

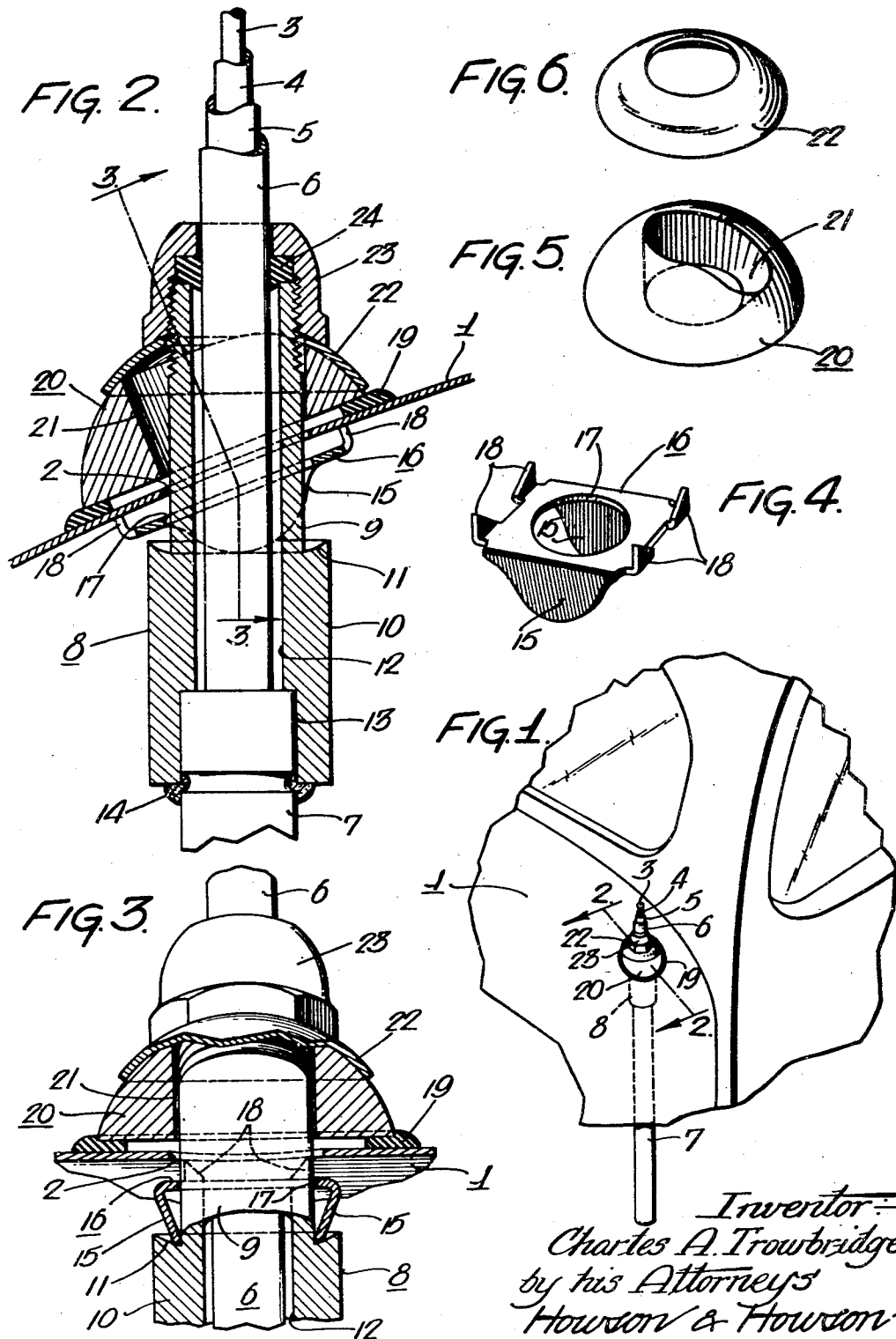
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ANTENNA MOUNTING

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UNITED STATES PATENT OFFICE

2,454,897

ANTENNA MOUNTING

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This invention relates to new and useful improvements in antenna mountings and more particularly to antenna mountings for automobiles and similar vehicles whereby an antenna of the telescopic type may be substantially concealed within the vehicle body when the antenna is fully telescoped.

