March 22, 1927. H. A. CALDERWOOD 1,622,087

BAR HANGER FOR THE SUPPORT OF OUTLET BOXES FOR THE WIRING OF BUILDINGS

Filed March 6, 1924

FIG. I.

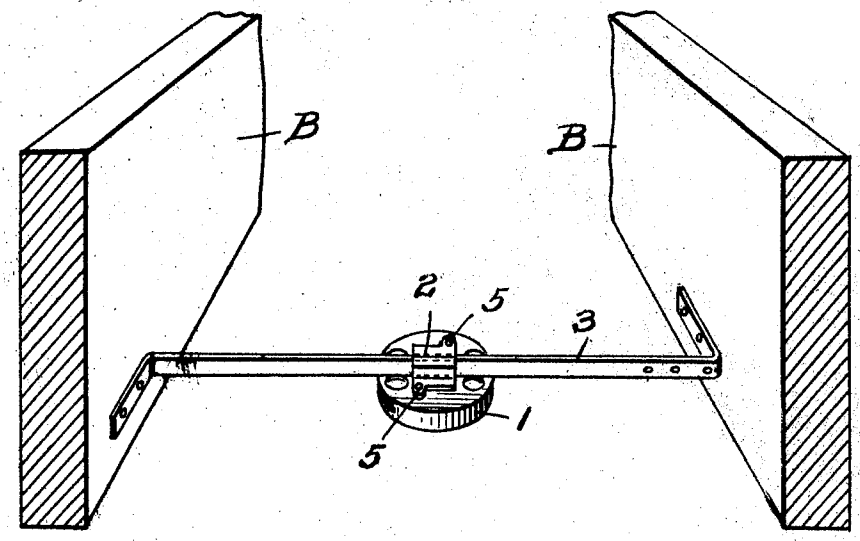


FIG. II.

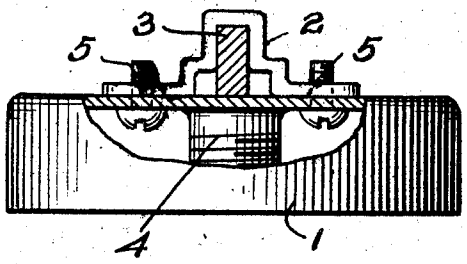


FIG. III.

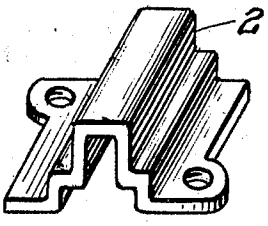
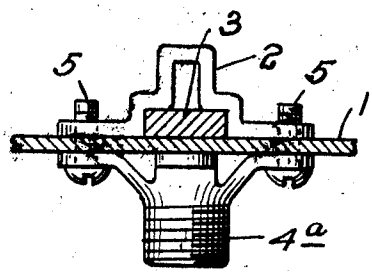


FIG. IV.



WITNESSES

J. Hobart Bradley.

Percy a. English

INVENTOR

Hugh A. Calderwood

by Christy and Christy

his attorneys

Patented Mar. 22, 1927. 1,622,087

UNITED STATES PATENT OFFICE.

HUGH A. CALDERWOOD, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO NATIONAL METAL MOLDING COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BAR HANGER FOR THE SUPPORT OF OUTLET BOXES FOR THE WIRING OF BUILDINGS.

Application filed March 6, 1924. Serial No. 697,273.

My invention relates to the construction of bar hangers for the support of outlet boxes used in the wiring of buildings. The objects in view are certain economies in space, together with the maximum rigidity which the conditions of the particular installation allow.

My invention is illustrated in the accompanying drawings. Fig. I is a view in perspective of an outlet box mounted in place between the stringers of the floor structure of a building. The invention resides in the mechanical structure by which the mounting is effected. Fig. II is a view to larger scale, partly in side elevation, partly in medial section, of the outlet box equipped with the structural feature for mounting, wherein my invention is particularly found. Fig. III is a view in perspective of a certain saddle member. Fig. IV illustrates a feature of adaptability.

An outlet is a structure used in the wiring of a building, and it serves to protect the union, where electrical wires are joined, and from which branch wires lead. My present invention does not particularly concern the box as such. Suffice it to say that the box 1 shown in the drawings is of typical cylindrical form.

