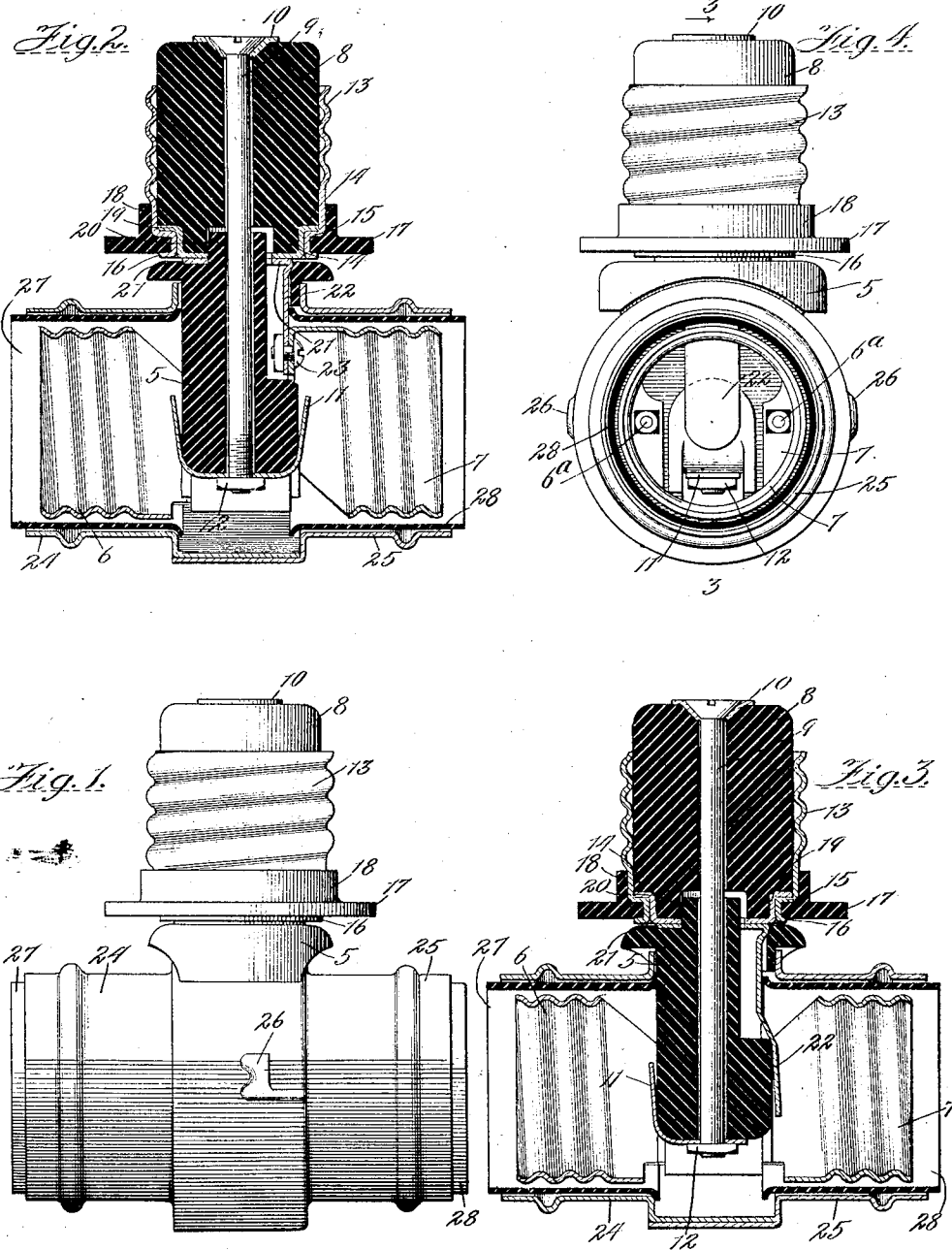


R. B. BENJAMIN.
ELECTRIC LAMP SOCKET.
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UNITED STATES PATENT OFFICE.

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ELECTRIC-LAMP SOCKET.

974,947.

Specification of Letters Patent.

Patented Nov. 8, 1910.

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To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Electric-Lamp Sockets, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvements in electric lamp sockets, and particularly to that type of lamp socket in which there is provided a plug carrying one or more lamp-receiving sockets and contacts associated with these sockets for engagement with the terminals of lamps carried thereby, this plug being itself provided with contacts which are adapted, when the plug is inserted into an ordinary socket, to cooperate with the contacts of said socket and thereby to provide current for the lamp or lamps carried by the device. In the use of such devices it is found to be desirable that some means be provided whereby the device may be turned about the axis of the plug to any desired position. This is especially true when the socket of the device extends at an angle with the plug. It is well known that the incandescent electric lamp does not distribute its light uniformly in all directions, but projects more light in a direction perpendicular to its longitudinal axis than in the direction of this axis. Hence to secure the best illumination from the lamp it sometimes becomes necessary to adjust the lamp to such a position that its longitudinal axis will be horizontal, so that a maximum amount of the light given off by the lamp will be projected downward, regardless of the direction in which the socket into which the plug is inserted extends. It also often becomes desirable to use two lamps in connection with a socket adapted originally to hold but one lamp.

