

C. E. AVERY.
FLUSH PLUG AND RECEPTACLE.
APPLICATION FILED APR. 18, 1904.

Fig. 1,

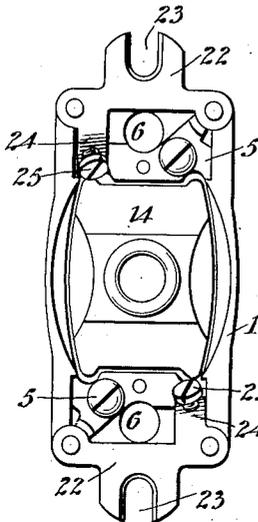


Fig. 2,

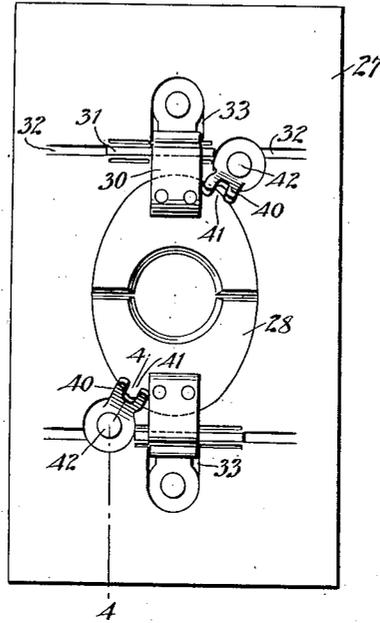


Fig. 6.

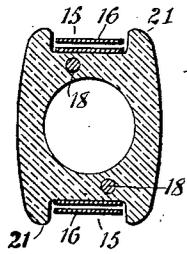


Fig. 4,

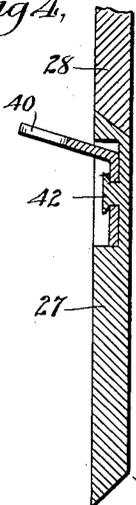


Fig. 3,

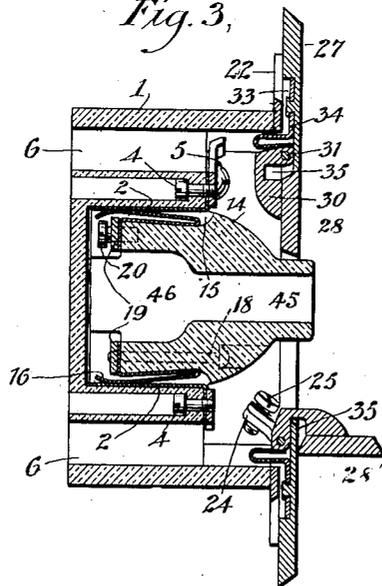
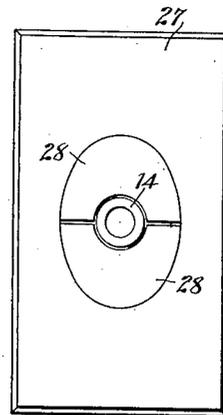


Fig. 5,



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UNITED STATES PATENT OFFICE.

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FLUSH PLUG AND RECEPTACLE.

No. 824,700.

Specification of Letters Patent.

Patented July 3, 1906.

Application filed April 18, 1904. Serial No. 203,716.

To all whom it may concern:

Be it known that I, CHARLES E. AVERY, a citizen of the United States, and a resident of the city of Jersey City, Hudson county, New Jersey, have invented certain new and useful Improvements in Flush Plugs and Receptacles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to electric cut-outs, and more especially to the form thereof known as "plug-receptacles" embodying a receptacle adapted to be supported in a recess—as in a wall, for instance—and carrying contacts which are connected with the main circuit-wires, a removable plug fitting said receptacle and carrying cooperating contacts which are connected with the conducting-wires of a translating device to be connected in the circuit, and a covering-plate for the receptacle provided with a door or doors through which the conducting-wires are carried.

