Oct. 10, 1939. A. L. KUHLMAN 2,175,472

RECEPTACLE

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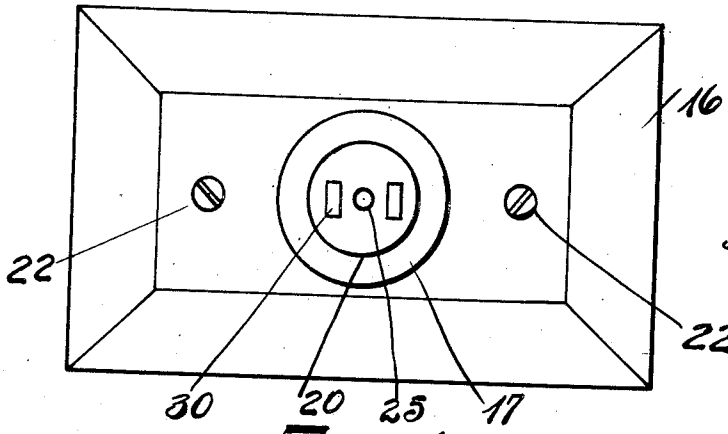


Fig. 1.

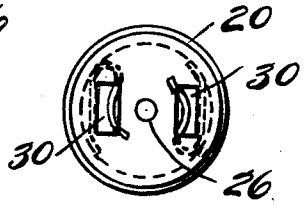


Fig. 6.

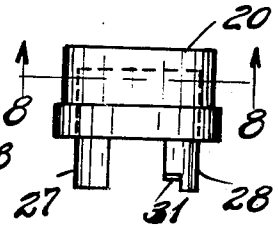


Fig. 5.

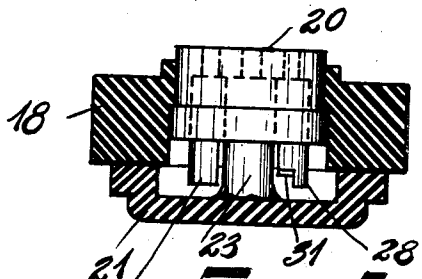


Fig. 2.

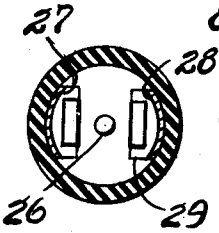


Fig. 8.

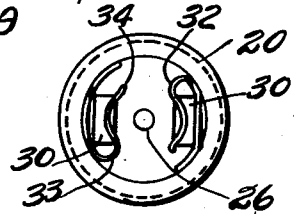


Fig. 7.

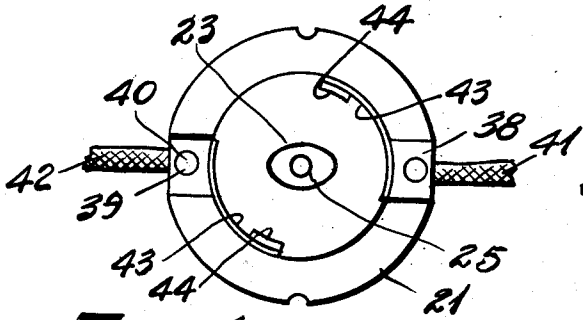


Fig. 4.

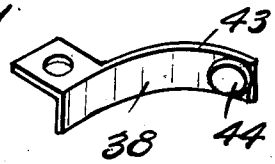


Fig. 9.

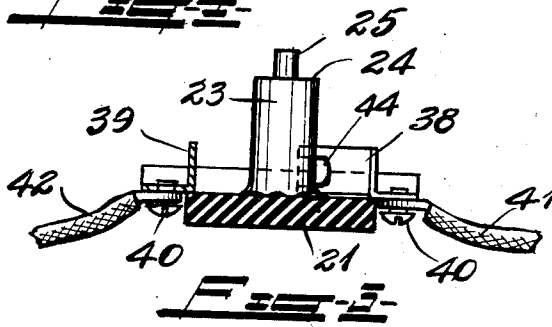


Fig. 3.

