

March 18, 1941.

D. C. JONES
ELECTRICAL CONNECTOR
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2,235,020

FIG. 1

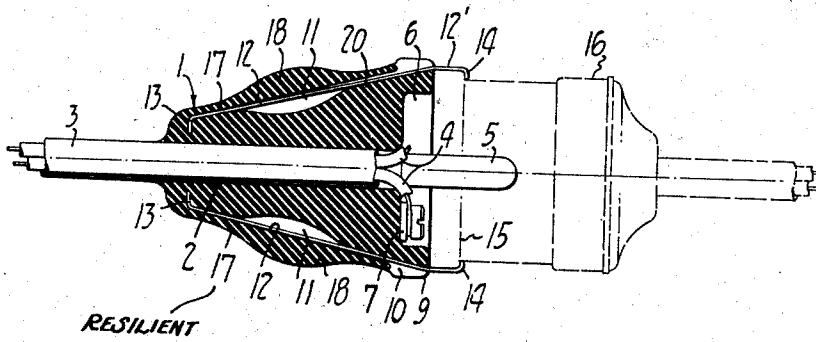


FIG. 3

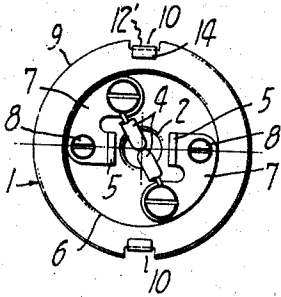


FIG. 2

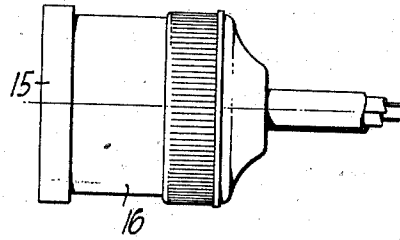


FIG. 5

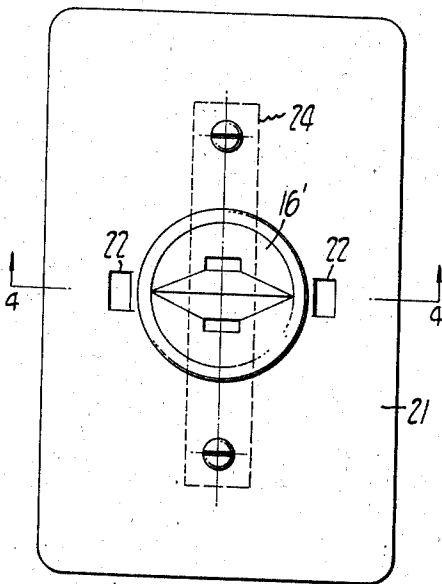
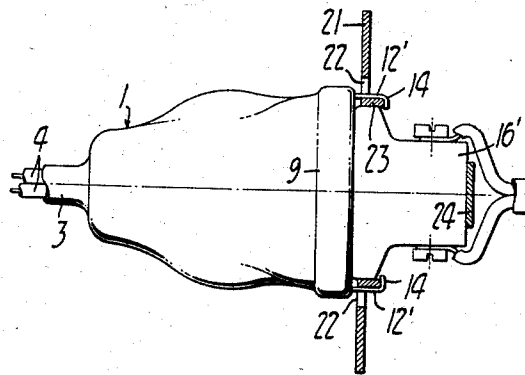


FIG. 4



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2,235,020

ELECTRICAL CONNECTOR

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2 Claims. (Cl. 173—361)

This invention relates to electrical connectors and has for its objects the provision of simple, improved means for releasably locking together the wires in an electrical circuit and which means includes male and female terminal members of generally the conventional type such as are used with electrical cord plugs or wall outlets, etc., where it is desirable to connect an electrical cord with another similar cord or with the main of an electrical circuit. Other objects and advantages will appear in the description and drawing annexed hereto.

In the drawing,

Fig. 1 is a longitudinal sectional view through a cord plug showing my improved locking means in position locking a prong-type plug with a socket plug, the latter being indicated in dotted line.

Fig. 2 is an elevational view of the socket-plug of Fig. 1.

Fig. 3 is an end elevational view of the prong supporting plug of Fig. 1.

Fig. 4 is an elevational view of the prong supporting plug of Fig. 1 shown connected with a wall type electrical outlet, the plate carrying the wall plug being shown in section.

Fig. 5 is an elevational view of the plate wall plate of Fig. 4 showing end of the plug as it appears in the plate opening.

In detail, referring to Figs. 1 to 3 inclusive, the prong carrying plug of my invention comprises a body 1, which may be of any suitable electrical insulating material, such as rubber or composition material. Said body is formed with a central passageway 2 extending longitudinally thereof for receiving therein one end of an electrical cord 3 that carries wires 4, which wires are exposed at one end of the cord for securement to the binding posts of outwardly projecting prong-terminals 5.

