March 21, 1933. R. M. HEINTZ 1,902,236

CONNECTING PLUG RECEPTACLE

Filed Nov. 24, 1930

Fig. 1.

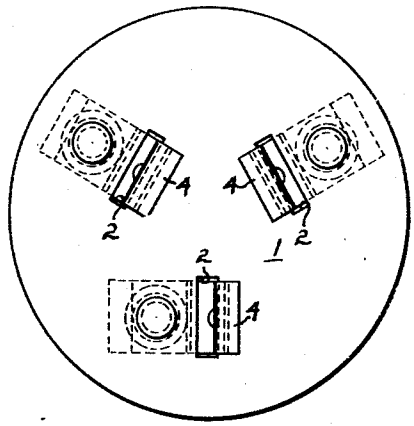


Fig. 2.

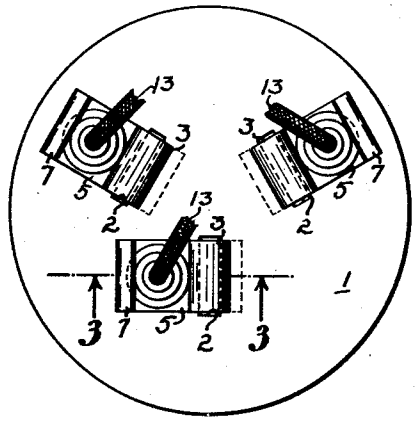
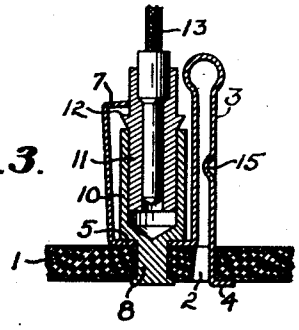


Fig. 3.



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CONNECTING PLUG RECEPTACLE

Application filed November 24, 1930. Serial No. 497,817.

This invention relates to receptacles for electrical connecting plugs, and its broad purpose is to provide a receptacle whereon the arrangement of the connections to the receptacle may be quickly and easily changed without the use of tools, and wherein these connections are of high conductivity and are not subject to accidental dislodgment.

Other objects of this invention are to provide a receptacle having few and simple parts, and to provide a receptacle wherein the contacts with the plug are firmly made and of low resistance.

The invention possesses numerous other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the invention. It is to be understood that I do not limit myself to this disclosure of species of this invention, as I may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawing:

Figure 1 is a front view of a three-contact plug receptacle.

Figure 2 is a rear view of a receptacle similar to Figure 1.

Figure 3 is a sectional view through one of the contacts and its connecting leads, the plane of section being indicated by the line 3—3 of Figure 2.

The receptacle of this invention is primarily designed for use where the connections to the receptacle must be removed from time to time, either for the purpose of disassembling the device whereon the receptacle is mounted, or because the connections to the receptacle must be changed in order to provide changes of speed, voltage, or the like, in the device supplied by the receptacle.

Broadly considered, the invention comprises the usual base-plate apertured to receive the prongs of the connecting plug. Secured to the rear of the base-plate is a resilient contact strip, preferably bent to form a loop aligned with the aperture in the base-plate to receive the contact prongs. In electrical connection with the contact strip is a socket member, adjacent to the opening in which is a latch, preferably formed from the end of the contact strip. A connecting plug, formed with a flanged surface to receive the latch, engages this socket member. The latch serves the dual purpose of holding the solid plug firmly in contact with the socket, and of retaining it in position. It may, however, be removed at any time by holding back the latch with the fingers and simply withdrawing the plug from the socket.

The invention is shown, in a preferred form, in the drawing, wherein the base-plate 1 is provided with the three apertures 2 for receiving the prongs of the connecting plug.

The contact strips are mounted on the back of the base-plate, each preferably comprising a loop 3 projecting perpendicularly to the plane of the base-plate and having a free end 4 projecting through the aperture 2 and bent at right angles to overlie the front surface of the plate 1.

From the other end of the loop a portion 5 of the strip is bent to contact the inner surface of the base-plate, beyond which the end of the strip is again bent outward and back toward the loop to form a hooked latch 7. The portion 5 of the contact strip is provided with a hole for receiving the reduced end 8 of a cylindrical socket member 10, whose open end lies immediately below the hooked end of the latch 7. The reduced portion 8 extends through a hole in the base-plate, where it is riveted to secure the contact strip to the plate.

A contact plug 11 is formed to slip readily within the socket. This plug has a flange surface 12 formed upon it, the flange preferably being conical in shape as viewed from the outer end of the plug, and having a flat upper surface against which the hooked end 7 of the latch bears. The lead wire 13 is soldered or otherwise secured into the plug.

It will thus be seen that if the end of the plug is inserted in the socket a slight pressure will force the flange 12 past the latch 7, which will then snap into place and hold the plug firmly and permanently in position. The latch may easily be raised with the fingers, however, permitting the plug to be easily withdrawn in order to change the connection arrangement.

The loop 3 is preferably formed with a protuberance 15 projecting inwardly of the loop. When the connecting plug, which is not shown since it is of familiar form, is inserted through the aperture 2 in the base-plate, the presence of the protuberance 15 requires the side of the loop 3 to flex or arch to permit the passage of the plug prongs. Since both ends of the loop are prevented from moving, this exerts a relatively heavy pressure against the prongs by the spring contact, thus giving a low resistance electrical connection.

I claim:

1. A plug receptacle comprising a base-plate apertured to receive a plug contact, a resilient contact strip secured to said base-plate and having a portion projecting from the plane of the base-plate and registered with said aperture to engage said plug contact, a socket member secured to the base-plate and electrically connected to said contact strip, a contact plug formed to engage said socket member and having a flange surface formed thereon, and a latch formed on the end of said contact strip and adjacent said socket for engaging said flange surface.

2. A plug receptacle comprising a base-plate having an aperture therein through which a contact plug is adapted to be inserted from one side of the base-plate; a resilient contact strip adjacent the opposite side of the base-plate; said contact strip comprising a looped portion registering with said aperture and with which said contact plug is adapted to engage, a second portion extending at substantially right angles to the loop, and a third portion extending at substantially right angles to the second portion and having a latch formed at the end thereof; and a socket member securing said second portion to the base-plate and having its end adjacent said latch whereby the latch may retain a second contact plug in said socket.

In testimony whereof, I have hereunto set my hand.

RALPH M. HEINTZ.