

Sept. 3, 1935.

C. T. VON HOLTZ  
SNAP-ON SIGN RECEPTACLE

2,012,979

Filed June 4, 1932

2 Sheets-Sheet 1

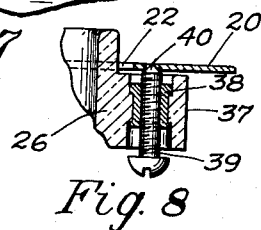
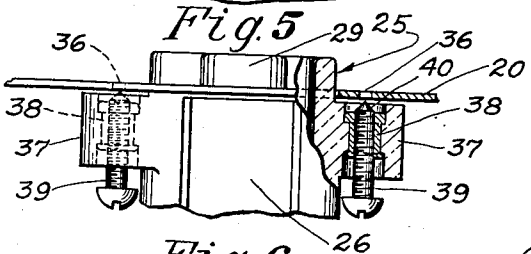
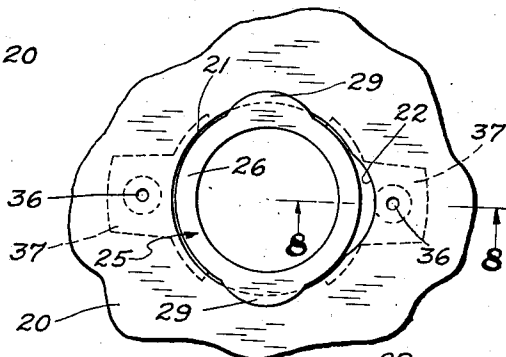
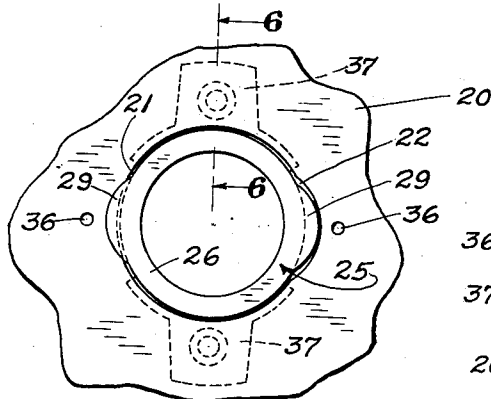
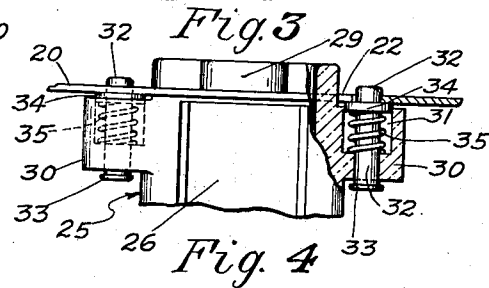
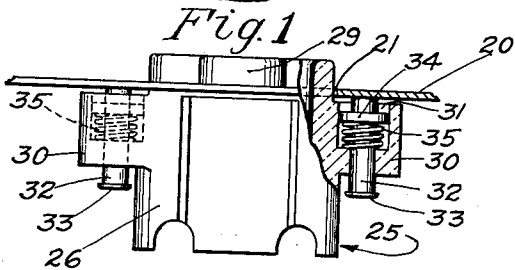
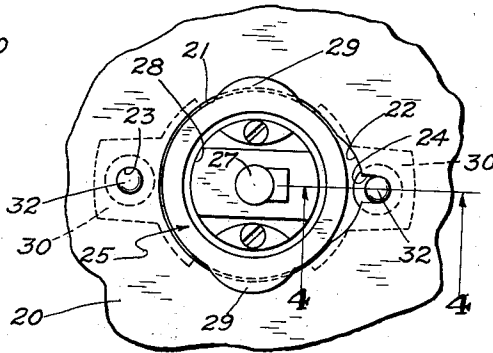
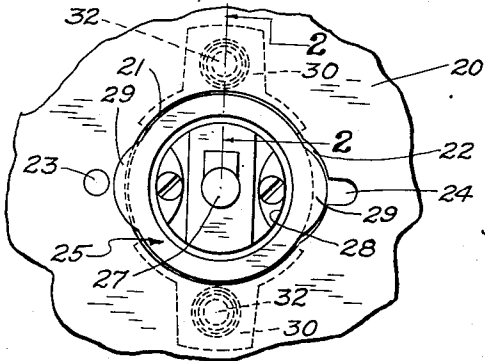


