May 19, 1953 D. N. THOMPSON ET AL 2,639,381

HIGH RECEIVING AND LOW SERVICING ANTENNA MOUNTING

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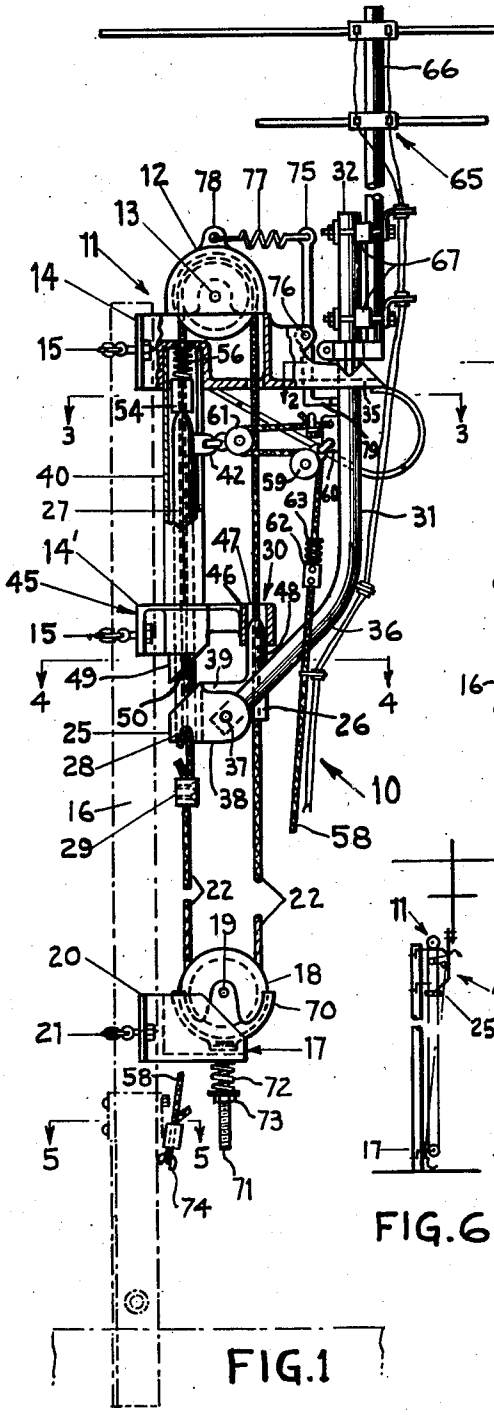


FIG.1

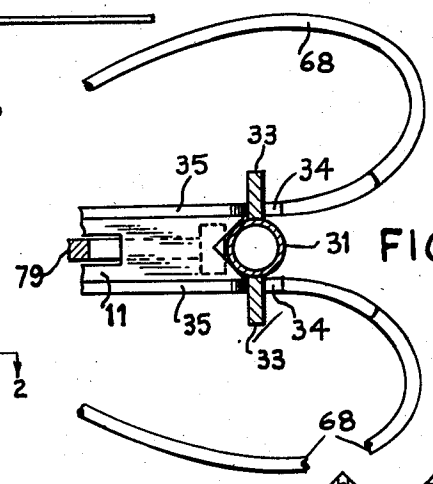


FIG.2

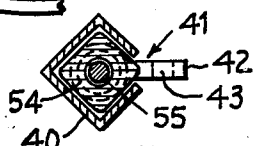


FIG.3

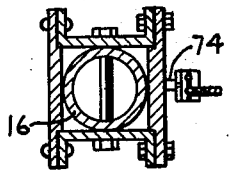


FIG.5

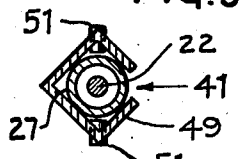


FIG.4

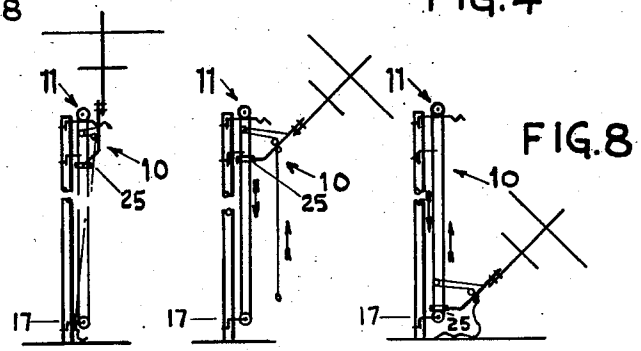


FIG.6 FIG.7

FIG.8

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HIGH RECEIVING AND LOW SERVICING ANTENNA MOUNTING

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4 Claims. (Cl. 250—33)

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In the art of mounting an aerial or antenna of the type used for television and which have to be mounted at a considerable height from a roof or the like, a pole or mast is used which must be made strong enough to support the weight of a workman who has to service or install the antenna.

