May 30, 1939. C. O. PEARSON ET AL 2,160,440

ELECTRICAL CONNECTOR

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Fig. 1.

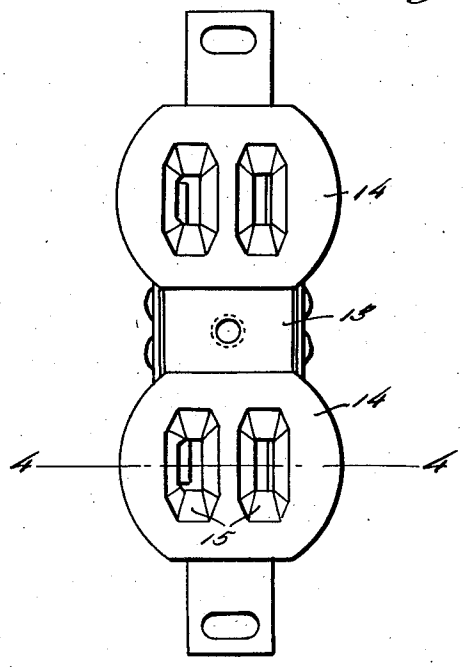


Fig. 3.

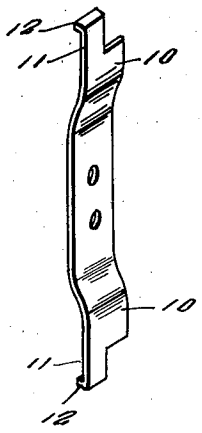
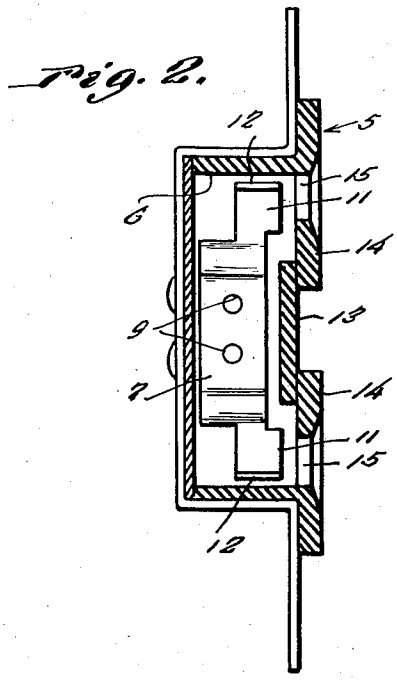


Fig. 2.



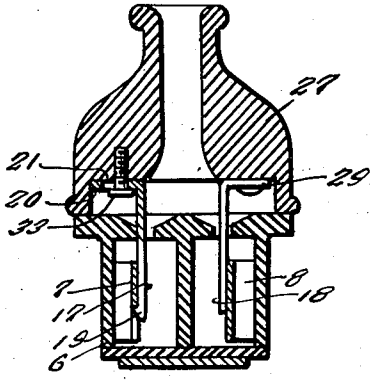


Fig. 4.

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Fig. 5.

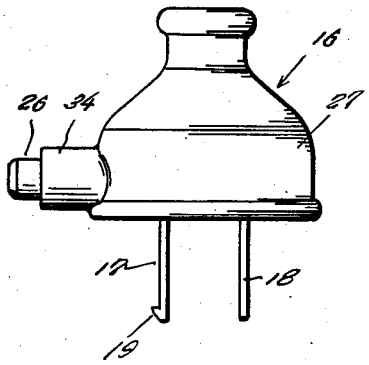


Fig. 6.

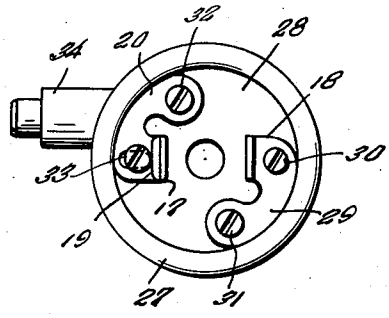


Fig. 7.

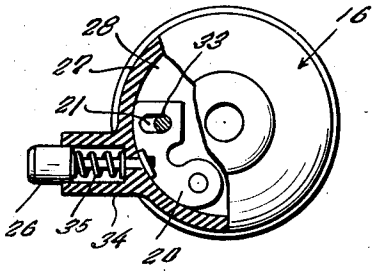
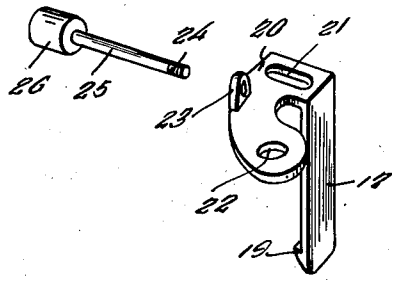


Fig. 8.



