

A. CASPER.
ELECTRIC CONNECTION.
APPLICATION FILED APR. 25, 1918.

1,317,548.

Patented Sept. 30, 1919.

FIG. 1.

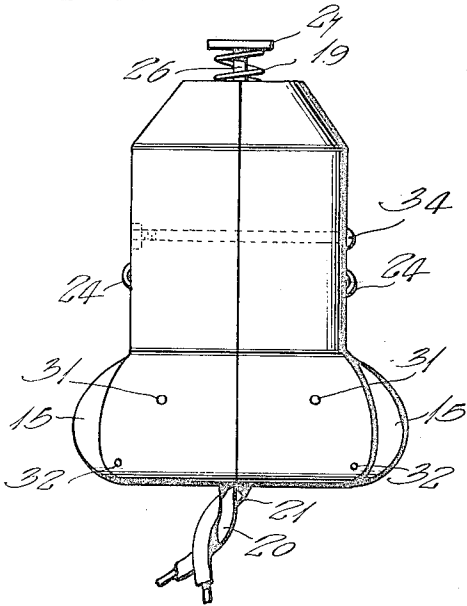


FIG. 2.

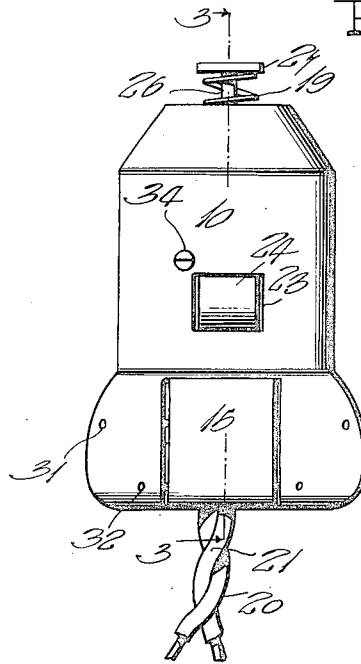


FIG. 3.

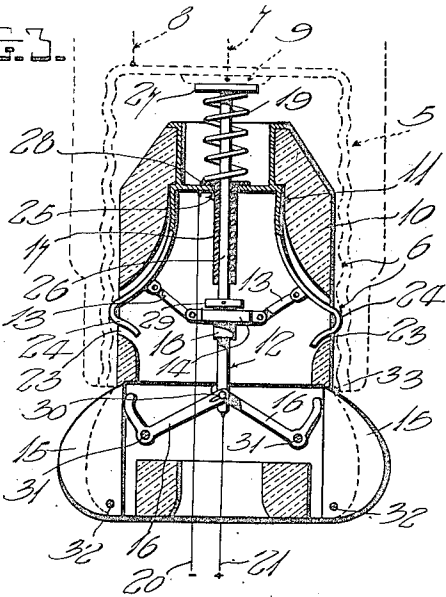
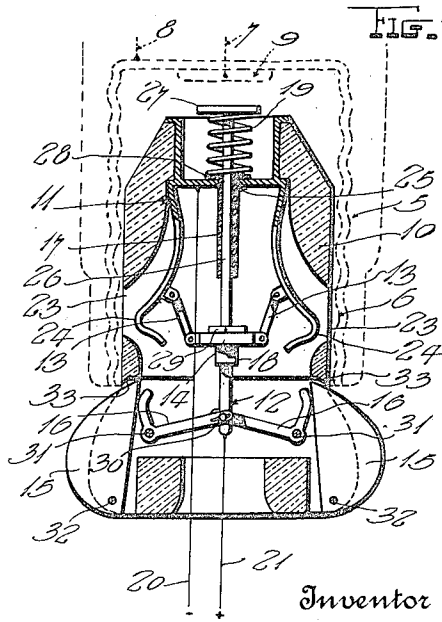


FIG. 4.



Inventor

Albert Casper

Witness
H. Woodard

By *A. H. Williams & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

ALBERT CASPER, OF VALLEJO, CALIFORNIA.

ELECTRIC CONNECTION.

1,317,548.

Specification of Letters Patent.

Patented Sept. 30, 1919.

Application filed April 25, 1918. Serial No. 230,764.

