May 10, 1932. E. CLEMENCE 1,858,072

ATTACHMENT PLUG RECEPTACLE

Filed June 25, 1927

Fig. 1

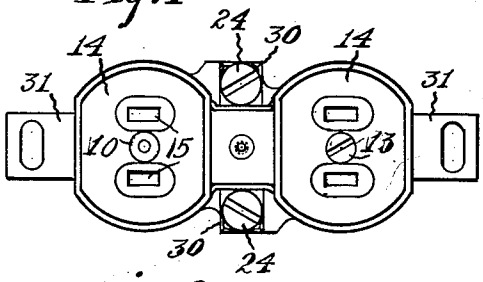


Fig. 4

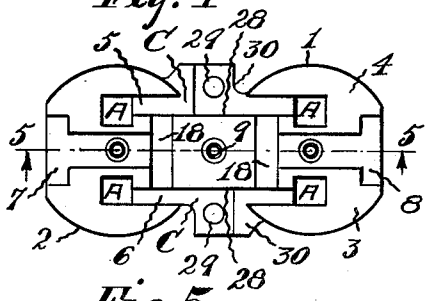


Fig. 2

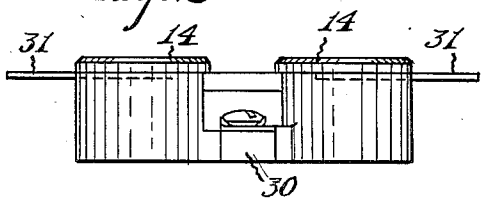


Fig. 5

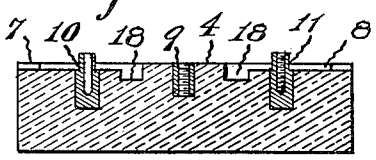


Fig. 3

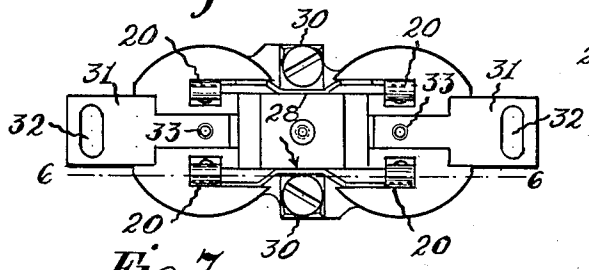


Fig. 6

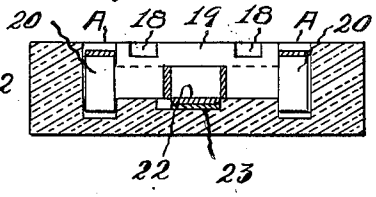


Fig. 7

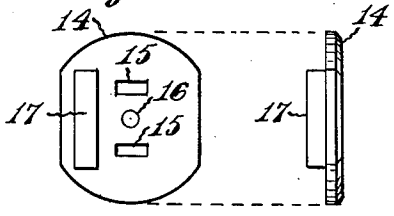
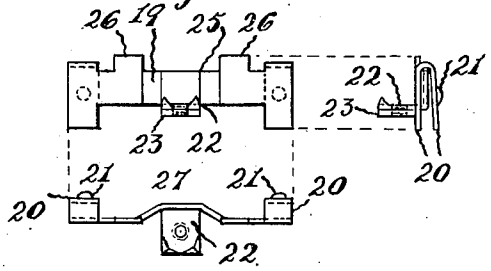


Fig. 8



INVENTOR

Elliott Clemence,

BY

Harold D. Penney ATTORNEY

Patented May 10, 1932 1,858,072

UNITED STATES PATENT OFFICE

ELLIOTT CLEMENCE, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE MONOWATT ELECTRIC CORPORATION, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT

ATTACHMENT PLUG RECEPTACLE

Application filed June 25, 1927. Serial No. 201,504.

My present invention relates to an improvement in attachment plug receptacles, and has for its main objects the simplification of the parts whereby the molding of the insulator parts comprising the body thereof may be simply and easily made without complex dies and molds, and whereby throughout the structure, especially in a two-circuit device, the metallic conducting parts thereof as well as the metallic attachment parts not in circuit are duplicates, thereby halving the die work necessary for striking up the metallic portions used.

