Aug. 11, 1931. W. HUPPERT 1,818,804

ELECTRICAL OUTLET

Filed Dec. 15, 1928

Fig. 1.

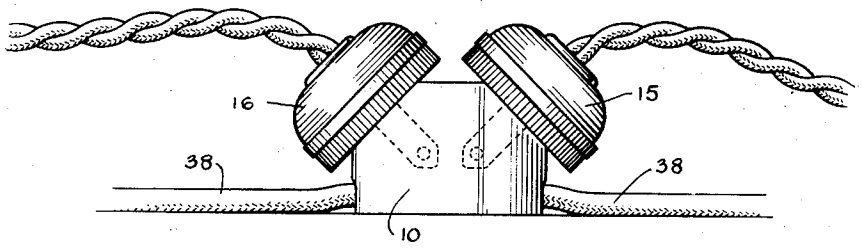


Fig. 2.

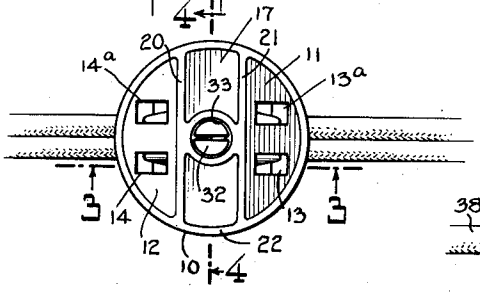


Fig. 3.

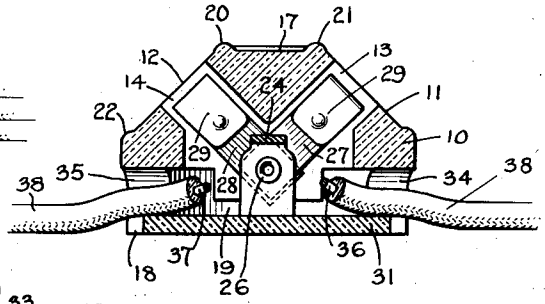


Fig. 4.

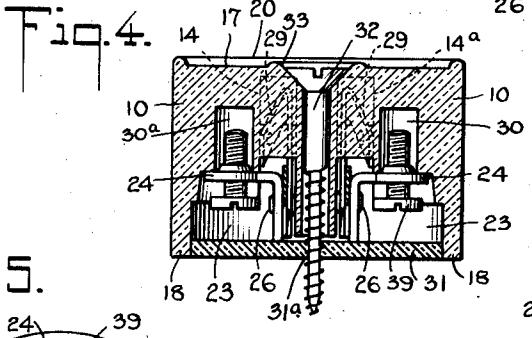


Fig. 5.

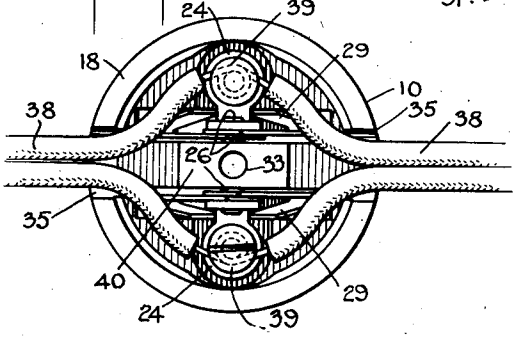
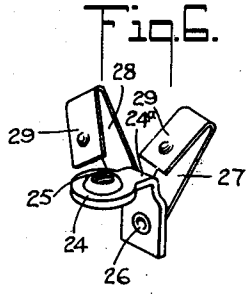


Fig. 6.



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UNITED STATES PATENT OFFICE

WILLIAM HUPPERT, OF NEW YORK, N. Y.

ELECTRICAL OUTLET

Application filed December 15, 1928. Serial No. 326,190.

This invention relates to electrical outlets.

Pursuant to my invention, the electrical outlet embodies a plurality of faces, each face having a set of openings in which are disposed contacts arranged to engage the respective terminals of one or more plugs, thus enabling all of the plugs when desired to be inserted at one time and within a minimum space and without interference with one another.

