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J. T. MORROW

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ILLUMINATED ANTENNA FOR AUTOMOBILES

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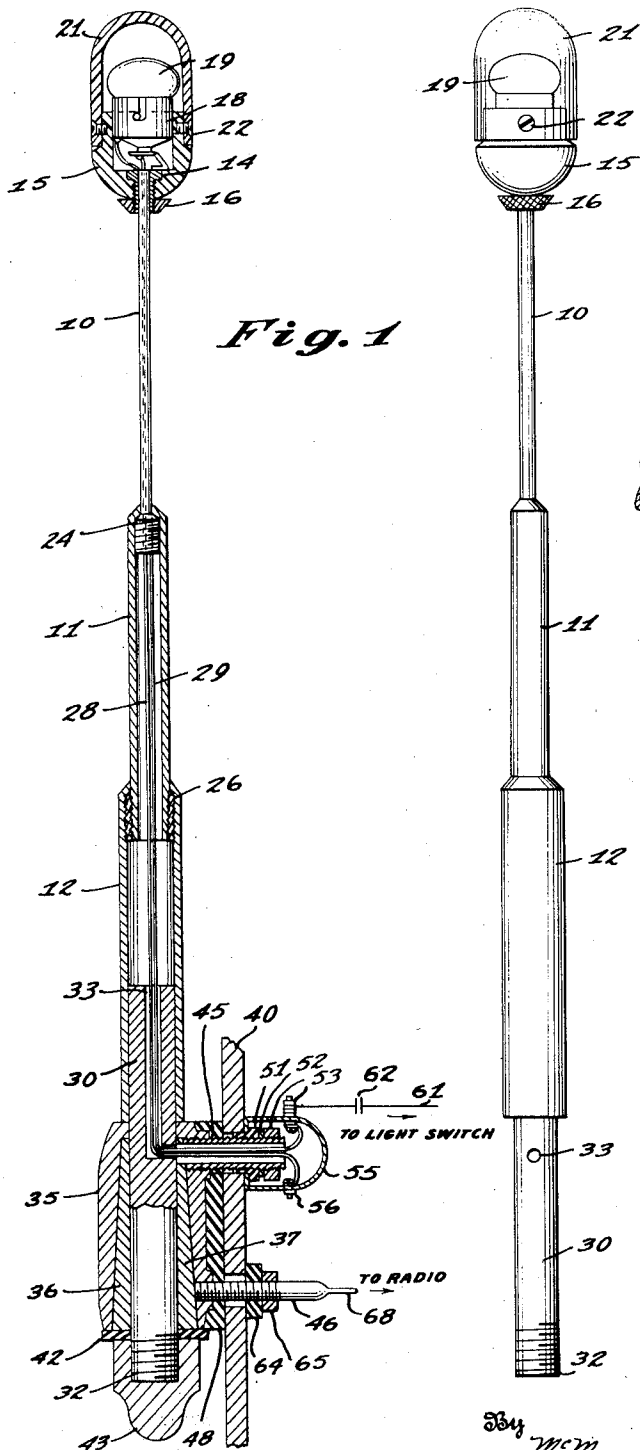


Fig. 1

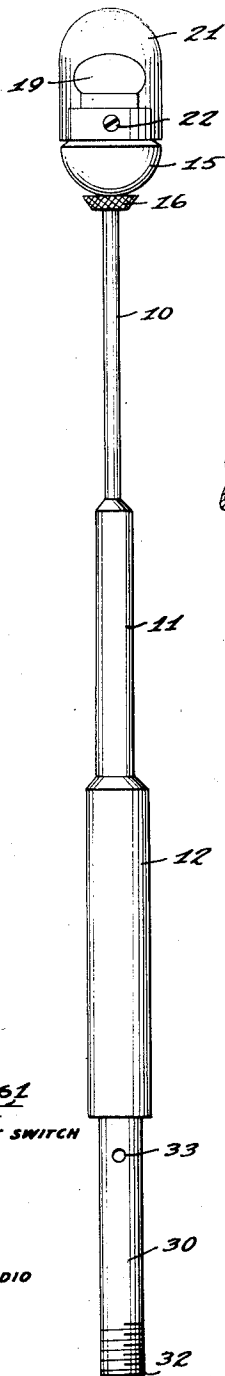


Fig. 2

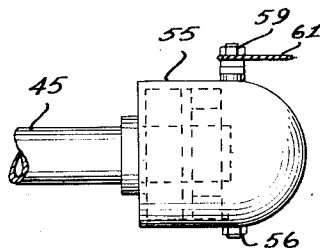


Fig. 3

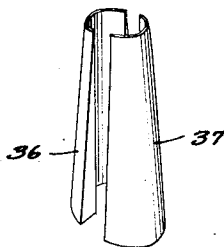


Fig. 4

Inventor

JOSEPH T. MORROW

By *M. Morrow, Bertram & Davidson*
Attorney

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ILLUMINATED ANTENNA FOR AUTOMOBILES

Joseph T. Morrow, Mobile, Ala.

