

(No Model.)

P. LANGE.
INCANDESCENT LAMP SOCKET.

No. 434,153.

Patented Aug. 12, 1890.

Fig. 1.

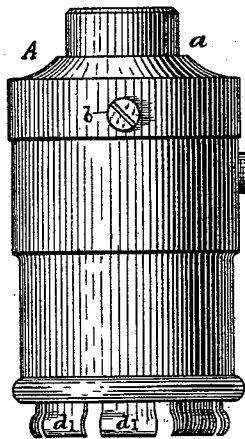


Fig. 2.

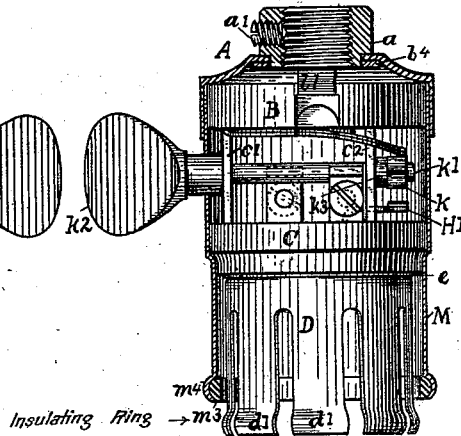


Fig. 3.

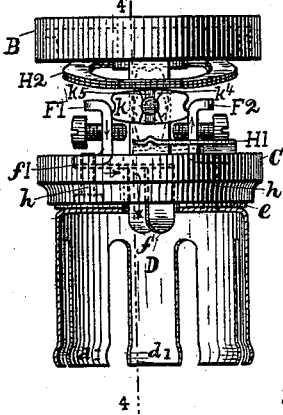


Fig. 4.

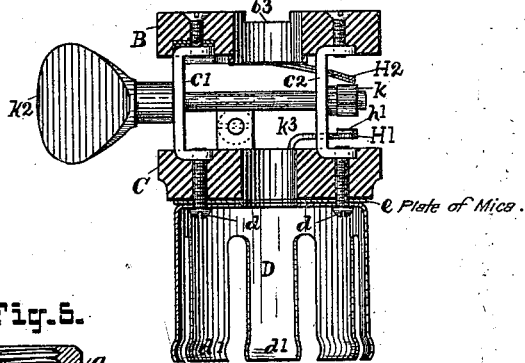
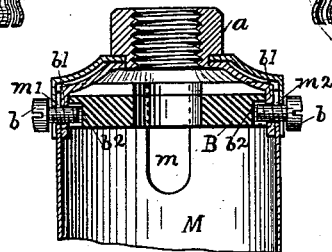


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

PHILIP LANGE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE WEST-
INGHOUSE ELECTRIC COMPANY, OF SAME PLACE.

INCANDESCENT-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 434,153, dated August 12, 1890.

Application filed October 31, 1888. Serial No. 289,621. (No model.)

To all whom it may concern:

Be it known that I, PHILIP LANGE, a citizen of the United States, residing in Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Key-Sockets for Incandescent Electric Lamps, (Case No. 241.) of which the following is a specification.

The invention relates to the class of devices employed for holding incandescent electric lamps and for completing and interrupting the circuit-connections through the same.

The object of the invention is to simplify and improve the mechanical construction of the device, and thereby lessen its cost and increase its durability.

The invention involves numerous details of construction, which will be described in connection with the accompanying drawings.

In the drawings, Figure 1 is a side elevation of the key-socket. Fig. 2 is a similar view, a portion of the shell being removed; Fig. 3, a section, showing the circuit-controller in detail. Fig. 4 is a section through the line 4 4, Fig. 3. Fig. 5 is a detail, showing the plan of securing the base-plate and outer shell to the base.

Referring to the figures, A represents a cup-shaped base adapted to be secured to a fixture of any suitable character. In this base there is set a base-plate B of non-conducting material. The plate B is secured in position by means of two screws $b b$, which enter corresponding lugs $b' b'$, extending from the bottom of the base A parallel with its sides. These lugs may be conveniently formed upon a ring b^4 , which surrounds the portion a , which screws into the fixture. The portion a may be soldered or screwed or otherwise fastened into the cup-shaped portion of the base. A screw a' serves to bind the base upon the fixture. The screws b are designed to project over shoulders $b^2 b^2$ in the plate B, and thus hold it in position. The bottom of the base-plate B is constructed with a recess or groove b^3 , which fits over the portion of the lugs $b' b'$ lying along the bottom of the cup. This prevents the plate from being turned in the cup. The screws b pass freely through the flange of the base and screw into the lugs, and by means of them the outer shell, pres-

ently to be described, may be held firmly between the flange of the base and the lugs.

A second plate C, of insulating material, is supported from the base plate B. This is secured in position parallel with the base-plate by two brackets or arms $c' c^2$, secured at their respective ends to the base-plate and the plate C. An inner shell D is mounted upon the opposite side of the plate C. This is designed to receive the neck of the lamp. It is fastened to the plate C by the screws $d d$, which serve also to fasten the ends of the arms $c' c^2$. The screws therefore do not hold in the body of the plate, but in the ends of the arms themselves, which, being of metal, are not affected by heat. It should be noticed, also, that the screws holding the lower ends of the arms $c' c^2$ screw into the ends of the arms instead of holding in the plate B itself. This is a matter of importance, since heretofore considerable difficulty has been experienced by reason of the shrinkage of the non-conducting material in the key sockets when heated by the burning of the lamp, and as it has been customary to have the screws enter and hold in the insulating material, they were liable to become loosened after the socket had been in use a considerable time.

