(No Model.)

A. BERNSTEIN.

HOLDER FOR INCANDESCENT ELECTRIC LAMPS.

No. 319,177. Patented June 2, 1885.

Fig. 1.

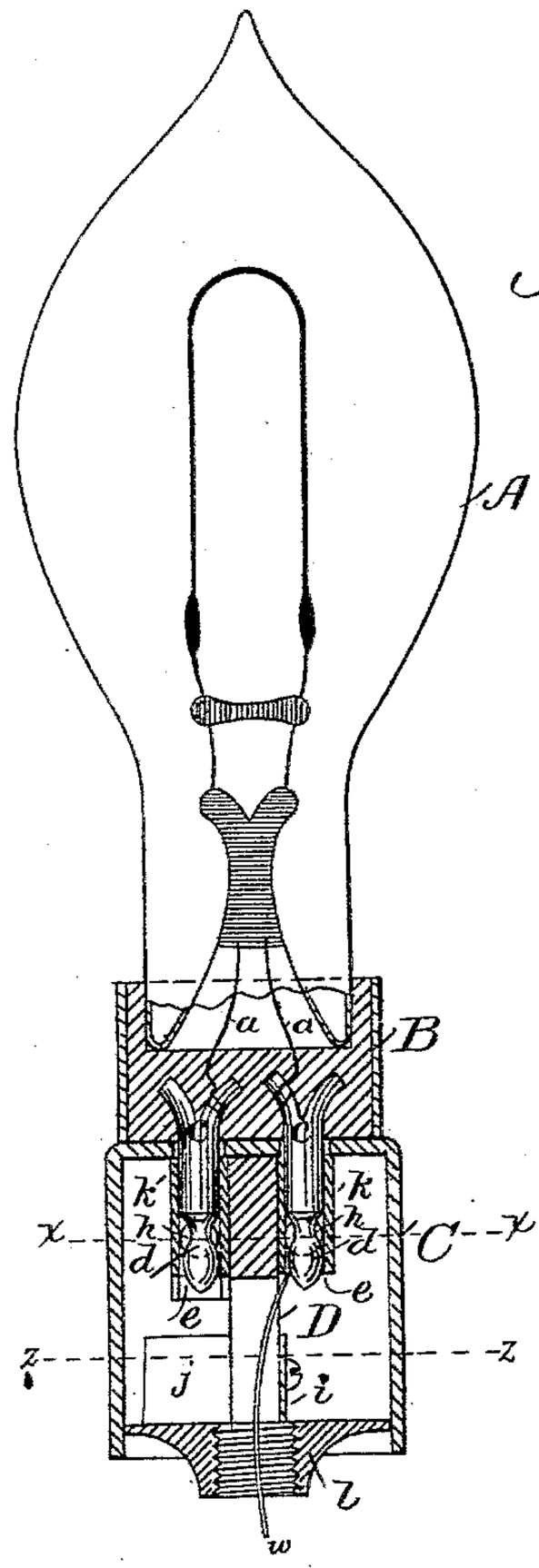


Fig. 3.

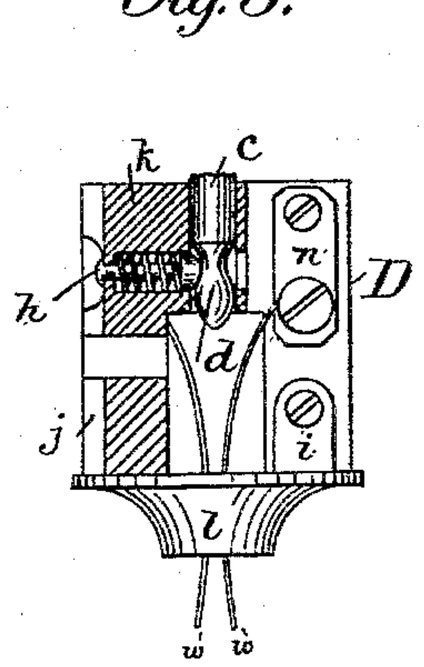


Fig. 2.

