

May 7, 1940.

J. R. KOSS

2,199,727

AERIAL

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2 Sheets-Sheet 1

Fig. 1.

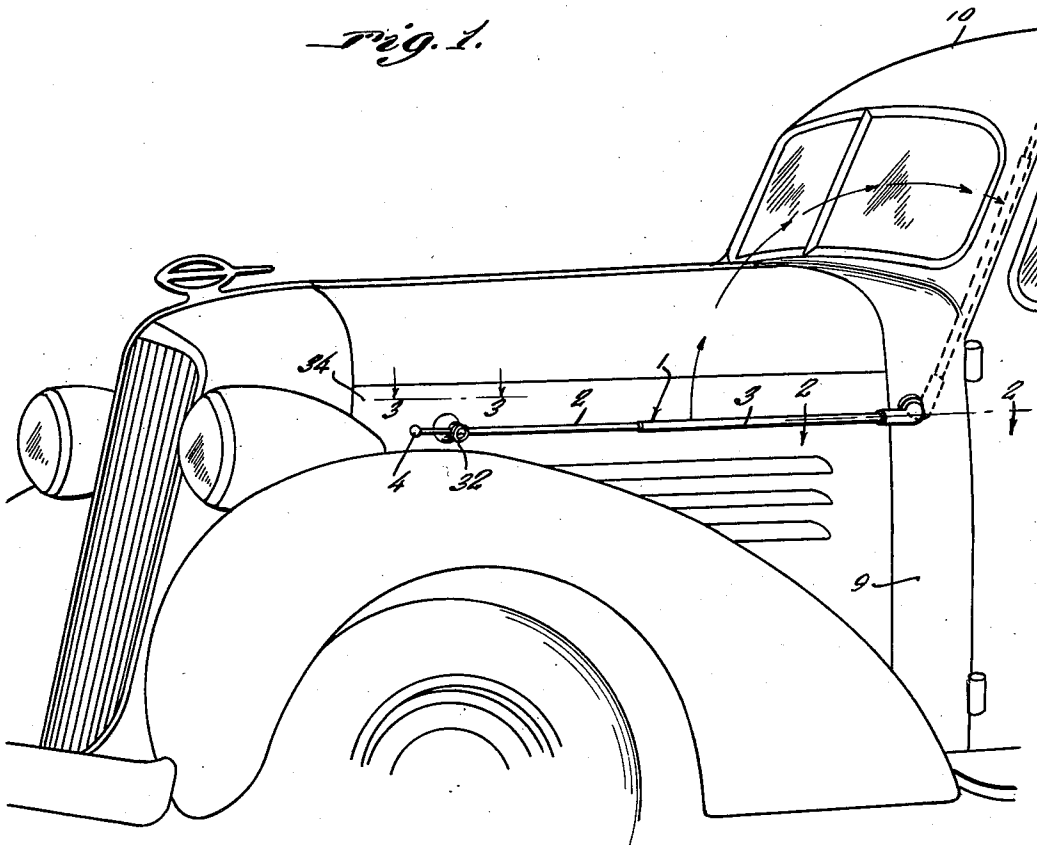
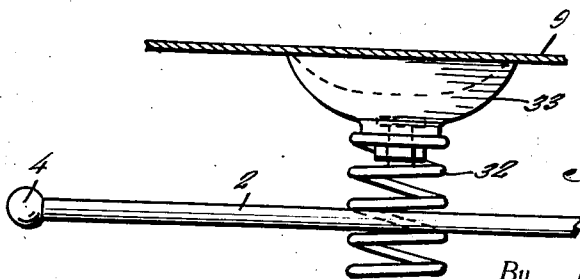


Fig. 3.



