F. C. DE REAMER.
ATTACHMENT PLUG,
APPLICATION FILED AUG. 2, 1911.

1,176,659. Patented Mar. 21, 1916.

Fig. 1.

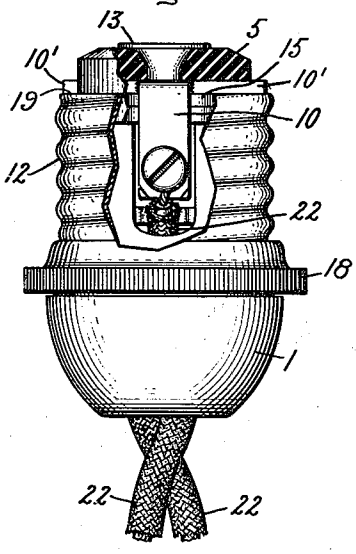


Fig. 2.

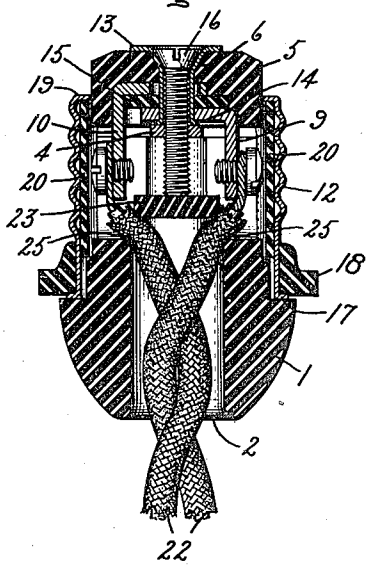


Fig. 3.

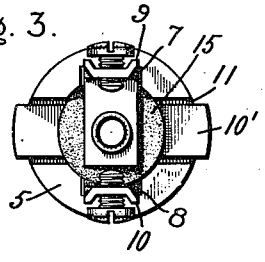


Fig. 4.

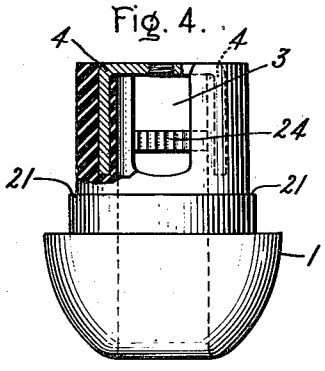
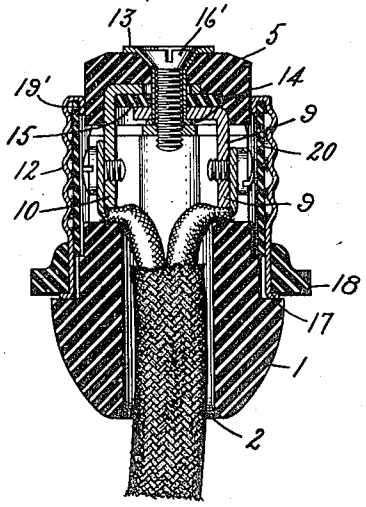


Fig. 5.



Witnesses:
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Frank C. De Reamer,
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UNITED STATES PATENT OFFICE.

FRANK C. DE REAMER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ATTACHMENT-PLUG.

1,176,659. Specification of Letters Patent. Patented Mar. 21, 1916.

Application filed August 2, 1911. Serial No. 641,986.

To all whom it may concern:

Be it known that I, FRANK C. DE REAMER, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Attachment-Plugs, of which the following is a specification.

This invention relates to electric connectors whereby branch conductors for drop lights or other portable apparatus may be connected in circuit to the terminals of an ordinary incandescent lamp socket or receptacle, and more especially to swiveled attachment plugs having the part which makes engagement with the screw contact of the socket or receptacle swiveled with relation to the rest of the plug, so that it may be screwed into and out of engagement without twisting of the branch conductors.

The object of my invention is to provide a swiveled attachment plug which shall be hardy, simple, compact and capable of connection with its wires with facility.