The end of the plug adjacent the terminals 5 is recessed, as at 6 and the base 7 of each terminal is secured within the recess at opposite sides of the open end of passageway 2 by screws 8. The bottom of the recess may, of course, be shaped to receive the terminal bases, which is conventional in the art.

A radially outwardly projecting bead 9 is formed around the outer edge of the sides of recess 6, which bead is broken away at 10 (Fig. 3) at two opposite sides of the body at points in a plane disposed at right angles to the plane in which the prongs 5 are disposed and the opposite sides of the body 1 in the same plane as the cut-out portions 10 are formed with recesses 11

(Fig. 1) which recesses are disposed about half way between the ends of the body.

The sides of body 1 taper from the bead 9 toward the opposite end thereof, and straight flat spring arms 12 are disposed longitudinally of the body and over the recesses 11, and extend past bead 9 at one of their ends which ends pass through the cut-out portions 10 of the bead. The opposite ends of the arms are preferably turned inwardly at 13, which ends are imbedded in recesses formed in opposite sides of the body 1.

The ends of arms 12 projecting outwardly of the recessed end of body 1 are also turned inwardly to form relatively slight hooks 14, which hooks are adapted to engage over an annular flange 15 on the end of a socket-plug 16, which plug carries conventional terminal sockets adapted to receive the prongs 5.

Covering the tapered outer sides of body 1 is a relatively thin sheet of resilient, flexible material 17, such as rubber, which sheet is cemented or vulcanized to the body. On the inner side of said sheet and over arms 12, the sheet 17 is preferably thickened to provide outwardly extending projections 18 adapted to lie over the portions of arms 12 that extend across recesses 11. It is, of course, obvious that the projections 18 may be formed integrally with the sheet 17, as shown, or may be separately made and secured to the sheet in any suitable manner.

From the foregoing, it is seen that the arms 12 are completely covered with the exception of their outer ends. Also, it will be seen that slight outwardly projecting protuberances will appear on the outer side of sheet 17 by reason of the projections 18 that lie over the spring arms 12.

In actual practice, the operator, desiring to connect body 1 with plug 16, will grasp the body 1 between the thumb and forefinger of one hand in the usual manner, but with the thumb and forefinger positioned over the protuberances caused by projections 18. Upon pressing against said protuberances, the exposed ends 12' and hooks 14 will spread apart by reason of the tendency of the arm to fulcrum at points 20 which are between recesses 11 and the outer ends of the arms. Thus, when hooks 14 are spread, they will pass over flange 15 of plug 16 simultaneously with passage of prongs 5 into plug 16, and upon releasing the pressure on arms 12, the hooks 14 will engage flange 15 against withdrawal of the body 1. To release the body, the same process is followed, except that the body is pulled outwardly of plug 16.

In the event the receiving socket is of the wall

type, the wall plate 21 is formed with openings 22 at opposite sides of plug 16' which fits at one end in the central opening of the plate, the openings 22 being formed in any suitable manner, such as by pressing ears 23 out of the plate to positions alongside the plug 16' in which case the hooks 14 will engage over the free outer ends of the ears, as seen in Fig. 4. The plug 16' is carried by the plate in the usual manner, as by a metal strip 24 that extends over the inner end of said plug, the ends of the strip being secured to the side of plate 21.

In the form shown, it will be seen that the prong carrying body 1 presents a substantially smooth outer surface free from projections that would tend to catch on curtains, upholstery, etc. where the electrical connection is used to form an extension of another cord.

The covering sheet 17 may be initially formed in the general shape of a cup, and then stretched over the plug body 1, after the latter is assembled, thus permitting ready removal of the covering for facilitating the repair or replacement of arms 12, and this is the preferable construction. Thus the covering sheet in itself will hold the arms 12 in position against separation from the body 1.

The flange 15 on the socket plug 16, is preferably formed integrally with said plug, but may be a ring pressed on the plug, or if desired, the outer side of the plug may merely be provided with recesses to receive the hooks 14.

Having described my invention, I claim:

1. In electrical connectors, an elongated body formed with a central bore extending longitudi-

nally therethrough for receiving an electric cord, the opposite outer sides of the body being provided with a pair of recesses and a flat strip of spring metal extending longitudinally of the body and disposed across each recess, the strip over each recess being extended at one end outwardly of one end of said body and in engagement with the outer side of said body adjacent one end of said recess and the opposite end of each strip being out of said recess and in engagement with the other end of the body adjacent the opposite end of said recess, whereby the portion of the strip extending across the recess may be depressed into the recess thereby causing the outwardly projecting end of the strip to move radially outwardly relative to the longitudinal axis of the body, means at the outer ends of the outwardly projecting portions of the strips adapted to normally engage a plug member therebetween and to release the plug body upon said radially outward movement of the outer ends of said strips, and means securing said strips to said body, and terminal members on the body adjacent with the wires of the cord disposed within said bore.

2. In a construction as defined in claim 1, said last mentioned means including a flexible covering over the outer sides of said body extending over said recesses and over the portions of the strips disposed over said recesses whereby the strips may be depressed into said recesses by application of pressure against said covering.

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