

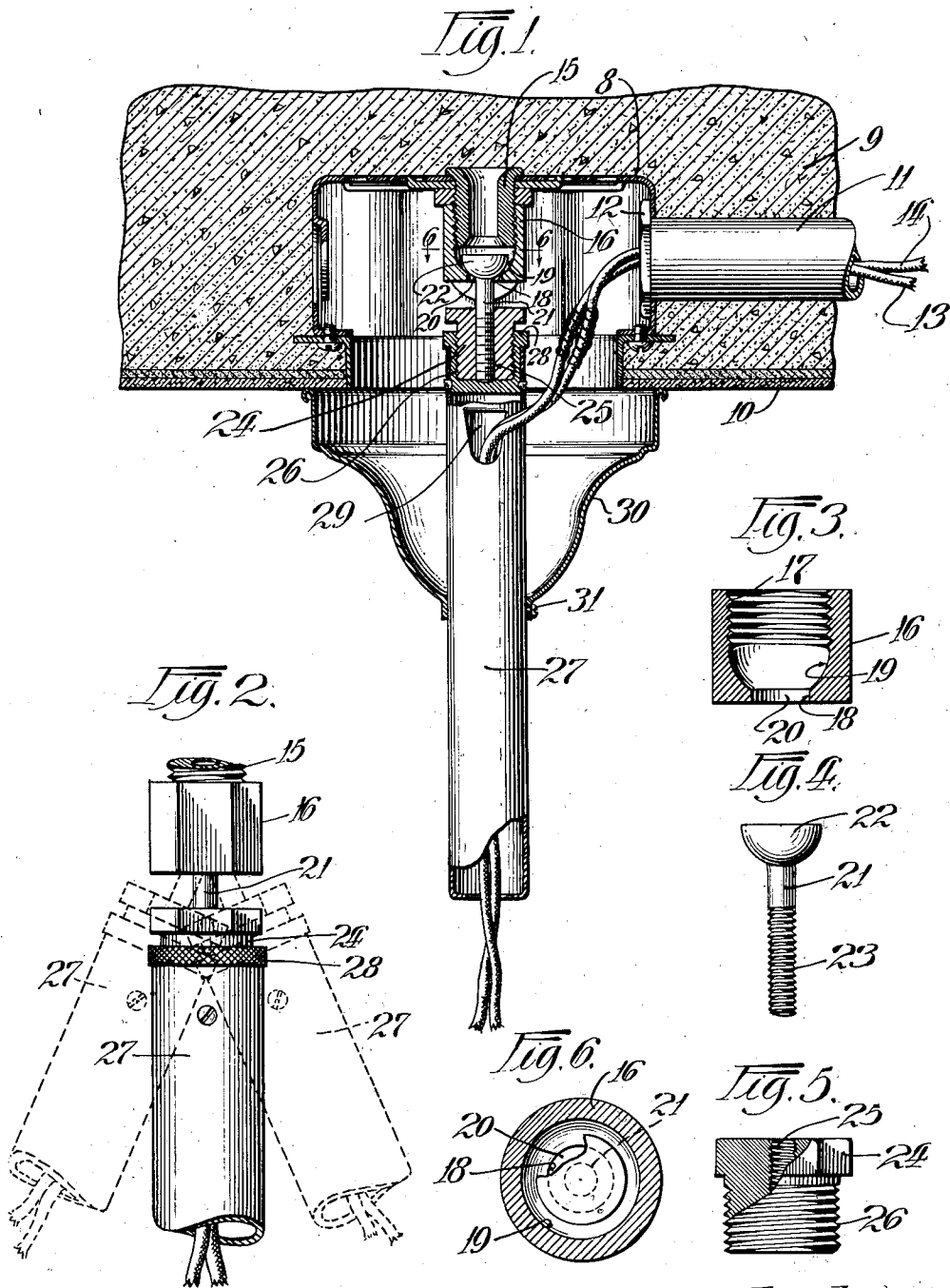
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SELF ALIGNING ADAPTER

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SELF-ALIGNING ADAPTER

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2 Claims. (Cl. 247—20)

This invention relates to a self-aligning adapter particularly designed for use in connection with depending electric fixtures or other devices. An object of the invention is the provision of a self-aligning adapter and extension for engagement with a ceiling support whereby an electric fixture, for example, will automatically be disposed in vertical alignment, regardless of slight irregularities in the ceiling or in the supporting member located in the ceiling. In electrical installations it often occurs that a ceiling outlet box, for example, is not disposed in a horizontal plane whereby the threaded engaging stud is not disposed vertically. Inasmuch as it has become general practice to embed the ceiling outlet boxes in concrete, angular irregularities of this nature cannot be corrected by changing the position of the box, and therefore a more specific object of the present invention resides in the provision of a comparatively simple and convenient device intended to serve as a mounting connection and self-aligning adapter between the outlet box stud and the electrical fixture. In addition to serving as a self-aligning adapter, the device of the present invention also serves as an extension between the box stud and the fixture stem. Further, the invention aims to provide a device of this character constructed and arranged to connect with the standard forms of outlet box studs and electric fixtures whereby the use of additional fittings or couplings is obviated.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing, forming a part of this specification, and in which:

Fig. 1 is a vertical sectional view, partly in elevation, of the device of the present invention shown in operative association with an outlet box and the stem of an electric fixture;

Fig. 2 is a detail elevational view of the device operatively connected with the upper portion of a fixture stem, showing in dotted lines the possible angular displacement;

Fig. 3 is a detail sectional view of the stud engaging cap member;

Fig. 4 is a detail elevation of the intermediate swivel member;

Fig. 5 is a detail elevation, partly in section, of the adapter plug member; and

Fig. 6 is an enlarged section, taken on line 6—6 of Fig. 1.

As illustrated in the drawing, the preferred embodiment of the present invention is comprised in the three members shown in Figs. 3, 4 and 5, constituting a combined self-aligned adapter and extension. To describe an illustrative embodiment, an outlet box 8 is embedded in concrete 9 in such manner that the lower flange portion is disposed substantially flush with the ceiling 10. Conduit 11, which may be similarly embedded in the concrete, is secured to the box 8 by means of nut 12, and contains the electric wires 13 and 14. An outlet box of the character illustrated is provided with a depending stud 15 which is externally threaded and uniformly of stock equivalent in size to three-eighths inch pipe. Cap member 16 of the present invention is provided with internal threads 17 adapted to engage the external threads on stud 15, and on the lower surface has an annular inturned flange portion 18 adapted to provide a concave annular cup or socket 19 and a circular opening 20. Swivel member 21, as shown in Fig. 4, has an enlarged head 22, preferably semi-spherical in contour, to seat in cup portion 19 of cap 16 so as to permit of angular displacement in any direction of sufficient degree to accommodate all irregularities encountered. It will be noted that the lower portion of swivel member 21 is of reduced size and carries external threads 23. In assembling, the swivel member 21 is first inserted in cap member 16 and the latter then threaded upon the stud 15.

The device is completed by the provision of a plug member 24 having an internally threaded bore 25 adapted to form threaded engagement with the threaded extension 23 of the swivel member 21, as shown in Fig. 1. Plug member 24 is also provided with an externally threaded portion 26, preferably of the same diameter as stud 15 or equivalent to a three-eighths inch pipe thread in general practice. This is for the reason that the upper portion of stem 27 of an electric fixture carries a corresponding internally threaded cap 28, as shown in Fig. 1. As shown in Fig. 5, the plug member 24 is preferably provided with wrench engaging faces to facilitate engagement with the fixture stem. Further, as shown in Fig. 1, wires 13 and 14 generally lead through an opening 29 provided in the upper portion of stem 27, but it will be understood by those skilled in the art that should attachment to a different form of box or support or to a different form of fixture be necessary in certain cases, the coupling may be completed by using an internally and externally threaded hickey provided with wire openings.

Should the outlet box stud 15 not be disposed in a vertical position, as often occurs, it will be seen that the weight of the fixture will cause member 21 to assume a vertical position by reason of the self-adjusting ball and socket swivel connection between members 16 and 21. After the parts have been connected as described, canopy 30 may be slid upwardly on stem 27 and held in place by set screw 31, and thus it has been found in practice that in the present invention a set screw or equivalent fastening element between members 16 and 21 may be dispensed with.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with an outlet box having an externally threaded depending fixture supporting stud, of a self-aligning adapter and extension device comprising a cap member internally threaded for attachment to said stud and pro-

vided with a socket portion having an inturned annular retaining flange, a fixture attaching plug member having an externally threaded portion of the same size and standard thread as said fixture supporting stud of the outlet box, and an intermediate swiveled connecting member having a reduced stem portion secured supportingly at one end to said plug member axially thereof and provided at its opposite end with an enlarged semi-spherical head seated in said socket portion of the cap member with universal movement on the inturned annular flange thereof.

2. A self-aligning adapter and extension device comprising a cap member internally threaded adjacent one end for attachment to a standard fixture supporting stud and having a socket portion adjacent its opposite end provided with an inturned annular supporting flange, a fixture attaching plug member having an externally threaded portion of the same size and thread as said standard fixture supporting stud, and an intermediate connecting member having a reduced stem portion secured supportingly to said plug member axially thereof and having an enlarged semi-spherical head supported swivelly in the socket portion of said cap member on said inturned annular flange thereof.

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