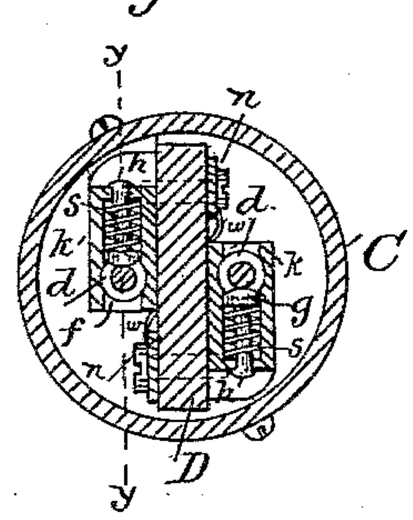
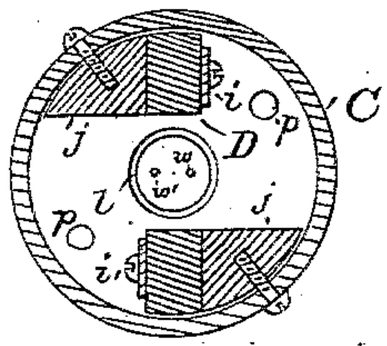


Fig. 4.



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UNITED STATES PATENT OFFICE.

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HOLDER FOR INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 319,177, dated June 2, 1885.

Application filed May 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER BERNSTEIN, a subject of the Emperor of Germany, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Holders for Incandescent Electric Lamps, of which the following is a specification.

This invention relates to the device for securing the lamp to a suitable support, and has for its object, first, to provide means whereby it will be rendered impossible to suitably fix the lamp in its socket upon the fixture unless at the same time a perfect electric contact between the terminals of the lamp and the conducting-wires is insured; second, by the use of an insulating material which will not be affected by the heat of the lamp to prevent injury to the holder; and, third, by covering the connecting devices with a cap of porcelain to prevent contact with or injury to any part of the circuit.

To this end the invention consists in the combination of two metallic sockets fixed on opposite sides of a suitably-supported vertical plate of an infusible insulating material, and each connected with one of the conducting-wires, and two metallic pins fixed in the base of the lamp insulated from one another, and each connected with one of the terminals of the carbon loop, the said pins being each provided with a contraction near its extremity, and the sockets each having in a recess in its side a horizontal sliding pin, which is forced back by the insertion of the vertical pin into its socket, but when the said pin is further inserted is forced by a spring into the contraction or neck, thus firmly holding the pin in position, and at the same time, by pressing it against the wall of the socket, establishing a perfect electrical connection.

The invention also consists of the combination, with the holder, of a cap of porcelain or other similar material, and devices for holding this cap in position.

In the accompanying drawings, Figure 1 is a vertical sectional view of the device, showing the lamp and protecting-cap in position. Fig. 2 is a horizontal sectional view of the same on the line *x x*, Fig. 1. Fig. 3 is a transverse vertical sectional view on the line *y y*, Fig. 2, with the cap removed; and Fig. 4 is a horizontal sectional view on the line *z z*, Fig. 1.

In these several figures similar letters refer to similar parts.

Referring to the drawings, A is the glass bulb of the lamp. B is the base of insulating material, into which the glass bulb and metallic terminals *a a* of the carbon loop are cemented, as is customary, and *c c* are two metallic cylindrical pins cemented into this base, insulated from one another, and each connected with one of the terminals of the carbon loop. The extremity of each of these pins is of ovoid shape, so that a contraction or neck, *d*, is formed near the extremity of the pin, while the remainder of the pin is of uniform diameter. These pins need not be cylindrical, but are preferably so.

l is a circular plate of metal, in which is a central opening provided with an internal screw-thread, by means of which the plate can be attached to any fixture, and through which may pass the conducting-wires; or these wires may pass through perforations *p p* in this plate.