My invention further embodies the distinctive feature of molding the insulating material to have inner and outer configurations and a bottom opening, attainable by simple molding operations, and co-ordinated to receive simply assembled terminals having contacts for the respective polarities, capable of being inserted through the bottom opening and maintained in position within the inner apertures of the molded insulating material by simple rectilinear movement. Such arrangement enables common binding screws to be employed for the respective polarities, thus reducing the wiring to be performed by the electrician to simplest operations.

Further features and objects of the invention will be more fully understood from the following detail description and the accompanying drawings, in which

Fig. 1 is an elevational view of an electrical outlet embodying my invention for two plugs of cords of auxiliary circuits;

Fig. 2 is a top plan view of Fig. 1; the plugs being omitted;

Fig. 3 is a sectional elevation on line 3—3 of Fig. 2;

Fig. 4 is a sectional elevation on line 4—4 of Fig. 2;

Fig. 5 is a bottom plan view, with the bottom closure removed; and

Fig. 6 is a detail perspective view of a preferred form of multiple terminal contact member.

Referring to the figures, the outer body 10 of the outlet is formed of suitable insulating material, such as porcelain, resinous condensation products, rubber and other suitable composition materials. As appears in Fig. 3 and indicated in Fig. 1, the planes of the faces 11, 12 having respectively the sets of openings and communicating channels 13, 13*a* and 14, 14*a*, for the reception of the terminals of the respective plugs 15, 16, see Fig. 1, are disposed at suitable angles to one another, thus enabling all of the plugs to be located in position relative to the body 10 without physical or other interference with one another. The upper face 17 of the body 10 may be substantially horizontal, that is to say, substantially parallel to the face of the bottom annular edge 18 surrounding the bottom opening 19.

The upper face 17 is preferably counter-sunk relative to the parallel ridges 20, 21 and relative to the upper annular ridge portions 22. The lateral faces 11, 12 are similarly preferably counter-sunk relative to the upper annular outer ridge 22, thus providing for physical stops of insulating material for limiting the extent of insertion of the terminals of the plugs 15, 16, and also to positively support the plug bodies.

The body 10 of insulating material is molded to provide the respective sets of openings 13, 13*a* and 14, and 14*a*, and their communicating channels extending downwardly at suitable angles to one another interiorly of the body 10, and to respectively merge with the substantially annular chamber 23. Thus, the channels having the exterior openings 13, 14, for respectively receiving terminals of like polarity merge at one side within a member 23 and the channels having the exterior openings 13*a* and 14*a* for terminals of like polarity merge at the opposite side within the chamber 23.

Such arrangement enables the contact members and their respective terminals to be constructed of simple assembly, and I prefer to form the assembly to enable the same to be mechanically completed prior to insertion and to be inserted by simple rectilinear movement. Since a like construction is thus made possible for the respective polarities, the description of one contact member, illustrated in perspective in Fig. 6, will suffice.

Such multiple terminal contact member

comprises the strip 24 of copper or other suitable electrically conducting material having the opening 25 for receiving a binding screw 39, see Fig. 4; this portion of the member 24 is disposed substantially horizontally as appears in Fig. 4. An intermediate portion 24*a* of the member 24 is bent at substantially a right-angle to extend vertically downwardly, as appears in Fig. 4 and is provided with a suitable opening for receiving an eyelet 26 or equivalent for pivotal and electrical connection with the terminals 27, 28, each preferably having flared resilient terminal portions 29, 29. The insulating body is molded to have the interior, closed-ended recesses 30, 30*a* for receiving and retaining the projecting shanks of the binding screws 39.

I have discovered that by the above stated formation of the contact members and the angular relationship between the respective terminal openings merging with common channels within the insulating body, the mere insertion of the respective contact members by rectilinear movement serves to physically maintain the same in position substantially, that is to say, without any further support or securement.

The insulating body is preferably closed at its bottom opening 19 by means of electrically non-conducting material such as a disk 31 of fiber.

