

F. J. RUSSELL.
ELECTRICAL RECEPTACLE AND MOUNTING THEREFOR.
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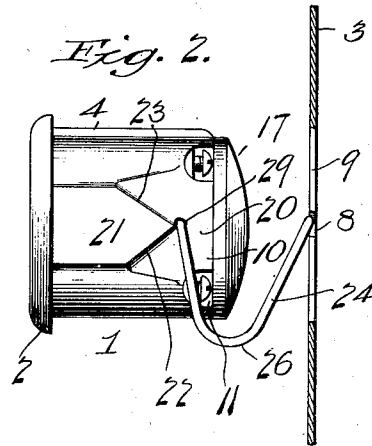
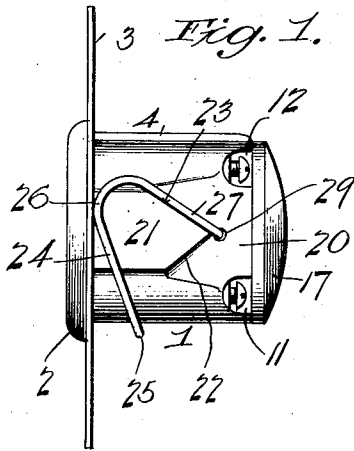


Fig. 3.

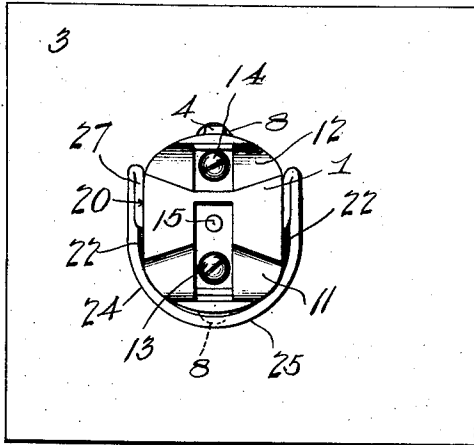


Fig. 4.

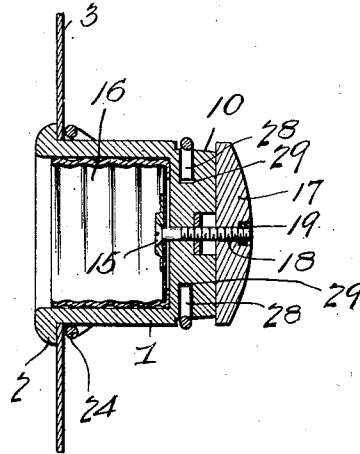
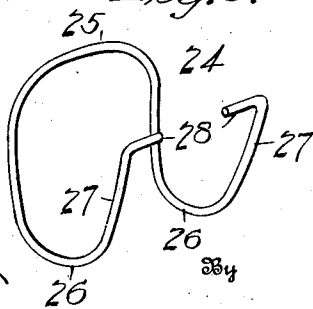


Fig. 5.



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ELECTRICAL RECEPTACLE AND MOUNTING THEREFOR.

945,049.

Specification of Letters Patent.

Patented Jan. 4, 1910.

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To all whom it may concern:

Be it known that I, FRANK J. RUSSELL, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Electrical Receptacles and Mountings Therefor, of which the following is a specification.

This invention relates to the subject of electrical receptacles which receive electrical connecting plugs such as the common incandescent lamp plugs and extension circuit plugs, and has special reference to an improvement in receptacles of that character and more particularly to the mounting of such receptacles on a sign board, junction box cover or other supporting element.

To this end the invention primarily has in view associating with the receptacle body a simple and practical form of clamping device carried with the receptacle body so that the receptacle as an entirety can be mounted in position on the sign board or other supporting element, and removed therefrom without disconnection of the clamping device from the receptacle. In this connection, the invention also has in view utilizing a clamping device of a resilient or spring type which will adjust itself to variable thicknesses of supporting sheets or sign boards in which the receptacle may be installed.

A further object of the invention is to provide a spring clamping device for the receptacle which exerts a strong clamping action upon the supporting element, and at the same time holds the receptacle in place yieldingly, by a spring or elastic clamping force, thus saving breakage of porcelains. Also, by reason of the clamping device being fitted directly to and carried by the receptacle body, the receptacle and said clamping device can be placed together into the hole of the supporting element, and then the clamping device thrown to its locked position, thereby obviating the necessity of a workman on each side of the sign board or sheet at the same time to install the receptacles, as is the practice with some types of sign receptacles.

