Feb. 28, 1950 R. W. WEEKS 2,499,011

ANTENNA MAST SUPPORTING BRACKET

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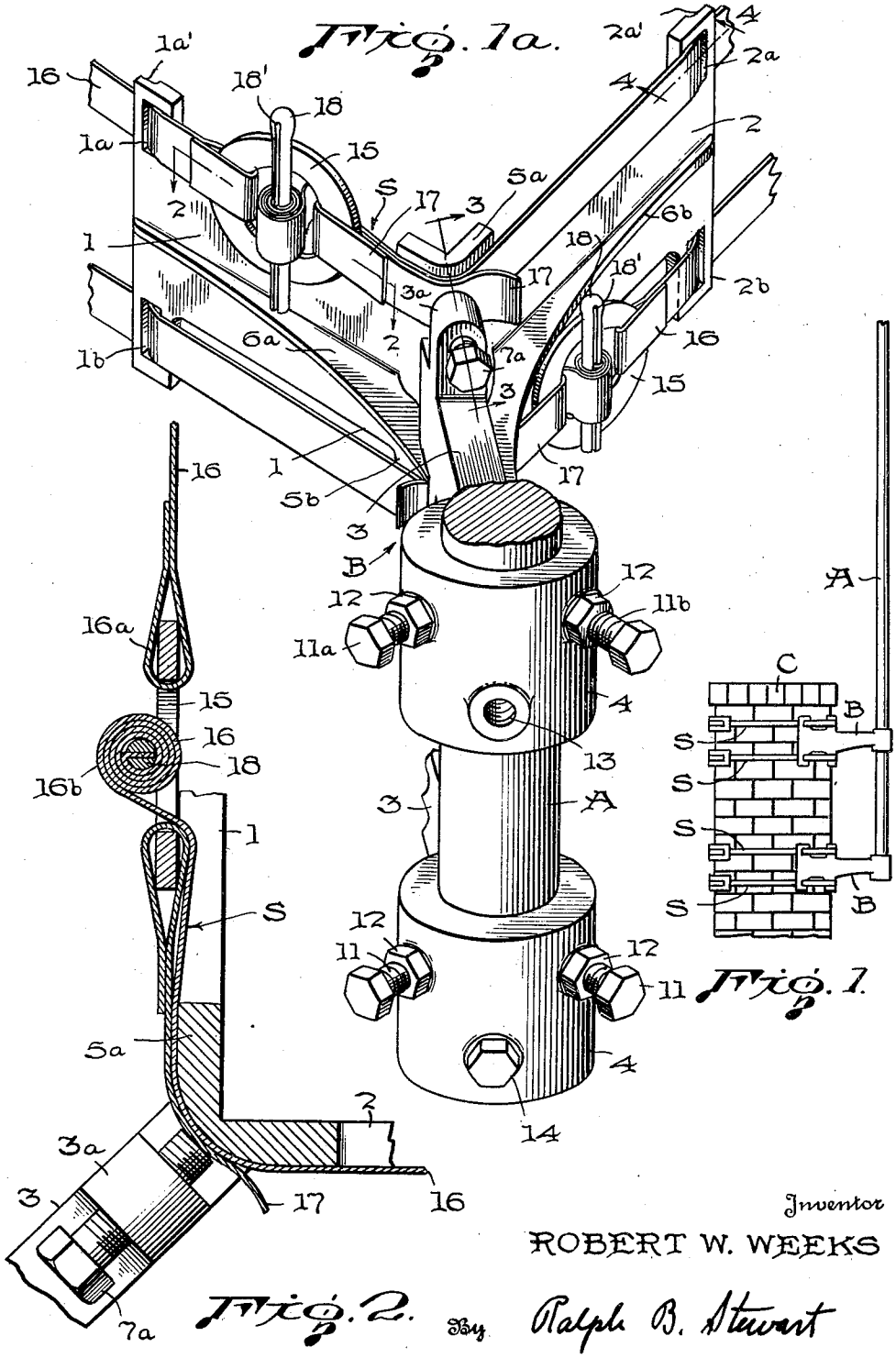


Fig. 1a.

