No. 854,369. PATENTED MAY 21, 1907.

W. S. MAYER.

RECEPTACLE AND PLUG FOR ELECTRICAL CONNECTIONS.

APPLICATION FILED DEC. 12, 1906.

Fig. 1.

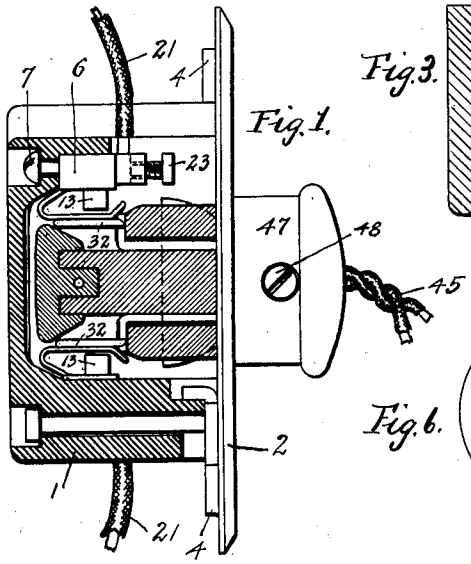


Fig. 3.

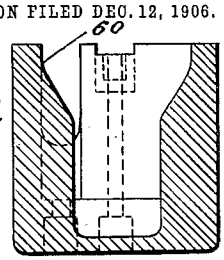


Fig. 2.

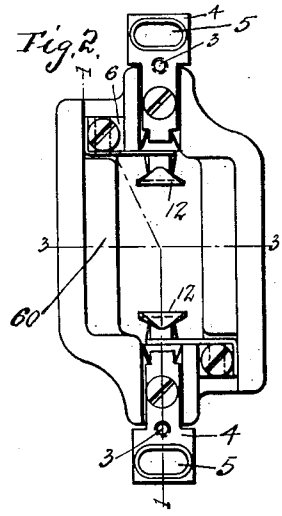


Fig. 6.

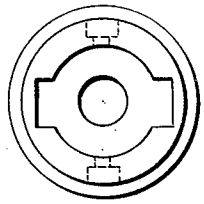


Fig. 7.

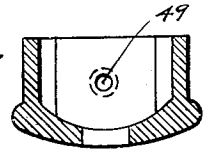


Fig. 4.

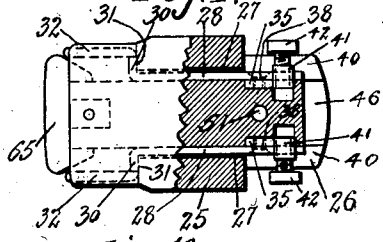


Fig. 5.

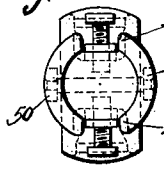


Fig. 8.

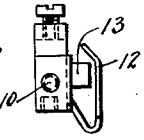


Fig. 9.

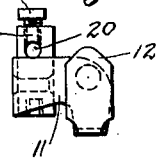


Fig. 10.

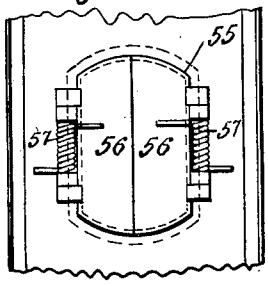


Fig. 12.

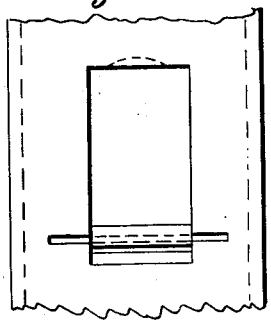


Fig. 13.

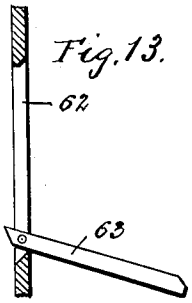
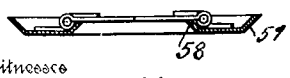


Fig. 11.



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Attorney

UNITED STATES PATENT OFFICE.

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RECEPTACLE AND PLUG FOR ELECTRICAL CONNECTIONS.

No. 854,369. Specification of Letters Patent. Patented May 21, 1907.

Application filed December 12, 1906. Serial No. 347,516.

To all whom it may concern:

Be it known that I, WALTER S. MAYER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Receptacles and Plugs for Electrical Connections, of which the following is a specification.