It is also my aim that in its preferred form the plug should securely grip the wires independent of the binding screws so as to relieve them of any strain imposed on the wires.

One form of my invention is shown in the accompanying drawing forming a part of this specification, in which—

Figure 1 is a side elevation in part section showing a binding post; Fig. 2 is a longitudinal section taken at right angles to the device, as shown in Fig. 1; Fig. 3 is an underside view of the end washer and binding posts; Fig. 4 is a side elevation of the base; and Fig. 5 is a section similar to Fig. 2 showing slight modifications.

The base 1 is made of insulating material with the upper portion cylindrical and the lower portion substantially semi-spherical with an intermediate portion of slightly greater diameter than the upper portion and has a cylindrical passageway 2 extending the entire length thereof, a transverse slot 3 extending down from the upper end, as clearly shown in Fig. 4, and a metal bridge 4 of U shape extending across the upper end of the slot with its ends embedded in the insulating material. The exposed hemispherical lower portion of the base affords a convenient hand hold for the manipulation of the plug in assembling or in wiring it. The end washer 5 is made of insulating material and has a central countersunk aperture 6 extending therethrough, notches 7 and 8 on its under side for the reception of L-shaped binding posts 9 and 10, and a transverse slot 11 for the reception of the T shaped end of the binding post 10, which forms a contact bearing part or bar 10′ for the swiveled screw shell 12. The washer 5 and binding posts 9 and 10 are firmly secured together by a metal sleeve 13 extending through the several pieces and spun over at its end 14 upon binding post 9, an insulating disk 15 being interposed between the feet of the binding posts. The aperture through the foot of binding post 10 is made much larger than the sleeve 13 so that said binding post will be insulated therefrom. The end washer and its attached binding posts constitute the detachable portion of the plug and is held in fixed relation to the base portion 1 by a screw 16 passing through the bore of the sleeve 13 and engaging a threaded hole in the metallic bridge 4. The base 1 and the screw 16, it will be seen, serve as a means for detachably securing the detachable part to the screw shell contact part 12 so that they shall be free to turn with reference to one another.

The swiveled screw contact 12 consists of a cylindrical sheet metal sleeve or shell with a thread formed in its cylindrical portion corresponding to the thread of the screw shell of a standard lamp socket and having at its lower end a flange 17 provided with an insulating ring 18 while its upper or forward end, which first enters a socket, has an inturned flange 19 which normally rides upon the bearing part of binding post 10. In case it is desired to make the contact end of the shell unyielding, it may be formed with a reversed flange 19′, as shown in Fig. 5. In order to fully insulate the sleeve contact from loose wire ends, a fiber tube 20 is forced in the shell with its upper end bearing against the flange 19 and its lower end in proximity to the shoulder 21 of the base.

In order to grip the conductor wires 22 independently of the binding posts, an insulating disk 23 with peripheral teeth 24 is inserted in the central aperture 2 of the base, so as to be engaged by the end of screw 16 and thereby forced down into engagement with the insulation on the branch wires

22 and forcing them against the shoulder 25 of the base formed between the bottom of the slot 3 and central aperture 2, as shown in Fig. 2. A modification of the wire gripping means is shown in Fig. 5 in which the insulating disk 23 is dispensed with and the binding posts 9 and 10 made sufficiently long to engage the insulated wires and force them down against the bottom of the slot 3 upon screwing home of the screw 16'.

In the arrangement above described, it will be observed that the metal bushing 13 forms the center contact of the plug. In service the current is conducted to binding post 9, through one of the wires 22 to the translating device connected therewith, back through the other wire to binding post 10 and its bearing part 10', and to the swiveled contact 12. To connect the branch wires 22 to the attachment plug, it is only necessary to remove the screw 16 which permits the detachable portion comprising the parts 5, 9 and 10 to be withdrawn sufficiently to expose the binding screws carried by the posts 9 and 10. The wires are then passed through the central aperture 2 of the base, to opposite sides of the metal bridge 4 and connected to posts 9 and 10 in the usual way; then upon retracting the wires the detachable portion is drawn into position with the ends of the binding posts resting in the transverse slot 3, and upon screwing home of the screw 16 the parts are securely connected and wires gripped to relieve their connections with the posts of strain.

