Oct. 10, 1944. A. T. MACE 2,360,248

RADIO ANTENNA

Filed Sept. 29, 1942

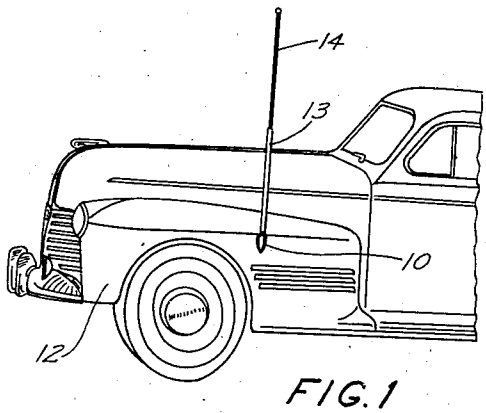


FIG. 1

FIG. 2

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Patented Oct. 10, 1944 2,360,248

UNITED STATES PATENT OFFICE

2,360,248

RADIO ANTENNA

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Application September 29, 1942, Serial No. 460,093

8 Claims. (Cl. 250—33)

The present invention relates to a radio antenna of the type adapted to be mounted on the exterior of an automobile, as for instance on the cowl or fender.

Antennas of this nature are intended to be used on different models of vehicle and this means that they should be adaptable to various surface shapes in order that they may be easily mounted under all conditions of use. As the surface of a vehicle on which the antenna is mounted is frequently shaped differently for each model it becomes desirable to have a universal type of mounting which can be used.

Such mountings have been attempted in the past, but have been subject to the objection that they are unsightly in appearance and do not readily lend themselves to adjustment to the desired surface.

The chief object of the present invention has been to provide an antenna of the class described which is mounted in a hollow casing, which casing in turn is secured to the vehicle body. Another object of the invention has been to provide for relative adjustment between the antenna proper and the casing in order that the antenna may be mounted at the desired angle, irrespective of the surface on which it is secured. A further object of the invention has been to provide an efficient electrical connection through the casing between the lead-in wire and the antenna, while at the same time insulating the various parts from the metal surface of the automobile body.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims; the annexed drawing and the following description setting forth in detail certain structure embodying the invention, such disclosed means constituting, however, but one of various forms in which the principle of the invention may be used.

In said annexed drawing:

Fig. 1 is a schematic view of an automobile with my improved antenna mounted thereon; and

Fig. 2 is a vertical section through the antenna showing the parts in detail.

In Fig. 1 an insulating antenna casing 10 is shown mounted on a fender 12 of an automobile. 13 and 14 are portions of the extended aerial.

Referring more particularly to Fig. 2 the casing 10 is shown as affixed to the fender 12 by a threaded stud 16, carrying a locking nut 17 and a washer 18. An insulator gasket 20 is interposed between the fender 12 and the wall of casing 10. A threaded plate 21 screwed onto stud 16 serves with nut 17 to fasten the casing on the fender. Preferably two studs 16 with their associated locking parts are used, one at each side of the casing 10.

The aerial consists of several hollow metal tubes, two of which are shown in the drawing and designated by 13 and 14. The uppermost portion 19 usually consists in a rod carrying a ball-shaped knob 21 which prevents the rod from sliding inside tube 14. The construction of this part of the device is well known in the art and not explained in further detail.

The lowermost of the telescoping parts of the device 13 has a metal ring 22 rigidly, secured thereto, for instance by soldering or brazing, and the ring has a cup-shaped portion 23 formed thereon fitting to the curved outside of a boss 24 in the way of a ball and socket joint.

The bottom end of tube 13 is pinned to a threaded stud 25. The latter carries a square nut 26 having an internal thread engaging with the thread on stud 25 and having a series of narrow parallel grooves on the upper face. These grooves are adapted to engage with the serrated portion 28 of two segments 29, one at each side of stud 25. Segments 29 have interiorly flanged end portions which meet each other to form a back wall which fits into a recess 30 in the end wall of casing 10. The other end of segments 29 each have an opening 31 in which a pin 32 is received with its ends projecting on both sides. On said pin 32 a substantially V-shaped spring 34 is mounted by means of loops 35. The bottom end of the spring has a third loop which serves to receive a threaded stud 37 forming part of the lead-in from the antenna to the receiver set. The lower part of spring 34 is received in a cutout portion of casing 10 and held against said casing by an insert plate 44. A lock screw 27 fastened to the bottom end of stud 25 serves to hold parts 25 and 26 as well as tube 13 assembled. A bore 33 in the bottom portion of casing 10 gives access to said screw 27 for mounting or dismounting the aerial.

The above mentioned stud 37 forming part of the lead-in is disposed in a plug of insulating material 40, which is housed in a metal casing 41. At the rear end stud 37 abuts on a spring 42 which connects to the wire core 43 of a cable 45. The cable comprises a metal tube 46 with a flange 47 adapted to connect the cable and portion 41 of the antenna by friction. Insulating material is interposed between the sleeve 46 and wire 43. The main portion of the cable consists of a metal tube 49 shielded by a braided wire covering 50, which is used in a known manner for picking up disturbing noises in the surrounding atmosphere and improving the radio reception thereby. A plug 51 at the end of the cable serves for connecting the antenna to a receiver set in the usual manner.

