Feb. 13, 1940. O. A. COLE 2,190,230

SEPARABLE ELECTRIC CORD PLUG

Filed Aug. 4, 1938

Fig. 1.

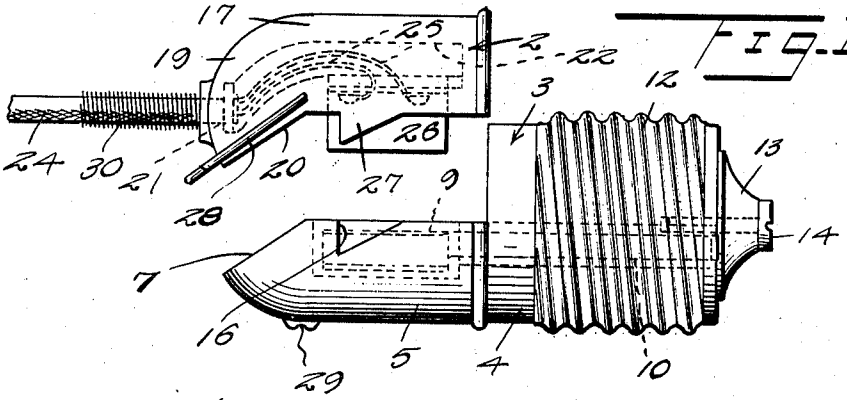


Fig. 2.

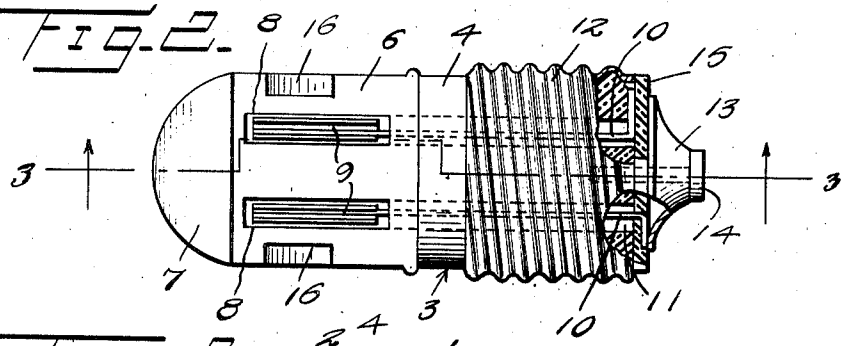


Fig. 3.

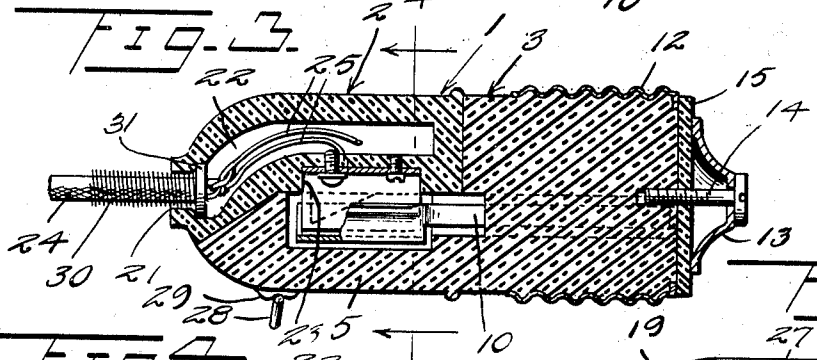


Fig. 4.

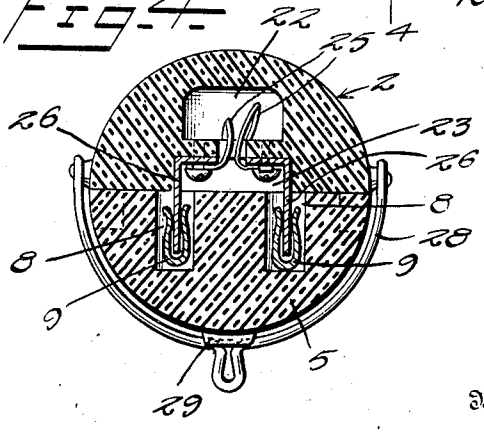
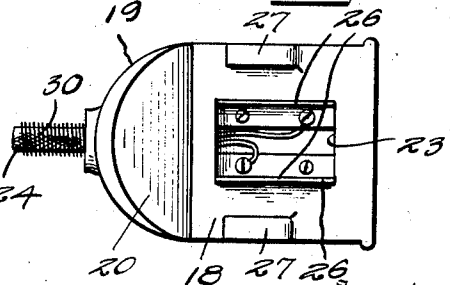


Fig. 5.



