F. J. RUSSELL.

WEATHERPROOF ELECTRICAL RECEPTACLE.

APPLICATION FILED AUG. 20, 1908.

928,282.

Patented July 20, 1909.

2 SHEETS—SHEET 1.

FIG. 1.

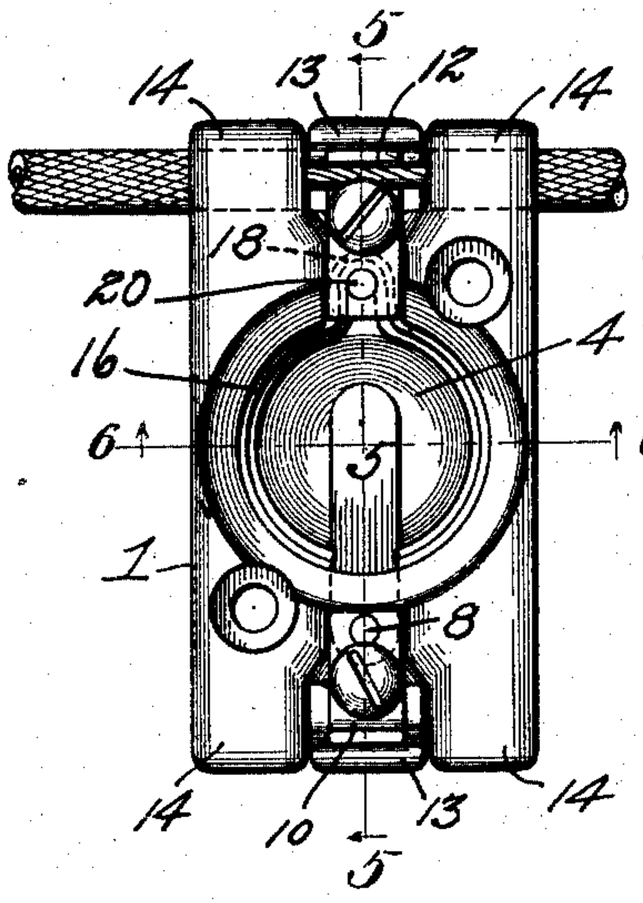


FIG. 4.

FIG. 2.

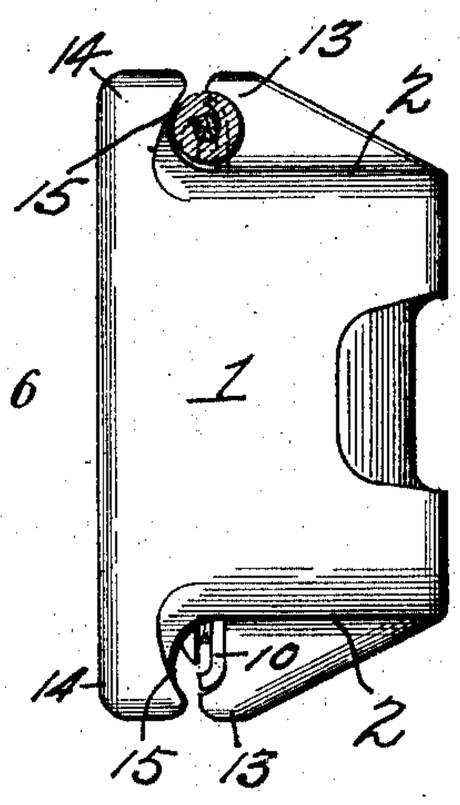


FIG. 5.

FIG. 3.

