C. D. PLATT.

PANEL BOARD RECEPTACLE.

APPLICATION FILED JULY 25, 1913.

1,127,088. Patented Feb. 2, 1915.

Fig. 1.

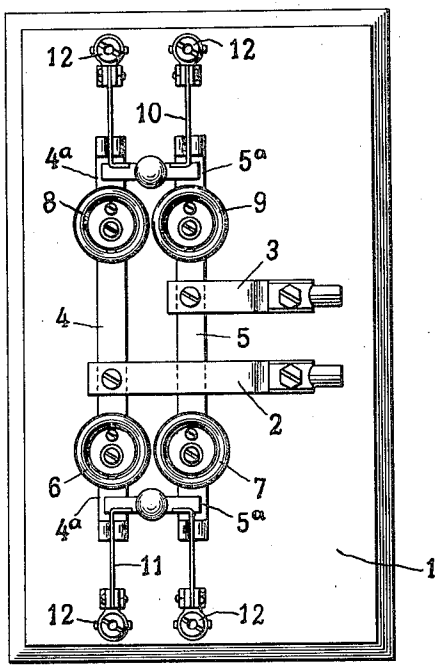


Fig. 2.

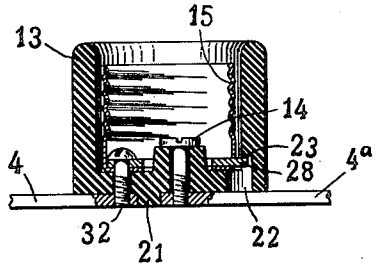


Fig. 3.

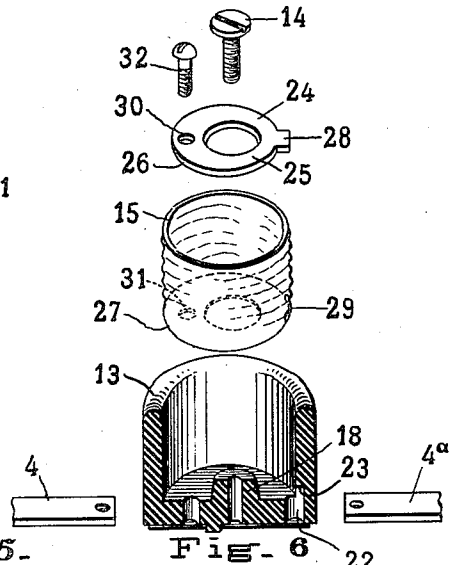


Fig. 4.

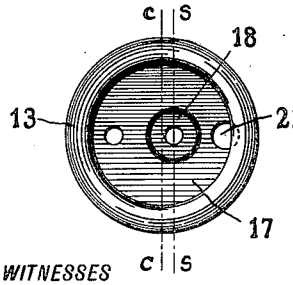


Fig. 5.

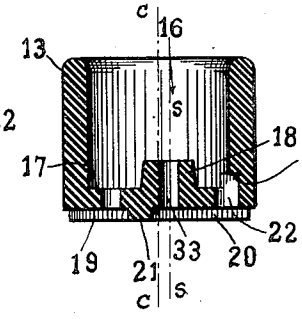
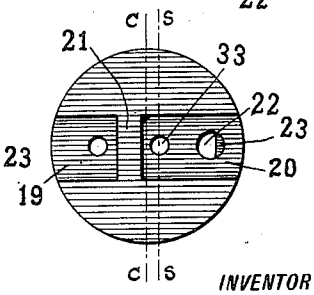


Fig. 6



WITNESSES

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PANEL-BOARD RECEPTACLE.

1,127,088. Specification of Letters Patent. Patented Feb. 2, 1915.

Application filed July 25, 1913. Serial No. 781,185.

To all whom it may concern:

Be it known that I, CLARENCE D. PLATT, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Panel-Board Receptacles, of which the following is a full, clear, and exact description, whereby any one skilled in the art may make and use the same.

The invention, as indicated by its title, relates to receptacles or sockets, particularly adapted for panel-boards or switch-boards. It is an electrical appliance for retaining a contact device which may be of various types as, for instance, a fuse plug, lamp base or other device for forming an electrical bridge between conductors.

The object of the invention is to provide a receptacle having an insulating shell with a pair of contact members arranged therein and applicable thereto and providing a suitable barrier or insulating wall intermediate the fixed conductors of the panel board to which it is applied.

