

A. W. BUELL.
SWIVEL PLUG ATTACHMENT.
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1,028,429.

Patented June 4, 1912.

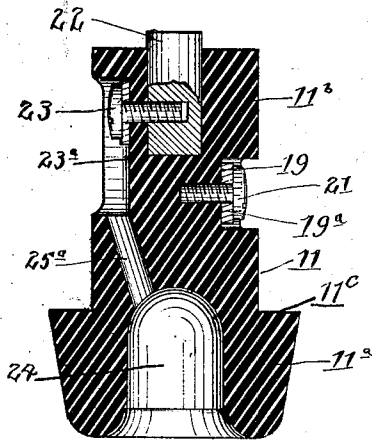


Fig. 5.

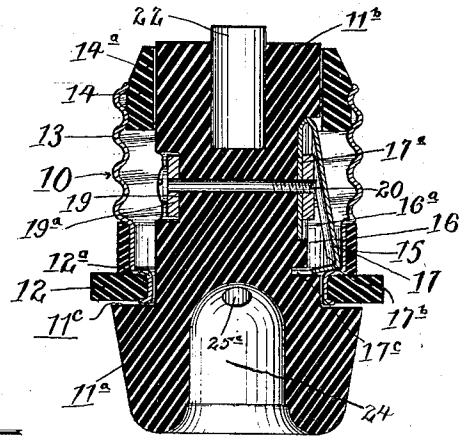


Fig. 4.

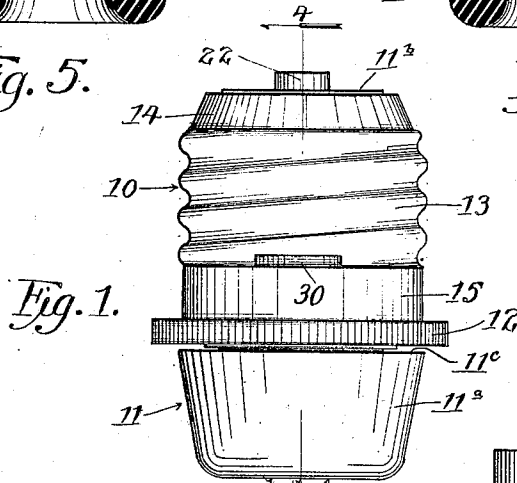


Fig. 1.

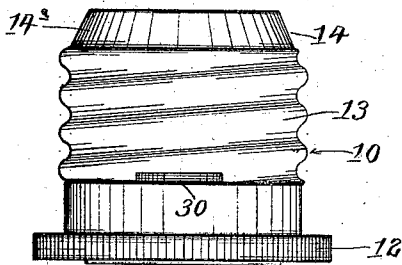


Fig. 3.

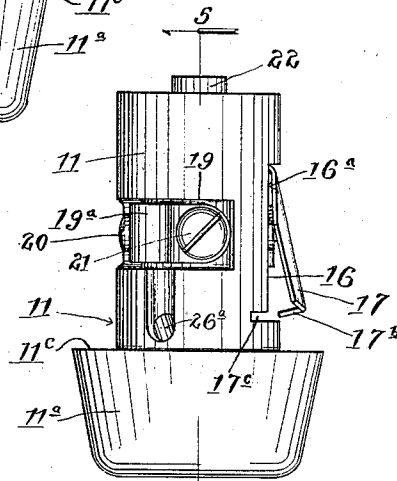


Fig. 2.

Witnesses:

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Inventor:

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by Poole & Brown. Attys.

UNITED STATES PATENT OFFICE.

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SWIVEL-PLUG ATTACHMENT.

1,028,429.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT W. BUELL, a citizen of the United States, and a resident of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Swivel-Plug Attachments; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved swivel plug attachment for electric light sockets and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The object of the invention is to provide a plug attachment of simple and economical construction which may be screwed into the electric socket without twisting the wires to which it is connected.