D is a plate of some infusible earthy insulating material—such as clay or kaolin, or other suitable substance—which is placed centrally across the plate *l*, and is secured by screws to metallic lugs *i* on the plate *l* on each side of the insulating-plate D, but at opposite ends thereof. Opposite each of these lugs, and on the other side of the insulating-plate, are fixed quadrant-shaped blocks of metal, *j*, which serve as nuts for the screws which pass through the lugs *i*, and also afford means for securing the porcelain cap C.

k k are blocks of metal, which are secured to opposite sides of the plate by means of screws which pass through a washer, *n*, on the opposite side of the plate D. One of the conducting-wires *w w* is connected to each of these washer-plates, and thus by means of the screws an electrical connection is made between the conducting-wires and the blocks *k k*. The upper surfaces of these blocks are in the same plane. In each block is an opening for the reception of the pins *c c*, and also an opening or recess for the reception of a horizontal pin, *h*, which slides in the same. This pin is surrounded by a spiral spring, *s*, and is provided

with a head, *g*, having a curved face, which head, by the action of the spring, is caused to project slightly from the inside of the vertical cylindrical opening in the block.

In order to fix the lamp to its holder, the pins *c c* are inserted into the openings in the blocks *k k* and pressed firmly down, when the ovoid-shaped extremities of the pins *c c*, by bearing against the curved faces of the heads *g g*, force the pins *h h* back against the action of their springs until the neck or contraction *d* on the pins *c c* comes opposite the heads, when they are forced forward by the springs and firmly press the pins *c c* against the opposite walls of the openings in the blocks *k k*, and thus establish an electrical circuit. These blocks are so placed relatively to each other that the pins *h h* move in opposite directions, and consequently pressure is exerted against the opposite side of each pin *c c*, thereby insuring a firm connection. The curved faces of the heads *g* permit the lamp to be easily withdrawn or detached from the holder. It is obvious that unless the pins *c c* are pressed down firmly the lamp will not be held in place; but as soon as this is done a perfect electric connection will be established.

I have described this method of securing a perfect electric connection, while at the same time making a firm mechanical connection as applicable to an incandescent lamp; but it is obvious that the device can also be used with other applications of electricity—as, for example, for making an electrical connection between railroad-cars using electrical apparatus.

In order to prevent the holder or conducting-wires from being injured or tampered with, and to prevent contact with these wires, a cap, C, of porcelain or other similar material, provided with holes in its top for the insertion of the pins *c c*, is placed over the holder. This cap may be secured by screws to the quadrant-shaped pieces *j j*.

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

1. The combination of two metallic pins insulated from one another and forming the terminals of an electric apparatus, sockets for the reception of these pins, each connected with one of the conducting-wires and insulated from one another, and a retaining device in each socket acting by pressure on the pins to firmly hold them in their sockets, and to establish a perfect electrical contact, substantially as and for the purpose set forth.

2. The combination of two pins insulated from one another and forming the terminals of an electrical apparatus, sockets for the reception of these pins insulated from one another and each connected with one of the conducting-wires, and a retaining device in each socket acting on the opposite side of each pin to press it against the opposite inside wall of its corresponding socket, substantially as and for the purpose set forth.

3. The combination of two metallic pins having ovoid-shaped extremities and cemented into the base of an incandescent lamp, insulated from one another, and connected, respectively, with the terminals of the carbon loop, with two metallic sockets each connected with one of the conducting-wires and suitably secured to opposite sides of a plate of insulating material suitably supported upon a metallic plate which is capable of being attached to the fixture, and retaining devices in each socket acting, when the pins are inserted into the sockets, to such an extent as is necessary to fix the lamp in position, to hold the pins, and at the same time to establish a perfect electric connection between the pins and the sockets, substantially as and for the purpose set forth.

4. The combination of the pins *c c*, having ovoid-shaped extremities provided with a contraction or neck, *d*, the metallic sockets *k k*, and horizontal pins *h h*, sliding in these sockets in opposite directions, provided with curved heads, and actuated by springs, substantially as and for the purpose set forth.

5. The combination of the plate D, of infusible insulating material, and the sockets *k k*, secured to opposite sides of said plate, substantially as and for the purpose set forth.

6. The combination of the holder, constructed substantially as described, with the cap C, of porcelain or other similar material, and provided with holes for the insertion of the pins *c c*, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand in the presence of the subscribing witnesses.

ALEXANDER BERNSTEIN.

Witnesses:

ALEX. L. HAYES,

WARREN P. DUDLEY.