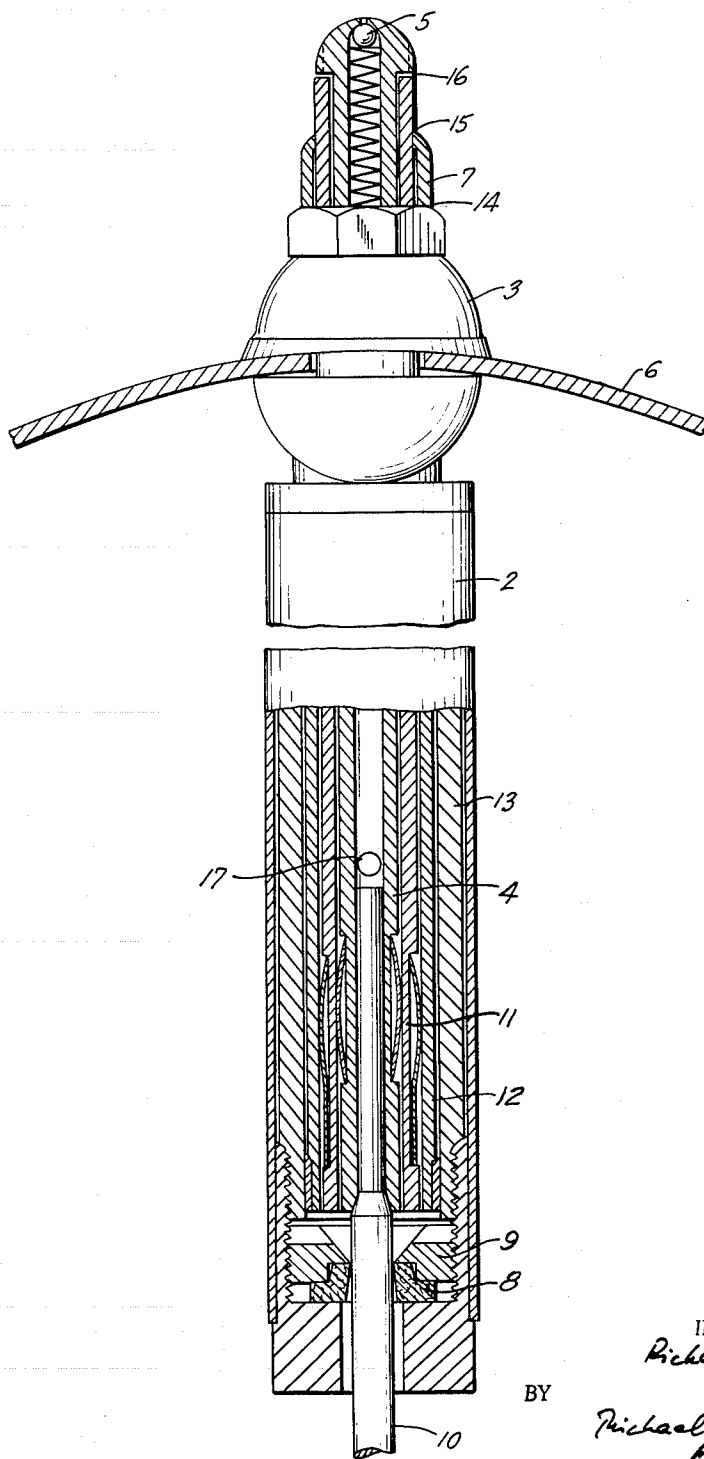


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LUBRICATING DEVICE FOR MOTOR-ACTUATED
EXTENDIBLE MOTOR-CAR ANTENNAE
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LUBRICATING DEVICE FOR MOTOR-ACTUATED EXTENDIBLE MOTOR-CAR ANTENNAE

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The present invention relates to a lubricating device for motor-actuated extendible motor-car antennae.

For extendible motor-car antennae it has already been known to introduce the lubricating grease through an innermost telescope-part devised as a tube. In a known construction of this type the grease passes into the gearing and finally fills up the gearing (the gear chamber) completely. And it is only then that the grease rises from below in the spaces between the tubes, that is to say, between the outer telescope tubes, whereby it carries along with it the dirt (deposited only there) and finally emerges at the upper ends of the spaces between the tubes.

If the lubricating structure is devised like this it is obvious that a considerable quantity of grease is needed to first fill up the gearing completely with the grease before the grease is caused to rise in the spaces between the tubes and then carries the dirt along with it. In addition to this it is advisable to employ for the removal of the dirt preferably some other type of grease as is used for the lubrication of the gearing. Finally, the grease-tightening of the bearings of the gearing is by no means easy under high grease pressure. Furthermore, there are gearings in which the gear-chamber is not suited at all for being filled up with grease. For motor-car antennae it is of considerable importance that no grease is admitted to the conveying wheel, in order to prevent the coefficient of friction between the conveying wheel and the conveying means from going down. Hence, at least the conveying wheel should rotate within a grease-free chamber.

According to the invention the protective tubular covering of the telescope antenna is closed up toward the gear side by a stopper which by the grease pressure in the interior of the protective tubular covering is pressed in grease-tight fashion against the conveying means of the antenna which traverses it. The result is that the grease passing through the center tube in downward direction is now caused to pass under continued grease-gun-pressure between the telescopic tubes in upward direction, whereby all of the dirt is carried along by it. The pressing-in of the grease can be continued until perfectly clean grease emerges from the gaps between the telescopic tubes. In this manner it is possible in the simplest way to remove the dirt from the telescopic tubes. Until now the dirt inevitably adhering to the extended antenna could only with difficulty be removed and was the source of constant trouble of the mechanism of the antenna. This source of trouble has now been removed by the invention.

