Jan. 10, 1950 M. J. BLAUGRUND 2,493,851

ANTENNA MOUNTING CLAMP

Filed Aug. 17, 1949 2 Sheets-Sheet 1

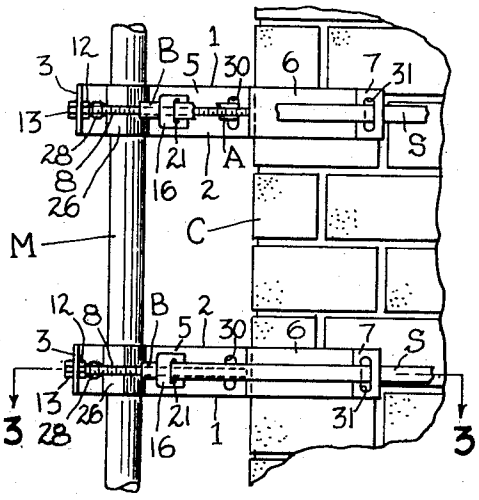

FIG. 1

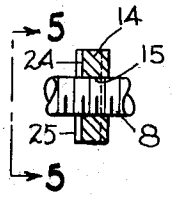

FIG. 4

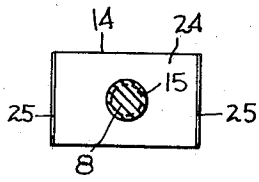

FIG. 5

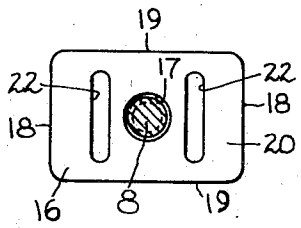

FIG. 6

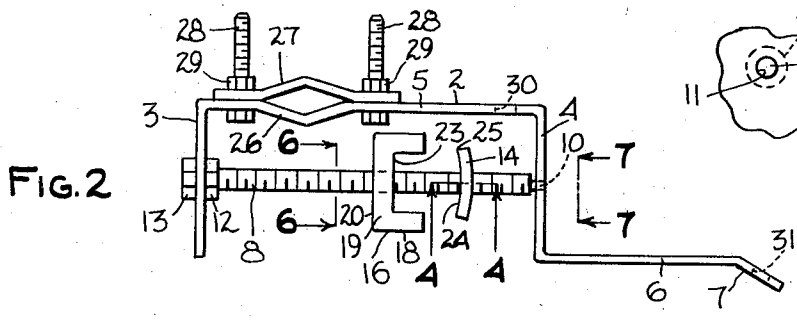

FIG. 2

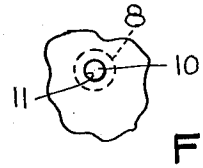

FIG. 7

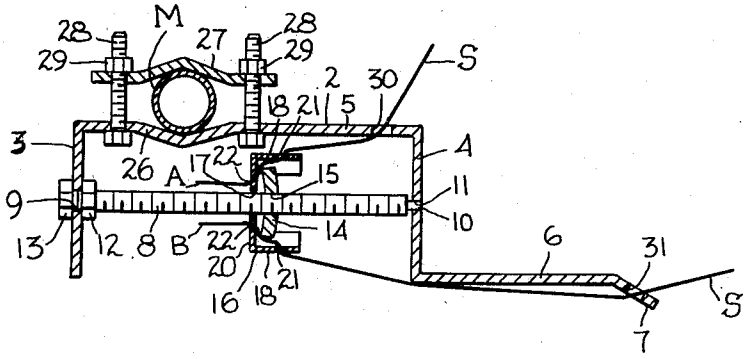

FIG. 3

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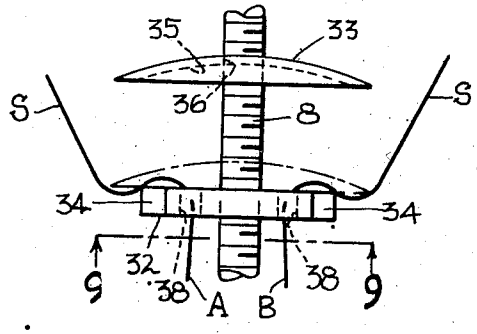