My invention relates to a new and useful improvement in receptacles and plugs for making electrical connections, and its object is to provide a simple and effective device of this description.

In devices of this character, receptacles are located at any convenient point in a building where connections can be made to electric circuits. The plugs may be inserted therein, if desired, to permit a lamp, motor or other translating device to be introduced into the electric circuit.

With these ends in view, my invention consists in the details of construction and the combination and arrangement of elements as hereinafter described in detail in the specification, and as specifically set forth in the claims.

In order that my invention may be more readily understood, reference is to be had to the accompanying drawings forming a part of this specification, and in which

Figure 1 is a central section along the line 1—1 of the receptacle and the inner portion of the plug, the outside insulating cap of the plug being shown in elevation; Fig. 2 is a plan view of the receptacle showing the terminal posts and the contact springs secured therein, and in addition the lugs fastened thereto for securing the receptacle to the wall or like object; Fig. 3 is a section on the line 3—3 of Fig. 2, showing the sloping sides which guide the plugs when inserted into the receptacle; Fig. 4 is a detail view of the plug, a portion thereof being in section, and showing the means for fastening the contact strips thereto; Fig. 5 is a plan view of the plug; Fig. 6 is an inverted plan view of the insulating cap; Fig. 7 is a section of the cap; Fig. 8 is a detail view of one of the terminal posts and contact members secured thereto; Fig. 9 is a view of the terminal post looking to the left in Fig. 8; Fig. 10 is a view of the inner surface of the face plate, showing hinged doors actuated by springs, which doors are adapted to be forced inwardly by the introduction of the plug, the said spring acting to close the doors when the plug is withdrawn; Fig. 11 is a transverse section of the face plate; Fig. 12 is a view of the inner surface of a modified construction of swinging door, wherein the door is opened outwardly to permit the insertion of the plug; and Fig. 13 is a section of the construction shown in Fig. 12.

In the drawings,—1 designates the receptacle which is made of any suitable insulating material, such as porcelain, and having secured thereto the metal face plate 2 by suitable means, as, for instance, screws 3, passing into the lugs 4, the latter being adapted to be secured to the surface of the wall or other object by fastening means (not shown) extending through the oblong opening 5 in the lugs into such wall or other object. The receptacle is intended to be sunk into said wall or other object.

Suitable recesses are formed in the receptacle 1, for the receipt of the terminal posts 6, which are secured in place by screws 7, one of which is shown in Fig. 1 of the drawings. These posts carry the contact members, each of which consists of a piece of spring metal, one end of which is connected to a post by means of a rivet, as indicated at 10 in Fig. 8 of the drawings. The said member comprises what may be termed a main or body portion 11 and a spring contact portion 12. In order that the latter may be prevented from being bent to such an extent that distortion is occasioned, I have provided a lug or projection 13, which is located immediately back of the spring portion 12. In the construction shown, this lug or projection is connected to the main or body portion 11 of the contact member, as is clearly shown in Figs. 8 and 9 of the drawings.

It is obvious from an inspection of Fig. 8 that the presence of the lug or projection 13 will limit the backward or outward movement of the springs 12 of the contact member.

The binding posts are provided with transverse openings 20 into which the ends of the circuit wires 21 are adapted to be inserted and extending at an angle thereto are screw-threaded openings 22, which are adapted to receive binding screws 23, the purpose of the

latter being to fasten the line wires in the transverse openings 20.

25 designates the plug which consists of suitable insulating material, such as porcelain, and which plug is provided with a reduced outer end portion 26.

27 designates channels extending longitudinally of the said plug, and in which contact strips 28 are secured. The contact strips 28 are prevented from moving outwardly in the channels 27 by means of portions 30 thereof bent at angles to the main portions of the said strips, such portions extending underneath and in contact with shoulders 31 formed in the plug 25. The outer ends 32 of the contact members are bent at an angle to the portions 30, as indicated in Fig. 4, so as to form contacting portions upon the said members. The contact strips are prevented from moving inwardly through the channels 27, by means of plates 35, which are located in depressions or seats 36, formed in the outer reduced end portion 36 of the plug, such plates being secured to the contact strips by means of screws 38. The depressions or seats 36 are located at the bottom of slots 40, located upon opposite sides of the reduced upper end portion of the plug. The plates 35 are provided with outwardly turned lugs 41, which are located upon opposite sides of the outer ends of the contact strips.

