

(No Model.)

M. J. WIGHTMAN & H. LEMP.

SWITCH SOCKET FOR INCANDESCENT LAMPS.

No. 348,875.

Patented Sept. 7, 1886.

Fig. 1.

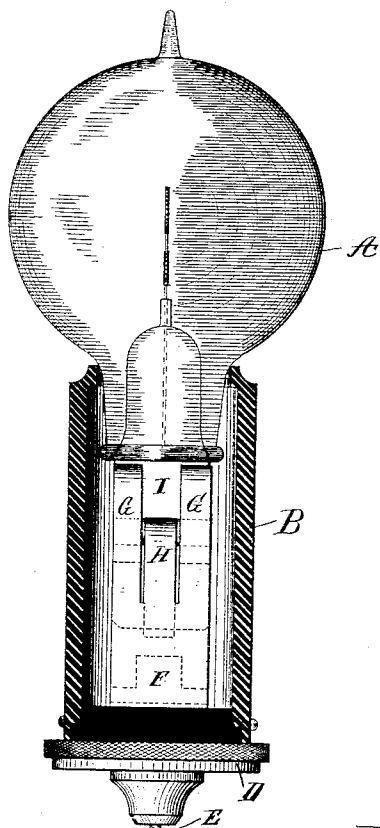


Fig. 2.

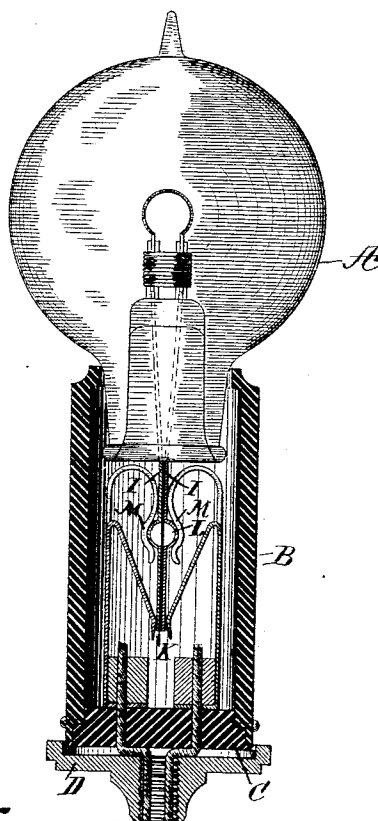


Fig. 3.

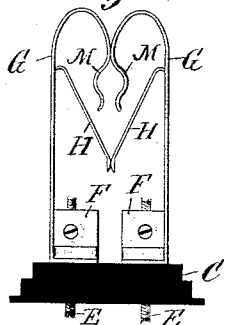


Fig. 5.

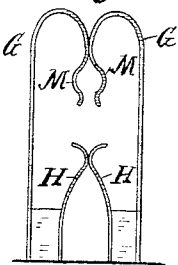
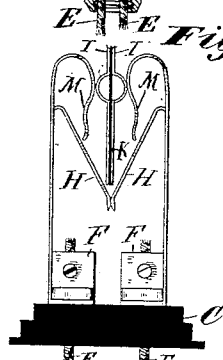


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SWITCH-SOCKET FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 348,875, dated September 7, 1886.

Application filed April 15, 1886. Serial No. 198,925. (No model.)

To all whom it may concern:

Be it known that we, MERLE J. WIGHTMAN and HERMANN LEMP, citizens of the United States, and residents of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Socket-Switches for Incandescent Electric Lamps, of which the following is a specification.

Our invention relates to the construction of sockets or holders for incandescent electric lamps, and has reference more particularly to the switching devices or means for forming an electrical connection between the lamp and conductors supplying current thereto when said lamp is inserted in its socket.

The object of the invention is to furnish a switch adapted for employment upon circuits in which the incandescent lamps are placed in series with arc lamps or with other incandescent lamps or other electrical devices through which the current requires to be maintained in case an incandescent lamp is removed from its socket.

The invention consists in a novel socket-switch so constructed that in the act of removing the lamp the circuit shall be established between the two outside conductors supplying current to the lamp before the lamp-terminals are withdrawn from electric connection with said conductors.

In constructing the switch in accordance with our invention, we prefer to employ two contact terminals or electrodes for the outside conductor, having a bias toward one another such as to establish the circuit between them, if there be nothing to hold them apart, and with such terminals spring-actuated or otherwise constructed to automatically come together, we employ a plug which consists of two plates or contacts insulated from one another, and projecting from the incandescent lamp and forming the outside electrodes or terminals thereof. The latter portion of the device constitutes in effect a switch-plug, and serves the purpose of forcing the conductor-terminals apart, and at the same time completing the proper connection through the lamp, as will be presently described.

The feature of invention to which our pres-

ent case more particularly relates lies in combining with the spring-socket, adapted to receive said plug, suitable contacts or contact-surfaces properly arranged to come into connection prior to the severance of the connection between the plug constituting the lamp-terminals, and the socket whose two sides or portions constitute the terminals or electrodes of the supply-conductor. The contacts by which the circuit is thus established prior to disconnection of the lamp may be formed with or attached to the electrodes constituting the terminals of the supply-conductors, or may be separately mounted. In either case, however, they are properly arranged to be separated when the lamp is fully inserted into its socket and the lamp-terminals constituting the plug have been forced home to their proper position by the insertion of the lamp into its socket.