To all whom it may concern:

Be it known that I, ALBERT CASPER, a citizen of the United States, residing at Vallejo, in the county of Solano and State of California, have invented certain new and useful Improvements in Electric Connections; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to electric connections, and it relates more particularly to an improved plug and socket connector.

One of the objects of this invention is to provide an electric connector whereby a slip connection may be quickly and easily made with an ordinary internally screw-threaded lamp socket.

Another object is to provide a device of this character which may be quickly and easily disconnected without rotation of the connector or plug relative to the socket.

Another object is to provide an electric connection in which the tendency of the plug to pull out of the socket tightens the engagement of the detents or spring catches that engage with the threads of the socket.

Another object is to provide an electric connection with manipulative members whereby the detents and electric contact elements are simultaneously moved out of their respective effective positions.

Another object is to provide an electric connection in which all conducting parts and substantially all working parts are inclosed and thus protected.

Another object is to provide a device of this character which is neat, sightly and sanitary.

Another object is to provide a device of this character which is of simple construction, comparatively inexpensive, highly efficient and thoroughly practical.

Other objects and advantages may become apparent to persons who read the following details of description in connection with the accompanying drawings in which—

Figure 1 is an elevation of the preferred embodiment of this invention;

Fig. 2 is a view similar to Fig. 1, but viewed along a line at right angles to the line of vision of Fig. 1;

Fig. 3 is a vertical sectional view along the line 3—3 of Fig. 2; and

Fig. 4 is a view similar to Fig. 3, except

that the working parts are differently positioned.

Referring to these drawings in detail, in which similar reference characters correspond with similar parts throughout the several views, the socket 5 is of ordinary internally threaded construction, and is not described in detail, except to call attention to the depressions 6 between the screw-threads; the conductors 7 and 8, which are indicated diagrammatically; and the contact element 9.

The connector or plug which constitutes this invention comprises a hollow insulating body 10, a metallic supporting element 11, a conductor element 12, connector elements 13 and 14, manipulative operating elements 15, levers or actuating elements 16, an insulating element 17, a nonconducting actuating element 18, a spring 19 and conductors 20 and 21, the latter being shown diagrammatically in Figs. 3 and 4.

The insulating body 10 is provided with apertures 23, and through each of these apertures extends a portion of the detent 24, the outwardly extending portions of the element 24 being convexed so as to fit within one or another of the depressions 6 of the socket. The detents 24 are preferably formed integrally with the support 11 and are composed of spring metal and therefore constitute contacts which close the circuit between the conductor 20 and the screw-threaded inner portion of the socket 5. The detents 24 are connected together by means of the connecting elements 13 and 14, the latter being pivotally connected to the elements 13, and these elements being pivotally connected to the elements 24, as clearly shown in Figs. 3 and 4.

The member 11 is provided with an aperture 25 through which the insulating member or tube 17 extends, and through this tube extends a rod 26 which has a contact element 27 secured on its upper end. These elements 26 and 27 constitute the conductor 12 to which the conductor 21 is electrically connected by any appropriate means. The contact element 27 is held in its normal effective position by means of the spring 19, the latter being seated upon a flange 28 in the insulating element 17.

The insulating element 18 is secured to the rod 26 and is provided with a head 29 which is movable into contact with the element 14 by means of a pin-and-slot connection 30 with the levers 16, the latter being

swung about their respective pivots 31 by means of the manipulative members 15 which are preferably of porcelain or other non-conducting material, and are mounted to swing about their respective pivots 32. The outward movement of the members 15 is limited by means of the shoulders 33 formed in the body 10, while the levers 16 and their pivots 31 limit the inward movement of the members 15.

From the foregoing description, it will be seen that the parts 24 and 27 may be simultaneously moved away from their effective positions by pressing the members 15 inward against the contiguous arms of the levers 16, thereby causing said levers to draw the rod 26 downward, so that the head 29 presses the element 14 downward and thereby cooperates with the links 13 for drawing the detents inward.

However, clearance is preferably provided between the head 29 and the element 18 when the elements 24 and 27 are in their effective positions, so that the element 29 does not interfere with the most complete and preferred engagement of the detents 24 with the depressions 6. Moreover, because of this clearance, the contact is first broken between the contact elements 9 and 27, and when the head 29 begins to operate the elements 13, 14 and 24, these parts are then moved simultaneously with the elements 26 and 27.

