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ADJUSTABLE ANTENNA MOUNTING

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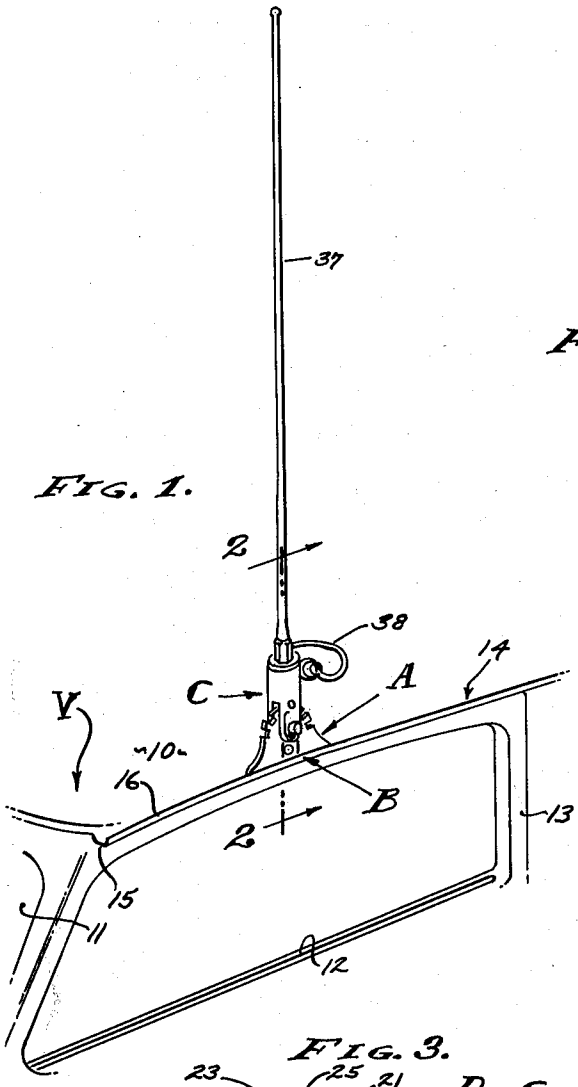


FIG. 1.

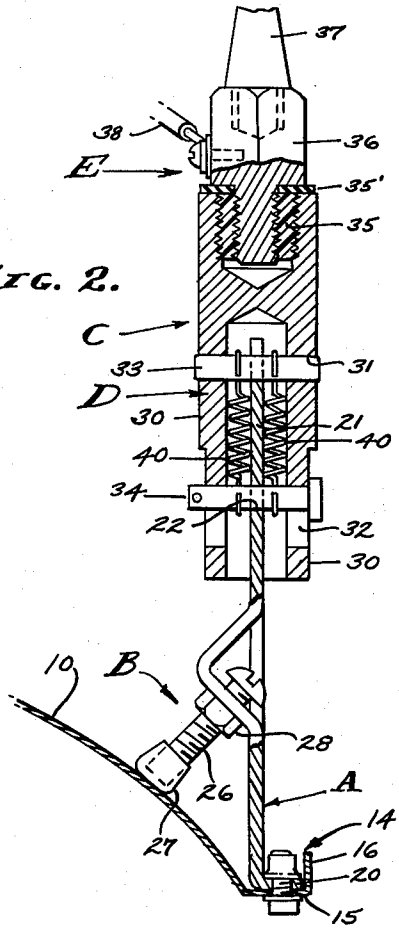


FIG. 2.

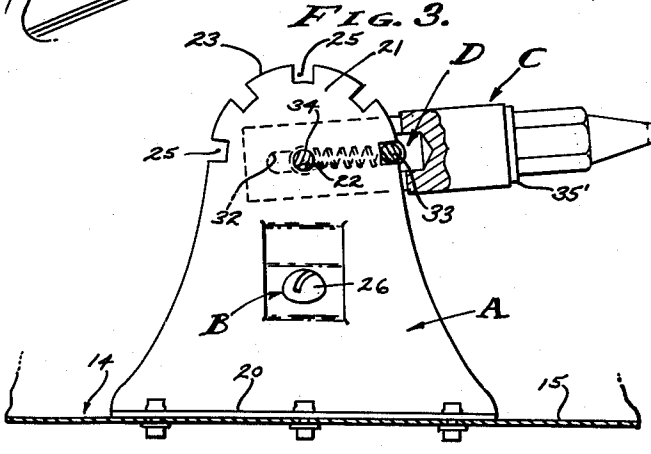


FIG. 3.

