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311

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(No Model.)

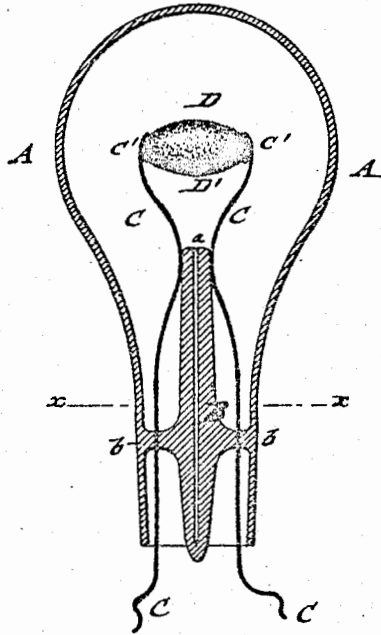
A. BERNSTEIN.

ELECTRIC INCANDESCENT LAMP.

No. 258,976.

Patented June 6, 1882.

Fig 1.



TX2040
X2000
1345

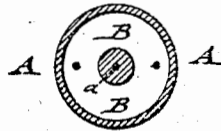
Fig 3.



Fig 4.



Fig 2.



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

ALEX BERNSTEIN, OF NEW YORK, N. Y.

ELECTRIC INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 258,976, dated June 6, 1882.

Application filed December 24, 1881. (No model.)

To all whom it may concern :

Be it known that I, ALEX BERNSTEIN, of the city, county, and State of New York, have invented certain new and useful Improvements in Electric Incandescent Lamps, of which the following is a specification.

The main objection to the electric vacuum-lamps in which a carbon filament is employed as the light-giving agent has been the want of permanency and reliability, as the delicate filament was too easily destroyed by exterior or interior influences, so that no absolute reliance could be placed on this class of electric lamps.

The object of the present invention is to produce an electric lamp which has the advantage of increased durability and illuminating power, owing to the fact that substances are employed which are capable of resisting the action of strong currents, so as to impart a high degree of efficacy and permanency to the lamp.

The invention consists of an electric lamp the light-giving part of which is made of any substance having the property of phosphorescence, and which is either entirely or partly covered with a deposit or film of carbon.

In the accompanying drawings, Figure 1 represents a vertical central section of an electric lamp constructed according to my invention. Fig. 2 is a horizontal section of the same on line *x x*, Fig. 1; and Figs. 3 and 4 are details of the same.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the bulb or globe which incloses the light-giving part of my improved electric lamp, and B the stopper or closing part, which is sealed into the neck of the bulb. The bulb is evacuated in the usual manner through a central tube or channel, *a*, of the stopper B. The platinum conducting-wires C C are sealed into an annular collar, *b*, of the stopper, which collar is arranged at some distance below the upper end of the central upward-extended portion of the stopper, so as to be little if at all affected by the heat emitted by the light-giving part. The conducting-wires C C may also be sealed to the uppermost end of the central portion of the stopper

if it be desired to increase the stability of the former. The wires are then spread apart, so as to clamp the light-giving part D, by means of enlarged ends C. The light-giving part D is made of oval, cylindrical, spherical, oblong, or any other shape, and composed of any substance having the property of phosphorescence—such as calcined egg or oyster shells, chalk, lime, fluor-spar, the compounds of strontium, magnesium, calcium, &c. This light-giving part D is partly or entirely covered with a film of carbon, which is deposited thereon by chemical or mechanical means, said film serving to conduct the current from one wire to the other, while the substratum of phosphorescent material serves as a support or carrier for the film of carbon and prevents the destruction of the same. The substratum or carrier has the properties of non-fusibility and non-conductivity, and is heated up by the intense heat of the current, so as to form a luminous body the light of which does not appear when the carrier is entirely covered with carbon, while it is clearly discernible at that part which is not covered with carbon. The large surface of the incandescent film of carbon furnishes a large light-giving surface, and consequently lamps of greater candle-power than can be furnished by lamps with carbon filaments. If the light-giving part D be only partly covered with carbon, as in the case of suspended lamps, (shown in Fig. 4,) the covered portion will emit an intense light, while the remaining portion will emit a much softer light, which is due to the heating up of this part by the carbon-covered portion.

If the lamp be used for a wall-lamp, the front half of the light-giving part is covered with carbon, so as to emit a strong light in front and a comparatively weak light at the rear.

The essential advantages of a lamp of this construction will be its freedom from accidental destruction, its greater economy both as to construction and as to light-giving power, and the higher illuminating power which is capable of being obtained by reason of the increased light-emitting surface.

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

1. In an electric lamp based on the princi-

ple of incandescence, a light-giving part composed of a non-conducting and infusible carrier and of a film or deposit of carbon covering partly or entirely the surface of the carrier, 5 substantially as set forth.

2. In an electric lamp, the combination of the conducting-wires having enlarged end clamps with a light-giving part supported thereby, said light-giving part being composed 10 of a non-conducting and infusible substance, and being partly covered with a film of carbon, substantially as specified.

3. In an electric lamp, the combination, with

a bulb, A, having a centrally-channeled stopper, B, of conducting-wires C C, sealed into a 15 collar of the stopper below the upper end of the same, and adapted to support the light-giving part D, 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. 20

ALEX BERNSTEIN.

Witnesses:

PAUL GOEPEL,
CARL KARP.