In the drawings, wherein I have illustrated a preferred form of my invention, Figure 1 is a front elevation showing the receptacle and plug. Fig. 2 is a back view of the plate covering the receptacle. Fig. 3 is a vertical section of the device. Fig. 4 is an enlarged sectional detail on the line 4 4, Fig. 2, showing the manner of connecting the fastening devices. Fig. 5 is a front elevation showing the end of the plug projecting through the covering-plate, and Fig. 6 is a cross-section of the plug.

Similar reference characters are employed to designate corresponding parts in all the views.

The receptacle 1 is usually made of porcelain and is formed with a central chamber in which are arranged the contacts 2 2. These contacts are of conducting metal, and their bent outer ends are clamped by the screws 4 under the binding-post 5, to which are connected the line-wires which extend through the passages 6.

The plug 14 is also made of porcelain or other non-conducting material and is provided with a central aperture 45. The conducting-wires from the translating device extend through the aperture 45 into the recess 46, formed in the inner end of the plug, as

shown most clearly in Fig. 3. On each side of the plug a channel 15 is formed, in which is secured one of the plug-contacts 16. As shown, these plug-contacts are bent back upon themselves so as to be sufficiently resilient to maintain a good contact with the receptacle-contacts 2, and they are held in place by the screws 18, which pass through the plug and secure the plates 19, carrying the binding-screws 20, adjacent to the recess 46 in the inner end of the plug to permit the convenient and secure attachment of the conductors to the binding-screws.

The walls of the channels 15 project sufficiently beyond the surfaces of the contacts 16 to form guards 21, Fig. 6, which prevent the contacts from touching the metallic parts of the receptacle or the covering-plate and forming a short circuit when inserting or removing the plug.

Plates 22 are fitted to the face of the receptacle and are provided with slots 23 to receive the screws by which the receptacle is held in place. The plates 22 are also provided with the inwardly-extending inclined lugs 24, threaded to receive the screws 25.

A plate 27 covers the face of the plug. It is provided with a central elliptical aperture which is provided with two hinged doors 28, having opposed semicircular recesses, through which when the doors are closed the end of the plug 14, carrying the conducting-wires, projects. The aperture is not necessarily in the form of an ellipse, but may be of any desired shape which will permit the insertion and removal of the plug. It has, however, preferably, an unbroken contour-line free from any offsets for hinge-openings, and the exterior outline of the doors exactly corresponds therewith, so that the appearance of the plate is rendered more attractive while its cost is not increased. In order to secure this result and at the same time permit the doors to open to fully uncover the opening in the plate, each door is provided with a hinge member or connection 30, which may be secured to the back of the door in any suitable manner and projects beyond the edge of the door. Each hinge is loosely mounted upon a pivot 31. These pivots 31 are secured to the back of the plate 27, one on each side of the opening therein. The hinge-pivots are preferably secured to the plate by forming trans-

verse slots 32 therein, in which the pivots are placed, fitting the slots loosely, and then up-setting the sides of the slots, so as to grip the pivots and prevent any movement thereof.

5 The back of the plate 27 is also provided with recesses 33, which receive the ends of the hinge members 30 and permit the pivotal movement thereof, and in the recesses are also secured the loop-springs 34, the free ends
10 of which bear against the ends of the hinge members 30 when the doors are closed and which by the turning of the hinges on their pivots are brought into engagement with the front surface thereof, so that the doors are
15 held in either open or closed position by the springs.

The hinge members 30 are each provided with a recess 35, into which when the doors are opened the edge of the plate 27 will enter,
20 permitting the doors to be swung outwardly until they are substantially at right angles to the face of the plate, and the movement of the doors is arrested by the engagement of the edge of the door with the plate, as shown
25 in Fig. 3. Thus substantially the full area of the opening is uncovered, furnishing ample room for the insertion of the fingers in removing the plug.

