J. G. PETERSON.

ELECTRICAL SWITCH RECEPTACLE.

APPLICATION FILED AUG. 31, 1909.

956,161. **Patented Apr. 26, 1910.**

FIG 1

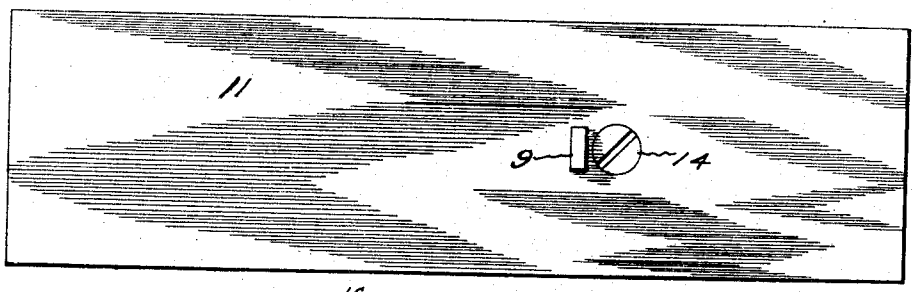


FIG. 2

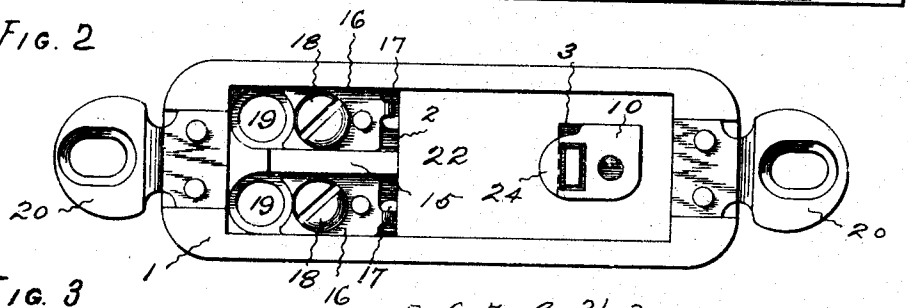


FIG. 3

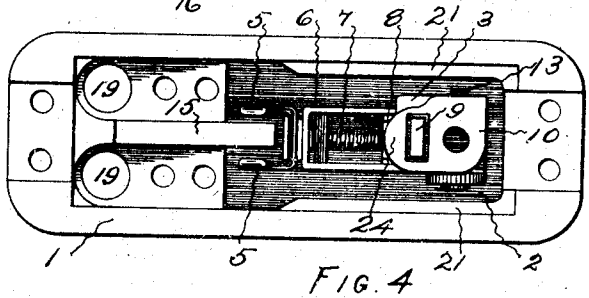


FIG. 4

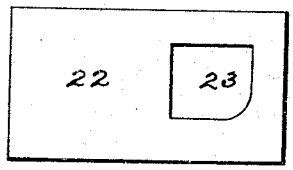
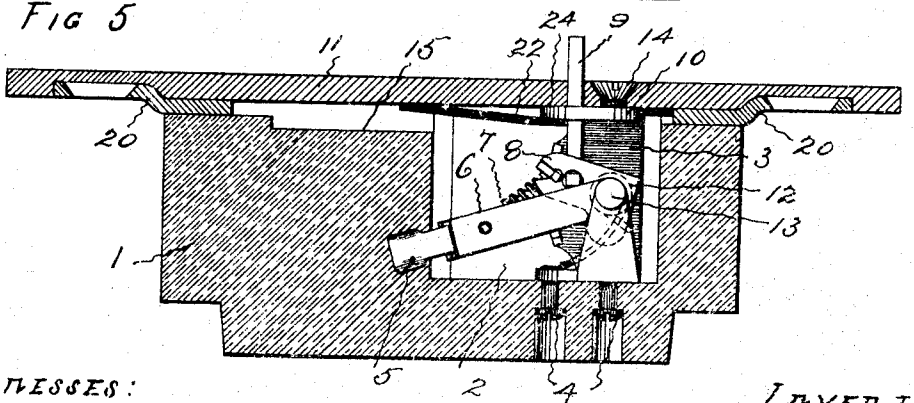


FIG 5



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UNITED STATES PATENT OFFICE.

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ELECTRICAL-SWITCH RECEPTACLE.

956,161. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed August 31, 1909. Serial No. 515,410.

To all whom it may concern:

Be it known that I, JOHANN GODFREY PETERSON, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Electrical-Switch Receptacles, of which the following is a specification.

This invention relates to those receptacles which are designed to receive push button electric switch mechanisms, and while it is more particularly applicable to receptacles for single button switches, such as door switches, it is useful in connection with receptacles for other types of switches.

The object of the invention is to provide a receptacle of this nature with a very simple, cheaply formed and quickly applied means which will cover and protect the operating mechanism, and will separate and insulate that mechanism from the face plate, said means being so designed and secured that it will not become detached and lost when the face plate is removed, will not require removal to allow the line wires to be connected, and will eliminate all danger of accidentally short circuiting any of the parts by the tool being used while wiring.

The embodiment of the invention illustrated is designed to be inserted into a door frame. When the door is closed, the button is pushed and held in, and the mechanism actuated so as to open or close the circuit, as the case may be, and when the door is opened, a spring forces the button out and actuates the mechanism so as to reverse the circuit conditions.

