(No Model.)

M. G. FARMER.

ELECTRIC LAMP.

No. 265,790. Patented Oct. 10, 1882.

Fig: 1.

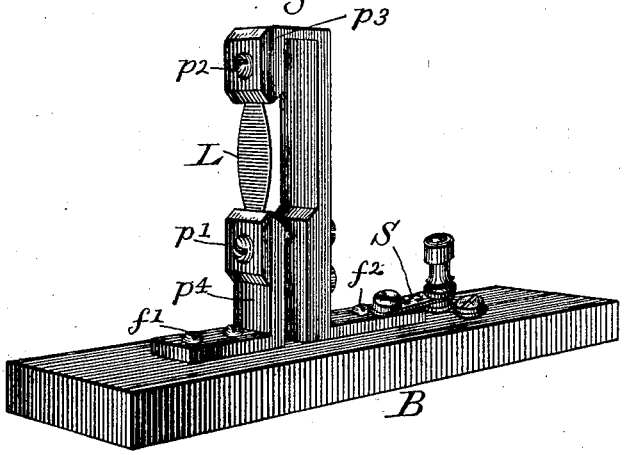

Fig: 2.

Witnesses:

Miller C. Earl

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Inventor,

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by his Attorney,

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UNITED STATES PATENT OFFICE.

MOSES G. FARMER, OF NEWPORT, R. I., ASSIGNOR TO THE UNITED STATES ELECTRIC LIGHTING COMPANY, OF NEW YORK, N. Y.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 265,790, dated October 10, 1882.

Application filed March 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, MOSES G. FARMER, a citizen of the United States, residing at the United States Naval Torpedo Station, Newport, in the county of Newport and State of Rhode Island, have invented a new and useful Improvement in Electric Lamps, of which the following is a specification.

My invention relates especially to that class of electric lamps in which the light is produced by causing a current of electricity to traverse one or more sections of a conductor, which sections are composed of some suitable refractory metal offering a resistance much greater in proportion to its length than the remainder of the circuit, and which becomes incandescent in consequence of such resistance upon the passage of the current, and thereby produces light.

My invention consists in an improved construction of the light-producing portion of the electric lamp, by which the illumination may be rendered uniform over a comparatively large surface or may be concentrated at a single point.

In the accompanying drawings, Figure 1 is a perspective view of my improved lamp, and Fig. 2 represents a detail view of the illuminator or light-giving portion of the lamp.

If a bar, wire, or strip of platinum, iridium, or other similar refractory metal be rendered incandescent by the passage of an electric current through it, a mild and pleasant light is emitted, much less concentrated and glaring than the light obtained from an arc between carbon pencils, and of a much more uniform character, provided the electric current is maintained at a constant strength. Platinum affords a light equivalent to about one hundred candles per square inch of incandescent surface when within 220° of its temperature of fusion, while iridium, from its higher melting-point, produces a still greater proportionate amount of light than platinum under the same conditions. In accordance with this principle I construct my lamp by taking a bar or strip of one of the hereinbefore-mentioned metals, preferably a flat strip, as shown at L in Fig. 1, the thickness of which may be about one-tenth or less of its greatest breadth. This is affixed in an upright position between two metallic standards, p^3 and p^4, by means of suitable clamps, p' and p^2. These standards are secured to a base, B, of any suitable non-conducting material by means of screws f' f^2 or otherwise. A lever-switch, S, provided with an insulating knob or handle, serves to close or open the branch of the circuit passing through the lamp when it is desired to turn the light on or off. I sometimes prefer to use a different arrangement, known as the "peg-switch," in which the circuit is completed by inserting a slightly-conical metallic plug between two metallic bars insulated from each other.

In Fig. 2 I have shown the configuration of the metallic strip which constitutes the illuminator of the lamp. The curves of the edges of the strip in Fig. 2 are formed by a geometrical line in conformity with the ascertained law of the conduction of heat in the particular metal employed, so as to obtain a uniform temperature throughout the whole length of the strip, and consequently a uniform illuminating-power from the entire surface. A portion of the heat generated in the strip by the passage of the current is conducted away by the clamps or holders at each end, which tends to reduce the temperature of the strip at any given point in proportion to the nearness of that point to the holder. By making the strip of the form shown in Fig. 2 this reduction of temperature at any given point is compensated by the generation of a greater amount of heat at that point consequent upon the increased resistance encountered by the electric current in proportion to the reduction in the sectional area of the conductor.

I claim as my invention—

1. An electric lamp the light-producing portion of which consists of a thin and broad strip of metal having its edges shaped to a geometrical curve corresponding with the law of heat-conductivity in such metal, so as to produce a

uniform illumination throughout every portion of said strip, substantially as and for the purpose specified.

2. An electric lamp the light-giving portion of which is composed of a flat strip of metal broadest in the center of its length, and gradually decreasing in breadth from the center to each end thereof, substantially as and for the purpose specified.

In testimony whereof I have hereunto subscribed my name this 3d day of March, A. D. 1881.

MOSES G. FARMER.

Witnesses:
SARAH J. FARMER,
DARIUS BAKER.