Another object of the invention is to provide a clamping device for the receptacle, which on account of being carried by the latter, saves the loss of loose parts, and furthermore, provides a construction which

can be readily installed and removed without the use of tools.

With these and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated and claimed.

The essential features of the invention involved in carrying out the above recited objects are susceptible to structural modification without departing from the scope of the invention, but a preferred and practical embodiment of the latter is shown in the accompanying drawings, in which:

Figure 1 is a side elevation of an electrical receptacle, equipped with the improvements contemplated by the present invention and shown fastened upon a sign board or other supporting element by the spring clamping device claimed herein. Fig. 2 is a similar view, of the same parts showing the spring clamping device swung to a position admitting of its passing with the receptacle either into, or out of, the hole of the supporting element. Fig. 3 is an inner end view of the receptacle, shown clamped in position upon the supporting element, and illustrating the insulating guard cap detached from the inner end or base of the receptacle body. Fig. 4 is a sectional view. Fig. 5 is a detail in perspective of the pivotal spring clamping device, shown separate from the receptacle body.

Like references designate corresponding parts in the several figures of the drawings.

The improved spring clamping device may be fitted to different kinds and styles of electrical receptacles, but for illustrative purposes the same is shown in the drawings as applied to a receptacle of a form possessing special utility as a sign receptacle and embodying in its organization a one-piece porcelain or equivalent receptacle body 1. This receptacle body 1 is illustrated as being provided at what may be termed its outer end with an annular binding collar 2, presenting at its inner side a binding shoulder which impinges against one side of the sign sheet or other supporting element 3 in opposition to the spring clamping device hereinafter more particularly referred to. The said receptacle body 1 is also preferably provided on the exterior thereof with an ex-

ternal longitudinally disposed holding rib 4, which is adapted to slidably interlock with one of a pair of opposite notches 8 formed in diametrically opposite edge portions of the receptacle receiving hole 9 provided in the supporting element 3.

The construction just described prevents the receptacle body from turning in its receiving hole 9 of the supporting element, and in addition to said detail of the external holding rib 4, the receptacle body 1 is provided with a closed integral base portion 10 formed in its outer side with the transversely arranged wire grooves 11 and 12, which respectively accommodate therein the wire terminal elements 13 and 14, which are respectively in metallic connection with the center and side plug contacts 15 and 16 arranged within the plug receiving opening of the receptacle body. These specific features are not a part of the present invention, and are not claimed herein, as any kind and arrangement of plug contacts and wire terminal elements may be employed without affecting the invention, but one of the preferable features of the receptacle forming a part of the present application is that of covering the wire grooves 11 and 12 by means of a disk like insulating guard cap 17. This cap is made of porcelain or equivalent insulating material and flatly abuts upon the inner end of the receptacle body and is of a sufficient diameter to completely cover the wire grooves 11 and 12 and thus protect the elements confined therein. The cap 17 is preferably detachably held in place by the central plug contact 15, which is in the form of a screw having a detachable threaded and nut connection 18—19 with the center of the cap, as plainly shown in Fig. 4 of the drawings.

In addition to the elements specified, the receptacle body 1 is provided upon diametrically opposite sides with the flattened clearance faces 20, and directly adjoining each of said faces upon the same side of the body with a wedge projection 21 preferably of an approximate V-shape and presenting at one side a guiding shoulder 22 and at the opposite side a retaining shoulder 23, the functions of which details will be explained in connection with the action of the spring clamping device now to be described. The said spring clamping device may be designated in its entirety by the number 24 and essentially consists of a spring wire frame possessing sufficient strength to afford a strong and positive clamping action for locking the receptacle in place, while at the same time, of the necessary resiliency to provide a spring clamping action to adapt the device to supporting elements of different thicknesses or to the use of washers or gaskets behind the annular binding shoulder 2 of the receptacle body. The spring wire

frame 24 which constitutes the clamping device as an entirety, is bent to provide what may be termed a swinging U-shaped locking bail 25 formed at opposite sides with the U-shaped side clamp members 26. These U-shaped side clamp members 26 are formed with the relatively straight pivot arms 27 provided at their extremities with the in-turned terminal pivot studs 28 having a pivot mounting in the bearing holes or openings 29 formed in the opposite clearance faces 20 of the receptacle body. With the side pivot arms 27 pivotally hung in the holes 29, it will be observed that the clamping device frame and its bail 25 embrace the receptacle body, and the pivot arms 27 have a swinging movement over the clearance faces 20 and over the wedge projections 21.

