No. 759,941. PATENTED MAY 17, 1904.

J. H. TRUMBULL.

PLUG RECEPTACLE FOR ELECTRIC CIRCUITS.

APPLICATION FILED OCT. 9, 1903.

NO MODEL.

Fig. 1.

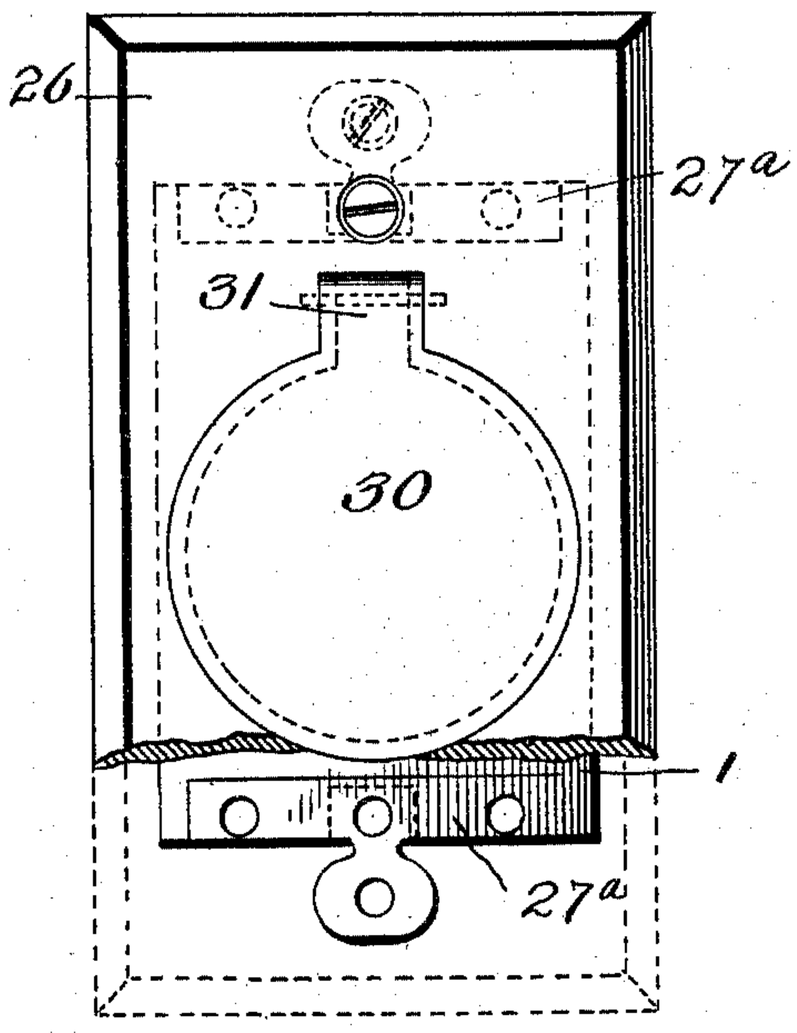


Fig. 2.

