April 29, 1941. E. KAKES 2,239,787

ELECTRIC CURRENT PLUG AND RECEPTACLE

Filed March 29, 1940

Fig. 1.

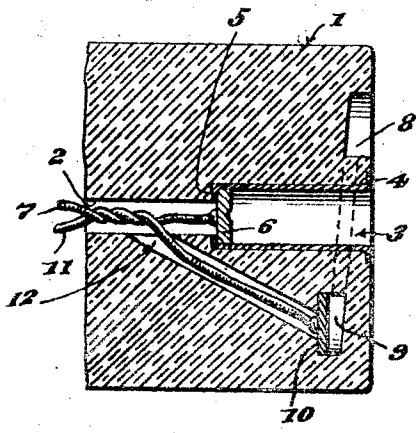


Fig. 2.

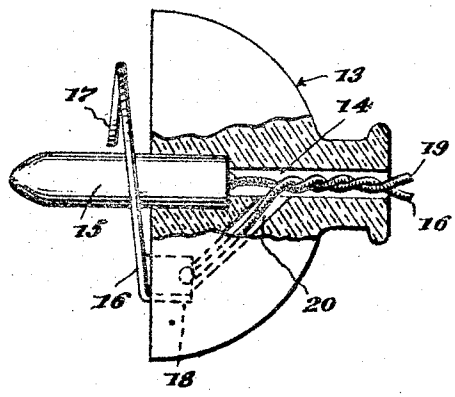


Fig. 3.

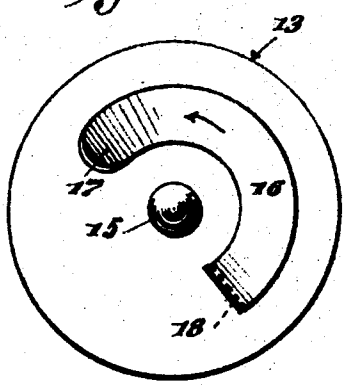


Fig. 4.

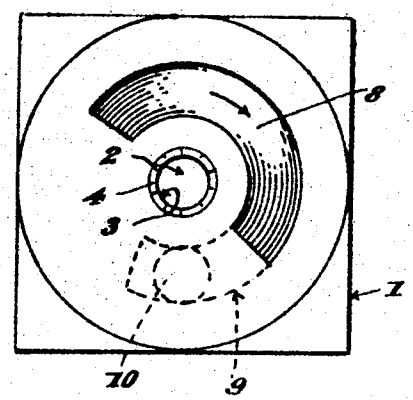
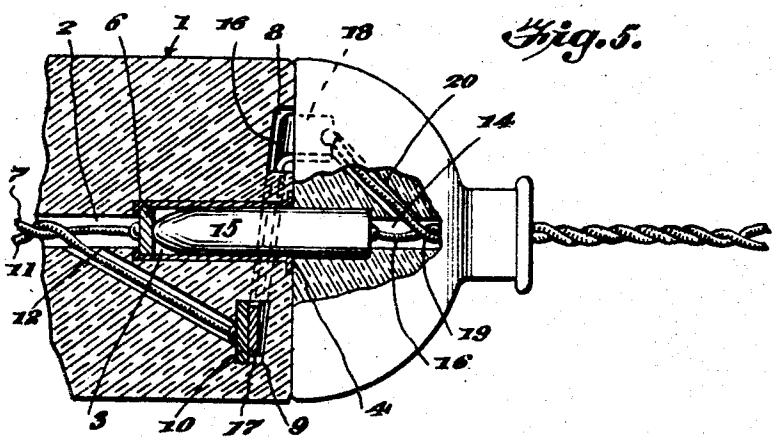


Fig. 5.



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UNITED STATES PATENT OFFICE

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ELECTRIC CURRENT PLUG AND RECEPTACLE

Edward Kakes, Antigo, Wis.

Application March 29, 1940, Serial No. 326,796

3 Claims. (Cl. 173—330)

This invention relates to an electric current plug and receptacle.

An object of the invention is the construction of a simple and efficient device which can be easily operated in the dark, and which will complete an efficient connection for the purpose desired.

Another object of the invention is to simplify the construction of an electrical connector for completing a circuit.

A still further object of the invention is the efficient construction of a receptacle or socket unit as well as the plug unit, whereby it is possible to complete a quick and efficient connection or closure of the two units, for permitting the flow of a current.

With the foregoing and other objects in view, the invention comprises certain novel constructions, combinations, and arrangements of parts as will hereinafter be fully described, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims.

