Dec. 1, 1931. E. G. APPLETON 1,834,758

FIXTURE MOUNTING

Filed April 25, 1927

Fig. 1.

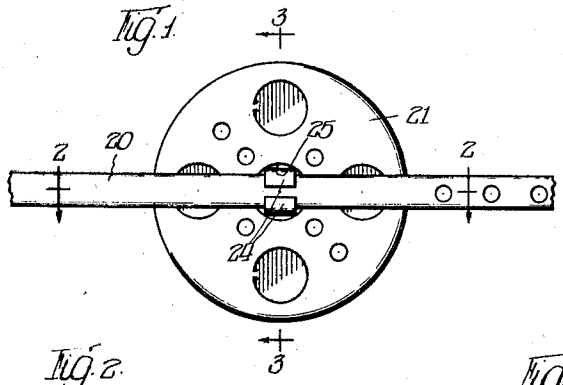


Fig. 2.

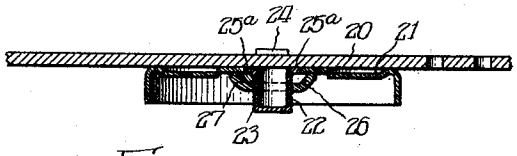


Fig. 3.

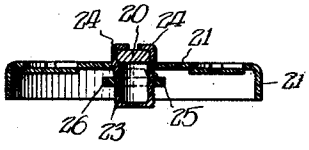


Fig. 4

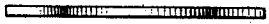


Fig. 5.

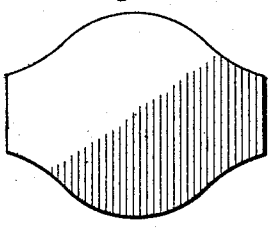


Fig. 6.

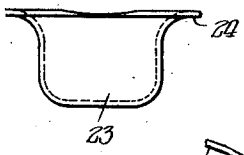


Fig. 7.

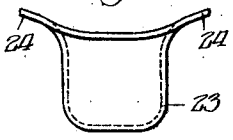


Fig. 8.

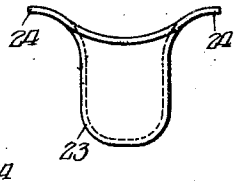


Fig. 9.

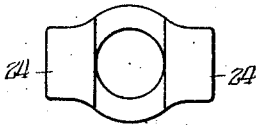


Fig. 10.

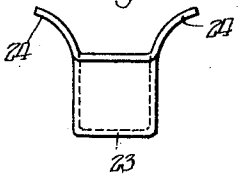


Fig. 11.

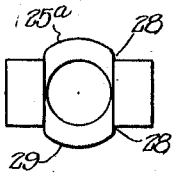


Fig. 12.

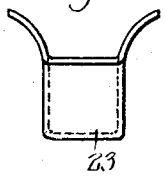


Fig. 13.

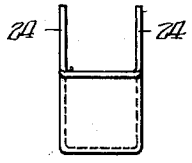


Fig. 14.

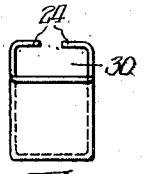


Fig. 15.

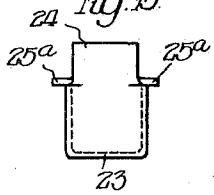
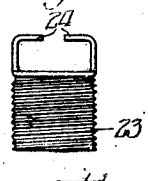


Fig. 16.



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Atty

Patented Dec. 1, 1931 1,834,758

UNITED STATES PATENT OFFICE

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FIXTURE MOUNTING

Application filed April 25, 1927. Serial No. 186,500.

The present invention relates to fixture mountings.

It is common practice in the electric wiring of houses to provide hanger members or construction cleats attached to adjacent joists or studs, which hangers or cleats adjustably support outlet boxes or switch boxes which provide attaching means for chandeliers, droplights and the like, or to provide housings for switching mechanism. It is common to provide a fixture stud having a portion engaging the bar or cleat referred to, which fixture stud has a screw-threaded portion for the reception of a nut which may be turned to hold the box in tight frictional engagement with the bar hanger or cleat.

An object of the present invention is to provide an improved stud which may be manufactured at a minimum of cost and which will effectively meet the needs of commercial practice.

A further object is to provide a fixture stud which may be made out of cheap material.

Further objects will appear as the description proceeds.

Referring to the drawings—

Figure 1 is a plan view showing a bar hanger, an outlet box and a fixture stud embodying the principles of the present invention;

Figure 2 is a sectional view taken along the plane indicated by the arrows 2—2 of Figure 1;

Figure 3 is a sectional view taken along the plane indicated by the arrows 3—3 of Figure 1;

Figures 4 and 5 are views in side elevation and plan, respectively, of a blank from which may be formed the fixture stud embodying the principles of the present invention;

Figure 6 is a view of the blank above referred to after it has been subjected to a drawing operation in the method involved in the present invention;

Figures 7 and 8 are views similar to Figure 6 but showing the blank after successive drawing operations;

Figures 9 and 10 are views in top plan and side elevation, respectively, showing the blank after a still further operation, which operation is known as "bumping";

Figures 11 and 12 are views similar to Figures 9 and 10, respectively, but showing the blank after excess metal has been trimmed therefrom;

Figure 13 is a view similar to Figure 12 but after the lugs have been subjected to a straightening operation;

Figures 14 and 15 are elevational views taken along planes at right angles to one another, illustrating the blank after the lugs have been subjected to a bending operation; and

Figure 16 represents the finished fixture stud after said stud has been screw-threaded.