Fig. 1.

Fig. 2.

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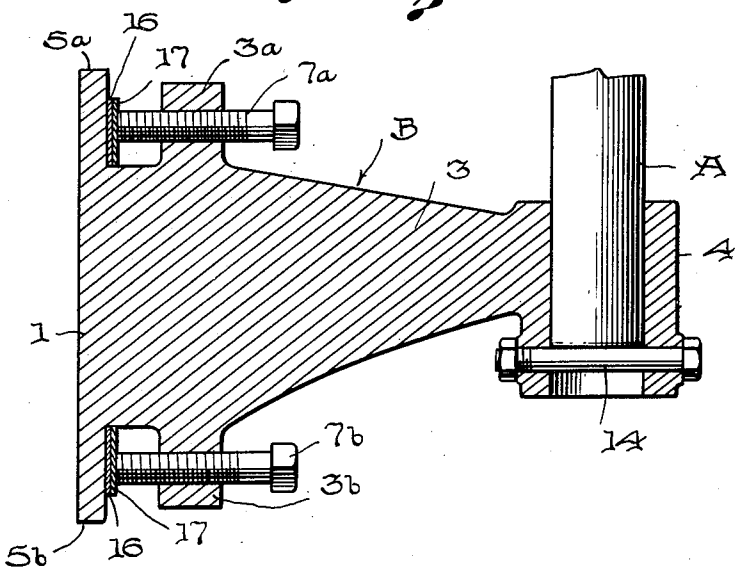
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Fig. 3.



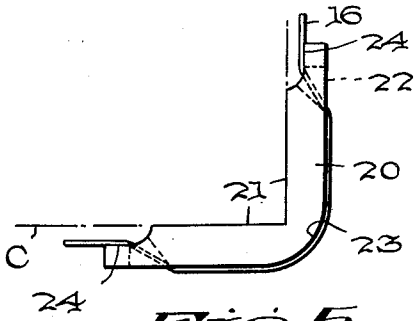


Fig. 5.

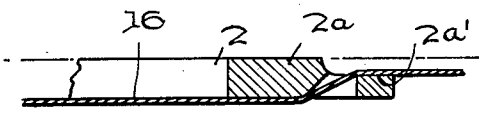


Fig. 4.

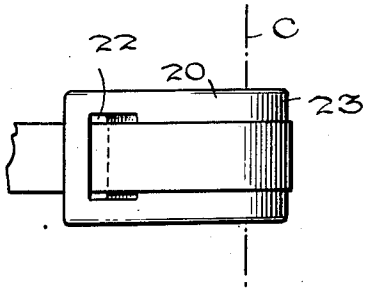


Fig. 6.

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2,499,011

ANTENNA MAST SUPPORTING BRACKET

Robert W. Weeks, West Chester, Pa.

Application February 21, 1947, Serial No. 729,912

7 Claims. (Cl. 248—43)

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This invention relates to antenna mast supporting brackets and to flexible means for securing the bracket on a chimney or other supporting object.

The primary objects of the invention are to provide a novel arrangement of flexible fastening means for securing the bracket to a supporting object, together with novel locking or clamp means, which may be carried by the bracket, for maintaining said flexible means taut; to provide in such flexible means a novel tensioning device for obtaining the desired degree of tautness therein; to provide in such a bracket adjustable means for supporting masts or standards of varying cross-sectional dimensions and for exerting equal amounts of retaining pressure thereagainst from several directions; and to provide such a bracket which is selectively operable either to offer endwise abutting support to the mast or standard supported therein, or to permit insertion of the mast completely therethrough.

A further object is to provide such a flexible fastening means which may be economically assembled from standard commercially available parts and which is quite simple, efficient and reliable in operation.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which:

Figure 1 is a side elevational view on a small scale showing an antenna mast secured to a chimney by a pair of brackets according to my invention, the brackets being shown only diagrammatically.