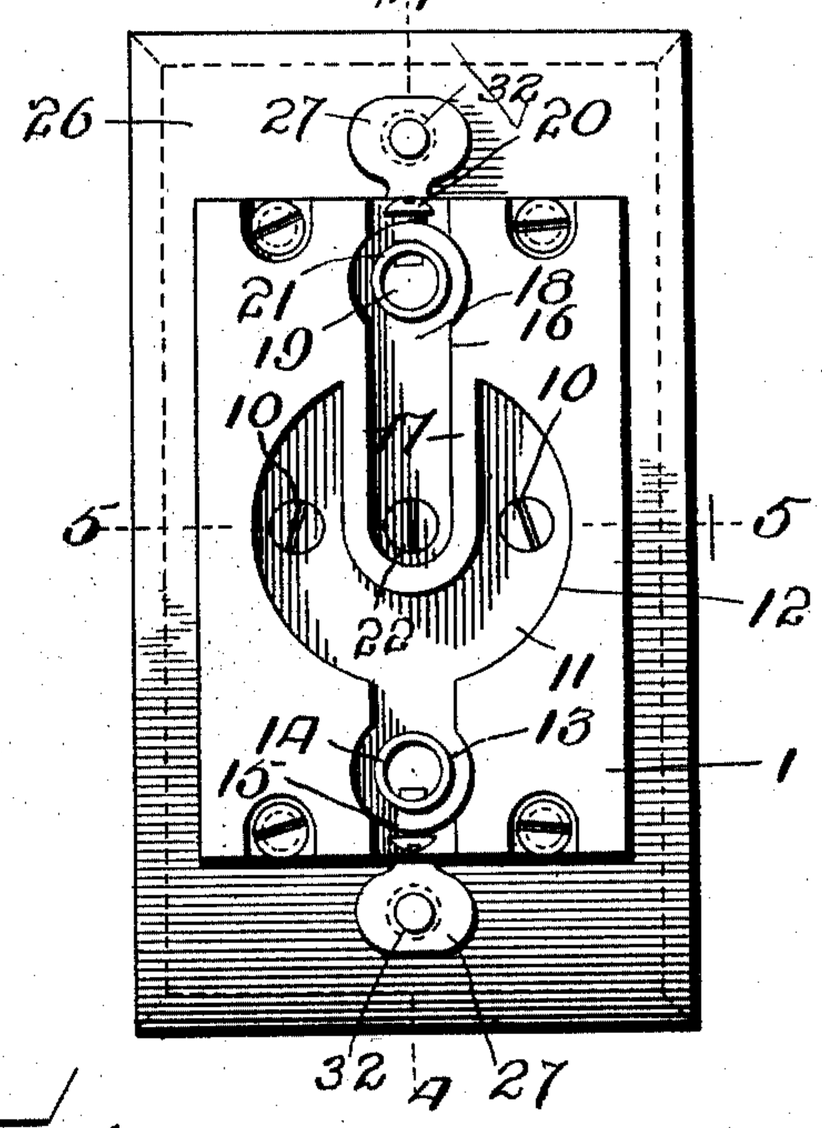


Fig. 3.

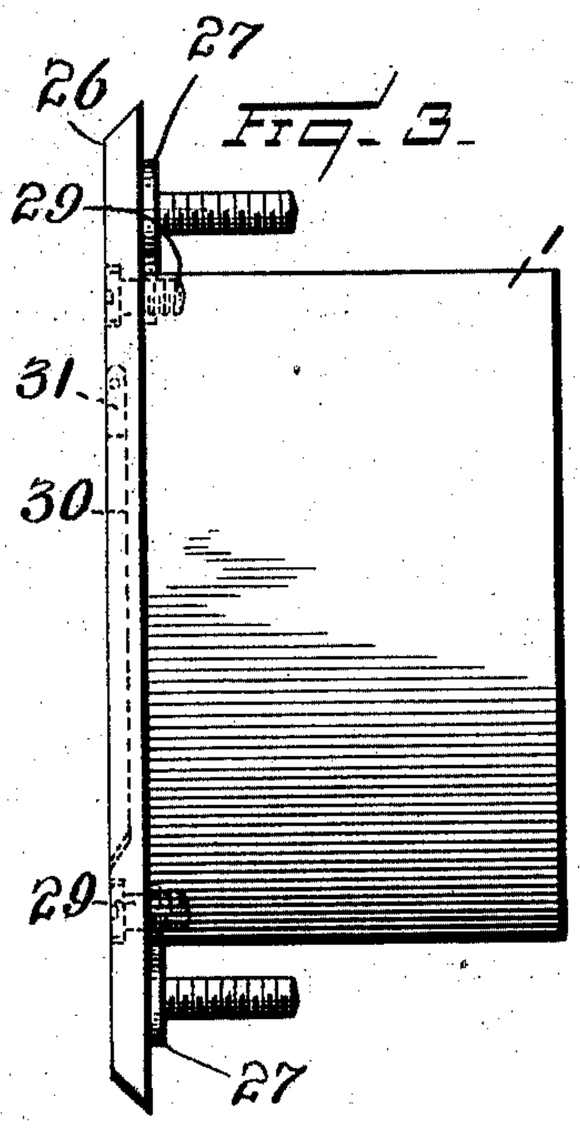


Fig. 4.

