April 16, 1935. R. G. BENNETT 1,998,353

ELECTRIC WIRING DEVICE

Filed Feb. 4, 1933

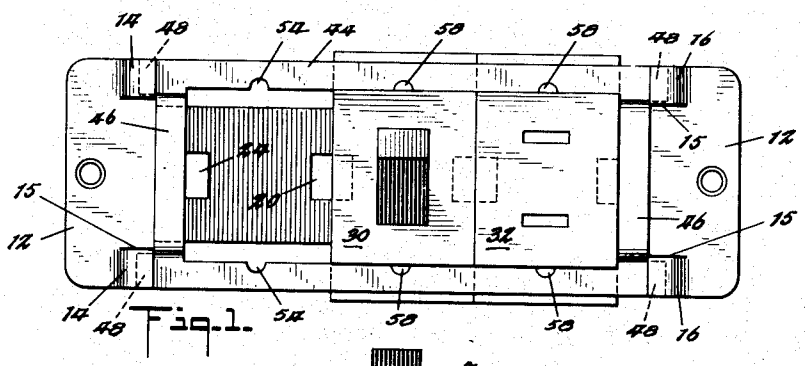


Fig. 1.

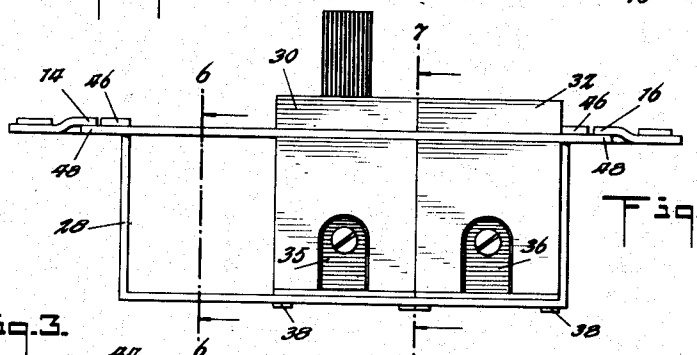


Fig. 2.

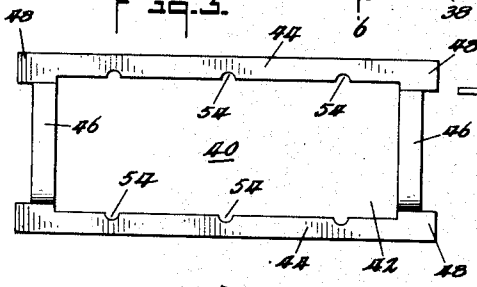


Fig. 3.

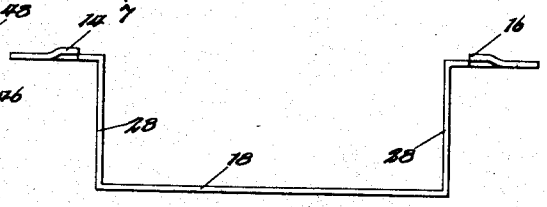


Fig. 4.

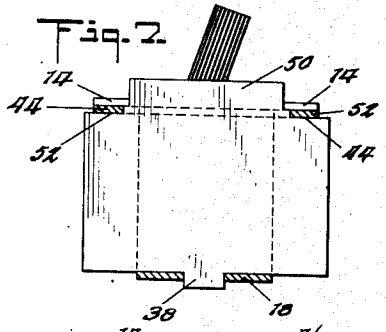


Fig. 7.

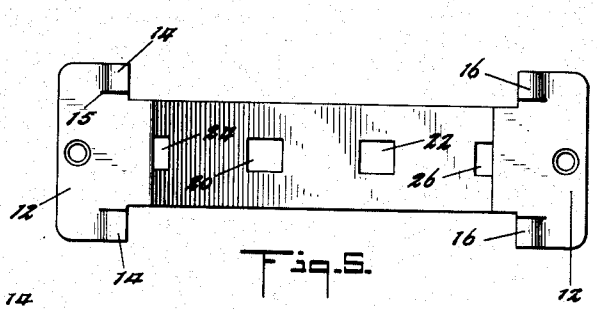


Fig. 5.

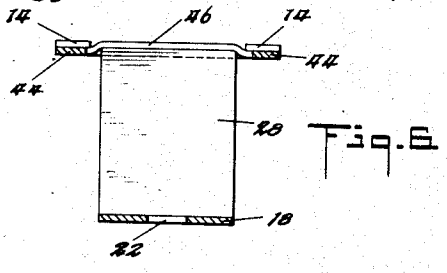


Fig. 6.

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1,998,353

ELECTRIC WIRING DEVICE

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10 Claims. (Cl. 247—20)

This invention relates to electric wiring devices. More particularly the invention relates to means whereby one or more electric wiring devices such as switches, attachment plug receptacles, pilot lights and the like may be mounted interchangeably in position upon a supporting yoke and, by means of the yoke secured to an outlet or switch box. The wiring devices may have different functions but preferably will have casings of approximately the same size.

