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MOTOR VEHICLE ANTENNA

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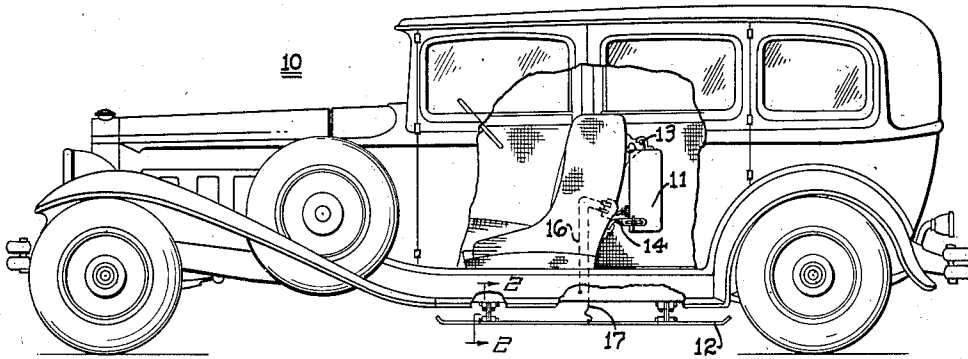


FIG. 1

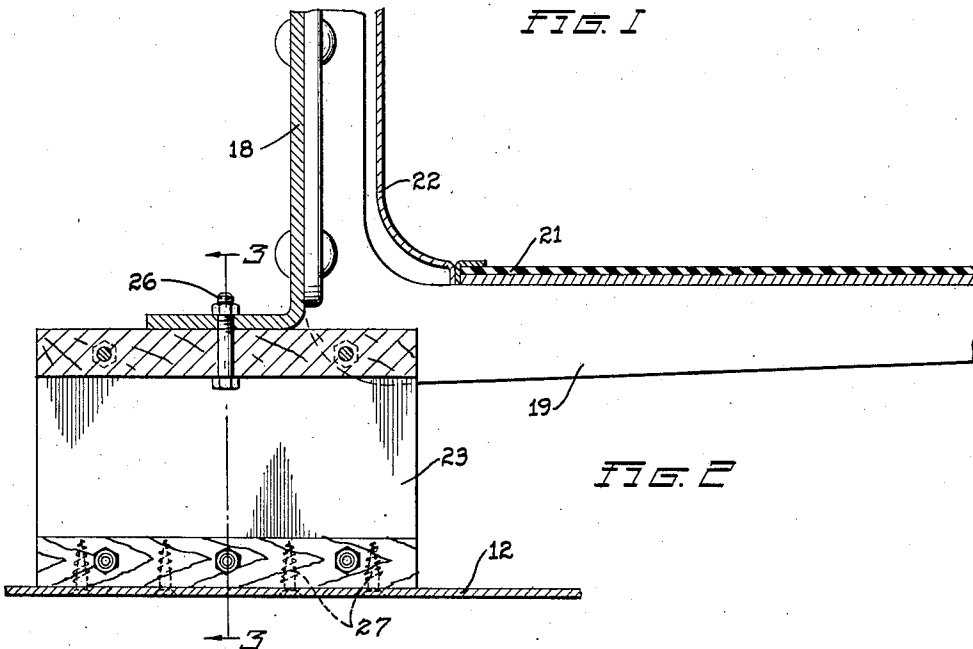


FIG. 2

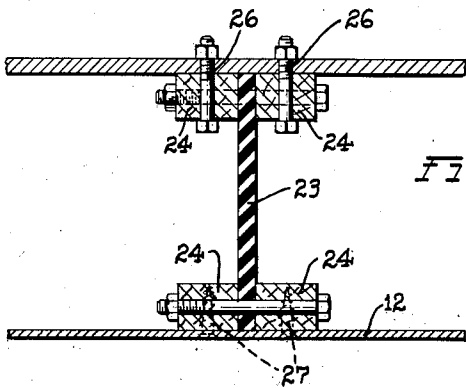


FIG. 3

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MOTOR VEHICLE ANTENNA

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12 Claims. (Cl. 250—33)

This invention relates to motor vehicles and particularly to motor vehicle radio receiving apparatus.

It is well known that an antenna is an almost necessary adjunct for satisfactory radio set operation, but in a radio-equipped motor vehicle the location and installation of the antenna presents a problem which heretofore has not been solved with great success. The application of an antenna to a motor vehicle is further complicated by the desirability of being able to install a radio antenna as accessory equipment after the vehicle has been built.

As one arrangement, plate or capacity type antennas have been installed below the vehicle running board or frame. This location, however, is subject to the objection that the antenna reduces the road clearance if it is separated from the adjacent metallic parts of the vehicle by a distance sufficient to provide satisfactory radio set operation.

It is one of the objects of this invention to place an antenna on a motor vehicle in such a manner that it may be readily installed and readily removable.

Another object of the invention is to mount an antenna on the underside of a vehicle in such a manner as not materially to reduce the effective ground clearance.

Still another object of the invention is to attach an antenna to a vehicle in such a way as to permit movement of the antenna under the influence of external forces tending to displace or damage it.

Another object of the invention is to attach an antenna to a vehicle in such a way as to permit a yieldingly resilient movement of the antenna out of the path of damaging obstacles.

