July 8, 1924. 1,501,029

H. R. SARGENT

LIGHTING FIXTURE

Filed March 28, 1921

Fig.1.

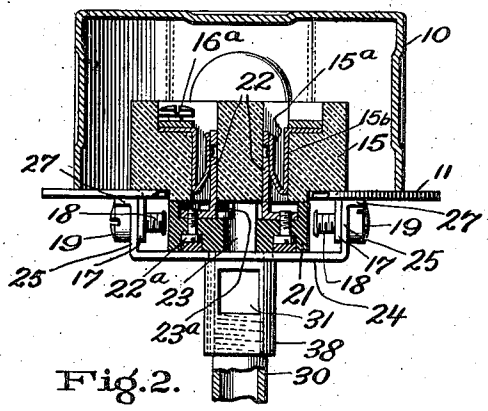


Fig.2.

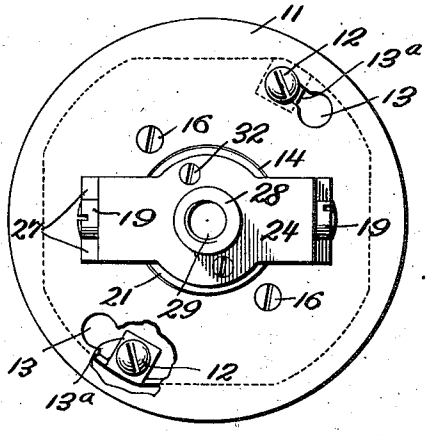


Fig.3.

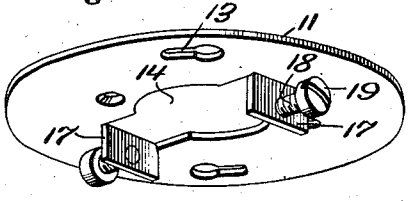


Fig.4.

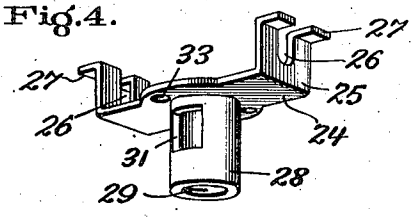


Fig.5.

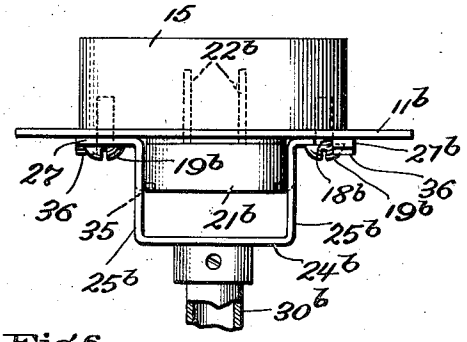


Fig.6.

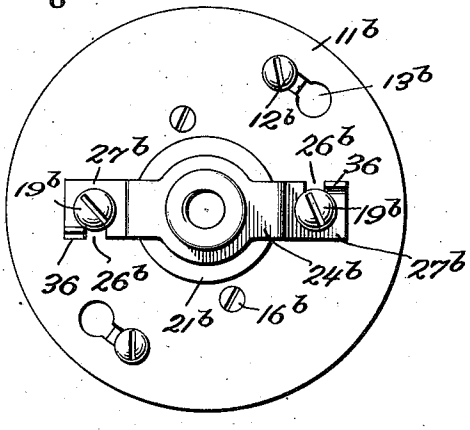
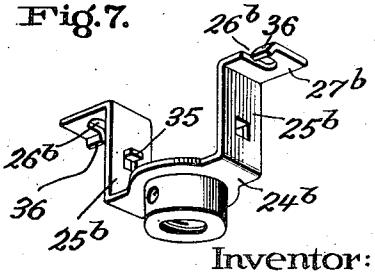


Fig.7.



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UNITED STATES PATENT OFFICE.

HOWARD R. SARGENT, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

LIGHTING FIXTURE.

Application filed March 28, 1921. Serial No. 456,244.