A further object is to provide a receptacle having an insulating shell with a pair of contact members arranged therein and with conducting parts connecting the contact members with the main fixed conductors, all of the parts arranged so that they may be applied and assembled from one side of the panel-board or base.

It is also an object to provide a device of the character described which will be simple in form and which will overcome objections of assembly heretofore found in devices of this character, always giving constant distances between the contact members and conductors and between the contact members and contacts of the applied fuse-plugs, lamp bases and the like, with features of interlocking of the parts which will provide an extremely substantial and stable structure.

Referring to the drawings Figure 1 is a front face view or plan of a base of insulating material or panel-board showing several of the receptacles in place. Fig. 2 is an enlarged sectional view through one of the receptacles. Fig. 3 is a perspective view of the various parts of the receptacle in unassembled position, said parts occupying their relative position ready for assembly. Fig. 4 is a top plan view of the insulating cup of the receptacle. Fig. 5 is a central vertical section of the cup shown in Fig. 4. Fig. 6 is a bottom plan view of the cup shown in Fig. 4.

It has been common practice in the art to employ receptacles upon bases of insulating material such as switch-boards, panel-boards and the like. It has also been common practice to employ receptacles embodying an insulating shell with a central stud contact and a coöperating screw-threaded shell contact, said parts being mounted in a cup or shell of insulating material and adapted to be applied to the face of a panel-board or switch-board. Usually such devices have been applied as complete units, although in some instances, they have been assembled on the face of the board. In the latter case, assembling them upon the board has involved interlocking the parts between the insulating cup or shell and one of the contact members as, for instance, the threaded sleeve contact.

Whether applied as fixed units with means for securing them to the panel-board or assembled upon the face of the board, it has been necessary to employ insulating washers to separate the contacts of the receptacle. The use of separable insulating washers has involved difficulties in assembly by requiring a greater number of parts for the device and through variations in the sizes of the parts, serious difficulty has been experienced in securing fixed distances between the contact members of the receptacle. This is all important as they must register and contact with the contact members of the plugs or switch bases used therewith. Difficulty has also been experienced in securing a proper barrier between the main fixed conductors which lead into such a receptacle where the receptacles are of a small enough form to present a neat and compact appearance.

In the device herein described, the various objections noted have been completely overcome. The contact members are firmly and securely locked in place within the shell or receptacle of insulating material and the locking of said parts simultaneously secures and binds the receptacle in place upon the panel-board or base. There are no insulating washers of a removable type; the entire insulation for the contacts of the receptacle being effected through the form of the insulating shell. Distances between contacts are permanently fixed for all times when

the parts are manufactured and no adjustments are required to correct inaccuracies, such as are found in the ordinary type of receptacle. The device may be completely assembled upon or removed from the face of the board or panel. The parts are of a simple form and interlocking character so that they may be shipped in "knock-down" form and may be readily applied to a panel-board or switch-board when the same is set up. This "knock-down" feature, particularly in shipping, insures safety to the more or less fragile insulating portions of the receptacle and facilitates close packing and safe shipping of the entire panel-board structure.

Referring to the drawings, the numeral 1 denotes an insulating base or panel-board of ordinary type which has applied to it, as illustrated, main line conductors 2, 3, and branch conductors 4, 5, connected respectively with the mains 2, 3. The circuit of the branches 4 and 5 is continued through the receptacles 6, 7, 8 and 9, when the contacts of said receptacles are bridged as by the fuse-plug, not specifically illustrated herein or by any form of plug which makes contact with the contact members of the receptacle for the purpose of electrically connecting the conductors 4, 5, with conductors such as 4^a, 5^a. The conductors 4^a, 5^a, as illustrated, are connected with switch devices 10, 11, for opening and closing the circuits of the branch conductors 4, 5. Suitable connectors 12 are employed for attaching the conductors of branch circuits.

Obviously, the receptacle hereinafter described in detail may be employed in various manners although specifically illustrated herein as a fuse receptacle for the branch conductors of the panel-board.