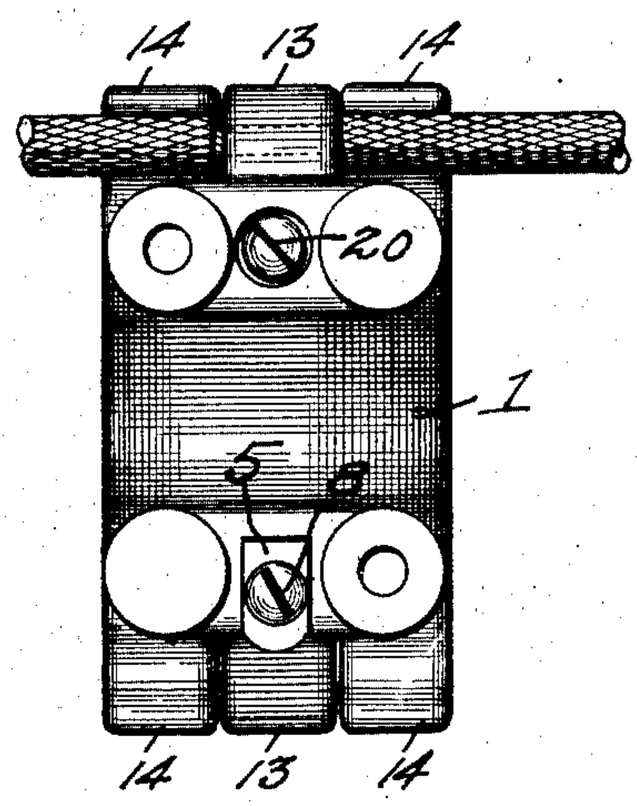


FIG. 6.

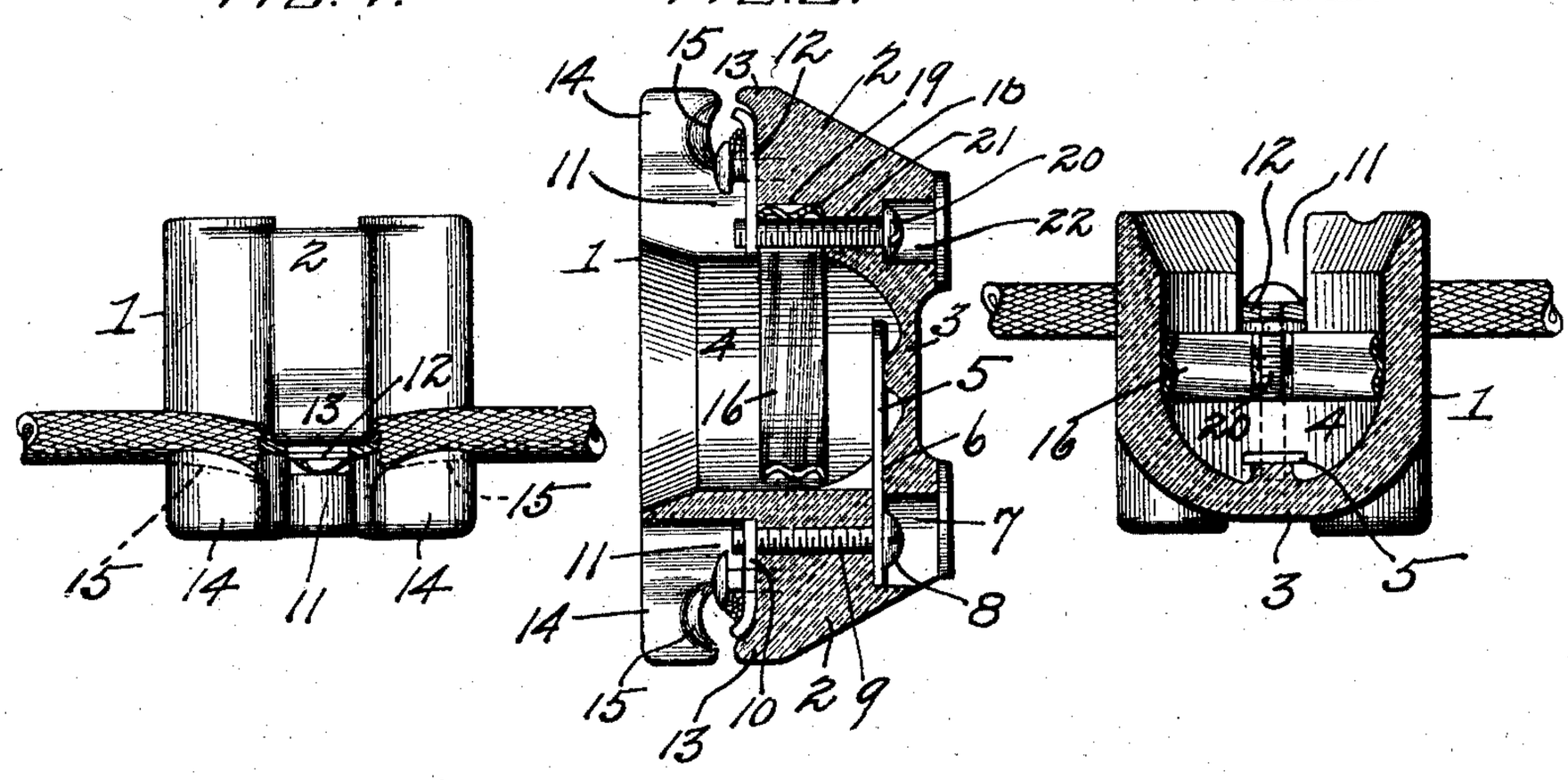
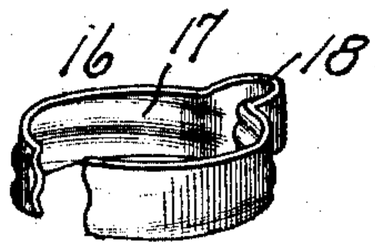


