

[54] **TRIPLE ARRESTOR MOUNT**

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[51] Int. Cl.F16m 13/02, F16l 3/08

[58] Field of Search248/221, 300, 68, 65; 174/158 R, 149 R, 161, 163

[56]

References Cited

UNITED STATES PATENTS

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Primary Examiner—J. Franklin Foss

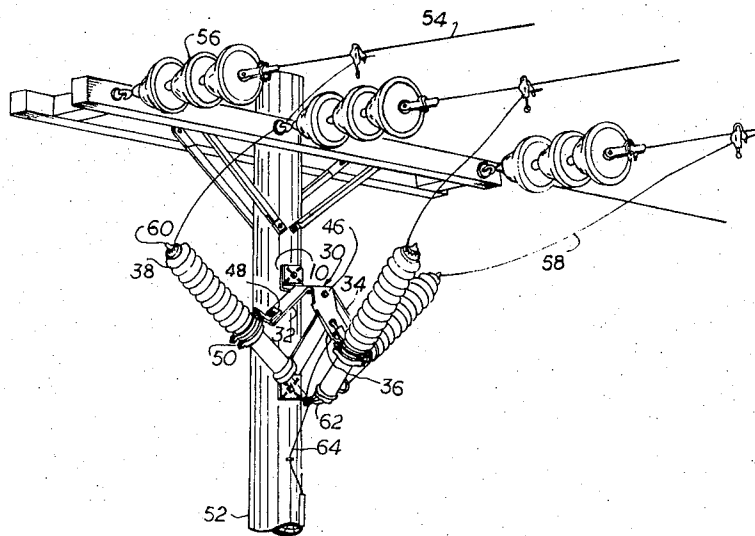
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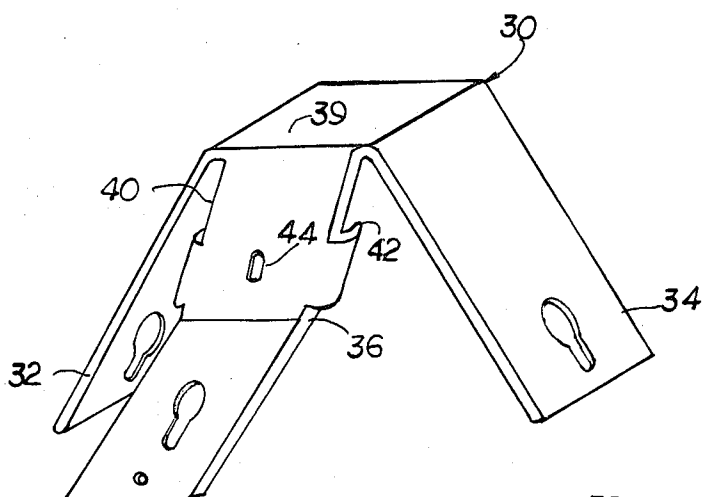
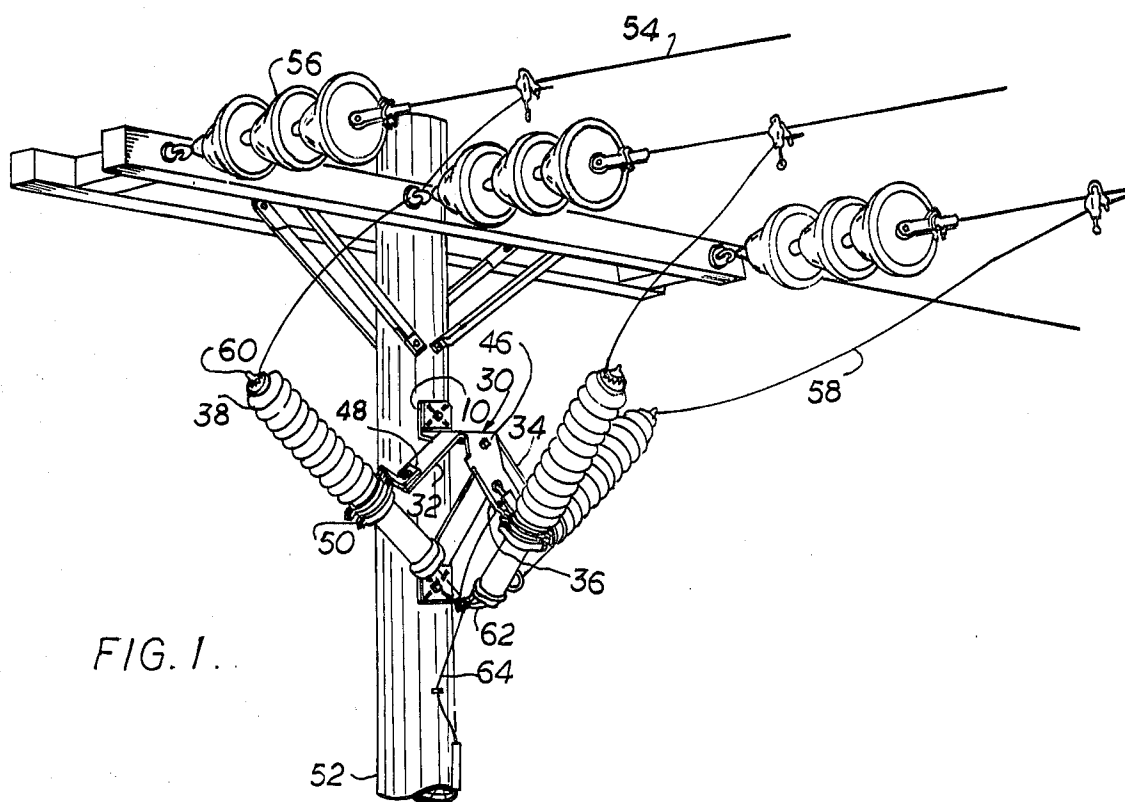
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ABSTRACT