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3 Claims. (Cl. 250—33)

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This invention relates to radio antennae, and more particularly to an illuminated radio antenna for an automobile.

It is a principal object of this invention to provide means for illuminating a conventional radio antenna of an automobile, whether it be of the center-mounting type extending upwardly from the roof of the automobile, or whether it be of the vertical whip-mounting at the side of the vehicle.

Since an antenna usually extends above the roof of the automobile, it can be seen, if illuminated, an appreciable time before the car can be seen when it is coming over a hill. This feature will provide additional safety. If of the center-type installation, the illuminated antenna will provide another advantage. For example, if one headlight burns out, the illuminated antenna will serve to inform oncoming traffic whether the extinguished headlight is on the right side or left side of the car. Many serious accidents have occurred at night involving automobiles having only one headlight in operation, because oncoming drivers could not guess on which side of the road the one-eyed vehicle was traveling.

The new and improved radio antenna, of course, is adapted to be mounted vertically, or substantially vertically, so that it projects above the roof of the car. The top of the antenna is provided with a small electric light bulb, which is energized from the automobile storage battery, and the electrical connections are such that the primary function of the antenna as an aid to radio reception is not interfered with.

The accompanying drawings illustrate a preferred embodiment of the invention, but it is understood that modifications may be made therein without departing from the spirit of the invention as hereinafter claimed.

Figure 1 represents a vertical section through the new and improved antenna.

Figure 2 is an elevation of the same structure, some of the members for attaching the antenna to the automobile being omitted for the sake of clarity.

Figure 3 is an elevation of the means for providing the electrical connections to the illuminating bulb at the top of the antenna.

Figure 4 is a perspective view of some wedge members for insuring secure attachment of the antenna to the automobile.

The antenna proper comprises a top section 10, a center section 11, and a bottom section 12. These sections 10, 11, and 12 are secured to each other and are not telescopic, as will be described more particularly hereinafter.

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The top section 10 comprises a cap 14 at the upper extremity thereof, the cap 14 being either integral with the top section 10 or threaded or welded thereto. A shade base 15, made of metal or plastic, is positioned from the bottom of the top section 10 against the cap 14, and is locked in position thereagainst by means of a wing nut 16 that acts on the bottom of the base 15. The shade base 15 contains a bayonet socket 18, into which a light bulb 19 may be positioned in the usual manner. A glass or transparent plastic shade 21 encloses the bulb 19, and is locked to the shade base 15 by means of one or more set screws 22.

In the construction of the antenna, the cap 14, the base 15, and the wing nut 16 are first mounted on the top section 10. Thereafter a bushing 24 is secured to the bottom end of the section 10 by threads or welding, and the top of the center section 11 is permanently secured to the bushing 24. This may be done by threading the center section 11 to the bushing 24, or by welding the two members together. To assure permanency, the upper extremity of the center section 11 may be turned down or upset against the bushing 24 to form a solid water-tight seal. A similar bushing 26 fastens the lower end of the center section 11 to the upper end of the bottom section 12.

The top section 10, the center section 11, and the bottom section 12 of the antenna are all hollow. The two wires 28 and 29 for the electric light bulb 19 pass through the sections 10, 11, and 12, and go to the automobile storage battery in a manner to be described more particularly hereinafter.

In the lower portion of the bottom section 12 of the antenna is a bolt 30, the threaded lower portion 32 of which projects below the bottom section 12 for a considerable distance. The bolt 30 is joined to the bottom section 12 so as to be fixed thereto. The upper portion of the bolt 30 has an angular passageway 33 for the wires 28 and 29, so that these wires may be extended from the antenna horizontally. The wires 28 and 29, of course, are insulated from each other and from the antenna itself.

An antenna base 35 is adapted to enclose most of the bolt 30 that projects below the bottom section 12 of the antenna. A pair of wedges 36 and 37 are positioned between the bolt 30 and the antenna base 35 to effect a firm joint between the antenna base 35 and the other portions of the antenna, and also to adjust the positioning of the antenna with respect to the car body 40. After the wedges 36 and 37 are positioned, an insulating washer 42 is placed over the end of the bolt 30

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against the ends of the wedges 36 and 37 and the end of the antenna base 35, as shown more clearly in Figure 1 of the drawings, and a nut 43 is threaded on the threaded end 32 of the bolt 30 and tightened to form a unitary antenna structure.

