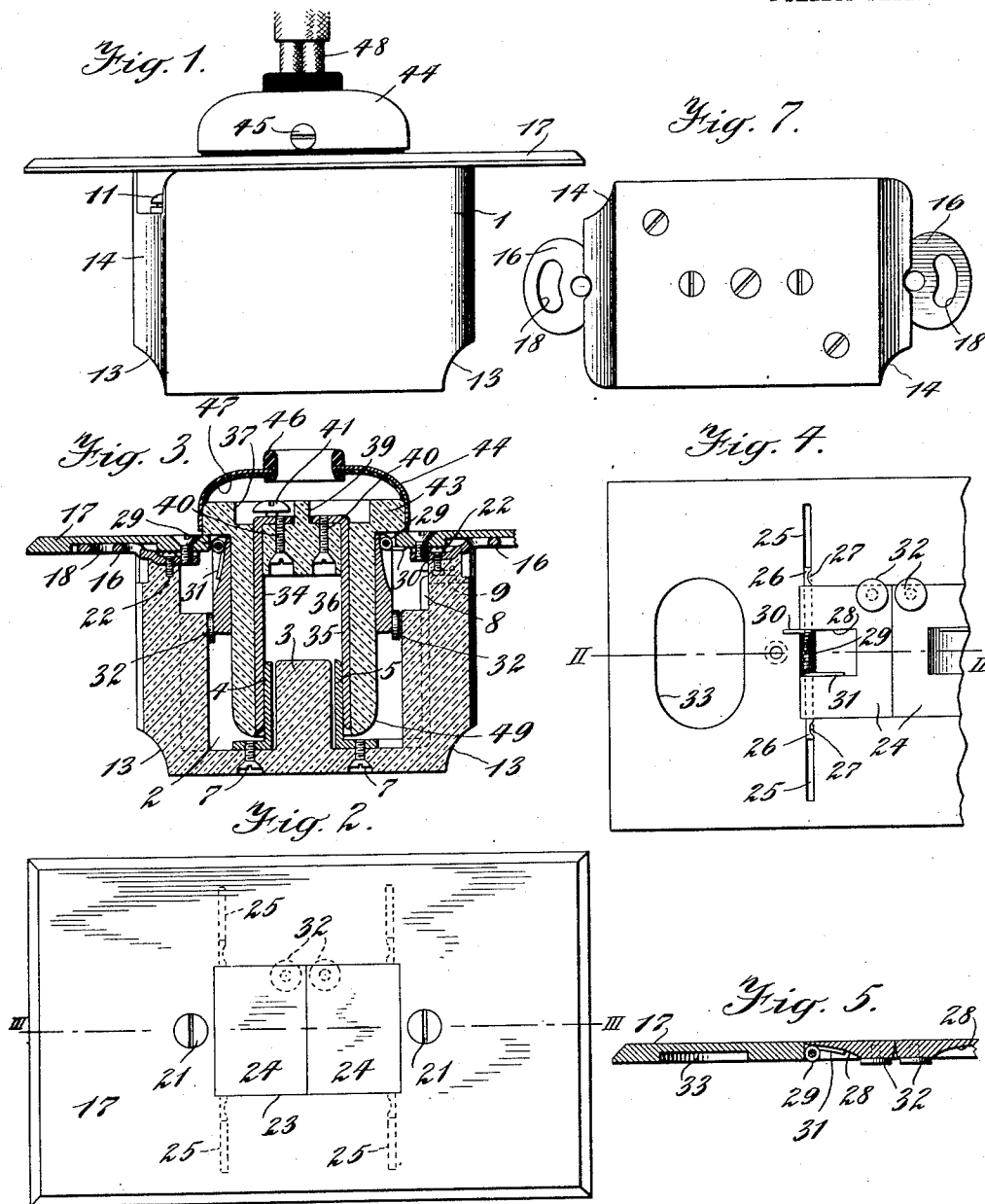


Patented Apr. 29, 1913.

2 SHEETS—SHEET 1.

1,060,011.