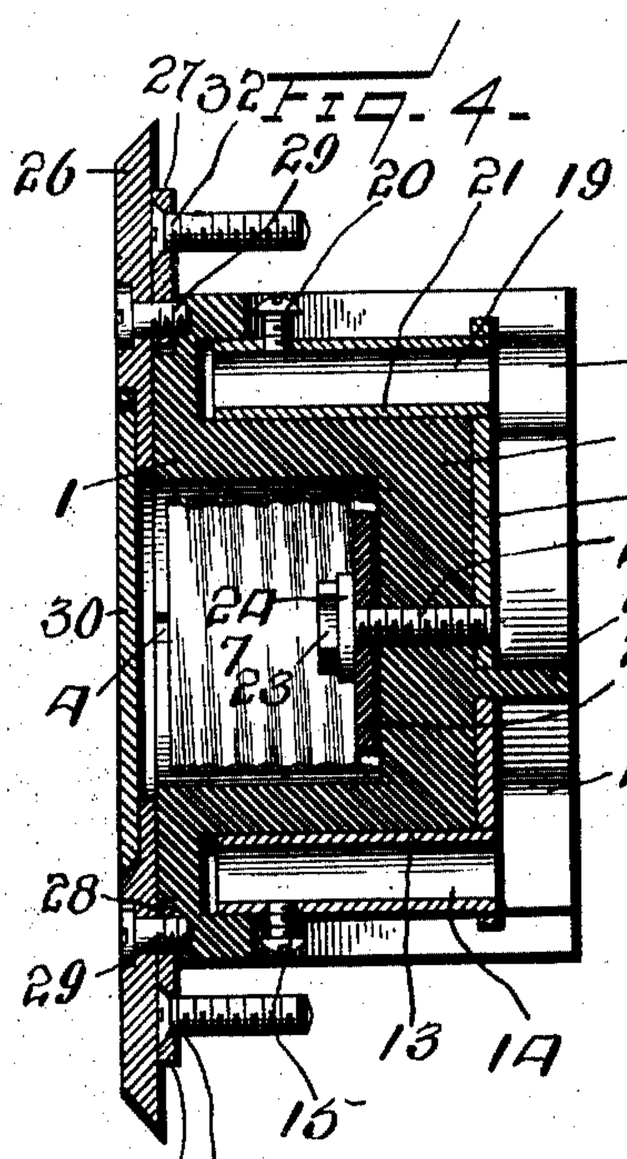
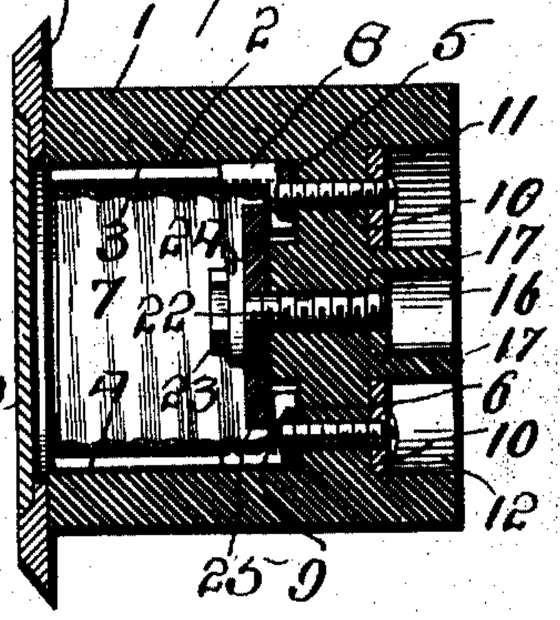


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN H. TRUMBULL, OF PLAINVILLE, CONNECTICUT, ASSIGNOR TO THE TRUMBULL ELECTRIC MANUFACTURING COMPANY, OF PLAINVILLE, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PLUG-RECEPTACLE FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 759,941, dated May 17, 1904.

Application filed October 9, 1903. Serial No. 176,388. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. TRUMBULL, a citizen of the United States, and a resident of Plainville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Plug-Receptacles for Electric Circuits, of which the following is a specification.

The invention relates to the class of devices generally known as "receptacles," and more particularly to a receptacle for forming the attachment of a plug with suitable electric line-wires.

The object of the invention is to provide a very substantial though inexpensive device which may be inserted in a wall-opening and will be flush with the wall when in place.