FIG. 8

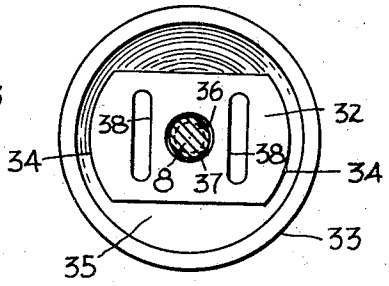

FIG. 9

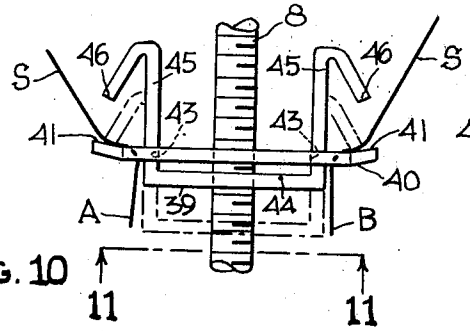

FIG. 10

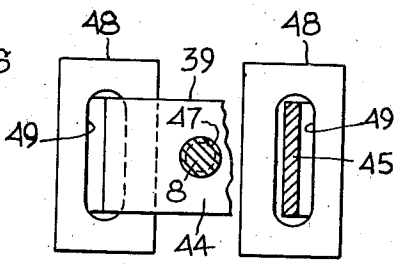

FIG. 12

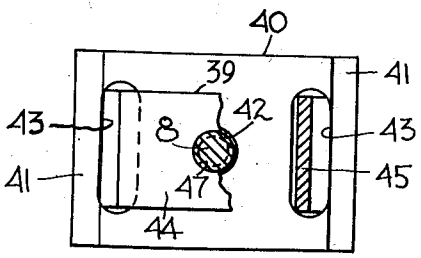

FIG. 11

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ANTENNA MOUNTING CLAMP

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Application August 17, 1949, Serial No. 110,781

9 Claims. (Cl. 248—231)

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The present invention pertains to an antenna mounting device and more particularly to such devices which are especially adapted for mounting on corners, such as chimney corners.

It is a primary object of my invention to provide an antennae mounting device which will hold the antennae firmly in position on chimney installations without requiring the use of log screws, expansion bolts or the like.

Another object of my invention is to an antennae mounting clamp of the character described, which has means provided thereon for tensioning a steel strap, as well as means for securing the ends of said strap.

Still another object of my invention is to provide a device of the character described, which is simply constructed, yet efficient in operation.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is an elevational view showing the manner in which a mounting clamp embodying the features of my invention is utilized for a chimney-mounted installation.

Fig. 2 is a top plan view of the mounting clamp shown in Fig. 1, with the parts in non-clamping position, the strap not being shown.

Fig. 3 is a cross-sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is an enlarged fragmentary view taken as indicated by line 4—4 on Fig. 2.

Fig. 5 is an enlarged fragmentary view taken as indicated by line 5—5 of Fig. 4.

Fig. 6 is an enlarged fragmentary view taken as indicated by line 6—6 of Fig. 2.

Fig. 7 is an enlarged fragmentary view taken as indicated by line 7—7 of Fig. 2.

Fig. 8 is a fragmentary top plan view of a modified form of the invention.

Fig. 9 is an elevational view taken as indicated by line 9—9 of Fig. 8.

Fig. 10 is a fragmentary top plan view of another form of the invention.

Fig. 11 is an elevational view taken as indicated by line 11—11 of Fig. 10.

Fig. 12 is a view similar to Fig. 11 of still another form of the invention.

Referring more particularly to Figs. 1–7 of the drawings, in Fig. 1 I have illustrated the manner in which my invention is utilized for mounting an antenna mast M on a chimney C, or the like.