The receptacle comprises a shell 13 of insulating material, preferably porcelain, having a central stud contact 14 and a threaded sleeve contact 15. Within the threaded sleeve may be screwed a plug having a central contact and a coöperating sleeve contact. The insulating shell 13, as illustrated, is of cylindrical form and has a cylindrical opening 16 of a sufficient depth to receive the threaded sleeve contact 15 which rests upon the bottom 17 of the opening 16. Extending upward from the bottom 17 is an insulating boss 18, said boss having its center slightly out of center with the cylindrical opening 16. The lower side of the insulator 13 is recessed as at 19, 20, to receive the ends of the conductors 4, 4^a. These recesses are so formed extending in from opposite sides of the insulator 13 that a barrier 21 is provided intermediate their adjacent ends. An opening 22 is formed from the under side of the receptacle up through the bottom 17 and cuts into the side wall of the cylindrical opening 16 to form a locking shoulder 23. To secure the threaded sleeve contact 15 firmly within the cylindrical opening 16 at the bottom of said opening 17, a ring-like plate 24 is employed. This plate has a perforation 25 slightly eccentric to its center so that its outer periphery 26 will fit snugly within the threaded sleeve contact and against the bottom 27 thereof with the perforation 25 surrounding the raised boss 18. The plate 24 has a lug 28 adapted to pass through a perforation 29 of the threaded sleeve contact 15. The plate 24 is also provided with a perforation 30 registering with a perforation 31 of the threaded sleeve contact and a conducting screw 32 is passed through the perforations 30, 31, and engages the branch conductor 4. This screw 32 serves as a conductor between conductor 4 and the threaded sleeve contact and binds the receptacle against the board. The tongue 28 resting under the shoulder 23 positively holds the threaded sleeve contact 15 against tilting movement within the insulating cup 13. The central stud contact 14 passes through a central perforation 33 in the recessed boss 18 and base of the insulator 13. This screw engages the conductor 4^a and is completely insulated from the threaded sleeve contact and appurtenant parts.

The receptacle as a whole is firmly bound and locked to the sections of the conductors 4, 4^a, and the threaded sleeve is firmly locked within the insulating section of the receptacle. With the parts arranged as illustrated, there is no lack of insulating barrier between the adjacent ends of the conductors 4, 4^a.

It is apparent that it would be quite impossible to properly arrange the parts if the boss 18 were at the center of the structure as there would not be a sufficient insulating barrier between the ends of the conductors 4, 4^a. It has, therefore, been common practice heretofore to arrange part of the connections from the rear of the board. The eccentric position of the boss 18, with the central contact 14 raised thereon and of a sufficient size to project over the actual center of the receptacle, no difficulty is experienced in securing registration and proper contact between the threaded sleeve and central contact 15, 14 and the coöperating contact members of the plug. The insulating receptacle 13 is first placed in position with its recesses 19, 20, registering with the conductors 4, 4^a, the latter being secured upon the base or panel board 1. The threaded sleeve contact shell 15 is then inserted in the opening 16. The ring-like plate 24 is then dropped into the threaded sleeve contact with its projection 28 passing through the perforation 29 of the shell and underlying the shoulder 23. In this position, the perforation 30 is brought into

registration with the perforation 31 of the shell and with the opening through the base. The screw 32 is then inserted and engaged with the conductor 4 locking all of the parts firmly together and making the electrical connection between the conductor 4 and the shell 15.

In Figs. 4, 5 and 6, the main center of the receptacle and the threaded sleeve contact is shown on dotted line C—C and the actual center of the central stud contact 14 is indicated by the dotted line S—S. It will be observed that the head of the screw 14 projects across the center-line C—C and gives ample contact for the coöperating center contact of the plug. The raised insulating boss 18 is shown herein as formed integral with the insulating shell 13 which is the preferred form though the invention contemplates a raised insulated stud contact eccentrically arranged with reference to the center of the receptacle which gives the necessary barrier between the conductors of the panel-board. As illustrated in the drawings, the opening 22 is so formed that it opens directly through the base-wall 17 into the cylindrical opening 16 and is of sufficient length and size to cut into the inner wall of said opening so that the distinct shoulder 23 is arranged at just the proper height to engage the upper face of the extension 28 of the binding plate 24. It will also be noted that the receptacle is so formed at its base that it may be applied to the ordinary type of flat conductor used upon the face of panel-boards and when in place is held against relative rotation by said parts as well as by the double hold of the two screws 14 and 32, said screws firmly binding the receptacle to the respective conductors and to the face of the panel-board.

What I claim as my invention and desire to secure by Letters Patent is:

1. A panel board receptacle comprising an insulator having a base, a cylindrical side wall surrounding a central opening, in which wall is a shoulder, and a boss rising from the base, a threaded sleeve contact seated in the said opening of the receptacle and provided with a perforation for the boss and an opening for a locking lug, a locking member having a lug extending through the said opening in the sleeve and under the shoulder in the side wall of the insulator, a conducting screw engaging the locking member and a conductor, and a stud contact extending through the boss of the insulator and engaging with a conductor.

