

E. H. FREEMAN.
SELF LOCKING SIGN RECEPTACLE.
APPLICATION FILED APR. 8, 1914.

1,193,252.

Patented Aug. 1, 1916.

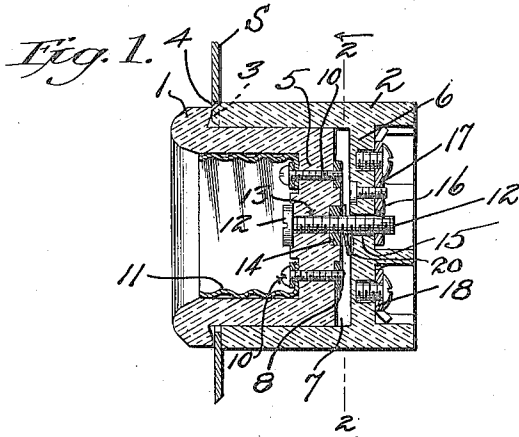
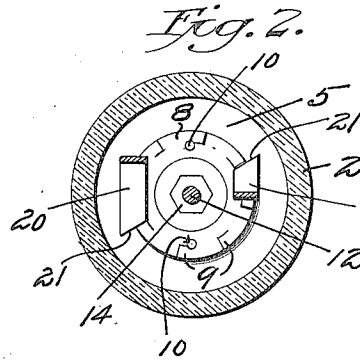
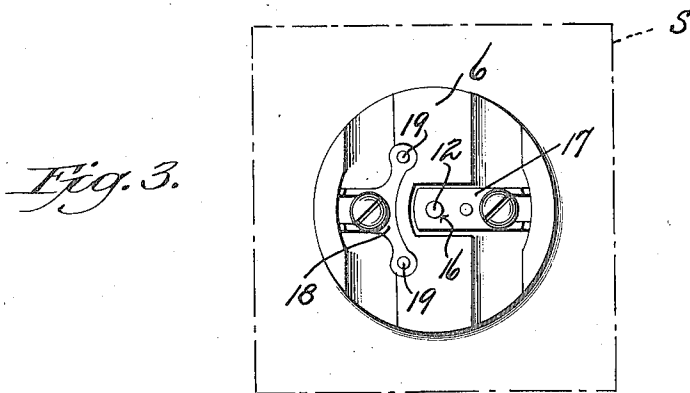


Fig. 4.

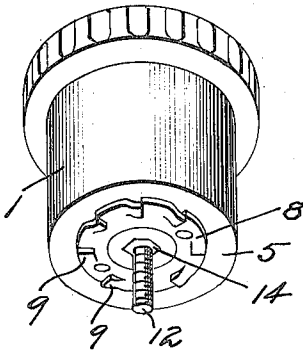
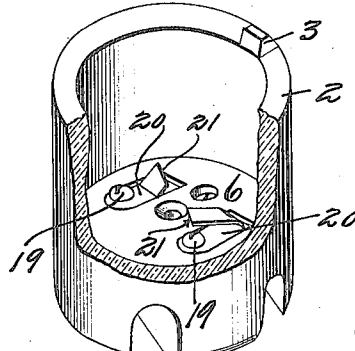


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SELF-LOCKING SIGN-RECEPTACLE.

1,193,252.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDGAR H. FREEMAN, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Self-Locking Sign-Receptacles, of which the following is a specification.

This invention relates to an electrical sign receptacle of simple and compact construction and characterized by embodying the desirable feature of an automatic or self-locking connection between the two principal parts or members of the receptacle.

To this end, the invention has in view a separable circuit-making locking contact which is specially applicable to that type of electrical sign receptacles comprising a pair of telescoping cup members which respectively carry the wire terminal plates and the plug contacts, and which are so related as to provide a clamp for engagement with the sign sheet so that other supporting or fastening means are unnecessary to secure the receptacle to the sheet.

More specifically, the invention contemplates a novel construction of contacts which are completely housed between the two cup members while at the same time providing a ratchet lock that becomes automatically and yieldingly effective when the two cup members are telescoped and screwed together, thereby providing a most effectual lock which prevents relative rotation of the receptacle members, and a consequent impairment of the electrical circuit.

With these and other objects in view, the invention consists in the novel construction, combination, and arrangement of parts as will more fully appear as the description proceeds, the novel features thereof being pointed out in the appended claims.

Though susceptible of structural modification without departing from the spirit or scope of the invention, a preferred and practical embodiment thereof is shown in the accompanying drawing, in which—

Figure 1 is a sectional view of a complete

receptacle, embodying the present invention, and shown clamped in position on a sign sheet or equivalent supporting element. Fig. 2 is a cross sectional view on the line 2—2 of Fig. 1. Fig. 3 is a rear elevation of the receptacle exposing the wire terminal plate. Fig. 4 is a detail perspective view of the inner cup member exposing the ratchet contact ring on the outer side of its insulating bottom piece. Fig. 5 is a perspective view partly broken away of the outer cup member, exposing the interior reversely disposed frame contact pawls which coöperate with the ratchet contact ring.

Like reference characters designate corresponding parts in the several figures of the drawings.

