

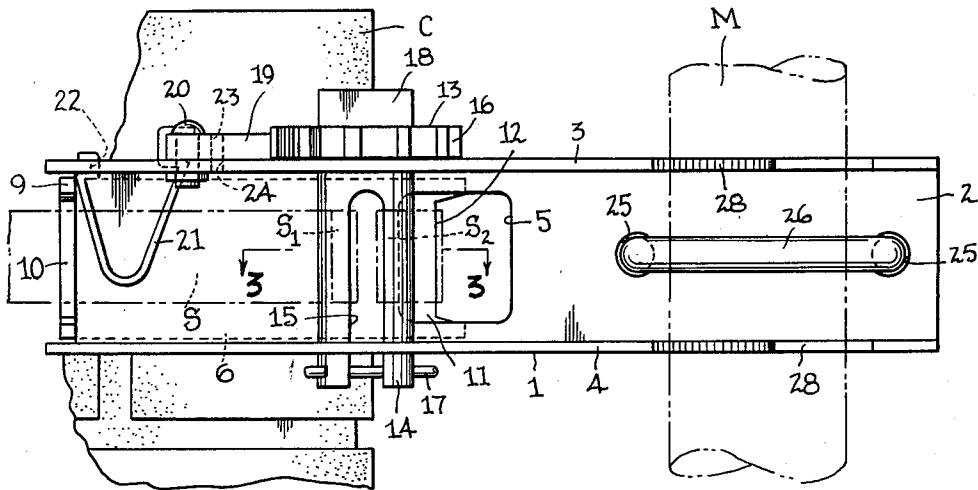
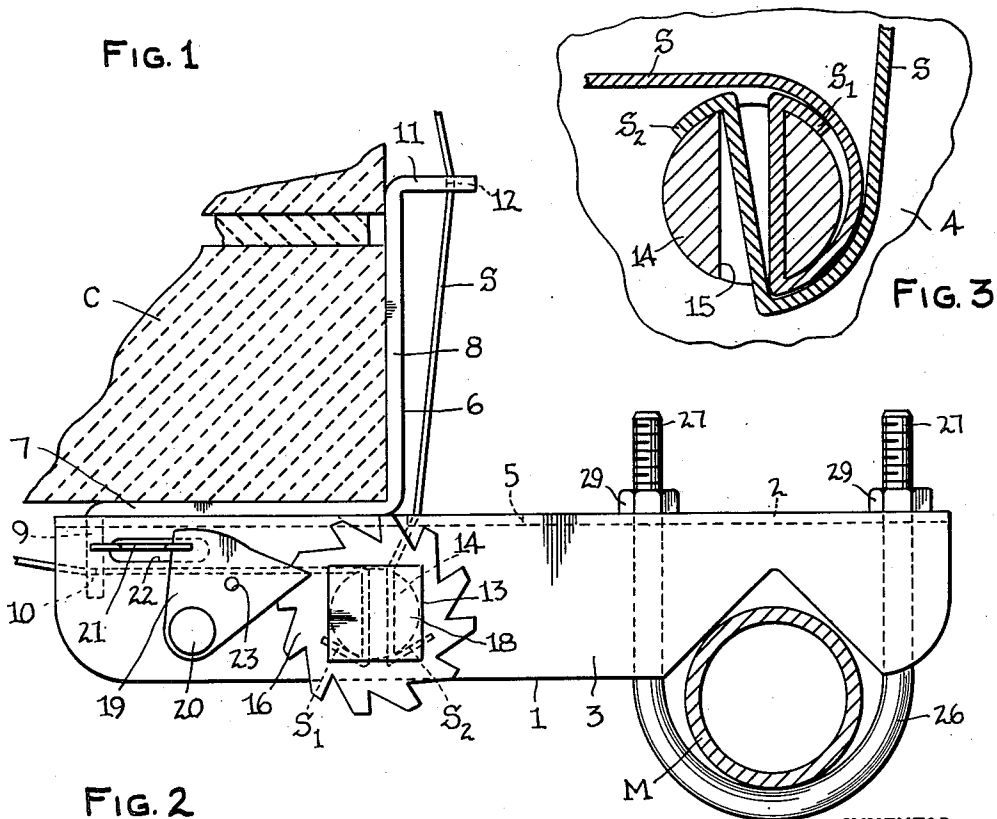
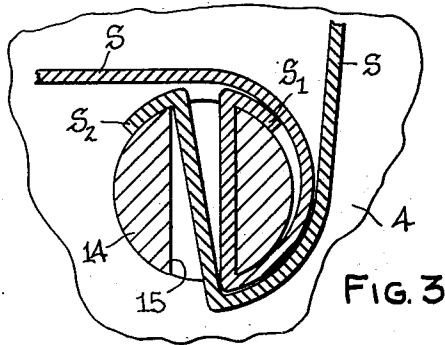
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ANTENNA MOUNTING CLAMP