It is an object of this invention to provide novel means for detachably mounting one or more of a plurality of electric devices upon a supporting yoke.

Another object of this invention is to provide a device of the above type in which the supporting elements are stamped from sheet metal.

Other objects and advantages of this invention will become apparent as it is described in connection with the accompanying drawing:—

Figure 1 is a plan view of my invention with two electric wiring devices secured in position upon the supporting yoke.

Figure 2 is a side elevation view of the device shown in Figure 1.

Figure 3 is a plan view of the securing frame.

Figure 4 is a side elevation view of the supporting yoke.

Figure 5 is a plan view of the supporting yoke shown in Figure 4.

Figure 6 is a transverse section taken upon line 6—6 of Figure 2.

Figure 7 is a transverse section taken upon line 7—7 of Figure 2.

Referring to the drawing the supporting yoke upon which the devices may be mounted is stamped from sheet metal into substantially U-shape providing enlarged end portions or plaster ears 12. The plaster ears each have bent up or offset from opposite sides a pair of lugs (indicated by numeral 14 on one end and 16 on the other) which are formed by making a longitudinal cut 15 in the plaster ear from the inner edge toward the outer edge or end of the yoke, starting close to the point at which the supporting strap enlarges to form the plaster ear 12. The bottom or central part 18 of the supporting yoke is provided with a plurality of apertures 20, 22, 24 and 26 for a purpose which will hereinafter appear. The apertures 20 and 22 are twice as large as the apertures 24 and 26 and are located in the central portion of the part 18 of the supporting yoke. The apertures 24 and 26 are located at opposite ends of the part 18 of the supporting yoke and adjacent the point at which the supporting yoke is bent up from the part 18 thereof to the plaster ears 12. Preferably, the distance between apertures is equal to the width of the wiring devices which are to be mounted on the strap.

The electric wiring devices which are to be secured to the supporting strap may be of any desired character. For the purpose of illustration I have shown a lever operated switch 30 and an attachment plug receptacle 32. As shown the lever operated switch is in the center of the supporting strap and the attachment plug receptacle is at its right, but the positions of these two devices may be exchanged or they may be put in any desired position upon the strap.

Preferably the casings of the wiring devices 30 and 32 are of approximately the same size and will have wiring terminals 35 and 36 at opposite ends for connecting the devices to their circuits. The end faces of the wiring device casings are adapted to abut with adjacent faces of the neighboring wiring devices or with the leg portions 28 of the supporting strap.

In order that the devices may be interchangeable in position upon the supporting strap their widths will be equal and equal to one third of the distance between the leg portions 28 of the supporting strap. Obviously if more than three devices are to be secured upon the strap their widths would be proportioned so that the desired number could be placed on the strap between the leg portions 28.

In order to hold the wiring devices against sliding along the supporting strap, rectangular stubs 38 project from the bottoms of the devices and are equal in cross sectional area to one half the areas of the apertures 20 and 22 in the supporting strap and are approximately equal to the areas of the apertures 24 and 26. The stubs 38 are so located that one surface of each will be in extension of an end surface of the wiring devices. Preferably the stubs 38 are located in the center line of the bottom of the wiring device casings so as to position the wiring device symmetrically on the supporting strap. When two wiring devices such as 30 and 32 are to be secured in abutting position upon the supporting strap the neighboring stubs 38 upon each of the devices will extend into opposite halves of the aperture 22 while the stubs which are farthest apart will fit into the apertures 26 and into one half of the aperture 20 respectively of the supporting strap.

In order to hold the wiring devices from outward movement of the supporting strap a securing frame, designated generally by the numeral 40, as illustrated in Figure 3, is provided. This

frame is made of sheet metal and is stamped with a large central aperture 42 thereby providing side arms 44 and cross bars 46 at the ends thereof. Longitudinal extensions 48 of the side arms 44 are provided to extend beneath the offset lugs 14, 16 of the supporting strap and the frame 40 is made of such width and length as to permit the projection of the extensions 48 beneath these lugs 14, 16, the width of the frame being approximately equal to the width of the plaster ears 12. The end bars 46 of the securing frame 40 are pressed up out of the plane of the side arms 44 as illustrated most clearly in Figures 2 and 6 so as to permit them to lie over the portion of the supporting strap which joins the plaster ears 12 to the legs 28. By reason of the formation and dimensioning of the parts as just described the frame is kept from moving sidewise on the strap, as well as from moving longitudinally. This will be more clearly understood as the invention is further described.