An object of this invention is to provide a supporting bracket having means for attachment to an upright support and having an antenna pivotally supported and latched thereon in a manner to enable a serviceman to lower the antenna within reach at a point near the base of the upright support for servicing.

Another object of this invention is to provide a two-position antenna mounting designed for a selective high reception position and a low service position, and means whereby the antenna may be released from its high supporting position and safely lowered to the low service position.

Another object of this invention is to provide a two-position antenna mounting by means of which an antenna may be serviced from the ground or roof and then hoisted into selective high reception position and so that the height of the upright support or pole or post is not restricted as the only load these supports have to sustain is merely the weight of the antenna.

With the above and other objects in view, the invention will be hereinafter more particularly described, and the combination and arrangement of parts will be shown in the accompanying drawings and pointed out in the claims which form part of this specification.

Reference will now be had to the drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a side elevation of the two-position antenna mounting, the antenna being in high reception position.

Figure 2 is a top view of a fragmentary portion of a securing bracket and latch hooks, and a cross-sectional view of the boom and latch bars, the section being taken on line 2—2 in Figure 1.

Figure 3 is a cross-sectional view taken on line 3—3 in Figure 1, showing a slotted guideway and a radial guide bar for the mast, and a cable sliding guide.

Figure 4 is a cross-sectional view taken on line 4—4 in Figure 1, showing the cable sliding guide, stop pins, mast and cable.

Figure 5 is a cross-sectional view taken on line 5—5 in Figure 1, showing a support for the mast.

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Figure 6 is a diagrammatic view of the antenna mounting in latched operating position.

Figure 7 is a diagrammatic view showing the antenna mounting in unlatched but raised position.

Figure 8 is a diagrammatic view showing the antenna mounting in low service position.

In the illustrated embodiment of the invention, the numeral 10 indicates a two-position antenna mounting designed for a selective high reception position and a low service position.

The mounting 10 comprises a bracket 11 having a pulley 12 rotatably mounted on a pivot 13 positioned horizontally above its upper surface. The bracket 11 has recessed vertical walls 14, 14' to which chains 15 are suitably attached and serve for securing the bracket 11 to the top portion of an upright support, such as a pole or mast or chimney 16.

A housing 17 having a pulley 18 rotatably mounted on a horizontal pivot 19, has a recessed vertical wall 20 to which a chain 21 is suitably attached and serves for securing the housing 17 to the lower portion of the upright support 16. The pulleys 12 and 18 are in alinement. A cable 22 is rotatably mounted on the pulleys.

A boom carrier 25 of generally U-shaped cross-section, has an upright tubular guide extension 26 through which one portion of the cable 22 freely passes. The boom carrier 25 also comprises an elongated upright tubular guide extension or mast 27 through which the other portion of the cable 22 passes. The cable 22 is secured to the boom carrier 25 by suitable interengagement therewith at a point 28. A wire clamp 29, well known in the art, clamps both ends of the cable 22 and makes it endless. The extension 26 has a tapering upper end 30.

An antenna carrier boom 31 has an upright portion 32 with latch bars 33 seated in latch hooks 34 at the free ends of latch arms 35 extending from the bracket 11. The antenna carrier boom 31 is thus latched in upright position to the bracket 11. The carrier boom 31 has an angular extension 36 positioned in obtuse angular relation with the upright portion 32 of the antenna carrier boom 31.

The lower end of the angular extension 36 is pivoted to the boom carrier 25 by a pivot pin 37 passing through the boom carrier 25 and through the angular extension 36. The angular extension 36 is pivotally mounted between side walls 38 and 39 of the boom carrier 25.

A tubular casing 40 preferably of square cross-section, is integral with the bracket 11 and extends downwardly in parallel relation with the

upright portion 32 of the antenna carrier boom 31.