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RECEPTACLE

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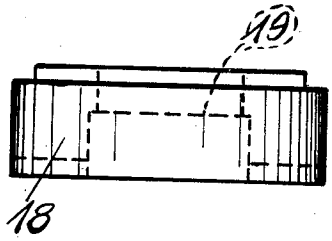


Fig. 10

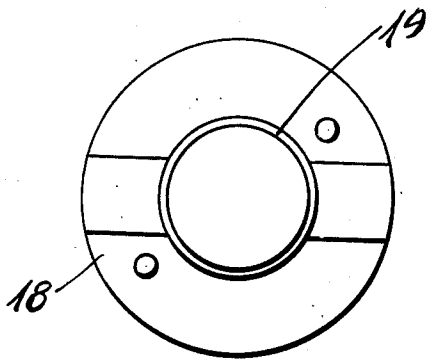


Fig. 11

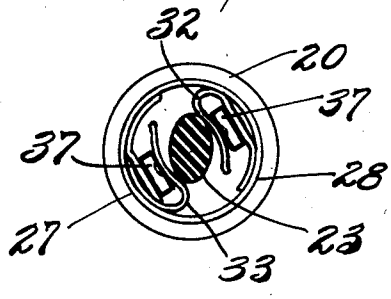


Fig. 14

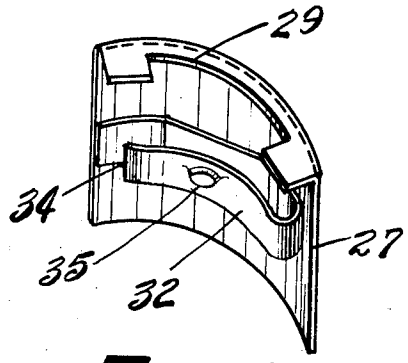


Fig. 12

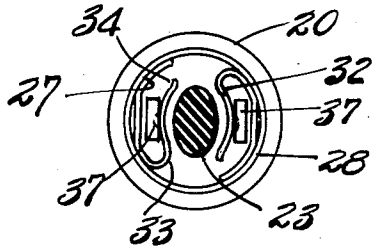


Fig. 13

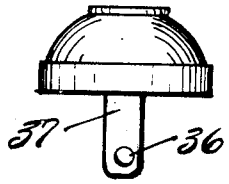


Fig. 15

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RECEPTACLE

Arthur L. Kuhlman, Bay City, Mich.

Application January 14, 1936, Serial No. 59,055

3 Claims. (Cl. 173—330)

This invention relates to electrical fixtures and more particularly to a socket and/or receptacle and into which a standard plug is inserted, forming a union for connecting any electrical appliance or fixture to a source of electrical supply.

One of the prime objects of the invention is to provide a socket designed to receive the prongs of a standard plug in the usual manner, and provide means in the socket for firmly locking said prongs therein when desired.

Another object of the invention is to provide a socket having simple, practical, and inexpensive locking mechanism which permits the socket to be used in the conventional manner, and by means of which the plug prongs can be securely locked therein when desired, eliminating the possibility of the accidental springing open or releasing when tension is placed upon the parts in such manner that an unintentional break in the contact would occur during the normal method of use.

A further object is to provide a locking socket which is identical in appearance, and which is interchangeable with and functions in exactly the same manner as does the conventional socket when the plug is inserted.

A still further object is to provide a socket which can be used as a wall outlet, a combination adapter, or in fact any form of outlet, which is composed of few parts, all of substantial construction, and which can be readily manufactured and assembled.

A further object still is to provide a receptacle having manually operable locking means adapted to engage the plug prongs and securely hold them in contact so that the plug cannot be removed and thus break the connection.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion, and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawings—

Fig. 1 is a front view showing my locking receptacle utilized as a wall outlet.

Fig. 2 is an enlarged, vertical, part sectional view of the locking receptacle.

Fig. 3 is an enlarged, part sectional, side elevation of the unitary back and cam member.

Fig. 4 is a top plan view.

Fig. 5 is a side elevation of the prong receiving cup socket.

Fig. 6 is a plan thereof.

Fig. 7 is an inverted plan view.

Fig. 8 is an inverted sectional view taken on the line 8—8 of Fig. 5.

Fig. 9 is an isometric view of one of the connection plates for the base.

Fig. 10 is a detail side elevational view of the insulated base.

Fig. 11 is an inverted plan view thereof.

Fig. 12 is an enlarged isometric view of one of the cup socket connectors.

Fig. 13 is an inverted plan view of the cup socket assembly, with plug prongs (shown in section) inserted, the cam being shown in section and the mechanism in unlocked position.

Fig. 14 is a view similar to Fig. 13, with the cup socket turned to lock the plug prongs in position.

Fig. 15 is a side elevational view of a conventional plug member.