I do not desire to restrict myself to the particular form or arrangement of parts shown and described, since it is apparent that they may be changed and modified without departing from my invention.

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

1. An attachment plug comprising a threaded contact shell part and an insulating part detachably swiveled therein so as to be removable through the forward end thereof and carrying a center contact, conductive means adapted to engage the contact shell at its forward end when said contact shell part is forced forward with reference to the center contact in screwing the plug into a socket, and means within said contact shell part carried by said insulating part for connecting current leads to the center contact and to said conductive means.

2. An attachment plug comprising a base; exposed contact means, including a contact shell swiveled so as to turn with reference to said base and a center contact; an end portion for the plug having thereon means including symmetrically arranged insulatively separated binding posts for making connection to said contact means; and means for detachably securing said end portion to said base.

3. An attachment plug comprising a base; exposed contact means, including a contact shell swiveled so as to turn with reference to said base and a center contact; a washer at the end of the contact shell having secured thereto means including insulated binding posts for making electrical connection to said contact means; and a screw connecting said washer to said base.

4. An attachment plug comprising a base with an exposed hand hold part; exposed contact means, including a contact shell swiveled so as to turn with reference to said base and a center contact; a detachable end portion for the plug having means including two binding posts for making electrical connection to said contact means; and means for detachably securing said end portion to said base.

5. An attachment plug comprising a base with an exposed hand hold part; exposed contact means, including a contact shell swiveled so as to turn with reference to said base and a center contact; an insulating washer at the end of said contact shell having secured thereto means including binding posts for making electrical connection to said contact means; and a screw connecting said washer to said base.

6. An attachment plug comprising a base; a threaded contact shell loosely swiveled about said base; an insulating part carrying a center contact and conductive means adapted to engage said contact shell at its forward end when it is forced forward with reference to the center contact in screwing the plug into a socket, and also carrying means within said contact shell for connecting the current leads to the center contact and to said conductive means; and means for detachably securing said insulating part to said base, so that it may be detached and separated therefrom along with the aforesaid parts carried by it.

7. An attachment plug comprising a base, an end part having binding posts secured thereto, a bearing part connected to one of the binding posts, a swiveled contact shell contacting with said bearing part, and a screw connecting said end part and said base.

8. An attachment plug comprising a base, an end part having binding posts thereon, a bearing part connected to one of said posts, a swiveled contact shell having a flanged end contacting with said bearing part, and means for securing said end part in fixed relation to said base.

9. An attachment plug comprising an insulated base, an end washer having insulated and oppositely disposed binding posts thereon, a metallic bearing part connected to one of said posts and projecting beyond the periphery of said washer, a swiveled contact shell having a reversely flanged end

engaging said bearing part, and means for securing said end washer to said base.

10. An attachment plug comprising a base, a contact shell, and a detachable part consisting of an insulating washer, two insulated posts, and a metal sleeve extending through said parts and spun or swaged over to hold them in fixed relation.

11. An attachment plug comprising a base having a central aperture for the branch wires, a contact shell surrounding one end of said base, a detachable part having thereon binding posts for the wires, a screw for connecting said detachable part to said base, and means operable upon turning home the screw to grip the wires and relieve their connections with the binding posts of strain.

12. An attachment plug comprising a base having a central aperture extending therethrough and a transverse slot at its upper end, a contact shell surrounding the upper end of the base, a detachable part having two oppositely disposed binding posts for the branch wires secured thereto and extending into the transverse slot of the base to near the bottom thereof, and a screw operating to connect the detachable part to the base and grip the branch wires between the ends of the binding posts and the bottom of the transverse slot.

In witness whereof, I have hereunto set my hand this 31st day of July, 1911.

FRANK C. DE REAMER.

Witnesses:
BENJAMIN B. HULL,
HELEN ORFORD.