Oct. 1, 1929. H. J. MOREY 1,729,678

DUPLEX FLUSH RECEPTACLE

Filed April 13, 1925

FIG. 1.

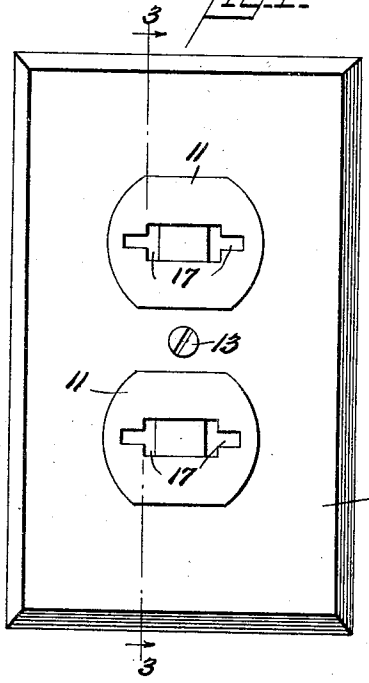


FIG. 2.

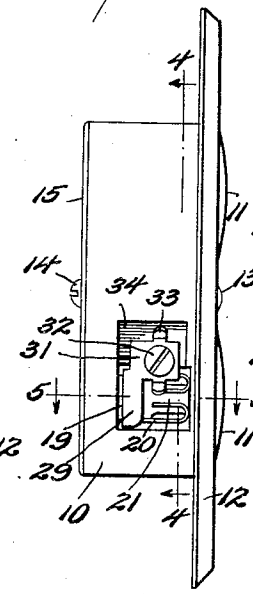


FIG. 3.

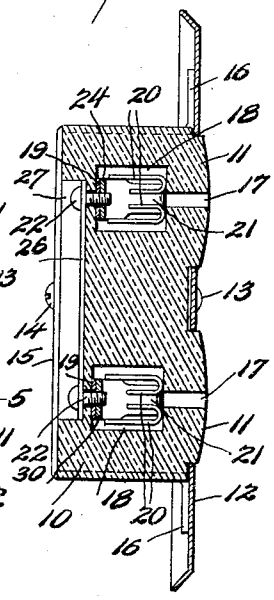


FIG. 4.

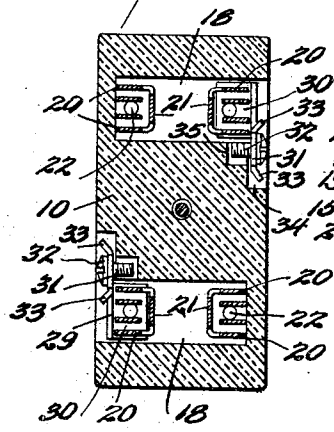


FIG. 5.

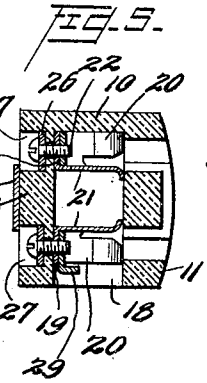
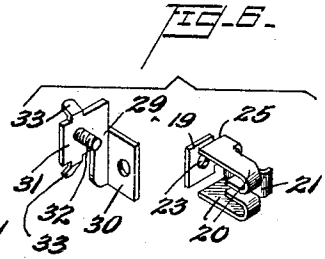


FIG. 6.



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UNITED STATES PATENT OFFICE

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DUPLEX FLUSH RECEPTACLE

Application filed April 13, 1925. Serial No. 22,836.

The present invention relates to duplex flush receptacles of that type adapted to be mounted in a wall or baseboard and to receive a pair of attachment plugs.

It is a general object of the present invention to provide a novel and improved form of duplex flush receptacle.

More particularly it is an object of the present invention to provide a duplex flush receptacle which has a single unitary insulating block provided with a pair of contact receiving recesses each adapted to contain a pair of contacts, said recesses opening on opposite sides of the block.

Another object of the present invention consists in the provision of a duplex flush receptacle having a unitary insulating block provided with recesses in which are mounted, each by a single mounting and connecting means, a plurality of stationary contact members.