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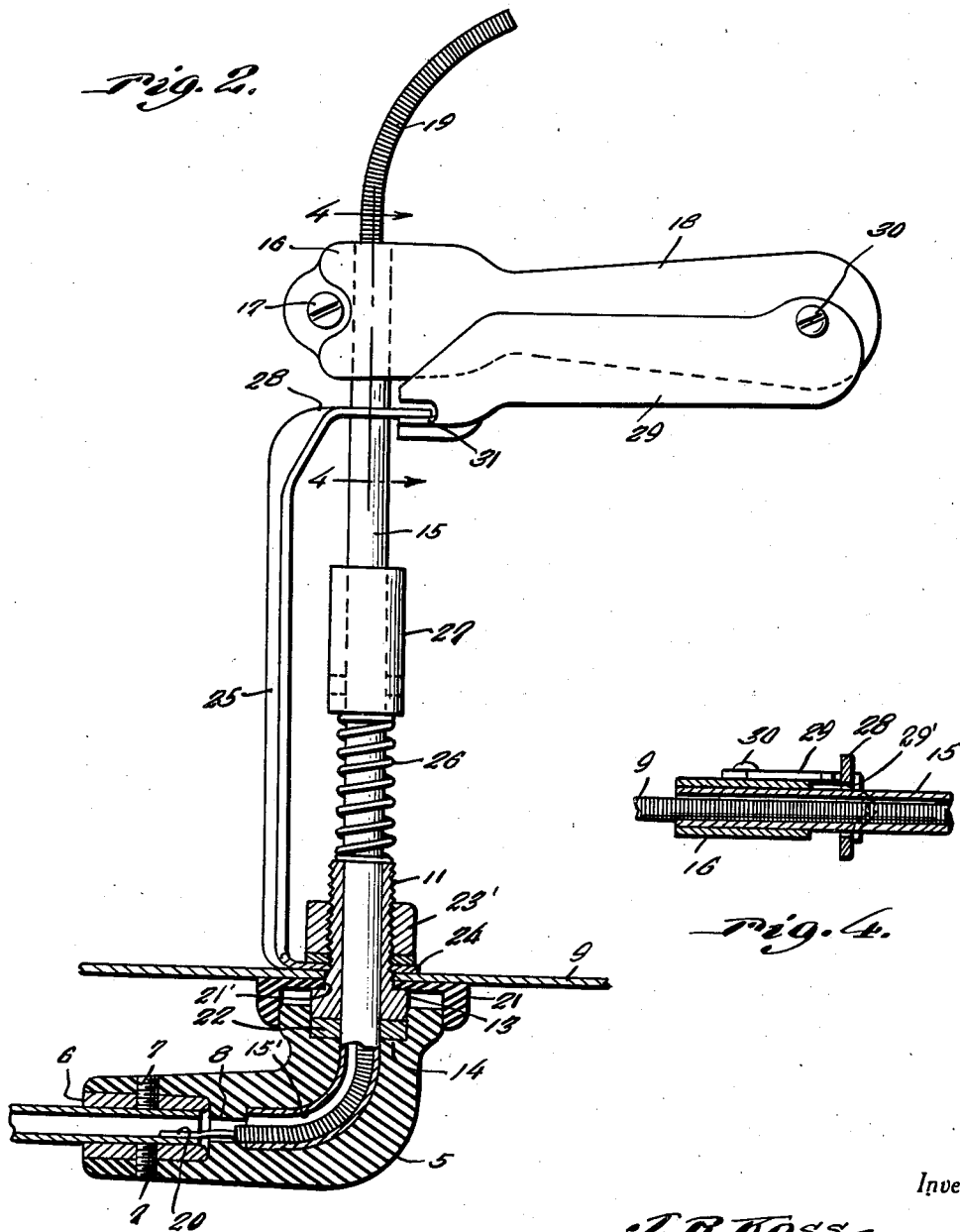
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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AERIAL

Joseph R. Koss, Detroit, Mich.

Application April 4, 1939, Serial No. 265,993

5 Claims. (Cl. 250—33)

My invention relates to improvements in aerials for use more particularly on automobiles.

The invention is designed with the particular purpose in view of providing an outside aerial for automobiles which may be manipulated from within the vehicle by the driver into horizontal position, as for instance when not in use, or into upstanding set positions at different angles to the vertical as occasion may require.

Another object is to provide an aerial for the purpose above set forth adapted for attachment to the side of the cowl of the automobile body and which is inexpensive to manufacture and install and easy to operate.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of my invention has been illustrated in the accompanying drawings, set forth in detail in the succeeding description and defined in the claims appended hereto.

In said drawings:

Figure 1 is a fragmentary view in perspective of an automobile body equipped with my improved aerial.

Figure 2 is a fragmentary view in longitudinal section taken on the line 2—2 of Figure 1 looking downwardly as indicated by the arrows and drawn to an enlarged scale.

Figure 3 is a view in horizontal section taken on the line 3—3 of Figure 1 looking downwardly as indicated by the arrows and drawn to an enlarged scale, and

Figure 4 is a fragmentary detail view in longitudinal section taken on the line 4—4 of Figure 2, looking in the direction indicated by the arrows.

Describing the illustrated embodiment of my invention in detail, with reference to the drawings by numerals, the aerial, proper, comprises an extensible unit 1 including a terminal rod section 2 mounted at one end in one end of a tubular section 3 for sliding movement therein to extend or contract said unit and fitted in said section 2 to be frictionally locked in selected position. The other end of the section 1 may be provided with a terminal ball 4 for a purpose which will be understood. The unit 1 may be formed of any suitable metal. The other end of the section 3 is mounted in one end of an elbow 5 preferably of insulating material, such as "Bakelite," and preferably by means of a reinforcing sleeve 6 suitably secured in said end of the elbow 5 and a pair of stud screws 7 threaded into said elbow 5 and sleeve 6. The elbow 5 has formed therein a shoulder 8 for

engagement by said sleeve to establish the position of the latter in the elbow.