The shell D is preferably separated from the plate C by an intervening layer of mica e , the purpose of which will presently appear.

Two arms f project through the center of the plate C. These are designed to form the central contact for the lamp. They are held upon a plate f' , which is fastened at the bottom of the plate C by screws passing from the upper side of the plate C into a binding-plate F' . This binding-plate is designed to receive one of the conductors, which is led from the fixture through the base A. The other conductor is led to a similar binding-plate F^2 , which is secured in like manner to the plate C. This binding-plate serves also to hold in position a yielding contact point or arm H' for closing the connections of an electric circuit. The mica plate e , before referred to, serves to securely insulate the shell D from the heads of the screws $h h$ holding the binding-plates.

A second contact-plate H^2 is secured to the base-plate B. This is preferably formed

of two or more rings of metal stamped out. They are fastened in position at one side by the screws which hold the arm c' against the plate B, and the opposite side is caused to bend upward toward the contact-plate H' . It will be seen that the contact-plate H^2 is at all times in electrical connection through the arm c' with the shell D. When the lamp is placed in the socket, one of its terminals is connected with the inner contact f in a manner well understood and its other terminal with the shell D. To complete the connections, therefore, between the shell and the conductor fastened to the binding-plate F^2 , it is only necessary to bridge across from the contact H' to the contact H^2 . This is done by a movable piece k of conducting material. This is carried at the end of a shaft k' , which is provided with a key k^2 for turning it. The shaft k' is held in bearings formed in the arms c' c^2 . The key k^2 itself prevents the shaft from moving longitudinally in one direction, and a washer k^3 , intervening between the movable piece k and the arm c^2 , prevents it from being withdrawn. The movable piece is held upon the shaft by a pin k^5 , as shown, and it is constructed so that it can move a slight distance in either direction independently of the shaft for the purpose of giving a more sudden and quick action when the circuit is opened by turning it. For this purpose the piece is constructed with a transverse slot k^4 of greater width than the width of the pin k^5 . The ends of the movable piece k are preferably indented, as shown, so that a projection h' upon the plate H' will enter it and hold it in the proper position when the circuit is closed. The key is movable in either direction, so that either end of the piece k is liable to come in contact with the plate. By making the contact-plate H^2 of two or more thicknesses of metal independent of each other, greater elasticity is combined with the requisite pressure.

It will be noticed that by means of the two plates B and C all the working parts of the key-socket are thoroughly insulated from the other sections, so that there is no danger of false contacts being made. The entire working parts of the socket and the inner shell D are inclosed in an outer shell M, which fits over the shell D and the plates B and C and extends into the bottom of the cup A. The shell M is provided with a slot m for receiving the shaft k' of the key, and two small slots m' and m^2 , which pass over the screws b b between the outer shell and the lugs b' b' . When the screws are tightened, they pinch the shell between the flange of the base A and the lugs b' , holding it securely in position.

When the socket is being applied to the fixture, both the shell and the working parts are removed by loosening the screws b . The bottom is then screwed upon the fixture, the plate B is inserted, and the screws tightened sufficiently to hold it in place. After the wire connections have been made the outer shell is slipped into position and fastened by tightening the screws b . It will be seen thus that the number of parts which the workman is obliged to handle in putting the socket into position is reduced to a minimum. When the neck of the lamp is inserted into the sleeve D, the arms d' d' are sprung outward, and as they might chance to be pressed into contact with the outer shell, a ring of insulating material is inserted in the shell M, as shown at m^3 . This preferably fits into a bead m^4 near the end of the shell, and it may be sprung into position by being cut open and temporarily compressed, its ends lapping past each other and then allowed to expand.

I claim as my invention—

1. In a key-socket, the combination, with the base, of the base-plate contained therein, screws passing through the sides of the base holding said base-plate in position, lugs carried by the base through which said screws pass, and a recess in the base-plate fitting over the lugs.

2. In a key-socket, the combination, with the base, of the base-plate contained therein, screws passing through the sides of the base holding said base-plate in position, lugs carried by the base through which said screws pass, and a shell extending between the lugs and the base and held in position by pressure.

3. In a key-socket, a circuit-closing block, two contacts therefor, and a revolving shaft carrying the block continuously movable in either direction to open and close the circuit.

4. The combination, in an electric-lamp socket, of the binding-plates for receiving the conductors, screws holding said binding-plates in position, the plate of non-conducting material upon which the binding-posts are mounted, the inner shell secured to the opposite side of the plate, and the sheet of mica or other non-conducting substance intervening between said shell and the plate and covering the heads of said screws, whereby they are insulated from the shell.

In testimony whereof I have hereunto subscribed my name this 29th day of October, A. D. 1888.

PHILIP LANGE.

Witnesses:

CHARLES A. TERRY,
C. C. WOLFE.