FIG. 7.



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2 SHEETS—SHEET 2.

FIG. 8.

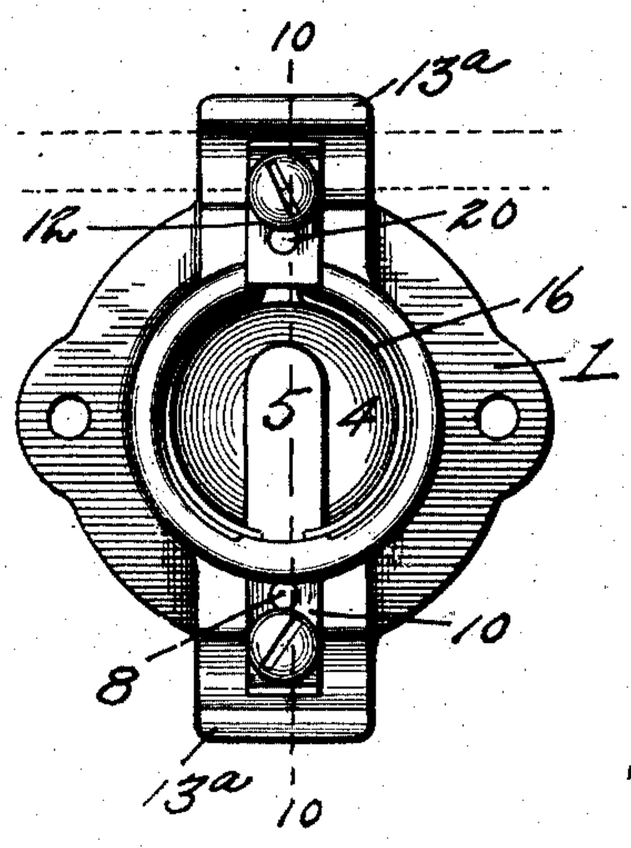


FIG. 9.

