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H. PALMER

2,186,934

ANTENNA CONSTRUCTION

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Fig. 1.

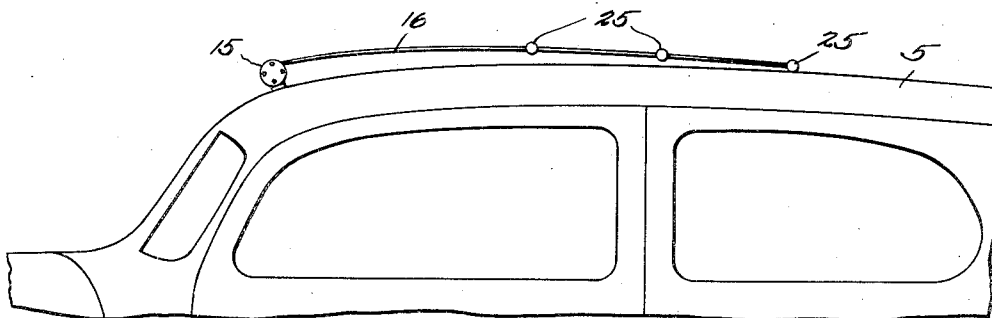


Fig. 2.

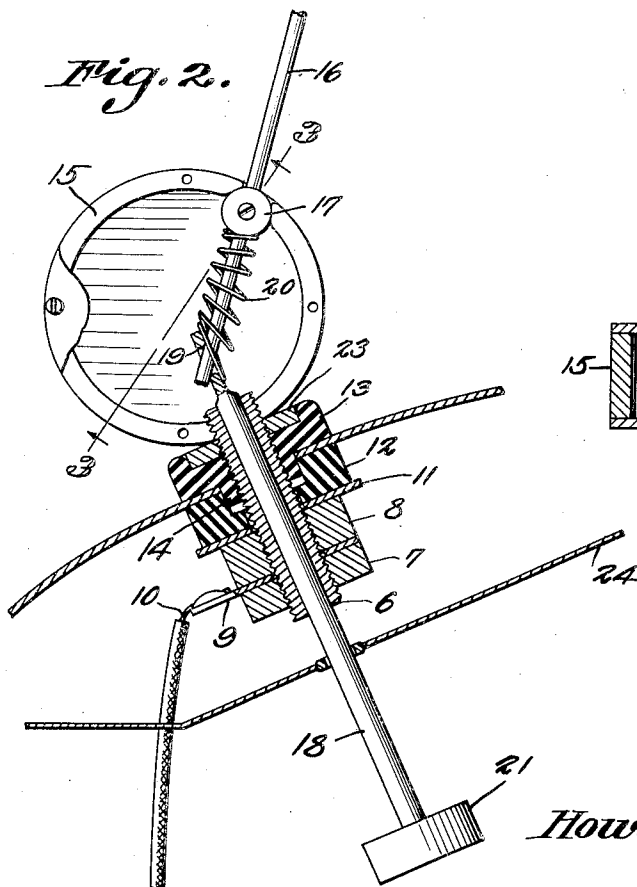
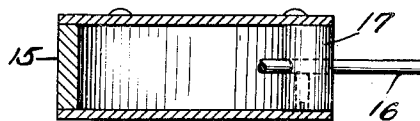


Fig. 3.



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UNITED STATES PATENT OFFICE

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ANTENNA CONSTRUCTION

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4 Claims. (Cl. 250—33)

This invention relates to antenna construction, the primary object of the invention being to provide an antenna particularly designed for use in connection with motor vehicles.

5 An important object of the invention is to provide an antenna adapted to be supported on the roof of a motor vehicle, means being provided for raising and lowering the antenna, to the end that when the antenna is out of use, it may be
10 moved to a position adjacent to the roof of the vehicle, where it will be out of the way.

Another object of the invention is to provide an antenna operating means which will hold the antenna in either its extended or inactive position, insuring against objectionable noise due to
15 vibrations of the vehicle on which the antenna is mounted.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise
20 embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawing:

30 Figure 1 is an elevational view of the roof of a motor vehicle body, equipped with an antenna constructed in accordance with the invention.

Figure 2 is a vertical sectional view through the car roof, illustrating the antenna and its support, as mounted on the roof.

35 Figure 3 is a sectional view taken on line 3—3 of Figure 2.

Referring to the drawing in detail, the roof of a motor vehicle is indicated by the reference character 5.

40 The antenna support embodies a tubular housing 6 externally threaded, to accommodate the nuts 7 and 8 between which the contact plate 9 is held. The lead-in wire indicated at 10 is soldered or otherwise secured to the contact plate 9.

45 The reference character 11 designates a washer that is fitted against the nut 8, the washer providing a support against which the insulating member 12 engages. The insulating member 12 is formed with a cut-out portion, and as shown, is
50 positioned on the tubular housing 6.