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ANTENNA MOUNTING CLAMP

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This invention relates, as indicated, to an antenna mounting clamp, but has reference more particularly to a clamp or bracket which is especially adapted for mounting on corners, such as chimney corners.

A primary object of the invention is to provide a device of the character described, which will hold the antenna firmly in position on a chimney, without the use of lag screws, expansion sleeves or bolts, or similar fastening means.

Another object of the invention is to provide a chimney clamp or mount, which is devoid of elements, such as bolts, screws, nuts or similar fastening means which can become loosened or lost during storage, shipment, installation or use thereof.

A further object of the invention is to provide a chimney mount or clamp which can be installed on a chimney with a minimum of labor or effort and without the use of tools other than a simple wrench.

A further object of the invention is to provide a device of the character described, which has simple means provided thereon for securing the ends of a steel strap and for tensioning the strap.

A still further object of the invention is to provide a device of the character described, which consists of a minimum number of parts, which can be manufactured economically and sold at low cost, which is extremely simple in construction, and which is highly efficient in operation or use.

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 elevation of an antenna mounting clamp embodying the features of my invention, as it appears when mounted on a chimney corner.

Fig. 2 is a top plan view of the device shown in Fig. 1.

Fig. 3 is an enlarged fragmentary cross-sectional view taken on line 3-3 of Fig. 1.

Referring more particularly to the drawings, and especially to Figs. 1 and 2, there is illustrated the manner in which my invention is utilized for mounting an antenna mast M on a chimney C, or the like.

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

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The mounting clamp comprises a body 1 of channel shaped form, having a web 2 and parallel flanges or sides 3 and 4. The web 2 is provided with a rectangular opening 5, and secured to the web 2, adjacent one end of this opening, as by spot welding, is a corner bracket 6.

The bracket 6 has two arms 7 and 8 which extend at right angles to each other, the arm 7 lying parallel to the plane of the web 2 and the arm 8 extending in a direction normal to the plane of the web 2. The end of the arm 7 is bent or flanged as at 9 to form a strap guide having a strap retaining recess 10. The end of arm 8 is also bent as at 11 to form a strap guide having a strap retaining recess 12.

The sides 3 and 4 of the body 1 serve to support a winch or tensioning element 13 which traverses the flanges 3 and 4 and is rotatably secured therein. The winch comprises a cylindrical barrel 14 which is slotted longitudinally as at 15 to receive the portions S₁ and S₂ of a flat steel band or strap S. The barrel is surmounted by a ratchet wheel 16, which is integrated therewith and which abuts or rests upon the exterior surface of the flange 3. The barrel 14 projects through the flange 4 and a cotter pin 17 which extends diametrically through the projecting portion of the barrel serves to retain it against withdrawal from the body 1.

The winch is provided with a square head or extension 18 to which a wrench or other suitable tool may be applied in order to manually rotate or turn the winch.

The winch is designed to be rotated only in one direction, and counter-rotation thereof is prevented by means of a pawl 19 which is pivotally secured to the flange 3 by means of a rivet or bolt 20. A U-shaped spring 21 extends through a slot 22 which is formed in the flange 3 and bears against the pawl 19 to yieldably maintain it in engagement with the ratchet wheel 16. An opening 23 is provided in the pawl 19, which opening is normally in registry or alignment with an opening 24 in the flange 3. As will more fully appear hereinafter, the openings 23 and 24 are adapted to receive any suitable form of locking pin or cotter pin (not shown).