Witnesses:
John A. Cheney
Clas J. Hiden

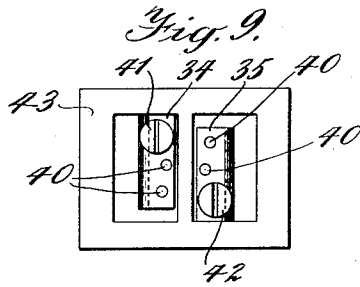
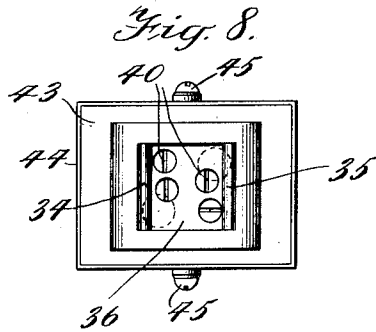
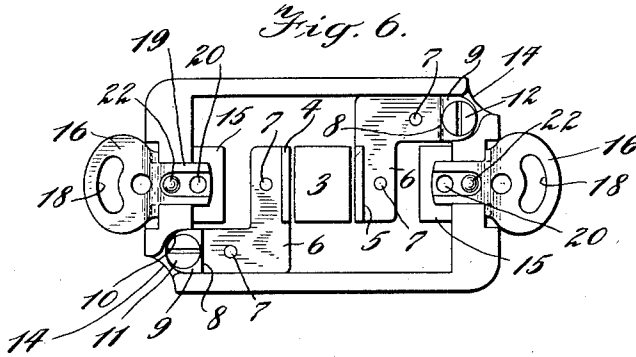
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W. J. NEWTON.
 FLUSH RECEPTACLE.
 APPLICATION FILED AUG. 12, 1911.

1,060,011.

Patented Apr. 29, 1913.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIAM J. NEWTON, OF LYNBROOK, NEW YORK, ASSIGNOR TO METROPOLITAN ELECTRIC MFG. CO., A CORPORATION OF NEW JERSEY.

FLUSH RECEPTACLE.

1,080,011.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed August 12, 1911. Serial No. 643,708.

To all whom it may concern:

Be it known that I, WILLIAM J. NEWTON, a citizen of the United States, residing at Lynbrook, in the county of Nassau and State of New York, have invented certain new and useful Improvements in Flush Receptacles, of which the following is a full, clear, and exact description.

This invention relates to flush receptacles, and has for its object the provision of means whereby in a device of this character when the plug has been withdrawn the aperture from which the said plug has been removed will be automatically closed, the cover plate and the doors which effect the said closure preferably presenting a plane and substantially unbroken surface. In receptacles of this character as heretofore constructed means have been provided for partially closing the plug opening in the cover plate, such means consisting of two outwardly movable flaps or slides. In order to readily displace the said flaps or slides it has been found necessary to provide openings therein to permit the introduction of a finger, or the like, whereby they may be engaged so that they may be swung outwardly substantially perpendicularly to the cover plate, if pivotally mounted, or separately thrust laterally, if slidably mounted, thus uncovering the aperture into which the plug is to be inserted. These types of flush receptacles are objectionable for several reasons. In the first place the plug cavity is not completely closed owing to the necessity for supplying the finger hole or holes in question, and in the pivoted flap type when the flaps are in their outermost position, if the plug has been withdrawn, the plug cavity with its terminals remains exposed so that there is always a possibility of short circuiting occurring by the inadvertent introduction of conducting material into the said cavity. Furthermore it has been necessary in both the slide and flap constructions to separately close the slides or flaps after the plug has been removed, and as has been above stated, if one neglects so to do, the plug cavity is left open. Furthermore in the pivoted flap type the outstanding flaps project from the surface of the wall and are apt to tear the clothing of a person passing by; the projecting flaps being also unsightly. My present invention not only eliminates

these objectionable features, but does away with the necessity of handling the cover flaps or doors at all, the opening and closing of the flaps being substantially automatic, the mere introduction of the plug sufficing to uncover the plug aperture, and the said aperture being automatically covered when the plug is removed.

A further object of my invention is to utilize the flaps in question not only as covers for the plug aperture but also as guides for the plug.

A still further object is to so form the plug that any inadvertent short circuiting across the plug terminals is practically obviated; the said terminals being also protected from injury by being substantially inclosed within the plug.

These and other objects of my invention will be hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings which form a part hereof and in which like reference characters designate like parts throughout the several views: Figure 1 is a side elevation of one embodiment of my invention. Fig. 2 is a plan of the receptacle, the plug being removed. Fig. 3 is a section taken on the line III—III of Fig. 2, the plug, however, being shown in position in the receptacle. Fig. 4 is a bottom view of the receptacle cover shown detached from the receptacle. Fig. 5 is a section of the said cover taken on the line II—II of Fig. 4. Fig. 6 is a plan of the receptacle base, with the said cover removed therefrom. Fig. 7 is a bottom view of the receptacle base. Fig. 8 is a bottom view of the plug, and Fig. 9 is a plan of the plug, the plug cap being removed.

