

Feb. 15, 1938.

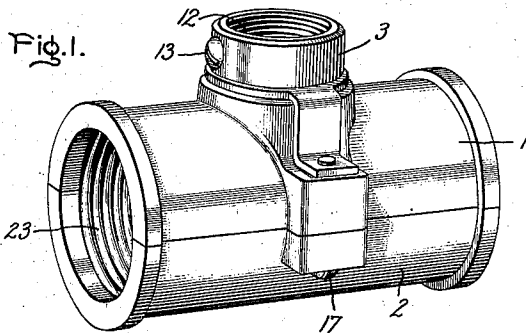
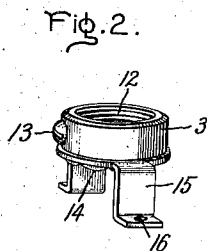
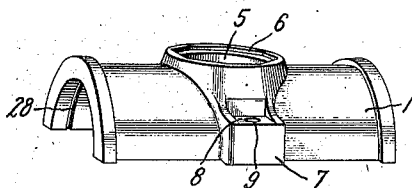
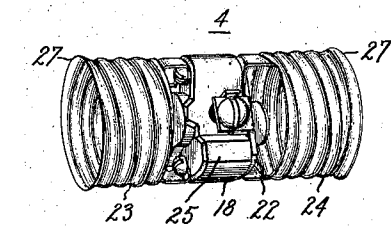
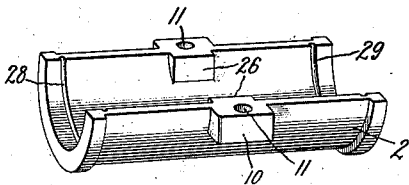
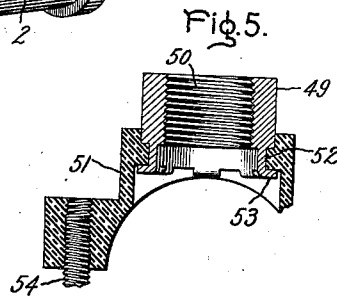
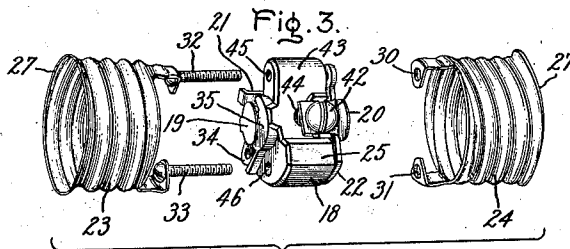
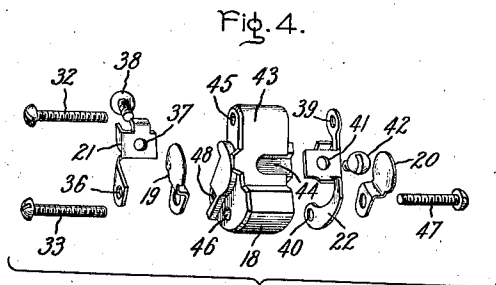
F. H. WESTON

