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MOUNTING FIXTURE FOR RESILIENTLY SUPPORTING AN ANTENNA

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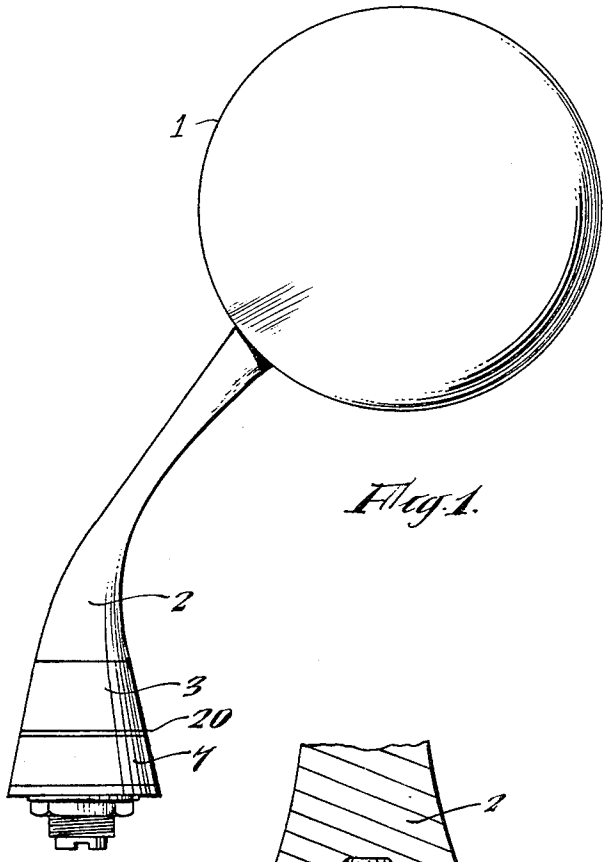


Fig. 1.

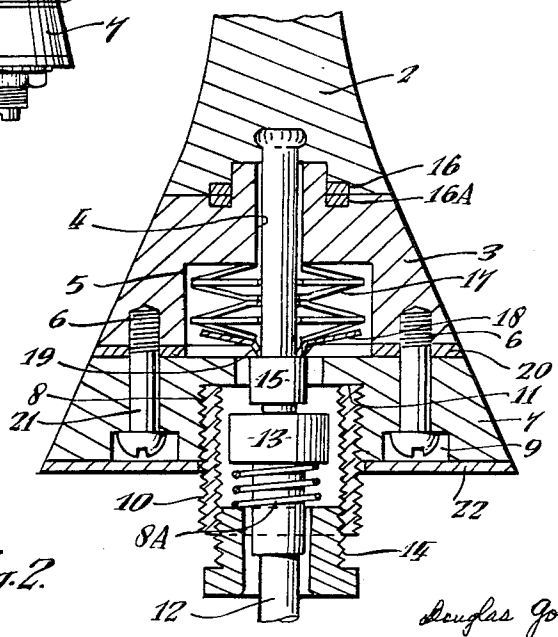


Fig. 2.

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MOUNTING FIXTURE FOR RESILIENTLY SUPPORTING AN ANTENNA

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The present invention relates to a combined mirror or other accessory and radio aerial for fitting to motor vehicles, and is particularly concerned with such a combination in which a metal mirror or frame or backing of a mirror or other accessory is mounted on an elongated metal pillar.

According to one feature of the present invention there is provided a device in the form of a combined mirror or other accessory and radio aerial for fitting to motor vehicles comprising a metal framed mirror or other accessory mounted on a metal pillar, a metal stud on the bottom face of said pillar, a cam shape on the bottom face of said pillar, an intermediate member to receive said stud and having a complementary cam shape on a mating face providing at least two alternative relative positions of the pillar and intermediate member on a relative rotation about the axis of the stud, first spring means co-operating between the stud and the intermediate member to urge said cam shapes together, an insulating base member mounted on the intermediate member, receiving means on the insulated base member coaxial with the stud to receive a contact member adapted to be associated with a cable for establishing electrical contact with said stud, and second spring means for urging said contact member into electrical contact with said stud.

According to another feature of the present invention there is provided a device in the form of a radio aerial for fitting to motor vehicles comprising a metal pillar, a metal stud on the bottom face of said pillar, a cam shape on the bottom face of said pillar, an intermediate member to receive said stud and having a complementary cam shape on a mating face providing at least two alternative relative positions of the pillar and intermediate member on relative rotation about the axis of the stud; first spring means co-operating between the stud and the intermediate member to urge said cam shapes together, an insulating base member mounted on the intermediate member, receiving means on the insulated base member coaxial with the stud to receive a contact member adapted to be associated with a cable for establishing electrical contact with said stud, and second spring means for urging said contact member into electrical contact with said stud.

The first spring means may for example be spring washers of the type commonly known as Belville washers.

The invention provides that the combined mirror or other accessory and/or radio aerial can be securely mounted on the motor vehicle for its intended purpose while if the combined mirror or other accessory and/or radio aerial is knocked heavily during a collision, for example, the pillar will rotate under the action of the colliding object to prevent or at least reduce the chance of the pillar and/or mirror or lead-in cable breaking.

One embodiment of the present invention which will now be described by way of example with reference to the accompanying drawing is a combined aerial and rear view mirror for a motor car in which:

FIGURE 1 is an elevation of the combined aerial and mirror, and

FIGURE 2 is an elevation, partly in section of the base portion of the combined aerial and mirror illustrated in FIGURE 1.