The base or body of the receptacle may be made of any suitable insulating material such as hard rubber, fiber, or the like, the said base having a plug receiving recess 2 therein, which recess is preferably substantially rectangular. Upwardly projecting from the bottom of the said recess is a boss or projection 3 of preferably rectangular contour, as shown in Fig. 6. Upon the respective opposite sides of this boss are the contact making ends of the terminals 4 and 5. These terminals are substantially the same in contour and the bases or bodies 6 thereof are secured to the bottom of the recess 2 by means of the countersunk screws

7. The body portions 6 are substantially L-shaped and have bent-up ends 8 which extend up the respective sides of the recess 2 adjacent the corners thereof, the extremities of these up-turned legs 8 being bent over as at 9 and extending into pockets 10 formed in the edge of the box like base. Binding posts or screws 11—12 are threaded into the respective bent ends 9 and afford means for electrical connection. The lower edges of the ends of the base are cut away or recessed as at 13 and diagonally opposite outer edges of the receptacle are correspondingly cut away as at 14; recesses 13 and 14 affording space for the current leads when the receptacle base is placed in the usual container box in the wall. Projections 15 are also formed upon the respective end walls of the recess 2 for the purposes hereinafter noted. The insulating base carries the usual attachment ears 16 which are preferably of metal and having inwardly directed extensions 19 which are apertured at 20 for the reception of screws 21 of the cover plate; the said extensions being also secured to the insulating base by means of studs 22, or the like. The cover plate 17 is provided with a preferably rectangular aperture 23 which is adapted to be closed by two flaps or doors 24 which have a bias for terminal covering position.

Referring to Figs. 2 and 4, it will be noted that the underside of the cover plate has grooves 25 milled therein and that each of the flaps 24 has a hinge pin 26 extending longitudinally through the body of the said flap adjacent its edge. The projecting extremities of the hinge pins 26 are received in the respective grooves 25, and they may be secured in position in said grooves by burring over a wall of each of said grooves as at 27; which may readily be accomplished by means of a prick punch. Each flap 24 has a preferably milled recess 28 in its underside adapted for the reception of a light helical spring 29 through which extends the corresponding hinge pin 26; one extremity 30 of each spring 29 engaging the underside of the cover plate 17, and the other extremity 31 correspondingly engaging the underside of the adjacent flap. Means are provided for preventing the spring from throwing the flap outwardly beyond the outer surface of the cover plate, such means preferably consisting of buttons 32 which may be secured to the underside of the respective flaps in any suitable manner; each of these buttons projecting slightly beyond the edge of its flap so as to engage the under surface of the cover plate. The cover plate may be recessed as at 33 upon the underside thereof adjacent either extremity so as to accommodate the ears 16.

As shown in Figs. 3, 8 and 9, the plug for this receptacle is of materially different

construction from plugs of this character as heretofore made, in that the present plug is hollow or recessed and the plug contacts are disposed within this recess rather than upon the outside of the plug. These contacts have respectively been designated 34 and 35; both being L-shaped, and the longer legs of each L extending down along opposite walls of the recess 36 of the plug. The upper face of the plug proper is also preferably recessed, two depressions 37 and 38 being provided, which are separated by a septum 39. The contacts or plug terminals are inserted into position from above; the longer legs of said contacts extending through suitable slots which connect the respective recesses 37 and 38 with the recess 36, while the short legs of the said terminals, when in position, bear against the bottoms of the respective recesses 37 and 38. Countersunk screws 40 may be provided for holding said terminals fixedly in position. Plug terminal 34 is provided with a binding post or set screw 41, and terminal 35 is correspondingly provided with a binding post 42. The insulating plug is flanged as at 43 to limit its movement into the receptacle and a dome-shaped cap 44, preferably of metal, serves to cover the upper extremity of the plug, the edges of said cap engaging the edges of the flange 43,—and the cap being held in position by means of screws 45, or in any other suitable manner. The cap 44 is apertured, preferably centrally thereof, for the reception of an insulating ring or thimble 46, the upper edge of the thimble being flanged, and the lower edge thereof being outwardly flared after the thimble has been inserted into the cap in order to secure said parts together. I prefer also to provide a sheet of insulating material 47 within the cap, which may be held in place by the flared edge of the thimble 46 in the manner shown in Fig. 3. It will thus be seen that the lead wires 48 may be led through the opening in the thimble 46 and respectively connected to the posts 41 and 42, without possibility of the wire coming in contact with the metal cap. Furthermore, the septum or wall 39 effectually prevents any possibility of short circuit, and as the exposed portions of the plug terminals are entirely within the recess 36 of the plug, inadvertent short circuiting is practically impossible. The plug may hence be thrown down carelessly in contact with charged conductors without danger. When the plug is in position in the receptacle, the flaps 24 are disposed as shown in Figs. 2, 4 and 5, and the cover plate presents an unbroken surface, the plug receiving recess of the receptacle being completely covered, thereby obviating the likelihood of dust accumulating therein. Furthermore, since the exposed

