

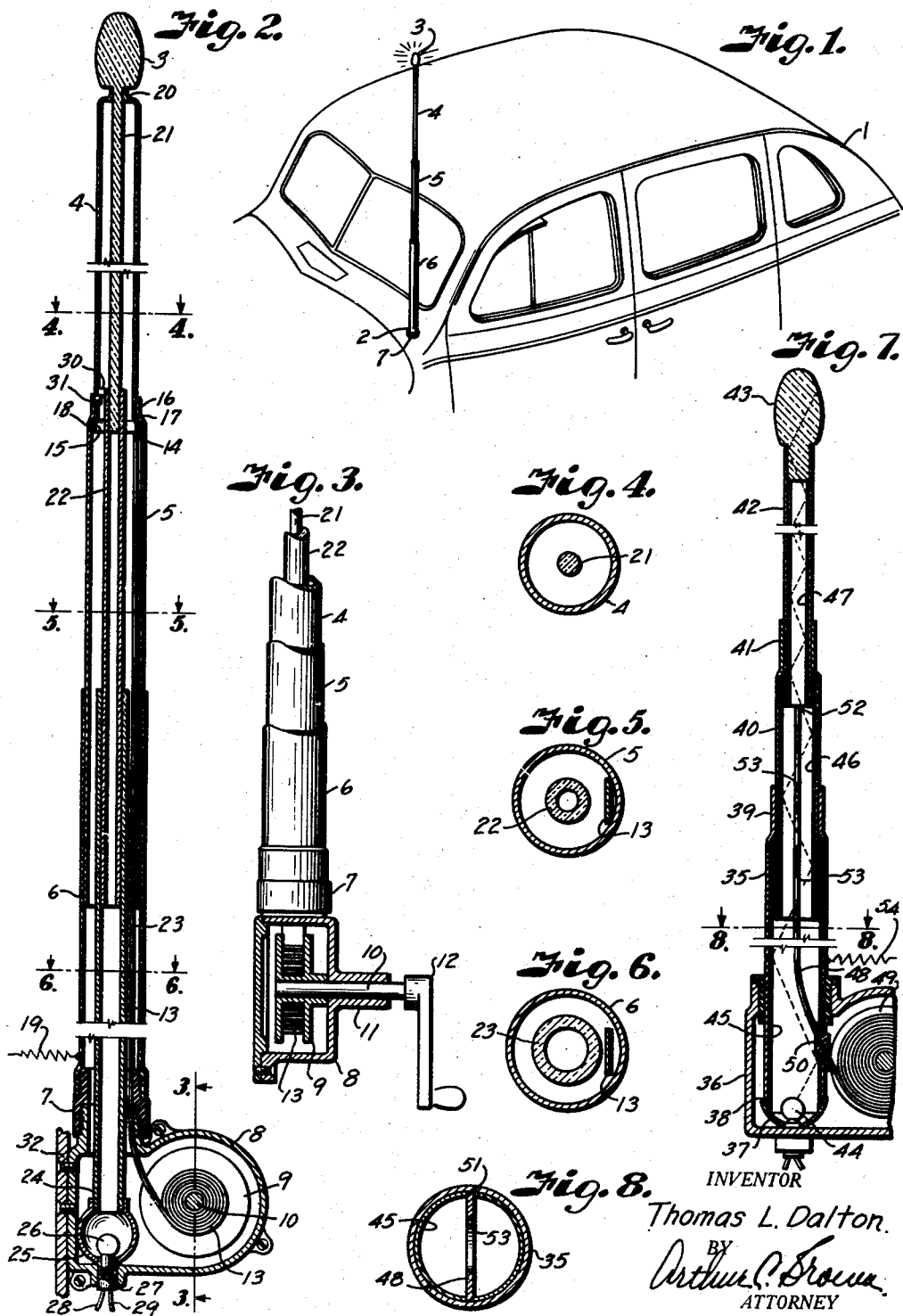
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COMBINATION SIGNAL AND RADIO AERIAL

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COMBINATION SIGNAL AND RADIO AERIAL

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1 Claim. (Cl. 240—8.1)

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This invention relates to a combination warning signal and radio aerial and more particularly to the provision of a position or warning signal on an extensible radio aerial of the type especially adapted for use on motor vehicles and boats; the principal object of the invention being to provide a signal at the top of an extensible radio aerial and illuminating said signal without interference with the capacity or operation of the radio aerial.