A mount designed for attachment to a stand-off insulator bracket having three downwardly and outwardly diverging legs provided with means adjacent their lower ends to support three elongated arrestors in laterally spaced upwardly and outwardly diverging relation.

7 Claims, 5 Drawing Figures





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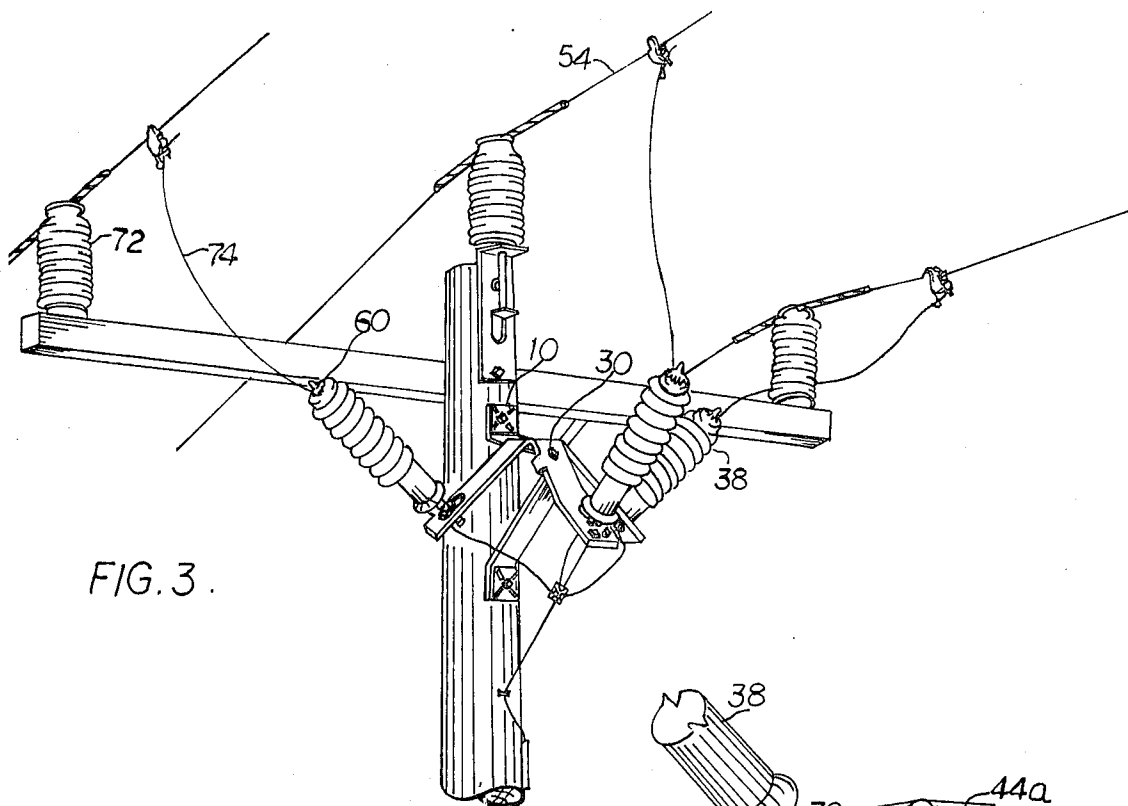