In the drawings—Figure 1 is a view representing my improved swivel plug attachment in side elevation. Fig. 2 is a view representing in side elevation the swivel plug member. Fig. 3 is a view representing in side elevation the shell contact member. Fig. 4 is a view representing a longitudinal section through the plug attachment on the line 4—4 of Fig. 1. Fig. 5 is a view representing a longitudinal section through the swivel plug on the line 5—5 of Fig. 2.

My improved plug attachment consists of two members,—a rotative, threaded, ring member adapted to be screwed into the socket and which constitutes the metallic shell contact of the device and a plug member on which the first-named member is rotatively mounted and which bears the center contact at one end and carries the binding posts or screws to which the wire conductors are led through laterally spaced longitudinal passages extending into its other end. A yielding spring contact carried by said plug member provides electric connection between one of the binding posts and the metallic shell contact of the rotative ring member and at the same time provides a lock to prevent the longitudinal withdrawal of the plug member from the rotative ring member.

Referring now in detail to that embodiment of my invention illustrated in the drawings, 10 indicates the rotative ring member, and 11, the plug member which carries the

connection for the wire conductors which is rotatively secured within the said ring member. The ring member 10 consists of an externally threaded, cylindric, metallic shell 13 secured at its base to a flat ring 12 of insulating material such as fiber, and at its outer end to a fiber sleeve 14. The aperture in the flat ring 12 is of smaller diameter than the diameter of the interior of the shell contact 13, so that the inner margin of said ring forms an inwardly extending, annular shoulder 12^a about which, as shown in the drawings, the base of the said metallic shell is spun. The fiber sleeve 14 is externally screw-threaded and is rigidly engaged with in the upper end of the shell which, as shown, is screw-threaded internally as well as externally. The exposed end 14^a of the sleeve 14 is made conical in cross-section to facilitate its insertion into a socket. The internal diameter of said sleeve is the same as the diameter of the aperture in the flat ring 12. An insulating ring 15 surrounds the base of the shell contact and bears at its lower edge against the flat ring 12.

The plug member 11 is made of insulating material and has a base 11^a and a reduced stem 11^b, the said base projecting radially beyond the stem to provide an annular shoulder 11^c. The stem 11^b is of a length substantially equal to the length of the ring member 10, and is of a diameter adapted to engage loosely within the flat ring 12 and within the sleeve 14 which provide a rotative bearing of the ring member on the stem of the plug member. Between the flat ring 12 and the sleeve 14, the inner surface of the metallic shell contact 13 is spaced from the stem 11^b of the plug member. At one side the stem 11^b of the plug member is cut away to provide a flat face 16 in which is formed a recess 16^a.

17 indicates a spring contact extending longitudinally downward from the stem end of the plug member and projecting away from and at an angle to said stem. As shown, said spring contact is bent back upon itself to form an attaching plate 17^a which is located in said recess 16^a. At its free end said spring contact 17 has a part 17^b bent inwardly at right angles to its length and adapted to engage against the annular, inwardly extending shoulder 12^a at the base of the ring member 10. A transverse groove 110

17^c in the surface of the stem is adapted to receive the part 17^b of the spring contact when the same is pressed against the flat face 16 of the stem.

5 The spring contact 17 is preferably rounded transversely adjacent its lateral margins so as to provide smooth contact with the interior of the metallic shell 13 when the ring member is rotated. Opposite the said
10 spring contact and extending part way about the stem of the plug member, a groove 19 is formed in the outer surface of said stem and in said groove is located a metal plate 19^a secured in place by means of a bolt or
15 screw 20 which extends transversely through the stem through a suitable aperture provided therein and through an aperture in the attaching plate 17^a on said spring contact. A nut 20^a threaded upon the end of
20 said bolt secures said attaching member in place. Into the end of the metal plate 19^a nearer the spring contact 17 is threaded a binding screw 21. Thus electrical connection is established between the binding screw
25 21 and the spring contact 17, through the metal plate 19^a, the screw 20 and the attaching plate 17^a of said contact.

The center contact consists of a pin 22 located in a cylindric recess in the end of
30 the stem 11^b and retained therein by a screw 23 which extends through a transverse aperture in the stem into a recess formed in said pin 22. Said screw 23 is located in a recess 23^a formed in the surface of the stem
35 11^b near its end and constitutes a binding screw for the attachment of one of the conducting wires, which it electrically connects with said center contact pin 22.