Fig. 6

Fig. 7

Fig. 8

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2 Sheets-Sheet 2

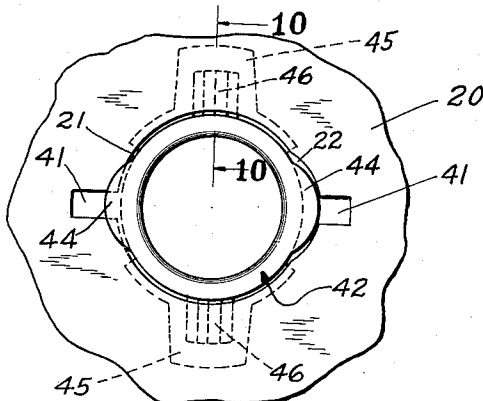


Fig. 9

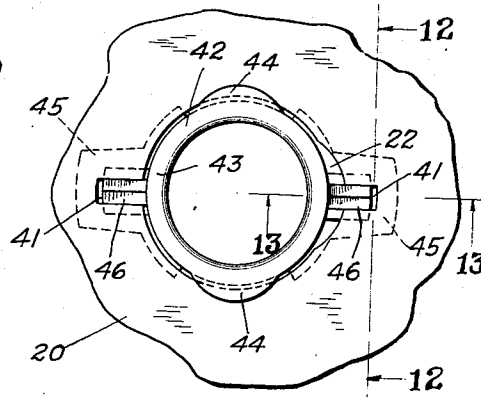


Fig. 11

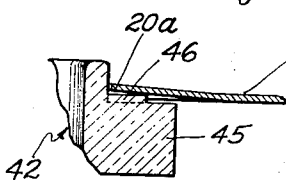


Fig. 10

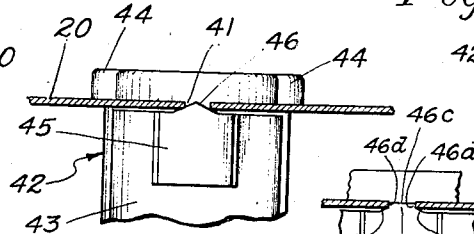


Fig. 12

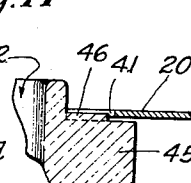


Fig. 13

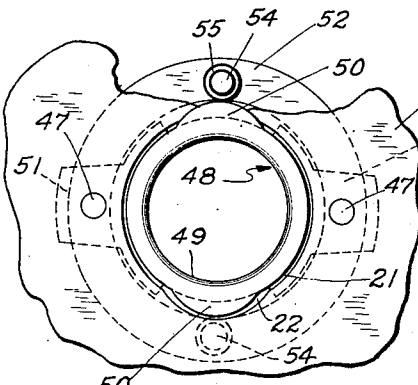


Fig. 14

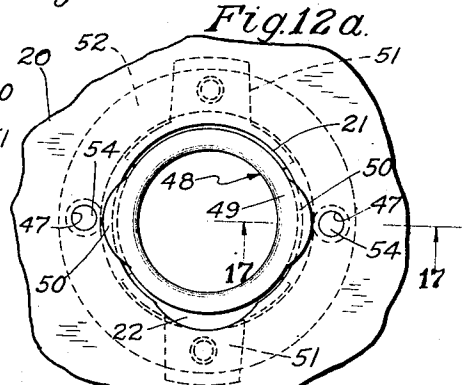


Fig. 16

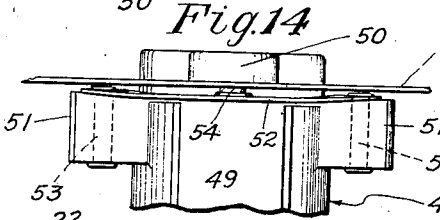


Fig. 15

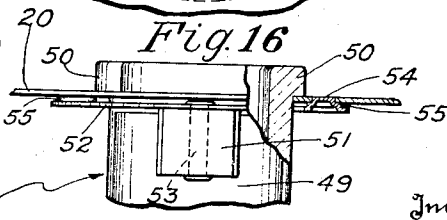


Fig. 17

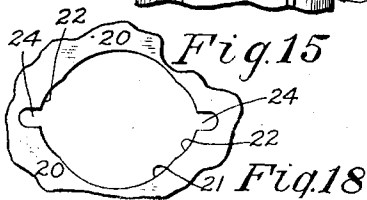


Fig. 18

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## UNITED STATES PATENT OFFICE

2,012,979

## SNAP-ON SIGN RECEPTACLE

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 Bridgeport, Conn., a corporation of Connecticut

Application June 4, 1932, Serial No. 615,458

2 Claims. (Cl. 173—339)

This invention relates to new and useful improvements in sign receptacles such as are used to mount the electric bulbs of illuminated signs.