Referring to the drawing, the combination includes a rear view metal framed mirror 1 which is adapted to be mounted on the front wing or body of a motor car by means of the metal pillar 2 so as to project upwardly and outwardly from the wing or body of the car. The mirror 1 is secured to the upper end of the pillar 2 and the lower end of the pillar 2 is adjustably mounted on to a metal intermediate member 3 having a central bore 4, recessed portion 5, and two threaded setscrew receiving holes 6.

The pillar 2 and intermediate member 3 are mounted on to an electrically insulating base member 7 made of ebonite or any other suitable insulating material, this member 7 having a central threaded bore 8 and recessed setscrew receiving holes 9 which are coaxial with the recessed portion 5 and setscrew receiving holes 6 respectively. An internally and externally threaded sleeve 10 is screwed into the bore 8 to abut the shoulder 11; and the lead-in cable 12 of the car radio has a flattened end contact member 13 secured in the bore 8 together with a spring 8A by a clamping nut 14 screwed into the sleeve 10.

An elongated metal stud 15 is rigidly secured to the lower end of the pillar 2 so as to project centrally from the pillar 2 and extend through the bore 4 and recessed portion 5 of the intermediate member 3. The lower end of the pillar 2 is rotatably mounted on the intermediate member 3 by means of complementary cam shapes 16, 16A formed integrally on the mating faces of the pillar and intermediate member respectively, and a system of spring washers 17 is retained in the recessed portion 5 by means of the grip cap 18 which clamps on to the stud 15 against the projecting head 19 thereof, the spring washers 17 acting on the grip cap 18 so as to force the stud 15 downwardly and produce a firm joint between the pillar 2 and intermediate member 3. In this way the pillar 2 will be securely mounted on the intermediate member 3 and will rotate only when acted upon by a reasonably heavy blow.

In order to assemble the device a sealing washer 20 is placed over the lower end of the intermediate member 3 and the base member 7 is attached to the intermediate member 3 by means of the setscrews 21, the heads thereof being accommodated in recesses 9. A second sealing and insulating washer 22 is placed over the lower end of the base member 7 thus sealing and insulating the setscrews 21 from mounting surface, for example wing or body of the vehicle, the outwardly projecting end of the sleeve 10 being inserted through appropriate hole in the car wing or mounting surface so that the washer 22 lies flush with the top face of said wing or mounting surface and a locknut (not shown) is screwed on to the sleeve 10 from underneath so as to bear tightly on the underside of the wing or mounting surface and mount the mirror securely in position insulated from the wing or mounting surface.

The device is arranged so that when assembled in the above described manner the spring 8A urges the end contact member 13 upwardly to make a good electrical contact with the lower end of the stud 15; this electrical contact being maintained in spite of slight gapping between the pillar 2 and intermediate member 3 caused by the cam shapes 16 and 16A when the pillar 2 is rotated on the intermediate member 3. In this way electrical connection is maintained between the elongated stud 15 and the cable 12 to ensure the pillar 2 and metal framed mirror 1 acting as an aerial for the car radio.

One great advantage of this invention is that if the mirror 1 sustains a heavy blow causing the mirror 1 and pillar 2 to rotate on the intermediate member 3, the abovementioned electrical contact is maintained without any twisting of the cable 12, end contact member 13 and stud 15; the rotation of the pillar 2 merely resulting in a

corresponding relative rotation of the contacting faces of the cable and stud. This results in a considerable reduction in the wear and tear of the cable and the joint, and of course the mirror **1** and pillar **2** can quite easily be pushed back by hand into its correct position.

In a modified version of this embodiment, the mirror **1** is dispensed with and the pillar **2** is suitably shaped to form solely a car aerial having the above mentioned advantages.

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

1. A mounting joint for a radio antenna comprising a radio antenna, a centrally bored electrical insulating supporting base member for the antenna, a centrally bored member intermediate of the base member and the antenna and rigidly secured to said base member, a terminal stud fixedly depending from the antenna into the base member and retaining the antenna rotatably upon said intermediate member, means at the interfaces of the antenna and intermediate members permitting gapping thereat on relative rotational movement between them, a housing removably attached to the base member supporting a lead-in cable and terminal thereof in said base member, spring means in said housing resiliently urging the terminal into contact with the terminal stud of the antenna, and means resiliently urging said terminal stud into contact with said terminal of said base member.

2. A mounting joint for a radio antenna comprising an antenna, a centrally bored electrical insulating supporting base member therefor, a centrally bored intermediate member rigidly secured to the base member and having a central hollow spigot and socket fitment with and permitting rotational movement of the antenna, a stud depending from and retaining said antenna to the intermediate member and constituting a termianl and extending through the bore of the intermediate member and into the bore of the base member, intermeshing cam surfaces at the interfaces of the antenna and the intermediate member permitting gapping at said interfaces on restraining rotational movement of said antenna, a housing extending into the bore of the base member from the lower end thereof and accommodating a lead-in electric cable and a terminal at the end thereof, spring means in said housing urging said terminal and lead-in cable therein into engagement with the terminal stud of the antenna, and spring means in an elargement of the bore of the intermediate member urging said terminal stud into contact with said terminal of said lead-in cable.

3. A mounting joint for a radio antenna as claimed in claim 2, wherein the intermeshing cam surfaces comprise one set of cam surfaces on each of the interfaces of the antenna and the intermediate member.

4. A mounting joint for a radio antenna as claimed in claim 2, wherein the housing for the lead-in cable comprises a sleeve having an inner end in screw thread engagement with the lower end of the bore of the base member and an outer end closed by a hollow screwed plug admitting passage of the lead-in cable.

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