40 The base 11^a of the plug member is provided with a recess 24 to receive the conducting wires 25, 26, said recess opening into laterally spaced, longitudinally extending branch passages 25^a, 26^a, leading respectively
45 to the recess containing the binding screw 23 and to the transverse groove containing the binding screw 21.

To assemble the device, the conducting wires 25, 26 are first inserted through the respective passages 25^a, 26^a, and are secured
50 to their associated binding screws 23 and 21 respectively. The stem of the plug member 11 is then pushed into the ring member 10 until the annular shoulder 11^c of the plug member formed by its radially extending
55 base engages against the flat ring 12 forming the base of the ring member. The spring contact, after it passes the annular shoulder 12^a, springs outward into engagement with the interior of the metallic shell contact 13
60 with its end part 17^b in engagement with said shoulder, which, as described, is covered by an integral part of said metallic shell contact. Said spring contact 17 thus provides a lock to prevent the withdrawal of
65 the plug member from the ring member and

affords electric connection between the metallic shell contact 13 and the wire conductor 26 connected to the binding screws 21—the wire conductor 25 attached to the other binding screw 23 having electric con- 70
75 nexion with the center contact pin 22 at the end of the stem 11^b of the plug member. It is thus apparent that while the two parts of the device are locked against relative longitudinal movement, either may be
80 rotated with reference to the other.

In order that the plug may be withdrawn from the shell, as when the wires are to be connected or in case of repairs or otherwise, a transverse slot 30 is formed in the metallic shell adjacent its base, through
85 which slot a small tool may be inserted and brought to bear against the spring contact 17 so as to press the same inwardly toward the body of the stem, whereupon the plug
90 member may be withdrawn from the ring member.

I claim as my invention—

1. A swivel plug attachment comprising a ring member having an externally
95 threaded shell contact, a plug member of insulating material on which said ring member is rotatively mounted, said plug member being adapted for the attachment of conductors, a center contact carried at the end
100 of said plug member, interlocking devices carried respectively by said ring member and said plug member adapted to prevent longitudinal movement of said plug member with reference to said ring member, one
105 of said interlocking devices being adapted to yield to permit the insertion of said plug member into said ring member, and the interlocking device carried by said plug member constituting an intermediate contact
110 member having sliding engagement with the interior surface of said shell member.

2. A swivel plug attachment comprising a ring member having an externally
115 threaded shell contact, a plug member of insulating material on which said ring member is rotatively mounted, a center contact carried at the end of said plug member, interlocking devices carried respectively by
120 said ring member and said plug member adapted to prevent longitudinal movement of said plug member with reference to said ring member, one of said interlocking devices being adapted to yield to permit the insertion of said plug member into said ring
125 member, and the interlocking device carried by said plug member constituting an intermediate contact member having sliding engagement with the interior surface of said shell member, said plug member being
130 provided with longitudinally extending, laterally separated passages opening through its base for conductors, and means carried by said plug member for electrically connecting said conductors to said inter-

mediate contact member and to said center contact.

3. A swivel plug attachment comprising a ring member including a threaded metal shell contact, said ring member being provided at its base with an inwardly projecting annular shoulder, a plug member of insulating material having a reduced stem on which said ring member is rotatively mounted and a base providing a radially extending annular shoulder located in abutting relation with the base of said ring member, a spring contact secured to said stem and adapted for abutting engagement with the annular shoulder of said ring member and for sliding engagement with the interior of said shell contact, a binding screw having electric connection with said spring contact, a

center contact secured in the end of said stem, and a binding screw having electric connection with said center contact, said stem being provided with circumferentially spaced recesses in which said binding screws are located and with laterally spaced, longitudinally extending passages opening through the base of said plug member for the conductor wires.

In testimony, that I, claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 26th day of August A. D. 1911.

ALBERT W. BUELL.

Witnesses:

GEORGE A. POHL,
JOS. A. LETHERT.