Still another object of the invention is to mount an antenna on a motor vehicle in such a manner that it may be electrically insulated from the vehicle by an insulating and yieldable weight supporting material, the two functions of insulating and yieldingly supporting being performed by the same element.

Other objects of the invention will appear from the following description taken in connection with the drawing which forms a part of this specification and in which:

Fig. 1 is a side elevational view of a motor vehicle with parts thereof broken away to show the invention as applied,

Fig. 2 is an enlarged sectional view with parts in elevation taken substantially on the line 2—2 of Fig. 1, and

Fig. 3 is an enlarged sectional view taken substantially on the line 3—3 of Fig. 2.

Referring to the drawing, 10 illustrates a motor vehicle on which a radio set 11 is mounted in any suitable manner. An antenna 12 is connected to the radio set and mounted on the vehicle in a manner to be described. The radio set shown includes all the necessary electrical apparatus within a cabinet which is adapted to be hung on the robe rail 13 and braced against the back of the front seat in any suitable manner as by brackets 14. A wire 16 leads to a suitable ground connection and a wire 17 leads to the antenna.

As shown, the underside of the vehicle includes a flanged frame side rail 18 on which is mounted a running board bracket or support 19 which carries the running board 21 and serves also to support the running board splash guard 22.

I have shown my antenna 12 as having attached thereto suitable connections 23 which in turn are fastened to the underside of the frame side rail 18. This invention contemplates the use of strips of a resilient insulating material, such as rubber, as the main component of each connection, and further contemplates having these strips of such a sufficiently rigid nature as normally to hold the antenna in a fixed position relative to the frame side rails, the running board, and the running board supports. But if, however, a road obstacle should strike the antenna, instead of breaking the connections between the antenna and the frame, these connections will yield and permit the antenna to move up out of the way of the obstacle and when the obstacle has been passed, the antenna will be brought back into position by the resiliency of the yielding insulating and supporting connections 23.

As a means of attaching each rubber strip to the frame or the antenna, I enclose its upper and lower edges between suitable blocks 24 which are bolted together on opposite sides of the rubber strip. These blocks are in turn attached to the frame side rail as by bolts 26, and to the antenna, as by screws 27.

I have thus provided for the mounting of a radio antenna on the underside of the motor vehicle and at a sufficient distance from the vehicle to provide satisfactory radio reception without, however, decreasing the effective ground clearance in case the vehicle should ride over an obstacle which otherwise might strike the antenna.

The use of a yieldable resilient insulating material, such as rubber, as a connection will electrically insulate the antenna from the vehicle and

at the same time provide the desired yielding resilient connection between them which will prevent damage to the antenna or the vehicle due to road obstacles.

5 While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details of the construction herein set forth, by way of illustration, as it is apparent
10 that many changes and variations may be made therein by those skilled in the art without departing from the spirit of the invention, or exceeding the scope of the appended claims.

Having thus described my invention, what I
15 claim and desire to secure by Letters Patent is:

1. In an automobile, the combination of a radio receiving set antenna beneath the bottom of the vehicle, and yieldable insulating means suspending the antenna from the bottom of the auto-
20 mobile, said means comprising strips of resilient material.

2. In a motor vehicle having frame members, running boards, and supports between the running boards and frame, the combination of a
25 radio set antenna supported below said parts of the vehicle, and yieldable insulating means suspending the antenna from the frame.

3. The combination with an automobile, of a radio receiving set antenna beneath the vehicle,
30 and a flexible strip of rubber suspending the antenna from the automobile.

4. The combination with a vehicle having a frame and a running board, of a strip of rubber
35 secured to and depending from the vehicle, and an antenna beneath the running board swingably carried by the strip of rubber.

5. The combination with a vehicle having a frame and a running board, of an antenna be-
40 neath the running board, and a swingable insulating means connecting the antenna with the vehicle.

6. The combination with an automobile, of a radio receiving set antenna beneath the bottom

of the vehicle, a swingable insulating means connected to suspend the antenna from the automobile.

7. The combination with an automobile, of a radio receiver antenna spaced beneath the bot- 5 tom of the vehicle, and swingable means secured to the automobile and the antenna.

8. The combination with an automobile, of a radio receiving set antenna mounted on the vehicle, and means for supporting the antenna
10 for yielding parallel movement with relation to the automobile.

9. The combination with an automobile, of a radio receiver antenna, and means supporting said antenna on and under said automobile and
15 sufficiently below the body of the automobile to avoid excessive lateral shielding of the antenna thereby, said supporting means being yieldable, whereby said antenna may be displaced with respect to the automobile on meeting an obstruc-
20 tion.

10. The combination with an automobile having a frame and a running board structure, of a radio receiver antenna, and means connected between said frame and said antenna and support-
25 ing the latter below said running board structure and sufficiently beneath the latter to avoid excessive lateral shielding of the antenna by the vehicle body, said supporting means being elastic, whereby said antenna may yield on meeting an
30 obstruction.

11. In an antenna structure, a resilient insulating supporting arm, means for mounting said supporting arm beneath an automobile body, and means on said supporting arm for receiving
35 metallic parts for the interception of radio waves.

12. The combination with an automobile and a radio receiver antenna, of yieldable insulating means beneath the automobile, detachable means securing the insulating means to the automobile,
40 and detachable means securing said antenna to said yieldable insulating means.

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