One of the most serious hazards in highway travel is in the approach of vehicles over the crown of a hill or around a curve the visibility of which is obscured by embankments and the like that the drivers of the approaching vehicles have no warning of parked or slowly operated vehicles on the far side of the hill or curve.

It has been found that a pole or the like of sufficient height to be raised to a position that it can be seen by approaching traffic may be effectively utilized for carrying warning signals. Most present day automobiles are provided with radios and use extensible aerals, but the aerals are not suitable for use in carrying illuminated signals because the current necessary for energizing the signals creates a field around the conductors leading to the signal and said field interferes with and reduces the capacity of the aerals. The advantages of the warning signal on a pole or the like are such that, if necessary, a second pole is justified, but it is desirable to eliminate all extra projections and mechanisms on the vehicle.

Other objects of the present invention are, therefore, to provide a signal adapted for use on a radio or like aerial; to provide means for illuminating a signal on a radio aerial; to provide means for transmitting light through an extensible pole; to provide for illuminating a signal on the top of a radio aerial without the use of wires in said aerial; to provide a telescoping light transmission apparatus operated by the aerial extending and collapsing apparatus; to provide mechanism for adjusting the signal to a height necessary to be effective; to provide a mounting for a radio aerial and warning signal on a motor vehicle; and to provide improved elements and arrangements thereof in a combination illuminated signal and radio aerial of the character and for the purpose noted.

In accomplishing these and other objects of the present invention I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings wherein:

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Fig. 1 is a perspective view of a vehicle equipped with a radio aerial having an illuminated signal thereon embodying the features of the present invention, the same being shown in raised operative condition.

Fig. 2 is a detail vertical section through the aerial and signal showing the relation of the several parts.

Fig. 3 is a detail vertical section through the aerial extending and collapsing mechanism on the line 3—3, Fig. 2.

Fig. 4 is a detail transverse section through the aerial on the line 4—4, Fig. 2.

Fig. 5 is a detail transverse section through the aerial on the line 5—5, Fig. 2.

Fig. 6 is a detail transverse section through the aerial on the line 6—6, Fig. 2.

Fig. 7 is a detail vertical section through an aerial showing a modified form of the device for illuminating the signal.

Fig. 8 is a detail transverse section through the modified form of aerial on the line 8—8, Fig. 7.

Referring more in detail to the drawings:

1 designates a motor vehicle having a radio aerial 2 mounted thereon and provided with an illuminable signal member 3 at the outer end thereof. The aerial preferably consists of a plurality of tubular extensible sections telescopically disposed one with respect to the other, there being a top section 4, one or more intermediate sections 5 and a bottom section 6. All of these sections are preferably tubular and the upper section is capable of telescoping with the intermediate section 5 and the intermediate section, with the top section 4 telescoped therein, may be telescoped within the lower section 6.

The bottom section 6 is preferably mounted on an insulating member 7 which is secured to a housing 8 in which a spool 9 is disposed. The spool 9 is mounted on a spindle 10 extending through a bearing member 11 on the housing 8 and is adapted to mount a crank 12 on the outer end thereof for rotation of the spool to wind or unwind a tape 13 on said spool. The tape member is adapted to extend upwardly in the tubular section of the aerial for connection to the lower end of the upper section 4, as at 14, whereby unwinding or winding of the tape on the spool moves the telescopic section into extended or collapsed condition respectively. The upper and intermediate sections are preferably provided with enlarged and reduced portions 15 and 16 respectively whereby, when the outer section is fully extended relative to the intermediate section, the shoulder 17 formed by the enlarged por-

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tion 16 engages the shoulder 18 formed by the reduced portion of the intermediate section to draw the intermediate section outwardly relative to the bottom section 6. The lower section 6 of the aerial may be properly connected to the radio circuit by an antenna wire 19 as is well understood in the art.

The apparatus heretofore described forms an extensible radio member and the particular construction forms no essential part of my invention except for the portions that are necessary to the operation of the aerial in combination with and as a supporting member for the signal now to be described.

The outer end of the top section 4 is preferably provided with a reduced portion 20 adapted to receive a downwardly projecting rod 21 of the illuminable signal member 3 all of which are preferably of transparent light transmissible material such as "Lucite" or the like. The rod 21 is preferably of the same length as the aerial section 4 and is telescoped in a tubular member 22 preferably formed of the same material as the rod 21. The tubular section 22 is preferably of the same length as the intermediate aerial section 5 and the lower end thereof is telescopically received in a tubular bottom member 23 of light transmissible material, said bottom member extending into the housing and having its lower end 24 preferably mounted on and closing a reflector 25. Mounted in the reflector is a source of light such as a light bulb 26 mounted in a socket 27 and adapted to be energized by a suitable source of electric current (not shown) through conductors 28 and 29. In order that the intermediate tubular section 22 of light transmissible material may be moved with the radio aerial section 5, the upper end of said tubular section is provided with a boss 30 adapted to be engaged by a boss 31 adjacent the lower end of the aerial section 4.