In the drawing:

Figure 1 is a longitudinal sectional view of a receptacle or socket unit, constructed in accordance with the present invention.

Figure 2 is a view partly in elevation and partly in longitudinal section of a plug unit, constructed in accordance with the present invention.

Figure 3 is a view in elevation of the inner face of the plug unit.

Figure 4 is a view in elevation of the inner face of the receptacle or socket unit.

Figure 5 is a view partly in elevation and partly in longitudinal section of the two units of the device, in an assembled position.

Referring to the drawing, in which the preferred embodiment of the invention is shown, 1 designates the receptacle or socket unit, which is preferably constructed of insulating material. The socket unit 1 is provided with a central aperture 2, in a portion of which is a cylindrical casing 3. This casing 3 is provided on its outer end with an annular flange 4; said flange 4 is embedded or countersunk in the outer face of the socket unit. The casing 3 is provided at its inner end with an annular flange 5 against which rests the contact plate 6. Connected to contact plate 6 is current conductor 7. On the outer face of the socket unit 1 is a curved or spiral-like groove 8 (Fig. 4) that terminates at its inner end in a curved socket 9. In socket 9 is a contact plate 10. A current conductor 11 is connected to plate 10; this conductor 11 extends through passage 12, which passage communicates, at one end, with the central aperture 2.

The plug unit 13 is made of insulating material, and is provided with a central aperture 14. A metallic, round prong 15 extends at its inner end into plug unit 13 with current conductor 16 attached thereto. This prong 15 is adapted to fit into the metallic casing 3. A curved contact spring 16 has an outwardly-bowed outer end 17, and an inner angular end 18; angular end 18 extends at substantially right angles into the body of the plug unit 13, with current conductor 19 attached thereto; current conductor 19 extends through the passage 20, as clearly shown in Figure 2.

In operation, when the units of the device are separated, the plug unit is moved toward the socket unit, causing the prong 15 to register or enter partly the casing 3, whereupon the end 17 of contact spring 16 will engage the socket unit, and upon rotating the plug unit, end 17 will ride into the curved groove 8 and thence will move into the socket 9, until it contacts the plate 10, while at the same time the outer end of prong 15 will contact plate 6, whereupon a circuit is completed through the device. To separate the units, reverse movement is caused of the plug unit, whereupon the contact spring 16 will move out of socket 9 and groove 8, permitting the operator to deposit the plug unit wherever he desires.

It is to be understood that, in placing the units together, the bevelled outer end of the round prong 15 permits easy location of the casing 3, and then by slightly rotating the plug unit, the contact spring will be seated in its closed position (Fig. 5) for completing the circuit.

While I have described the preferred embodiment of my invention and illustrated same in the accompanying drawing, certain changes or alterations may appear to one skilled in the art to which this invention relates during the extensive manufacture of same, and I, therefore, reserve the right to make such changes or alterations as shall fairly fall within the scope of the appended claims.

What I claim is:

1. In a device of the class described, the combination of a socket unit provided with a central aperture, a cylindrical casing in part of said aperture, said cylindrical casing provided on its outer end with an annular flange embedded in said socket unit, said cylindrical casing provided on its inner end with an annular flange, a contact plate in said cylindrical casing against the flange on the inner end of said casing, said

socket unit provided in its outer face with a curved groove and a curved socket at the inner end of said groove, a contact plate in said curved socket, a plug unit provided with a central aperture, an outwardly-pointed round prong extending at its inner end into said last-mentioned aperture, a curved contact spring having an outwardly-bowed outer end, and said curved contact spring provided with an angular inner end extending into said plug unit, substantially as shown and described.

2. In a device of the class described, the combination of a socket unit provided with a casing and with a spiral-like socket, said socket open at its outer end only and partly extending around said casing within said socket unit, plates at the extreme inner ends of said casing and spiral-like socket, a plug unit provided with means for contacting said plates and said contacting means only making contact when said units are brought together in their extreme contacting or closed position.

3. In a device of the class described, the combination of a socket unit provided with a cylindrical casing, said casing provided at its inner end only with a flat contact plate, said socket unit provided with an inwardly-extending spiral-like socket open at its outer end only and said outer end opening upon the outer face of said socket unit, said spiral-like socket extending around said cylindrical casing, contact plates in said cylindrical casing and spiral-like socket, a plug unit provided with a straight prong and a curved contact spring, said prong engaging at its inner end said plate within said cylindrical casing, and said curved contact spring engaging at its inner end said plate within said spiral-like socket, substantially as shown and described.

EDWARD KAKES.