An insulating member indicated at 13 is provided with an extension 14 that is disposed within the cut-out portion of the insulating member 12, the insulating members 12 and 13, clamp-
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ing the roof 5 of the vehicle, at a point adjacent to the opening formed in the roof, for the reception of the antenna support. Thus it will be seen that due to this construction, the tubular housing 6 is insulated from the roof of the vehicle.

6 Mounted on the upper end of the tubular housing 6, is a circular housing 15, the housing being provided with an opening through which the antenna indicated at 16, extends, the antenna being pivotally mounted within the housing, as
10 at 17.

As clearly shown by Figure 2 of the drawing, the antenna is pivotally mounted in such a way that an appreciable length of the antenna extends into the housing, beyond the pivot point 17.
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The control rod, which is indicated at 18 is slidably mounted within the tubular housing 6, the upper end of the control rod extending into the circular housing 15, where it is provided with an enlarged opening 19 through which the
20 inner end of the antenna extends. A coiled spring indicated at 20 has one of its ends bearing against the pivot point 17, while the opposite end thereof engages the upper end of the control rod at a point adjacent to the enlarged
25 opening 19. Thus it will be seen that due to this construction, the coiled spring 20 will act to exert a pressure between the pivot point 17 and inner end of the control rod 18, holding the antenna in its positions of adjustment, and insuring against rattling of the various elements
30 of the antenna, due to vibrations of the motor vehicle.

A knob indicated at 21 is secured to the free end of the control rod 18, and affords means
35 whereby a person may conveniently operate the control rod, to accomplish the purpose of the invention.

Rubber cushioning members 25 are secured on the antenna 16, and prevent the damaging of the
40 top when the antenna is moved to its inactive position.

In the operation of the antenna, it will be seen that by forcing the control rod 18 upwardly, the antenna 16 will swing downwardly to a position as shown by Figure 1, where it will be out of the way of obstructions, which would otherwise damage the antenna.

When it is desired to use the antenna, the control rod 18 may be pulled, swinging the antenna
50 to its normal operative position, as shown by Figure 2.

It might be further stated that a nut indicated at 23 is used in conjunction with the insulating members 12 and 13, to force the insulating mem-
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bers 13 into close engagement with the roof 5 of the vehicle, thereby firmly securing the antenna support in position.

The spring obviously holds the rod yieldingly 5 in either of its two extreme positions. Should the rod, while raised, come against an obstruction as the vehicle moves forwardly, it would be pressed back against the action of the spring and past the dead center, to its other, or lower 10 extreme position where it would remain until raised.

The antenna can be tubular or solid and of inert metal. Thus should it become caught while the vehicle is backing, it would bend without 15 breaking and could thereafter be easily straightened for further use.

The roof lining is indicated by the reference character 24, and is provided with an opening through which the control rod 18 moves.

20 In view of the foregoing detail description, it is believed that a further description as to the operation of the antenna is unnecessary.

What is claimed is:

1. A motor vehicle antenna comprising a tubu- 25 lar support adapted to be secured within an opening in a motor vehicle top, a housing secured at the upper end of the tubular support, an antenna rod pivotally connected to the housing, one end of the antenna rod extending into the 30 antenna housing, a control rod extending into the housing and having pivotal connection with the antenna rod and adapted to swing the antenna rod to its vertical or horizontal position, and yieldable means for holding the antenna in its 35 positions of adjustment.

2. A motor vehicle antenna comprising a tubular support adapted to be secured within an opening of a motor vehicle top, means for insu- 40 lating the tubular support from the top of the vehicle, an antenna, means for pivotally mounting the antenna at the upper end of the tubular

support, a control rod operating through the tubular support and having pivotal connection with the antenna whereby the antenna may be moved to its active or inactive position, and 5 means for holding the antenna in its positions of adjustment.

3. A motor vehicle antenna comprising a tubular support adapted to be extended through an opening in a motor vehicle top, means for insu- 10 lating the tubular support from the top, an antenna rod, means for pivotally mounting the antenna rod at the upper end of the tubular support, a control rod movable through the tubular support, said control rod having an enlarged opening into which one end of the antenna ex- 15 tends, a coiled spring disposed between the pivot point of the antenna and engaging the control rod, said rod adapted to move the antenna to its vertical or horizontal position, said spring adapted to exert pressure on the antenna holding the 20 antenna in its positions of adjustment, and a lead-in wire in circuit with the tubular housing.

4. A motor vehicle antenna comprising a tubular support adapted to be secured in an opening 25 of a motor vehicle top, a circular housing mounted at the upper end of the support, an antenna rod pivotally mounted within the housing, one end of the antenna rod extending into the housing, a control rod extending through the tubu- 30 lar support and having one end thereof disposed within the housing, said control rod having an enlarged opening through which one end of the antenna extends, a coiled spring mounted on the antenna and bearing against the pivot point of 35 the antenna, said spring also bearing against the control rod, said rod adapted to move the antenna rod to its positions of adjustment, and said coiled spring adapted to hold the antenna against displacement after it has been adjusted.

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