surface is entirely plane when the plug is removed there is no possibility of clothing, curtains, or the like, being damaged by contact therewith, and as the flaps open inwardly there is at no time possibility of damage to such articles. When it is desired to insert the plug into the receptacle it is merely necessary to push the end thereof against the flaps or doors 24, when the flaps will promptly open inwardly. When the plug is being inserted these flaps move inwardly until the end surfaces of their free extremities engage the vertical walls of the projections 15, thereby providing guides for the plug to insure its proper emplacement. As the plug moves inwardly, plug terminal 34 engages the receptacle terminal 4, while plug terminal 35, correspondingly engages the receptacle terminal 5. The upper extremities of the terminals 4 and 5 are preferably slightly rounded as are also the downwardly projecting extremities of contacts 34 and 35, and terminals 4 and 5 are also preferably somewhat resilient so as to insure effective contact. When the plug is in position current will be led in, let us say, through one of binding posts 11, and will then traverse the body 6 of terminal 4, passing thence through the upstanding leg of terminal 4 into plug terminal 34, from whence it may pass out via one of the wires 48 and through a lamp or other device returning to post 42 and flowing from thence down terminal 35 and into receptacle terminal 5, emerging from the receptacle at the remaining binding post 11 of the said receptacle.

I desire to direct attention to another advantageous feature of my novel receptacle. When the plug is being removed, the flaps or doors again serve as guides until the plug has been withdrawn to a considerable extent. Thereafter the springs 29 urge the doors outwardly and as the innermost edges of the plug are well rounded as at 49, there is a strong tendency to forcibly eject the plug during the last portion of the withdrawing movement so that if the plug be nearly withdrawn it will automatically be forced out of the way and the flaps 24 will spring closed. I wish also to point out the fact that since the flaps are under spring tension, they will serve as guides to steady and direct the inward movement of the plug whether they are provided with the back stops or not. For this reason they are peculiarly adapted to operate in connection with a plug having a chamber which must find and pass over a projection in the bot-

tom of the receptacle in order to make contact.

I am aware that many modifications of my device may be made without departing from the spirit of my invention, and hence desire to be limited only by the scope of the appended claims.

Having described my invention, I claim:

1. An electrical appliance comprising a recessed base, an apertured cover plate therefor, inwardly swinging flaps normally closing the aperture in said plate and provided with means tending to move them to the closed position, means for limiting the inward swing of said flaps to substantially 90°, electrical contacts within the recessed base and a plug carrying corresponding contacts and adapted to be guided into said recess by the flaps when held at the inward limit of their swing.

2. An electrical appliance comprising a recessed base provided therein with an outwardly projecting contact member, and a plug of insulating material having a cavity in its forward end in which is located a corresponding contact member, the contact member in the base being adapted to enter the cavity in the plug and make contact therein with the contact member in the plug, in combination with an apertured cover plate for said base having inwardly swinging spring pressed flaps, normally covering said aperture and adapted to guide said plug on its entry into said recessed base for the purpose set forth.

3. An electrical appliance comprising an insulating base having a recess in the bottom of which is a projection of insulating material, contacts located on opposite sides of said projection, a plug of insulating material having an axial chamber in its forward end and provided in said chamber with contacts, said projection in the base, with its contacts, being adapted to enter the chamber in the plug when the latter is inserted into the recess of the base, and thereby bring the two sets of contacts into engagement with each other and an apertured cover plate having spring pressed flaps adapted to guide the plug so that its chamber will pass over the projection of insulating material in the base, substantially as described.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

WILLIAM J. NEWTON.

Witnesses:

WALDO M. CHAPIN,
JAMES D'ANTONIO.