Other advantages of my device are that, owing to the location of the contact recesses for receiving the metal parts of opposite polarity, these particular members are widely spaced, insuring absolute insulation, and at the same time are located to receive the standard connector plugs now in use.

A further advantage is in the arrangement of the recesses in the main insulator body, wherein said recesses are all open from the top of the body, with no openings at the rear thereof.

Another advantage of my device is that the parts of the receptacle after being quickly and easily assembled, are fixedly held in assembled condition by the simple operation of fastening two cover plates, with a single fastening means for each plate, which in addition to locking the assembly also locks up receptacle attaching straps in a rigid and suitable manner.

These and other capabilities will be ascertained as the description proceeds, and it is obvious that structural modifications may be made in the details of my receptacle without departing from the spirit thereof or the scope of the appended claims.

In the drawings:

Fig. 1 is a plan view of my device.

Fig. 2 is a side view thereof.

Fig. 3 is a plan view with the plug receiving cover plates removed.

Fig. 4 is a plan view of the main recessed receptacle body with all assembly removed.

Fig. 5 is a sectional view taken on the line 5—5, Fig. 4, looking in the direction of the arrows.

Fig. 6 is a sectional view taken on the line 6—6, Fig. 3.

Fig. 7 is a combined view of the plug receiving cover plate showing the bottom and end view thereof.

Fig. 8 is a combined view of one of the duplicate contact members in side, plan and end elevation.

While certain features of the present invention are adapted for use in single flush receptacles, the invention is for convenience illustrated as applied to a duplex flush receptacle. The parts are all carried by an insulating body 1, which may be made of porcelain, hob molded, or other insulating material. The base for the duplex receptacle is shaped to have two substantially cylindrical end sections 2 and 3, and two centrally disposed laterally extending lugs 30. The front face 4 of the base is provided with a number of recesses. As here shown, these recesses are in pairs; 5 and 6 adapted to receive contact members, and 7 and 8 adapted to receive supporting straps. The insulating body is also provided with key receiving recesses 18.

In the molding of these bodies there is also provided a series of bushings, one of which, 9, is a centrally located bushing threaded and embedded and molded into the material as shown in Fig. 5. In addition thereto, there are also provided at substantially the center of the cylindrical members 2 and 3 two upstanding pins or thimbles 10 and 11, provided with a thin upstanding cylindrical portion adapted to be either spun over in the form of a hollow rivet or threaded to receive a screw.

The other insulating parts of the duplex receptacle may consist of cover caps or plates 14, preferably made out of molded material. These covers are provided with blade receiving slots 15, spaced to receive the blades of attachment plugs, and also with central holes 16 adapted to receive the pins or thimbles 10 and 11. The cover plates are also provided with rearwardly extending keys 17, adapted to enter the recesses or depressions 18 in the front face of the body 1, these keys and recesses being adapted to align the cover plates when the parts are assembled.

One of the conducting members, suitable for a duplex receptacle having a base of the type above described, is shown in detail in Figure 8. Figure 3 shows the assembly of these conducting members in the insulating base. These conducting members 19 are alike, and each is made from a flat blank of suitable resilient metal such as manganese bronze, the stamping being bent to suitable form to provide on opposite ends a pair of folded over spring contacts 20. These spring contacts may be provided with the usual indentation or teat 21. The contact member 19 is also provided with a centrally located laterally extending lug 22 to the bottom of which is secured a reinforcing plate 23. The lug and plate are threaded for a wire receiving screw 24. Portions of the conducting strip are bent as indicated at 25, to provide an offset central portion 27, and the conducting strip is provided with upwardly extending lugs 26 which are carried slightly above the fold in the spring contacts.

In order to receive the contact members 19 in operative relation, as is fully disclosed in Fig. 3, the longitudinal recesses 5 and 6, which, it will be noted, are cut in opposite sides of the body 1, and are open at an intermediate point C, at the sides, Fig. 4. The recesses 5 and 6 are each provided at their ends with rectangular depressions A somewhat deeper and wider than the remainder of the recesses. These recesses conform to the shape of the conducting members, and are adapted to receive the conducting members, as indicated in Figures 3 and 6, and hold them immovably therein. When the contact members are inserted in place, the offsets 27 rest against the side walls 28 of the recesses 5 and 6, and the lugs 22 and the conducting members extend outwardly to overlie the lugs 30 on the insulating base. These lugs are provided with enlarged blind holes 29 to receive the screws 24.

