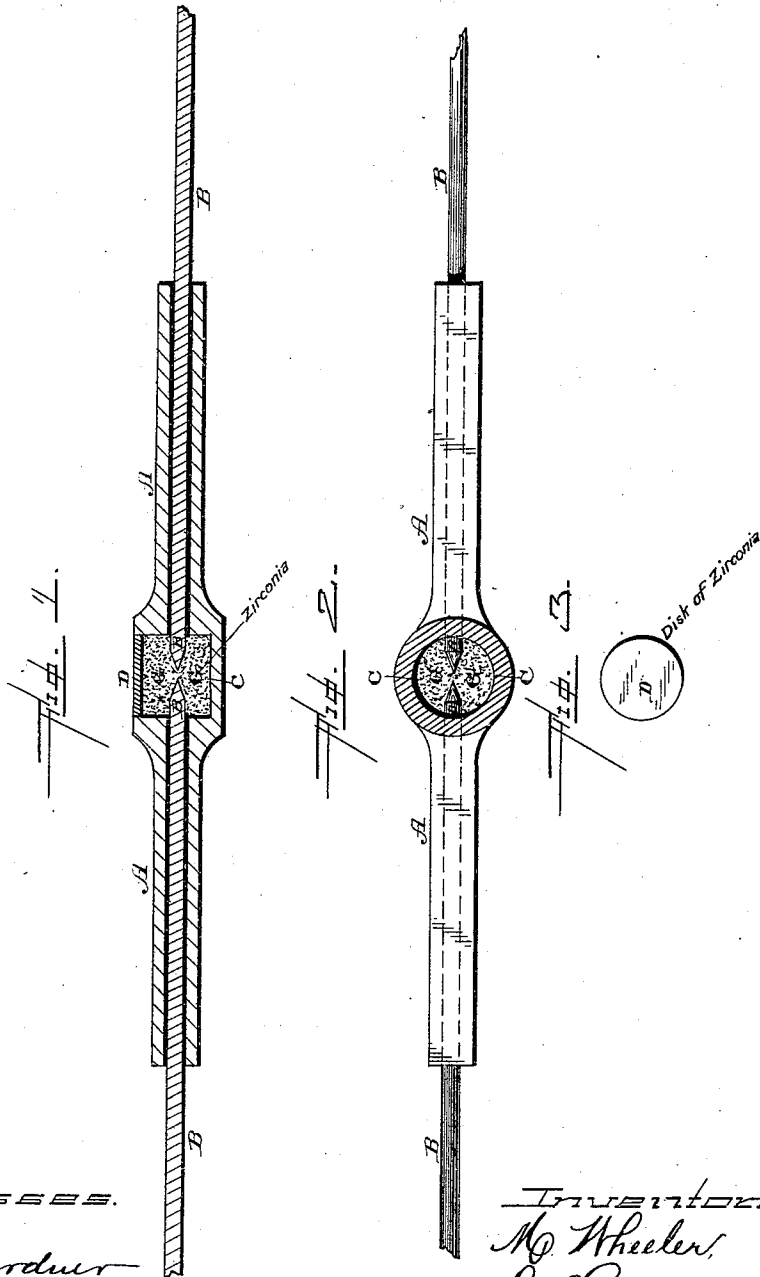
(No Model.)

D. LYMAN & M. WHEELER.

ELECTRIC LAMP.

No. 352,625.

Patented Nov. 16, 1886.



Witnesses.

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UNITED STATES PATENT OFFICE.

DARIUS LYMAN AND MARSHAL WHEELER, OF WASHINGTON, D. C.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 352,625, dated November 16, 1886.

Application filed February 8, 1886. Serial No. 191,251. (No model.)