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Although only one mounting clamp may be used, it is preferable, as illustrated, to employ two vertically spaced clamps 1, thus providing support for the mast M at two spaced points.

The mounting clamp 1 comprises a body 2 formed of heavy gauge metal strip or the like, which body is bent or formed to provide two spaced substantially parallel arms 3, 4 which extend at right angles to a connecting portion or web 5 which is integral with the arms. The arm 4 is bent to form a right-angled extension bar 6 which lies substantially parallel to the web 5 and extends in a direction away from the arms 3 and 4. The extension bar terminates in a short angularly extending portion 7 which projects in a direction away from the web 5.

An adjusting bolt 8, of approximately the same length as the distance between the arms 3 and 4 extends through a clearance hole 9 centrally located in the arm 3. The end of the bolt 8 is provided with an extension or dowel 10 of reduced diameter, which extension projects into an opening 11 provided in the arm 4.

A nut 12 is threadedly secured to the bolt 8 so as to abut the inner surface of the arm 3 in opposition to the head 13 of the bolt, thereby firmly securing the bolt in position between the arms 3 and 4.

A strap locking member or clamp block 14 having a centrally disposed tapped opening 15 is threaded onto the bolt 8 and is carried by the bolt between the arms 3 and 4.

Intermediate the clamp block 14 and the nut 12 is mounted a strap receiving member or anchor element 16 which is provided with a clearance hole 17 through which the bolt 8 extends, the anchor element being freely movable along the bolt.

The anchor element 16 is in the form of an open-ended rectangular box having two parallel sides 18, two parallel sides 19, and an end or back wall 20 in which is located the clearance hole 17 heretofore mentioned. In the use of my invention, the anchor element is so disposed that the sides 18 are vertical and the sides 19 are horizontal, and if this be borne in mind, it will lead to a clearer understanding of this description.

Each of the sides 18 is provided with a vertically extending elongated opening or slot 21 and the back wall 20 is provided with two vertically extending openings or slots 22 which straddle the aperture 17.

The sides 19 are each recessed as at 23, which, as will hereinafter more fully appear, permits

easier access to the interior of the anchor element 16.

The clamp block 14 is arcuate in form and is of such dimension as to be received within the anchor element 16. The concave surface 24 of the block faces the anchor element and the edges 25 thereof project forwardly of the face of the block and toward the back wall 20 of the anchor element.

A portion of the web 5 of the body 2 is bent or offset to form a vertically extending V-shaped channel or groove 26 which is adapted to receive the mast M. A complementary channel piece 27 is releasably secured to the body 2 in opposed relationship to the channel 26 by means of bolts 28 and nuts 29. The mast M may thus be frictionally secured between the piece 27 and the web 5 by drawing up on the nuts 29.

A vertically extending slot 30 is provided in the web 5 near the arm 4, and a similar slot 31 is provided in the portion 7 of the extension bar 6.

Referring more particularly to Figs. 1 and 3, I have shown the manner in which a metal strap S is utilized to secure the mounting clamp to the chimney C.

The mounting clamp is located on a corner of the chimney so that the arm 4 lies against one face of the chimney and the extension bar 6 lies against an adjacent face thereof. The strap S encircles the chimney and one end A thereof is passed through the slot 30 and through the slot 21 in one side 18 of the anchor element 16. The end A then is passed through one of the slots 22 so that it passes completely through the element 16.

The other end B of the strap S is passed through slot 31 in the portion 7 of the bar 6 and then is passed through the other slots 21 and 22 in the same manner as the end A. For the sake of clarity, the ends A and B are illustrated as projecting rearwardly from the anchor element 16, however, in practice, these ends would be bent back upon themselves after passing through element 16 so that the strap S would be snubbed about the anchor element.

It will be understood that during this procedure, the strap is pulled taut manually insofar as is possible.

