

May 18, 1948.

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2,441,643

PROTECTIVE ELECTRICAL OUTLET RECEPTACLE

Filed May 13, 1946

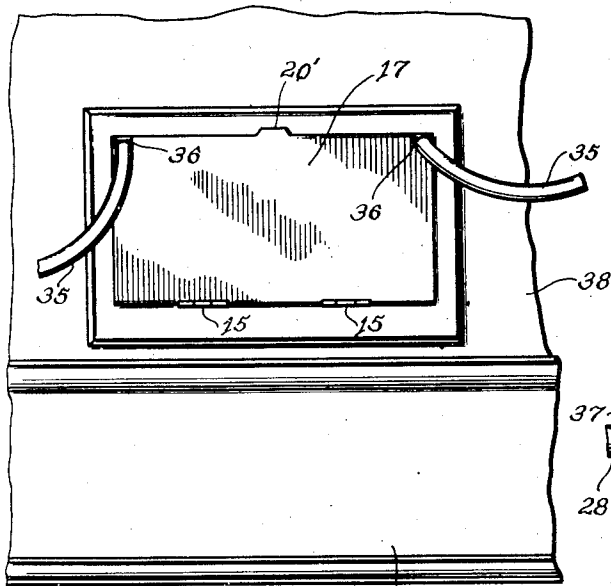


Fig. 1.

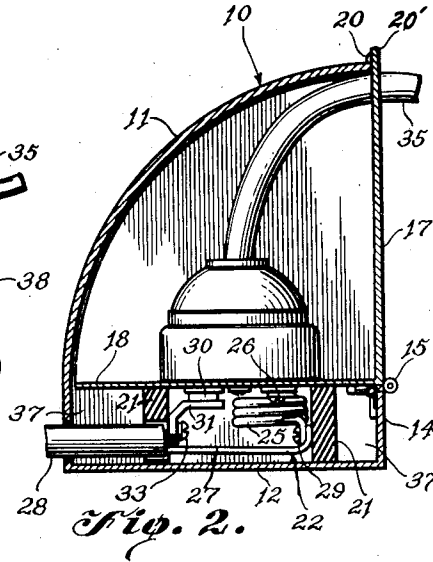


Fig. 2.

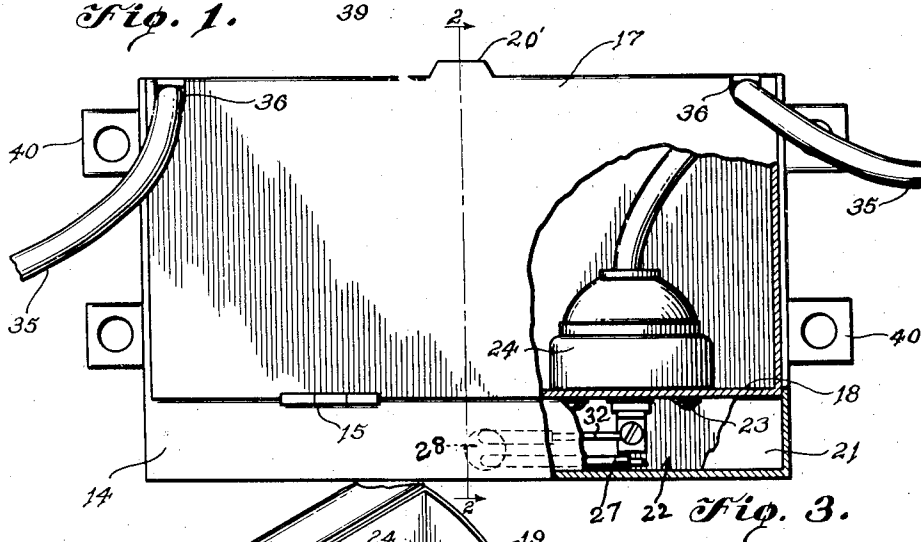


Fig. 3.

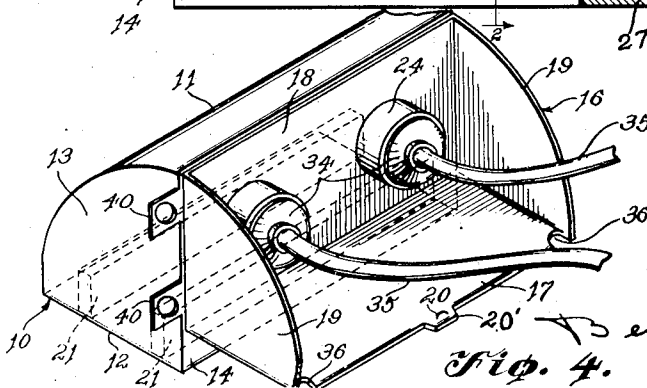


Fig. 4.