For adjusting the aerial to the desired angle,

ring 22 is turned around taking along portion 13 of the aerial so as to loosen the nut 26 on segments 29. Nut 26 is thereby made free to move along the segments 29 until the desired position is obtained by swinging tube 13 by hand for the required angle. By turning ring 22 in the opposite direction the screw is tightened and the grooves in nut 26 will engage the serrations in segments 29 so that the aerial will be rigidly held against displacement.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the structure herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In a radio antenna, a hollow casing, means for attaching said casing to a part of an automobile so as to be immovably fixed thereon, and means for positioning an extensible aerial in a vertical plane independently of the shape of the part to which said antenna is attached, said means comprising a pair of segments mounted in said casing without forming part thereof, means on said aerial mounted to slide along said segments and means mounted on said second mentioned means for engagement with said segments whereby said antenna is held in a desired position.

2. In a radio antenna, a hollow casing, means for attaching said casing to a part of an automobile so as to be immovably fixed thereon, and means enclosed in said casing for positioning an extensible aerial at a desired angle with said casing independently of the shape of the part to which said antenna is attached, said means comprising a pair of segments, means on said aerial mounted to slide between said segments and a member on said aerial within said casing, said member being adapted to engage with said last mentioned means for holding the same in a desired position.

3. In a radio antenna, a hollow casing, means for attaching said casing to a part of an automobile so as to be immovably fixed thereon, and means enclosed in said casing for positioning an extensible aerial at a desired angle with said casing independently of the shape of the part to which said antenna is attached, said means comprising a pair of serrated segments, means on said aerial mounted to slide between said segments and a member having a grooved surface adapted to engage with said serrated segments for holding said last mentioned means in a desired position.

4. In a radio antenna, a casing, means for attaching said casing to a part of an automobile so as to be immovably fixed thereon, and means in said casing for positioning an extensible aerial in a vertical plane independently of the shape of the part to which said antenna is attached, said means comprising a pair of segments mounted within said casing without forming part thereof, means on said aerial adapted to slide along said segments, a convex projection on said casing, cup-shaped means on said aerial mounted to form with said projection a ball-and-socket joint means and screw means on said aerial within said casing for holding the same in a desired position.

5. In a radio antenna, a casing, means for attaching said casing to a part of an automobile so as to be immovably fixed thereon, and means in said casing for positioning an extensible aerial in a vertical plane independently of the shape of the part to which said antenna is attached, said means comprising a pair of curved guide bars mounted within said casing without forming part thereof, means on said aerial near the bottom end thereof adapted to slide between said guide bars, a member for holding said sliding means against said guide bars, a convex projection on top of said casing, cup-shaped means on said aerial mounted to form with said projection a ball-and-socket joint means and screw means on said aerial within said casing for holding the same in a desired position.

6. In a radio antenna, a casing, means for attaching said casing to a part of an automobile so as to be immovably fixed thereon, and means in said casing for positioning an extensible aerial at a desired angle with said casing independently of the shape of the part to which said antenna is attached, said means comprising a pair of serrated segments mounted within said casing, means on said aerial near the bottom end thereof adapted to slide along between said segments, a locking member having a grooved surface adapted to engage with said serrated segments, a curved projection on said casing, cup-shaped means on said aerial mounted to form with said projection a ball-and-socket joint means and screw means on said aerial for fastening the same in a desired position.

7. In a radio antenna, a casing, means for attaching said casing to a part of an automobile so as to be immovably fixed thereon, means enclosed in said casing comprising a pair of segments extending into said casing without forming part thereof and an element sliding on said segments for positioning an extensible aerial at a desired angle with said casing independently of the shape of the part to which said antenna is attached, means for holding said aerial in said vertical position and lead-in means on the antenna comprising a metal stud and a spring mounted in contact with said stud on said positioning means in electrical contact with said segments.

8. In a radio antenna, a casing, means for attaching said casing to a part of an automobile, and means in said casing for positioning an extensible aerial in a vertical plane independently of the shape of the part to which said antenna is attached, said means comprising a pair of serrated segments mounted within said casing, means on said aerial near the bottom end thereof adapted to slide along between said segments, a locking member having a grooved surface adapted to engage with said serrated segments, a curved projection on said casing, cup-shaped means on said aerial mounted to form with said projection a ball-and-socket joint means, screw means on said aerial for fastening the same after adjustment, and lead-in means on said antenna, comprising a metal stud embedded in insulating material, a substantially V-shaped spring mounted in contact with said stud on said positioning means in electrical contact with said segments and another spring mounted in alignment with said metal stud so as to provide a metallic connection with a wire leading to a receiver set.

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