The nut 12 is then loosened slightly thereby permitting the adjusting bolt 8 to be turned or rotated. The clamp block 14 which threadedly engages the bolt 8 is caused to move toward the anchor element 16 by the rotation of the bolt until the edges 25 abut the strap and press it against the wall 20 of element 16. Continued rotation of the bolt causes the element 16 to be forced rearwardly (to the left in Fig. 3), thus tightening the strap and forcing the arm 4 tightly against the surface of the chimney.

When the mounting clamp 1 is thus secured to the chimney, the nut 12 is drawn up to secure the bolt 8 against rotation, and the mast is secured to the mounting clamp in the manner heretofore indicated.

Referring now to Figs. 8–9 of the drawings, I have shown a modified form of the invention in which I utilize an anchor element 32 in lieu of the anchor element 16, and a clamping element 33 instead of the clamp block 14. In all other respects the structure is identical with that of Figs. 1 to 7.

The anchor element 32 is in the form of a short bar having rounded edges 34 which conform to the curvature of the concave face 35 of the clamping element 33. The clamping element

is a circular dished or cupped piece of concavo-convex form which has a centrally located tapped opening 36 extending therethrough. The adjusting bolt 8 threadedly engages the opening 36 in the clamping element.

The anchor element 32 is disposed between the element 33 and the arm 3 and is provided with a centrally located clearance hole 37 through which the screw 8 passes. Two laterally-spaced vertically extending slots 38 are provided in the anchor element 32, one being disposed on each side of the opening 37. The anchor element 32 is thus freely movable longitudinally of the bolt 8.

In utilizing this form of the invention, the end A of the strap S, as heretofore described, is passed through the slot 30 in the body web 5 and thence through one of the slots 38 in the anchor element 32. The end B of the strap is passed through slot 31 in the extension 7 and then through the other slot 38.

The nut 12 is then loosened permitting the adjusting screw 8 to be turned thereby causing the clamping element 33 to be drawn toward the anchor element 32 as indicated by the dotted line position in Fig. 8. The strap S is gripped between the surface 35 of the clamping element and the edges 34 of the anchor element. Continued rotation of the screw 8 causes the anchor element to be moved rearwardly (downwardly as viewed in Fig. 8) and increases the tension on the strap S. The clamp assembly is thus frictionally secured to the chimney.

This modified form of the invention, as well as the modifications illustrated in Figs. 10 to 12, has an advantage over the form of invention shown in Figs. 1 to 7, in that, misalignment of the clamping element 33 and anchor element 32 cannot occur, as was possible between the clamping block 14 and the anchor element 16.

In practice it has been found that, through carelessness, the block 14 may be permitted to go askew so that it will not enter the anchor element 16 when it is drawn up. Due to the circular form of clamping element 33, such a condition is obviated in the form of invention illustrated in Figs. 8 and 9.

Referring now more particularly to Figs. 10 and 11, I have shown another modification which, as heretofore mentioned, has as its objective the avoidance of misalignment of the parts.

In this instance, I utilize a clamp element 39 and an anchor element 40 in lieu of the block 14 and the element 16. In other respects, the structure is identical with that shown in Figs. 1 to 7.

The anchor element 40 is in the form of a short bar having angularly inclined ends 41 and having a centrally disposed clearance hole 42. Two spaced vertically extending slots 43 are provided in the element 40, one being disposed to each side of the aperture 42.

The clamping element 39 is a U-shaped member having a web portion 44 from which extend two parallel arms 45, which pass through the slots 43. The ends of arms 45 are bent back at a sharp angle to form gripping edges 46 which are adapted to abut the anchor element 40. The web 44 of clamping element 39 is provided with a centrally located tapped opening 47 which is threadedly engaged by the adjusting screw 8 which also passes through clearance hole 42 in element 40.

The anchor element is thus longitudinally movable relatively to the screw 8 and has a limited amount of movement relatively to the clamping element 39.