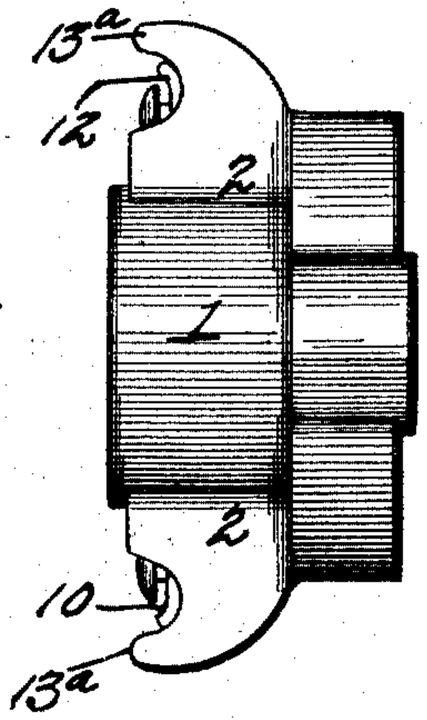


FIG. 10.

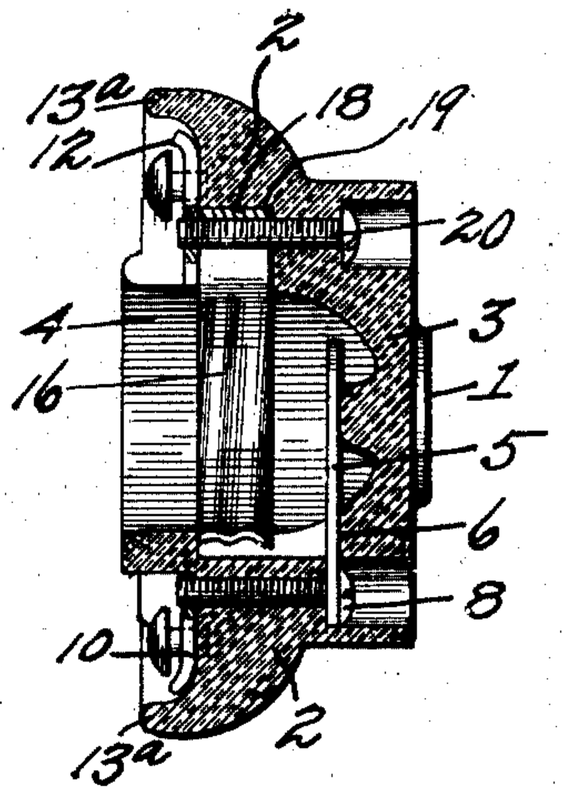


FIG. 11.

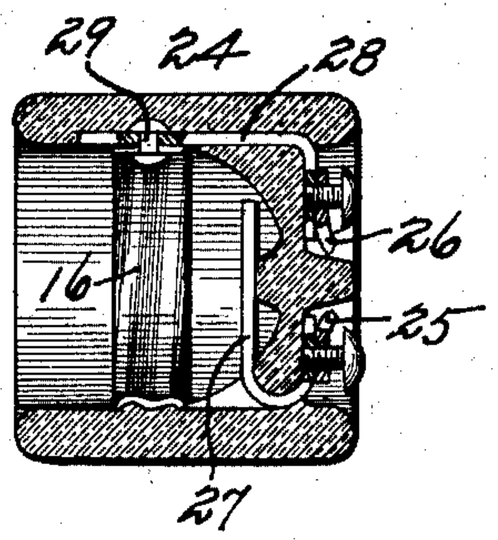
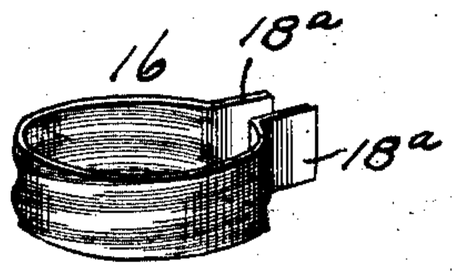


FIG. 12.



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UNITED STATES PATENT OFFICE.

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WEATHERPROOF ELECTRICAL RECEPTACLE.

No. 928,282. Specification of Letters Patent. Patented July 20, 1909.

Application filed August 20, 1908. Serial No. 449,532.