As best shown in Figure 3, it will be seen that the tubular member 40 has a vertical opening or guideway 41 extending throughout its height. The mast 27 has an ear 42 vertically slidable in the guideway 41. The ear 42 forms a guide means and has an aperture 43.

The lower portion of the bracket 11 terminates in a hollow support member 45. The free end portion 46 of the support member 45 has an opening 47 with a tapering lower end 48. The cable 22 passes through the opening 47. At the lower face of the support member 45 is a hollow guide extension 49 having a tapered face 50.

It is to be noted that the mast is slidably mounted for vertical motion through the tubular casing 40 and through the hollow support member 45 and through the hollow guide extension 49. As shown in Figure 4, the guide extension 49 has two diametrically positioned stop pins 51.

A guide block 54 of square cross-section is slidably mounted in the tubular casing 40 and has an aperture 55 through which the cable 22 passes and is thereby centered in the tubular casing 40. A compression spring 56 sits on the block 54 to cause free sliding movement of the block. The downward movement of the guide block is limited by the stop pins 51.

A further cable 58 passes over a pulley 59 secured to an ear 60 on the carrier boom 31. The cable 58 then passes over a pulley 61 secured to the ear 42 on the mast 27 and has its upper end suitably fixed to the ear 60.

The cable 58 has stop means 62 secured thereto in pre-set spaced-apart relation from the pulley 59, against which the stop means abuts and limits the downward swing of the carrier boom 31. A compression spring 63 on the stop means 62 serves to absorb the shock due to the swinging of the boom.

Suitably secured to the antenna carrier boom 31 is an antenna 65 of well known make and having a tube 66 which is adjustably mounted on the boom 31 by bolts 67. The latch arms 35 have elongated looped extensions 68 secured thereto at their outer ends. The extensions 68 have their rear ends secured to the bracket 11. The extensions 68 serve for guiding the antenna carrier boom in its swinging movements.

It is to be noted that the pulley 18 is mounted on the pin 19 in a bracket 70 which is slidably mounted in the housing 17 on a bolt 71. A compression spring 72 pressing against a nut 73 on the bolt 71 causes the endless cable to be under tension, whereby the cable 22 acts as a guide for the boom 31 between upper and lower positions.

The further cable 58 is secured to the lower end portion of the support 16 by a hook 74 when the antenna is in raised position. Before lowering the antenna, the cable 58 is released from the hook 74, thereby permitting the raising and unlatching of the boom prior to lowering the boom. During the lowering of the boom, the cable 58 acts as a guide to prevent the boom from swinging around the upright support.

In order to cause or augment the downward swinging movement of the antenna boom carrier 31, there is provided a lever 75 pivotally mounted on a pin 76, in the bracket 11. The upper portion of the lever 75 is connected to one end of an open coil spring 77 having its other end secured to the bracket 11 at a point 78. The

lower end portion 79 of the lever 75 is in alinement with the boom 31 and exerts pressure against the boom, thereby causing or augmenting the swinging movement of the boom when unlatched.

An antenna mounting of the type herewith disclosed is necessary in the television art because new stations having different wave lengths and locations are being put in operation each year. To receive new stations requires additional receiving bars on installed antennas or the directional adjustment of the old bars which is done by slightly turning the antenna pole. To make these adjustments on the majority of antenna poles in service at present, it is necessary to climb up high poles or up on roof tops which is dangerous for the average person. Using the herewith disclosed mounting eliminates the necessity of climbing and the ensuing danger, because the antenna can be lowered from its high receiving position to a low and safe adjusting position or vice versa without damaging the antenna.

In accordance with the patent statutes we have described and illustrated the preferred embodiment of our invention, but it will be understood that various changes and modifications can be made therein without departing from the spirit of the invention as defined by the appended claims.