In utilizing this modified form of clamp as-

sembly, the end A of strap S is passed through slot **30** and thence through one slot **43** outwardly of arm **45** of the clamping element **39**. The end B is passed through slot **31** and then through the other slot **43** in anchor element **40**. When screw **8** is rotated, the clamp element **39** is moved to the dotted line position shown in Fig. 10 and the strap is gripped between the ends **41** of element **40** and the gripping edges **46** of element **39**, thereby securing the strap and tensioning it in the manner heretofore described.

In Fig. 12, I have shown a modification of the form of invention shown in Figs. 10 and 11. This form of the invention obviates certain difficulties in manufacture which may be encountered in producing the embodiment of Figs. 10 and 11.

In this instance the unitary anchor element **40** is replaced by two like elements **48**, each having a slot **49** formed therein, through which an arm **45** of clamping element **39** passes.

The manner of utilizing this form of the invention is the same as heretofore described with reference to Figs. 10 and 11.

From the foregoing description, it will be apparent that I have provided a simple, yet efficient, antenna mounting clamp particularly adapted for chimney installations.

It is to be understood that the forms of my invention, herewith shown and described, are to be taken as preferred examples of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A strap-secured mounting clamp for affixation to a chimney or the like, comprising a body, said body having spaced parallel arms extending therefrom, an adjusting screw supported by said arms, a strap anchoring element slidably carried on said adjusting screw, said element having strap-receiving openings therein, a strap clamping element threadedly secured to said adjusting screw, said clamping element having gripping surfaces disposed toward the strap-receiving side of said anchoring element, whereby said anchoring element is engageable by said clamping element in response to rotation of said adjusting screw, and a mast receiving portion provided on said body.

2. In a strap-secured mounting clamp of the character described, the combination of a body, an adjusting screw supported by said body, a strap anchoring element slidably carried by said adjusting screw, said element having strap-receiving apertures therein, and a strap clamping member threadedly engaging said adjusting screw, said member having gripping surfaces disposed toward the strap-receiving side of said element, whereby said gripping surfaces engage said element in response to rotation of said screw to clamp a strap therebetween.

3. A combination, as defined in claim 2, in which said anchoring element comprises a slotted bar having projecting sides and said clamping member is containable within said sides.

4. A combination, as defined in claim 2, in

which said anchoring element comprises a slotted bar and said clamping member comprises a circular element of larger diameter than the largest dimension of said anchoring element.

5. A combination, as defined in claim 2, in which said anchoring element comprises a slotted bar and said clamping element is secured to said bar for movement relatively thereto longitudinally of said screw.

6. In a strap-secured mounting clamp of the character described, the combination of a body, an adjusting screw supported by said body, a strap-anchoring element slidably carried by said adjusting screw, said element having strap-receiving apertures therein, and a strap clamping member threadedly engaging said adjusting screw, said member having gripping surfaces disposed toward said element, whereby to clamp a strap against said element in response to rotation of said screw.

7. A strap-secured mounting clamp of the character described, comprising a body, an adjusting screw carried by said body, a strap-anchoring element slidably carried by said adjusting screw, said element having portions adapted to engage the end portions of the strap, and a strap-clamping member threadedly secured to said adjusting screw, said member being movable toward said element in response to rotation of said screw in one direction whereby to clamp said end portions of the strap against said element, said element and said member being movable along the screw after clamping the strap to tension the same.

8. A combination, as defined in claim 7, in which a mast-securing clamp is mounted on said body.

9. A strap-secured mounting clamp for affixation to a chimney or the like, comprising a body, said body having spaced parallel arms extending therefrom, an adjusting screw supported by at least one of said arms, a strap-anchoring element slidably carried on said adjusting screw, said element having strap-receiving openings therein and a strap-clamping element threadedly secured to said adjusting screw, said clamping element having gripping surfaces disposed toward said anchoring element, whereby said anchoring element is engageable by said clamping element in response to rotation of said adjusting screw to grip a strap therebetween.

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