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PROTECTIVE ELECTRICAL OUTLET
RECEPTACLE

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Application May 13, 1946, Serial No. 669,233

5 Claims. (Cl. 200—54)

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It is a matter of common knowledge that such household articles as electrical outlet receptacles are of great attraction to children and particularly to a child of tender years while crawling or playing about on the floor. As a general practice outlet receptacles are mounted on the wall just above the baseboard as experience has taught such location to be the most convenient for plugging in the cords of such household electric appliances as vacuum cleaners, floor lamps, etc. Being so located these receptacles are readily accessible to small children and as a consequence are often the depository of miscellaneous metal elements such as hair-pins, parts of toys and the like, resulting either in the fouling or damage to the electrical elements of the receptacle necessitating repair or replacement, or, what is more important, in shock either to the child at the time of such insertion or to an adult incidental to connecting an electric cord plug with the outlet receptacle.

It is, therefore, the primary object of this invention to provide an electrical outlet receptacle that is substantially inaccessible to children, readily accessible to adults, and is effectively protected against being fouled or damaged, and which at the same time is not at all unsightly, and may be conveniently installed and located in the wall at any desired elevation.

The invention, the method of employing the same to use, and the objects thereof will be best understood from the following description made with reference to the accompanying drawing in which is illustrated what is presently considered the preferred embodiment of the invention, and wherein:

Figure 1 is a front elevational view showing my improved electrical outlet receptacle applied to use;

Figure 2 is a vertical transverse sectional view taken substantially on line 2—2 of Figure 3;

Figure 3 is a front elevational view of the receptacle, with parts broken away to illustrate certain details hereinafter more specifically described; and

Figure 4 is a perspective view of the receptacle with the protective box forming part thereof in open position.

Referring more particularly to the drawing the receptacle of my invention is designated generally by the reference numeral 10 and is in the form of a box fabricated from sheet metal preferably, and having a back wall 11 that is arcuate in transverse section, a bottom wall 12, side walls 13, and a front wall 14 that rises from bottom

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wall 12 a relatively short distance, and to the upper edge of which is hinged as at 15 a door 16.

The body of box 11 may be made in one piece or of several appropriately united in fixed relation. This is also true of the door 16 which is made up to provide a closure proper 17, a tray or false bottom 18, and segmental side shields 19.

Door 16 is normally urged to closed position by the spring hinges 15 and is releasably secured in the mentioned position by any suitable closure fastener, as by a detent 20 formed on one side of door 17 in the region of a finger hold 20' and adapted for positive frictional engagement with the wall 11 at the front edge of the latter as the door swings to fully closed position.

Arranged within the bottom of the box are a pair of spaced parallel partition strips 21, 21 that extend from one side wall 13 to the other, and are spaced from the walls 11 and 14 as shown. Partition strips 21, 21 form therebetween a compartment 22 which, with tray 18, provides effective means for protecting the electrical contents of the box against fouling and, what is more important, from the standpoint of my invention, against access thereto by a wire or the like in the hand of, for example, an immature child and as would likely result in severe, if not fatal, injury to such child.

Carried by the tray 18, and secured thereto in any suitable manner, as by screws 23, are electrical receptacles 24. In the drawing I have shown two receptacles although it will be understood that my invention is applicable to a greater or lesser number of receptacles and also to receptacles of the double or multiple type and of various sizes and shapes.

Each receptacle 24 is electrically connected with a source of current supply through the medium of a suitable length of wire 25 connected to the receptacle at the inner or underside of tray 18 as at 26 and to a lead-in wire 27 of electrical conductor 28 by a terminal screw 29 that serves to anchor the connected ends of the wires to a partition strip 21; and by a circuit maker and breaker device in the form of a contact 30 electrically connected with the receptacle and disposed on the inner or underside of tray 18 to move therewith into and out of electrical engagement with a complementary contact element 31 that is anchored to the partition strip 21 located nearer the rear wall 11 and electrically connected with the wire 32 of conductor 28 through the medium of a single screw 33.

Electrical plugs 34 are of conventional structure and design and are applicable to the outlets

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24 in the usual manner. To accommodate the cords 35 which extend from the plugs 34, door 17 is provided in the longitudinal free edge thereof with notches 36. These notches are of dimensions to receive the cords in a manner as to present minimum clearance between the peripheries of the cords and edges of the notches so as to render it very difficult, if not impossible, to pass a wire or any foreign article into the box through these notches. As an added safety factor, notches 36 are located with respect to outlets 24 either as shown or in an alternate manner so long as the notches and outlets are out of alignment with consequent less likelihood of any wire being passed through the notches and into the outlets, or of any foreign matter as may gain access to the interior of the box becoming lodged in the outlets.

The spring hinges 15 implemented by the friction closure fastener 20 provide for the retention of the closure assembly 16 in the position shown in Figure 2 and the maintaining of the elements 30, 31, of the circuit maker and breaker in contact in the event the cord or cords 35 are placed under such stress as might result from a pull exerted thereon by a child of tender years.

