(No Model.)

J. S. POTTER & D. J. CARTWRIGHT.

SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

No. 485,587. Patented Nov. 1, 1892.

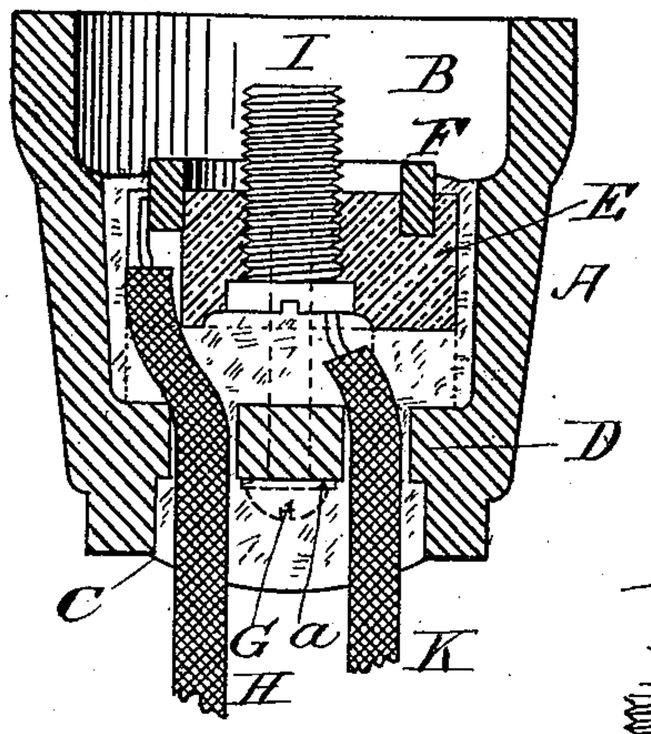


Fig. 1.

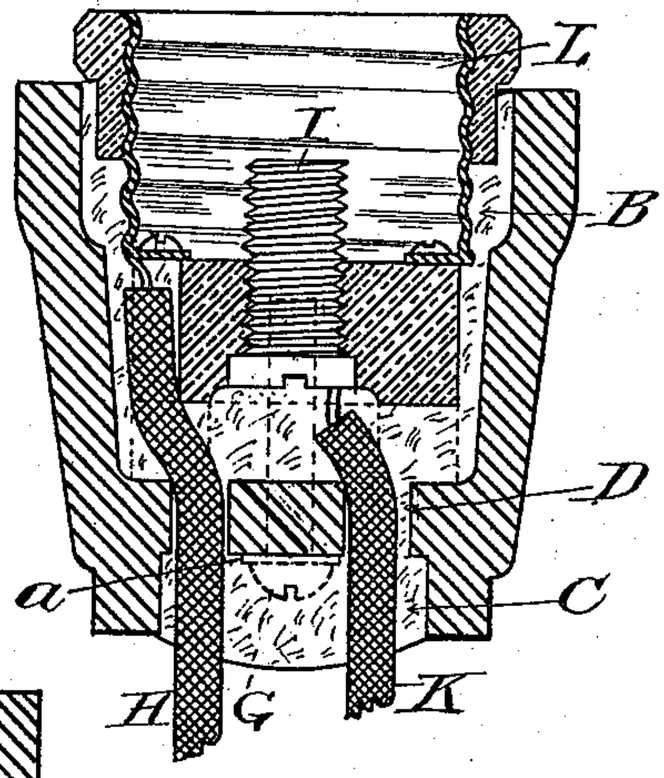
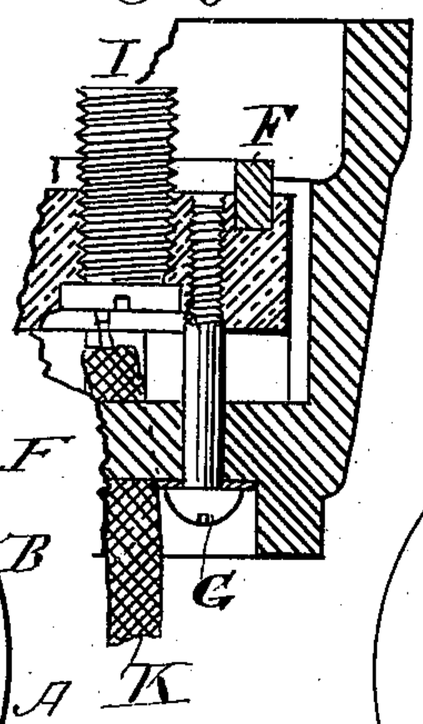


Fig. 5.



