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ANTENNA ROTOR BRACKET

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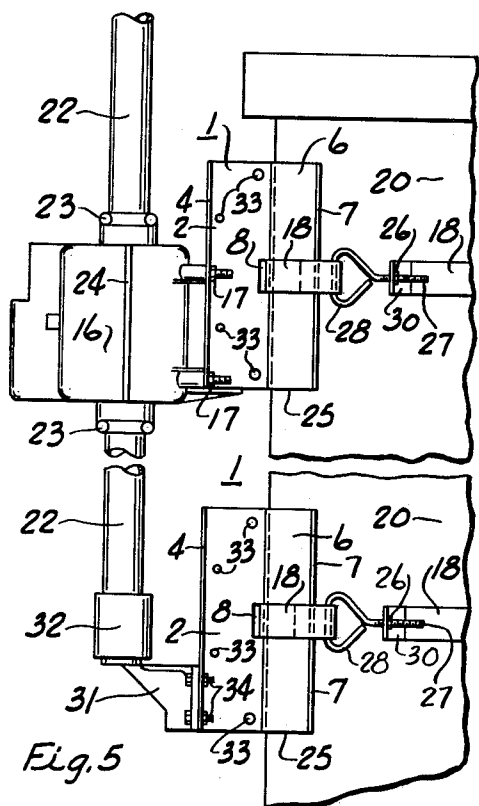


Fig. 5

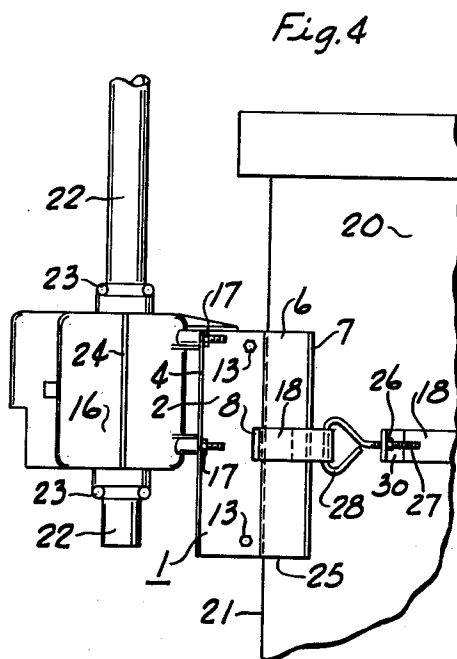


Fig. 4

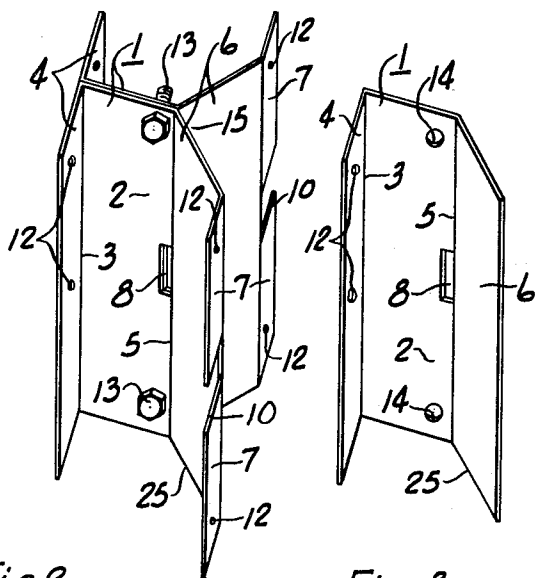


Fig. 2

Fig. 3

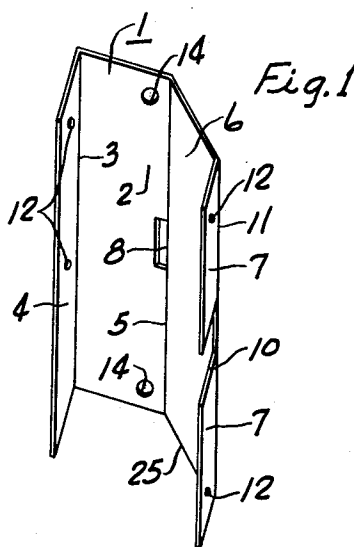


Fig. 1

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This invention relates generally to antenna mast supporting brackets and more particularly to a bracket that is constructed of a pair of duplicate plates.

The principal object of this invention is the provision of an object that is simple in construction and economical to manufacture yet provides additional advantages in the support of the antenna mast from a building structure and more particularly that of a corner of a building structure such as the corner of a house or chimney. The bracket provides an included angle of approximately 90° to embrace the corner of the building structure and held thereto by a single strap member which functions as a fulcrum in forcing the lower edge of the bracket into tight clamping engagement on the corner of the building structure.