Also the arrangement of the strips 20 is such that should any foreign matter, such as pins, pieces of wire, etc., ultimately pass into the box beyond tray 18, their final resting place would be in the spaces 37, 37 rather than within compartment 22, and hence fouling of the electric contents of the box is rendered less likely than might otherwise be the case. Too, strips 21 form a stop for tray 18 and hence permit contacts 30 to engage contacts 31 only to the extent necessary to a good electrical connection therebetween, and as will preclude damage to the contacts 31 which might follow from unrestrained movement of the closure 16 to its inward or box closing position.

Another safety feature of my invention is the side members 19 which prevent access to the receptacles 24 from either of the two opposite sides of the closure when the latter is in either the position of Figure 3 or in any position intermediate of those positions shown in Figures 2 and 3.

The box of my invention lends itself readily to installation with equal facility in walls previously constructed and those under process of construction, and in Figure 1 I have shown the box installed. In the mentioned figure reference numeral 38 designates the vertical wall of a room 39 and the usual baseboard. As illustrated the box 10 may be conveniently mounted in the wall 38 above the baseboard 39, and secured in place in an obvious manner by screws or similar fastening elements engaging apertured lugs 40 provided for that purpose and arranged at opposite sides 13 of the box, preferably in pairs (see Figure 4).

To insert or remove a plug 34 the closure 16 is swung from the position shown in Figure 2 to that illustrated in Figure 4, finger hold 20 being provided to facilitate this operation. With the parts in the position of Figure 4 engagement of the electric plug with, and/or removal thereof from, the receptacle 24 is conveniently effected.

Upon release of hand pressure on the closure assembly 16 the latter, in response to the action thereon of the springs forming parts of the hinges 15, will swing upward and inward to the closed position of Figure 2.

As is believed apparent movement of the closure 16 to open position results in a separation of complement switch contacts 30, 31 and interruption of the circuit so that the engagement of

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plug 34 with, or its removal from, receptacle 24 will be accomplished without possibility of an electrical shock and with complete safety to the user. Upon movement of the closure 16 to the closed position of Figure 2, tray 18 will come to rest on strips 21, 21 and as it does so, contacts 30 move into engagement with the complemental contacts 31, without jarring impact, for completing the circuit.

From the foregoing it will be seen that I have provided a simplified combination of electrical outlet receptacle and safety enclosure therefor whereby substantially fool-proof protection of children, particularly, against shock and the physical protection of the electrical outlet against fouling and accidental damage are insured.

While I have herein described a preferred embodiment of my invention, nevertheless it is to be understood that various changes may be made therein, within the scope of the appended claims.

What I claim is:

1. An inclosed electrical outlet comprising in combination, a box equipped with a hinged, spring pressed door, a tray on the inner side of the door, an electrical receptacle mounted on the tray, the door having a notch in the edge thereof to provide an exit for an electric cord plugged into the receptacle, and a service wire connection for the receptacle comprising a make and break device having a fixed contact mounted within the box and a complemental contact mounted on the tray in electrical connection with the receptacle.

2. In an inclosed electrical outlet, a box equipped with a hinged, spring-pressed door, a tray mounted on the door at the inner side of the door and of the same dimensions as the latter, side walls integral with the door and tray, an electrical receptacle mounted on the tray at the top side of the latter, and a service wire connection for the receptacle comprising a make and break device operable in response to the movement of the door and tray for completing the service wire connection when the door is closed.

3. An enclosed externally accessible electrical outlet comprising in combination, a box, partitions within the box and defining an interior protected space, a hinged, spring-pressed closure assembly for the box and including as a unitary structure, a door proper, a tray and opposed side members, an electrical outlet mounted on the tray, and a make and break service wire connection for the electrical outlet comprising a contact within the protected space and a complemental contact on the tray engageable with the first contact only when the tray is at a position of rest on the partitions.

4. In an enclosed electrical outlet, a box provided with an opening, partitions within the box and defining an interior protected space, a hinged spring pressed closure assembly for the box and including as a unitary structure a door proper for the box opening and a tray providing a support for an electrical outlet, the door of the closure assembly having a portion thereof removed to provide an exit for an electric cord and the tray being operative to prevent access to the interior protected space when the door is in either open or closed position.

5. An enclosed electrical outlet comprising in combination, a box equipped with a hinged closure, said closure embodying a door proper for the box and a tray movable with the door into and out of the box, an electrical receptacle mounted on the tray, the door of the box being of an edge contour it incompletely closes the open-

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ing of the box to provide an exit for an electric cord plugged into the receptacle, and a service wire connection for the receptacle comprising a fixed contact arranged in the box and a complementary contact mounted on the tray and connected with the receptacle.

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