A further object of the present invention consists in the provision of a duplex flush receptacle provided with a single unitary insulating block carrying contacts and circuit terminals, contacts of like polarity being connected together and to the circuit terminal and mounted upon the block by a single means.

A still further object of the present invention consists in the provision of a duplex flush receptacle having novel means for connecting together contacts of like polarity so that the connecting bars of opposite polarity are spaced and positively insulated from each other by a partition forming a portion of the insulating block.

Other and further objects will appear as the description proceeds.

In the accompanying drawings and following specification there is disclosed by way of example, only, a single modification of the invention, it being understood however, that various changes may be made in the arrangement, shape, size, proportion and association of the various parts without departing from the spirit of the invention as set forth in the appended claims.

In said drawings;

Figure 1 is an elevation of a duplex flush receptacle constructed according to this invention as mounted in position upon a wall or baseboard and covered with its associated face plate;

Figure 2 is a side elevation thereof;

Figure 3 is a vertical section on line 3—3 of Figure 1;

Figure 4 is a vertical section on line 4—4 of Figure 2 looking in the direction of the arrows;

Figure 5 is a horizontal section on line 5—5 of Figure 2; and

Figure 6 is an exploded view of one of the stationary contacts and its associated screw terminal.

In the construction and manufacture of flush receptacles it has always been the aim of the manufacturer to reduce as much as possible the manufacturing costs, which can best be effected by reducing the number of parts and increasing the ease of assembly. At the same time it is highly desirable to maintain certain standards of insulation. To this end the present invention contemplates a novel and improved form of duplex flush receptacle in which the number of parts have been materially reduced and in which the insulating quality and the separation of parts of opposite polarity have not been sacrificed.

Referring to the drawings, there is disclosed at 10 a single unitary insulating block, preferably formed of porcelain, and provided on its front face with two bosses 11 which are adapted to project thru openings in the face plate 12 which serves to cover the remainder of the receptacle and the wall box into which it is received and to provide a finish for the whole device. This plate 12 is secured to the block by means of a screw 13 passing thru the center of the plate and into the block and received in a nut (not shown) which is mounted in a recess in the block. This nut is retained in position by a screw 14 passing into its opposite end, which screw serves to retain in position the mounting strap 15 which passes longitudinally along the back of the porcelain block and is bent forwardly extending along the ends thereof and is provided with the flanges 16 parallel to the back portion and to the plate 12 and

just below this plate thru which screws may be passed to mount the whole receptacle in a wall box as is well known.

Each of the bosses 11 is perforated by a pair of T-shaped slots 17 adapted to receive the prongs of any of the present style of attachment plugs such as those having parallel, tandem or polarized blades. These slots communicate with recesses or tunnels 18 in the block 10, one beneath each boss, which recesses open on opposite sides of the block as clearly shown in Figure 4. The recesses are substantially rectangular in section and are closed on five sides. Within each recess are mounted a pair of duplex contacts, one beneath each of the T-slots and adapted to receive and electrically engage the prongs of any of the mentioned types of attachment plugs.

Figure 6 discloses the general form of these duplex contacts. It will be seen that they comprise a base 19, a pair of parallel arms 20 at right angles thereto and a third arm 21 at right angles to both the base and the arms 20, all of said parts being formed from a single piece of metal. The arms 20 are bent backward upon themselves toward each other so as to engage between them a contact prong or to engage between their edges and the arm 21 a contact prong. The general form of these contacts is well known in the art. Each of the contacts is secured to the bottom wall of one of the recesses 18 by a screw such as 22 pasing in from the back of the insulating block thru the aperture 23 in the base 19 of the contact and having threaded engagement in a tab or plate such as 24 which rests upon the top of the base 19 and immediately beneath the edges 25 of the side arms 20 to form a support for these arms and also to be held in position between these arms and the base for ease in assembling. The contacts in each recess are of course at opposite polarity and are fully spaced apart to provide adequate insulation as best disclosed in Figure 5. In order to connect contacts of like polarity, one of which is arranged in each recess, the straps 26 are provided extending longitudinally of the insulating block and arranged in recesses 27 in the rear face of this block. These straps 26 are secured in position and electrically connected to their respective contacts by means of the screws 22 which pass thru them, thru the porcelain, thru the bases 19 of the contacts and into the tabs 24, previously mentioned, thus securing all of the parts together mechanically and electrically and retaining them all upon the porcelain insulating block.

