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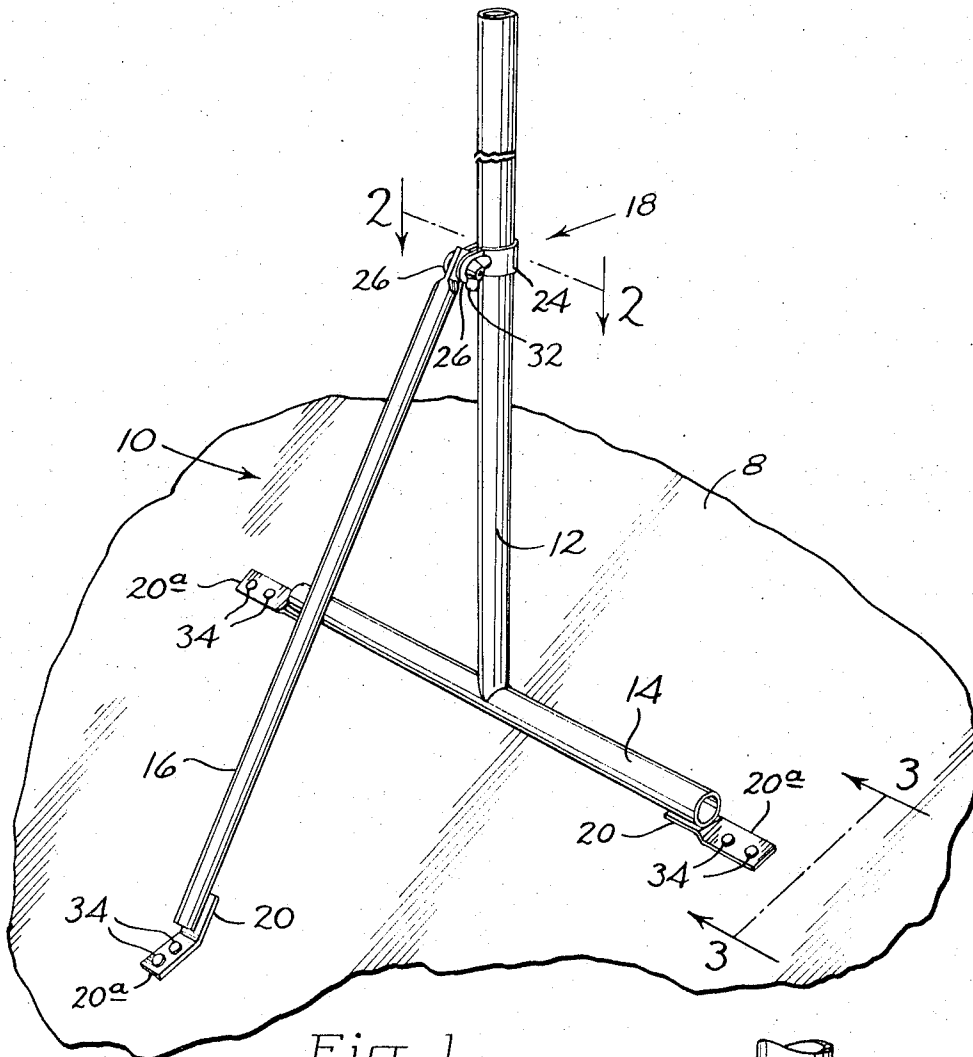


Fig. 1.

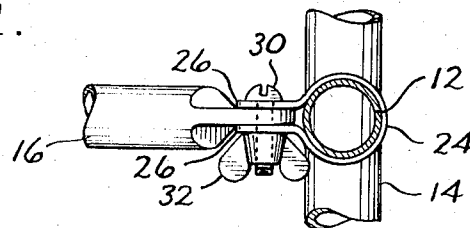


Fig. 2.

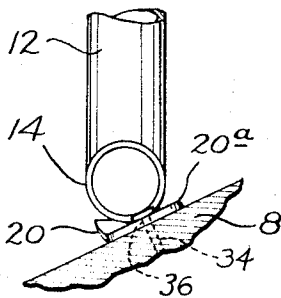


Fig. 3.