A simple method of mounting the insulating body 10 and contained contact members on a wooden base-board or the like, is had by means of a screw 32 passing through the substantially central perforation 33 in the insulating body 10. The screw 32 serves also to hold the bottom closure 31 in position, namely, by passing its threaded end through the opening 31*a* in the disk 31.

The insulating body 10 is also provided with suitable lateral openings 34, 35 for receiving therethrough the terminal portions 36, 37 of the electrical conductors to be connected to the binding posts 39, 39, respectively.

A simple method of connection of the contacts with the electrical conductors is effected by severing but one conductor, say the conductor 38, to provide the respective terminal portions 36, 37, and leaving the other conductor 39 intact, thus connecting the conductors of the cords of the plugs 15, 16, in electrical series.

From the above, it will be apparent that the molding of the block of insulating material is effected by simple operations and is adapted for the use of porcelain as well as a resinous condensation product, rubber composition and the like. Specifically, the insulating body may be solid for the central zone extending through the lower extension 40, excepting for the bore of the central perforation 33 for the mounting screw 32, and the channels in the interior of the insulating body which respectively communicate with the terminal openings, are advantageously of slotted formation, preferably rectangular in cross-section.

The use of electrical outlets embodying my invention will be apparent from the above description.

In the assembly in manufacture of the electrical parts within the insulating body, a set of two contact members is grasped, one placed with a binding screw within one interior recess and the angularly arranged channels and similarly for the other set of contact members in the opposite interior recess and its angular channels, whereupon the bottom closure 31 is placed in position, and the mounting screw 32 passed through the central perforation 33 and then threaded through the central opening 31*a* of the closure 31, thus holding the closure in position for the period of shipments and storage of the electrical outlet. The mounting or positioning of the outlet upon a baseboard or other suitable material or location is had by the simple use of a screw driver or equivalent, after the bored terminals of the conductor or conductors have been screwed to the binding posts, as above indicated. As appears in Fig. 4, the horizontal portions of the elements 24 respectively of the contact members are arranged to engage cornered or other solid portions of the interior body of the insulating material, and the rearward ends of the vertical portions of these elements 24 are arranged to be engaged by the closure 31 or equivalent, whereby the individual contact members are readily positioned in assembly by force applied at the rearward ends of the portions 24 of the contact members and effectively retained in position against displacement in all directions by force applied at their forward ends to the respective contact members in the normal insertion and withdrawal of the plugs.

It will be observed that my invention provides a face having a set of openings in which are respectively disposed contacts for engaging the terminals of a plug, which face has an area which is considerably less than the area of the face of the plug, thus greatly decreasing the quantity and dimensions of outlets as compared with those heretofore proposed and used. Furthermore, the ridges or projections in general at each face further serve to reduce the amount of material by providing the counter-sunk disposal of the flat faces, as well as to positively limit the extent of insertion of each plug, as well as to support the same, as above stated.

Whereas I have described my invention by reference to specific forms thereof, it will be understood that many changes and modi-

fications may be made without departing from the spirit of the invention.

I claim.

1. An outlet comprising an integral body of insulating material having a plurality of sets of channels opening at opposite lateral sides, the faces of said lateral sides being disposed at an angle to one another, contact members each having a plurality of terminal portions respectively extending into said channels for engagement therein with terminals of respective plugs, said insulating material being provided with lateral openings in its body portion respectively communicating with said angularly arranged channels for the accommodation of conductors, said body of insulating material having a single opening at its bottom, a closure of insulating material for said bottom opening, said body of insulating material further being provided with a perforation and a securing element extending through said perforation for mounting said body of insulating material and jointly holding said closure in position.

2. An outlet comprising an integral body of insulating material having a plurality of sets of channels opening at opposite lateral sides, the faces of said lateral sides being disposed at an angle to one another, and contact members each having a plurality of terminal portions respectively extending into said channels for engagement therein with terminals of respective plugs, said insulating material being provided with lateral openings in its body portion respectively communicating with said angularly arranged channels for the accommodation of conductors, each of said contact members being formed of contact elements of electrically conducting material having resilient terminal portions and an element of electrically conducting material jointly connected to said contact members, said elements being arranged to engage solid portions of the interior of said insulating material to serve jointly for connection respectively with line conductors and for retaining the contact members in position.