Prior to the present invention efforts have been made to mount antennas interiorly of automobile bodies so that the telescopic antennas would be substantially concealed within the bodies when collapsed. However, the slope or curvature of the cowls, fenders and other portions of the automobile bodies vary widely between different makes and models and in the absence of a satisfactory standardized mounting that could be used in all cases, considerable time and ingenuity was required to install the antennas within the variously shaped cowls and fenders of the automobiles so that when the antennas were extended they would project outwardly from the automobile bodies at the desired angle, normally vertically.

With the foregoing in mind, an object of the invention is to provide a novel mounting for telescopic antennas which permits the antennas to be installed in the cowls, fenders and other portions of the vehicle body having different slopes or curvatures.

Another object of the invention is to provide a novel mounting as set forth which is substantially concealed within the body of the vehicle and enables the antenna to be extended in a vertical or other desired direction.

A further object of the invention is to provide a novel antenna mounting having features and characteristics set forth which is of relatively simplified and inexpensive construction, and can be comparatively easily and readily installed.

These and other objects of the invention and the various features and details of the construction and arrangement thereof are hereinafter fully set forth and described with reference to the accompanying drawing, in which:

Fig. 1 is a fragmentary perspective view showing an automobile having installed therein an antenna mounting made according to the present invention.

Fig. 2 is an enlarged sectional view taken on line 2-2, Fig. 1.

Fig. 3 is a sectional view taken on line 3-3, Fig. 2; and

Figs. 4, 5 and 6, respectively, are views in perspective of certain parts of an antenna mounting made according to the invention.

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Referring now more particularly to the drawing, reference numeral 1 designates a section of an automobile such as, for example, the upper cowl wall, fender or other like portion having an opening 2 therein through which extends the antenna. Preferably the antenna is of the so-called telescopic type comprising members, 3, 4, 5 and 6, and a base 7 which may be employed as a housing for suitable mechanism to extend and telescope the antenna sections as desired.

In accordance with the present invention, a mounting for the antenna comprises a sleeve or the like 8 having an upper portion 9 of a diameter that will pass through the body opening 2 and a lower portion 10 of greater diameter than the portion 9 and the body opening 2. At the junction of the portions 9 and 10 an annular shoulder 11 is provided circumferentially of the sleeve 8 and the annular surface portion of this shoulder 11 preferably is arcuately concave in cross-section, for example, as best shown in Figs. 2 and 3 of the drawing.

The sleeve 8 has a bore 12 therethrough to receive the outer tubular member 6 of the antenna and this bore 12, at its lower end, preferably is counterbored as indicated at 13 to receive the upper end of the antenna base 7 which preferably is secured to the sleeve 8 in any suitable manner such as, for example, by welding 14.

The concave arcuate surface of the annular shoulder 11 provides a curved supporting surface for the rocker portions 15 of a support plate 16 (see Fig. 4). The support plate 16 has an opening 17 therethrough for the reduced portion 9 of the sleeve 8 which it surrounds, and at its four corners the said plate 16 is provided with upwardly extending projections or lugs 18 arranged to engage against the underside of the automobile body section 1, as shown in Fig. 2 of the drawing, when the sleeve 8 is inserted upwardly through the body opening 2. Preferably the projections 18 are tapered as shown so that point contacts are provided between the plate 16 and the underside of the body section 1.

It is to be noted that the rocker portions 15 of the plate 16 decline inwardly so that their edges engage the shoulder 11 adjacent the inner circumference thereof, and this arrangement of the rocker portions 15 of the plate 16 and the arcuate concave configuration of the shoulder 11 serve to retain the rocker portions 15 engaged or seated upon the sleeve shoulder 11. Furthermore, the provision of the rocker portions 15 permits the plate 16 to be disposed at any angle with respect to the axis of the sleeve

8 and still insure engagement of all of the four projections 18 thereof with the undersurface of the automobile body section 1.