In using an apparatus constructed as described, the housing 8 is preferably mounted on the interior of the vehicle on a suitable support, as at 32, with the bottom member 6 extending through an aperture in the body of the vehicle. It is preferred that the tape member extend through the bottom and intermediate sections of the aerial exteriorly of the light transmissible sections, whereby engagement of the tape with the sides of the aerial section and the light transmissible sections offers sufficient support to the flexible tape member thus said tape member can operate as a column in compression.

When it is desired to use the radio or the signal, the crank 12 is turned to unwind the tape 13 from the spool 9, thus moving the outer section 4 together with the signal illuminable member 3 and the rod 21 upwardly relative to the intermediate sections 5 and 22. When the outer sections have reached the extent of their movement, engagement of the shoulders 17 and 18 and the bosses 30 and 31 permit further unwinding of the tape to move the intermediate sections 5 and 22 outwardly relative to the bottom sections 6 and 23 until the signal and aerial have reached a desired height. The radio may then be operated as desired regardless of operation of the signal and the signal may be illuminated by proper energization of the light 26 whereby light reflected upwardly from the reflector 25 through the light transmissible member 23, light transmissible member 22, and rod 21 illuminates the signal member 3. Not only is the light directed upwardly through the material of the members 22 and 23 but also upwardly through the passages

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therein and into the rod member 21 to illuminate the signal member 3 as a warning to other vehicles in adjacent territory. Since the light transmissible members are not conductors of electricity and no current is passed therethrough, there is no interference or reduction in capacity in the radio aerial.

In the form of the invention shown in Figs. 7 and 8, the lower section 35 of the aerial extends into the housing 36 and into engagement with the reflector 37, as at 38. The upper end of said aerial member 35 is provided with a reduced portion 39 for slidably receiving the intermediate section 40 which is also provided at its upper end with a reduced portion 41 to slidably receive the outer section 42 of the aerial. Mounted in the open upper end of the section 42 is an illuminable signal member 43 adapted to receive light from a light source such as a light bulb 44 enclosed by the reflector 37 and the base member on the aerial 35. The inner surfaces of the aerial members are coated with a light reflecting material, as indicated as 45, 46 and 47 whereby the light may pass directly through the tubular members and is reflected from the sides thereof for transmission to the signal member 43 for illuminating same.

In order to move the respective sections to extended and contracted positions, respectively, a tape 48 is provided on a spool 49 in the housing 36 and adapted to extend through an insulated opening 50 in the aerial member 35 and upwardly through guide grooves 51 in the respective aerial members for attachment to the lower end of the upper aerial member 42 as at 52. The tape member is preferably perforated, as at 53, in such a manner as not to interfere with light being reflected back and forth from the reflecting surfaces on the inside of the tubular member. The base members of the aerial may be connected to a radio circuit by an antenna wire 54, as in conventional practice.

This form of the apparatus is actuated in substantially the same manner as the preferred form of invention that is to say it is being moved to extended or contracted position by unwinding or winding the cable on the spool. The passage of light through the tubular members for illumination of the signal member does not affect the capacity or operation of the radio aerial.

It is therefore apparent that a convenient, relatively economical and efficient warning signal is provided at the upper end of an extensible radio aerial and that illumination of said signal is effected without interference with the capacity or operation of the radio aerial.

What I claim and desire to secure by Letters Patent is:

In a radio aerial of the character described, a plurality of vertically slidable tubular telescoping sections, a housing having an opening at the top thereof, means for supporting the lower telescoping section in said opening in the housing forming a continuous opening from said housing to the top of said aerial, a spool in said housing, a flexible member wound on said spool and adapted to be unwound to move the telescoping sections to extend said aerial, a light source in said housing adjacent the lower end of the lower section for diverting light rays upwardly in said sections, a signal on the outer end of said aerial, and light directing means substantially continuous with the aerial for conducting light rays from the bottom of the aerial to said signal at the top of said aerial, said light directing means being spaced

from the outside telescoping sections to accommodate said flexible member so that said flexible member is guided therebetween and prevented from interfering with light rays transmitted through the tube.

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