

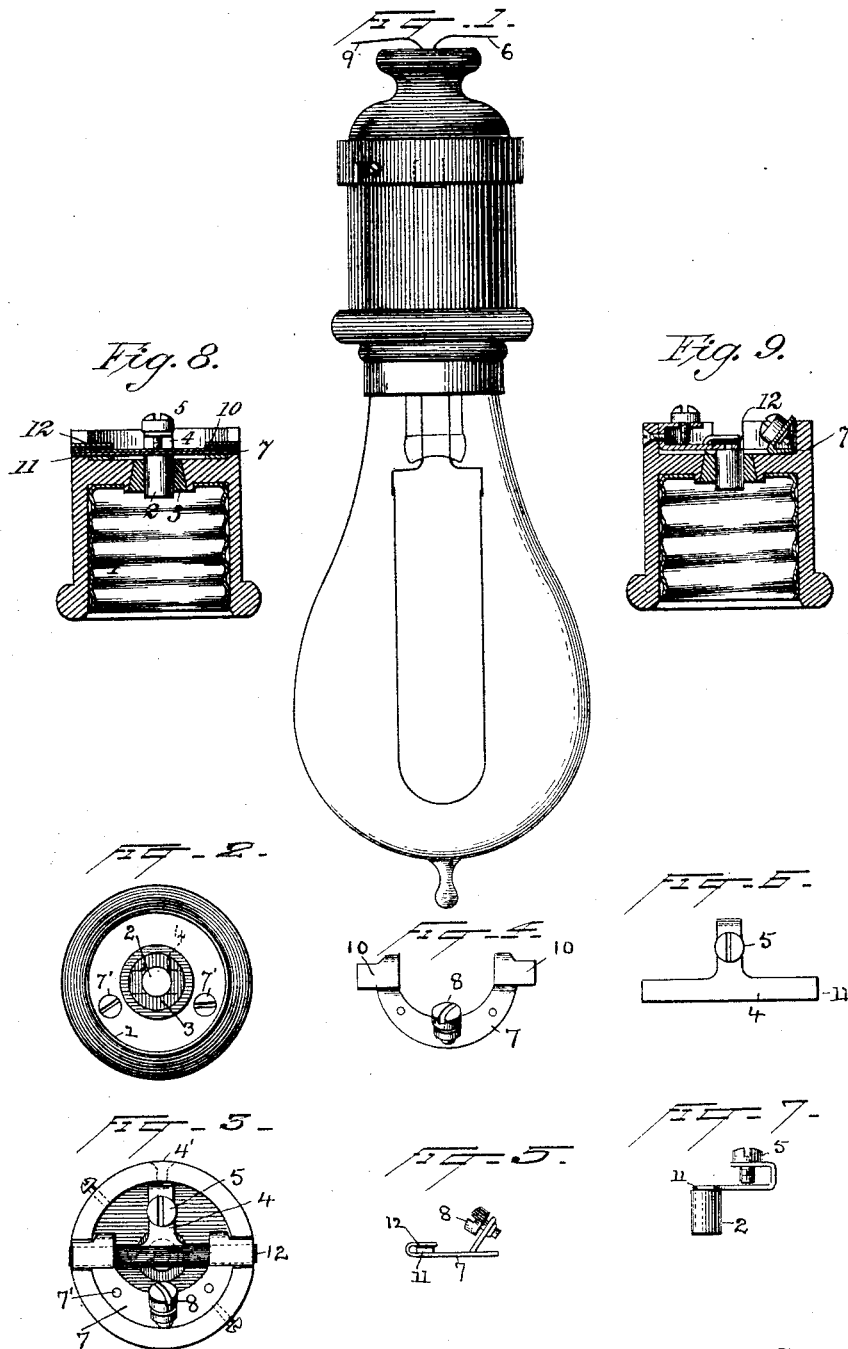
(No Model.)

H. P. BALL.

LAMP SOCKET AND SWITCH AND CIRCUIT CLOSER THEREFOR.

No. 455,559.

Patented July 7, 1891.



Witnesses
Norris A. Clark
St. F. Clark

Inventor
Harry Price Ball.
By his Attorneys
Lyett Seely.

UNITED STATES PATENT OFFICE.

HENRY PRICE BALL, OF BROOKLYN, ASSIGNOR TO THE EDISON GENERAL ELECTRIC COMPANY, OF NEW YORK, N. Y.

LAMP-SOCKET AND SWITCH AND CIRCUIT-CLOSER THEREFOR.

SPECIFICATION forming part of Letters Patent No. 455,559, dated July 7, 1891.

Application filed December 16, 1890. Serial No. 374,879. (No model.)

To all whom it may concern:

Be it known that I, HENRY PRICE BALL, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Improvement in Lamp-Sockets, of which the following is a specification.

The invention relates to a socket adapted to receive the base of an incandescent lamp and to connect the lamp filament to the lighting-circuit.

The invention consists in several features of improvement in the socket and in the automatic switch in or forming a part of the socket; and the invention also consists in the potential-circuit closer in the base of the socket, the devices all being constructed and arranged substantially in the manner hereinafter specified.

In the accompanying drawings, Figure 1 is a side view of the socket with a lamp in place therein. Fig. 2 is an end view of the socket with the lamp removed. Fig. 3 is an end view of the socket, looking in the opposite direction, with the cover or cap removed. Fig. 4 is a plan view of one member of the switch and circuit-closer, and Fig. 5 is an end view thereof. Fig. 6 is a plan view of the second member of the switch and circuit-closer, and Fig. 7 is an end view thereof. Figs. 8 and 9 are central sections of the socket at right angles to each other.

