Nov. 29, 1949 L. E. BONHAM 2,489,741

ELECTRICAL OUTLET

Filed Feb. 20, 1947

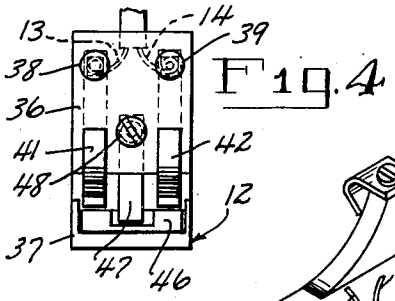

Fig. 4

Fig. 1

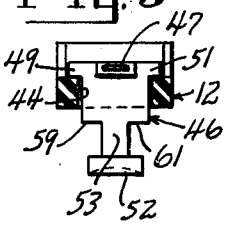

Fig. 3

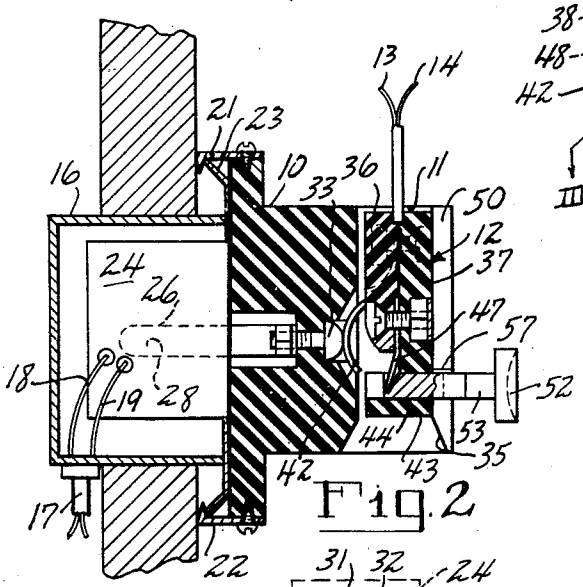

Fig. 2

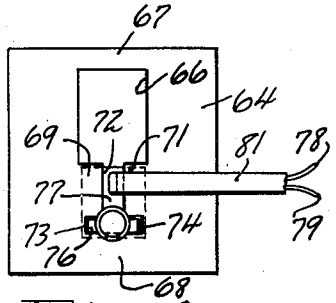

Fig. 6

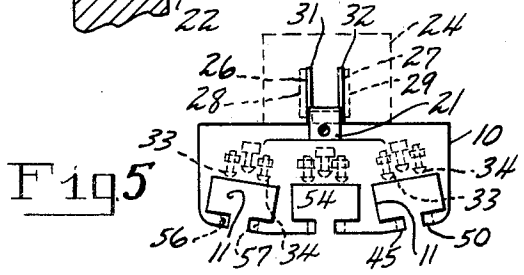

Fig. 5

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Patented Nov. 29, 1949 2,489,741

UNITED STATES PATENT OFFICE

2,489,741

ELECTRICAL OUTLET

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Application February 20, 1947, Serial No. 729,844

3 Claims. (Cl. 173—330)

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This invention relates to an electrical outlet device such as is employed to connect electrical appliances, tools and the like to the usual outlet box in a shop or residence and has for one of its objects the provision of a device of the character designated which shall include a socket member and a plug member capable of being connected by a simple pull on the electrical conductor to which the plug member is connected.

A further object of my invention is to provide an electrical outlet comprising a socket member and a plug member in which the plug member is latched in position in the socket member so it cannot become accidentally disconnected.

As is well known in the art to which my invention relates, electrical outlet connections are usually comprised of a socket member having relatively narrow openings or slits with spring contact members encased therein to receive the blades of a plug member which are held in place by frictional engagement with the contact members. The socket members are often mounted, especially in homes, in relatively inaccessible places along base boards, and in order to insert a plug in place it requires a person to stoop, kneel or assume a squatting position. Further, where appliances are connected, such as vacuum cleaners, electric irons, tools and the like, which are moved from place to place, the plug often becomes detached from the socket member due to an inadvertent pull on the cord carrying the conductors in the plug member. In accordance with my invention, I provide an outlet connection in which the plug member is held in firm electrical contact with the terminals of the socket member and in which it is not necessary to stoop, or kneel in order to place the plug member in the socket or to detach it therefrom. A device embodying features of my invention is illustrated in the accompanying drawing forming a part of this application, in which

Fig. 1 is a perspective view of the device, showing a socket member having multiple sockets and with one of the plug members disengaged;

Fig. 2 is a transverse sectional view of the device with a plug member in position in the socket;

Fig. 3 is a sectional view taken along the line III—III of Fig. 1;

Fig. 4 is a view of the rear side of the plug member;

Fig. 5 is a plan view of the socket member detached from the outlet box; and

Fig. 6 is an elevational view showing a modified form of my invention.

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Referring now to the drawing for a better understanding of my invention I show a socket member having a body portion 10 with a plurality of sockets 11 therein. A plug member 12 having electrical conductors 13 and 14 connected thereto fits slidably in each of the sockets 11 in a manner to be described later. In Fig. 1 of the drawing, I show two of the plug members in position and the third in the position assumed when being inserted in its associated socket 11.