Our invention consists, also, in details of construction and combinations of parts that will be described in connection with the accompanying drawings, and then pointed out in the claims.

Referring to the drawings, Figure 1 is a vertical section through the lamp-socket, showing the lamp in one position. Fig. 2 is a vertical section through the socket at right angles to Fig. 1, showing the lamp and attachment in side elevation. Fig. 3 shows the position of the plug-socket or conductor terminals when the lamp is removed; and Fig. 4 their position when the lamp is partially removed from its socket. Fig. 5 is a side elevation representing a modification of the invention.

A indicates an incandescent lamp of any desired construction, and B a cylinder or holder of, preferably, non-conducting material, in which the neck of the lamp rests when said lamp is inserted for use.

C indicates a base-block of insulating material, upon which the parts of the socket-switch are supported, and D indicates a metal plate or disk having an opening through its center for the passage of the wires supplying current to the lamp, and properly constructed for attachment to any desired fixture after the manner commonly practiced in the art.

The conductors E E are carried through the base piece or block C, and are properly se-

cured to metal blocks F F by set-screws passing through the blocks and bearing against the sides of the conductors in obvious manner.

Secured to the metal blocks F F are two springs, G G, whose upper ends are curved inward and downward, as indicated, and which have a bias which tends to throw them toward one another, so as to form a direct connection between the conductors E E.

Attached to the springs G G are the supplemental electrodes H H, which make connection with one another either by their own resiliency or by the action of the springs G G. These electrodes H H might, however, be separate spring-electrodes mounted as shown in Fig. 5.

Projecting from the neck of the lamp, and in electrical connection with the entering conductors thereof, are two broad flat plates of metal, I I, separated from one another by an insulating piece of mica or other desired material, K, which lies between said plates, and serves to insulate them from one another. The plates I I and the insulating sheet of mica K are held together by any suitable means—as, for instance, by being embedded in a plug or in a mass of plaster located in the hollow neck of the lamp. Other means might, however, be used for this purpose.

The switch-plug, formed by the plates I I and the interposed non-conductor, is provided with an enlargement on opposite sides at the point L, such enlargement being formed by simply bending the plates I outward in a curve, as indicated. This enlargement is adapted to rest in the space formed by curving the inner ends of the springs G G at the point M M, the result being that when the plug is fully inserted, as shown in Fig. 2, it is held against removal by any but a positive force applied to withdraw the lamp.

When the lamp is out of its socket, electrodes G G are in connection with one another, as shown in Fig. 3, thus establishing a direct connection between the wires E E, and preserving a path for the current to other devices on the same circuit.

When the lamp is inserted into its socket, the plug carried thereby and consisting of the two lamp terminals or electrodes I I, insulated from one another, enters between the springs G G and forces the same apart, so that the current is obliged to pass through the lamp in obvious manner. The lamp is shown fully inserted at Fig. 2, and in this position of the parts the contacts H H are forced apart, so that the current supplied by the conductors E E cannot pass through said contacts avoiding the lamp. When the lamp is withdrawn, the electrodes H H come into contact with one another, establishing the circuit between the conductors E E before the plug carried by the lamp is removed from connection with the electrodes G G proper. By this means any interruption of the circuit through the switch in the act of withdrawing the lamp is prevented.

It will be observed that the socket-switch described is of exceedingly simple construction, and that it possesses decided advantages in the fact that the lamp-electrodes are formed by broad flat plates, thus insuring good electrical connection, a point particularly desirable where incandescent lamps are operated on the same circuit with arc lamps.

We have herein described the contacts H H as if they were moved solely by the spring action of the electrodes G G. It is obvious, however, that they might have a resiliency of their own, and this is, in fact, the preferred arrangement. If constructed in the latter way, they may be independently mounted, as shown in Fig. 5, the same results being obviously produced.

What we claim as our invention is—

1. The combination, in an incandescent lamp-socket, of an electric switch whose two portions or electrodes are connected with the supply-conductors and normally tend to make contact with one another, means for forcing said electrodes apart in the act of inserting the lamp into its socket, and contact-surfaces also connected to the two conductors, and adapted to make connection with one another when the lamp is withdrawn from its socket before the lamp-terminals pass out of contact with the switch-electrodes.

2. The combination, in a socket for an incandescent lamp, of a plug-switch whose plug consists of the two lamp-electrodes, and which is provided with contacts establishing the circuit between the two switch-electrodes before disconnection of the plug-electrodes, as and for the purpose described.

3. The combination, with an incandescent lamp and its socket, of an electric switch operated by the lamp in the act of withdrawal and insertion, and continuity-preserving contacts or surfaces for establishing the circuit between the two outside conductors before connection with the lamp is broken in the act of withdrawing the lamp from its socket, as and for the purpose described.

4. The combination, with an incandescent lamp, of two elongated flat plates, I I, projecting from the neck of the lamp in an axial line therewith, and provided with the swelling or enlargement, as described, the interposed thin sheet of mica, and the springs G G, having broad flat surfaces adapted to press against the plates I I, and provided also with depressions with which the swellings or enlargements on the plates I I may engage.

Signed at Hartford, in the county of Hartford and State of Connecticut, this 10th day of April, A. D. 1886.

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Witnesses:

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