Additional features and advantages of the invention will be understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of this specification. However, I wish to say that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified, so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

The drawing shows by way of example and partly in section a preferred embodiment of the invention.

Referring now to the drawing in detail, the reference numeral 2 designates the protective tubular outer cover-

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ing secured to the car-body 6 by means of the clamping screw 3.

The innermost part 4 of the antenna has been devised as a tube, which tube has the spring-pressed ball 5 positioned in its end, whereby the ball 5 acts as a valve for the lubricating grease pressed in from above.

Onto the collar 7 an ornamental cap or the like may be pushed or screwed. The grease pressed into the tube 4 passes through the bore 17 in the lower end of the tube 4. Provided at the lower end of the protective tubular covering 2 is a stuffing box consisting of a stopper 8 and of the slotted tensioning screw 9 with the aid of which the conveying means, a nylon wire 10, is closed up in grease-tight fashion. The pressure of the lubricating greases, augmented by the pressure exerted by the collar-like portions of the stopper 8, increase the packing or tightening effect. Continued pressure by means of the grease gun then causes the grease to rise in the space between the tubes 4—11 and 11—12 and 12—13 in upward direction until it finally escapes from the telescope at 14, 15 and 16, taking all of the dirt along with it.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. Lubricated telescopic antenna comprising, in combination, an outer tubular casing; a plurality of slidable telescopic tubes having a contracted position in which said tubes are located in said casing with one end portion of each tube projecting from one end of said casing, said projecting end portions slidably engaging each other, adjacent tubes forming annular lubricating spaces open at the other ends of said tubes, the innermost tube of said tubes having a lubricating opening at its projecting end portion and an outlet opening at its other end; and closure means sealing the other end of said casing so that a lubricating medium pressed into said lubricating opening and through the interior of said innermost tube and said outlet opening into the sealed other end of said casing, passes through said annular spaces and out of the same in the region of said projecting end portions of said tubes whereby dirt is removed from said annular spaces to facilitate sliding movement of said tubes to an expanded position.

2. Lubricated telescopic antenna comprising, in combination, an outer tubular casing; a plurality of slidable telescopic tubes having a contracted position in which said tubes are located in said casing with one end portion of each tube projecting from one end of said casing, said projecting end portions slidably engaging each other, adjacent tubes forming annular lubricating spaces open at the other ends of said tubes, the innermost tube of said tubes having a lubricating opening at its projecting end portion and an outlet opening at its other end; an actuating wire secured to said other end portion of said innermost tube and passing out of the other end of said casing; and closure means sealing the other end of said casing and having an opening in which said actuating wire is slidable while in fluid-tight sealing engagement with said closure means so that a lubricating medium pressed into said lubricating opening and through the interior of said innermost tube and said outlet opening into the sealed other end of said casing, passes through said annular spaces and out of the same in the region of said projecting end portions of said tubes whereby dirt is removed from said annular spaces to facilitate sliding movement of said tubes to an expanded position.

3. A telescopic antenna as set forth in claim 2, wherein said actuating wire projects into said other end portion of the innermost tube and closes the same; and wherein said outlet opening of said innermost tube is a lateral opening in said other end portion thereof adjacent said actuating

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wire and communicating with the annular space between said innermost tube and the adjacent tube.

4. Lubricated telescopic antenna comprising, in combination, an outer tubular casing; a plurality of slidable telescopic tubes having a contracted position in which said tubes are located in said casing with one end portion of each tube projecting from one end of said casing, said projecting end portions slidably engaging each other, adjacent tubes forming annular lubricating spaces open at the other ends of said tubes, the innermost tube of said tubes having a lubricating opening at its projecting end portion and an outlet opening at its other end; an actuating wire secured to said other end portion of said innermost tube and passing out of the other end of said casing; and closure means for sealing the other end of said casing and including an annular packing surrounding said actuating wire in sealing engagement while permitting sliding movement of said wire so that a lubricating medium pressed into said lubricating opening and through the interior of said innermost tube and said outlet opening into the sealed other end of said casing presses said annular packing against said wire whereby a tight seal is obtained and passes through said annular spaces and out of the same in the region of said projecting end portions of said tubes whereby dirt is removed from said annular spaces to facilitate sliding movement of said tubes to an expanded position while no lubricating medium is discharged from said other end of said casing.

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5. Lubricated telescopic antenna comprising, in combination, an outer tubular casing; a plurality of slidable telescopic tubes having a contracted position in which said tubes are located in said casing with one end portion of each tube projecting from one end of said casing, said projecting end portions slidably engaging each other, adjacent tubes forming annular lubricating spaces open at the other ends of said tubes, the innermost tube of said tubes having a lubricating opening at its projecting end portion and an outlet opening at its other end; a lubricating valve including a spring-loaded ball mounted in said lubricating opening; and closure means sealing the other end of said casing so that a lubricating medium pressed into said lubricating opening and through the interior of said innermost tube and said outlet opening into the sealed other end of said casing, passes through said annular spaces and out of the same in the region of said projecting end portions of said tubes whereby dirt is removed from said annular spaces to facilitate sliding movement of said tubes to an expanded position.

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