2. A panel board receptacle comprising an insulator having a base and a cylindrical side wall surrounding a central opening, in which wall is formed a recess, and a boss rising from the base, a threaded sleeve contact seated in the said opening and provided with a perforation for the boss, and an opening for a locking lug, a perforated plate having a lug extending through the opening of the sleeve and into the said recess in the side wall of the insulator and resting upon the threaded sleeve contact, a conducting screw engaging the said perforated plate and a conductor, whereby the receptacle and contained parts are locked upon said conductor, and a stud contact extending through the boss and engaging with another conductor.

3. An insulator for a panel board receptacle consisting of a shell having a base and a cylindrical side wall rising therefrom and surrounding a central opening, the outside of the base being provided with recesses to receive conductors separated by an insulating barrier, an eccentrically disposed insulating boss rising from the base within the central opening of the insulator, the boss being perforated and located over one of the conductor recesses, the base being also perforated to form a communication between the central opening of the insulator and the other conductor recess, and there being formed in the side wall of the insulator a locking shoulder arranged diametrically opposite the last aforesaid perforation.

4. A panel board receptacle comprising an insulator having at its bottom substantially diametrically opposed recesses adapted to fit over conductors, an intermediate wall of insulating material between said conductors, a concentric cylindrical opening arranged in the upper side of said insulator, and a shoulder arranged in the wall of said cylindrical opening, a threaded sleeve contact concentrically arranged in said opening and having an opening in the wall thereof, a plate fitting within said threaded sleeve and having a locking lug extending through the said opening in the sleeve and projecting under the shoulder of the insulator, a binding screw passing through said plate and threaded sleeve contact and engaging one of the conductors, and a stud contact extending within the threaded sleeve contact and insulated therefrom and connected with a coöperating conductor, said stud being arranged at one side of the center of the threaded sleeve contact and receptacle.

5. A panel board receptacle comprising an insulator having a base and a central opening, an eccentric boss extending from said base, a threaded sleeve contact having a perforation encircling said boss and an opening in its side for a locking lug, a locking shoulder formed at one side of the central opening of the insulator, a clamping ring having an eccentric opening fitting the boss of the base and provided with a lug projecting through the said opening in the sleeve and under the shoulder of the insulator, a clamping screw engaging said ring

and one conductor and a contact member extending through the boss and engaging a second conductor.

6. A panel board receptacle comprising an insulator having a base and a central opening, and an eccentric insulating boss projecting upward from the base, a threaded sleeve contact having an eccentric perforation fitting said boss and an opening for a locking lug, a locking shoulder arranged in the side wall of the insulator, a locking ring resting upon the threaded sleeve contact and having a lug extending through the said opening in the sleeve contact and engaging the shoulder of the insulator, a binding screw passing through said locking ring and engaging a conductor and a stud contact extending through the said boss and engaging with another conductor.

7. A panel board receptacle comprising an insulating shell having a base and a central opening, a threaded sleeve contact seated in said opening upon the base and provided with an opening in its side for a locking lug, a recess in the side wall of the central opening forming a locking shoulder adjacent to the bottom of the threaded sleeve, a locking ring seated within the sleeve and having a lug projecting through the opening in the threaded sleeve and under the locking shoulder, a binding screw for locking the ring upon the sleeve and a stud contact insulated from the sleeve contact.

8. A panel board receptacle comprising an insulating shell having a base and a central opening, a threaded sleeve contact seated in said opening upon the base and provided with an opening for a locking lug through its side, a recess in the side wall of the central opening forming a locking shoulder adjacent to the bottom of the threaded sleeve, a locking ring seated within the sleeve and having a lug projecting through the opening in the threaded sleeve and into the recess under the locking shoulder, a conductor engaging the locking ring and extending through the base of the receptacle to engage and clamp the parts to a conductor and a stud contact extending through the base and engaging with a second conductor.

9. A panel board receptacle comprising an insulating shell having a base and a central opening, a threaded sleeve contact seated in said opening upon the base and provided with an opening through its side for a locking lug, a locking shoulder in the side wall of the central opening adjacent to the bottom of the threaded sleeve, a locking ring having a lug at one side projecting through the said opening in the threaded sleeve and under the locking shoulder, a binding screw engaging said ring at a point diametrically opposite the locking shoulder, said screw engaging a conductor, and a contact member projecting through said locking ring and insulated therefrom, said contact member engaging a second conductor.

CLARENCE D. PLATT.

Witnesses:
MAUDE F. SCRIPTURE,
GEORGE N. SEARS.