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(54) Vehicle antenna anchoring device

(57) The vehicle antenna anchoring device comprises a pair of bodies (1,2) that rapidly connect to each other. One of the bodies remains fastened to the automobile and has means for mechanical anchoring of the other body (2) and means for connecting the antenna coil shaft.

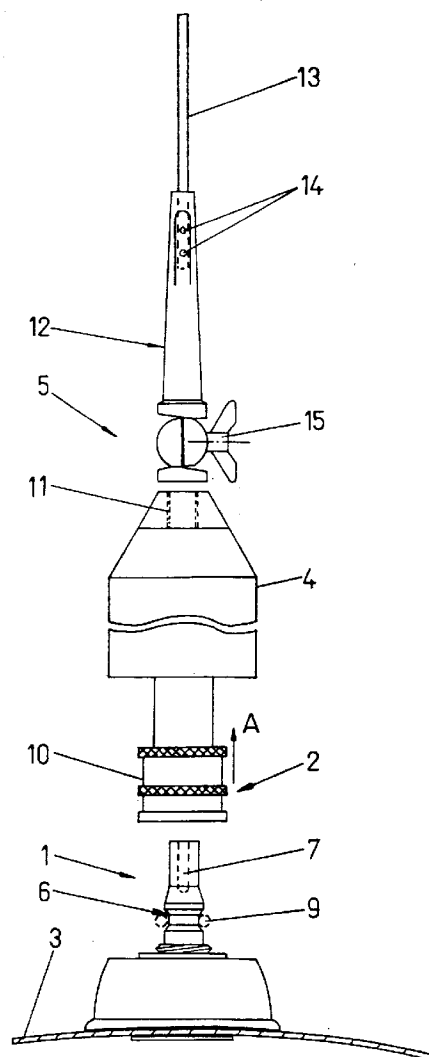


FIG.1

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Description

OBJECT OF THE INVENTION

As expressed in the title of the present specification, the following patent consists of a vehicle antenna anchoring device, which is preferably useful for the anchoring and release of the antenna for 27 MHz transmitters to the support integral to the vehicle, in such a way that the rapid anchoring allows the anchoring and release of the antenna simply and rapidly without producing any wear in the anchoring device itself.

In short, it is a question of obtaining a quick actuating anchoring and releasing device of the antenna to the vehicle, facilitating for the user the carrying out of said operations and besides the device does not undergo any wear.

BACKGROUND OF THE INVENTION

practically all automobiles have a radio apparatus with its corresponding antenna installation that may be of different types and that may likewise be placed in different places of the vehicle body.

Thus, between the antennas used for automobile radio apparatus, we can cite telescopic antennas that can be easily drawn in and extended in such a way that when the user is using the vehicle the antenna is extended for the correct operation of the radio apparatus, while if the user is not using the vehicle, the antenna will be drawn in.

In this way, the user leaves the antenna drawn in when the vehicle is not being used so that the same is not destroyed, since practically all drivers have had the unpleasant surprise of finding the antenna bent and practically unserviceable when they are about to get into their vehicle.

At any rate, despite the fact that the antenna is telescopic and that the user can leave it drawn in, it can always happen that a disregardful person may extend the antenna himself and destroy it.

Another type of automobile antenna is manufactured in such a way that the same can be disassembled so that the user can dismount it and guard the antenna inside the vehicle when he parks the vehicle, in order to prevent the antenna from being stolen.

Hence, the antenna is formed by a body integral to the vehicle that is connected to the antenna pre-installation that the vehicle itself has, while a hollow threaded stud with the corresponding center insulation which has the connector to which the coil shaft will be connected that is in the coil body, extends outside.

In this way, the coil body at whose connecting base there is a coil shaft that is fastened to the connection element of the fixed body to connect the inside antenna is fastened to the body integral to the vehicle by threading. Said coil body has at its opposite base a threaded stud which the rod body is fastened to.

The rod body has at its free rod placement end a pair of bolts to regulate the position of the same to avoid stationary waves.

Besides, the rod body can be formed by a pair of pieces in such a way that they can rotate with each other, making it possible to position the antenna rod from its vertical position to a horizontal position.

With this shape the user can disassemble the antenna either by means of the rod body or by means of the coil body, the latter being the most practical solution, since in this way only the body remains fastened to the vehicle, while if the rod body is removed the coil body which may be stolen, remains.

This embodiment has the serious inconvenience that aside from using quite a large amount of time in said assembly and disassembly operations, upon being carried out rather frequently, the thread body eventually deteriorates and produces interference. Thus, it must be replaced in order to obtain correct operation with the expense that this involves.

Logically, all that which has been indicated referring to radio antennas, is also applicable to transmitters, which as everyone knows, are used more and more in vehicles, mainly in certain service sectors such as taxis.

DESCRIPTION OF THE INVENTION

The present specification describes a vehicle antenna anchoring device, which comprises a pair of bodies that are anchored together in such a way that one of them is integral to the automobile, and the other one is integral to the coil body.

