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R. P. BRIDGES ET AL

3,268,191

CLAMP MOUNTING STRUCTURE FOR CROSSARMS

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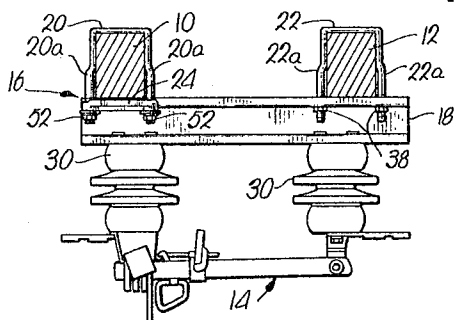


Fig. 1.

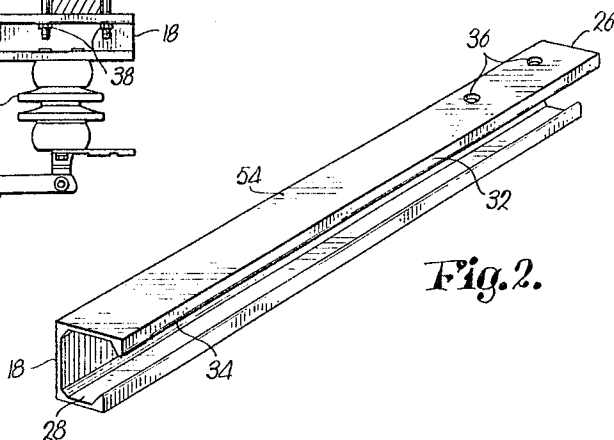


Fig. 2.

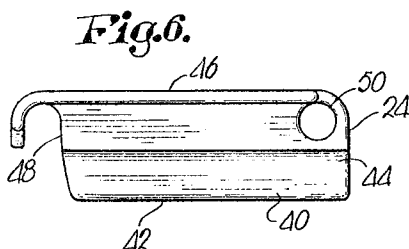


Fig. 6.

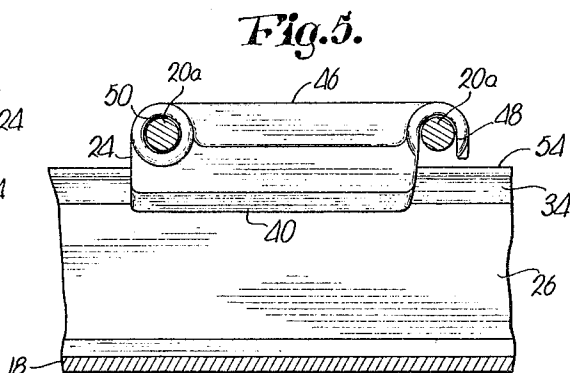


Fig. 5.

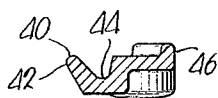


Fig. 7.

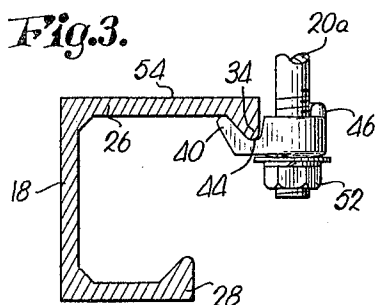


Fig. 3.

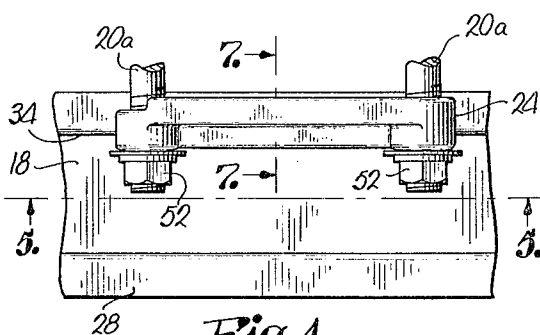


Fig. 4.

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## 3,268,191 CLAMP MOUNTING STRUCTURE FOR CROSSARMS

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6 Claims. (Cl. 248—72)

This invention relates to structure for securing an electrical device, such as a line interrupter switch, to the cross-arms of a line pole.

A constantly recurring problem in the design of devices such as switches for electric power distribution is to provide an economical means of attaching the device to line pole crossarms. Such crossarms extend in parallel pairs from each side of a wooden line pole and thus vary in spacing according to the diameter of the pole.

It is, therefore, the primary object of this invention to provide mounting structure which is adaptable to any crossarm spacing without the necessity of drilling holes in the structure to accommodate variations in the spacing between the crossarm straps.

Another object of the invention is to provide a crossarm mount for a switch unit or the like which is readily installed in a minimum of time and which automatically locates the switch unit on the crossarms in the proper position for attachment of operating mechanism thereto.

A further object of the instant invention is to provide structure as aforesaid having a clamping surface of relatively large area to distribute the pressure exerted on the wooden crossarms in order to minimize the tendency to crush the wooden surfaces and which, additionally, does not require the drilling of holes in the crossarms.