To all whom it may concern:

Be it known that I, HOWARD R. SARGENT, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Lighting Fixtures, of which the following is a specification.

The present invention relates to lighting fixtures such as wall brackets, ceiling fixtures and the like, and particularly fixtures of the type wherein the wall or ceiling portion of the fixture comprises a wired unit and the bracket or hanging portion of the fixture comprises a second wired unit, the latter being adapted to be detachably connected mechanically and electrically to the former, electrical connection being made by means of a receptacle and plug connection.

The object of my invention is to provide an improved structure and arrangement in an apparatus of this character and for a consideration of what I believe to be novel and my invention, attention is directed to the accompanying description and the claims appended thereto.

More particularly, the object of my invention is to provide an improved arrangement for attaching a lamp bracket or lamp hanging means to the wall portion of a fixture whereby the bracket or hanging portion of the fixture may be attached to and detached from the wall portion in a manner as simple and easy as that of attaching and detaching an ordinary plug to and from a receptacle whereby any person is enabled to mount the fixture in place or change it at will without the assistance of an electrician. At the same time the attachment of the fixture is strong and firm and imposes no strains on the electrical connections, this latter being of primary importance.

My invention relates more particularly to ceiling fixtures, and in the specification I have described it as applied to such fixtures but it will be understood that it is not necessarily limited thereto.

In the drawing, Fig. 1 is a side elevation, partly in section of a fixture embodying my invention; Fig. 2 is a bottom plan view thereof; Fig. 3 is a perspective view of a face plate; Fig. 4 is a perspective view of a part of the hanging portion of the fixture; Fig. 5 is a side elevation of a modified structure embodying my invention; Fig. 6 is a bottom plan view thereof, and Fig. 7 is a perspective view of a part of the hanging portion of the fixture shown in Figs. 5 and 6.

Referring to the drawing, 10 indicates an outlet box to which is fixed a face plate 11 by means of screws 12, the face plate being provided with key hole slots 13 through which screws 12 pass, and the outlet box being provided with inwardly projecting ears 13^a having holes into which the screws thread. The use of key hole slots enables the face plate to be removed from the box without entirely removing screws 12, it being only necessary to loosen them after which the face plate can be turned to bring the round part of the key hole slots in line with the heads of the screws when the plate can be removed, the screw heads passing through such round parts. Likewise the face plate can be applied to the outlet box with the screws already in place and partly screwed down. In face plate 11 is a central opening 14 and fastened to the rear of plate 11 in line with opening 14 is a plug receptacle 15 having the usual openings 15^a and contacts 15^b for receiving and making engagement with the contacts of a plug. 16 indicates screws fastening the receptacle to the face plate, and 16^a binding screws for connecting lead wires to contacts 15^b.

The foregoing arrangement may be taken as being typical of any outlet box having a face plate which carries a plug receptacle; in other words, a flush plate receptacle, and it will be understood that in general the outlet box is fastened in or to a wall or ceiling with the face plate flush or substantially flush with the surface of the wall.

According to the form of my invention shown in Figs. 1 to 4 inclusive, I modify the wall portion of the fixture, that is a suitable plug receptacle structure, by providing the face plate with opposed projections or ears 17 having threaded openings adapted to receive screws 18, the screws having heads 19. Ears 17 are located on opposite sides of

opening 14 and may be formed by punching them out of the material of the face plate as shown.