2,108,632

DOUBLE ENDED SOCKET

Filed March 6, 1934

2 Sheets-Sheet 1



Inventor:
Frederick H. Weston,
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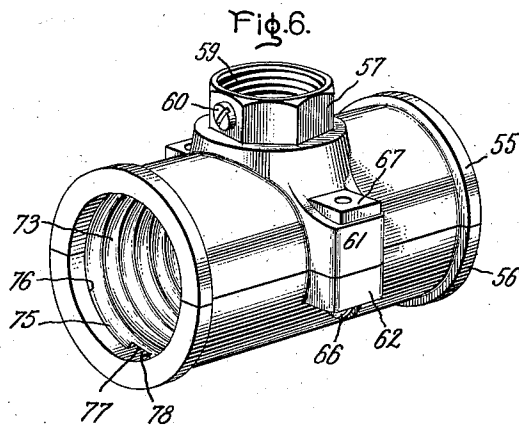
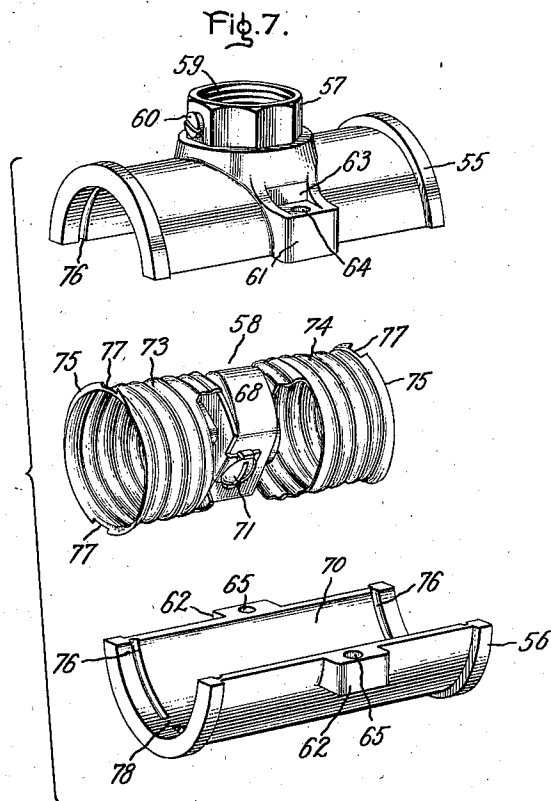
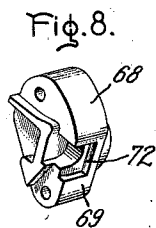
F. H. WESTON

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DOUBLE ENDED SOCKET

Filed March 6, 1934

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,108,632

DOUBLE ENDED SOCKET

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Application March 6, 1934, Serial No. 714,293

8 Claims. (Cl. 173—337)

This invention relates generally to lamp sockets and is directed more particularly to the provision of lamp sockets that can be readily assembled in a limited working space.

It is an object of this invention to provide a lamp socket that can be attached to a conduit or other supporting means without turning the entire socket enclosure.

It is another object to provide a lamp socket that can be more easily wired in a restricted space than the ordinary socket.

It is a further object to provide a relatively simple means for preventing longitudinal and rotary displacement of the contact base assembly, which is assembled within the socket enclosure, relatively to the enclosure.

It is an additional object of the invention to provide one type of lamp socket that may be connected to the current bearing conductors of the associated conduit by extending dead-end wires from these conductors to the lamp socket and to provide another type of lamp socket that may be connected to these current bearing conductors by looping the conductors themselves through the lamp socket.

An understanding of the invention may be obtained upon reference to the following detailed description of one preferred embodiment of the invention and to the accompanying drawings, in which:

Fig. 1 is a perspective view showing an assembled lamp socket that may be connected to the current bearing conductors by dead-end wires extended therefrom; Fig. 2 is a perspective view of the parts shown assembled in Fig. 1; Fig. 3 is a view showing the way in which the screw shells are attached to the contact base; Fig. 4 is an exploded view showing the details of the contact base assembly without the screw shells; Fig. 5 is a sectional view showing another method of attaching the socket enclosure to a conduit or other supporting structure; Fig. 6 is a perspective view showing an alternative construction for a lamp socket which permits the conductors of the conduit to be looped through the socket; Fig. 7 is a perspective view of the parts shown assembled in Fig. 6, and Fig. 8 is a perspective view of the contact base shown assembled in Fig. 6.

While the illustration and description have been restricted to a separable double ended lamp socket it is to be understood that the invention is not to be limited in this respect, for it has other uses that will readily suggest themselves to those skilled in the art.

Referring now to the drawings, the double end-

ed socket comprises a socket enclosure of molded insulating material having an upper semi-cylindrical portion 1 and a lower semi-cylindrical portion 2, a nipple 3, and a contact base assembly generally designated by 4 in Fig. 2. It will be noted that the socket enclosure is split longitudinally.