In the drawing:

FIGURE 1 is a vertical cross-sectional view through a pair of crossarms showing the invention in side elevation;

FIG. 2 is a perspective view of the mounting base only;

FIG. 3 is a fragmentary, cross-sectional view through the base showing the clamping element in end elevation;

FIG. 4 is a fragmentary, side elevational view of the base and the clamping element;

FIG. 5 is a horizontal, sectional view taken along line 5—5 of FIG. 4;

FIG. 6 is a plan view of the clamp element; and

FIG. 7 is a fragmentary, vertical sectional view taken along line 7—7 of FIG. 4.

A pair of horizontally spaced crossarms 10 and 12 are shown in FIG. 1 and have a line interrupter switch 14 suspended therebeneath by mounting structure 16 of the instant invention. Structure 16 includes an elongated mounting base 18 in the form of a channel member, a pair of crossarm straps or U-bolts 20 and 22, and a clamp element 24. Base member 18 is provided with upper and lower, elongated plate sections 26 and 28, switch 14 being secured to the lower plate section 28 by a pair of insulators 30. Base member 18 preferably comprises an aluminum extrusion which may be cut into desired lengths, depending upon the maximum crossarm spacing to be encountered.

Plate section 26 has a longitudinal edge 32 presenting a lip 34 and is provided with a pair of pre-drilled holes 36 adjacent one end thereof. Strap 22 has a pair of legs 22a received by holes 36, and provided with nuts 38 which, when tightened, clamp member 18 to crossarm 12.

Clamp element 24 is elongated in configuration and is provided with a longitudinally extending, angular projection 40 terminating at one longitudinal margin 42 of element 24. Projection 40 and the main body portion of element 24 thus define a longitudinal groove 44 (FIGS. 3

and 7) which receives lip 34. The opposite longitudinal margin 46 is reinforced by an integral rib and extends the entire length of element 24, while margin 42 merges with a clearance notch 48 adjacent the left end of element 24 as viewed in FIG. 6. Notch 48 and an opening 50 adjacent the other end of element 24 receive the legs 20a of strap 20, the latter being provided with nuts 52 which, upon tightening thereof, clamp the outer surface 54 of upper plate section 26 against the underside of crossarm 10.

In use, the end of member 18 having pre-drilled holes 36 therein is attached to crossarm 12 by strap 22 in the usual manner. Member 18 then spans the distance between crossarms 10 and 12 and, depending on the spacing thereof, may extend beyond crossarm 10. With nuts 52 loosely threaded on the free extremities of legs 20a, clamp element 24 is swung about the leg 20a received by opening 50, to a position permitting strap 20 to be slipped over crossarm 10. Element 24 is then rotated to the position shown where the other leg 20a is seated in notch 48, whereupon projection 40 is hooked underneath lip 34 and nuts 52 are tightened. This ultimately brings projection 40 and lip 34 into tight engagement with each other as shown most clearly in FIG. 3. It may be noted that the upper angular surface of projection 40 and the lower angular surface of lip 34 are beveled at approximately a 45° angle to provide mating surfaces.

It will be appreciated that element 24 may be disposed at any position along the length of lip 34, ultimate positioning of element 24 being dependent solely upon the spacing between crossarms 10 and 12. Thus, regardless of crossarm spacing, member 18 is rigidly secured to the crossarms by clamping action upon tightening of nuts 52 without the necessity of drilling additional holes in member 18 at the mounting site to accommodate a particular crossarm spacing. In this manner, therefore, the objects of the invention set forth hereinabove are achieved, and a crossarm mounting structure is provided which obviates the difficulties caused by crossarm spacing variation frequently encountered heretofore.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. Structure for securing an electrical device to a pair of spaced crossarms comprising:

an elongated mounting base for said device having a longitudinally extending edge;

means for attaching said base to one of said crossarms in spanning relationship to the crossarms;

a clamp element engageable with said edge at any one of a number of dispositions therealong spaced from said attaching means, whereby said element may be positioned in alignment with the other of said crossarms regardless of the spacing between the crossarms; and

a drawbolt coupled with said element for clamping the base between the element and said other crossarm.

2. The invention of claim 1,

said edge presenting a lip extending longitudinally of the base,

said element being configured to overlap said lip to prevent movement of the element laterally of the base prior to tightening said drawbolt.

3. The invention of claim 1,

said base having a plate section provided with a crossarm-engaging major surface, said section presenting said edge.

4. The invention of claim 1,

said drawbolt comprising a crossarm strap having a pair of legs, said element being swingable about one of said legs,

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toward and away from a position engaging the other of said legs.

5. The invention of claim 4,  
said element being elongated in configuration and hav-  
ing an opening adjacent one end thereof receiving said 5  
one leg, and a transverse clearance notch therein ad-  
jacent the other end thereof receiving said other leg  
as the element is shifted to said position.
6. The invention of claim 5,  
said base comprising a channel member having a pair of 10  
spaced plate sections,  
one of said sections being provided with a crossarm-  
engaging outer surface and presenting said edge,  
the edge being configured to form a lip extending lon-  
gitudinally of the member,

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the other of said sections presenting a mount for said device,

said element having a pair of opposed, longitudinal margins and including a main body portion provided with a longitudinally extending projection terminat-  
ing at one of said margins and defining a groove with the body portion for receiving said lip,  
said notch communicating with the other of said mar-  
gins.

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