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ADJUSTABLE ANTENNA MOUNTING

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This invention relates to an adjustable antenna mounting and is particularly concerned with a mounting that is manually operable to set an antenna in a predetermined fixed position.

Automobiles and the like are often equipped with citizen radio equipment requiring whip antennas ranging from 28" to 109", approximately, in length. It is most advantageous to mount such an antenna so that it projects upward from the highest point of the vehicle, and in this regard the vehicle roof is most often used as a base or foundation support. However, such a roof installation, as do most others, requires that the antenna be lowered in order to pass beneath obstacles, such as in parking the vehicle in a garage through a low overhanging door. In any case, various devices have been resorted to for the purpose of lowering and raising an antenna, but these devices are either complicated and costly, or they are relatively simple and correspondingly not so effective. For example, antennas are often swively mounted and held positioned by cam or detent means, the deficiency being apparent when high wind forces are encountered and the antenna uncontrollably swings downward.

An object of this invention is to provide an antenna mounting that is manually operable to fix the antenna in any one of a plurality of predetermined positions.

Another object of this invention is to provide a mounting for an antenna that is adjustable between a plurality of positively spaced fixed positions.

It is still another object of this invention to provide a mounting of the character referred to that can be placed in a working position where the driver of a vehicle can operate the same without leaving his driving position and without stopping the vehicle, and without opening the door thereof.

With the mounting hereinafter disclosed the antenna is positively locked in selective predetermined positions, all as circumstances require, without resort to tools, and with the least amount of inconvenience. Only the window of the vehicle need be lowered in order to reach and manipulate the mounting.

The various objects and features of this invention will be fully understood from the following detailed description of the typical preferred form and application thereof, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is a perspective view of the antenna mounting, showing the antenna whip adjusted to a positive erect position.

FIG. 2 is a sectional view taken as indicated by line 2—2 on FIG. 1.

FIG. 3 is a side elevation of the structure shown in FIGS. 1 and 2, showing the mounting and whip antenna in a lowered fixed position.

The adjustable antenna mounting, as it is shown throughout the drawings, involves generally, a mounting plate A, a brace means B, a shiftable body C, lock means D, and antenna coupling means E. The elements A through E are all incorporated in a single rugged and rather light weight unit that can be manually operated with facility.

The mounting plate A is a flat part, of metal such as steel, disposed in a vertical plane, and in the case illustrated it is specially formed in order to mount at the gutter of a vehicle roof. As shown, the vehicle V has a roof 10 with a front window 11 and a side window 12 in a door 13.

It is common practice in such vehicle tops to provide a horizontal gutter 14 at or over the door 13, said gutter 14 being a narrow and upwardly opening channel usually formed integrally with the edge or marginal portion of said roof 10. Such a channel-shaped gutter is ordinarily 3/8" to 1/2" in width, having a flat bottom 15 and a straight upstanding outside rail 16. The roof per se usually crowns upwardly and inwardly from the inside of the channel.

The plate A is adapted to be disposed in a plane extending fore and aft of the vehicle V, and to be carried by or in the channel-shaped gutter 14. For this purpose the plate A has a foot 20 co-extensive with the longitudinal extent of the plate and shaped to occupy the bottom 15 of said gutter, in flat engagement with said bottom. The foot 20 is bent or turned from the material forming the plate A, at 90°, and it is fastened to the gutter by means of spaced screw fasteners, as shown.

The plate A projects substantially above the gutter 14, being characterized by a semi-circular head portion 21. The head portion 21 has a center opening 22 extending through the plate, and it has a concentrically curved periphery 23 extending about 180°. The periphery 23 is notched at a top dead-center position, and at opposite 45° positions (approximately), and at opposite 85° positions (approximately), there being five radially indented notches 25, as shown.

