June 28, 1927. 1,633,668

W. ILE

DUPLEX RECEPTACLE

Filed May 5, 1926

Fig. 1.

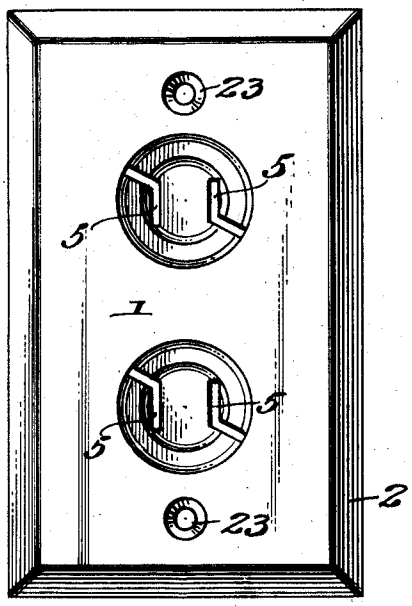


Fig. 2.

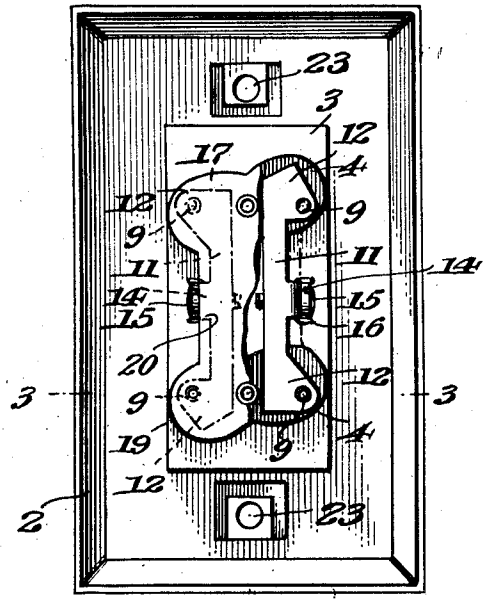


Fig. 3.

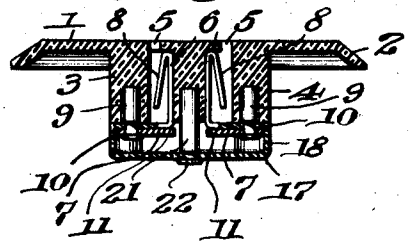


Fig. 4.

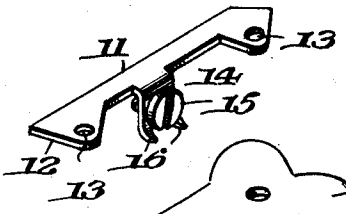


Fig. 5.

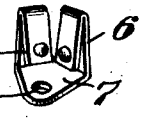


Fig. 7.

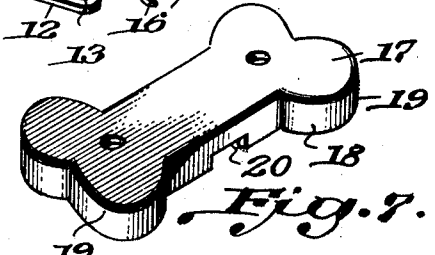
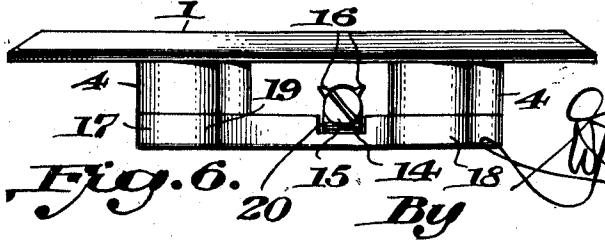


Fig. 6.



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By

Atty.

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UNITED STATES PATENT OFFICE.

WILLIAM ILE, OF JACKSON, MICHIGAN, ASSIGNOR TO REYNOLDS SPRING COMPANY, OF JACKSON, MICHIGAN, A CORPORATION OF DELAWARE.

DUPLEX RECEPTACLE.

Application filed May 5, 1926. Serial No. 106,972.

The invention relates to a duplex receptacle.

The object of the present invention is to improve the construction of duplex receptacles and to provide a simple, practical and efficient duplex receptacle of strong, durable and comparatively inexpensive construction designed for use in connection with a metal outlet box or the like and adapted to form a face plate for the same and capable of enabling the feed wires to be easily and quickly connected with it before it is secured in position over the outlet box.

A further object of the invention is to provide a duplex receptacle of this character adapted to afford a maximum air space around and between the wires so that there will be no liability of arcing, sparking or short circuiting.

Another object of the invention is to provide a duplex receptacle which will be perfectly safe in handling it when attaching the wires to the binding post and while securing the device to the outlet box.

It is also an object of the invention to provide a duplex receptacle adapted to receive plugs of different types having their contact blades arranged in the same plane or in parallelism or having a combination of such knife contacts.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—

Figure 1 is a front elevation of a duplex receptacle constructed in accordance with this invention.

Fig. 2 is a rear elevation of the same, the removable cap being partly broken away to illustrate the arrangement of the conductor bars.

Fig. 3 is a transverse sectional view taken substantially on the line 3—3 of Fig. 2.

Fig. 4 is a detail perspective view of one of the conductor bars.

Fig. 5 is a detail perspective view of one of the multiple contacts.