The supporting or hanging portion of the fixture comprises a combined plug and supporting member adapted to be wired as a unit and detachably connected mechanically and electrically to and from the ceiling portion of the fixture. The plug comprises a mounting block 21 of insulating material to which is attached contacts 22 by screws 22^a, contacts 22 being adapted to engage the contacts of the receptacle. The plug may be of any suitable or standard structure and is provided with a central opening 23 for the passage of lead wires which are connected to the plug contacts by binding screws 23^a. The supporting member proper comprises a yoke 24 having angularly bent ends 25 which are provided with slots 26 of a size to receive the shanks of screws 18. Ends 25 are provided with outturned feet or flanges 27 which are adapted to fit behind screw heads 19 and against the surface of face plate 11. Fixed to the central portion of yoke 24 is a tubular stud 28, the yoke being provided with a hole 29 in line with the hole through the stud. Stud 28 is threaded to receive a fixture supporting member such as a hook or hooks for supporting chains, a hickey, a tube, or other supporting means, it being understood that the particular form of support will depend upon the nature of the fixture to be hung. In the present instance, a pipe 30 is shown attached to stud 28 and at its lower end it may support a suitable chandelier or other device. Stud 28 is provided with opposed openings 31 for the passage of lead wires. The plug is attached to yoke 24 by screws 32 the opening in the yoke through which the screws pass being indicated at 33 in Fig. 4.

In use the wall portion of the fixture is wired in the usual manner, the circuit terminals which enter the outlet box through an opening formed by removing a knockout plug being connected by binding posts to the receptacle terminals. The wall portion of the fixture thus forms a completely wired unit. The hanging portion of the fixture is also completely wired, the lead wires which extend through tube 30 being connected at one end by the binding screws to plug contacts 22 and at the other end to the electrical device or devices such as a lamp socket or sockets carried by tube 30. To hang the fixture, screws 18 are screwed out far enough, as shown in Fig. 3 so feet 27 on flanges 25 can pass between ears 17 and the heads 19. The plug contacts are then pushed into the receptacle openings, the entire hanging portion of the fixture being pushed toward the wall portion. During the latter part of this movement ends 25 move alongside ears 17 as shown in Fig. 1, the shanks of screws 18 entering slots 26. The parts are pushed together until feet 27 strike face plate 11. Screws 18 are now screwed in so heads 19 come in front of feet or flanges 27 and ears 17 and ends 25 are tightly clamped together. The hanging portion of the fixture is then hung securely in place, the plug being electrically connected to the receptacle and the supporting member mechanically connected to the face plate.

These connections, it will be noted are entirely independent of each other so the weight of the hanging portion of the fixture puts no strain on the electrical connections. To remove the hanging portion of the fixture it is only necessary to unscrew screws 18 until heads 19 are beyond the ends of feet 27 when the hanging portion can be pulled from engagement with the wall portion in an obvious manner.

It will thus be seen that the hanging portion of the fixture can be quickly and easily attached to or detached from the wall portion without the services of an electrician and in a manner almost as simple as that of connecting an ordinary plug to a receptacle. The only tool required is a screw driver. At the same time the fixture, when in place, is firmly held and not likely to come loose accidentally. Furthermore, to apply my invention to existing structures requires only slight and simple changes which can be readily carried out at small expense.

In Figs. 5, 6 and 7 I have shown a modified structure which in many respects is similar to that shown in Figs. 1 to 4 and the same reference numerals with the exponent "b" added have been applied to corresponding parts. In this arrangement screws 18^b thread into holes in face plate 11^b and feet 27^b are provided with slots 26^b which fit the shanks of the screws, the head 19^b being screwed up against the lower surface of feet 27^b. The plug 21^b is connected to yoke 24^b in such a manner that the yoke can turn relatively to the plug by a small amount and for this purpose ends 25^b are provided with struck in lugs 35 which enter elongated slots in plug 21^b the slots being sufficiently long to permit of the desired amount of relative movement. The feet 27^b are provided with downturned ends 36 which serve as a locking means for the hanging portion of the fixture.

Manipulation of the modification shown in Figs. 5 to 7 is in all essentials the same as that of Figs. 1 to 4 inclusive. To connect the hanging portion of the fixture to the wall portion the screws 18^b are screwed down sufficiently far so that ends 36 may pass between the heads of the screws and

the surface of face plate 11b. The plug contacts 22b are inserted into the receptacle opening and the hanging portion of the fixture pushed toward the receptacle. At this time the yoke 24b is positioned relatively to plug 21b so that feet 27b strike the face plate at one side of screws 18b. After the plug is fully inserted into the receptacle, the surface of the plug coming in contact with the face plate, yoke 24b together with the hanging portion of the fixture supported by tube 30b is turned relatively to plug 21b and face plate 11b. This brings slots 26b over the shanks of screws 18b, the projections 36 sliding beyond heads 19b. Screws 18b are then tightened to clamp feet 27b against face plate 11. The heads 19b then lie behind the downturned ends or projections 36 to lock the fixture against accidental release. To remove the hanging portion of the fixture, it is only necessary to screw screws 18b part way out giving the fixture first a turn to move feet 27b from engagement with the screws and then pull the hanging portion of the fixture away from the wall portion.