The upper portion 1 of the socket enclosure has a transverse opening 5, circumscribed by a multi-sided recess 6, and has disposed on its opposite sides external abutments 7. Each abutment is provided with a recess 8 and an opening 9.

The lower portion 2 of the socket enclosure has disposed on opposite sides thereof, external abutments 10 each of which is provided with an opening 11.

The nipple 3 is provided with a threaded opening 12 for attaching it to a conduit or other support (not shown) and with a set screw 13 for locking it to the conduit or support. The bottom of the nipple is provided with a plurality of projections 14 formed during the process of riveting the nipple to a yoke piece 15. This yoke piece is provided with two legs each having therein a tapped hole 16.

A complete description of the lower portion 2 of the socket enclosure and of the contact base assembly will be given later. At this point it is desired to make clear the steps that occur in assembling the nipple 3, and the contact base assembly with the upper and lower portions of the socket enclosure and in wiring the contact base assembly to the conductors of the conduit. Dead-end wires (not shown) are connected to the conductors (not shown) of the conduit and are extended through the opening 12 of the nipple 3 which is then attached and locked to the conduit or other support. The dead-end wires are next extended through the transverse opening 5 in the top of the upper portion 1 of the socket enclosure and then wired to the contact base assembly 4 while it is still free of the socket enclosure. The present construction, therefore, enables the contact base assembly to be readily connected to the conductors of the conduit even though there is insufficient working space in the immediate neighborhood of the conduit outlet to make the connections. The upper portion 1 of the socket enclosure is then assembled with the nipple 3 whereupon the projections 14 of the nipple fit into the recess 6 and the legs of the yoke piece 15 fit into the recesses 8 with the holes 16 in the legs coincident with the openings 9 in the abutments of the upper portion. The contact base assembly is thereupon positioned within the

lower portion 2, in a manner that will be described later, and then the upper and lower portions are assembled with the abutments 7 and 10 in juxtaposition. When thus assembled the two portions form an enclosure provided with a longitudinal opening. The screws 17 (only one of which is shown) are positioned in the openings 11 of the lower portion 2, in the openings 9 of the upper portion 1 and threaded into the holes 16 in the legs of the yoke piece 15.

From this description it is apparent that the nipple can first be attached to the conduit, the contact base assembly then connected by dead-end wires to the conductors of the conduit before being placed within the socket enclosure, and finally the upper and lower portions of the socket enclosure can be assembled into a rigid, unitary structure, without the necessity of turning the socket enclosure.

The contact base assembly 4 (Figs. 2-4) which, as previously stated, is adapted to be positioned within the socket enclosure comprises a contact base 18, carrying thereon contact members 19 and 20, contact terminal plates 21 and 22, and two oppositely disposed screw shells 23 and 24.

The contact base itself, which may be molded from any suitable insulating material, is provided on each of its opposite sides with a straight edge 25 (only one edge being illustrated). When the contact base is positioned within the socket enclosure, these edges fit within the internal abutments 26 of the lower portion 2, thereby preventing rotary displacement of the contact base assembly.

Each of the screw shells 23 and 24 is provided with a threaded opening for receiving a screw base lamp (not shown) and the outer edge 27 of each screw shell is flared. The flared edges of these shells are adapted to enter internal grooves 28 and 29 on the upper and lower portions of the socket enclosure, thereby preventing longitudinal displacement of the contact base assembly 4. The screw shells are adapted to be rigidly attached to the contact base, with their openings facing in opposite directions as shown in Figs. 2 and 3, and for this purpose each shell has at its inner edge two brackets provided with punched holes 30 and 31 adapted to receive the screws 32 and 33.

The contact members comprise spring center contacts 19 and 20 attached to the contact base 18 on opposite ends thereof. Each spring center contact, which is of the usual construction, is provided with a substantially circular portion adapted to engage the center contact terminal of a screw base lamp (not shown) and with a connecting portion extending in a direction substantially at right angles to the circular portion and in a different plane therefrom. The connecting portion of each spring center contact is provided with a punched hole, as shown in Fig. 4, and is adapted to be positioned in a recess 34 of the contact base. The circular portion projects over a raised portion 35 of the contact base, as is shown in Fig. 3.