To all whom it may concern:

Be it known that I, FRANK J. RUSSELL, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Weatherproof Electrical Receptacles, of which the following is a specification.

This invention relates to the subject of electrical receptacles of the type adapted to receive and connect with the standard forms of electrical connecting plugs, such as the common incandescent lamp plugs and extension circuit plugs, and has particularly in view certain novel and practical improvements which provide a structure possessing special utility as a weatherproof electrical receptacle.

One of the distinctive features of the present invention is to provide an improvement in the construction and mounting of the plug holder, commonly termed the lamp holder, of the receptacle. In this connection, the invention contemplates a plug holder so constructed and arranged as to be decidedly more durable than the common form of thin screw shell terminal, and which also provides for receiving the lamp plug under tension, thereby maintaining a good electrical connection and also holding the plug with firmness and security.

A further object is to provide for a novel mounting of the improved plug holder in such relation to the wire terminals and the center plug contact as to secure an extra wide separation of opposite-polarity parts, while at the same time being well housed within the receptacle body, though in such proximity to the mouth of the plug receiving socket or hole that the lamp plug is likewise permitted to be well housed inside of the receptacle body, and in a position close to the surface on which the receptacle is mounted.

A further general object of the invention is to provide a form of plug holder admitting of an economical construction, and at the same time admitting of the use of a heavy and substantial piece of metal in the formation of said holder. Also, the improved manner of mounting the plug holder provides for a novel and practical arrangement of wire line terminals, especially in that kind of receptacles termed exposed terminal receptacles. Furthermore, in the latter type of receptacles, the present invention contemplates an improvement in the means for fastening and protecting the line wire connections, and particularly in the means for protecting the line wire terminals themselves.

Again, the invention has in view simplicity of construction and of assembling, two fastening screws being all the fasteners required for securing all parts.

With these and other objects in view, which will readily appear to those familiar with the art, as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

The essential features involved in carrying out the objects above indicated, are necessarily susceptible to structural modification, and also to embodiment in different forms of receptacles without departing from the scope of the invention, but certain preferred embodiments are shown in the accompanying drawings, in which:

Figure 1 is a front plan view of an electrical receptacle constructed in accordance with the present invention. Fig. 2 is a side elevation thereof. Fig. 3 is a rear elevation thereof. Fig. 4 is an end view thereof. Fig. 5 is a longitudinal sectional view thereof on the line 5—5 of Fig. 1. Fig. 6 is a cross sectional view thereof on the line 6—6 of Fig. 1. Fig. 7 is a detail in perspective of one form of the improved metal band plug holder. Fig. 8 is a front elevation of another form of exposed terminal electrical receptacle embodying the improvements contemplated by the present invention. Fig. 9 is a side view thereof. Fig. 10 is a longitudinal sectional view on the line 10—10 of Fig. 8. Fig. 11 is a modification illustrating the improved plug holder applied to an electrical receptacle having rear wire terminal connections, instead of the front exposed terminals as shown in other figures of the drawings. Fig. 12 is a detail in perspective of a modified form of the plug holder that may be employed.

Like references designate corresponding parts in the several figures of the drawings.

In the exemplification of the invention shown in Figs. 1 to 7 inclusive of the drawings, the receptacle body is designated in its entirety by the reference numeral 1 This body is constructed of porcelain or equivalent insulating material and is pref-

erably of an approximate rectangular, oblong form so that the fitting may be well adapted for use as a cleat receptacle, although it will be understood that the improvements claimed herein are necessarily applicable to an electrical receptacle designed for general use with lamp plugs or extension circuit plugs.

In the form of the invention being described, the receptacle body is formed with integral, solid, end portions 2, and a solid or closed bottom portion 3, thereby providing a body entirely closed upon all sides with the exception of what may be termed its front side, in which latter side the body has formed therein a comparatively deep plug receiving socket or hole 4 which is closed in at the bottom by the comparatively thin, though substantially solid, closed bottom portion 3 above referred to.