Overlying the body section 1 and surrounding the opening 2 and the reduced portion 9 of the sleeve which projects upwardly therethrough, is an annular gasket 19 of suitable resilient material such as, for example, rubber or the like. Surmounting this gasket 19 is a substantially semi-spherical member 20 having an opening 21 therein through which extends the reduced portion 9 of the sleeve 8. It is to be noted that the opening 21 in the semi-spherical member 20 diverges or flares outwardly from the base of said member, for example, as best illustrated in Fig. 5 of the drawing, so as to provide for the positioning of the sleeve 8 and antenna at various angles with respect to the plane of the base surface portion of the semi-spherical member 20, for example, as shown in Fig. 2 of the drawing, thereby enabling the sleeve 8 and the antenna therein to be mounted with their common axes in the true vertical or other selected position irrespective of the slope or curvature of the automobile body section 1.

Overlying the semi-spherical member 20 is a cap 22 of generally spherical configuration which surrounds the reduced end portion 9 of the sleeve 8 and overlies the member 20 to substantially close the portion of the opening 21 therein which is not occupied by the sleeve 8 (see Fig. 6). The several parts of the mounting are secured together in proper relation with respect to each other and the automobile body section 1 by means of an internally threaded cap nut 23 which is threaded onto the exterior of the upper end of the reduced portion 9 of the sleeve 8, a suitable washer or gasket 24 being interposed between the end face of the sleeve 8 and the nut 23 as shown in Fig. 2.

To install the antenna mounting of the present invention the body opening 2 is drilled at the desired location and the nut 23, cap 22, semi-spherical member 20 and gasket 19 are moved from the assembly. The sleeve with the plate 16 thereon is inserted upwardly through the opening 2 in the vertical or other direction in which it is desired to have the mounted antenna extend until the four upstanding projections or lugs 18 of the plate 16 engage the undersurface of the body section 1 which they will do by reason of the fact that the plate 16 is rockably supported by the sleeve 8 through the rocker portions 15. The gasket 19, semi-spherical member 20 and cap 22 are then dropped over the protruding end portion of the sleeve 8 and the nut 23 is threaded onto the latter and tightened thereby clamping the assembly together and to the automobile body section 1, and since the pressure exerted by tightening the nut 23 is exerted along the axis of the sleeve which is located within the area defined by the upstanding projections or lugs 18 of the plate 16, a firm and stable mounting of the antenna in the desired position is insured.

From the foregoing it will be apparent that the present invention provides a novel mounting for telescoping antennas which permits the antennas to be installed in the cowl, fenders or other body portions of the vehicle having different slopes or curvatures. The invention also provides a novel mounting as set forth which is substantially concealed within the body of the vehicle and enables the antenna to be extended in a vertical or other desired direction. Furthermore, the invention provides a novel antenna mounting having the

described features and characteristics which is of relatively simplified and inexpensive construction and can be comparatively easily installed.

While a particular embodiment of the invention has been illustrated and described herein, it is not intended that the invention be limited to such disclosure and changes and modifications may be made therein and thereto within the scope of the claims.

I claim:

1. In an antenna mounting of the character described, a sleeve adapted to extend through an opening in a wall, a support rockably supported by said sleeve and arranged to engage one side of said wall at a plurality of points about the axis of the sleeve, a member arranged for positioning at the other side of the wall and having therein an opening for said sleeve, and means on said sleeve operable to fixedly secure said support, said sleeve and said member relative to each other and to said wall.

2. In an antenna mounting of the character described, a sleeve adapted to extend through an opening in a wall, a support rockably supported by said sleeve and arranged to engage one side of said wall at a plurality of points about the axis of the sleeve, a substantially semi-spherical member arranged for positioning at the other side of the wall and having therein an outwardly diverging opening for said sleeve constructed and arranged to permit limited angular adjustment of the sleeve relative to said member, a cap of generally spherical shape surrounding said sleeve and overlying said semi-spherical member, and means on said sleeve operable to engage said cap and fixedly secure said support, said sleeve and said member relative to each other and to said wall.