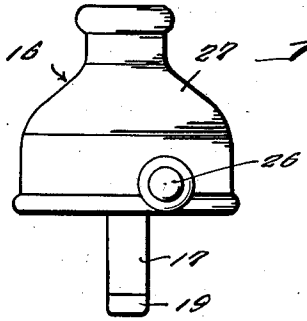


Fig. 9.

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UNITED STATES PATENT OFFICE

2,160,440

ELECTRICAL CONNECTOR

Carl O. Pearson and Clinton L. Sherwood,
Pontiac, Mich.

Application March 17, 1938, Serial No. 196,514

1 Claim. (Cl. 173—361)

This invention appertains to new and useful improvements in electrical connecting means and more particularly to a novel plug-socket assembly.

The principal object of the present invention is to provide a connector of the plug and socket construction wherein the plug in cooperation with the socket is provided with means for positively retaining the plug connected to the socket.

Another important object of the invention is to provide cooperative means between an electrical plug and socket assembly for preventing accidental displacement of the plug through vibration, shock or other unintentional disturbance.

These and other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a front elevational view of the improved socket structure of the dual type.

Figure 2 is a longitudinal sectional view through the socket.

Figure 3 is a perspective view of the keeper strip.

Figure 4 is a cross section on the line 4—4 of Figure 1.

Figure 5 is a side elevational view of the plug.

Figure 6 is a front elevational view of the plug.

Figure 7 is a rear elevational view of the plug with a portion broken away.

Figure 8 is a perspective exploded view of the movable plug prong and its push button.

Figure 9 is a side elevational view of the plug.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the socket structure generally referred to by numeral 5 is of the dual type, the same including the elongated box 6 of insulation in which the contact strips 7—8 are located. These contact strips 7—8 are secured to the opposite sides of the box 6 by screws or the like 9 which also serve as binding posts. The intermediate portions of these strips are set in channels to prevent movement of the strips.

The contact strip 7 is constructed differently from the strip 8 in that the strip 7 is provided with inwardly disposed portions 10—10 at its ends extended to provide keeper fingers 11—11, each of which is provided with a backwardly disposed terminal portion 12.

Numeral 13 represents the front of the dual socket structure, this front being constructed to define the socket faces 14—14 each of which is provided with a pair of slots 15 for receiving the prongs of a plug such as is generally referred to by numeral 16. As can be seen in Figure 1, the offset portions 10 and their fingers 11 partly underlie the slots 15 along one side of the socket structure, that is, they underlie the slots 15 through which the prong 17 of the plug 16 is to be disposed. The other prong 18 is smooth and unobstructed through its entire length, while the prong 17 is provided with a hook-shaped head 19 at its free end.

As is shown in Figure 8, the inner end of this prong 17 is provided with the arcuate-shaped laterally disposed plate 20 having the straight slot 21 therein and the circular opening 22, as well as the upstanding apertured ear 23 which is internally threaded to receive the threaded end 24 of the stem 25 which protrudes from the button 26, the latter being of insulating material.

As can be seen in Figure 7, and also in Figure 6, numeral 27 represents the shell of insulation which has the partition 28 therein to which the arcuate plate 29 of the prong 18 is secured by screws 30—31.

In regard to the plate 20 of the prong 17, a conductor binding screw 32 is provided while the screw 33 is disposed through the slot 21 and into the partition 28 serving as an anchor for the plate 20 so that it can slide with its prong 17 directly toward the prong 18.

The stem 25 extends from the ear 23 through the tubular formation 34 which projects laterally from the shell 27 and in the outer end portion of this tubular formation 34, the inner end portion of the button 26 is slidably disposed.

A coiled spring 35 is located in the tubular formation 34 and interposed between the button 26 and the inner end of the tubular formation 34 and this spring serves to normally urge the plate 20 in a direction maintaining the prong 17 spaced to the maximum from the prong 18.

It can now be seen that when the prongs 17—18 are disposed into a pair of the openings 15, the head 19 of the prong 17 will engage under the corresponding finger 11 and the spring 35 will serve to maintain the prong 17 thus engaged to hold the plug against displacement.

Obviously, when disengagement of the plug from the socket is desired, the button 26 is forced inwardly, this resulting in the movement of the prong 17 toward the prong 18 and displacement of the head 19 from under the corresponding finger 11, thus permitting the plug to be completely removed from the socket.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

In an electrical contact device for use with a socket member having a slot therein and a keeper member in the bottom of the slot, a plug having a hooked prong adapted for insertion in said slot and to interlock with said keeper member, said prong being pivotally mounted in said plug for swinging movement laterally about an axis parallel with that of said plug into unlocking position, means to limit such movement of said prong comprising a stud on said plug, said prong having a slot therein for receiving said stud, and manipulative means for swinging said prong comprising a push button extending laterally from said plug, and a spring tensioning said push button against manipulation and said prong against such swinging movement.

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