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SEPARABLE ELECTRIC CORD PLUG

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Application August 4, 1938, Serial No. 223,095

2 Claims. (Cl. 173—343)

This invention relates to improvements in electrical connections and pertains particularly to an improved electric cord screw plug.

The present invention has for its primary object to provide an improved electric cord plug which is so designed that it cannot be accidently pulled loose from a socket in which it is engaged but may, on the other hand, be easily and quickly disconnected to break the electric circuit when desired, by the manipulation of a securing latch whereby the plug becomes divided into two portions, one of which may be readily removed with the attached electric cord.

Another object of the invention is to provide an improved electric cord screw plug which is separable into two parts, one of which parts is threaded for engagement in an electric socket and is adapted to have the other part, to which an electric cord is attached, coupled therewith by a sliding snap connection whereby an electrical joint is established easily and quickly which cannot be accidently broken.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not to be confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Fig. 1 is a view in side elevation of the electric cord screw plug embodying the present invention, showing the two parts in separated relation.

Fig. 2 is a view in plan of the threaded portion of the plug, the view looking toward the socketed portion thereof.

Fig. 3 is a view taken longitudinally through the complete plug substantially upon the line 3—3 of Fig. 2.

Fig. 4 is a sectional view on the line 4—4 of Fig. 3.

Fig. 5 is a view looking toward the prongs of the cord carried portion of the plug.

Referring now more particularly to the drawing, the present improved electric cord plug is generally designated by the numeral 1 and comprises, as shown in Fig. 1, the two main portions 2 and 3 which may be referred to for convenience in describing the device, respectively as the cord attached portion and the threaded portion.

The threaded portion of the plug consists of a barrel or cylinder end 4 which may be formed of porcelain as shown or of Bakelite, hard rubber or other suitable electrical insulation material, and a semi-cylindrical end portion 5 of the same material and cast integral with the barrel. The semi-cylindrical portion has a flat face 6 in the plane of the longitudinal center of the barrel portion 4, the outer end of the semi-cylindrical portion being cut obliquely to form the breast 7. In the face 6 are two sockets, each of which is indicated by the numeral 8, and in each of which is located a prong receiving contact 9 which, as shown in Fig. 4, consists of two connected blades having a slight space between their parallel faces to receive prong contacts hereinafter described. Each of these contacts 9 which is housed within a socket 8 has a metallic leg 10, which passes through a suitable passage 11 formed longitudinally through the barrel 4 from a socket and one of the metallic legs is electrically coupled with a screw sleeve 12 which encircles the barrel 4 while the other of the contact legs is electrically coupled with the metallic central terminal 13 which is secured to the end of the barrel 4 by a pin 14 in the conventional manner and separated from the end of the barrel 4 by the fibre insulation washer 15. Thus it will be apparent that when the metal sleeve end of the barrel 4 is threaded into an electric outlet socket, electrical connection will be established in the usual manner between the two electric terminals connected with the socket and the electric terminals of the plug which constitute the sleeve 12 and the central tip 13.

At each side of the semi-cylindrical portion 5 of the threaded half 3 of the plug, a notch 16 is formed which opens through the face 6. The function of this notch will be hereinafter described.

The cord attached portion 2 of the device is formed of the same insulation material as portion 3 and has the semi-cylindrical body portion 17 which is cut square across at one end to abut the end of the barrel 4 when the flat face or side 18 of the cord portion 2 is placed against the surface 6. The other end of this semi-cylindrical portion is rounded off, as indicated at 19, and has the obliquely directed wall portion 20 which is designed to position against the breast 7 of the threaded portion when the two parts of the plug are together.

The rounded end portion 19 of the portion 2 is provided with a cord receiving opening 21 which leads into a passage 22 which extends longitudinally in the body 2 toward but terminating

short of the opposite end thereof and this passage opens laterally into a recess 23 which opens through the face 18. The electric cord, illustrated conventionally and indicated by the numeral 24, is extended into the opening 21 and the two wires 25 are carried forward through the passage 22 to the recess 23 in the bottom of which are secured the two contact prongs 26. These prongs extend outwardly beyond the face 18 of the body 2 and are properly spaced so as to be insertible into the spring contacts 9 when the two sections of the device are placed together in the manner illustrated in Fig. 3.