The web 2 of the body 1 has two spaced openings 25 provided therein, through which project the threaded legs 27 of a U-bolt 26. The flanges 3 and 4 are provided with V-shaped notches or recesses 28 which are in vertical alignment with each other, and the mast M is clamped between the edges of the recesses 28 and the U-bolt 26 by means of nuts 29 which are utilized to draw up

the U-bolt. The mast is thereby tightly secured to the body 1.

In utilizing the above described antenna mounting clamp, the end S₁ of the steel band or strap S is first passed through the slot 15 in the barrel 14 of the winch 13 and bent or snubbed around the barrel as indicated in Figs. 1 and 2. For reasons of clarity in illustration, the strap S is shown in broken line outline in Fig. 1. The device is then positioned on the corner of the chimney C and the strap S is brought around the chimney and through the opening 5 and slot 15 and is pulled reasonably taut and the end S₂ is snubbed about the barrel 14 of the winch as shown in Figs. 1 and 2. The device is thus loosely retained on the chimney. The excess of the end S₂ is then cut off.

A handle or wrench is then applied to the square head 18 and the winch is rotated clockwise as viewed in Fig. 2. The rotation of the ratchet 16 cams the spring-pressed pawl 19 and causes it to pivot about element 20 so as not to interfere with the turning movement of the ratchet. The pawl will, however, prevent any counter-rotation of the ratchet.

As the barrel 14 turns, the strap S is placed under increasing tension until it grips the chimney very tightly and thus frictionally secures the device to the chimney without the need for lag screws, bolts or like fastening means. It will be understood that the strap is guided and retained by the portions 9 and 11 of the bracket arms 7 and 8 respectively.

In Fig. 3, I have illustrated the manner in which the strap S is wound up on the barrel 14 after it has been rotated through 180°. It will be noted that the end S₁ underlies and is gripped by a portion of the strap, and that this portion in turn underlies and is gripped by another portion of the strap which extends from the end S₂. It will be apparent that if the barrel be rotated further, the end S₂ will likewise be gripped by successive layers of the strap. Thus the ends S₁ and S₂ are firmly secured against loosening.

The device is then ready to receive the mast M which is secured thereto in the manner heretofore described.

Inasmuch as the clamping device is intended primarily for outdoor use, it will over a period of time be subject to atmospheric corrosion. It is probable that such corrosion may impair or destroy the resiliency of spring 21 and then through inadvertence the pawl 19 might be displaced from locking engagement with the ratchet gear 16. In order to avoid such a happening, it is desirable that a small nail or cotter pin be inserted in the openings 23 and 24 after the installation of the device has been completed. Such a pin will prevent inadvertent release of the ratchet even if the spring 21 should fail. The nail or cotter pin could, of course, be removed if at any time it was desired to take up additionally on the strap S or perhaps to disassemble the antenna mounting.

I have thus provided a sturdily constructed antenna mounting clamp which is inexpensive to manufacture and which eliminates the need for separate fastening elements such as lag screws and the like which are time-consuming to install.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example 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. An antenna mounting clamp comprising a body having a spring-receiving slot, rotatable strap-receiving and tensioning means mounted on said body, said means comprising a winch having a strap-receiving slot therein whereby to retain the ends of a chimney encircling strap, said means having an element adapted to be engaged by a tool for the purpose of rotating said means, means for locking said winch against tension-induced counter-rotation, said locking means comprising a ratchet wheel secured to said winch and a pawl adapted to engage said ratchet wheel to prevent said counter-rotation, said pawl being pivotally secured to said body for movement about an axis spaced from but parallel with the axis of rotation of said strap-receiving and tensioning means, and a U-shaped spring removably mounted in said first-named slot and having one arm thereof bearing against said pawl to yieldably maintain it in engagement with the ratchet wheel, the other arm of said spring bearing against one end of said first-named slot.

2. An antenna mounting clamp, as defined in claim 1, including means for locking said pawl against pivotal movement from said ratchet wheel.

3. An antenna mounting clamp, as defined in claim 2, in which said pawl locking means includes a pin which extends through registered openings in said pawl and body.

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