The recesses 27 which receive the connecting straps 26 are separated by the longitudinal ridge or partition, integral with the base 10, which serves as a supporting means for the mounting strap 15 and maintains it positively out of contact with the connecting straps. If desired the recesses 27 may be filled with a filling compound or wax to more thoroughly insulate the connecting straps from each other and from any danger of external contact.

One contact of each pair is adapted to be provided with a wire or circuit terminal in order that each two contacts of the same polarity may be connected to an external circuit as is well known. In order to accomplish this each contact adjacent the openings of the recess 18 is directly connected to a ciruit terminal such as 29, best shown in Figure 6. Each of these circuit terminals is provided with a base or tab 30 which supplements the tab 24 in receiving the screw 22 to secure the stationary contacts in position and is therefore of such size and shape as to fit above the base 19 of stationary contacts and support the lower edges 25 of the arms 20 thereof. The remaining portion of the circuit terminal is bent at right angles to the tab 30 and provided with the enlarged portion 31 provided with the central aperture threaded to receive the binding screw 32. If desired integral ears 33 may be provided on the enlarged portion 31 to assist in retaining the wire beneath the binding screw. The shape and arrangement of the parts of the circuit terimnals is such that when their tabs 30 are secured to the lower walls of the recesses 18 in order to secure the stationary contacts in position, the enlarged portions 31 extend over the insulating block, project toward the center thereof and fit within the shallow recesses 34 adjoining the large recesses 18 so that the binding terminals are completely below the surfaces of the sides of the insulating block. It is necessary to relieve the walls of the recesses 18 as at 35 to accommodate the inner ends of the binding screws as shown best in Figure 4.

It will be noted from Figure 4 that the binding terminals are entirely below the surface of the sides of the insulating block, are on opposite faces thereof, are directed toward each other and are fully spaced and insulated from each other by a large and substantial wall of insulating material. It will also be seen that it is not necessary to provide any additional recesses or connecting means to receive, mount or electrically connect the circuit terminals with the contacts or the connecting strips for the contacts but that one single screw serves to mount one of the contacts, the circuit terminal, and to make electrical connection with the corresponding stationary contact which is in the bottom of the other recess 18. These inner contacts are arranged to abut against the end walls of the recesses as shown in Figure 4 to prevent their being rotated about the axes of the screws 22 and also in order that the contacts may be dropped into the bottoms of the recesses and properly positioned im-

mediately to receive the screws, thus insuring rapid assembly. The other contacts together with the binding terminals which are secured to them by being pinched between the bases 19 and the edges 25, as explained, are dropped into position so that enlarged portions 31 of the circuit terminals rest against the bottoms of the recesses 34, which then properly positions the openings in the tabs 30 to receive the screws 22 for securing the contacts in place.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In an attachment plug receptacle, in combination, an insulating block adapted to be received in a wall box, a boss on the front thereof provided with a pair of plug prong receiving openings, said block having a tunnel behind said boss communicating with said openings and itself opening into the side of said block, a spring contact member in said tunnel for each prong opening only, and a circuit terminal projecting into said tunnel through said side opening and directly connected to one of said contacts.

2. In an attachment plug receptacle, in combination, an insulating block adapted to be reecived in a wall box, a boss on the front thereof provided with a pair of plug prong receiving openings, said block having a tunnel behind said boss communicating with said openings and itself opening into the side of said block, a spring contact member in said tunnel for each prong opening only, and a circuit terminal recessed in the side of said insulating block and directly connected to one of said spring contacts.

3. In an attachment plug receptacle, in combination, an insulating block, a boss thereon provided with a pair of plug prong receiving openings, said block being provided with a transverse recess with which said openings connect, a bottom wall for said recess, a spring contact secured to said bottom wall opposite each prong opening, and a wall closing one end of said recess and substantially abutting one of said contacts, said recess being open laterally opposite the said end closing wall.

4. In an attachment plug receptacle, in combination, an insulating block, a pair of bosses thereon each provided with a pair of plug prong receiving openings, said block being provided with a single transverse tunnel behind each boss, each tunnel being connected with the openings of its boss, a pair of contacts of opposite polarity in each tunnel, one behind each opening, said tunnels opening on opposite sides of said block and being closed on the side of the block opposite said bosses.