The socket to be described is especially adapted for use in series or multiple-series systems and is designed to maintain the circuit closed when the lamp is removed from its socket, and it is designed also to maintain or form a continuous circuit when the filament breaks or when for any other reason the lamp becomes inoperative.

The socket illustrated is of the general form used in connection with the Edison lamps, there being a screw sleeve or terminal 1 and a central pin or electrode 2, which, when the lamp or any device having a similar base is screwed into the socket, make contact, respectively, with the two ends of the lamp filament. In the present socket the central pin or electrode 2 is not rigidly supported at the center of the socket, as is usually the case, but is loosely

or movably held within a central rubber or other similar tube 3. The outer end of the pin 2 rests upon or is secured to the T-shaped spring or switch member 4, the position of which is indicated in dotted lines in Fig. 2, and which is more clearly shown in Figs. 3, 6, and 7. 4 is secured in place by a single screw 4' passing through the wall of the socket. This T-piece is provided with a screw 5, by means of which one of the circuit-wires 6 is connected thereto.

7 is a second member of the switch and circuit-closer supported on the opposite side of the space in the base of the socket, as shown in Fig. 3. This member is held in place and metalically connected with the sleeve 1 by a screw or screws 7' passing through a flange in the sleeve and through the body of 7, as indicated in Figs. 2 and 3. It is convenient to make this member U-shaped and to place on it near the center a binding-screw 8, by means of which the other circuit-wire 9 is connected thereto. The two ends of this U-shaped member are bent or folded back, as clearly indicated in Figs. 3, 4, and 5 at 10. Two ends of the cross-piece of the T member pass between the body of the U-shaped piece and the bent ends thereof. This is indicated in Fig. 3, and also in Fig. 5, where 11 is an end view of the cross-piece. As shown in Figs. 3 and 5, the cross-piece is in direct metallic contact with the opposite member 7. Above said cross-piece is placed a strip of paper 12 or other film of insulating material for the purpose of preventing metallic contact between the cross-piece and the bent ends 10 during normal operation of the lamp in the socket.

The operation of the switch and circuit-closer will now be described. When there is no lamp in the socket, the circuit enters through wire 6 to binding-post 5, through member 4 to 7, binding-post 8, and through wire 9 to the succeeding lamp. When, however, a lamp is placed in the socket, its base presses against pin 2 and moves the same outward. This raises the two ends 11 from their metallic contact with 7, thereby breaking the direct circuit through the switch and establishing a direct circuit through the filament

of the lamp. The paper strip 12 allows the two ends 11 to approach very close to the ends 10 10, but prevents actual contact. If in this condition of the switch the filament 5 should break or burn out, the potential of the circuit at the points 10 11 would be so great that the paper would be punctured and a circuit formed directly between 10 11 in a manner well known in devices termed "potential" or "disruptive" circuit closers. To 10 replace the paper in the socket it is only necessary to loosen the cap of the socket sufficiently to expose the openings in the side of the same, (indicated in dotted lines in Fig. 11,) into which the paper is slipped. Before 15 this is done the lamp should be loosened, in order to allow the cross-piece to move away from the ends 10, allowing the paper to slip easily between them. The cap of the socket 20 is then pushed over the openings and the lamp is screwed home in the socket.

The socket above described provides a very simple and compact form of switch and circuit-closer. The potential-circuit closer is 25 very efficient, since it has two points where the current can break through the paper to the opposite terminal. There is also an absolute short circuit around the lamp-socket terminals at two places when the lamp is screwed 30 out of the socket. It will be seen, also, that there is a spring-contact between the central terminal of the lamp and the point 2, since the latter is supported by the T member of the switch, which is of spring metal. The 35 body of the socket is preferably made of incombustible material, and the metallic portions which are connected with the circuit are entirely covered and protected.

Having thus described the invention, what I 40 claim is—

1. The combination, in a lamp-socket, of terminals for the circuit, a potential or disruptive circuit closer in the base of the socket, consisting of two conducting members, a film 45 of insulating material between the members, and means operated by insertion of the lamp for moving the parts of said potential or disruptive circuit closer near together, substantially as described.

2. The combination, in a socket, with the 50 terminals of a circuit, of a compound switch and potential-circuit closer consisting of a metallic member connected to one of the terminals and a second member connected to the other terminal, one of said members extending on both sides of the other member 55 and being in contact on one side when there is no lamp in the socket, and being separated on the other side by an insulating strip or film when the lamp is inserted, substantially 60 as described.

3. A circuit-controller for sockets, consisting of a U-shaped member, the ends of which are folded back and which is adapted for 65 connection to one wire of the circuit, and a second member adapted for connection to the other wire of the circuit, passing between the body and the ends of the first member, said members being in contact when there is no lamp or device in the socket, substantially as 70 described.

4. A circuit-controller for sockets, consisting of a U-shaped member, the ends of which are folded back, and a T-shaped member, the 75 ends of which pass between the body and the ends of the first member, said members being in contact when there is no lamp or device in the socket, the T member being movable away from the body of the first member and into proximity to the bent ends of the first 80 member, substantially as described.

5. A circuit-controller for sockets, consisting of a U shaped member, the ends of which are folded back, and a T-shaped member, the 85 ends of which pass between the body and the ends of the first member, said members being in contact when there is no lamp or device in the socket, the T member being movable away from the body of the first member and in proximity to the bent ends of the first member, 90 and a paper strip, substantially as described.

This specification signed and witnessed this 12th day of December, 1890.

HENRY PRICE BALL.

Witnesses:

W. S. ANDREW,
W. S. KELLEY.