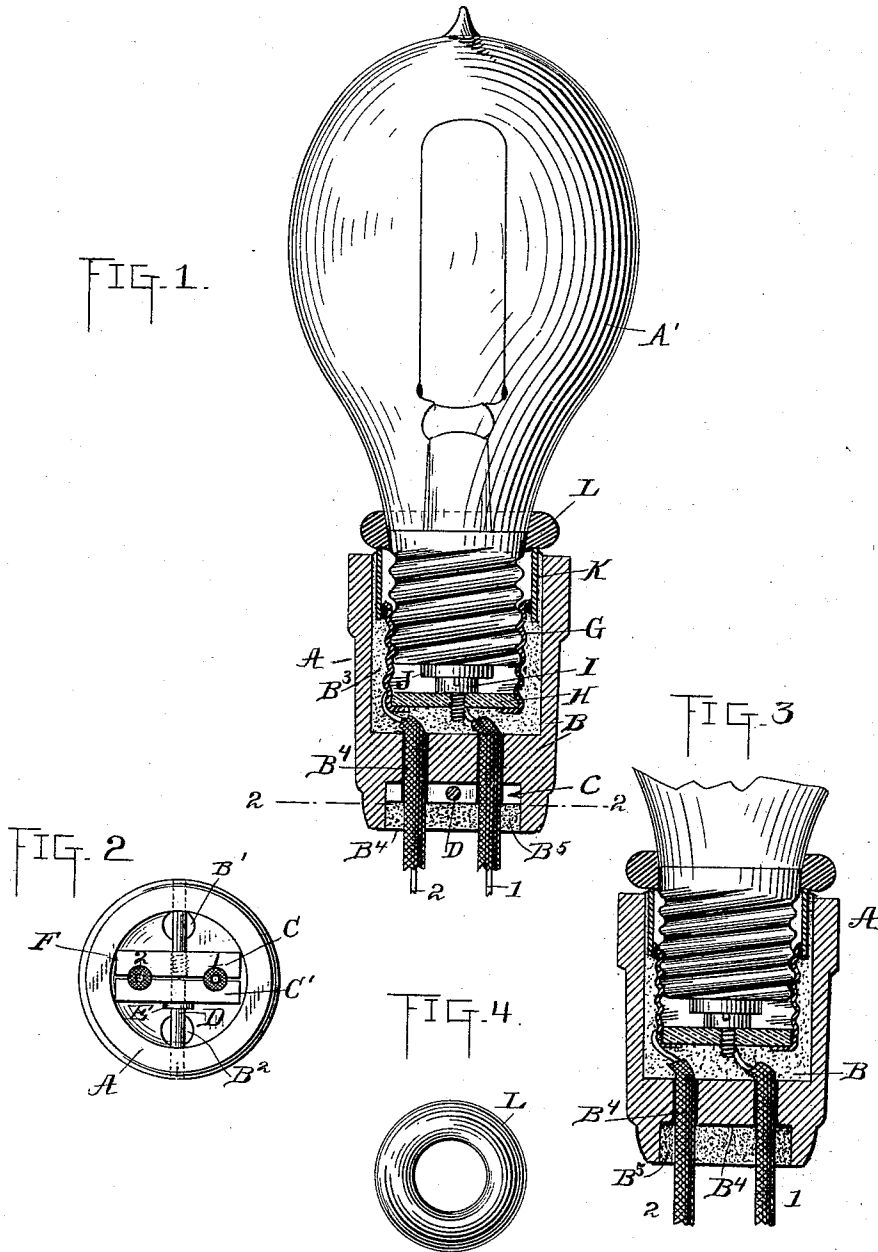


(No Model.)

C. J. KLEIN.
INCANDESCENT ELECTRIC LAMP SOCKET.

No. 484,207.

Patented Oct. 11, 1892.



WITNESSES:

E. Rowland
W. Eger

INVENTOR

Charles J. Klein

BY

John J. Kelly

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES J. KLEIN, OF NEW YORK, N. Y., ASSIGNOR TO THE BERGMANN & COMPANY, OF SAME PLACE.

INCANDESCENT-ELECTRIC-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 484,207, dated October 11, 1892.

Application filed December 28, 1889. Serial No. 335,223. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. KLEIN, a citizen of the United States, residing at New York city, in the county and State of New York, have invented a certain new and useful Improvement in Sockets for Electric Lamps, of which the following is a specification.

The object of my invention is to produce a water-tight socket for electric lamps at low cost, easily made, and which continued use in damp locations will not injuriously affect.

The main feature of my invention resides in the use of a packing, preferably an elastic rubber ring, placed so as to surround the neck of the lamp and to be in contact therewith and with the adjacent portion of the socket, whereby the elasticity of the ring is utilized to produce a tight joint between the lamp-neck and socket, and thereby prevent moisture entering between those parts.

Another feature of my invention resides in the use of a clamp for holding the conductors which enter the socket firmly from movement back of the clamping-point to the end that the waterproofing material employed at the bottom of the socket may not be disturbed by any movement given to the wires outside of the socket.

Other features of my invention will appear in the subjoined description, and will be pointed out in the claims.

In carrying out my invention I preferably use a porcelain cup divided into two sections, the larger section of which receives the lamp and the smaller section of which is adapted to receive a waterproofing material. The water-tight joint between the lamp and socket is preferably made by a packing of elastic material arranged around the neck of the lamp and in contact with the socket thereof. The water-tight joint where the house-conductors enter the socket is preferably made by a waterproofing-paint applied between the conductors and the bottom of the porcelain cup. Preferably, also, I employ a clamp to secure the conductors from movement in the lamp-socket, so that there will be greater certainty of the waterproofing material between the conductors and the bottom of the socket remaining effective.