The contact terminal plates include a center contact terminal plate 21 and a horseshoe terminal plate 22. The center contact terminal plate 21 is provided with two portions in planes substantially at right angles to one another. One portion is provided with a tapped hole 36 adapted to receive the screw 47 and the other portion is provided with a tapped hole 37 adapted to receive the binding screw 38. The horseshoe terminal plate 22 has a first portion provided with

two tapped holes 39 and 40 adapted to receive the screws 32 and 33 and has also a second portion substantially at right angles to the first. The second portion is provided with a tapped hole 41 adapted to receive a binding screw 42. This second portion is adapted to be positioned in a recess 43 on the contact base, while the binding screw 42 is positioned in the deeper recess 44. The portion of the center contact terminal plate 21 having the hole 37 therein is positioned in a recess (not shown, but similar to the recess 43) of the contact base, while the binding screw 38 is positioned on a deeper recess (not shown, but similar to the recess 44) therein.

In combining the parts of the contact base assembly 4, the brackets of the right-hand screw shell 24 are positioned under the horseshoe terminal plate 22 and then the screws 32 and 33 are inserted through the holes 30 and 31 in the brackets of the screw shell 23, through the openings 45 and 46 in the contact base, through the holes 30 and 31 in the brackets of the screw shell 24, and into the tapped holes 39 and 40 of the horseshoe terminal plate 22. The screw shells 23 and 24, and the horseshoe terminal plate 22 are thus rigidly attached to the contact base 18. The screw 47 is inserted through the holes provided in the spring center contact 20, through the opening 48 in the base, through the hole in the spring center contact 19 and into the tapped hole 36 of the center contact terminal plate 21. The two spring center contacts 19 and 20, and the center contact terminal plate 21 are thus rigidly attached to the base 18.

The manner in which the dead-end wires (not shown) are extended from the conduit conductors (not shown) to the contact base assembly has been previously explained. The remainder of the circuit connecting these conductors to the lamps supported by the socket will now be traced. One of these conductors is connected by means of one dead-end wire and the binding screw 42 to the horseshoe terminal plate 22 and the other is connected by means of another dead-end wire and the binding screw 38 to the center contact terminal plate 21. The circuit for the lamp associated with the screw shell 24 can be traced from the horseshoe terminal plate 22, the screw shell 24, filament of the lamp connected to the screw shell, the center contact terminal of the lamp (not shown), spring center contact 20 to the center contact terminal plate 21. The circuit for the lamp associated with the screw shell 23 can be traced from the center contact terminal plate 21, spring center contact 19, center contact terminal of the lamp (not shown), filament of the lamp, screw shell 23 to the horseshoe terminal plate 22.

An alternative means for attaching the socket enclosure to the conduit or other supporting member and for assembling the upper and lower portions of the enclosure is shown in Fig. 5. In this arrangement the nipple 49, which is provided with a threaded central opening 50, is permanently connected to the upper portion of a socket enclosure which is, except for the differences now to be pointed out, similar to the upper portion 1 of the enclosure shown in Fig. 1. The nipple 49 has on its base a plurality of projections which fit into the multi-sided recess 52, in the molded upper portion 51, which is similar to the recess 6 (Fig. 2). After the nipple 49 has been fitted into this recess its lower edge 53 is spun over, thus permanently attaching the nipple to the upper portion 51. The upper portion 51

and the lower portion (not shown) of the socket enclosure are held together, as is shown in Fig. 5, by means of the self-tapping screws 54 (only one of which is shown), which thread into the compound of the upper portion 51. The contact base assembly (not shown) which is positioned within the socket enclosure is the same as the one disclosed in Figs. 2 to 4.