FIG. 3.

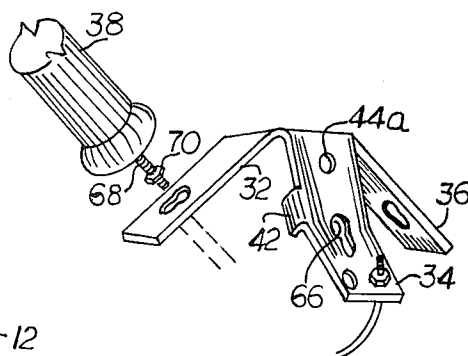


FIG. 4.

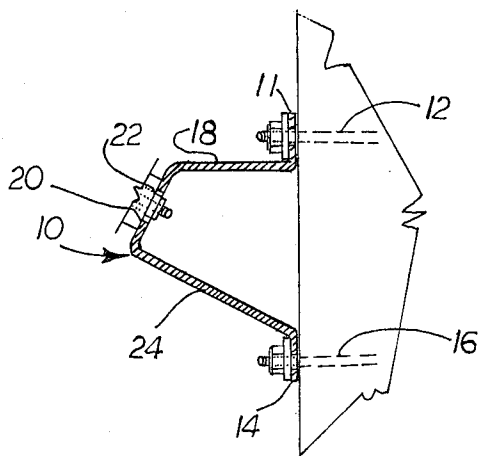


FIG. 5.

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TRIPLE ARRESTOR MOUNT

BRIEF SUMMARY OF THE INVENTION

The present invention relates to a triple arrestor mount formed of sheet material, normally metal, and adapted to be attached to a stand-off insulator bracket and to provide means for mounting three elongated lightning arrestors at their lower ends to extend upwardly and outwardly therefrom in laterally diverging relationship.

The mount comprises a flat central portion adapted to conform to and rest on a horizontal ledge provided on the stand-off insulator bracket, a pair of legs extending downwardly and outwardly from the sides of said central portion, an intermediate leg having its upper portion inclined to conform to the downwardly and outwardly inclined support portion of the insulator bracket and having its lower portion bent to extend outwardly at a great angle from the vertical. All of the legs are provided with means adjacent their lower ends for supporting the lower portions of elongated lightning arrestors so that the lightning arrestors extend upwardly and outwardly therefrom in laterally diverging relationship.

According to one form of the invention the lightning arrestors are supported by clamps which engage intermediate portions thereof so that the lightning arrestors extend both above and below the lower ends of the legs. In a second embodiment of the invention the lightning arrestors have longitudinally extending threaded elements at their lower ends which extend through openings in the legs and are clamped in mounted position by nuts threaded to the elements.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view illustrating the use of the triple arrestor mount at a dead end pole.

FIG. 2 is a perspective view of the triple arrestor mount.

FIG. 3 is a perspective view illustrating the use of the mount at an intermediate point of a power line.

FIG. 4 is a perspective view illustrating a second embodiment of the connection between the arrestors and a mount.