A further object is to provide a positive insulation about the line-wire terminals entering the receptacle.

A still further object is to arrange the conductors and contact parts in such relation to an insulated body part that they will be firmly held in place, isolated from each other, and may be subjected to heavy strains without liability of disarranging the parts.

Referring to the drawings, Figure 1 is a front face view of the device with the wall-plate broken away at one end to show construction. Fig. 2 is a rear view of the insulating-body, showing the relative arrangement of the contacts and appurtenant parts. Fig. 3 is a side view. Fig. 4 is a cross-sectional view on the line 4 4 of Fig. 2. Fig. 5 is a sectional view on the line 5 5 of Fig. 2.

In the accompanying drawings the numeral 1 denotes a body part, of insulating material, as porcelain, having a central recess or depression 2, with grooves 3 4, located, preferably, in the diametrically opposite walls of the central opening and connecting at the bottom of the depression or opening 2 with similar grooves 5 6. Within this central depression is arranged a screw-threaded shell 7, which has attached to it at opposite sides lugs or foot-pieces 8 9, which when the shell is in place rest within the grooves 3 5 and 4 6. These foot-pieces are perforated to permit the passage of binding-screws 10, which pass through the insulated body part and engage at its rear side a conductor 11. This conductor is arranged within a recess 12, formed in the body portion and connecting at one end with a cylindrical depression 13. The conductor 11 has attached to its end a tubular connecting member 14, which is firmly secured to the conductor 11 and provides a means for the attachment of a line-wire. A set-screw 15 holds the line-wire in engagement with the tubular part 14. The conductor 11 and its corresponding recess are of peculiar form, and centrally arranged with relation thereto is a depression 16 so formed that a wall of insulating material 17 is left between the depression 16 and the depression 12. Within this depression 16 is arranged a second conductor member 18, which at its outer end has connected to it a cylindrical member 19, which forms a connection for the second line-wire, a set-screw 20 providing a suitable means for securing the wire in place. This cylindrical member 19 extends into a depression 21, similar to the depression 13. Each of the depressions 13 and 21, which receive the cylindrical wire-connecting parts, are cut out as to their outer wall, leaving a free opening through the end walls of the receptacle to manipulate the binding-screws 15 20.

To the inner end of the conductor 18 is secured a screw-threaded post 22, having an enlarged head 23, which overlies a washer 24 and is insulated from the shell 7 by a washer 25, of insulating material. The head 23 of the post 22 forms one contact for connecting the line-wires with the connections of the plug, while the shell 7 forms the other contact. It will be seen from this construction that any ordinary screw-plug may be readily inserted or removed from the receptacle, and by arranging the parts as herein described all of the metallic conducting parts are thoroughly insulated one from another and are so held as to stand the greatest possible strains without liability of injury. A further advantage re-

sides in the simplicity of the parts. The metallic parts may be all stamped out and readily inserted and held in place.

To secure the face-place 26 in proper position, there are provided ears 27, screw-threaded, as at 28, which are engaged by screws 29, passing through the face-plate. This plate is provided with a hinged trap or cover 30, having its hinge arranged on an offset portion 31 in such position that the plates 30 may be raised clear of the opening to insert the plug, but in normal position will form a smooth surface over the opening to prevent ingress of dirt or moisture.

The ears 27 are preferably formed as part of a plate 27ª, and these plates are arranged in depressions in the opposite ends of the insulating body-piece and secured thereto, as by screws. The ears 27 provide the requisite means for securing the receptacle in place in a wall-opening and are provided with perforations 32, through which screws may be placed to hold the device in place.

It is to be noted that all conducting parts and contacts are located entirely within the material of the insulating-block or body portion of the receptacle. Recesses are formed which permit all metallic parts to be sunk down below the level of the outer walls of the insulating-block, and either set of conducting and contact parts may be readily removed without interfering with the second set of conducting and contact parts. In other words, the metal contact 23 may be removed, and thus will release the conductor 18 and wire-attaching part 19 without in any way interfering with the wire-connector 14 and connected parts, including the shell 7. It is also to be noted that the shell 7 is firmly held in place against rotation by the ears which coöperate with the grooves in the side walls of the depression which receives the shell, and, in fact, the shell may be greatly strengthened by extending the ears 8 9 upward along the outer surface of the shell and firmly securing them thereto.