Figure 1 of the accompanying drawings shows on enlarged scale a plan of such a switch. Fig. 2 shows a plan of the same with the face plate omitted. Fig. 3 shows a plan of the receptacle with the cover removed. Fig. 4 shows a plan of the insulating cover, which is the means that is quickly applied for protecting the mechanism and insulating the plate. Fig. 5 shows a central longitudinal section of the receptacle, attaching ears and face plate, and side elevation of the actuating mechanism which is employed to illustrate the utility of the invention.

The oblong cup 1, which is shown, is desirably made of porcelain, although it may be made of other insulating material. The switch actuating mechanism, which may be any desired type, is located in the chamber 2 at one end of the cup. The switch mechanism shown has a frame 3 that is secured to the bottom of the chamber by screws 4. This mechanism has contact brushes 5 that are mounted on and insulated from a yoke 6, which is pivoted to the frame. This yoke is thrown by the spring 7, which is compressed by the movement of the rocker 8 that is pivoted to the frame. The rocker is moved in one direction by the push button or bar 9 that extends through a slot in the plate 10 at the top of the frame and through a slot in the face plate 11. The rocker is moved in the other direction by the spring 12 coiled about the pivot 13 of the yoke and rocker. The details of this switch mechanism are not further described herein, for the mechanism is a common type and the specific details form no part of the present invention. Any common type of switch mechanism may be used in the receptacle, which forms the subject of the invention.

The face plate is secured to the top plate of the frame by a screw 14. An insulating partition 15 divides the interior of the cup at one end into compartments, in which compartments are secured the terminal plates 16. Connected with these terminal plates are the stationary switch contacts 17. Binding screws 18 are threaded into the terminal plates for the attachment of the line wires. Perforations 19 are made through the bottom of the cup adjacent to the terminal plates for the entrance of the ends of the line wires. Attached to the receptacle in a common way, for securing it in place, are perforated ears 20.

The front edge of the receptacle about the chamber containing the switch actuating mechanism is rabbeted so as to form a ledge 21. Resting on this ledge and covering the chamber containing the mechanism, but preferably not the compartments containing the terminal plates, is a cover 22. This cover which is formed of a sheet of insulating material, has an opening 23. The cover is of such size that it fits the rabbeted portion of the walls of the receptacle, and the opening in the cover is of such size that it fits three sides of the plate 10 that forms the top of the mechanism supporting frame. This opening is so shaped that a portion of the edge of the cover about the opening,

when the cover is in place, is sprung beneath the fourth edge of the top plate of the frame, which edge is preferably shaped to form a tongue 24 for the purpose of projecting over and holding down a portion of the cover. The cover with the opening of this character is placed over the chamber containing the mechanism, a short distance to one side of its final position, and then with its center slightly depressed, it is slid along the rabbeted portion of the receptacle until it reaches its final position, when the end nearest the ears snaps down about the top of the frame. When it is slid along in this manner, with the middle depressed, an edge about the opening passes beneath the edge or the tongue on the edge of the front plate of the frame. With the outer edges of the cover lying on the ledges formed by rabbeting the walls of the receptacle, and with three sides of the opening in the cover fitting three edges of the top plate of the frame, and the fourth side of the opening passing beneath the tongue projecting from the top plate of the frame, the cover is securely held in place by its own resilience and closes in the chamber containing the switch actuating mechanism, without covering the compartments containing the terminal plates. The length of this cover, however, is not essential; it may be made longer or shorter, as desired. The cover applied in this manner is very quickly located in position, and it cannot be removed without drawing it longitudinally sufficiently to free the edge of the opening from the top plate of the frame, and then lifting it off, and it cannot be drawn longitudinally without first bending up the end and freeing it from the edge of the frame plate that is nearest the ear. This cover protects the actuating mechanism and insulates the face plate from the actuating mechanism where there is the most liability of accidents resulting from arcs incident to the opening of the circuit. With this construction the cup can be made very shallow, as all the conducting parts are separated and insulated from each other.

The invention claimed is:

1. The combination of a cup of insulating material, a switch mechanism located therein, a frame supporting said mechanism, and a cover of insulating material held in place over the opening in the cup by the engagement of a portion with the said mechanism supporting frame.

2. The combination of a cup of insulating material having a chamber and insulated compartments, a switch mechanism located in said chamber, a frame supporting said mechanism, terminal plates located in said compartments, and a cover of insulating material held in place over the opening in the cup by the engagement of a portion with said mechanism supporting frame.

3. The combination of a cup of insulating material having a rabbeted front edge, a switch mechanism located therein, a frame supporting said mechanism, and an insulating cover located in the rabbeted portion of the cup and held in place by a portion of said frame.

4. The combination of a cup of insulating material, a switch mechanism located therein, a frame supporting said mechanism, and a cover of insulating material inclosing the actuating mechanism and held in place by engagement with a portion of said supporting frame.

5. The combination of a cup of insulating material, a mechanism supporting frame located therein, and a cover of insulating material located in the front of the cup, said cover having an opening fitting three sides of a portion of the top of the frame, and one side of said opening passing beneath a portion of the top of the frame.

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