Another object of this invention is the provision of a bracket so constructed that it may be supported to the corner of a building structure by a single strap member which alleviates any difficulty in attempting to hold and secure bracket structures that require two or more straps to hold them in position.

Another object is the provision of a bracket that supports an antenna mast either adjacent its upper or its lower end to provide maximum clamping pressure between the bottom end of the bracket and the corner building structure on which it is mounted and the single supporting member holding the bracket to the building structure is spaced from the bottom edge of the bracket.

Another object is the provision of a bracket made of duplicate plates that may be constructed from the same die and when the plates are assembled together to form the bracket one plate is merely inverted to extend the flanges of the plates in opposite directions and are secured together.

Another object is the bracket having outwardly extending edge flanges extending along the outer edge of marginal flanges forming an included right angle. The outwardly extending flanges are employed to secure the bracket to a flat face rather than to support the bracket against a corner of a building structure.

Other objects and advantages appear hereinafter in the following description and claims.

The accompanying drawings show for the purpose of exemplification without limiting this invention or the claims thereto, certain practical embodiments illustrating the principles of this invention wherein:

FIG. 1 is a perspective view of a single plate.

FIG. 2 is a perspective view showing a pair of duplicate plates secured together.

FIG. 3 is a perspective view of a plate not provided with an outwardly projecting edge flange.

FIG. 4 is a side elevation of the bracket as applied to the corner of a building structure and supporting an antenna mast and motor.

FIG. 5 is a view in side elevation showing two brackets applied to the corner of a building structure wherein one bracket supports the motor and the other the step bearing in supporting the mast.

Referring to the drawing the bracket 1 is provided with the web portion 2. The marginal edge 3 of the web portion 2 being provided with a marginal plate flange 4 which extends along the marginal edge 3 at right angles to the face of the web portion 2.

The marginal edge 5 of the web portion 2 has extend-

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ing therefrom the marginal plate flange 6 which extends outwardly 135°.

The outer edge of the marginal plate flange 6 is provided with the edge flange 7 which is bent at an angle so as to be substantially parallel with the flange 4 or disposed approximately at right angles to the web portion 2.

The bracket member 1 is provided with a window means 8 as formed by cutting out a section through the web portion 2 adjacent the marginal edge 5. This cut-out may extend slightly into the marginal flange 6 so that the strap passing therethrough will not be cut or otherwise engage a sharp corner of the cutout.

A second window 10 is cut in the edge flange 7 along the margin 11 between the marginal flange 6 and the edge flange 7. The window 10 may be partially cut out or completely cut out. When completely cut out as shown it is very easy to thread the band or strap that secures the bracket to the building structure.

The edge flange 7 and the marginal flange 4 are provided with the mounting holes 12 for securing the bracket to other members.

As shown in FIG. 2, two of the plates 1 are bolted together by passing the bolts 13 through the holes 14 and securing the web portions of two duplicate plates 1 together after one plate has been inverted so that the marginal flanges 4 and the edge flanges 7 extend in opposite directions and lie in parallel planes with the marginal flanges 6 forming an included angle 15 which is substantially 90°.

Owing to the fact that the windows 8 are in the center of the plate members the bracket has matching openings which form the window means of the bracket structure.

In the structure shown in FIG. 3 the plate 1 is provided with the marginal flanges 4 and 6 but the outer edge of the marginal flange 6 is not provided with an edge flange 7. A bracket made with plates of this character would be employed for bracing the corners of a building structure only.

As shown in FIG. 4 the bracket made up of a pair of duplicate plates 1 to support the housing 16 secured thereto by the rivets or bolts 17. The bolts on the housing pass through the holes 12 in each of the flanges 4 and since the housing 16 is secured or forms an integral member it aids in holding the plates 1 of the bracket in assembled relation thereby aiding the function of the bolts 13.

A strap member 18 is employed to pass through the window means 8. This strap is preferably made of a thin metal and preferably of stainless steel so that it will withstand the weather conditions in supporting the bracket and the housing 16 to the chimney member 20 which represents the building structure presenting a corner 21 that is embraced by the included angle of the marginal flanges 6 formed on the bracket.

The rotary mast 22 passes through the tubular shaft of the motor enclosed in the housing. The mast is secured to the opposite ends of this tubular shaft by means of the U-bolts 23. Since the housing 16 is secured to the bracket its center of mass when combined with that of the antenna mast may be assumed to be located in the center of the motor at the approximate position indicated at 24. This center of mass is outwardly of the window 8 and the strap 18 and exerts a downwardly thrust which would be in a direction substantially at right angles to a line drawn from the center of mass 24 to the window 8 and would be effective in impressing the lower edge 25 of the bracket into the surface of the chimney 20 along the lower edges of the marginal flanges 6. This will cause the bracket to tend to clamp into or bite into the surface of the chimney and aid in holding or supporting the bracket by the stainless steel strap 18. The stainless steel strap 18 may be tightened up by the nut 26 on the stem

27 of the eye bolt 28 which in turn is secured to the opposite end of the strap. By folding in the strap and locking it in place the opposite end of the strap 18 carries the bracket member 30 through which the stem 27 extends. Thus when the motor is mounted on the bracket on the ground and the clamping band 18 is threaded through the window 8 one need only to encircle the chimney by the band and tighten up the nut 26 to secure the bracket in place. A sufficient pressure can be exerted to hold the bracket square, however there is always that moment of forces exerted on the lower edge 25 of the bracket.