At 16 I show the usual outlet box to which a cable 17 carrying conductors 18 and 19 is connected. The body portion 10 of the socket member may be attached to the outlet box 16 by means of clips 21 and 22 engaging a cover plate 23 on the outlet box. It will be apparent, however, that the body portion may be attached to the outlet box by any suitable means. As shown in Figs. 2 and 5 of the drawings, the outlet box 16 has located therein the usual socket member 24 having slits 26 and 27 therein in which are located conductors 28 and 29 connected in the usual manner to the conductors 18 and 19. The body portion 10 of the socket member is provided with blades 31 and 32 to fit into the slits 26 and 27 and make electrical connection with the conductors 28 and 29. The blades 31 and 32 are connected in any suitable manner to contact members 33 and 34 in each of the sockets 11.

As shown in Fig. 1, the sockets 11 are preferably rectangular in cross section with the terminals 33 and 34 in the bottoms thereof. One end of each socket is provided with a flaring opening 35 which in event the outlet is located in a base board is preferably disposed downwardly. The plug member 12 is also rectangular in cross section to provide a loose sliding fit in the socket 11. The plug member 12 is made up of two parts 36 and 37 which may be joined together by means of screws 38 and 39 to which are attached the conductors 13 and 14 and also resilient contact members 41 and 42. The contact members 41 and 42 are preferably curved as shown in Fig. 2 of the drawing. As shown in Fig. 1 the portion 36 of the plug member 12 is shorter than the portion 37 and the latter is provided with an overhanging shoulder 43 and with a rectangular opening 44 therein beyond the end of the portion 36 of the plug. Slidably fitting within the opening 44 is a latch member 46 which is biased outwardly by means of a leaf spring 47 secured to the under side of the portion 37 by means of a screw 48. Shoulders 49 and 51 engage the sides of the opening 44 to prevent the latch member from moving out of the opening 44. The latch

member 46 may be pressed inwardly by means of a button head 52 on the outer end of a stem 53.

The socket 11 is provided with overhanging shoulders 45 and 50 defining between them a slot 54 extending the length of the socket. The overhanging shoulders are provided with opposed notches 56 and 57. The latch member 46 is provided with shoulders 59 and 61, which, as the plug member is being inserted, are engaged by the flaring opening 35 to push the latch member inwardly with the shoulders engaged on the inner side of the overhanging shoulders 45 and 50. As soon as the latch member reaches the opposed notches 56 and 57, the spring 47 pushes the latch member outwardly so that the shoulders 59 and 61 engage in the notches 56 and 57 and securely hold the plug member in place. In this position, the contact members 41 and 42 are in engagement with the contact members 33 and 34 in the body portion 10. Once so positioned, the plug member cannot accidentally become disengaged.

Referring now to Fig. 6 of the drawing, I show a modified form of my invention comprising a socket member 64 having a socket 66 therein which is closed at both ends as shown at 67 and 68. At one end of the socket 66 are overhanging shoulders 69 and 71 defining a slot 72 therebetween similar to the slot 54 in the body portion 10 in the modification first described. At the lower end of the slot 72, as viewed in Fig. 6, are notches 73 and 74, similar to the opposed notches 56 and 57. These notches are adapted to receive the latch member 76 of a plug 77 and hold it in position. As shown in Fig. 6, the plug member 77 is shorter than the plug member 12 of the first modification, but in all other respects it is similarly constructed and the latch member 76 is mounted similarly to the latch member 46 and requires no detailed description. To position plug 77, it is inserted in the open end of the socket and slid under the overhanging shoulders 69 and 71 until the latch member 76 engages the opposed notches 73 and 74. Conductors 78 and 79 are connected to the plug 77 through a single cord 81.

While I have shown my invention in each instance with the sockets 11 and 66 vertically disposed, it will be apparent that they may be horizontally disposed, or disposed in any desired direction. In the modification described in Figs. 1 to 5 of the drawings and with the sockets 11 vertically disposed, it will be seen that it is not necessary to stoop or kneel in order to insert the plug member 12 in a socket where the outlet connection is disposed near the floor. It is only necessary to position the plug member as shown by the detached plug member in Fig. 1 of the drawing, and pull the cord 15 carrying the conductors 13 and 14 upwardly until the plug member enters the socket 11 and the latch member 46 is engaged in the notches 56 and 57. To disengage the latch member 46, the button 52 may be pushed inwardly with the toe so that no

stooping is required to disengage the plug. The curved contact members 41 and 42 permit the insertion of the plug member in the socket from the opposite end, if desired. The modification shown in Fig. 6 is especially contemplated for installations in which it is desired to have the complete socket and plug flush with a wall in which the unit is placed. Such an outlet would ordinarily be located at a distance above the floor of the building and the plug member 77 would be inserted in the socket 66 and pushed downwardly until the latch member 76 was engaged in the notches 73 and 74. When so mounted, it will be seen that the plug member will not accidentally be disengaged from the socket member.

From the foregoing, it will be apparent that I have devised an improved electrical outlet which is simple and sturdy of design, which retains the outlet connection against accidental disengagement and in which the plug member may be readily engaged and disengaged when desired.

While I have shown my invention in but two forms, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claims.

I claim:

1. An electrical outlet comprising a stationary member having an elongated socket open at both ends, overhanging shoulders along the sides of the socket defining a slot therebetween and extending from end to end, electric terminals in the bottom of the socket, and a plug member adapted to fit slidably within the socket underneath the shoulders and having resilient electric terminals adapted to engage the terminals in the socket, a spring pressed latch carried by the plug member and having an actuating stem extending outwardly through the slot, and notches provided in the overhanging shoulders to engage the latch and hold the plug member in place.

2. A device as set forth in claim 1 in which the socket is provided with a flaring opening at one end thereof.

3. A device as set forth in claim 1 in which the resilient terminals are curved.

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