The object of the present invention is the production of a device of the above-outlined class in which there is provided a plug adapted to be inserted into the ordinary lamp-receiving socket and to carry one or more lamps with their axes arranged at an angle with the axis of the said plug, and in which means are provided whereby the lamp or lamps may be adjusted in a circle about the axis of the plug to any desired position

without losing the connection between the contacts of the plug and the contacts of the socket in which the plug is inserted. In the accomplishment of these objects I provide the plug with an outer contact member which is adapted to be screwed into the socket without turning the device as a whole, whereby the main portion of the device and the lamp or lamps carried thereby may be held in the desired position while the rotating outer contact is screwed up into place.

In the accompanying drawings I have shown my invention as applied to a lamp-holding device adapted to carry two lamps with their longitudinal axes co-incidental with each other, and disposed at a right angle with the axis of the plug.

In the accompanying drawings, Figure 1 is an elevational side view of the device; Fig. 2 is a longitudinal sectional view of the same, showing the arrangement of contact-members and other parts of the device when this device is made up so that the lamps carried thereby will be arranged in parallel; Fig. 3 is a view similar to Fig. 2, but showing the parts arranged so as to connect the lamps in series; and Fig. 4 is an elevational view of the series device shown in Fig. 3, looking into one of the sockets.

In these drawings, in which like reference numerals indicate the same or similar parts throughout, 5 is a base formed of porcelain or other suitable insulating material, this base carrying the lamp-receiving sockets 6 and 7 and suitable lamp-terminal-engaging contacts associated therewith. The sockets 6 and 7 are secured to the base 5 and electrically connected with each other, by a pair of bolts 6^a which extend through the base from one of these sockets to the other. A plug 8, formed of porcelain or the like, is connected with the base 5 by a bolt 9, which passes centrally and longitudinally through these parts and secures them firmly together. The head 10 of the bolt 9 serves as a center contact for the plug and engages, when this plug is inserted into a socket, the center contact of such socket. Upon the lower end of the base 5 is a plate 11 adapted to serve as a center contact for engaging the center terminals of one or more of the lamps, this plate being held in place by and electrically connected with the bolt 9 by a nut 12 screwed on to the end of this bolt. When the device is arranged for the connection of

the lamps in parallel, as shown in Fig. 2, this plate 11 will be U-shaped in form and both of its ends will extend upwardly, one on each side of the base, so as to engage the center terminals of both lamps, but when the device is arranged so as to connect the lamps in series, as in the device illustrated in Figs. 3 and 4, the plate 11 will be L-shaped in form, and one only of its ends will engage a lamp-terminal.

Sleeved on the plug 8 is a corrugated or threaded metallic shell 13 adapted to constitute the outer contact-member of the plug. The plug 8 is formed with a shoulder 14 near its lower or inner end, and the shell 13 has its inner end 15 flanged inwardly so as to lock under the shoulder 14 on the plug 8 and thereby be held in place on said plug. The shell 13 is again flanged outwardly at 16 so as to hold in place a ring 17, of hard rubber or other suitable material, which surrounds the lower end of the shell 13 and is secured to this shell so as to rotate therewith. When the device is inserted into a socket this ring 17 is adapted to be grasped and to be rotated so as to screw the shell 13 into such socket. The ring 17 is provided with an apron 18 which extends along the outside of the shell 13 for a short distance and forms an insulating covering for that part of the shell 13 which would be left exposed in case the socket into which the device was inserted was not as deep as the length of the plug.

Arranged between the base 5 and the plug 8, and immovably secured in place, are a pair of metallic plates, one of which, designated 19, is dished and is in electrical contact with the inturned portion of the shell 13. This plate 19 is provided with a central circular opening through which extends a projection 20 on the upper end of the base 5. The other of these plates is provided at one of its ends with a ring-shaped portion 21 extending at a right angle with its main body portion, this ring portion surrounding the projection 20 on the base 5, and making electrical contact with the dished plate 19. The downwardly-extending end 22, of this plate, in the case of the device illustrated in Fig. 2, in which the lamps are connected in parallel, is secured to the socket 7 by a screw 23 and thus makes electrical connection between the socket and the rotating sleeve 13. In the series form of the device, shown in Fig. 3, this plate 22 engages directly with the center terminal of the lamp inserted into the socket 7.