FIG. 5 is a fragmentary sectional view showing the configuration of the bracket with which the triple arrestor mount cooperates.

DETAILED DESCRIPTION

The present invention is designed for cooperation with a stand-off insulator bracket having the configuration best illustrated in FIG. 5. Such a bracket is the subject matter of prior U.S. Pat. No. 3,309,047 entitled "Stand-off Insulator Bracket." For completeness in the present case, this bracket is illustrated at 10 in FIG. 5 and is adapted to be attached to the side of a pole and for this purpose has a vertical upwardly extending portion 11 apertured to receive a fastening element 12, and a lower downwardly extending portion 14 apertured to receive the fastening element 16. Extending horizontally outwardly from the lower end of the upper portion 11, the bracket comprises a flat horizontal ledge 18. Extending downwardly from the outer end or edge of the ledge 18 is an apertured support portion 20. The support portion 20 has the central aperture 22 and extends downwardly at a small angle from the vertical as for example between 15° and 20°. The bracket includes a brace or strut portion 24 which connects the lower edge of the support portion 20 to the downwardly extending portion 14.

Referring now to FIG. 1 the triple arrestor mount is indicated generally at 30 and provides three downwardly extending legs 32, 34 and 36, each of which supports an elongated lightning arrestor 38 adjacent the lower end thereof. It will be observed that the lightning arrestors extend upwardly and are inclined to diverge outwardly from each other.

The detailed construction of the arrestor mount 30 is best illustrated in FIG. 2 and comprises a flat horizontal central portion 39 at the sides of which are provided the downwardly and outwardly inclined side legs 32 and 34 previously referred to. At the outer side of the central portion 39 is provided the third

or intermediate leg 36. The leg 36 has its upper portion as indicated at 40, inclined to conform to the inclination of the support portion 20 of the insulator bracket for a length conforming to the vertical dimension thereof. Below the support portion 20 of the bracket, the leg 36 extends outwardly at a substantially greater angle, as for example, the same angle as the legs 32 and 34. The exact angle at which the side legs 32 and 34 and the intermediate leg 36 extend is not critical except that it is desirable to insure that the elongated lightning arrestors diverge upwardly to provide a substantial spacing between the upper ends of the arrestors and the pole or any attachments thereon. In some cases the legs are provided to extend downwardly and outwardly at an angle of approximately 45°. In other cases, angles of approximately 30° from the vertical have been employed.

The upper portion 30 of the intermediate leg 36 is provided at its sides with inwardly bent ears 42 which are dimensioned to engage closely against the sides of the support portion 20 of the insulator bracket. In FIG. 2 the upper portion 40 of the intermediate leg 36 is illustrated as provided with an elongated opening 44 which is adapted to receive a fastening element 46 such for example as a bolt, which extends through the aperture 22 in the insulator bracket. While only the single fastening element 46 is provided, it will be appreciated that the triple arrestor mount is adequately supported and located on the insulator bracket by reason of the abutting ears 42 and the downwardly extending legs 32 and 34 which centralize the bracket on the ledge 18.

Referring again to FIG. 1 it will be observed that adjacent the lower ends of each of the legs 32, 34 and 36 there is provided an L-shaped mounting bracket 48. The L-shaped bracket carries a clamp ring indicated generally at 50 which as seen in FIG. 1, engages an intermediate portion of the lightning arrestor but below the central portion thereof. In this case it will be observed that the lower portions of the arrestors converge below the triple mount in which case it may be necessary to decrease the inclination of the legs from the vertical to provide clearance between the lower ends of the arrestor mounts.

In FIG. 1 the arrestor mounts are associated with a dead end pole 52 to which the three conductors 54 are mechanically connected through insulating structure indicated generally at 56. Leads 58 are provided from each of the conductors 54 to a terminal indicated at 60 on one of the arrestors. The arrestors are provided at their lower ends with terminals indicated at 62 to which a ground connection 64 is made. The arrestors are of usual form provided with high resistance cores usually carbonaceous, which are adapted to operate normally as insulators but to break down under abnormal voltages such as may be attributable to lightning striking the transmission line.