An object of the invention is to provide a sign receptacle which may be easily and quickly mounted in a sign.

Another object is to provide a sign receptacle which may be mounted in a sign by a single workman operating from one side of the sign.

A further object is to provide a sign receptacle including means whereby it may be locked in place in a sign and whereby it is prevented from rattling.

An additional object is to provide a sign receptacle having the characteristics stated and which is simple in construction whereby it may be manufactured and sold at a reasonable price.

Other objects and advantages will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein several embodiments of the invention are shown. However, it is to be understood that the invention is not limited to the constructions shown but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawings:

Fig. 1 is a front elevational view showing a portion of a sign and illustrating the first step in the mounting of the improved receptacle in the sign;

Fig. 2 is a view taken at right angles to Fig. 1 parts being sectioned as indicated by the line 2—2 of Fig. 1;

Fig. 3 is a view somewhat similar to Fig. 1, but showing the receptacle fully mounted in the sign;

Fig. 4 is a view taken at right angles to Fig. 3 parts being shown in section as indicated by the line 4—4 of that figure;

Fig. 5 is a view similar to Fig. 1 but showing a slightly modified construction;

Fig. 6 is a view taken at right angles to Fig. 5 parts being shown in section as indicated by the line 6—6 of that figure;

Fig. 7 is a front elevational view showing the modified form of the improved receptacle in place in a sign;

Fig. 8 is a detail sectional view taken substantially along the line 8—8 of Fig. 7;

Fig. 9 is a view similar to Fig. 1 but showing a further modified construction;

Fig. 10 is a detail sectional view taken substantially along the line 10—10 of Fig. 9;

Fig. 11 is a front elevational view showing the

receptacle of Fig. 9 as completely installed in a sign;

Fig. 12 is a view taken at right angles to Fig. 11 as indicated by the line 12—12 in that figure.

Fig. 12a is a fragmental side view showing a different shape of locking rib which may be used;

Fig. 13 is a detail sectional view taken substantially along the line 13—13 of Fig. 11;

Fig. 14 is a front elevational view illustrating the first step in the mounting of yet a further modified construction of receptacle;

Fig. 15 is a view taken at right angles to Fig. 14;

Fig. 16 is a front elevational view showing the receptacle of Fig. 14 completely mounted in a sign;

Fig. 17 is a view taken at right angles to Fig. 16 parts being shown in section as indicated by the line 17—17 of that figure; and

Fig. 18 is a view showing a somewhat modified construction of opening in sign plate to fit receptacle.

Referring in detail to the drawings and at first particularly to Figs. 1 through 4, at 20 is shown a portion of a sign plate or of the front plate of any sign. This plate is provided with a relatively large opening 21 recessed or notched in one of its sides as at 22 and the plate is also provided with a pair of openings 23 and 24 arranged at opposite sides of the opening 21. As here shown the notch 22 extends practically to the opening 24 and in the operation of piercing the plate 20 to provide these openings the material which would remain between the opening 24 and the notch 22 would be so slight that it has been shown as removed. However, as the description proceeds it will become apparent that the opening 24 functions with the opening 23 and independently of the notch 22.

The improved receptacle is generally indicated by the reference character 25 and includes a body 26 generally cylindrical in outline and formed as by moulding or otherwise of any suitable insulating material. The receptacle body 26 is hollow and contains a central lamp contact member 27 and a screw shell contact 28, the arrangement or construction of contacts not being important in the present instance. Suitable conductors (not shown) may be electrically connected with the contacts in any desired manner. Adjacent its outer end the body 26 is provided with spaced lugs 29 providing flange-like portions at diametrically opposite sides of the body. While two of these lugs 29 are shown as the description proceeds it will become evident that the number is not controlling and that the

number, size and shape of the lugs may be varied as required.