The socket 4 accommodates, within the bottom thereof, a center plug contact 5 of any suitable form, but preferably consisting of a single spring blade arranged substantially parallel with the bottom 3 and having its free end exposed within the socket for engagement by the electrical connecting plug when screwed into the receptacle. In the construction illustrated, the center plug contact 5 is extended through a side receiving opening 6 formed in one side of the wall of the socket at a bottom corner thereof, and the outer end portion of said contact 5 is held flatly upon the base or bottom of a seating cavity 7, in the rear side of the receptacle body, through the medium of a combined fastening and conducting screw 8. This screw 8 passes through a screw hole 9 formed in one of the solid end portions 2 of the receptacle body and has its threaded extremity engaging a threaded opening in a wire terminal plate 10, which is thus held by the said screw on the bottom of one of the oppositely arranged recessed plate seats 11, as may be best seen from Fig. 5 of the drawings.

In connection with the mounting of the wire terminal plates, attention is drawn at this point to the special formation of the receptacle body shown in Figs. 1 to 6 of the drawings. As shown in these figures of the drawings, the receptacle body is provided at diametrically opposite sides of the plug receiving socket 4 with comparatively deep recesses in its front face. These recesses constitute what have been termed the plate seats 11 for the two wire terminal plates designated by 10 and 12 respectively, and each of these plate seats may be said to be formed with a main supporting base lug 13 projecting from the solid end portion of the receptacle body and of a somewhat curved or hooked form at the face, upon which the wire terminal plate rests and is held by the fastening screw therefor. Each supporting base lug 13 is arranged in spaced and staggered relation to a pair of oppositely disposed bearing lugs 14, likewise projecting from the same end or side portion of the body as the lug 13, and which bearing lugs are formed with under, inclined engaging hook-like portions 15 disposed reversely to the adjacent base lug, and lying sufficiently close to the transverse plane thereof so as to provide deflecting abutments for the line wire, as may be clearly seen from Fig. 4 of the drawings.

It will be observed that in the construction described, provision is made for fastening the line wires to the wire terminal plate 10 upon the supporting base lug 13, and hooking the portions of the wire at opposite sides of said lugs beneath the hook-like portions 15 of the bearing lugs 14. This requires a slight bending or deflection of said opposite portions of the line wires to engage them beneath or behind the lugs 14, thus providing a very secure and effective fastening for the line wires to the receptacle body, while at the same time protecting the line wire terminals.

As already pointed out, an important feature of the present invention resides in the side plug contact which is also designed to act in the capacity of a holder for the lamp or other electrical plug. This combined plug holder and side plug contact 16 consists of a narrow strip of heavy or stout metal bent into the form of a circular band which is preferably split so as to subserve the functions of a spring band adapted to yieldingly embrace the connecting plug under spring tension, thus insuring a firm electrical contact as well as a secure and reliable holding means for the plug.

The narrow split-band plug-holder 16, though simply made from a narrow strip of metal, is of a sufficient width to provide an effective holder and contact for the electrical plug, and it is preferable in the formation of the said holder 16 to provide the same with spiral grooves or threads 17 for engagement with the corresponding and complemental threads of the plug, thus adapting the improved plug holder to the conventional and standard forms of electrical plugs.

It is the purpose of the present invention to arrange the plug holder 16 within the plug receiving socket intermediate the base and the front opening thereof, thereby supporting the plug holder in a position quite widely removed and insulated from the center plug contact 5, and from the other opposite polarity parts. To provide for supporting the improved plug holder in position, various expedients may be resorted to. The plug holder is of stout, rigid material and hence, can be readily mounted or secured from one side. For instance, the band constituting the plug holder may be formed

at one side with an offset securing loop or ear 18 fitting in a supporting seat 19 inset in the wall of the socket 4 and adapted to be overhung by the inner end of the wire terminal plate 12. Hence, said end of the plate 12 extends over the loop or ear 18 and is securely clamped or bound thereon by means of the fastening screw 20 extending through the screw hole 21 in one end of the receptacle body, and whose head is housed in a seat 22 formed in the rear wall of the receptacle body. Instead of the free, split formation shown in Fig. 7, the plug holding part of the plug holder 16 may be continuous as shown in Fig. 12, and the terminals offset in parallel relation to form securing ears 18^a clamped beneath the wire terminal plate in the manner above explained.