At each side of the recess 23, the face 18 of the portion 2 has extending therefrom the two lugs 27, each of which is adapted to engage in a triangular notch 16 when the two parts of the device are disposed in assembled relation with the prongs 26 engaging in the contacts 9 and in order to maintain the parts 2 and 3 in assembled relation, the part 2 has pivotally secured thereto a substantially U-shaped resilient latching member in the form of a bail 28 which, when the two parts are placed together, is adapted to be swung around into encircling relation with the semi-cylindrical portion 5 of the part 3 so as to engage in the keeper notch 29 which forms a part of the part 5.

From the foregoing, it will be readily apparent that when the two parts 2 and 3 of the electric cord plug are secured together in the manner described, it will not be possible to accidentally separate them and thus when the threaded end portion of the part 3 is engaged in an electric outlet receptacle, there will be no danger of a short circuit occurring through the accidental striking of the plug as would be the case if the plug were of the usual push-in prong type. On the other hand, however, it will be readily seen that disconnection of the electric cord from the outlet receptacle can be easily and quickly accomplished by snapping the latching bail 28 out of the keeper notch 29 whereupon the cord attached portion 2 may be easily and quickly disconnected from the screw threaded portion 3.

In order that the cord 24 may be suitably protected against abrasion where it enters the opening 21, it may be encased in a wire guard 30 of the type commonly employed for this purpose, the guard being secured at one end in the inner end of the opening 21 as shown in Fig. 3. At the inner end of this guard 30, a metal ring 31 is formed which fits in the end of the passage 22, as shown in Fig. 3, and serves to prevent strain being imposed upon the contacts to which the ends of the electric wires are attached when the wires are knotted at the inner end of the guard in the manner commonly employed in securing electric wires in guards of this type.

What is claimed is:

1. An electric cord plug, comprising an elongated unit formed from one end through a portion of its length as a cylinder, the unit being longitudinally divided from its other end to form a separable portion and a fixed portion which is integral with the cylinder, said separable and fixed portions having opposing contacting faces which extend longitudinally of the unit, a pair of electric contact members secured to said separable portion and projecting from the said face thereof, means for connecting an electric cord with said separable portion and electrically coupling the cord with said contact members, a pair of electrical contacts mounted in recesses in the said face of the fixed portion to receive said contact members, an electric current conducting threaded sleeve encircling said cylindrical portion and electrically connected with one of said contacts, an electric terminal at the center of the cylindrical portion upon the end remote from said fixed portion and electrically coupled with the other one of said contacts, interlocking means between the fixed and separable portions of the unit consisting of prongs projecting from the said face of one portion and notches in the face of the other portion to receive the prongs whereby disengagement of the two portions by relative longitudinal movement is prevented, and a loop-like fastener straddling one of the portions and pivotally coupled therewith to be swung over the end of the other portion to encircle the same and secure the portions against lateral separatory movement.

2. A separable electric cord plug comprising a cylindrical body of insulation material divided intermediate its ends to the extent of its radius and longitudinally divided from said central division to one end whereby to form a one piece end portion of circular form having a semi-circular portion integral therewith and a separate semi-circular portion, the said semi-circular portions having opposing flat faces and said flat faces extending oblique to the longitudinal axis of the body at the end remote from the circular portion, the said circular portion having a threaded metallic sleeve thereabout and a central metallic terminal, the said face of the integral semi-circular portion having a pair of recesses therein extending longitudinally thereof and having a notch cut therein at the outer side of each recess, a terminal in each of said recesses, one of said terminals being electrically connected with said sleeve and the other terminal being electrically connected with said central terminal, a chamber formed in and extending longitudinally of said separable semi-circular portion and opening through the end thereof adjacent to the obliquely directed faces, the said face of the separable portion having a recess communicating with said chamber and opening toward said first recesses, a pair of terminals in the recess of the separable portion each adapted for extension into and connection with a terminal in one of said first recesses, a tongue member extending from said separable portion at each side of the recess therein in a direction to engage in a notch in said integral semi-circular portion when the said flat faces of the semi-circular portions are brought together, and means for locking said separable portion to said integral portion.

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