The brace means B is provided to prevent laterally inward sway of the plate A. As is shown, the means B is composed of commercially available fastener elements, arranged to oppose the crowned top or roof 10 of the vehicle. A stud 26 is threaded angularly, at about 45°, into the center of the plate A, just below the opening 22. A cushioning tip 27 covers the active end of the stud that presses against the roof 10, while a pair of nuts 28 adjustably position the said stud. The plate A is initially dimpled and punched, as is shown, to position and adjustably pass the stud. The plate can be formed to lean slightly inward toward the vehicle V, so that a little pressure exerted by the brace B erects the plate.

The shiftable body C is adapted to be swivelly carried on the plate A to swing about the opening 22 as positively controlled by the notches 25. In the preferred form, the body C is a cylindrical bar of material, of metal such as aluminum, bifurcated so as to have spaced depending legs 30 to slidably straddle the head portion of the plate. Spaced transverse openings 31 and 32 extend through the legs, opening 31, extending through the upper portions of the legs in order to register with the notches 25, and opening 32 extending through the lower portions of the legs in order to register with the opening 22 in the plate. In practice, the opening 31 is a round bore to receive a pin 33 pressed therein, while opening 32 is a slotted opening enlarged longitudinally of the body C in order to slidably pass a pivot pin 34. When the body is depressed the pin 34 occupies the upper end of opening 32 (a normal position), while the pin 33 is seated in a notch 25. However, when the body is shifted radially (outward) the pin 34 occupies the lower end of opening 32, while the pin 33 is removed from any one of the notches 25. Thus, the body C is shiftable relative to the plate A to move radially and to swing circumferentially upon deliberate manipulation.

In accordance with the invention the lock means D is provided in order to selectively and adjustably set the body C in predetermined fixed positions. The means D is a bias means that yieldingly urges the body C radially inward, in order to seat the pin 33 in any one of the selected notches 25. As shown, the body C is bored to an inside diameter substantially exceeding the thickness of plate A, whereby a pair of chambers extend between the pins 33 and 34 at opposite sides of the plate. A pair

of tension springs **40** extend between the pins **33** and **34**, occupying said two chambers respectively, to the end that the body is always urged toward a central and locked position, where a notch **25** is occupied by the pin **33**.

The antenna coupling means E involves formation of the radially uppermost end of the body C which is bored and threaded to receive an internally and externally threaded insulating sleeve **35** preferably of dielectric material such as nylon. This sleeve receives a fitting **36** threaded onto the base end of the whip **37**, there being a flexible loading connection **38** extending from the fitting and fastened thereto by a screw, as shown. There is an insulating washer **35'** between the fitting **36** and uppermost end of the body C, preferably a dielectric plastic material of rubber-like quality, for example neoprene.

From the foregoing it will be apparent that I have provided a very practical arrangement of parts. The plate A can be of sufficient length so as to space the mounting fasteners for ample strength. The body C is round and smooth without injurious projections. The lock means comprises spaced pins that are cooperatively combined with the body C to prevent shifting of the body, and to lock the body in a selected notch **25**. Also, the body C, in the lock means D, houses the pins and also the biasing elements. As a result, the body C forms a simple handle shaped post that is conveniently engaged for manual adjustments as circumstances require.

Having described only a typical preferred form and application of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any modifications or variations that may appear to those skilled in the art and fall within the scope of the following claim.

Having described my invention, I claim:

An adjustable mounting for antennas or the like including:

(a) a flat vertically disposed plate with a semi-circular head portion with circumferentially spaced notches,

(b) a shiftable body for carrying said antenna and bifurcated to engage over the head portion of the plate and with a pin at the center of the head portion to form a pivot that permits the body to swing, said body being slotted so as to shift radially on said pin, and with a second pin placed radially from the first mentioned pin so as to engage in and disengage from the said notches upon radial shifting of the body, there being a bore in the body extending between said pins,

(c) and bias means comprising a pair of springs housed in the said bore and at opposite sides of the plate and engaged between the two pins to urge the body radially inward to engage the second mentioned pin in a selected notch,

(d) whereby the body carrying said antenna can be selectively positioned relative to the plate.

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