In the illustrated embodiment of the invention shown in the drawings, the sign receptacle includes two principal parts or members, namely an inner cup member 1 and an outer cup member 2 which are made of porcelain, fiber or other insulating material. These two cup members are adapted to be telescopically applied, one within the other, and are also adapted to be clamped respectively upon opposite sides of the sign sheet or other supporting element S. In this connection, it is preferable to provide one of the cup members, as for instance the cup member 2, with a retaining lug or projection 3 at its edge for engagement with a corresponding keeper notch 4 formed in the edge of the receptacle-receiving hole in the sign sheet, thereby providing a locking expedient which prevents rotative movement or turning of the electrical receptacle within the hole of the sign sheet.

The two cup members which loosely and telescopically register in the manner shown in the drawings, are both provided with integral insulating bottom pieces 5 and 6 respectively, between which there is provided within the receptacle a housing chamber 7 which serves to completely house the electrical contacts between the two receptacle members, and thus thoroughly and effectually protect them from weather conditions. One of these contacts is in the form of a

ratchet contact ring 8 which is applied to the outer side of the insulating bottom piece of the inner cup member 1, and consists of a ring of sheet metal having struck-up or punched therefrom a circular series of inclined tongues forming ratchet teeth 9. The said ratchet contact ring 8 is in effect a universal contact element, and the same is rigidly held in position by means of the combined fastening and conducting screws 10, passing through the bottom piece 5 of the cup 1 and also engaged with the screw shell contact 11 seated within the socket of the cup member 1. These screws therefore electrically connect the contacts 11 and 8 as well as secure such contacts in place.

The center plug contact for the receptacle consists of a single connecting screw 12 which is held in a central opening 13 in the bottom piece 5 by means of a jam nut 14 seated in the outer side of the bottom piece, and the projecting end of the said screw 12 extends through a center opening 15 in the bottom piece 6 of the outer cup 2 and adjustably engages a threaded opening 16 in one of the wire terminal plates 17 fitted to the outer side of the bottom piece 6 of said cup member 2. The other wire terminal plate 18 is also fitted to the outer side of said bottom piece 6 and is of a forked construction to receive the oppositely located conducting screws 19, which pass through and hold in position the oppositely located spring contacts 20. The pair of spring contacts 20 is held at the inner side of the bottom piece 6 and constitute, in combination with the contact ring 8, the separable circuit-making locking contact between the two cup members. These spring contacts are in the form of spring plates having their free portions offset at an inclination from the inner side of the bottom piece 6, and whose ends are beveled as at 21 to provide pawls or dogs over which the ratchet teeth 9 yieldingly slide and engage. To permit of this ratchet action, the opposite spring pawls 20 are reversely disposed with respect to each other.

When assembling the two cup members, it will be observed that after passing the screw 12 through the center hole 15 in the bottom piece 6 of the outer cup member and engaging it with the threaded opening 16 of the terminal plate 17, it is then only necessary to rotate the inner cup member within the outer cup member, or vice versa, to bring the ratchet ring 8 into ratchet engagement with the spring contact pawls 20. This relative rotation of the two cup members is continued until they are tightly drawn together, and during this movement the pawls 20 will adapt themselves or yield, within reasonable limit, to this relative longitudinal or telescopic adjustment of the two cup

members. Thus, not only is electrical communication firmly established and maintained between the plug contacts and the wire terminal plates under all reasonable adjustments of the receptacle, but at the same time the two cup members of the latter are securely and effectually locked against relative backward rotation or in the direction of unscrewing or loosening. The latter can only be effected by the removal of the lamp from the receptacle so that access may be had to the screw 12 for unscrewing the latter sufficiently to permit of the ratchet ring and the spring pawls being separated sufficiently to become disengaged.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

I claim:

1. A sign receptacle comprising a pair of telescoping cup members respectively carrying the plug contacts and the wire terminal plates, an adjustable screw connection between said members, and an intermediate pawl and ratchet device rendered effective by a relative rotation of the two members and forming a part of the electrical circuit.

2. A self-locking sign receptacle comprising a pair of telescoping members carrying the plug contacts and the wire terminal plates, a pivotal connection between the two members, and a pawl and ratchet connection between the two members, said pawl and ratchet connection being included in the electrical circuit.

3. A sign receptacle including a pair of telescoping cup members, an adjustable pivoting screw connection between said members, and a ratchet contact connection electrically connecting and housed between the two members.

4. A sign receptacle including a pair of telescoping cup members respectively carrying the plug contacts and the wire terminal plates, one of the plug contacts constituting an adjustable connection between the two members, a ratchet contact ring fitted to one of the cup members when electrically connected with one of the plug contacts, and spring contact pawls carried by the other cup member and having a ratchet locking engagement with the ring, said pawls being electrically connected with one of the wire terminal plates.

5. A sign receptacle including a pair of adjustably connected cup members which respectively carry the plug contacts and the wire terminal plates, and a self-locking device preventing relative rotation of the two members and forming a part of the electrical circuit.

6. A sign receptacle including, in combi-

nation with the supporting element, two members respectively carrying the plug contacts and the wire terminal plates and respectively engaging upon opposite sides of the supporting element, means for securing said members upon the supporting element by relative rotation thereof, and locking means to prevent relative backward movement of said members, said locking means being included in the electrical circuit. 10

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

EDGAR H. FREEMAN.

Witnesses:

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