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4 Claims

ABSTRACT OF THE DISCLOSURE

An antenna stand which provides tripodic attaching means for securing the stand on variously configured supporting surfaces and includes a rigid strut pivotally connected to an upright mast, adjustable locking means for locking the strut in different angular positions relative to the mast, a rigid crosspiece secured to the base of the mast, and deformable attaching pads secured to the strut and crosspiece.

This invention relates to an antenna stand. When installing an antenna, such as is used for television or radio reception, it is often expedient to mount the antenna on top of the building which houses the television or radio receiver. The antenna is usually mounted on a stand, and the stand is secured to the roof of the building. Since roof lines of different buildings vary considerably, an antenna stand, to be practical, should be adapted to be mounted simply and securely on widely differing supporting planes and combinations of planes. Further, the antenna stand when mounted on a roof should provide the stability to withstand extreme environmental conditions, preferably without having to include guy lines or other forms of auxiliary support.

A general object of this invention is to provide an improved antenna stand, which is readily adapted for mounting on differently shaped supporting structures.

A further object is to provide such an antenna stand, which provides a stable mounting for an antenna when mounted in operative position.

A related object is the provision, in such an antenna stand, of a rigid elongated strut connected at one of its ends through lockable pivot means to an upright mast, at a point intermediate the ends of the mast. The pivot means allows the strut to be positioned at different angular positions relative to the mast, and then locked in a selected position relative to the mast. Strut positioning may be accomplished without bending or otherwise deforming the strut.

The invention also features, in such an antenna stand, an elongated rigid crosspiece secured to the base of the mast extending generally normal to the mast. Projecting from the ends of this crosspiece and the base of the strut are attaching pads used in securing the stand to a structure. While the strut and crosspiece are preferably quite stiff, to obtain rigidity, the attaching pads are relatively easily deformed, to enable them to be shaped best to conform to the structure upon which the stand is mounted. With the provision of such attaching pads, the strut and crosspiece need not be bent when installing the stand, another factor permitting the use of rigid stock as the strut and crosspiece elements.

Other objects and advantages will become more fully apparent as the following description is read in conjunction with the following drawings, wherein:

FIG. 1 is a perspective view, illustrating an antenna stand constructed according to an embodiment of the invention mounted on a sloping roof structure;

FIG. 2 is a cross-sectional view, taken along the line 2—2 in FIG. 1, illustrating a pivotal connection provided between an upright mast and a support strut in the stand; and

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FIG. 3 is a cross-sectional view, taken generally along the line 3—3 in FIG. 1 illustrating a deformed attaching pad secured by a nail to the roof structure.

Referring now to the drawings, and more specifically to FIG. 1, at 8 is indicated a portion of a sloping roof. A stand for mounting an antenna, constructed in accordance with an embodiment of the invention, is indicated generally at 10.

In broad terms, the stand comprises an upright mast 12, an elongated crosspiece or crosspiece member 14 rigidly secured to the base of and extending normal to the mast, and a rigid elongated strut or strut member 16. Pivot means 18 pivotally connects the strut's upper end to the mast, and an attaching pad 20 is secured to each end of the crosspiece and to the nonpivoted end of the strut.

Mast 12 is an elongated, rigid tube, preferably of metal stock which, in operative position, may project vertically upwardly from the roof or other structure upon which the stand is mounted. An antenna (not shown) to be supported by the stand is secured to the mast's upper end (in FIG. 1, the mast has been shown broken away and shortened somewhat from the length it normally has, in order to conserve space).

Crosspiece 14 is a rigid, elongated tube, also preferably of metal stock which may have the same outer diameter as the outer diameter of mast 12. The mast is joined to the crosspiece at a point midway between the crosspiece's ends. The mast and crosspiece are securely joined, as by welding them together, to form a rigid, inverted T-shaped structure.

Strut 16 is also an elongated, rigid tube, preferably of metal. As is best seen in FIGS. 1 and 2, the upper end of this tube is flattened.

Referring now to FIGS. 1 and 2, it will be seen that pivot means 18 secures strut 16 to the mast at a point located somewhat above the crosspiece. The pivot means shown comprises a clip 24 which substantially encircles the mast, and terminates in a pair of parallel spaced-apart ears 26 which project laterally from the mast. The clip is secured in its position as by welding it to the mast. The flattened end of strut 16 is received between ears 26, and a screw, or element, 30 extending through aligned accommodating bores in ears 26 and the flattened strut end serves to hold the strut end between the ears. Screwed onto the threaded end of screw 30 is a wing nut 32.