The wiring devices are preferably made with reduced necks 50 providing shoulders 52 over which lie the side arms 44 of the securing frame when the device is in assembled position, as shown in Figure 2. To prevent longitudinal movement between the wiring devices and the securing frame, notches 54 are provided in the inside edges of the side arms 44 of the frame. Adjacent their shoulders 52 the wiring devices are provided with protuberances 58 of similar shape in cross section to the notches 54, and are so positioned as to fit into the notches 54 when the extensions 38 on the bottoms of the wiring devices are fitted into the apertures in the supporting strap 10.

In order to assemble the wiring devices upon the supporting strap they may be first placed in the desired order upon the strap with their extensions 38 fitting into the apertures 20, 22, 24 or 26, as the case may be, and then the securing frame 40 will be placed in position by inserting the extensions 48 of one end thereof beneath the lugs 14 of the supporting strap, then fitting the protuberances within the notches 54 and springing out the plaster ear and leg 28 at the other end of the frame until the extensions 48 at that end of the securing frame can pass by the ends of the lugs 16 of the outsprung end of the supporting strap. The outsprung end of the strap is then released causing the extensions 48 to be held beneath the lugs 16 and detachably secure the securing frame in position, while at the same time the wiring devices will be held firmly against any movement upon the supporting strap. In order to remove the wiring devices for replacement or rearrangement it is only necessary to spring out one end of the supporting strap until the lugs on the end of the supporting strap no longer overlie the extensions 48 on the corresponding end of the securing frame. The supporting frame may then be removed and the wiring devices removed or rearranged.

It will now be observed that I have provided a simple and inexpensive means for detachably mounting one or more wiring devices of identical or different functions upon a supporting strap, suitable for mounting in a single gang flush box.

Many modifications and changes within the scope of my invention will occur to those skilled in the art, therefore I do not limit myself to the specific embodiment shown.

I claim:

1. The means to support an electric wiring device in the front of an outlet box, comprising a flexible supporting strap of sufficient length to be secured across the front of an outlet box, a securing frame engaging with said strap, interlocking means on said strap and frame capable of disengagement by temporary distortion of said strap to bodily remove the frame from the strap, and a wiring device held upon said strap by the interengagement between said strap, said frame, and said device.

2. In combination a U-shaped flexible supporting strap, a wiring device seated thereon, and a securing frame having its ends interlocking with said strap and its mid-portion engaging said wiring device, said frame being detachable from said strap by flexing of said strap.

3. In combination, a supporting strap, a wiring device seated thereon and readily removable therefrom, said device having projections on its bottom and sides, and a securing frame having its ends engaging said strap and its mid-portion engaging said wiring device, said frame being detachable from said strap, said strap and frame having recesses adapted to receive said projections to prevent movement of said devices relative to said strap, said strap and frame being adapted to be positioned behind and concealed by a conventional face plate.

4. In combination, a U-shaped flexible supporting member, a wiring device seated thereon and adapted to be removed therefrom, and a securing member having its ends engaging said supporting member and its mid-portion engaging said wiring device, projections formed integrally on said device, said securing member being detachable from said supporting member, said supporting member having recesses adapted to receive said projections to prevent movement of said device relative to said supporting member.

5. In combination, a U-shaped supporting strap with out-turned ends, said ends having offset portions, a wiring device seated on said strap, and a securing frame engaging with said offset portions and said wiring device to hold said device on said strap, said frame being formed separately and being detachable from said strap by flexing said strap, said strap and frame being adapted to be secured across the front of an outlet box behind a face plate.

6. In combination, a U-shaped flexible supporting strap with out-turned ends, said ends having offset portions, a wiring device seated on said strap, and a securing frame engaging with said offset portions and with said wiring device to hold said device on said strap, said frame being formed separately and being detachable from said strap by flexing of said strap.

7. In combination, a U-shaped supporting strap with out-turned ends, said ends having offset portions, a wiring device seated on said strap, and a securing frame having longitudinal extensions at its ends engaging with said offset portions, said frame also engaging with said wiring device to hold said device on said strap, said frame being formed separately and being detachable from said strap by flexing of said strap.

8. In combination, a U-shaped supporting strap, a wiring device seated on said strap, and a securing frame having longitudinal extensions at its ends interlocking with said strap, said frame engaging with said wiring device to hold said device between said strap and said frame, said frame being formed separately and being detachable from said strap by flexing of said strap.

9. In combination, a flexible supporting strap,

a wiring device having a shoulder, said device being seated upon said strap, and a securing frame overlying said shoulder and means on said strap and frame interlocking to hold said device between said strap and said frame, said frame being separately formed and being detachable from said strap by flexing said strap, said strap and frame being adapted to be secured across the front of an outlet box behind a face plate.

10. In combination a U-shaped supporting strap adapted to be secured across an outlet box, a wiring device seated thereon, a securing frame having ends engaging with said strap for holding said device on said strap, said strap having a resilient end which may be sprung back and released to cause said frame to interlock with it.

ROSS G. BENNETT.