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1,647,697

W. F. HESSEL

ELECTRICAL CONNECTER

Filed Nov. 24, 1919

Fig. 1.

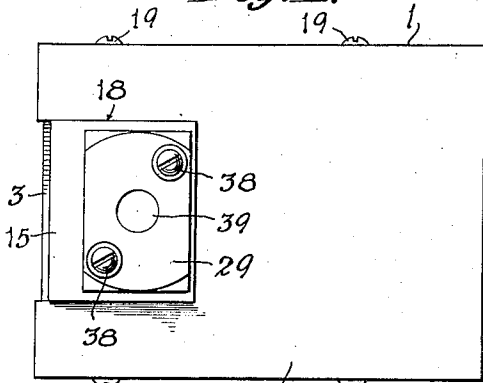


Fig. 2.

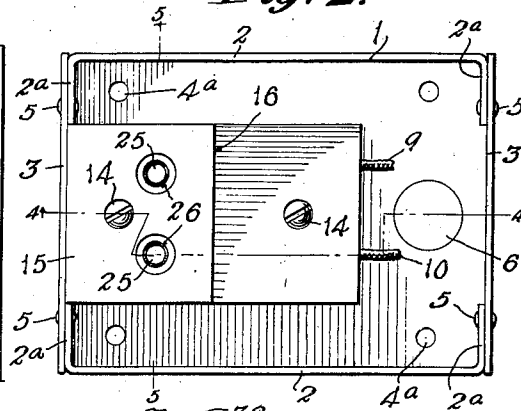


Fig. 3.

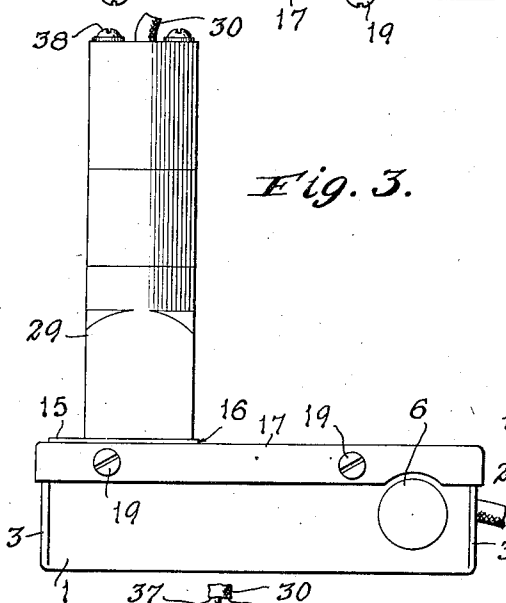


Fig. 4.

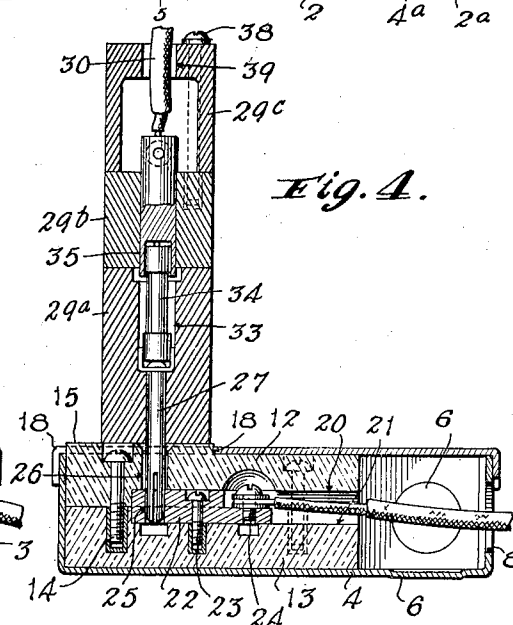


Fig. 5.