In Figs. 6 to 8, inclusive, is illustrated a modified lamp socket in which the upper and lower portions of the socket enclosure are held together in a different manner than in the constructions shown in Figs. 1 and 5, and in which the lamp socket, instead of being connected to the conductor wires of the conduit by dead-end wires extended therefrom to the contact base of the lamp socket, as is necessary with the construction shown in Figs. 1 to 4, inclusive, is connected to the conductor wires by looping the wires themselves through the lamp socket.

Referring to Figs. 6 and 7, the modified lamp socket is provided with a socket enclosure comprising an upper portion 55 and a lower portion 56, a nipple 57 which is disposed in a recess in the upper portion 55 in the same manner as the nipple 49 shown in Fig. 5, and a contact base assembly 58. The nipple 57 is provided with a threaded opening 59 for attaching the nipple to a conduit or support and with a set screw 60 for locking the nipple to the conduit. The upper and lower portions of the socket enclosure are each provided with a pair of oppositely disposed abutments, as 61 and 62. A recess 63 is provided at the top of each of the abutments, as 61, on the upper portion of the enclosure, and in this recess is a clearance hole 64, while in the corresponding abutment on the lower portion of the enclosure is a complementary clearance hole 65. When the upper and lower portions of the socket enclosure are assembled with their corresponding abutments in juxtaposition, screws as 66, are adapted to be inserted into the complementary openings 64 and 65 from the bottom face of the abutment on the lower portion 56 and to be threaded into nuts, as 67, positioned in the recesses 63, thus fastening the upper and lower portions of the socket enclosure into a unitary structure.

The contact base assembly 58 is similar to the contact base assembly 4 of Fig. 2, which has already been described, except in the particulars now to be mentioned. The contact base 58 is designed so that sufficient clearance space is provided between its sides, as 69, and the inner surface 70 of the lower portion of the socket enclosure to permit the conductor wires of the conduit to be looped through the opening 59 in the nipple 57 and connected to the contact base assembly 58 by means of the binding screws, as 71, which are disposed in recesses, as 72, in the sides 69 of the contact base. It is to be noted that when the contact base assembly is positioned within the socket enclosure, the binding screws, as 71, are located within the lower portion of the enclosure. The remainder of the circuit for the lamps attached to the socket base assembly may be readily understood from the description of the complete lamp circuits described in connection with Figs. 1 to 4, inclusive.

The screw shells 73 and 74 are attached to the contact base 68 and to the other parts of the contact base assembly in the same manner that the shells 23 and 24 are attached to the contact base 18, as described in connection with Figs. 1 to 4, inclusive. But in addition to providing

each screw shell with a flared edge 75 which cooperates with a groove 76 on the inner surface of the upper and lower portions of the socket enclosure to prevent longitudinal displacement of the contact base assembly 58 relatively to the enclosure, each flared edge 75 is provided with diametrically opposite notches 77, and each groove 76 is provided with a filled-in portion 78 which the notches engage to prevent rotary displacement of the socket base assembly 58 relatively to the enclosure.

The invention provides a lamp socket that can be attached to a conduit and readily wired to the conductors thereof even though the conduit is positioned in a limited working space. This is effected by providing the socket with a socket enclosure having separable upper and lower portions and with a separable contact base assembly that can be wired to the conductors of the conduit before being positioned within, and assembled with, the upper and lower portions of the socket enclosure.

The invention also provides a lamp socket that can be readily assembled into a rigid, unitary structure by merely placing the contact base assembly within the upper and lower portions of the socket enclosure and fastening the upper and lower portions of the enclosure together.

The invention further provides one type of lamp socket that can be connected to the conductor wires by means of dead-end wires extended from these conductors and provides another type of lamp socket that can be connected to the conductor wires by looping these wires through the lamp socket.

The invention is not to be restricted to the particular form or arrangement of parts shown and described herein since it is apparent that they may be changed and modified without departing from the scope of the present invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a lamp socket assembly, a socket enclosure of insulating material comprising an upper portion provided with a transverse opening and a lower portion cooperating with the upper portion to form a socket enclosure provided with a longitudinal opening, a nipple positionable in said transverse opening and provided with legs and an opening connecting with the longitudinal opening, a separable lamp receiving means rigidly positionable within said longitudinal opening, and means cooperating with said legs and with both portions of the enclosure for assembling the enclosure and nipple into a rigid, unitary structure.