Slightly inwardly of the lugs 29 the body 26 is at diametrically opposite points provided with laterally extending enlargements or shoulder portions 30 recessed from their upper ends as at 31. These shoulders 30 are shown as arranged at right angles to or between the lugs 29. Each shoulder 30 carries a pin or plunger 32 passing through the recess 31 thereof and through the lower wall of said recess and headed at its lower end as at 33. Inwardly of its upper or outer end each pin 32 carries an enlargement or flange 34 and surrounding each pin and bearing at one end against its flange and at its other end against the lower wall of the recess is a coil spring 35. Obviously, the normal tendency of the spring 35 is to project the pin out of its recess 31 and movement of the pin under the influence of the spring is limited by the head 33 of the pin.

In mounting the improved receptacle in a sign a workman at the rear of the sign holding the receptacle slightly tilted inserts it through the opening 21 in the sign plate disposing one of the lugs 29 at the front side of the plate and in overlapping relation with the front surface thereof and then straightening the receptacle passes the other lug 29 through the notch 22 whereby the receptacle is disposed as shown in Fig. 1. This action brings the outer ends of the pins 32 into engagement with the rear surface of the plate 20 compressing the springs 35 as shown in Fig. 2. Next, the receptacle is given a quarter turn or partial rotation disposing both of the lugs 29 at the front side of the sign and in spaced relation with the notch 22 and bringing the pins into alignment with the relatively small openings 23 and 24 in the plate. When the parts are in this position the springs 35 will of course force the pins 32 outwardly and the outer ends of the pins will enter the openings 23 and 24 as shown in Figs. 3 and 4.

With the pins disposed in the openings 23 and 24 the receptacle will be locked against rotation and since these pins enter the openings from the rear of the sign they will co-operate with the lugs 29 to prevent the receptacle from falling or being pushed out of the sign. To remove the receptacle from the sign a screw driver or similar instrument may be inserted under the heads 33, which are spaced somewhat from the rear surface of lugs 30 as shown in Fig. 4 to draw the pins 32 inwardly out of the openings 23 and 24 after which the receptacle may be rotated to again bring one of the lugs 29 into alignment with the notch 22 after which the receptacle may of course be removed. It is to be noted that the operation of applying or mounting the receptacle is all performed from the rear of the support of plate 20. The same is true of the operation of removing or demounting the receptacle. The fit of the pins in the openings 23 and 24 may be tight or in the nature of a wedging action to prevent the receptacle rattling in the sign. However, in the present instance the flanges or shoulder 34 on the pins are held pressed against the rear surface of the sign by the springs 35 and in this way rattling is prevented. The action of the springs in pressing the flanges 34 against the rear surface of the sign results in the lugs 29 being maintained in engagement with the front surface of the sign so that free movement of the receptacle relative to the sign is prevented.

Referring now to that form of the invention shown in Figs. 5 through 8 the sign plate 20 is provided with the relatively large opening 21 and the notch 22 at one side thereof, and in spaced relation to this relatively large opening the plate is provided with relatively small openings 36. The improved receptacle is here again generally designated 25 and includes a substantially cylindrical hollow body portion 26 moulded or otherwise formed of any suitable insulating material 10 and adjacent its outer end provided with the laterally extending lugs or flange-like portions 29.

Inwardly of the lugs 29 and at diametrically opposite sides the body 26 is enlarged to provide extensions or shoulder-like portions 37 arranged between or at right angles to the said lugs 29. These portions 37 each carry a preferably metallic insert 38 which may be molded therein and the portions are open at the opposite ends of the insert and the insert itself is hollow and internally screw threaded. Through each of the inserts 38 there is threaded a screw 39 of such length that its head is disposed beyond its associated shoulder portion 37 for each operation. The outer end portions 40 of the screws 39 are conical or tapered and these portions are adapted to seat in the openings 36 above referred to, which openings are of less diameter than the screws as shown.

The receptacle of Figs. 5 through 8 is also mounted in the sign by a workman operating from the rear of the sign and in mounting the receptacle it is held at a slight angle and partially pushed through the opening 21 to dispose one of the lugs 29 over the front surface of the sign and then the second lug 29 is brought into alignment with the notch or recess 22 and passed through it. This will position the receptacle as shown in Figs. 5 and 6 and the receptacle is then given a partial rotation or quarter-turn to carry the lugs 29 into overlapping relation with the front surface of the sign plate and to bring the screws 39 into alignment with the openings 36. The screws are then adjusted to seat their conical end portions 40 in the openings 36 in the plate 20 thus securing the receptacle in place as shown in Figs. 7 and 8.