In applying this plug to the socket, the user grasps the lower part of the plug and presses the manipulative members 15 inward, thereby moving the parts 24 and 27 to the ineffective position shown in Fig. 4. When the plug has been inserted in the socket, the members 15 are released so as to allow the detents 24 to engage with the respective depressions 6, and the spring 19 is allowed to press the contact element 27 against the contact element 9, thereby closing the circuit between the conductors 8, 9, 20 and 21 through the medium of the members 11 and 26.

For convenience in manufacturing, the body 10 is preferably made in two complementary sections which are secured together by any appropriate means, such, for instance, as a screw 34.

Although I have described this embodiment of my invention very specifically, it is not intended to limit my invention to these exact details but I contemplate making minor changes within the scope of the inventive idea disclosed in the foregoing description and appended claims.

What I claim as my invention is:

1. In an electric connection, a plug comprising a hollow insulating body, a detent mounted in said body and having a part movable in and out through a side of said body and adapted to engage with a socket for securing the plug in the socket, a mov-

able contact element, and a manipulative element operable to move said contact element and said detent away from their respective effective positions.

2. In an electric connection, a plug comprising a hollow insulating body, a detent mounted in said body and having a part movable in and out through a side of said body and adapted to engage with a socket for securing the plug in the socket, a movable contact element, and a manipulative element operable to simultaneously move said contact element and said detent away from their respective effective positions while the plug remains fixed with relation to the socket.

3. In an electric connection, a plug comprising a hollow insulating body, a detent mounted in said body and having a part movable in and out through a side of said body and adapted to engage with a socket for securing the plug in the socket, a movable contact element, a spring to move said contact element to its effective position, and a manipulative element operable to simultaneously move said contact element and said detent away from their respective effective positions while the plug remains fixed with relation to the socket.

4. In an electric connection, a plug comprising a hollow insulating body, a detent mounted in said body and having a part movable in and out through a side of said body and adapted to engage with a socket for securing the plug in the socket, a movable contact element, and a manipulative element operable to first move said contact element out of its effective position and then move said detent out of its effective position while the plug remains fixed with relation to the socket.

5. In an electric connection, a plug comprising a hollow insulating body, a detent mounted in said body and having a part movable in and out through a side of said body and adapted to engage with a socket for securing the plug in the socket, a rod mounted for movement longitudinally within said body, an electric contact element carried by said rod, an actuating element mounted to be moved by means of said rod, manipulative means operable to move said rod and thereby move said contact element and actuating element, and means cooperative with said actuating element for moving said detent inwardly of said body.

6. In an electric connection, a connector comprising a supporting element having detents of conducting material that are movable into and out of contact with the internal conducting and plug-supporting threads of an ordinary lamp-socket, a contact element supported by said supporting element and movable with relation thereto into and out of contact with a contact element of said

lamp-socket, and means movable with relation to said supporting element and operable to effect movement of said detents and of said contact element out of their contact
5 with said lamp-socket.

7. In an electric connection, a plug comprising a hollow insulating body, a detent mounted in said body and having a part adapted to extend outward for engagement
10 with a socket, a contact element supported by said insulating body and movable relative thereto in and out of contact with a contact element of an electric lamp socket, and a manipulative means operatable to first move
15 said contact element out of contact with that of the lamp socket and thereafter move said detent inward.

8. In an electric connection, a connector comprising a supporting element having detents of conducting material that are movable into and out of contact with the internal

conducting and plug-supporting threads of an ordinary lamp socket, a contact element supported by said supporting element and movable with relation thereto into and out
25 of contact with a contact element of said lamp-socket, a rod movable longitudinally between said detents, a spring for moving said rod in one direction, means whereby movement of said rod in the opposite direction effects movement of said contact element and of said detents out of their contact
30 with said lamp socket, and means for moving said rod in said opposite direction.

In testimony whereof I have hereunto set
35 my hand in the presence of two subscribing witnesses.

ALBERT CASPER.

Witnesses:

MARIE HANNS,
B. E. CUNNINGHAM.