We claim:

1. A two-position antenna mounting designed for a selective high reception position and a low service position, comprising a bracket carrying an upper pulley and having means for securing to an upright support, a boom carrying an antenna and being latched in upright position to the upper portion of said bracket, said boom having an angular extension positioned in obtuse angular relation therewith, a tubular guide casing integral with said bracket, a housing secured to the lower portion of said upright support and supporting a pulley in alinement with said upper pulley, an endless cable rotatably mounted on said pulleys, a mast circumscribing and integral with said cable and slidably mounted in said tubular guide casing, said mast having a boom carrier fixed thereto at its lower end and having guide means at its upper end, means for pivotally mounting the lower end portion of said boom extension to said boom carrier in a manner to cause an unbalanced moment about said pivot, a guide support integral with the lower portion of said guide casing and having means for securement to said upright support, the free end portion of said support member having an opening with a tapering lower end providing free passage for said cable, said boom carrier having an integral upright tubular guide extension in circumscribing relation with said cable and having a tapering upper end adapted to enter the tapering lower end of said support member, means for securing said mast and said boom carrier to said endless cable, said endless cable serving as means for raising and releasing said attached boom from said latching position to permit downward swinging movement of said boom and antenna about said pivot, further cable means having pre-set stop means on said bracket for limiting said downward swinging movement, whereby upon pulling down on one portion of said endless cable, the other portion of said cable raises said mast and boom, thereby releasing said boom from its latched upright position to swing to said pre-set unlatched position, and then by con-

trolling the inherent downward movement of said mast and boom due to its weight, to safely lower said antenna to low service position.

2. A two-position antenna mounting designed for a selective high reception position and a low service position, comprising a bracket carrying an upper pulley and having means for securing to an upright support, a boom carrying an antenna and being latched in upright position to said bracket, said boom having an angular extension positioned in obtuse angular relation therewith, a tubular guide casing integral with said bracket, a housing secured to the lower portion of said upright support and supporting a pulley in alinement with said upper pulley, an endless cable rotatably mounted on said pulleys, a mast circumscribing and integral with said cable and slidably mounted in said tubular guide casing, said mast having a boom carrier fixed thereto at its lower end and having guide means at its upper end, means for pivotally mounting said boom extension to said boom carrier in a manner to cause an unbalanced moment about said pivot, a support member integral with the lower portion of said guide casing and having means for securement to said upright support, the free end portion of said support member having an opening with a tapering lower end providing free passage for said cable, said boom carrier having an integral upright tubular guide extension in circumscribing relation with said cable and having a tapering upper end adapted to enter the tapering lower end of said support member, means for securing said mast and said boom carrier to said endless cable, said endless cable serving as means for raising and releasing said attached boom from said latching position to permit downward swinging movement of said boom and antenna about said pivot, preset stop means on said bracket for limiting said downward swinging movement, whereby upon pulling down on one portion of said endless cable, the other portion of said cable raises said mast and boom, thereby releasing said boom from its latched upright position to swing to said preset unlatched position, and then by controlling the inherent downward movement of said mast and boom due to its weight, to safely lower said antenna to low service position.

3. In a two-position antenna mounting designed for a selective high reception position and a low service position, comprising an upward support having a bracket fixed at its upper end portion and having latching means, said bracket having a pulley rotatably mounted at the upper end thereof, a housing fixed to the lower portion of said upright support and supporting a pulley in alinement with said upper pulley, an endless cable rotatably mounted on said pulleys, a boom carrier secured to said cable intermediate said pulleys and having a pivot, an antenna carrier boom mounted on said pivot in a manner to cause an unbalanced moment about said pivot, said boom having latch bars and being thereby adapted to be latched to said bracket to occupy a high reception position, said carrier and boom being vertically movable by said cable to cause said boom to disengage from said bracket, further cable means for moving said boom and antenna from said high latched position to a pre-set unlatched position and clear of said bracket, and means for controlling the inherent downward movement of said carrier and boom to said low service position.

4. In a two-position antenna mounting designed for a selective high reception position and a low service position, comprising an upright support having a bracket fixed at its upper end portion, said bracket having latching means and an upright tubular guide casing, said bracket having a pulley rotatably mounted at the upper end thereof, a housing fixed to the lower portion of said upright support and supporting a pulley in alinement with said upper pulley, an endless cable rotatably mounted on said pulleys, a boom carrier secured to said cable intermediate said pulleys and having a pivot, said boom carrier having an upright tubular guide extension for slidable engagement in said tubular guide casing and being guided thereby and through which a portion of said cable freely passes, an antenna carrier boom mounted on said pivot in a manner to cause an unbalanced moment about said pivot, said boom having latch bars and being thereby adapted to be latched to said bracket to occupy a high reception position, said carrier and boom being vertically movable by said cable to cause said boom to disengage from said bracket, further cable means for moving said boom and antenna from said high latched position to a pre-set unlatched position and clear of said bracket, and means for controlling the inherent downward movement of said carrier and boom to said low service position.

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