The elbow 5 is rotatably mounted at its opposite end on one side wall of the cowl 9 of the automobile body 10 for swinging movement thereon to elevate the unit 1 from a horizontal forwardly extending position into upstanding position and vice versa and by means of the following devices.

A bearing sleeve 11 of metal is slidably and rotatably fitted in a suitable aperture 12 in cowl 9 to extend horizontally into the latter, said sleeve having an enlarged outer end 13 fitting into a countersink 14 provided in the rotatably mounted end of the elbow 5. Extending from said end of the elbow 5 is a tubular housing 15 of metal having a curved outer end 15' fitting into said elbow against the shoulder 8 and suitably secured in said elbow. The housing 15 extends through said sleeve 11 into the cowl 9 horizontally for a suitable distance and is rotatable in the sleeve. The inner end of the housing 15 has secured thereto, as by means of a split clamping end 16, and a screw 17 passing through said end 16, a handle bar 18 adapted to extend toward the driver's seat, not shown, of the automobile. A flexible lead-in cable 19 extends through the housing 15, one end of said cable being secured in the section 3 of the unit 1, as at 20, and the other end being extended out of the inner end of the housing 15 for connection to a radio receiving set, not shown. The housing 15 forms an axis member on which the bearing sleeve 11 is slidable.

In addition to the foregoing, my invention includes the following devices for frictionally locking the elbow 5 and the unit 1 in selected positions into which they have been rotated, together with means for reducing the friction to provide for easy rotation of said elbow.

Capping the rotatably mounted end of the elbow 5 is a cup-like member 21 of hard composition, Bakelite or plastic, apertured centrally, as at 21', to fit around the bearing sleeve 11 between the outer face of the cowl 9 and the enlarged end 13 of said sleeve 11, whereby said member is adapted to be clamped between the sleeve and said cowl. A friction washer 22 is provided in the elbow 5 intermediate the enlarged end 13 of sleeve 11 and the bottom of the countersink 14 of said elbow. A friction washer 23 is provided on the bearing sleeve 11 on the inside of the cowl 9. A nut 23' is threaded onto the inner end of the bearing sleeve 11 against the washer 23. The washer 23 bears

against the rightangled end 24 of a sleeve operating member 25, said end 24 surrounding said sleeve 11 between the washer 23 and cowl 9. A coil spring 26 is sleeved onto the housing 15 intermediate the inner end of the bearing sleeve 11 and a collar 27 fast on said housing, said spring tending to urge the sleeve 13 outwardly in the cowl 9, and said nut 23' thereby clamping the washer 23 against the end 24 of the sleeve operating member 25 and said end 24 against the cowl 9, and also clamping the outer end of the sleeve 11 against the friction washer 22.

Thus, as will be seen, the sleeve 11 normally is frictionally locked to the cowl 9 by engagement of washer 23 with end 24 and end 24 with cowl 9, the elbow is similarly locked to the sleeve 11 by engagement of the enlarged end 13 of the latter with the washer 22 and the washer 22 with the countersink 14. However, as will also be clear, said sleeve 11 is movable inwardly of the cowl 9 along the housing 15 against the cushioning action of the member 21 and spring 26 to break the friction at the point of engagement of the parts above enumerated, whereby the elbow 5 may be rotated through the medium of the housing 15 to position the unit 1 as desired.

To break the frictional engagement of the parts, the sleeve operating member 25 is extended along the housing 15 and provided adjacent to the handle bar 18 with a right-angularly related end 28 apertured, as at 29', to slide on the housing 15, and a hand grip 29 is provided on the handle bar 18 which is pivoted to the latter, as at 30, and has a notched end 31 straddling said end 28 of the member 25, the arrangement being such that the driver grasping the handle bar 18 and the hand grip 29 may by so doing manipulate the latter to move the member 25 inwardly and thereby slide the sleeve 11 in the cowl 9 to break the frictional engagement between the end 24 of member 25 and the cowl 9 and also between the end 13 of sleeve 11 and the washer 22.

The unit 1 is adapted to be releasably retained in horizontal position by means of a coil spring 32 suitably secured to and extended from a resilient suction cup 33 adapted to be attached to the hood 34 at any suitable point thereon for the insertion of the section 2 of unit 1 between convolutions of the spring 32, as shown for instance in Figure 3.