In both the parallel and series forms of the device the sockets 6 and 7 are electrically connected with each other by the bolts 6^a which secure the sockets in place. In the series form current is led in through the center bolt 9 to the plate 11, thence to the center terminal of the lamp in the socket

6 and through the filament of this lamp to the socket 6, thence through the bolts 6^a to the socket 7, and to the outer terminal of the lamp in this socket, thence through the filament of this lamp and the center terminal thereof to the plate 22, thence to the dished plate 19 and the outer contact-shell 13.

In the parallel form of the device current is led in through the bolt 9 to the plate 11 and there divides, a portion of the current passing to the center terminal of the lamp in the socket 6 and a portion thereof passing to the center terminal of the lamp in the socket 7. These branch currents flow through the filaments of the lamps to the outer terminals of these lamps and the sockets 6 and 7. As the sockets 6 and 7 are electrically connected with each other through the bolts 6^a, current from both of these sockets will pass through the plate 20, which is connected with one of these sockets, to the dished plate 19, thence to the contact shell 13.

An outer casing or housing for the sockets is provided, this housing consisting of two engaging shells 24 and 25, these shells preferably telescoping one within the other and being secured together by any preferable means. As shown in the drawings, I provide a bayonet connection 26 for interlocking these shells 24 and 25, but any other suitable and convenient means may be employed for effecting this result. Lining sleeve-rings 27 and 28 are provided for insulating the shells 6 and 7 from the outer casing.

When the plug of this device is inserted into an ordinary socket the outer contact-shell 13 is rotated on the plug 8 by means of the projecting collar 17, the device being thus screwed up into place in the socket and the center terminal 10 engaging the center contact of the socket. The lamp-base holding portion of the device may be turned so that the lamp or lamps carried thereby will extend in any desired direction in a plane at right angles with the longitudinal axis of the plug and the socket into which this plug is inserted.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. In a lamp-holding device, the combination of a base, a plug having a center contact adapted to cooperate with the center contact of a suitable receptacle, an outer contact-member rotatable on said plug and adapted to cooperate with the outer contact of said receptacle, a pair of plates clamped between said base and said plug, said outer contact member having a flange extending under one of said plates, a lamp-receiving socket carried by said base and having lamp-terminal-engaging members associated therewith, electrical connection between one of

said lamp-terminal-engaging members and the center contact of the plug and electrical connection between the other of said lamp-terminal-engaging members and the other of said plates.

2. In a lamp-holding device, the combination of a base, a plug, two plates clamped between said base and plug, a threaded shell arranged to rotate around said plug and having a portion extending under one of said plates, the base having a groove extending longitudinally thereof and the other of said plates having a tongue lying in said groove and arranged to conduct current to one of the terminals of a lamp, means for supporting the lamp, and means for conducting current to the other terminal of said lamp.

3. In a lamp-holding device, the combination of a base and plug made separable from each other, a pair of plates arranged between said base and plug, means for securing said base and plug together and clamping said plates therebetween, a rotatable threaded shell on said plug having a part extending under one of said plates, a lamp-holding device carried by said base, and a tongue on the other of said plates arranged to conduct current to one of the terminals of a lamp.

4. In a lamp-holding device, the combination with a base, of a plug having a center contact, a lamp-receiving socket carried by said base and disposed with its axis at an angle with the axis of said plug, a rotatable outer contact-member on said plug, said member having an intumed flange, a plate non-rotatably arranged on said plug and engaging the flange of said rotatable outer contact-member, a contact plate clamped between said base and said first-named plate and contacts associated with said socket and electrically connected one with the center contact of the plug, and the other with said last-named plate.

5. In a lamp-holding device, the combination of a base and plug separable from each other, a bolt extending longitudinally through said base and plug, two plates clamped

between said base and plug, a rotatable outer contact on said plug arranged to have sliding contact with one of said plates, lamp-receiving shells upon opposite sides of said base, means extending through said base for securing said shells in position and electrically connecting them together, a center contact for one of said lamp-receiving shells electrically connected with said bolt, and means for making electrical connection between the other plate and one of said lamp-receiving shells.

6. The combination of a base and plug made separable from each other, a plate clamped between said base and plug, a rotatable outer contact on said plug arranged to have sliding engagement with said plate, lamp-receiving shells on opposite sides of said base, means extending through said base for securing said shells in place and electrically connecting them together, means for electrically connecting said plate with one of the terminals of the lamp, and a tubular casing shell made in two parts arranged to be passed on over the lamp-receiving shells and telescoping with each other.

7. In a lamp-holding device, a base and plug separable from each other, a rotatable outer contact on said plug, a plate clamped between said base and plug and arranged to be maintained in electrical connection with said rotatable contact, a base having a flattened side, a lamp-receiving shell secured to said flattened side with its axis at an angle with the axis of the plug, means for electrically connecting said plate with one of the terminals of the lamp, and a tubular casing shell arranged to telescope with said lamp-receiving shell.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

REUBEN B. BENJAMIN.

Witnesses:

M. L. FARRAR,
C. L. HOPKINS.