

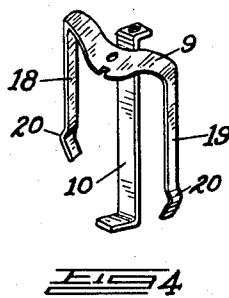
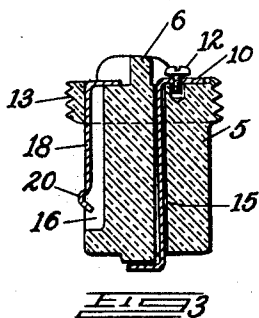
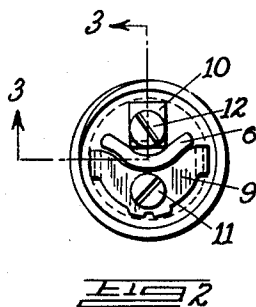
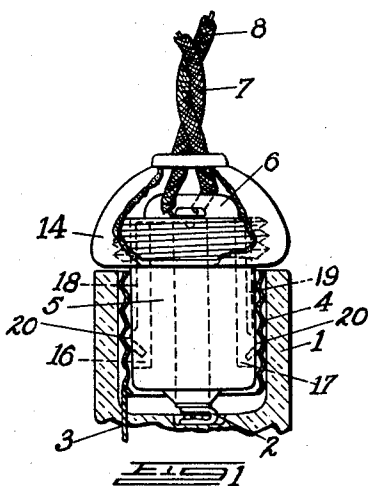
June 3, 1930.

C. O. GRAVES

1,761,335

PLUG CONNECTER

Filed Feb. 7, 1929



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PLUG CONNECTER

Application filed February 7, 1929. Serial No. 338,270.

My invention relates to plug connectors and particularly those adapted to be inserted in a suitable outlet socket for electrically connecting electrical conductors.

5 The principal object of my invention is to form a plug connector that may be inserted in a socket by pushing it into position and may be disconnected by pulling it out of the socket, instead of being rotated a number of
10 turns in the usual manner as with the ordinary screw plug connector.

I am aware of the fact that others have attempted to accomplish the same result; that some of these attempts have been commercially abortive because a sufficiently
15 secure connection has not been made, and in others because the expense of the device was too great to successfully compete with screw plugs.

20 A further object of my invention is therefore, to construct a plug connector that will not rock or cant when inserted in the socket, and therefore will at all times make a good electrical connection.

25 Another object of my invention is to construct a simple and sturdy plug connector at comparatively small cost.

In the particular embodiment of my invention selected for illustration:

30 Figure 1, is a plug connector assembled and in position for use in a standard screw socket; with lead wires connected and a portion of the cap broken away to show the relative position of the parts,

35 Fig. 2, is a top plan view of the body portion only,

Fig. 3, is a section through the body on the line 3-3 of Fig. 2, and

40 Fig. 4, is a perspective of the negative and positive contact elements only, in their relative positions when assembled in the body.

Referring now to the drawings, 1 is a standard socket, made of insulating material, with an axially positioned electrical contact
45 element 2 and an electrical contact element 3 secured to the threaded metal shell which forms the side wall 4.

50 The plug connector, which is the subject of this invention, preferably fits easily but closely in the socket, has a body portion 5

made of insulating material and formed integral therewith, an upstanding partition wall lug 6 which prevents the stripped ends of the lead-wires 7 and 8 from coming into
55 wires are connected with the resilient contact elements 9 and 10 by the binding screws 11 and 12 respectively. The lug 6 is preferably of such shape and size as will make of it the most effective partition wall.

60 The body 5 has a longitudinal slot 15 to receive the positive contact element 10, bent at the top, perforated and threaded to receive the binding screw 12, and also bent at the bottom to make effective electrical contact with contact element 2 of the socket. The negative element 9 is in the general form of an inverted U, with the connecting portion perforated and threaded to receive the
65 binding screw 11, while the legs 18, 19 rest in longitudinal slots 16, 17 respectively in the body portion 5. These legs each have an outwardly extending projection 20, preferably positioned at unequal distances from the connecting portion of the U so as to make
70 more perfect contact with the socket.

A threaded portion 13 is used to secure the cap 14, also made of insulating material, to the body 5. The cap 14 holds the negative contact element securely in position by
75 clamping its adjacent edges between the body 5 and the cap 14.