The screw provides a pivot axis for strut 16 which generally parallels crosspiece 14. With loosening of wing nut 32, strut 16 may be swung about this axis to place it at different angular positions relative to the mast. The screw and wing nut function as adjustable locking means in the organization for locking the strut in any selected position relative to the mast, since with tightening of the wing nut, ears 26 clamp against opposite sides of the flattened end of the strut to produce tight frictional contact locking the strut against the pivotal movement.

Referring now to FIGS. 1 and 3, attaching pads 20 comprise metal strips secured, as by welding, to the ends of the crosspiece and to the bottom end of the strut. The pads include portions 20a projecting longitudinally outwardly from the members to which the pads are secured. As is best seen in FIG. 3, each of the strips associated with the crosspiece is secured with one of its flat sides directly against the underside of the crosspiece. The strip for strut 16 is similarly joined to the underside of the strut. Each strip has a minor cross-sectional area in comparison to the cross-sectional area of the member which mounts the strip. In comparison with the strut and crosspiece members, therefore, the strips are relatively easily deformed, and can be bent and twisted during installation of the stand so as best to conform to the plane of the supporting surfaces which are found under the stand at the installation site.

Holes or apertures 36 extend through the attaching pads, in projecting portions 20a of the pads. These are provided to receive nails 34 or other fasteners used in securing the stand in place.

Describing how the stand may be mounted on a supporting structure, wing nut 32 may be loosened on screw 30 to permit adjusting of the strut. Crosspiece 14 ordinarily is placed in a substantially horizontal position with the mast projecting vertically upwardly. On a sloping surface such as a sloping roof, strut 16 may be placed either on the uphill or downhill side of the crosspiece, with the strut swung relative to the mast to bring the strut's base against the roof. The attaching pads connected to the ends of the crosspiece are twisted to the extent required to place portions 20a flush with the roof. Transverse bending of the pad for strut 16 places its projecting portion 20a flush with the roof. The pads may then be fastened in place and wing nut 32 tightened to produce a rigid mounted assembly. With other types of supporting structures, including structures where multiple support planes are presented, suitable placement of the strut and bending of the pads ordinarily will result in a rigid installation.

While an embodiment of the invention has been described, modifications and variations are possible without departing from the invention and it is desired to cover all such variations as would be apparent to one skilled in the art.

I claim:

1. A stand for mounting an antenna on variously configured supporting surfaces comprising, in operative position, an upright rigid mast, an elongated rigid crosspiece member rigidly secured to the base of said mast with the crosspiece member extending normal to the mast, a rigid elongated strut member extending at an angle relative to said mast with one end adjacent the mast and an opposite end spaced from the mast; pivot means pivotally connecting said one end of said strut member to said mast at a point above and spaced from said crosspiece member; said pivot means comprising an element providing a pivot axis for said strut member which substantially parallels said crosspiece member, and adjustable locking means for locking said strut member in different angular positions relative to said mast; and an attaching pad secured to the

opposite end of said strut member and each end of said crosspiece member; each of said attaching pads having a projecting portion projecting from the end of the member to which the attaching pad is secured which is relatively easily deformed in comparison to the member to which the pad is secured and which is employed in securing the stand to supporting surfaces.

2. The stand of claim 1, wherein the pivot means comprises an ear secured to said mast which projects laterally from the mast, said element passes through said ear and said strut member, and said adjustable locking means comprises a tightenable fastener mounted on said element which may be tightened on said element to press said ear and the strut member into tight frictional contact with each other.

3. The stand of claim 1, wherein said crosspiece and strut members are of cylindrical metal stock, and the pads secured to said opposite end of said strut member and the ends of said crosspiece members comprise deformable metal strips having minor cross-sectional areas in comparison to the cross-sectional areas of said strut and crosspiece members to which they are attached, enabling the pads easily to be bent to conform to a supporting surface.

4. The stand of claim 1, wherein the crosspiece member is secured to the mast at a point of joinder with the mast located substantially midway between the ends of the crosspiece member, and the only connection of the mast and crosspiece member is at said point of joinder.

References Cited

UNITED STATES PATENTS

2,597,733	5/1952	Jackson	248—43
2,616,571	11/1952	Griffin	211—171
2,891,748	6/1959	Winegard	248—46

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