In accordance with the provisions of the patent statutes, I have described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention may be carried out by other means.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. In an apparatus of the character described, the combination of a plug receptacle, a face plate associated therewith, headed screws threaded into said face plate, a plug for electrical connection to the receptacle, a supporting member associated with the plug and provided with slots adapted to receive the shanks of the screws without the removal of the screws from the face plate, and a fixture member carried by the supporting member, said fixture member and plug being wired as a unit.

2. In an apparatus of the character described, the combination of a plug receptacle, a face plate associated therewith, headed screws threaded into said face plate, a plug for electrical connection to the receptacle, a supporting member associated with the plug and provided with slots adapted to receive the shanks of the screws without the removal of the screws from the face plate, means for locking the supporting member to the face plate when the screws are screwed in, and a fixture member carried by the supporting member, said fixture member and plug being wired as a unit.

3. In an apparatus of the character described, the combination of a plug receptacle, a face plate associated therewith, headed screws threaded into said face plate, a plug for electrical connection to the receptacle, a supporting member associated with the plug and adapted to be fastened to said face plate by said screws, said supporting member being provided with slots in which the shanks of the screws lie and parts with which the heads of the screws engage to lock the supporting member to the face plate, and a fixture member carried by the supporting member, said fixture member and plug being wired as a unit.

4. In a fixture of the character described, a wall portion comprising a face plate, spaced headed screws therein, and a plug receptacle, and a hanging portion comprising a supporting member and a contact plug, said contact plug being adapted to make electrical connection with the plug receptacle and said supporting member being provided with parts having slots adapted to take the shanks of said screws and other parts which lie in planes at an angle to the plane of the slots whereby when the screws are screwed out a predetermined amount, the supporting member can be moved relatively to the face plate to bring the shanks of the screws into the slots, and when the screws are screwed in the supporting member is clamped and locked to the face plate.

5. In a fixture of the character described, a wall portion comprising a face plate, spaced headed screws therein, a plug receptacle, a hanging portion comprising a yoke member having angularly extending ends provided with slots and a contact plug carried by the yoke, said contact plug being adapted to make electrical connection with the plug receptacle and said yoke being adapted to be moved simultaneously with the plug to bring the shanks of said screws into said slots, whereby when the screws are tightened, the yoke is fixed to the face plate.

6. In a fixture of the character described, a wall portion comprising a face plate, outwardly projecting ears thereon, headed screws in said ears, and a plug receptacle, and a hanging portion comprising a yoke having bent ends adapted to lie alongside said ears, slots in said ends for the shanks of said screws and feet adapted to lie against the face plate and behind the heads of said screws, said wall portion and said hanging portion being each wired as separate units.

7. In a lighting fixture, a permanently wired wall portion comprising a face plate having a central opening, a plug receptacle in line with said opening, and spaced headed screws in the face plate, and a permanently wired hanging portion comprising a fixture member, a contact plug at one end

thereof, and parts carried by such end of the fixture member and projecting along the sides of the plug, said parts comprising feet adapted to engage the surface of the face plate and being provided with slots into which the shanks of the screws are adapted to pass, the hanging portion of the fixture being adapted to be connected both electrically and mechanically to the wall portion by a continuous movement to insert the plug contacts in the receptacle and bring the shanks of the screws into said slots, and then a tightening of the screws.

In witness whereof, I have hereunto set my hand this 26th day of March, 1921.

HOWARD R. SARGENT.