Referring now more specifically to the drawings in which I have shown the preferred embodiment of my invention, the numeral 16 indicates a conventional face plate to which a receptacle 17 is secured in the usual manner to form a wall outlet, the receptacle proper comprising an insulated body member 18 formed with a centrally disposed shouldered opening 19 adapted to receive and accommodate a cup socket 20, all as clearly shown in Figs. 5 to 8 inclusive, of the drawings, the body of this cup socket being formed of insulating material as usual. A back 21 forms a closure for the lower end of the body, and screws 22 serve to rigidly secure the back thereto, said back being formed of rubber, fibre, "Bakelite", or any suitable desired insulating material, and a cam shaped post 23 is preferably formed integral therewith and is shouldered as at 24 to form a pilot 25 which extends into a centrally disposed opening 26 formed in the face of the cup socket, thus centering the cup in the body.

Opposed cup connectors 27 and 28 respectively are provided in the cup socket 20, and are formed as clearly shown in Fig. 12, the upper edge 29 being turned to lie in facial contact with the upper wall of the cup socket and is shaped to reinforce the spaced prong openings 30 which are provided therein, the lower edge of the connector 28 having marginal turned corner sections 31 which serve as stops for a purpose and in a manner to be presently described.

Contacts 32 and 33 respectively are mounted

on and form a part of these connectors and are formed as clearly shown in Fig. 12 of the drawings, each contact being bent as shown, the one end **34** being free so that necessary resiliency is provided to form a contact when the socket is utilized in the conventional manner, or to move to locked position when the cup socket is actuated, the rotative movement of the cup member being limited by the stops **31** provided on the connector **28**.

Each contact is formed with a raised section or boss **35**, said boss engaging the usual opening **36** provided in the plug prongs **37**.

I wish to direct particular attention to the fact that the device is intended for use with a standard plug such as shown in Fig. 15 of the drawings, the body E being formed of insulating material, and the spaced apart prongs **37** depending therefrom, each prong having an opening **36** therein, as usual, which opening cooperates in the locking arrangement as will hereinafter be more fully described.

Suitable connection plates **38** and **39** (see Fig. 9) are provided on the main body by means of screws **40**, and wires **41** and **42** are connected thereto and lead to a source of electrical supply, the ends **43** of the plates engaging the lower skirt sections of the cup connectors as usual, the contacts **44** engaging the turned corner sections **31** of the cup connector **28**, and limiting the rotative action of the socket.

When the receptacle is in its normal position, the cup socket **20** is in position as clearly shown in Figs. 6, 7, and 13 of the drawings, and in such position functions in exactly the same manner as does the conventional receptacle. Plugs can be inserted to form a proper and satisfactory electrical connection and union, with the plug prongs engaging the contacts **32** and **33**, but when it is desired to lock the prongs in the receptacle to prevent the removal caused by accidental jerk or tension on the plug cords or appliance, the operator merely rotates the plug and cup socket so that the cam post **23** firmly wedges and locks the prongs **37** between the contacts **32** and **33** respectively and the walls of the cup connectors **27** and **28**, the raised contacts **35** engaging the openings **36** provided in the prongs, and the prongs will then be firmly locked in position in the receptacle and cannot be removed until the plug and cup socket are turned back to original position. It will, of course, be obvious that the cam post **23** can be of any desired shape and that it may be formed with slightly raised surfaces or ridges (not shown) to assist in securing the cam post in locked position, and if desired the plug may be stationary and the cam rotated; this, however is merely a reversal of parts.

From the foregoing description it will be obvious that I have perfected a very simple, practical, economical, and substantial receptacle by means of which plug prongs can be locked in the receptacle if and when desired.

What I claim is:

1. In a device of the class described and comprising an electrical receptacle formed with a centrally disposed cam post, a cup socket revolubly mounted on said cam post and formed with spaced apart openings adapted to receive the usual plug prongs, contacts in said cup socket and formed with raised sections adapted to normally engage the openings in the plug prongs to firmly lock them in position when the cup socket is rotated to predetermined position.

2. In an electrical receptacle of the class described and comprising a main insulated body provided with a centrally disposed opening, a cam post mounted therein, a cup socket revolubly mounted on said cam post, resilient contacts mounted therein and adapted to be connected to a source of electrical supply, spaced openings in said cup socket adapted to receive the usual plug prongs, said cam post firmly wedging and locking the plug prongs in the socket when said socket is turned to predetermined position, and stops for limiting the rotative movement of the cup socket.

3. In an electrical receptacle of the class described and comprising a main insulated body and having a central vertically disposed cam post, an insulated cup socket mounted on said post and rotatable in said body member, cup connectors mounted in the socket and provided with resilient contacts having outwardly projecting raised sections thereon, spaced openings in the face of said cup socket and adapted to accommodate the usual plug prongs, said cam post forcing said contacts firmly into interlocking engagement with the plug prongs when the socket is turned to predetermined position, and stops for limiting the turning movement of said socket.

ARTHUR L. KUHLMAN.