In Figs. 8, 9, and 10 of the drawings, the improvements described are illustrated as being applied to a form of exposed terminal receptacle omitting the wire interlocking elements 13 and 14, and simply provided with the diametrically opposite hook-like supporting base lugs 13^a upon which are arranged the wire terminal plates for the attachment of the line wires.

In Fig. 11 of the drawings, there is suggested the modification of adapting the improved plug holder 16 to a form of electrical receptacle 24 provided with wire terminal connections 25 and 26 seated in the rear side of its base, and which connections are respectively in metallic connection with the center plug contact 27, and with a suitable form of conductor element 28 to which the plug holder 16 is riveted, screwed, or otherwise fastened, as at 29. Other modifications and adaptations of the invention will readily suggest themselves to those skilled in the art.

I claim:

1. In an electrical receptacle, a body having a plug receiving socket, a center plug contact in the socket, a plug holder comprising a narrow band of sheet metal located within the socket, and means engaging the body of the band and securing it to the side wall of the socket.

2. In an electrical receptacle, a body having a plug receiving socket, a center plug contact in the socket, a plug holder comprising a narrow threaded split ring of sheet metal located within the socket and spaced from its rear end, and means engaging the body of the band and securing it to the side wall of the socket.

3. In an electrical receptacle, a body having a plug-receiving socket, a plug holder comprising a narrow band of sheet metal located within the socket, and a holding device extending across the body of the band and securing the same in the socket.

4. In an electrical receptacle, a body having a plug-receiving socket, a plug holder comprising a narrow ring of sheet metal located in the socket and having an offset loop extending the width of said ring, and a fastener extending across said body and located within the loop.

5. In an electrical receptacle, a body having a plug-receiving socket and a recessed seat in one side communicating with the socket, a plug holder comprising a narrow band of sheet metal located within the socket and having an offset loop the width thereof, said loop being located in the recessed seat, and a fastener extending longitudinally within the seat and within the loop to retain the plug holder in position.

6. In an electrical receptacle, a body having a plug-receiving socket and a recessed seat located at one side of the socket, a center plug contact arranged within the rear end of the socket, a plug holder comprising a narrow threaded split ring of sheet metal located within the socket and having an offset portion extending its entire width and arranged within the recessed seat, and a fastener extending transversely through the body and engaging in the seat within the offset portion to maintain the ring in place.

7. In an electrical receptacle, a body having a socket, a plug holding ring fitted in the socket, a wire terminal plate extending over the edge of the ring, and a fastener disposed transversely of the ring within the same and engaging the wire terminal plate.

8. In an electrical receptacle, a body having a plug-receiving socket and a recessed seat opening into one side of the socket, a center plug contact located in the rear end of the socket, a split threaded ring located in the socket and having an offset loop its entire width, said loop being located in the recessed seat, a wire terminal plate arranged on the body and extending over the said seat and the outer edge of the ring, and a fastening screw extending through the rear side of the body through the seat within the offset loop, said screw being threaded into the terminal plate.

9. In an electrical receptacle, the receptacle body provided with oppositely arranged supporting base lugs and a pair of opposing rearwardly extending bearing lugs associated with each base lug and arranged in staggered relation thereto to provide interlocking elements for the line wires, said bearing lugs extending rearwardly beyond the base lugs and having wire receiving seats in their front sides the center and side plug contacts mounted in the body, and the wire terminal plates seated on said base lugs.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FRANK J. RUSSELL.

Witnesses:

B. F. STALNAKER,

THEO. STOLL.