The antenna base 35 is provided with two horizontal threaded apertures, into the upper of which a horizontal metallic outlet tube 45 is inserted, and into the lower of which a radio antenna stud 46 may be inserted. The outlet tube 45 is in alignment with the horizontal portion of the angular passageway 33, and the wires 28 and 29 pass through this outlet tube 45. The car body 40 contains two horizontal openings registering with the outlet tube 45 and the radio stud 46, and slightly larger, so that the outlet tube 45 and the stud 46 do not have any direct contact with the car body 40. An insulating spacer 48 is disposed between the antenna base 35 and the car body 40 so that there is no electrical connection between any part of the antenna and the car body 40.

The outlet tube 45 is tightened against the car body 40 by means of a flanged insulating washer 51, a steel washer 52, and a steel nut 53, on the inside of the car body 40, preferably on the dash. An outlet cup 55 covers the end of the outlet tube 45 and the washer 51, the washer 52, and the nut 53. This outlet cup 55 may be attached to the inside of the car body 40 in any conventional manner. If the outlet cup 55 is metallic, one of the wires 28 may be attached to the outlet cup 55 by means of a binding post 56, so that the wire 28 will be grounded to the car body 40. The other wire 29 is attached by means of an insulated binding post 59 to a cable 61 going to a switch for the electric light bulb 19. If desired, a condenser 62 may be positioned in the cable 61 to minimize or suppress radio interference.

The stud 46 is secured to the car body 40 by means of an insulating washer 64 and a metal nut 65. The stud 46 may comprise a prong 68 leading to the automobile radio receiving set.

It will be observed, therefore, that there is no metallic contact between any portions of the antenna and the car body 40. The metallic outlet tube 45 is spaced from the horizontal aperture in the car body 40, and the electrical system for the electric light bulb 19 is, therefore, completely separated from the antenna as a radio element. The top section 10, the center section 11, and the bottom section 12 of the antenna are, of course, in contact with each other, and the radio impulses travel downwardly to the bolt 30 and the antenna base 35. Thence the radio impulses are conducted along the metallic stud 46 to the radio set.

At night, therefore, the switch in the cable 61 may be operated to turn on the electric light bulb 19. The light will shine through the transparent shade 21, to warn traffic, as hereinbefore mentioned. By virtue of its construction, no moisture can enter any portion of the antenna, so that the electrical system for the electric light bulb 19 will run no risk of shorting.

I claim:

1. An automobile radio antenna comprising a mast having a coaxial bolt depending from its lower end, a lateral shoulder on the mast at the upper end of said bolt, a mounting bracket for mounting said mast on an automobile, said bracket comprising a body formed with a vertical bore extending therethrough, said bore tapering toward its upper end to a diameter substantially the same as the diameter of said bolt

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and smaller in diameter than said shoulder, said bolt being downwardly inserted in said bore with said shoulder resting upon the top of said body, a plurality of wedges inserted in said bore around said bolt and depending below the bottom of said body, and a nut threaded on the lower end of said bolt and bearing against the lower ends of said wedges and locking said bolt in said bore.

2. An automobile radio antenna comprising a mast having a coaxial bolt depending from its lower end, a lateral shoulder on the mast at the upper end of said bolt, a mounting bracket for mounting said mast on an automobile, said bracket comprising a body formed with a vertical bore extending therethrough, said bore tapering toward its upper end to a diameter substantially the same as the diameter of said bolt and smaller in diameter than said shoulder, said bolt being downwardly inserted in said bore with said shoulder resting upon the top of said body, a plurality of wedges inserted in said bore around said bolt and depending below the bottom of said body, and a nut threaded on the lower end of said bolt and bearing against the lower ends of said wedges and locking said bolt in said bore, said bolt being formed with a longitudinal wire accommodating passage opening through its upper end and terminating at its lower end in a lateral branch opening through one side of said bolt at a point above its lower end, a lateral tube extending through said body and communicating with the outer end of said lateral branch.

3. An automobile radio antenna comprising a mast having a coaxial bolt depending from its lower end, a lateral shoulder on the mast at the upper end of said bolt, a mounting bracket for mounting said mast on an automobile, said bracket comprising a body formed with a vertical bore extending therethrough, said bore tapering toward its upper end to a diameter substantially the same as the diameter of said bolt and smaller in diameter than said shoulder, said bolt being downwardly inserted in said bore with said shoulder resting upon the top of said body, a plurality of wedges inserted in said bore around said bolt and depending below the bottom of said body, and a nut threaded on the lower end of said bolt and bearing against the lower ends of said wedges and locking said bolt in said bore, said bolt being formed with a longitudinal wire accommodating passage opening through its upper end and terminating at its lower end in a lateral branch opening through one side of said bolt at a point above its lower end, a lateral tube extending through said body and communicating with the outer end of said lateral branch, and a lateral antenna connection stud extending through said body below said lateral tube and reaching into said tapered bore into engagement with a wedge therein.

JOSEPH T. MORROW.

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