In applying the receptacle to the supporting element or sign sheet, the pivotal clamping device is swung to its inactive position over the inner end of the receptacle body so that the side members of the wire frame can pass through the opposite notches 8 of the hole 9, thereby permitting the entire receptacle with its clamp to be moved through said hole, and by turning the receptacle body just before it passes into the hole the rib 4 may be engaged with one of the notches 8 as described, though this may obviously be done in the first instance where the hole is sufficiently large to receive the wire frame 24 without passing it through the notches 8. After thus inserting the receptacle with its clamp, it is simply necessary to swing the latter laterally over the receptacle body to the position shown in Fig. 1. In thus moving the clamping device to its locked position, the pivot arms 27 first engage the guiding shoulders 22 and are spread thereby onto the wedge projections 21, whereupon the said arms 27 pass over the said projections till they snap into engagement behind the retaining shoulders 23, thus contributing materially to the security of the lock which is otherwise provided for by the ends of the U-shaped clamp members 26 firmly engaging against the supporting element with a spring pressure and also on account of said clamp members moving to a "past center" position, as plainly shown in Fig. 1.

The construction described is equally available for receptacles having wire terminal elements as described, or simply leading-in wire connections, as will be well understood by those familiar with the art.

I claim:

1. An electrical receptacle including a body insertible into the receptacle hole of a supporting element and having a stop at its front end to prevent its passage entirely through the hole, and a clamping device movably mounted on the body and insertible therewith through said receptacle hole, said device and stop constituting means for en-

gaging opposite sides of and clamping the body to the supporting element.

2. An electrical receptacle including a body insertible into the receptacle hole of a supporting element and having a stop at its front end to prevent its passage entirely through the hole, and a clamping device pivotally mounted on the rear portion of the body and insertible therewith through said receptacle hole, said device and stop constituting means for engaging opposite sides of and clamping the body to the supporting element.

3. An electrical receptacle including a body insertible into the receptacle hole of a supporting element and having a stop at its front end to prevent its passage entirely through the hole, and a clamping yoke pivotally mounted on the body and capable of swinging to a position against one side of the same in rear of the stop, said yoke and stop constituting means for engaging opposite sides of the supporting element.

4. An electrical receptacle including a body insertible into the receptacle hole of a supporting element and having a stop at its front end to prevent its passage entirely through the hole, and a clamping yoke pivotally mounted on the body and capable of swinging to a position with its looped end in rear of the body, in which position it is insertible through the opening and also being movable to a position with its looped end against one side of the body in rear of the stop, said looped end and stop constituting means for engaging opposite sides of the supporting element.

5. The combination with a supporting element having an opening, of a receptacle body insertible into the opening and having a stop at its front end too large to pass

through said opening, and a clamping device movably mounted on the body and insertible therewith through the receptacle opening, said device being movable to a position against the rear side of the support in rear of the stop.

6. The combination with a support having an opening therethrough, of an electrical receptacle body insertible into the opening and having a stop on its front portion that engages the front face of the support, and a yielding clamping yoke pivoted on the rear portion of the body and swinging between a position in rear of the same and a position at one side of said body in rear of the stop, said yoke being insertible through the opening and engaging the rear side of the support.

7. In an electrical receptacle, the receptacle body provided with side retaining shoulders, and a spring clamping device having pivotal side clamp members adapted to be snapped into engagement with said shoulders.

8. In an electrical receptacle, the receptacle body provided upon opposite sides with flattened clearance faces and directly adjoining each of said faces with a wedge projection presenting at opposite edges a guiding shoulder and a retaining shoulder respectively, and a spring clamping device carried with the body and having pivotal side clamp members movable over the clearance faces and also over said wedge projections.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FRANK J. RUSSELL.

Witnesses:

THEO. STOLL,
DAVID E. DANIELSON.