In the drawings, Figure 1 is a central ver-

tical section of the socket and elastic ring, the lamp and its metal-threaded portion being shown in elevation. Fig. 2 is a bottom plan view of Fig. 1, taken on the line 2 2 thereof. Fig. 3 is a view similar to that shown in Fig. 1, but with certain of the parts there shown omitted; and Fig. 4 is a plan of the elastic ring.

In the drawings, A is a socket, preferably of porcelain, divided into two sections by the perforated partition or bottom B, the larger section being adapted to receive the lamp A' and the house-conductors 1 2, passing through the smaller section. The larger section of the socket receives the metal shell G, which is provided with a bottom of insulating material H, through which passes the metallic screw I. The wire 1 is in electrical connection with the screw I, and the wire 2 is in electrical connection with the metal shell G. The lamp A' is provided, as usual, with a threaded metallic neck provided with a metallic button J on its base, so that when the lamp is screwed into the metallic screw-shell G and the button J contacts with the screw I the proper electrical connections for the lamp will be made.

B' B² (shown in Fig. 2) are holes provided in the partition or bottom B, through which a suitable plastic material may be filled, so as to form a bed or setting for the screw-shell G. B³ shows such a material, which may be putty or plaster-of-paris.

Where the conductors 1 2 pass into the larger section of the socket in order to make the socket at that point waterproof I coat both the conductors and the holes in the bottom B, through which they pass with a waterproofing compound, preferably what is known as "P D paint," which is a viscous elastic paint that may be easily applied and remain effective for a considerable period. The heavy lines B⁴ in Figs. 1 and 3 indicate this coating of waterproofing material.

In order to prevent the cracking or disintegration of the waterproofing compound used between the conductors and the bottom of the socket, I prefer to clamp the conductors beneath the bottom of the socket firmly, so that whatever movement is given them beyond the clamping-point will not result in the disturbance of the waterproofing material. In Figs.

1 and 2 I have shown a clamping device consisting of two blocks C C', preferably of insulating material, between which the wires 1 2 are clamped, the clamping being effected by the rod D, which passes through holes in the porcelain, said rod being provided with a shoulder E, abutting against the block C', and with a screw-thread F where it passes through the other block. By turning this rod D the clamping-blocks may be brought to bear with greater or less force on the conductors 1 2, and thereby to clamp them from movement to any desired degree. The clamping-blocks may also be coated, as shown, with a waterproofing material such as above described. They may also be surrounded with a waterproofing cement B⁵, such as plaster-of-paris, and the whole then coated with an outer coating of waterproofing-paint. In Fig. 3 the clamps are omitted and the waterproofing-paint, together with the waterproofing-cement, used together to form the water-tight joint. The paint may, however, be used alone with good results. In order to make the water-tight joint between the lamp and socket, I prefer to use an elastic ring-packing surrounding the lamp and in contact with the socket.

K is a metallic ring of about the same diameter as the porcelain cup A, soldered to the shell G and projecting slightly above the socket, as shown. The object of this ring is to afford a seat for the elastic packing-ring L close to the neck of the lamp and into which said ring may become embedded to effect a thorough water-tight joint. Instead of this metal ring, however, the cup itself may be so formed as to afford a suitable bearing for the elastic ring. This elastic ring L is preferably approximately circular in cross-section, like the ring used with an umbrella to hold the ribs in place about the stick. The opening in this ring should be smaller than the diameter of the neck of the lamp. It is combined with the lamp and the socket by first forcing it onto the neck of the lamp and rolling up its tapering portion and holding it while the screw-threaded neck of the lamp is turned into the metal shell in the socket. When the parts J and I are in contact, the electrical connection will be completed, and the rubber ring then being released will roll down the tapering neck of the lamp and snap itself firmly onto its seat.

What I claim is—

1. The combination, with an incandescent lamp and socket divided into two parts by a perforated partition, of conductors 1 2, a packing located between the neck of the lamp and its socket, a packing around the conductors below the partition, and a waterproofing material between the said conductors and the bottom or partition of the socket, substantially as set forth.

2. The combination, with an incandescent lamp and socket, of conductors 1 2, a packing located between the neck of the lamp and the socket, a waterproofing material between said conductors and the bottom of the socket, and a clamping device, substantially as set forth.

3. The combination, with an incandescent lamp and socket and conductors 1 2, of a waterproofing material between said conductors and the bottom of the socket and a clamping device, substantially as set forth.

4. The combination, with an incandescent lamp and socket, of conductors 1 2, of a waterproofing material between said conductors and the bottom of the socket, a clamping device, and a waterproofing material surrounding said clamping device, substantially as set forth.

5. The combination of an electric lamp having a tapering neck and a socket whose upper end terminates in a narrow flange, of an elastic ring on the neck, the thickness of which is greater than the distance between the neck and socket, substantially circular in cross-section and of less diameter than the neck of the lamp, substantially as set forth.

6. The combination, with an electric lamp, of a socket therefor provided with an upwardly-extending circular flange and an elastic ring, the thickness of which is greater than the distance between the flange and lamp, located on the neck of the lamp in contact with said flange, whereby the ring rests on the flange and a water-tight joint is formed, substantially as set forth.

This specification signed and witnessed this 20th day of December, 1889.

CHAS. J. KLEIN.

Witnesses:

D. H. DRISCOLL,
W. PELZER.