As a means for attaching the plug receptacle to the usual outlet box, there is also provided a pair of metallic attaching straps 31 which are provided with the usual enlarged attaching screw-receiving hole 32, of oblong form, whereby the said device upon installation may be properly attached to the face of the outlet box in the usual and well known manner.

In the present instance the straps 31 are made separate and, as in the case of the contact member 19, are duplicates and are of such form that they are firmly and rigidly received into the shallow conforming recesses 7 and 8, as indicated in Figs. 2, 3, 4 and 5, and the straps are further provided with bores 33 whuch suitably register with the upstanding bushings 10 and 11, so that when the straps are inserted in the position shown in Fig. 3, they are substantially flush with the top face 4 of the body 1.

In assembling the devices, the duplicate contact members 19 are inserted in the recesses 5 and 6, thereby placing the spring contacts in the depressions A, and bringing the screw receiving lugs 22 against the lugs 30 on the insulating base. When the contacts are in this position, the upwardly extending members 26 are flush with the upper face of the insulating base. The straps 31 are inserted in place in the recesses 7 and 8, and then the cover plates are secured in position either by the screws 12 and 13 or by upsetting or riveting the end of the inserts 10 and 11. The cover members bear on the extensions 26 and secure the contacts and attaching strips in place. The receptacle is then ready for installation. The connections may be readily made by placing the wires under the heads of the screws 24.

From the foregoing description and the drawings it will be ascertained that all openings in this device are from the top of the body 1, and that owing to this structure the body 1 is easily molded in a simple type of mold because of the fact that the openings are drafted in one direction for easy withdrawal from the mold.

It will be further ascertained that the assembly of all parts necessitates the handling of only six pieces, disregarding the screws, and that they are all introduced from the top of the structure and that two simple fastening means, also on the top, lock the entire assembly in operative relation, as previously described.

It will therefore be ascertained that I have designed an attachment plug receptacle of great simplicity, easy to assemble, and therefore of greater economy in manufacture, and at the same time have improved the article as to obviate the tendency of short-circuits by widely separating the operative parts, all of said parts being paired and being duplicates, thereby further reducing the cost of manufacture through the elimination of extra sets of dies.

It will, of course, be understood that many of the features of the duplex receptacle above described may be employed in a single flush receptacle. Also that various modifications may be made within the scope of the appended claims.

Having thus described my invention what I claim is:

1. An attachment plug receptacle comprising an insulator body portion provided with a plurality of recesses from the top thereof, duplicate circuit contact members and, duplicate receptacle attaching straps, which are located in said recesses, a pair of cover plates mounted thereover with a single attaching means for each of said cover plates whereby said cover plates are held in operative position, and lug means on said contact members for engaging the sides of said recesses and

said cover plates whereby said contact members are firmly held in operative position.

2. In an attachment plug receptacle an insulator body receptacle provided with recesses from the top thereof, a pair of metallic circuit conducting members therein, keyways molded in said body member and disposed between said recesses, and a pair of covers for said receptacle, each of said covers being provided with a key for cooperating with the keyway to lock said covers in operative relation.

3. In an attachment plug receptacle, an insulator member provided with a plurality of recesses therein entering from the top, a pair of said recesses being at the ends of said body and adapted to receive therein oppositely mounted duplicate strap attaching means, another pair of said recesses being adapted to receive therein duplicate opposing metallic circuit conducting members, said last recesses being on opposite sides of the said body, and opening to the opposite sides thereof to provide an outlet for wire attaching means on said conducting members, and cover plates fixedly secured to said insulating member over said recesses and adapted to secure therein said attaching means and said circuit conducting members.

4. In an attachment plug, an insulator body provided with receptacle attachment means comprising a pair of oppositely mounted attachment straps set in conforming recesses in said body, and insulating cover plates overlying the straps, and metallic attaching pins, one for each plate, one of said insulating parts being apertured to receive the corresponding pin which is secured to the opposite part, the pin being riveted over to secure the cover plate and the strap overlaid thereby in place.