3. In an antenna mounting of the character described, a sleeve adapted to extend through an opening in a wall, said sleeve having an external annular shoulder arranged at one side of said wall, support means surrounding the sleeve arranged to engage said one side of the wall at a plurality of points about the axis of the sleeve and having relatively spaced depending portions rockably engaging said shoulder at respectively opposite sides of the sleeve, a member arranged for positioning at the other side of the wall and having therein an opening for said sleeve, and means on said sleeve operable to fixedly secure said support, said sleeve and said member relative to each other and to said wall.

4. In an antenna mounting of the character described, a sleeve adapted to extend through an opening in a wall, said sleeve having an external annular shoulder arranged at one side of said wall, support means surrounding the sleeve arranged to engage said one side of the wall at a plurality of points about the axis of the sleeve and having relatively spaced depending portions rockably engaging said shoulder at respectively opposite sides of the sleeve, a substantially semi-spherical member arranged for positioning at the other side of the wall and having therein an outwardly diverging opening for the sleeve constructed and arranged to permit limited angular adjustment of the sleeve relative to said semi-spherical member, a cap of generally spherical shape surrounding said sleeve and overlying said semi-spherical member, and means on said sleeve operable to fixedly secure said support, said sleeve and said semi-spherical member relative to each other and to said wall.

5. In an antenna mounting of the character de-

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scribed, a sleeve adapted to extend through an opening in a wall, said sleeve having an external annular shoulder of concave cross-sectional shape arranged at one side of said wall, support means surrounding the sleeve arranged to engage one side of the wall at a plurality of points about the axis of the sleeve and having relatively spaced inwardly declining arcuate portions rockably engaging said shoulder at respectively opposite sides of the sleeve, a member arranged for positioning at the other side of the wall and having therein an opening for the sleeve, and means to fixedly secure said support, said sleeve and said member relative to each other and to said wall.

6. In an antenna mounting, a sleeve adapted to extend through an opening in a wall, support means tiltably supported by said sleeve and constructed for selective positioning angularly with respect to the axis of the sleeve to engage one side of said wall, and means to fixedly secure said support means and said sleeve relative to each other and to said wall.

7. In an antenna mounting, a sleeve adapted to extend through an opening in a wall, support means tiltably supported by said sleeve and constructed for selective positioning angularly with respect to the axis of said sleeve to engage one side of said wall at a plurality of points circumferentially of said sleeve axis, a member arranged for positioning at the other side of the wall and having an opening for said sleeve, and means to fixedly secure said support means, said sleeve and said member relative to each other and to said wall.

8. In an antenna mounting, a sleeve adapted to extend through an opening in a wall, an annular

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surface about said sleeve at one side of said wall, support means surrounding the sleeve and having relatively spaced depending portions engaging said annular surface and constructed for selectively positioning said support means angularly with respect to the axis of the sleeve to engage said one side of the wall at a plurality of points, and means to fixedly secure said support means and said sleeve relative to each other and to said wall.

9. In an antenna mounting, a sleeve adapted to extend through an opening in a wall, an annular surface about said sleeve at one side of said wall, support means surrounding the sleeve and having relatively spaced depending portions engaging said annular surface and constructed for selectively positioning said support means angularly with respect to the axis of the sleeve to engage said one side of the wall at a plurality of points, a member arranged for positioning at the other side of the wall and having therein an opening for said sleeve, and means threaded on said sleeve to fixedly secure said support means, said sleeve and said member relative to each other and to said wall.

CHARLES A. TROWBRIDGE.

REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
2,098,997	Bramming	Nov. 16, 1937
2,252,671	Ludwig	Aug. 12, 1941

Certificate of Correction

Patent No. 2,454,897.

November 30, 1948.

CHARLES A. TROWBRIDGE

It is hereby certified that the above numbered patent was erroneously issued to "Ben Snyder and Gerson Snyder, copartners trading as Snyder Mfg. Company, of Philadelphia, Pennsylvania, as assignee"; whereas said patent should have been issued to *Ontario Research Corporation, of Philadelphia, Pennsylvania, a corporation of Pennsylvania, assignee by mesne assignments*, as shown by the record of assignments in this Office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 8th day of March, A. D. 1949.

[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.

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[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.