Obviously the details of the several parts might be varied without departing from the intent or scope of the invention, and various forms of contact might be used in lieu of those herein shown and described, it being important that all of the main conducting parts are located on one side of and in depressions in the receptacle, while the contact-posts are arranged in the opposite side of the insulating block or section.

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

1. In combination in a receptacle, a block of insulating material having a cylindrical depression, grooves formed in the walls of said depression, a cylindrical contact member having means for holding it within the recess and provided with ears arranged upon the exterior walls of the cylindrical contact and adapted to rest in the recesses of the depression, a conductor arranged upon the opposite side of the insulating-block and having means for the attachment of a line-wire, and connections intermediate the ears and conductor.

2. In combination in a device of the class specified, a block of insulating material having a contact-recess, contacts arranged within the recess, recesses formed one about the other in the opposite side of the block from that occupied by the contacts said recesses terminating in cylindrical depressions, and conductors arranged within said recesses each comprising a conducting portion connected with one of the contacts and the wire-receiving section lying within the cylindrical recesses.

3. In a device of the class specified, a base of insulating material having a contact-opening of cylindrical form, grooves formed in the walls and bottom of said opening, a cylindrical contact member, lugs extending from the periphery of the cylindrical contact member and arranged to lie within the grooves, and a cooperating contact member concentrically arranged and insulated from the cylindrical contact member and lugs.

4. In combination in a receptacle, a block of insulating material having a cylindrical opening extending into the block, a cylindrical contact member arranged to be slid into said cylindrical opening, with its outer side walls adjacent to the side walls of the cylindrical opening, grooves arranged upon the adjacent side walls of one of the members and extending therealong and interengaging parts upon the adjacent walls of the coöperating member arranged to engage therewith, and means for preventing axial movement of the parts.

5. In combination in a receptacle, a block of insulating material having a cylindrical opening extending therein, a cylindrical contact member arranged to be slid into said cylindrical opening, grooves arranged upon one of the adjacent walls of these two members and extending from the face of the block to the base thereof, interengaging parts arranged upon the other member to register therewith, a cooperating contact member arranged within and insulated from the cylindrical contact member, conductors operatively arranged with reference to both contact members, and connections between the conductors and the contact members.

6. In combination in a device of the class specified, a block of insulating material having a cylindrical contact-opening extending therein, contacts arranged within said opening, depressed recesses formed in the opposite side of the block of insulating material from that occupied by the cylindrical contact-opening, said recesses being isolated one from the other by an intermediate and integral wall of the insulating material, conductors

filling said recesses and each provided with means for the connection of a line-wire, and connections intermediate the conductors and contacts.

7. In a device of the class specified, a block of insulating material having a contact-recess of cylindrical form extending therein, contacts arranged within the recess, depressed recesses formed in the opposite side of the block of insulating material from that of the cylindrical contact-opening, said recesses terminating in cylindrical depressions arranged substantially parallel with the main cylindrical contact-opening and isolated one from the other by an intermediate wall of insulating material integral with the block, conductors filling said recesses and provided at their ends with means for attachment of line-wires, and connections extending through the block of insulating material from the contact members to the conductors.

8. In a device of the class specified, a base of insulating material having a contact-opening extending thereinto, grooves formed along the wall of said opening, a contact member corresponding in form to that of the contact-opening and provided with lugs arranged to engage the grooves of the opening as said contact member is slid into said opening, and a coöperating contact member arranged within the first-named contact member, insulated therefrom, and means for preventing axial movement of the cylindrical contact member.

9. In a device of the class specified, a base of insulating material having a contact-opening, grooves formed in the walls of said opening, a contact member corresponding in form to that of the contact-opening and having lugs arranged to lie within the grooves of the opening, a coöperating contact member arranged within the first-named contact and insulated therefrom, depressed recesses formed in the opposite side of the base of insulating material from that occupied by the contacts and isolated one from the other by a wall of insulating material, conductors filling said recesses and each provided with means for attachment of a line-wire, and connections extending through the block of insulating material and connecting the respective contacts and conductors.

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