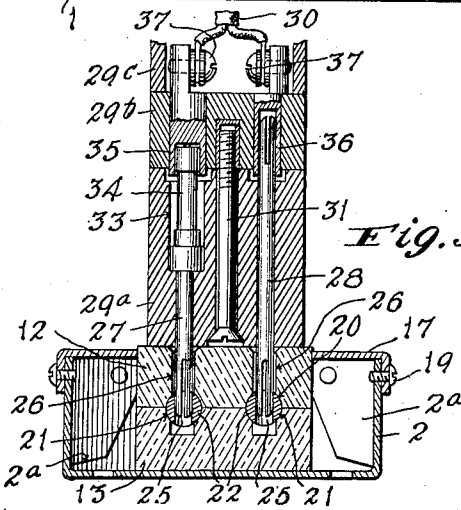
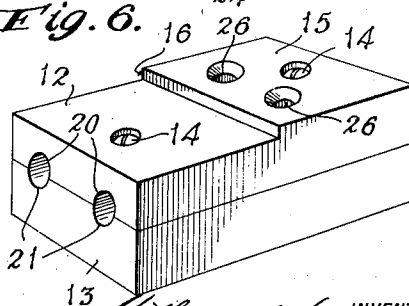


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM F. HESSEL, OF NEW YORK, N. Y., ASSIGNOR TO W. F. HESSEL COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ELECTRICAL CONNECTER.

Application filed November 24, 1919. Serial No. 340,182.

This invention relates in general to electrical connectors, and more particularly to an electrical connector of the type described in my United States Patent No. 1,296,801, dated March 11th, 1919, such connectors being designed to withstand hard usage and maintain a high degree of insulation.

The objects of the invention are to provide a device of the character described embodying novel features of construction which will withstand rough handling and hard usage without damage thereto; to provide an electrical connector which will not easily get out of repair and which will ensure safety; to secure a device of this character which possesses and will maintain a high degree of insulation; to provide an electrical connector which is simple and inexpensive in its construction, which can be easily and quickly assembled or taken apart and which embodies a minimum number of parts and fastening members; and to obtain other objects and results as may be brought out by the following description.

Referring to the accompanying drawings which illustrate one embodiment of my invention, and in which like numerals of reference indicate the same parts throughout the several views:

Figure 1 is a top plan view of an electrical connector embodying my invention,

Figure 2 is a plan view of the connector box and insulating block, with the cover plate and plug removed,

Figure 3 is a side elevation of the device;

Figure 4 is a vertical sectional view on the line 4—4 of Figure 2;

Figure 5 is a similar view on the line 5—5 of Figure 2, portions of the plug being broken away, and

Figure 6 is a detached perspective view of the insulating block.

Specifically describing the present embodiment of the invention, the numeral 1 designates, the base of the device, which is shown in the form of a box constructed of any suitable material to withstand hard usage, preferably heavy sheet metal. This box 1 is shown as formed of a single blank of sheet material with sides 2 and ends 3 integral with the bottom 4 thereof, the ends of the sides 2 being bent inwardly at 2^a and riveted at 5 to the inner faces of the ends 3. At one end of the box 1, the bottom, sides and end thereof are provided with

knock-out portions 6 formed by pressing the walls of the box to weaken the same, any one of said knock-out portions being adapted to be struck out of the box by a hammer or the like, to provide an opening 8 to receive the line wires 9 and 10, according to the position of the box with respect to the line wires. The bottom 4 of the box is provided with a plurality of holes 4^a to receive screws or bolts for fastening the box to a wall or the like if desired.

An insulating block 11 is fitted within said box, one end of the block engaging one end wall of the box between the intumed ends 2^a of the sides 2. This insulating block is formed of any suitable insulating material and comprises superposed sections 12 and 13, fastened together by countersunk screws 14 accessible from the top of the block. The upper side of the end of the upper section 12 of the block 11 adjacent the end of the box is slightly raised above the top edges of the box as at 15 to form a transverse shoulder 16, the remaining portion of the block being of substantially the same height as the sides and ends of the box.

A flanged cover plate 17 closes the top of the box 1, one end and the top of said cover plate being cut away at 18 to fit snugly around the raised portion 15 of the upper side of the block, the edges of said cutaway portion engaging the shoulder 16 on the block 11 and the top of cover plate resting snugly over that portion of the top of the block 11 flush with upper edges of the box. The cover plate 17 is fastened to the box 1 by means of screws 19 passing through the flanges of the cover plate and sides 2 of the box, and it will thus be obvious that the insulating block is held firmly in position within the box. The intumed ends 2^a of the sides of the box serve to position the block in the box and the edges of the cutaway portion of the cover plate engaging the raised portion 15 of the upper section of the insulating block and shoulder 16 prevent all movement of the block in any direction.