Fig. 6 is a side elevation of the duplex receptacle.

Fig. 7 is a detail perspective view of the cap.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, the duplex receptacle comprises in its construction a face plate 1 consisting of a single piece of molded bakelite or other suitable insulating material and adapted to fit over and form the face plate of a metal outlet box or the like and provided with a marginal flange 2 arranged at an inclination and presenting a beveled marginal edge at the exterior of the face plate. The face plate which is rectangular to conform to the configuration of the outlet box not shown is provided at its inner face with a central longitudinal thickened portion 3 and it has projecting transversely disposed enlargements 4 located at opposite sides of the center of the face plate and arranged at an inclination to the side edges of the same and provided with angle slots 5 extending through the face plate and preferably composed of portions arranged at an obtuse angle to each other as shown to accommodate different types of plugs having their knife contacts arranged in different relative positions. The angle slots 5 are enlarged in rear of the face plate to receive spring contacts 6 of approximately U-shape and formed integral with a plate 7 arranged substantially at right angles to the planes of the sides of the spring contacts which are connected with the said plate 7. The other sides of the contacts are free and provided with protuberances 8 for contacting with the knife contacts of plugs. A multiple contact consisting of the plate 7 and the spring contact 6 is provided for each of the slots 5 and the plate 7 fits flat against the inner or rear end of the enlargement 4 and is secured to the same by a tubular rivet 9 embedded in the molded plastic insulating material and having a reduced terminal portion passing through a perforation 10 of the plate 7 and headed preferably by spinning the end of the tubular rivet and expanding the same in the usual manner. The contacts 6 are compressed slightly in introducing the same into the angle slot and their resiliency is adapted to cause the same to

hug the end walls of the angle slot which consists in maintaining them firmly in position. The free knife blade engaging portions which are provided with the protuberances are resilient and are adapted to maintain a proper contact with the said knife blade contacts when the same are plugged into the duplex receptacle. The multiple contacts are arranged in pairs and are spaced apart as clearly shown in Fig. 3 of the drawing so that there is no liability of arcing or short circuiting or sparking.

The spring contacts at each side of the duplex receptacle are connected in pairs by a pair of spaced parallel conductor bars 11 having enlargements or heads 12 at their fitting and conforming generally to the configuration of the plate 7 provided with perforations 13 to receive the tubular rivets 9 which are headed as before explained. The heads of the rivets engage the outer face of the conductor bars and retain the same and the multiple contacts securely in position.

The conductor bars which bridge the spaces between the enlargements are provided at their outer side edges with forwardly extending arms 14 equipped with binding screws 15 and provided with terminal projections 16 which cooperate with the binding screws in confining the terminals of the wires which are secured to the duplex receptacle. The terminals of the wires are thus widely separated so that there is no liability of the wires coming in contact with each other and producing a short circuiting, arcing or sparking of the device. The binding screws are located at the outer edges of the conductor bars and they are in convenient position for the attachment of the wires. The conductor bars are covered by a cap 17 of molded insulating material the same as the face plate and it is provided with a marginal flange 18 and has enlarged end portions 19 conforming to the configuration of and fitting the spaced enlargements. The cap 17 completely covers the conductor bars and the contacts with the exception of the arms 14 and the binding screws 15 the marginal flange of the cap being recessed at 20 to permit it to clear the said arms 14 and to expose the binding screws for the attachment of the electric wires. The cap is secured in position by means of tubular rivets 21 embedded in the molded plastic material of the enlargements and extending through perforations 22 of the cap and headed at their outer ends similar to the tubular rivets 9 as clearly illustrated in Fig. 3 of the drawing. The face plate is provided at its end portions with countersunk openings 23 for the reception of screws or bolts or other suitable fastening means for securing the device to an outlet box or the like.

What I claim is:

1. A duplex receptacle comprising a relatively thin face plate of insulating material provided at its inner face with spaced inwardly projecting enlargements having slots for the reception of knife contacts, spring contacts arranged within the slots of the enlargements, transversely spaced longitudinally disposed conductor bars bridging the intervening space between the enlargements and connecting the spring contacts and provided at the said intervening space between the enlargements with means for the attachment of electric wires.

2. A duplex receptacle comprising a relatively thin face plate of insulating material having a marginal flange and provided at its inner face within the said flange with completely spaced inwardly projecting enlargements having slots for knife contacts, spring contacts arranged in the slots of the enlargements, longitudinally disposed transversely spaced conductor bars bridging the space between the enlargements and having means for the attachment of electric wires located in the said intervening space.

3. A duplex receptacle comprising a face plate adapted to be secured to an outlet box and provided at its inner face with completely spaced inwardly projecting transversely disposed enlargements arranged at an inclination to the sides of the plate and provided with angle slots, multiple contacts arranged in pairs and secured to the enlargements and provided with spring contacts extending into the said slots, longitudinally disposed transversely spaced conductor bars connecting the said multiple contacts and provided intermediate of their ends at the open space between the enlargements with means for the attachment of electric wires, and a relatively thin insulating cap composed of a narrow intermediate portion and enlarged end portions and provided with a marginal flange, said insulating cap fitting the enlargements of the face plate and having its narrow portion arranged at the space between the enlargements and forming a housing for the conductor bars.

In testimony whereof I have hereunto set my hand.

WILLIAM ILE.