Figure 1*a* is a fragmentary perspective view on a larger scale of the preferred form of bracket in detail as it appears when applied to a chimney or other supporting object (not shown);

Figure 2, an enlarged sectional view on the line 2—2 of Figure 1, looking in the direction of the arrows;

Figure 3, a sectional view on the line 3—3 of Figure 1, looking in the direction of the arrows;

Figure 4, a detail sectional view on the line 4—4 of Figure 1, showing the construction of the strap guides or portions of the bracket;

Figure 5, a detail plan view showing one of the strap corner guides which are carried by the flexible fastening element of the invention; the cooperating corner of the chimney being shown in broken lines; and

Figure 6, a side elevation of the strap corner guide shown in Figure 5, the cooperating corner of the chimney being illustrated by a broken line.

Referring now in detail to the accompanying

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drawings, the letter B designates in its entirety a bracket which is secured to a chimney C or other support, preferably at the corner thereof, by flexible supporting means generally designated by the reference character S.

It is normally contemplated and intended that two or more such brackets B will be mounted on the chimney in vertical registry to receive and support an antenna mast, standard, flagstaff or similar object A, as shown in Figure 1. Such plural use of the brackets B is preferred, due to the increased strength and vertical stability with which the mast A is thus supported; however, the invention is not limited to such use, and obviously the various brackets or units B thereof may be utilized individually where a lesser degree of strength and stability is required.

Each such bracket B is preferably formed as an integral metal casting comprising a supporting base formed of two relatively perpendicularly disposed wings or arms 1 and 2 arranged to engage adjacent walls of a corner portion of a chimney or other supporting structure.

At the apex of wings 1 and 2 an integral arm 3 extends outwardly symmetrically with respect to the wings and carries a vertically arranged sleeve or socket 4 at its outer end. At the base of arm 3, where the wings 1 and 2 meet, a pair of vertical corner extensions 5*a* and 5*b* extend in opposite directions. The arm 3 is also provided with a pair of vertical lugs 3*a* and 3*b* on the upper and lower edges thereof and spaced from corner extensions. A pair of set-screws 7*a* and 7*b* are screwed into threaded horizontal bores in lugs 3*a* and 3*b* so that the screws are directed towards corner extensions 5*a* and 5*b* respectively. These lugs 5*a* and 5*b* constitute stationary jaws of two clamps in which screws 7*a* and 7*b* constitute the movable jaws.

At the end of wing 1 a pair of apertured lugs 1*a* and 1*b* extend vertically in opposite directions, and a corresponding pair of apertured lugs 2*a* and 2*b* are provided at the end of wing 2. These apertured lugs receive flexible bands which form part of the fastening means S of Figure 1 for securing the brackets to the chimney.

The bracket casting is reinforced by a pair of integral webs 6*a* and 6*b* formed on opposite sides of arm 3 and extending along the middle portion of wings 1 and 2.

The flexible fastening means S for securing the bracket B to the chimney or other support includes a centrally apertured buckle 15 which conveniently may consist of a large steel washer, such as is commonly available commercially.

Secured or anchored to this buckle or washer 15 and extending from opposite sides thereof are a chimney or support encircling straps 16 and a relatively short overlap or binding strap 17 respectively. These straps 16 and 17 preferably consist of flexible metal straps such as usual baling straps, and are anchored to the washer 15 in any suitable manner, as by passing an end of each through said washer, bending the end back against the adjacent portion of its respective strap to form a loop, and spot welding the contacting portions thereof together. One end of strap 16 is anchored to buckle 15 as at 16*a*, Figures 1*a* and 2, and the free end is passed through the aperture in lug 1*a*, and then passed around the chimney and threaded through the aperture in lug 2*a*, and after passing between clamping lugs 3*a* and 5*a*, it passes through buckle 15.

The free end of the strap 16 is passed outwardly through the buckle 15, as shown in Figure 2, and is wound upon a tightening reel 18 which may consist of a usual cotter pin extending across the aperture of the buckle with its end portions rotatably bearing against the outer surface thereof. The tip end of strap 16 is suitably secured to the cotter pin as by passing between the two legs of the cotter pin before rotating the pin about its major axis to wind the strap onto the pin, as shown at 16*b* in Figure 1*a*. The free end of strap 17 also passes between clamping lugs 3*a* and 5*a*, and the two straps 16 and 17 are clamped against lug 5*a* by screw 7*a* as will be explained later. A like fastening assembly S is provided on the lower side of each bracket as shown in Figures 1, 1*a* and 3.