42 designates binding screws, which are threaded into the contact strips 28 and the plates 35. The purpose of the ears or lugs 41 is to prevent the conductor wires indicated at 45 in Fig. 1 from working away from the screw heads when the screws are driven home. The slots or recesses 40 are for the purpose of providing a clearance for the binding screws 42. The conductor wires pass from the binding screws 42 outwardly through a central recess 46 formed in the outer end of the plug.

In order that the metallic members of the plug may be protected against contact with the hand of a person using the same, I provide an insulating cap 47 which fits over the outer end of the plug. This cap is held in place by screws 48 passing through holes 49 into the metal plates 50 shown in dotted lines in Fig. 5, said plates being secured to the plug by a pin passing through a hole 51.

The face plate 2, as shown in Figs. 10 and 11, has an opening 55 of sufficient size and of proper shape to permit the passage of the plug into the receptacle. This opening is normally closed by hinged doors 56, said doors being actuated by coiled springs 57, so that when a plug is forced against these doors, they will swing inwardly, and when the plug is withdrawn, they will swing outwardly into closed position under the action or impulse of the springs. By this means, it is insured that the opening in the face plate is always closed, so that accidental contact with any of the connections therein is prevented.

The edges of the face plate surrounding the opening 55 are bent inwardly, as indicated at 58 in Fig. 11, and the outer edges of the face plate are also bent inwardly, as indicated at 59 in the said figure forming a recess around the said opening 55 for the reception of the hinges by means of which the doors are secured to the face plate and the coiled wire springs 57 by means of which said doors are automatically closed when a plug is withdrawn from the receptacle.

The beveling or bending inwardly of the metal around the opening, as indicated at 58, guides the insertion of the plug into the receptacle. The plug is also guided into the receptacle by means of the beveled or inclined edges of the receptacle, as indicated at 60 in Figs. 2 and 3 of the drawings.

In Figs. 12 and 13, I have shown a construction of face plate in which the opening 62 therein is closed by means of a single door 63, which is adapted to swing outwardly when it is opened. In this construction, it is necessary to open the door as an independent operation before the plug can be inserted into the receptacle.

When the spring-actuated doors are used, I prefer to provide a buffer 65 of suitable material, as, for instance, rubber, upon the inner edge of the plug, so that when the plug is forced against the spring-actuated doors, this buffer will prevent scratching or marring of the outer surface of said doors.

Having thus described my invention, I claim:

1. In a device of the character described, a receptacle, contact springs located in the said receptacle, means for electrically connecting the ends of the circuit wire to the said springs, and stop lugs or projections independent of the walls of the said receptacle and located in the said receptacle to limit the movement of the said springs.

2. In a device of the character described, a receptacle, contact members located therein, the said members comprising body portions and spring contact portions, means for electrically connecting the ends of the circuit wire to the said contact members, and stop lugs or projections connected to the said body portions to limit the movement of the spring contact members.

3. In a device of the character described, a receptacle, a face plate secured to the face of said receptacle, the said face plate being provided with an opening, and the material of the said face plate around the said opening being bent inwardly and the outer edges of the said face plate being also bent inwardly to form a depression surrounding the said opening, doors for closing the said openings, means for securing the said doors to the said

face plate, springs for holding the said doors normally closed, the said means and the said springs being located within the said depression in the face plate.

4. A device of the character described, comprising a plug having channels extending through the same, shoulders located adjacent to the said channels toward one end of the said plug and depressions located adjacent to said channels toward the other end thereof, contact strips located in the said channels and having portions bent to engage the said shoulders, plates located in the said depressions, and means for connecting the said plates to the said contact strips.

5. A device of the character described, comprising a plug having channels extending through the same, and shoulders located adjacent to the said channels toward one end of the said plug, and depressions located adjacent to said channels toward the other end thereof, contact strips located in the said channels and having portions bent to engage the said shoulders, plates located in the said depressions, means for connecting the said plates to the said contact strips, and the said plates having lugs or ears which are located upon opposite sides of one side of the said contact strip, and binding screws adapted to be connected to the end of the said strip at points between the said lugs.

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this eleventh day of December, A. D. 1906.

WALTER S. MAYER.

In the presence of—
S. SALOME BROOKE,
CYRUS N. ANDERSON.