The meeting faces of the two sections 12 and 13 of the insulating block are formed with complementary longitudinally extending parallel grooves 20 and 21, which form openings to receive a pair of spaced bus bars 22 secured to the lower section 13 of the insulating block by screws 23. One end of each of said bus bars is provided with a binding

screw 24, to each of which screws is connected one of the line wires 9, 10. The line wires 9 and 10 are lead to the bus bars through the openings formed by the complemental
 5 grooves 20 and 21, and the connections and binding screws 24 are entirely housed within the insulating block. Each of the bus bars is formed with a transverse opening 25 registering with a corresponding opening 26 in the upper section 12 of the insulating block. These openings are adapted
 10 to receive the connecting conductor pins 27 and 28 of an electrical connecting plug 29, whereby electrical connection is made between said bus bars and an extension or
 15 branch line 30.

The plug 29 is formed in three sections, 29^a, 29^b and 29^c of suitable insulating material, the connecting end section 29^a carrying
 20 the connecting pins 27 and 28, and being secured to the intermediate section 29^b by means of the screw 31. The section 29^a is provided with a cavity 33 to receive a conventional cartridge fuse 34 connected with
 25 one of the conductor pins, in the present instance, the pin 27. This fuse 34 and the connecting pin 28 are engaged by spring sockets 35 and 36 carried by the intermediate section 29^b of the plug, said sockets being
 30 provided with binding screws 37 to which are secured the terminals of the branch or extension line 30. The section 29^c of the plug is hollowed out to receive and house these binding screws 37 and wires, and
 35 is fastened to the intermediate section 29^b by means of the screws 38. An opening 39 is provided through the end of the section 29^c to receive the branch wire and permit its connection with the binding screws 37.

40 It will be noted that all electrical connections within the box 1 are housed by the insulating block 11 so that there is no danger of short circuits or accidental shocks. There is no metallic connection between the insulating block and the box 1 or its cover plate
 45 17, such as screws or bolts, the insulating block being held firmly in position in the box by means of the cover plate 17. The block 11 is clamped between the cover and
 50 bottom of the box and lateral or longitudinal movement of the block is prevented by the edges of the cut-away portion 18 of the cover plate engaging the raised portion 16 of the insulating block. There is no conducting member interposed between the plug
 55 29 and the insulating block, so that the only possible electrical connection is between the pins 27 and 28, and the bus bars. With the above construction, it will be seen that re-

gardless of hard usage, knocks, or jars the
 60 connector embodying my invention will effectively maintain its insulating and connecting functions, and will not readily get out of repair. Furthermore, the insulating
 65 block 11 can be easily and quickly removed by merely removing the cover plate 17, and when inserting the block in the box, the in-
 70 turned ends 2^a of the sides 2 and the edges of the cut-away portion 18 engaging the raised portion 15 of the block serve to quickly and accurately position the block. The
 75 bottom of the box is of an extended area and flat so that it will lie steadily on a support and assume an upright position with the attached plug so as to eliminate the necessity of fastening the box to a support.
 80 This construction also allows the box to be transported from place to place and a quick positioning thereof when the device is set down.

Obviously, many detail modifications and changes can be made in the construction of my invention by those skilled in the art without departing from the spirit and scope
 85 of the invention, and I do not desire to be understood as limiting myself except as required by the following claims when construed in the light of the prior art.

Having thus described my invention what I claim as new herein and desire to secure
 90 by Letters Patent is:

1. In a device of the character described, a sheet metal box having its side and end walls integral with the bottom wall thereof, and having the end portions of the side
 95 walls bent inwardly and secured to the end walls of the box so as to form shoulders on said walls, a block of insulating material placed into said box and having only one of
 100 its side faces in contact with the walls of the said box, said face of the block being arranged to fit snugly between the said shoulders formed on an end wall of the box and a cover for said box, said cover being
 105 arranged to engage the said block and to retain the same in position.

2. In a device of the character described, a box, a block of insulating material, said block being in contact with only one of the
 110 side walls of said box, means on the said side wall for engaging said block and preventing lateral movement thereof, and a cover for said box for receiving said block within said box, said cover engaging said block and holding the same in contact with the said
 115 side wall of the box.

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