Referring now to FIG. 3 there is shown a second embodiment of the invention and in this case it is illustrated as applied to an intermediate point of the transmission line. In this case the triple arrestor mount 30 is located and supported as before on the stand-off insulator bracket 10. In this case however, the arrestors 38 are supported directly from the depending mount legs 32, 34 and 36. For this purpose the legs, as best illustrated in FIG. 4, are provided with keyhole shaped openings 66. The lower end of the arrestor mounts are provided with longitudinally extending threaded elements 68 carrying clamping nuts 70. The enlarged portion of the keyhole openings 66 is dimensioned to permit passage of the nut 70 therethrough after which the element is moved laterally into the narrow portion of the opening and the nut is tightened to clamp against the lower surface of the leg supporting the arrestor.

A further difference in the arrestor mount illustrated in FIG. 4 will be noted. The opening, here designated 44a, in the upper portion of the intermediate leg which registers with the opening 22 through the support portion 20 of the insulator bracket, is spaced substantially above the center line of the ears 42 so that location depending upon three generally triangularly arranged points is provided.

Referring again to FIG. 3 the transmission lines 54 are attached to and supported by the upper ends of conventional insulators 72 and the terminals 60 at the upper ends of the arrestors are electrically connected to the transmission wires by leads 74.

What we claim as our invention is:

1. A triple arrestor mount for use on a stand-off insulator bracket having an upper substantially horizontal ledge and a short flat apertured support portion extending downwardly and slightly outwardly from the outer edge of the ledge, said mount having a central flat horizontal portion conforming to the width of the ledge of the bracket and adapted to rest on the ledge, an intermediate downwardly and outwardly inclined elongated flat leg having a width conforming to the width of and adapted to rest against the flat apertured support portion of the bracket and provided adjacent its upper end with an aperture therein to coincide with the aperture in the support portion of the bracket and adapted to be attached thereto by fastening means extending through the apertures in said leg and the support portion of the bracket, and a pair of outer elongated legs extending downwardly and outwardly from the sides of the flat horizontal portion of said mount at the sides of the ledge of the bracket, all of said legs having means adjacent their lower ends for attachment thereto of the lower portions of elongated arrestors which extend upwardly and outwardly therefrom.

2. A mount as defined in claim 1 in which said intermediate leg extends downwardly substantially beyond the apertured support portions of the bracket whereby the lower portions of all three legs are free and in diverging relation to each other.

3. A mount as defined in claim 2 in which the upper portion of said intermediate leg is provided with laterally extending ears adapted to engage opposite sides of the apertured support portion of the bracket to stabilize the mount thereon, in which

said ears are oppositely disposed on said intermediate leg and substantially spaced longitudinally thereon from the aperture in its upper portion.

4. In combination, a bracket for attachment to the side of a transmission line pole comprising a substantially horizontal ledge and a short apertured support portion extending downwardly and slightly outwardly from the outer edge of said ledge, a triple arrestor mount having a flat horizontal portion disposed on said ledge and an intermediate leg extending downwardly and slightly outwardly from the outer edge of said flat horizontal portion of said mount, the upper portion of said intermediate leg being apertured and secured to said support portion of said bracket by fastening means extending through the apertures in said leg and the support portion of the bracket, and a pair of outer legs extending downwardly and outwardly from the sides of the flat horizontal portion of said mount, all of said legs having means adjacent their lower ends for attachment thereto of the lower portions of elongated arrestors which extend upwardly and outwardly therefrom.

5. The combination as defined in claim 4 in which said intermediate leg extends downwardly substantially beyond the apertured support portions of the bracket whereby the lower portions of all three legs are free and in diverging relation to each other.

6. The combination as defined in claim 5 in which the upper portion of said intermediate leg is provided with laterally extending ears adapted to engage opposite sides of the apertured support portion of the bracket to stabilize the mount thereon.

7. The combination as defined in claim 6 in which said ears are oppositely disposed on said intermediate leg and substantially spaced longitudinally thereon from the aperture in its upper portion.

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