The slotted lugs 40 are also secured to the
30 back of the plate 27. These are so located that when the plate is in position over the receptacle the screws 25 will enter the slots 41 in the lugs. The screws may then be tightened by means of a screw-driver inserted
35 through the opening in the plate 27, and the plate and receptacle are thus securely fastened together. The lugs 40 are preferably secured to the plate by means of countersunk integral studs 42, the lugs being formed
40 with an apertured projection which is fitted over the studs, and the ends of the studs are then upset, clamping the lugs fast to the plate. The springs 34 are secured to the plate in the same manner, and the front of the plate may
45 thus be finished smooth and is left free from screw-holes or rivet-heads.

Having thus shown and described my invention, what I claim as new, and desire to secure by Letters Patent, is—

50 1. In a plug-receptacle, the combination of a receptacle, a plate covering the same, and cooperating fastening devices secured to the back of the plate and the receptacle and projecting within the latter for securing the plate
55 to the receptacle.

2. The combination with a plug-receptacle of a plug of insulating material provided with an aperture for the conducting-wires extending
60 through the plug and terminating in an enlarged recess in the inner end of the plug, fastening devices for the conductors secured to the plug adjacent to said recess, channels formed on opposite sides of the plug, contacts secured in said channels to cooperate with
65 the receptacle-contacts, the walls of said

channels projecting above the contacts to form guards for the contacts.

3. In a flush-plug receptacle the combination with the covering-plate, an opening therein having a continuous contour-line, outwardly-swinging doors for the opening, a
70 hinge member secured to the back of each door and projecting beyond the edge thereof, a pivot for each door carried at the back of the plate and a recess in the hinge member to receive the edge of the plate when the door is
75 open.

4. In a flush-plug receptacle the combination with the covering-plate, an opening therein having a continuous contour-line, outwardly-swinging doors for the opening, a
80 hinge member secured to the back of each door and projecting beyond the edge thereof, a pivot for each door carried at the back of the plate and a spring secured to the plate for
85 holding the door in open or closed position.

5. An electrical receptacle in combination with a plug therefor, said receptacle being provided with means for direct electrical connection with a circuit-wire, contact-springs in
90 electrical connection with said means, said plug being provided with lateral recesses, and a bottom recess, contact-springs secured in said bottom recess, conductor-wires secured to said contact-springs in said bottom recess
95 and passing centrally through said plug.

6. A plug for an electrical receptacle, consisting of a block of insulating material having a peripheral recess extending around two of its sides and bottom, a central aperture
100 passing from the top and terminating in an enlarged cavity in the bottom.

7. The combination of a receptacle, a covering-plate therefor having hinged, recessed doors, a chamber in said receptacle, contacts
105 in said chamber and means for connecting the same in circuit, a plug consisting of a block of insulating material, a tubular projection upon said plug which projects into the recess in the doors of the covering-plate, an aperture
110 extending through said projection and into the plug, an enlarged recess at the inner end of said aperture forming an opening at the inner end of the plug, channels formed on opposite sides of the plug, contacts held in said
115 channels to cooperate with the contacts in the receptacle, the wall of said channels projecting above the contact to form guards for said contacts and means for securing a conducting-wire to each of said contacts substantially
120 as shown and described.

8. The combination of a receptacle, a covering-plate therefor having hinged, recessed doors, a chamber in said receptacle, contacts
125 in said chamber and means for connecting the same in circuit, a plug consisting of a block of insulating material, a tubular projection upon said plug which projects into the recess in the doors of the covering-plate, an aperture extending through said projection and
130

into the plug, an enlarged recess at the inner
end of said aperture forming an opening at the
inner end of the plug, channels formed on op-
posite sides of the plug, spring-contacts held
5 in said channels to cooperate with the con-
tacts in the receptacle, the walls of said chan-
nels projecting above the contacts to form

guards for said contacts and means for secur-
ing a conducting-wire to each of said contacts
substantially as shown and described.

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Witnesses:

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