5. In an attachment plug receptacle, an insulating body having strap recesses, straps in said recesses, the body having contact receiving recesses, contacts therein, cover plates having blade receiving openings, and aligning keys registering with recesses in the body, and means for securing the cover plates in position on the straps to hold them in the recesses.

6. An attachment plug receptacle comprising an insulating base provided with a plurality of contact receiving recesses opening toward the front face of the base, the recesses having lateral openings, a pair of contact members conforming to the shape of the recesses and insertible into the recesses from the front face of the base, each contact member having a spring terminal opposite the corresponding spring terminal of the other contact member and a wire receiving terminal extending out through the lateral opening, and an insulating cover plate secured to base, the cover plate having apertures to permit contact blades to pass through to reach the spring terminals, the cover plate and contact members having co-operative parts to force the contact members to the bottom of the recesses whereby they are immovably held therein.

7. An attachment plug receptacle comprising an insulating base provided with a plurality of contact receiving recesses opening toward the front face of the base, the recesses having lateral openings, a pair of contact members conforming to the shape of the recesses and insertible into the recesses from the front face of the base, each contact member having a spring terminal opposite the corresponding spring terminal of the other contact member and a wire receiving terminal extending out through the lateral opening, and an insulating cover plate, one of the said insulating parts having a metallic attaching pin adapted to pass through an aperture in the other and be riveted over to secure the two parts together, the cover plate having apertures to permit contact blades to pass through to reach the spring terminals, the cover plate and contact members have co-operative parts to force the contact members to the bottom of the recesses whereby they are immovably held therein.

8. An attachment plug receptacle comprising an insulating base provided with a plurality of contact receiving recesses opening toward the front face of the base, the recesses having lateral openings, a pair of contact members conforming to the shape of the recesses and insertible into the recesses from the front face of the base, each contact member having a spring terminal opposite the corresponding spring terminal of the other contact member and a wire receiving terminal extending out through the lateral opening, an insulating cover plate secured to base, the cover plate having apertures to permit contact blades to pass through to reach the spring terminals, the cover plate and contact members having co-operative parts to force the contact members to the bottom of the recesses whereby they are immovably held therein, the base having a recess in the front face, disposed between the contact receiving recesses, and an attaching strap fitted therein and held by said cover plate.

9. An attachment plug receptacle comprising an insulating base provided with a plurality of contact receiving recesses opening toward the front face of the base, the recesses having lateral openings, a pair of contact members conforming to the shape of the recesses and insertible into the recesses from the front face of the base, each contact member having a spring terminal opposite the corresponding spring terminal of the other contact member and a wire receiving terminal extending out through the lateral opening, and an insulating cover plate secured to base, the cover plate having aper-

tures to permit contact blades to pass through to reach the spring terminals, the cover plate and contact members having co-operative parts to force the contact members to the bottom of the recesses whereby they are immovably held therein, the base having lateral extending supporting lugs underneath the wire receiving terminals.

10. An attachment plug receptacle comprising an insulating base provided with a plurality of contact receiving recesses opening toward the front face of the base, the recesses having lateral openings, a pair of contact members conforming to the shape of the recesses and insertible into the recesses from the front face of the base, each contact member having a spring terminal opposite the corresponding spring terminal of the other contact member and a wire receiving terminal extending out through the lateral opening, and an insulating cover plate secured to base, the cover plate having apertures to permit contact blades to pass through to reach the spring terminals, the cover plate and contact members having co-operative parts to force the contact members to the bottom of the recesses whereby they are immovably held therein; the cover plate having an alignment lug adapted to enter a recess in the insulating base to align the apertures with the spring terminals.

11. In an attachment plug receptacle, a one piece insulating body member provided with a plurality of longitudinal recesses entering therein from the top, said recesses being adjacent opposite sides of said body and opening centrally through said sides, duplicate opposing metallic conducting members disposed in said recesses and extending through said side openings to the outside of the body and there provided with wire attachment means, and cover plates fixedly secured to said body over said recesses and adapted to secure said conducting members therein.

Signed at New York, in the county of New York and State of New York, this 24th day of June, A. D. 1927.

ELLIOTT CLEMENCE.