As shown in Figure 1, in dotted lines, by mounting the elbow 5 on the cowl 9 in the manner specified the unit 1 may be swung from a substantially horizontal, out-of-the-way position, alongside the hood 34 into an upright position alongside the left corner of the body 10 proper whereby said unit is also located in an out-of-the-way position for use. Obviously, the unit 1 may be swung into different positions as desired.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly the invention, as described, is susceptible of modification without departing from the inventive concept and right is herein reserved to such modifications as fall within the scope of the subjoined claims.

What I claim is:

1. The combination with the body of an automobile, of an aerial including a rod-like unit, means to mount said unit on one side wall of said body for swinging movement into and from upstanding position comprising an elbow fast on

one end of said unit, a bearing sleeve mounted in said wall for rotation and endwise slidable therein in opposite directions, respectively, a tubular axis member fixed at one end in said elbow and extending through said sleeve into said body, said member and sleeve being relatively rotatable and slidable, spring means on said member urging said sleeve endwise in one direction, a friction clutch between said sleeve and said elbow engaged under movement of said sleeve in said one direction and disengaged under movement of said sleeve in the opposite direction, a hand lever fast on said member for rotating the same, a hand grip on said lever swingably mounted thereon, and an operating connection between said grip and sleeve for moving the latter in said opposite direction.

2. The combination with the body of an automobile, of an aerial including a rod-like unit, means to mount said unit on one side wall of said body for swinging movement into and from upstanding position comprising an elbow fast on one end of said unit, a bearing sleeve mounted in said wall for rotation and endwise slidable therein in opposite directions, respectively, a tubular axis member fixed at one end in said elbow and extending through said sleeve into said body, said member and sleeve being relatively rotatable and slidable, spring means on said member urging said sleeve endwise in one direction, a friction clutch between said sleeve and said elbow engaged under movement of said sleeve in said one direction and disengaged under movement of said sleeve in the opposite direction, a hand lever fast on said member for rotating the same, a hand grip on said lever swingably mounted thereon, and an operating connection between said grip and sleeve for moving the latter in said opposite direction, and a flexible lead-in extending from said unit through said elbow and member into said body for connection to a receiving set.

3. The combination with the body of an automobile, of an aerial including a rod-like unit, means to mount said unit on one side wall of said body for swinging movement into and from upstanding position comprising an elbow fast on one end of said unit, a bearing sleeve mounted in said wall for rotation and endwise slidable therein in opposite directions, respectively, a tubular axis member fixed at one end in said elbow and extending through said sleeve into said body, said member and sleeve being relatively rotatable and slidable, spring means on said member urging said sleeve endwise in one direction, a friction clutch between said sleeve and said elbow engaged under movement of said sleeve in said one direction and disengaged under movement of said sleeve in the opposite direction, a hand lever fast on said member for rotating the same, a hand grip on said lever swingably mounted thereon, and an operating connection between said grip and sleeve for moving the latter in said opposite direction, comprising a yoke having a part straddling said sleeve.

4. The combination with the body of an automobile, of an aerial including a rod-like unit, means to mount said unit on one side wall of said body for swinging movement into and from upstanding position comprising an elbow fast on one end of said unit, a bearing sleeve mounted in said wall for rotation and endwise slideable thereon in opposite directions, respectively, a tubular axis member fixed at one end in said elbow and extending through said sleeve into said body, said member and sleeve being relatively

rotatable and slidable, spring means on said member urging said sleeve endwise in one direction, a friction clutch between said sleeve and said elbow engaged under movement of said sleeve in said one direction and disengaged under movement of said sleeve in the opposite direction, a hand lever fast on said member for rotating the same, a hand grip on said lever swingably mounted thereon, and an operating connection between said grip and sleeve for moving the latter in said opposite direction, comprising a yoke having a part straddling said sleeve, said part under movement of the sleeve in said one direction engaging said wall and forming together therewith a second friction clutch disengaged under movement of said sleeve in said opposite direction.

5. The combination with the body of an automobile, of an aerial including a rod-like unit, means to mount said unit on one side wall of said body for swinging movement into and from upstanding position comprising an elbow fast on

one end of said unit, a bearing sleeve mounted in said wall for rotation and endwise slidable therein in opposite directions, respectively, a tubular axis member fixed at one end in said elbow and extending through said sleeve into said body, said member and sleeve being relatively rotatable and slidable, spring means on said member urging said sleeve endwise in one direction, a friction clutch between said sleeve and said elbow engaged under movement of said sleeve in said one direction and disengaged under movement of said sleeve in the opposite direction, a hand lever fast on said member for rotating the same, a hand grip on said lever swingably mounted thereon, an operating connection between said grip and sleeve for moving the latter in said opposite direction, and a friction grip member on said wall for engaging said unit to restrain the same against vibration when swung from upstanding position.

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