Since the ends of the screws do not pass through the openings 36 but seat against the edges thereof it will be appreciated that tightening of the screws will result in the lugs 29 being drawn against the outer surface of the sign plate. Further, it will be apparent that tightening of the screws locks the receptacle against turning movement in the sign and also so secures the receptacle that it is not free to rattle. When it is desired to remove the receptacle from the sign the screws 39 are backed off and the receptacle may then be turned to bring one of the lugs 29 into registry with the notch 22 when the receptacle may be easily removed or may in fact be permitted to fall out of the sign. Since it is the seating of the conical end of the screws against the side of the openings 36 that prevents turning movement of the receptacle in the sign or that locks the receptacle in the sign it will be appreciated that recesses not extending entirely through the sign might well be used in place of the openings.

Referring now to Figs. 9 through 13 the sign or sign plate 20 is shown as provided with the opening 21 and the enlargement or notch 22 at one side thereof. Slot-like openings or notches 41 are provided in the plate 20 at opposite sides of the opening 21 and these openings 41 are shown

as entering into the opening 21. The improved receptacle of these figures is generally designated 42 and includes an elongated hollow body 43 which may be moulded or otherwise formed of any suitable insulating material. Adjacent its outer end the body 43 is provided with outwardly or radially extending lugs 44 providing flange-like portions. Inwardly of the lugs 44 the body is provided with or formed with enlargements or shoulder portions 45 each on its outer or forward surface provided with a raised portion or projection 46 which transversely is in the shape of a wedge or somewhat in the shape of an inverted V as best shown in Fig. 12.

When mounting the receptacle 42 in the plate 20 the receptacle is held at a slight angle to the plate and the open end of the receptacle is inserted or passed through the opening 21 in the plate. This will dispose one of the lugs 44 over the front face of the plate and the second lug 44 is then brought into registry with the notch 22 and the receptacle straightened or brought normal to the plate thus passing the second lug through the plate. The parts will now be disposed as shown in Figs. 9 and 10 with the raised portions or projections 46 pressing against the rear surface of the plate 20.

This requires a slight springing of the plate as suggested at 20a in Fig. 10 and while the receptacle is held against movement out of the opening 21 it is turned to carry its second lug 44 away from the notch 22 and to bring its portions 46 into registry with the slot-like openings 41. Since the pressure of the raised portions 46 has sprung the plate to a slight extent as soon as these portions come opposite the openings 41 the pressure on the plate will be relieved and the plate will return to a normal condition disposing these portions partially within the openings 41 as shown in Figs. 11, 12 and 13.

As the projections 46 more or less wedgingly engage in the openings 41 it will be apparent that this engagement secures the receptacle against free movement such as would cause rattle and in addition locks the receptacle in the sign. In both of these functions the projections cooperate with the lugs 44 since these lugs are held in engagement with the outer surface of the sign by the wedging action of the projections in the openings 41. When the receptacle is to be removed from the sign it is rotated or given a quarter turn to so position the lugs 44 that one of them registers with the notch 22 in which position of the parts as shown in Fig. 9 the receptacle may fall out of the sign. At the start of this turning movement the inclined sides of the projections 46 will have a cam-like action against the edges of the openings 41.

In Fig. 12a the ribs 46a corresponding to ribs 46 are tapered on opposite sides as indicated at 46b but instead of coming together at the center there is a flat portion 46c which enters the slots 41 and provide shoulders 46d to engage the sides of the slot to lock the receptacle against turning while the inclined walls 46b hold it against rattling.

In that form of the invention shown in Figs. 14 through 17 the plate 20 is again provided with the opening 21 having the notch 22 extending through one side thereof. In spaced relation to the opening 21 and the notch 22 the plate is provided with openings 47 of relatively small diameter. The receptacle in these figures is generally designated 48 and includes a hollow substantially cylindrical body portion 49 moulded

or otherwise formed of insulating material. Adjacent its outer end body 49 is at diametrically opposite points provided with radially extending lugs 50 forming short flanges or flange-like portions.