5. In an attachment plug receptacle, in combination, a unitary insulating block, a pair of bosses on the front face thereof each having a pair of plug prong receiving slots therein, said block having a tunnel therein behind each boss communicating with the respective slots, said tunnels being transverse to said block and opening on opposite lateral sides thereof, a pair of contacts of opposite polarity in each tunnel, one behind each slot, and a circuit terminal directly connected to one contact of each pair.

6. In an attachment plug receptacle, in combination, a unitary insulating block, a pair of bosses on the front face thereof, each having a pair of plug prong receiving slots therein, said block having a tunnel therein behind each boss communicating with the respective slots, said tunnels being transverse to said block and opening on opposite lateral sides thereof, a pair of contacts of opposite polarity in each tunnel, one behind each slot, a circuit terminal directly connected to one contact of each pair, and means connecting said circuit terminals, one to each remaining contact of the other pair.

7. In an attachment plug receptacle, in combination, a unitary insulating block, a pair of bosses on the front face thereof, each having a pair of plug prong receiving slots therein, said block having a recess therein behind each boss, said recesses being transverse to said block and opening on opposite sides thereof, a pair of contacts of opposite polarity in each recess, one behind each slot, a circuit terminal directly connected to the contact of each pair adjacent the mouth of its recess, and connecting straps joining each circuit terminal and the remaining contact of the other pair.

8. In an attachment plug receptacle, in combination, a unitary insulating block, a pair of bosses on the front face thereof, each having a pair of plug prong receiving slots therein, said block having a recess therein behind each boss, said recesses being transverse to said block and opening on opposite sides thereof, a pair of contacts of opposite polarity in each recess, one behind each slot, a circuit terminal directly connected to the contact of each pair adjacent the mouth of its recess, and a connecting strap secured by screws to each circuit terminal and the remaining contact of the other pair, each of said straps being set in a recess in the back of said block.

9. In an attachment plug receptacle, in combination, a unitary insulating block, a pair of bosses on the front face thereof, each having a pair of plug prong receiving slots therein, said block having a recess therein behind each boss, said recesses being transverse to said block and opening on opposite sides thereof, a pair of contacts of opposite polarity in each recess, a circuit terminal directly connected to the contact of each pair adjacent the mouth of its recess, connecting straps joining each circuit terminal and the

remaining contact of the other pair, each of said straps being set in a recess in the back of said block, a partition wall separating said straps and screws jointly holding each strap in position and securing the associated contacts in their recesses.

10. In an attachment plug receptacle, in combination, a unitary insulating block, a pair of bosses on the front face thereof, each having a pair of plug prong receiving slots therein, said block having a recess therein behind each boss, said recesses being transverse to said block and opening on opposite sides thereof, a rear wall for each recess, said block having a pair of longitudinal grooves in the rear face thereof, a pair of contacts in each recess against said rear wall, screws passing thru said rear wall, having their heads in said grooves and securing said contacts in place.

11. In an attachment plug receptacle, in combination, a unitary insulating block, a pair of bosses on the front face thereof, each having a pair of plug prong receiving slots therein, said block having a recess therein behind each boss, said recesses being transverse to said block and opening on opposite sides thereof, a rear wall for each recess, said block having a pair of longitudinal grooves in the rear face thereof, a pair of contacts in each recess against said rear wall, screws passing thru said rear wall, having their heads in said grooves and securing said contacts in place, and a connecting strap in each groove and held in position by said screws.

12. In an attachment plug receptacle, in combination, a unitary insulating block, a pair of bosses on the front face thereof, each having a pair of plug prong receiving slots therein, said block having a recess therein behind each boss, said recesses being transverse to said block and opening on opposite sides thereof, a rear wall for each recess, said block having a pair of longitudinal grooves in the rear face thereof, a pair of contacts in each recess against said rear wall, screws passing thru said rear wall, having their heads in said grooves and securing said contacts in place, a connecting strap in each groove and held in position by said screws, and a circuit terminal electrically connected to each strap and mechanically secured to said block by one of said screws.

In testimony whereof I hereunto affix my signature.

HARRY J. MOREY.