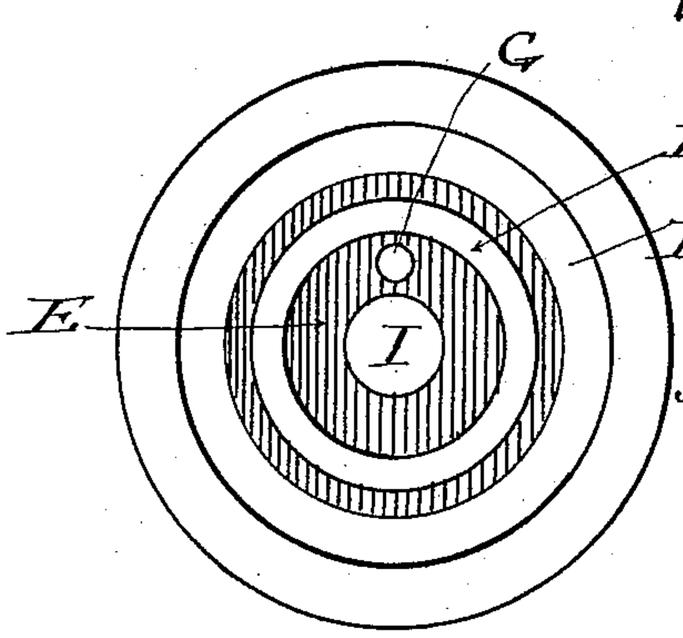


Fig. 2.

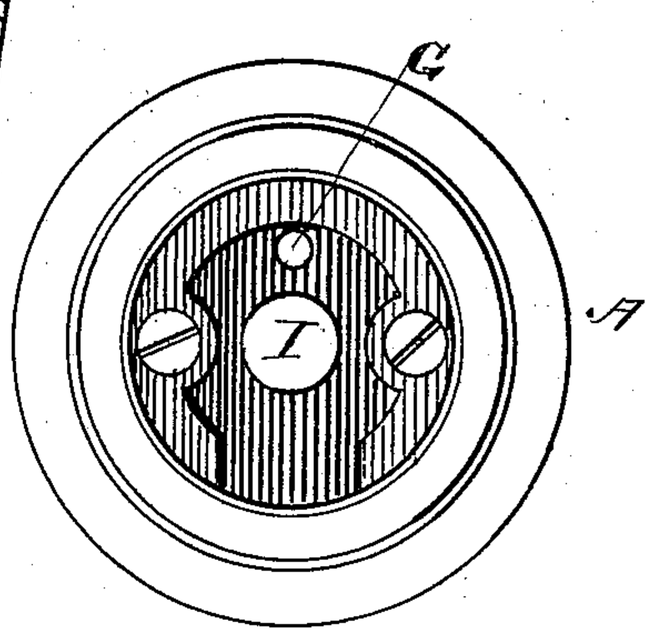


Fig. 4.

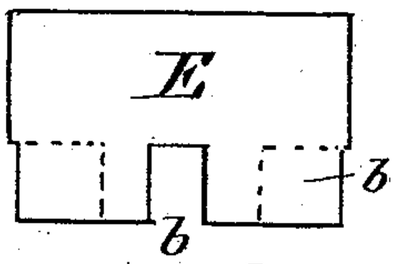


Fig. 6.

WITNESSES

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UNITED STATES PATENT OFFICE.

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SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 485,587, dated November 1, 1892.

Application filed October 6, 1890. Serial No. 367,237. (No model.)

To all whom it may concern:

Be it known that we, JOHN S. POTTER, of Newton, in the county of Middlesex, and DAVID J. CARTWRIGHT, of Boston, in the county of Suffolk, State of Massachusetts, have invented a new and useful Improvement in Sockets for Incandescent Electric Lamps, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of this invention is the production of a socket for incandescent electric lamps, which socket can be safely used in damp places without injury to the insulation and which will firmly hold the lamp and afford perfect electrical contact of the terminals of the conducting-wires within the socket. A socket having for its object the prevention of injury to the insulation by moisture has been in use for some years; but in this device the terminals of the connecting-wires within the socket are cemented to the socket and are thus liable to become so loosened by variations of temperature and other causes as to cease to afford a firm and sure contact of the terminals with the terminals of the conducting-wires in the sockets.

It is the object of our invention to obtain a contact which will always be firm and reliable.

To this end the invention consists in the combination, substantially as and for the purpose set forth, with a block of porcelain or any other suitable insulating material impervious to moisture, provided with recesses at opposite ends separated by a partition, of contacts connected to the conducting-wires and attached, mechanically, to the partition in the socket in such a manner that a firm and reliable contact is insured.

In the accompanying drawings are shown devices which embody the principle of our invention.

Figure 1 is a sectional view of a socket adapted to receive a Thomson-Houston incandescent lamp, Fig. 2 being a plan view of the same, Fig. 3 being a sectional view of a socket adapted to receive an Edison incandescent lamp, Fig. 4 being a plan view of the same, Fig. 5 being a partial section, and Fig. 6 a view of the block.

In the several figures the same letters refer to the same parts.

Referring to the drawings, A is a block of porcelain or other insulating material which is impervious to moisture and made in the form of a frustum of a cone.

B is a deep recess in the wider part of the frustum, which recess receives the base of the lamp.

C is a shallow recess in the narrower part of the frustum, and this recess contains a filling of insulating waterproof cement, which holds the conducting-wires in position and also prevents the access of moisture to the socket.