To all whom it may concern:

Be it known that we, DARIUS LYMAN and MARSHAL WHEELER, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Electric Lights; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in electric lamps; and it consists in the combination of a suitable holding device or cup, the two wires which conduct the current, an amorphous mass of zirconia, in either a powdered or a solidified form, and which is placed in a pocket, recess, or cavity in the holder, and into which the ends of the wires extend, the electric current being made to pass from one wire through the zirconia to the other, as will be more fully described hereinafter.

The object of our invention is to utilize the intense light which is produced by zirconia when heated by an electric current for illuminating purposes.

Figure 1 is a vertical longitudinal section of an apparatus embodying our invention. Fig. 2 is a plan view of the same. Fig. 3 is a plan view of the zirconia disk which is used to close the top or recess in the holder.

A represents a suitable holder or device, which may either be of the construction here shown, or any other that may be preferred, and which is perforated at both of its ends, so as to allow the platinum wires B to pass through it. The holder A is made of platinum or other suitable material which will resist the heat, and is insulated from the wires B by a packing of any suitable material.

At or near the center of the holding device A is made a suitable recess, pocket, or cavity, C, which is filled with amorphous zirconia, either in a powdered or compressed state. The manner of preparing the zirconia, or as to whether it is in a powdered form or is compressed tightly around the points of the wires B, is immaterial. There should be sufficient zirconia in the pocket or recess C to give an amount of light in comparison to the force of the electric current which is passed through

the two wires B and through the zirconia. If the zirconia is placed in a loose form in the pocket or recess C, it will be securely held therein by the use of a disk, D, which is also made of zirconia solidified to a suitable extent. As the tips of the wires D do not touch each other, the current passes from these wires through the body G of the zirconia, and in the passage of the electric current through this body G it becomes highly heated and throws off an intense light. As the holder A is here shown the pocket or recess is open upon its upper side only, and hence the light will be reflected upward if turned in that direction, and a reflector of some kind is necessary in order to deflect the light downward and obtain the best results. If the holder is turned so as to have the open end of the pocket extend in any other direction than upward, the light will be projected in that direction in which it is desired to throw the light. The form of the holder here shown is best adapted for household purposes, for the reason that the light is thrown upward against the ceiling, and will be reflected back in a soft diffused form, which especially adapts it for use in a room. As above stated, however, we do not restrict ourselves to the particular form of holder shown, for that may be varied at will, according to the use to which it is applied.

By the term "amorphous mass" is meant a body of powdered zirconia, which is placed in a suitable holder without regard to its form.

We are aware that zirconia and carbon have been molded together and wires passed through the body thus formed; but in this case the invention consists in a mixture of zirconia and carbon alone. We are also aware that a molded body of zirconia has had a recess formed therein, and in these recesses carbons have been placed and then an electric current passed through both the inclosing body of zirconia and carbon, and both of these inventions we broadly disclaim.

Having thus described our invention, we claim—

1. In an electric lamp, the combination of the conducting-wires, a suitable holding or conducting device which is applied to the wires, and an amorphous mass or body of zirconia, substantially as shown.

2. The combination of a suitable holding or

supporting device having a recess or pocket formed therein, a body or amorphous mass of zirconia, which is placed in the said pocket, and the conducting-wires which pass through the supporting device to the pocket formed therein, and which have their ends separated and surrounded by a mass of zirconia, substantially as described.

3. The combination of a suitable holding or supporting device provided with a recess or pocket, an amorphous mass or body of zirconia, which is placed in the pocket around the tips or points of the two conducting-wires, and a disk, D, of zirconia, placed in the open end of the pocket, substantially as set forth.

4. In an electric lamp, the combination of

the two conducting-wires connected with the terminals of the circuit, the points of which are slightly separated, and through which the electric current passes, with a body or amorphous mass of zirconia, which is placed around the tips of the conducting-wires, and through a portion of which zirconia the current passes, whereby the whole mass becomes intensely heated, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

DARIUS LYMAN.

MARSHAL WHEELER.

Witnesses:

T. A. LEHMANN,

L. L. BURKET.