Inwardly of said lugs 50 the body is provided with enlargements or shoulder portions 51 also arranged at diametrical sides of the body and further arranged or spaced about 90° from the lugs 50. Disposed on the outer ends of these enlargements or shoulder portions 51 is a spring ring 52 secured in place in any suitable manner as by rivets 53 passing through the ring and the shoulder portions and headed as shown. At points between the shoulder portions 51 and adjacent the lugs 50 the said ring 52 is provided with projections or tits 54. These projections 54 may be attached to the ring 52 or may be pressed therefrom as most clearly shown in Fig. 17.

When mounting the receptacle 48 in the sign or plate 20 the workman at the rear of the sign holds the receptacle at a slight angle and inserts the same into the opening 21. This disposes one of the lugs 50 at the front side of the sign and the second lug 50 is then brought into alignment with the notch 22 and passed therethrough disposing both lugs at the front of the sign and bringing the projections 54 into engagement with the rear surface of the sign as shown in Figs. 14 and 15. Next, the receptacle is given a quarter turn or partial rotation carrying the second lug away from the notch 22 and bringing the projections 54 opposite the openings 47 disposing the parts as shown in Figs. 16 and 17.

Of course, as soon as the projections 54 are brought into registry with the openings 47 the spring ring 52 acts to snap these projections into the openings. This effectually locks the receptacle to the sign preventing rotation of the receptacle in the opening 21. To remove the receptacle from the sign it is but necessary to pry out or withdraw the projections 54 and rotate the receptacle from the position shown in Fig. 16 to that shown in Fig. 14. However, while the projections are in the openings 46 the receptacle is securely locked to the sign or plate 20. Additionally, the projections 54 are provided with steps 55 and when the projections have entered the openings 47 the step portions 55 bear against the rear surface of the sign functioning to draw the lugs 50 against the front surface thereof and thereby prevent rattle.

In the above constructions only one notch 22 has been used in the edge of the opening 21 and this is preferred as it is all that is necessary for ready insertion of the receptacle as described. However, I am not limited to this construction but may use two of these notches arranged on opposite sides of the opening 21 as shown in Fig. 18. With this arrangement it is not necessary to tip the receptacle when inserting it in the opening but the lugs, such as 29, 44, and 50 may be inserted through these notches and then the receptacle turned through a partial revolution to move them out of alignment with the notches the same as in the first arrangement.

From the foregoing it will be seen that the improved receptacle as herein disclosed may be easily and quickly mounted in a sign by a single workman. At the present time a common receptacle used in signs requires two men for its installation, one working at the front and the other at the rear of the sign. It will also be appreciated that in the present device the receptacle is locked in the sign and is held against

rattle since in each form of the device the lugs adjacent the forward or outer end of the body of the receptacle are drawn or maintained against the outer face of the sign. Also, it will be understood that while in each form of the invention disclosed the receptacle is provided with two lugs to bear against the outer surface of the sign and two locking means to be disposed at the inner side of the sign the number, shape and size of these parts may be varied as desired.

Having thus set forth the nature of my invention, what I claim is:

1. In combination, a supporting plate having a large opening therein and a pair of small openings arranged laterally of said large opening, a receptacle including a body, a pair of radially extending lugs adjacent one end of the body, said plate having a notch opening through one side of said large opening, said receptacle adapted to be inserted into said large opening in the plate by passing one of said lugs through said notch whereby to dispose said lugs at the front side of the plate, a pair of shoulder portions on said body inwardly of said lugs, spring pressed pins carried by said shoulder portions, and said receptacle adapted after being inserted into said large opening to be given a partial rotation to carry said lugs out of alignment with said notch and

to align said spring pressed pins with said small openings whereby the pins will be projected into such openings to lock the receptacle to the plate.

2. In combination, a supporting plate having a large opening therein and a pair of small openings arranged laterally of said large opening, a receptacle including a body, a pair of radially extending lugs on said body adjacent one of its ends, said plate having a notch opening through one side of said large opening, said receptacle adapted to be inserted into said large opening by passing one of said lugs through said notch whereby to dispose said lugs at the front of the plate, a pair of shoulder portions on said body inwardly of said lugs, spring pressed pins carried by said shoulder portions, said receptacle adapted to be given a partial rotation after being inserted into said large opening whereby to carry said lugs out of alignment with said notch and to align said pins with said small openings whereby the pins will be projected into them to lock the receptacle to the plate, and an enlargement on each of said pins and adapted to bear against the rear face of the plate and draw said lugs against the front face thereof to secure the receptacle against rattle.

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