2. In a lamp socket assembly, a socket enclosure of insulating material comprising an upper portion provided with a transverse opening and a lower portion cooperating with the upper portion to form a socket enclosure provided with a longitudinal opening, abutments on said upper and lower portions, a nipple positionable in said transverse opening, said nipple being provided with legs supported on the abutments of the upper portion and with a threaded opening connecting with said longitudinal opening, a separable lamp receiving means rigidly positionable within said longitudinal opening, and means cooperating with said legs and with said abutments for assembling the enclosure and nipple into a rigid, unitary structure.

3. In a lamp socket assembly, a socket enclosure of insulating material comprising an upper portion provided with a transverse opening and

a lower portion cooperating with the upper portion to form an enclosure provided with a longitudinal opening, abutments on both of said portions and recesses in the abutments of the upper portion, a nipple positionable in said transverse opening, said nipple being provided with legs positionable in said recesses and with a threaded opening connecting with said longitudinal opening, a separable lamp receiving means rigidly positionable within said longitudinal opening, and means cooperating with said legs and with the abutments of both portions for assembling the enclosure and nipple in a rigid, unitary structure.

4. In a lamp socket assembly, a socket enclosure of insulating material comprising an upper portion provided with a transverse opening and a lower portion cooperating with the upper portion to form a socket enclosure having a longitudinal opening, a nipple mounted in said transverse opening, a separable contact base of insulating material positionable within the longitudinal opening, oppositely disposed screw shells carried on said base and provided with flared edges, and internal grooves on said upper and lower portions cooperating with said flared edges to prevent longitudinal displacement of the base relatively to the enclosure.

5. In a lamp socket assembly, a socket enclosure of insulating material comprising upper and lower separable portions, a separable contact base of insulating material provided with straight sides and positionable within the enclosure, internal abutments on said lower portion cooperating with the straight sides to prevent rotary displacement of the base relatively to the enclosure, oppositely disposed screw shells carried on said base and provided with flared outer edges, and internal grooves on said upper and lower portions cooperating with said edges to prevent longitudinal displacement of the base relatively to the enclosure.

6. In a lamp socket assembly, a socket enclosure of insulating material comprising an upper portion provided with a transverse opening and a lower portion cooperating with the upper portion

to form a socket enclosure provided with a longitudinal opening, a nipple positionable in said transverse opening and provided with a threaded opening connecting with said longitudinal opening, a separable contact base of insulating material, said base being relatively narrower in width than said longitudinal opening and being positionable in said opening, and lamp receiving means attached to said base and cooperating with said enclosure to prevent longitudinal and rotary displacement of the base relatively to the socket enclosure.

7. In a lamp socket assembly, a socket enclosure of insulating material comprising an upper portion provided with a transverse opening and a lower portion cooperating with the upper portion to form a socket enclosure having a longitudinal opening, a separable contact base of insulating material positionable within said longitudinal opening, oppositely disposed screw shells carried on said base and provided with flared edges, internal grooves on said upper and lower portions for receiving said flared edges to prevent longitudinal displacement of the base, filled in sections in said grooves, and notches in said flared edges cooperating with said filled in sections to prevent rotary displacement of the base.

8. In a lamp socket assembly, a socket enclosure of insulating material comprising an upper portion provided with a transverse opening and a lower portion cooperating with the upper portion to form a socket enclosure having a longitudinal opening, a separable contact base of insulating material, said base being relatively narrower in width than said longitudinal opening and being positionable in said opening, oppositely disposed screw shells carried on said base and provided with flared edges, internal grooves on said upper and lower portions for receiving said flared edges to prevent longitudinal displacement of the base, filled in sections in said grooves, and notches in said flared edges cooperating with said filled in sections to prevent rotary displacement of the base.

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