In order to prevent bending of the strap 16 at too sharp an angle where it passes around the corners of the chimney, corner guides 20 are provided, see Figures 4, 5 and 6. Each of these guides is an angle piece having an angular inner surface. 21 conforms to the shape of the corner to which it is to be applied. The guides 20 have end slots 22 through which the strap 16 is threaded. These guides are formed with smoothly rounded exterior corners 23 over which the strap 16 is disposed, as shown in Figure 6.

The stationary clamp lugs 5*a* and 5*b* of the bracket also are provided with a smoothly rounded outer corner so that it may serve the same purpose as the corner guide at its particular corner.

In order to prevent chafing of the straps 16 against the chimney, with consequent wear, the corner guides 20 and bracket B are each so formed as to maintain the straps 16 out of contact with the chimney surface. To this end, the inner surfaces of the slotted end portions of each of the corner guides 20 are outwardly offset, as shown at 24, from the remaining inner surface portions 21 thereof.

The corresponding inner surfaces of the end portions of wings 1 and 2 of the brackets B are similarly arranged for the same purpose, as shown at 1*a'* and 2*a'*.

In applying the bracket B to a chimney, after having assembled the bracket B and both flexible fastening means S thereof in operative relation as heretofore described, with the free end of the encircling strap 16 operatively associated with the reel 18, the set screws 7 of both clamps are loosened to permit relative movement between the overlapping portions of the straps 16 and 17 received therein and the encircling straps 16 are unwound from the reels 18 to form in each a loop of sufficient size to pass freely over and around the chimney C. The looped portions of the straps 16 are then lowered around the chimney while the bracket B is placed over a corner thereof in the desired position, and the several corner guides 20 are moved to locations in registry with their respective corners of the chimney. Then the flexible supporting means S are successively drawn taut by actuation of their respective reels 18, and secured in taut position by rotation of the respective set screws 7*a*, 7*b* into tight engagement with the overlapping portions of said respective means S. The reels 18 may be rotated by usual nails or rods inserted through the eyes 18' thereof to furnish the requisite leverage.

The sleeve 4 of the bracket serves as a socket to receive the mast or standard A. Each such sleeve is provided with mast positioning and diameter compensating means such as the two set screws 11*a* and 11*b* threaded through the sides of the sleeve for radial adjustment into tight clamping engagement with the mast A. These set screws are disposed preferably at one hundred and twenty degrees relative to each other to urge the antenna into frictional engagement with a portion of the sleeve 4 disposed at substantially 120° around the sleeve from either set screw. Thus it will be seen that the radial engagement or pressure on the antenna mast A will normally be substantially equally distributed between each of the two set screws and a point on the sleeve 4. If desired, each set screw 11*a*, 11*b* may be provided with a usual lock nut 12 to maintain it in adjusted position.

It is further desirable to provide a fixed support or abutment to positively engage the lower end of the mast A and thus axially position the mast. To this end, the sleeve 4 is provided with a diametrical bore 13 extending completely therethrough, and the end support or abutment may be in the form of a bolt 14 disposed thereacross, as shown in detail in Figure 3.

When two brackets B are employed, the second bracket is then applied in the same manner and positioned above the first bracket in vertical registry therewith, as shown in Figure 1. The end support bolt 14 of the upper bracket is removed, and a mast or standard A is inserted therethrough and into the socket of the lower bracket B to rest on the end-supporting bolt 14 thereof. Then the two set screws 7*a*, 7*b* of each bracket B are tightened into engagement with the mast A. Obviously, where desired, the upper bracket B may be omitted.

Where more than one bracket B is used, as in Figure 1, the end supports or bolts 14 are removed from all but the lowest bracket, thus allowing the antenna A to extend completely through all but the lowermost sleeve 8.