My invention consists in providing a saddle member and a supporting bar, of the particular form and structure to be described, by which the box 1 may be mounted on the bar and carried in the frame structure of a building. The saddle member 2 shown in perspective in Fig. III is applied, as shown in Fig. II, externally upon one head of the cylindrical box 1, and it is shaped to form with the adjacent surface of the head of the box an opening or eye through which the supporting bar 3, which as will be perceived is rectangular and of width greater than its thickness, may be threaded in either of two particular positions,—either with the greater dimension of the bar perpendicular to the plane of the head of the box (which is the arrangement particularly shown in Fig. II), or with the greater dimension extending in parallelism with the plane of the head of the box (an arrangement manifestly possible by way of alternative, by virtue of the T-shape which characterizes the opening or eye formed by and between the saddle 2 and the head of box 1, and shown in Fig. V).

The box of Fig. II is a box of improved structure, in that it is a one-piece box. Boxes of this general character are ordinarily provided with a stud for the securing of a fixture as a separate part. Such a stud present in the box of Fig. II is there shown to be integral with the head of box 1. Ordinarily, as I have said, this stud is formed as a separate part, and it is so shown at 4^a, Fig. V. When formed as a separate part the stud is secured to the head of the box by bolts. By custom in the industry the screw holes provided in the head of the box for securing a separate stud in place are four in number, equally spaced about the geometric center of the circular head of the box, and at a standard center to center diametrical distance of one and one half inches. My saddle 2 is capable of being secured to the head of the box through these same bolt holes, and I so show it in the drawings. The holes formed in the saddle for the screws 5 will be understood to be spaced at the standard distance, and so the saddle 2 of my invention may be applied to the ordinary box, and may be so applied whether the removable stud 4^a be present or not. No special preparation therefore is required in making adaptation of my invention to boxes ordinarily in use. And it will be perceived that in the case of a box mounted according to my invention, if it be a box adapted to carry a removable stud and be installed lacking the stud, the stud may subsequently be supplied without disturbing the box in its mounting.

Such mode of attachment of box to bar makes possible a clamping engagement of the bar 3 between saddle 2 and the head of box 1. Thus it will be seen that after assembly the box may be shifted along bar 3 to the desired point, and then securely clamped in that particular position.

The bar 3 is formed of mild steel, and as shown in Fig. I it may at its ends be provided with a succession of holes for screws or nails. It is provided in condition straight from end to end. When installation is to be made the bar having the box attached to it is

applied to and secured to the support, whatever that may be. It may be applied and secured without bending, as to the faces of adjacent beams. Fig. I shows application to the opposite faces of two adjacent beams, B, B. Here the bar 3 is bent in right-angled bends at its two ends, the bends being spaced at an interval corresponding to the space where installation is made, and the bar is secured at its two ends to the beams, by suitable means here shown to be screws. Manifestly bar 3 may be secured to beams B at any desired points in the vertical extent of the opposite surfaces.

If in making installation dimensions in the direction of the axis of the box are to be reduced to a minimum, the box may be secured on the bar flatwise; but if greater space is available, the box is preferably secured on the bar in the on-edge position shown in Fig. II. In one case there is economy of space, in the other increased strength to resist strain, strain such, for instance, as the weight of a fixture hung from stud 4.

It will be particularly remarked that the saddle which I provide is external of the outlet box and is secured upon the outer surface thereof, and, in consequence, it may be applied with the greatest facility, and furthermore, no special adaptation of the box is necessary in order to make application of it. This is particularly true in view of the fact that almost all boxes by custom in the industry, have already formed in their heads, the holes by which I effect the securing of the saddle to the box, and incidentally, the clamping of the structure to the hanger bar.

There are in the industry two classes of devices used for the same purpose; one known as outlet boxes, the other as outlet plates or pans. The distinction is that the plates and pans range from plain discs with no lip, to shallow boxes half inch deep. In the phrasing of the industry anything over one-half inch in depth, more or less, is spoken of as an outlet box. The structure which I have shown and described above is an outlet box properly so called, but manifestly, the invention is applicable to an outlet plate or pan as well, and, therefore, in the ensuing claim when I use the phrase outlet box, I use it generically, and I mean to include in it both of the classes above mentioned,—outlet boxes in the narrower sense of the word, and outlet plates or pans as well.

I claim as my invention:

Means for securing an outlet box in place in the frame of a building, such means consisting in a bar greater in width than in thickness and adapted to be secured at its ends to the frame of the building, a saddle bearing externally upon the box and having a T-shaped orifice of dimensions suitable to clamp the bar against the wall of the box in either of two positions at right angles one to the other, and means securing the saddle to the box.

In testimony whereof I have hereunto set my hand.

HUGH A. CALDERWOOD.