3. An outlet comprising a body of insulating material having a plurality of sets of channels opening at opposite lateral sides, the faces of said lateral sides being disposed at an angle to one another, and contact members each having a plurality of terminal portions respectively extending into said channels for engagement therein with terminals of respective plugs, said insulating material being provided with lateral openings in its body portion respectively communicating with said angularly arranged channels for the accommodation of conductors, each of said contact members being formed of contact elements of electrically conducting material having resilient terminal portions and an element of electrically conducting material jointly pivotally connected to said contact elements.

4. An outlet comprising a body of insulating material having a plurality of sets of channels opening at opposite lateral sides, the faces of said lateral sides being disposed at an angle to one another, and contact members each having a plurality of terminal portions respectively extending into said channels for engagement therein with terminals of respective plugs, said insulating material being provided with lateral openings in its body portion respectively communicating with said angularly arranged channels for the accommodation of conductors, each of said contact members being formed of contact elements of electrically conducting material having resilient terminal portions and an element of electrically conducting material jointly connected to said contact elements, said last-named element of electrically conducting material having a portion extending at an angle to said contact elements and provided with an opening for receiving a binding screw.

5. An outlet comprising a body of insulating material having a plurality of sets of channels opening at opposite lateral sides, the faces of said lateral sides being disposed at an angle to one another, and contact members each having a plurality of terminal portions respectively extending into said channels for engagement therein with terminals of respective plugs, said insulating material being provided with lateral openings in its body portion respectively communicating with said angularly arranged channels for the accommodation of conductors, each of said contact members being formed of contact elements of eletrically conducting material having resilient terminal portions and an element of electrically conducting material jointly pivotally connected to said contact elements, said last-named element of electrically conducting material having a portion extending at an angle to said contact elements and provided with an opening for receiving a binding screw.

6. An outlet comprising an integral body of insulating material provided with a plurality of sets of channels opening on opposite forward faces, said faces being disposed at an angle to one another, said insulating body being further provided with a chamber on a rearward face communicating in common with said channels respectively, contact members each formed of terminal portions respectively extending into said sets of channels for engagement therein with terminals of respective plugs, said terminal portions of each contact member being pivotally connected to one another, each said contact member further comprising an ele-

ment adapted to engage a solid interior portion of said insulation body to thereby limit the movement of each contact member in its enclosing channel, and retaining means for said contact members against displacement through said rearward chamber.

7. An outlet comprising an integral body of insulating material provided with a plurality of sets of channels opening on opposite forward faces, said faces being disposed at an angle to one another, said insulating body being further provided with a chamber on a rearward face communicating in common with said channels respectively, contact members each formed of terminal portions respectively extending into said sets of channels for engagement therein with terminals of respective plugs, said terminal portions of each contact member being pivotally connected to one another, each said contact member further comprising an element adapted to engage a solid interior portion of said insulation body to thereby limit the movement of each contact member in its enclosing channel, each said element being pivotally connected to one of its associated said terminal portions, and retaining means for said contact members against displacement through said rearward member.

8. An outlet comprising an integral body of insulating material provided with a plurality of sets of channels opening on opposite forward faces, said faces being disposed at an angle to one another, said insulating body being further provided with a chamber on a rearward face communicating in common with said channels respectively, contact members each formed of terminal portions respectively extending into said sets of channels for engagement therein with terminals of respective plugs, said terminal portions of each contact member and said element being pivotally connected to one another, each said contact member further comprising an element adapted to engage a solid interior portion of said insulation body to thereby limit the movement of each contact member in its enclosing channel, and retaining means for said contact members against displacement through said rearward member.

In testimony whereof I have signed this specification this 26th day of Nov. 1928.

WILLIAM HUPPERT.