D is the partition which separates the two recesses. For the reason that the block is generally formed by molding or casting this partition forms part of the block and is of the same material. When the block is of glass or porcelain, it is obvious that metallic contacts cannot be readily screwed to the partition for the reason that screw-threads cannot be formed in it. We therefore make use of a block of hard rubber or other similar insulating material capable of holding a screw, and this block of insulating material E is placed in the recess B, which receives the base of the lamp and is clamped and firmly fixed to the partition D by means of a screw G, which passes from the other recess through a perforation in the partition and is tapped into a block of insulating material. A washer *a* may be placed between the head of the screw G and the partition D. This block E does not fill the recess; but the space between the walls of the recess and the block is filled with a suitable waterproof cement of insulating material, which is poured into the recess B and flows into the recess C through the perforations in the partition, through which the conducting-wires H and K pass. Slots may be formed on the block across the bottom of the same and in the side for the purpose of allowing the cement to flow around the block, and thus more effectually prevent the entrance of moisture. The cement is used solely for this purpose, the block being sufficiently held by the screw G. To this block are attached the metallic contacts which form the terminals of the conducting-wires, and when the base of the lamp is placed in the recess B establish electrical contact with the terminals of the

filament. In the Edison lamp one of these terminals is formed by a ring of metal surrounding the base of the lamp and having a screw-thread thereon, by means of which it is attached to the socket, as is well known, and the other terminal is a plate of metal in the center of the bottom of the base of the lamps. In the Thomson-Houston lamp one of the terminals is formed by a metal socket in the base of the lamp, which socket has an internal screw-thread, and the other terminal is formed by a ring of metal insulated from this socket, but surrounding the same on the bottom of the base of the lamps. The contacts on the block E may be such as would be adapted for either form of lamp, as shown in Figs. 1 and 2 and Figs. 3 and 4. In Fig. 1 we have shown a ring F, of metal, fixed in the block E and connected with one of the conducting-wires H, and a central metallic screw I, in diameter equal to the socket in the base of the Thomson-Houston lamp and having a screw-thread thereon which fits the internal screw-thread on the socket, said screw or pin I being fixed to the block E and insulated from the ring F. To this screw or pin I is electrically connected the conducting-wire K. Instead of a ring one or more metal pieces may be fixed to the block. In the forms shown in Figs. 3 and 4 a similar central screw or pin I may be used, and a shell L, of metal, having a screw-thread adapted to receive the base of the Edison lamp, is secured to the block, and this shell is electrically connected to the conducting-wire H. The ring F may be preserved and the shell may be suitably secured to the ring by metallic connections—as, for example, metallic screws. By the addition of this shell the same socket which has been used to hold a Thomson-Houston lamp may be used to hold an Edison lamp. This is an advantage in electrical installation. The conducting-wires H and K are covered with insulating material and embedded in the insulating-cement above referred to.

In case the partition is made of some material which is capable of holding a screw—as, for example, what is known as "duralite"—the contacts could be directly secured to the partition; but we regard porcelain or other vitreous material as the best material for the purpose, in which case the block E will be required for the attachment of the socket-terminals.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, substantially as and for the purpose set forth, of a block of insulating material impervious to moisture, recesses in opposite ends of this block, one of the recesses being adapted to receive the base of an incandescent electric lamp and the other recess having the conducting-wires cemented therein, a metallic contact in the recess which receives the lamp, mechanically secured without cement to the partition and electrically connected with one of the conducting-wires, a metallic pin insulated from said contact mechanically attached to the partition, connected with the other conducting-wire, and adapted to make electrical contact with the filament terminal contact on the base of the lamp, and a filling of a cement of a waterproof insulating material around the conductors on the other recess.

2. The combination, substantially as and for the purpose set forth, of a block of insulating material impervious to moisture, recesses in opposite ends of the block, separated by a partition, one of the recesses being adapted to receive the base of the lamp and the other recess having the conducting-wires cemented on it by a waterproof insulating material, a block of hard rubber or other similar insulating material capable of holding a screw placed in the recess which receives the lamp and clamped to the partition by a screw or screws, metallic contacts fixed to this block, electrically connected to one of the conducting-wires, and adapted to make electrical contact with one of the filament terminals on the lamp, a metallic contact fixed in this block, insulated from the other contacts and electrically connected to the other conducting-wire and adapted to make electrical contact with the filament terminal contacts in the center of the base of the lamp, a filling of cement of a waterproof insulating material around the conductors in the other recess.

3. The combination, substantially as and for the purpose set forth, of the block A, of porcelain or other insulating material, impervious to moisture, recesses B and C in opposite ends of the block, separated by a partition, the block E, of hard rubber or other similar insulating material, capable of holding a screw placed in the recess B and firmly clamped to the partition by a screw or screws passing through the partition, the metallic ring F, fixed on the face of the block E, the conducting-wire H, electrically connected to this ring and passing through this partition, the central metallic pin I, fixed in the block E and projecting into the recess B, the conducting-wire K, electrically connected to the pin, and the cement of waterproof insulating material between the block E and the walls of the recess B and in the recess C.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 2d day of October, A. D. 1890.

JOHN S. POTTER.
DAVID J. CARTWRIGHT.

Witnesses:
J. H. BENNETT,
ALEX. L. HAYES.