As shown in FIG. 5 two brackets are employed one for supporting the housing 16 and the other for supporting the arm 31 that carries the step bearing 32 which is preferably made so that it is impervious to the weather conditions and the bearing therein will support but permit the mast 22 to freely rotate. In the structure as shown in FIG. 5 the plate members are not bolted together with the bolts 13 but are welded as indicated at the spots 33. Thus the housing 16 of the motor functions to hold the plate members together with the spot welds 33. The arm member 31 which is bolted as indicated at 34 to the flanges 4 likewise holds the plate members together to aid in completing the bracket.

Regardless of whether the housing 16 is mounted adjacent the top of the bracket or adjacent the bottom of the bracket as shown the mass of the device supported is applicable through force members to impress or engage the bottom edge 25 of the bracket into surface engagement with the chimney and thus aid in securing the bracket in place and preventing it from slipping.

In view of this application of forces it is preferable that the duplicate plates forming the bracket have sharp edges so that they may readily bite into the brick or other surface of the building structure.

We claim:

1. An antenna supporting bracket comprising a pair of duplicate plates, each plate having a web portion with a marginal flange along each side thereof, both of said flanges of each plate extending outwardly on one side of its web, means securing together the web portions of a pair of duplicate plates to form a bracket, one set of said marginal plate flanges on said bracket extending in opposite directions providing a mounting face transverse to said web portions, the other set of said marginal plate flanges on said bracket forming an included angle of approximately 90°, means defining window means in the web of each plate adjacent said other set of marginal plate flanges to mate and form a common hole through said bracket.

2. The bracket structure of claim 1 characterized in that said window means of each flange is an opening in the longitudinal center of each plate.

3. An antenna supporting bracket comprising a pair of duplicate plates, each plate having a web portion with a marginal flange along each side thereof, both of said flanges of each plate extending outwardly on one side of its web, means securing together the web portions of a pair of duplicate plates to form a bracket, one set of said marginal plate flanges on said bracket extending in opposite directions providing a mounting face transverse to said web portions, the other set of said marginal plate flanges on said bracket forming an included angle of approximately 90°, means defining window means in the web of each plate adjacent said other set of marginal plate flanges to mate and form a common hole through said bracket, an antenna mounting member embracing

said transverse mounting face, and means for securing said member to each of said one set of marginal plate flanges of said bracket to aid in securing said plates together.

4. The bracket of claim 3 characterized in that said member is a housing for enclosing a motor.

5. The bracket of claim 3 characterized in that said member is a bearing support.

6. The bracket of claim 1 characterized by outwardly extending edge flanges along the outer edge of each of said other set of marginal flanges and extending parallel with said one set of marginal flanges.

7. The bracket of claim 6 characterized by means defining a second window in each of said outwardly extending edge flanges and aligned with said first named windows.

8. The bracket of claim 3 characterized in that said means for securing said member positions the center of mass of said member to one side of said window to apply force at the bottom of said bracket along the lower edges of said other set of marginal flanges.

9. The bracket of claim 8 which also includes strap means passing through said window to hold the adjacent faces of said other set of marginal flanges against a corner structure and functions as a fulcrum for the application of forces from the center of mass to the bottom of said bracket.

10. An antenna support comprising a pair of duplicate plates secured to form a bracket having a web portion with marginal flanges extending outwardly on each side thereof, one set of marginal flanges on said plates extending in opposite directions providing a flat mounting face disposed transversely to said web portion, the other set of marginal flanges forming an included angle of approximately 90° to embrace a corner of a building structure, means defining a window in said web adjacent said other set of flanges.

11. The bracket of claim 10 characterized by a strap means passing through said window to hold said bracket against a corner of a building structure.

12. An antenna supporting bracket comprising a pair of duplicate plates, each plate having a web portion with a marginal flange along each side thereof, both of said flanges of each plate extending outwardly on one side of its web, means securing together the web portions of a pair of duplicate plates to form a bracket, one set of said marginal plate flanges on said bracket extending in opposite directions providing a mounting face transverse to said web portions, the other set of said marginal plate flanges on said bracket forming an included angle of approximately 90°, outwardly extending edge flanges along the outer edge of each of said other set of marginal flanges and extending parallel with said one set of marginal flanges, means defining holes in said outwardly extending edge flanges to fasten said bracket to a building structure.

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