It will be obvious that the assembled plug connector may be put in position for electrical contact in the socket by pushing it
80 straight in and may be disconnected by pulling it straight out.

Although a preferred form of the invention has been shown and described, it will be understood that a mechanic, working within
85 the scope of what is claimed, may make changes without departing from the spirit of the invention.

I claim as my invention and desire to secure by Letters Patent of the United
90 States:

1. A plug connector comprising in combination an unthreaded cylindrical body portion formed of insulating material and of slightly less diameter than the socket in
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which it is to be used, an electrical contact member extending through said body longitudinally with a contacting portion on the bottom of the body and a portion on the top of said body, means for securing said top portion and a lead-wire to the body, a resilient electrical contact member whose free end extends along the side of the body and has a projection normally outside the cylindrical wall of said body and whose upper portion is bent over against the top end of said body, means for securing said top end of the last named contact member to a lead-wire, and a cap formed of insulating material removably securable to said body and having an opening to admit lead-wires.

2. A plug connector comprising in combination an unthreaded cylindrical body portion formed of insulating material and of slightly less diameter than the socket in which it is to be used, an electrical contact member extending through said body longitudinally, with a contacting portion on the bottom of the body and a portion on the top of said body, means for securing said top portion and a lead-wire to the body, a resilient electrical contact member whose free end extends along the side of the body and has a projection normally outside the cylindrical wall of said body and whose upper portion is bent over against the top end of said body, means for securing said top end of the last named contact member to a lead-wire, an upstanding partition lug of insulating material forming a wall between said connecting means and a cap formed of insulating material removably securable to said body and having an axial opening to admit lead-wires.

3. A plug connector comprising in combination an unthreaded cylindrical body portion formed of insulating material and of slightly less diameter than the socket in which it is to be used, an electrical contact member extending through said body longitudinally with a bent over contacting portion on the bottom of the body and a bent over portion on the top of said body, means for securing said top bent over portion and a lead-wire to the body, a plurality of resilient electrical contact members united at the top and whose depending free ends extend along the sides of the body with an outwardly extending projection on each normally outside the cylindrical wall of said body, means for securing said top portion of said contact element and a lead-wire to said body and a cap formed of insulating material removably securable to said body and having an opening to admit lead-wires.

4. A plug connector comprising in combination an unthreaded cylindrical body portion formed of insulating material and of slightly less diameter than the socket in which it is to be used, an electrical contact member extending through said body longitudinally

with a bent over contacting portion on the bottom of the body and a bent over portion on the top of said body, means for securing said top bent over portion and a lead-wire to the body, a plurality of resilient electrical contact members united at the top and whose depending free ends extend along the side of the body with an outwardly extending projection on each normally outside the cylindrical wall of said body, a longitudinal slot in the cylindrical body to receive each depending contact portion, an upstanding partition lug of insulating material forming a wall between said connecting means, means for securing said top portion of said contact element to a lead-wire and a cap formed of insulating material removably securable to said body and having an opening to admit lead-wires.

5. A plug connector comprising in combination, an unthreaded cylindrical body portion formed of insulating material and of slightly less diameter than the socket in which it is to be used, an electrical contact member extending through said body longitudinally with a contacting portion on the inner end of the body and a portion at the outer end of said body, means for securing a lead-wire to the portion at the outer end of the body, a substantially U-shaped resilient electrical contact member whose connecting portion rests upon the outer end of said body and whose legs extend along the side walls of the body in a longitudinal direction, with an outwardly extending projection toward the free end of each leg normally outside the cylindrical wall of the body and means for securing a lead-wire to said second named contact member.

6. A plug connector comprising in combination, an unthreaded cylindrical body portion formed of insulating material and of slightly less diameter than the socket in which it is to be used, an electrical contact member extending through said body longitudinally with a contacting portion on the inner end of the body and a portion at the outer end of said body, a binding screw for securing a lead wire to the contact member at the outer end of the body, a substantially U-shaped resilient electrical contact member whose connecting portion rests upon the outer end of said body and whose legs extend along the side walls of the body in a horizontal direction, grooves in said side walls to receive said legs, an outwardly extending projection toward the free end of each leg, said projections normally outside the cylindrical wall of the body and at unequal distances from the connecting member, and a binding screw for securing a lead-wire to said second named contact member.

In testimony whereof I have hereunto set my hand.

CARL O. GRAVES. 130