Referring first to Figures 1, 2 and 3, the numeral 20 indicates a bar hanger which may have the usual form. Said bar hanger adjustably supports the outlet box 21, which may be of the usual form. Slidably disposed upon the bar hanger 20 is the fixture stud 22, which fixture stud embodies the principles of the present invention. Said stud is provided with the screw-threaded shank portion 23 and the ears 24—24, which are folded over toward one another to form a recess for the reception of the bar hanger 20. The outlet box 21 is provided with the central aperture 25 of sufficient diameter to admit the fixture stud 22, said stud being provided with flanges 25*a*—25*a* fitting within said aperture 25. A nut 26 is provided, adapted to engage the screw-threaded exterior of the shank 23 of the fixture stud 22. The nut illustrated has side flanges 27 adapted to engage the under side of the outlet box 21, whereby to hold the outlet box 21 and the ears 24—24 of the fixture stud 22 in tight frictional engagement with the bar hanger 20.

As indicated above, the present invention concerns itself with the fixture stud 22 and relates to methods of making said fixture stud.

According to the present invention, said fixture stud is manufactured from sheet metal. In a practical embodiment of the present invention, a piece of sheet metal is blanked and drawn in one operation, the blank being indicated in Figures 4 and 5 and the result of the first drawing operation being indicated in Figure 6. It will be noted

that according to Figure 6 the flat material is swedged into a cup form. The cup form of the blank is subjected to a further drawing operation, or operations, to produce the forms shown in Figures 7 and 8, in which the diameter of the cup portion of the blank is reduced and the length thereof increased. It will be noted from an inspection of Figures 6, 7 and 8 that the drawing operations tend to shape the metal of the blank to form the shank 23, the ears 24 and the flanges 25*a*.

Figures 9 and 10 show the structure after the shank portion 23 has had its end squared up and the ears 24—24 turned closer to parallel relationship with the axis of the shank 23.

Figures 11 and 12 illustrate the next step in the formation of the fixture stud, the corners 28—28 being trimmed out, but leaving the flanges 25*a*, which flanges 25*a* are adapted to fit more or less closely within the central aperture 25 in the outlet box 21.

Figure 13 shows a development from the form of the blank as it appears in Figures 11 and 12, the ears 24—24 being straightened.

Figures 14 and 15 show a still further development, the ears 24—24 being bent toward one another to provide a perforation 30 for receiving the bar hanger 20.

Figure 16 shows the finished fixture stud, the shank 23 of said stud being screw-threaded for the reception of the nut 26.

The present invention provides a fixture stud which may be manufactured in mass production at an exceedingly low cost. Said fixture stud, moreover, has all the strength necessary in service. In view of the fact, further, that it is made from relatively thin sheet metal which is subjected during the process of manufacture to drawing operations, the discovery of hidden defects is very greatly expedited.

Many modifications of the present invention will occur to those skilled in the art. It is intended to cover all such modifications that fall within the scope of the appended claims.

What is claimed is:—

1. A fixture stud adapted for cooperation with the usual outlet box and bar hanger, comprising a cup-shaped member screw-threaded on its exterior, said cup-shaped member having a shank, arcuate flanges disposed at one extremity of said shank, and ears disposed at said extremity of said shank and between said arcuate portions, said ears being bent over toward one another to form a recess for the reception of a bar hanger.

2. A fixture stud comprising an integral sheet metal member having the form of a cup having a cylindrical shank and a bottom portion and projecting bendable ears, said ears extending toward one another from the diametrical regions of said cylindrical shank and providing a recess between said ears and said shank.

3. A fixture stud comprising a sheet metal member of cup-shaped form having a cylindrical shank, flanges extending outwardly from said shank and ears extending from said shank between said flanges, said ears extending toward one another and forming a recess between said ears and said flanges.

4. A fixture stud comprising a sheet metal member having a cylindrical portion, flanges and ears extending therefrom at one extremity thereof, said flanges being diametrically opposed from one another and lying in a single plane, said flanges and said ears being alternately disposed around said shank, said ears having their end portions bent into substantial parallelism with said flanges.

5. In combination, a supporting bar, an outlet box and a fixture stud, said outlet box having an aperture therethrough for the reception of said stud, said stud comprising a cup-shaped member having a cylindrical shank, flanges extending outwardly from said shank and fitting within said aperture, and ears extending from said shank between said flanges, said ears extending toward one another and forming a recess between said ears and said flanges.

6. In combination, a supporting bar, an outlet box and a fixture stud, said outlet box having an aperture for the reception of said stud, said stud comprising a member having a screw-threaded cylindrical portion, flanges and ears extending therefrom at one extremity thereof, said flanges being diametrically opposed to one another, lying in a single plane and fitting within said aperture, said flanges and said ears being alternately disposed around said shank, said ears having their end portions bent into substantial parallelism with said flanges.

Signed at Chicago, Illinois, this 15th day of April, 1927.

ERNST G. APPLETON.