The sleeve 4 with the two clamping screws 11*a*, 11*b* and the end-supporting bolt 14 is capable of use independently of the particular type of supporting base disclosed herein.

I claim:

1. Supporting means for securing a mast to a supporting body comprising, a bracket adapted to be secured flush against the surface of said supporting body, said bracket being formed with a cylindrical antenna socket extending therethrough, a pair of mast positioning set screws adjustable radially into said socket and spaced substantially one hundred and twenty degrees relative to each other, and a clamp carried by said bracket, in combination with flexible fastening means for securing said bracket to said body comprising an apertured buckle, a body encircling

strap and an overlap strap respectively anchored to and extending from opposite sides of said buckle, both of said straps being disposed in said clamp in overlapping relation, the free end of said encircling strap being slidably disposed through the aperture in said buckle, a tightening reel extending across said aperture and secured to said free end, said reel being rotatable in abutting engagement with said buckle to wind said strap thereon and draw same through said aperture, said clamp being operable to urge said encircling strap and said overlap strap into tight frictional locking engagement to maintain said encircling strap around said body at any desired degree of tautness.

2. Supporting means for mounting a mast on a supporting body comprising a supporting bracket adapted to be secured against said supporting body, in combination with a flexible fastening means for securing said bracket to said body, said bracket comprising a medially disposed clamp carried thereby to receive cooperating portions of said fastening means and secure same against relative movement, said fastening means comprising an apertured buckle, an encircling strap and an overlap strap respectively anchored to and extending from opposite sides of said buckle, both of said straps having portions received in said clamp in overlapping relation, the free end of said encircling strap being slidably disposed through the aperture in said buckle, and a tightening reel extending across said aperture and secured to said free end, said reel being rotatable to wind said encircling strap therearound.

3. Flexible fastening means for securing a bracket to a supporting body comprising an apertured buckle, an encircling strap and an overlap strap respectively anchored to and extending from opposite sides of said buckle, the free end of said encircling strap being slidably disposed through the aperture in said buckle beneath said overlap strap, and a tightening reel extending across said aperture and secured to said free end, said reel being rotatable to wind said encircling strap therearound, portions of said respective straps being disposed in relatively overlapping relation adjacent said reel, and a clamp receiving said overlapping portions and operable to lock same against relative movement.

4. Supporting means for mounting a mast on a supporting body comprising a supporting bracket adapted to be secured against said body, a medially disposed clamp carried thereby, said bracket being formed with cooperating guide slots in alignment with said clamp on opposite sides thereof, in combination with flexible fastening means adapted to encircle said supporting body, said means being disposed through said guide slots and having relatively overlapping portions received in said clamp, said portions being relatively movable in the inoperative position of said clamp and locked against relative movement in the operative position of said clamp, and a reel rotatably associated with said flexible fastening means between said overlapping portions, a free end of said fastening means being secured to said reel for winding thereon to draw said fastening means taut around said supporting body.

5. Supporting means for mounting a mast on a supporting body comprising a supporting bracket adapted to be secured against said body, and a clamp carried thereby, in combination with a flexible strap adapted to encircle said supporting body and secure said bracket thereagainst, said strap having relatively overlapping portions received in and being clamped against relative movement by said clamp, and a reel rotatably associated with said strap at said overlapping portions, a free end of said strap being secured to said reel for winding thereon to draw said strap taut around said supporting body.

6. Flexible fastening means adapted to encircle a supporting body comprising a strap, tightening means carried by one end of said strap and engaging the free end of said strap to draw said strap taut around said supporting body, a second strap secured to said tightening means and extending into overlapping relation with a portion of the free end of said first strap adjacent said tightening means, and clamping means engaging said overlapping straps in clamping relation to hold said straps against relative movement.

7. A corner guide for a flexible securing strap comprising an angle piece having a pair of arms arranged at right angles and adapted to fit around a corner of a support, an aperture formed in the end of each arm of said angle piece for receiving said strap, and the inner face of each arm beyond each aperture being set back from the inner face of the arm whereby said strap is held in spaced relation to the walls of said support.

ROBERT W. WEEKS.

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