For this purpose, the body that is integral to the automobile at its outside part, defines the anchoring means of the body of the coil, as well as the connection means of the coil shaft with the contact body to the antenna installation of the vehicle protected by the corresponding insulation.

Thus, the body integral to the vehicle has a generally cylindrical shape, with a perimetric recess in its side surface and in relation to its free base, it has the isolated connection body of the coil shaft, in the center axial position.

On the other hand, the integral anchoring body of the coil body is formed by a quick connection means, formed by an inside ring, provided with a series of holes in which the corresponding balls fit, and in relation to which an outside ring remains. The ring, urged by a spring, acts on said balls pushing them and fastening them towards the inside part of the ring, while upon actuating on the outside ring, overcoming the force of the spring that actuates on it, the balls are partially released allowing the drawing in thereof, in connection to the inside side surface of the ring in which they remain situated. In this way, in order to assemble and disassemble the coil body along with the rod body connected to it, it will suffice to actuate on the anchoring means pushing the outside ring until the force of the spring that impels

it is overcome and the balls are left partially free to allow the assembly and disassembly thereof.

Thus, during assembly the balls can be positioned with regard to the perimetric recess of the side surface of the body integral to the vehicle, in such a way that when the outside ring returns to its original position, it actuates on said balls, fastening them and materializing the anchoring of both bodies while for the disassembly thereof the reverse operations will be carried out.

In order to complete the description that is going to be made hereinafter and for the purpose of providing a better understanding of its features, the present specification is accompanied by a set of drawings, in whose figures, the most significant details of the invention, described in the present specification, are represented in an illustrative and non-restrictive manner.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a raised view of the vehicle antenna, wherein the device for anchoring the same to the fixed body to the automobile is seen.

Figure 2 is a detailed view according to a raised view of the operating means of the outside ring on the balls that materialize the connection of both bodies.

Figure 3 is a raised view of the vehicle antenna, to which the anchoring device has been fitted, between the coil body and the rod body.

DESCRIPTION OF A PREFERRED EMBODIMENT

In view of the figures commented on and according to the numbering used, we can see how the vehicle antenna anchoring device comprises quick connection means and it is formed by a pair of bodies (1) and (2), the body (1) remaining integral to the automobile body (3), and the body (2) remaining integral to the body (4) of the antenna (5) coil.

The body (1) has a general cylindrical shape, and in its side surface it has a recess (6) while in relation to its free base it has a connection element (7) of the shaft of the coil, housed in the body (4), in such a way that said element (7) is connected to the antenna installation of the automobile itself, and it is likewise perfectly insulated.

On the other hand, the body (2) that forms the antenna (5) anchoring device in combination with the body (1), remains integral to the coil body (4), which can form a unitary assembly integral to the rod body (12), in such a way that the rapid connection body (2) is formed by a ring-shaped inside body (8), that has a series of holes in which the corresponding balls or spheres (9) fit upon which an outside ring (10) actuates pushing them and fastening them towards the inside of said ring.

In this way, in the inoperative position the outside ring (10) of the body (2) remains pushed by a spring actuating on the balls (9), in such a way that to unblock said balls the inside ring (10) must be pushed overcom-

ing the force of the spring that actuates on it, so that the balls are partially released and drawn back toward the outside upon actuating on them in relation to the inside part of the ring (8) wherein they are situated.

The materialization of the connection of bodies (1) and (2) will be done upon the balls (9) remaining in relation to the recess (6) of body (1) and upon the ring (10) actuating on the balls (9) carrying out the fastening thereof in such a way that if one does not actuate said ring (10) the body (2) will not be able to be moved and of course, removed from the body (1).

Thus, if we concentrate on figure 1 in order to carry out the assembly of the antenna (5) one must actuate the ring (10) pushing it upward (arrow A) the balls (9) remaining partially free in their slight movement towards the outside, letting the body (8) go by body (1) until the balls (9) are positioned in relation to the recess (6) at which time, upon releasing ring (10), it will descend pushing and fastening the balls (9) against the recess (6) materializing the rapid and simple fastening of the assembly of the antenna.

For the disassembly of the antenna it will suffice to act in the reverse fashion, since once the outside ring (10) has been removed, overcoming the force of the spring that actuates on it, the balls (9) remain partially free allowing the release of the body (2) with regard to body (1).

This rapid and simple way of assembling and disassembling the antenna (5), facilitates said operations, at the same time that the anchoring mechanism does not undergo any wear at all, as it happens in threaded connections, wherein the threads end up deteriorating due to simple wear and tear.

Rod body (12) can have a conventional bracket (15), that allows it to turn in order to position the rod (13) either in a horizontal or vertical position, and besides said body (12) has the corresponding bolts (14) to regulate the position of the rod (13) to avoid stationary waves.

Likewise, we can see how in a commercial embodiment, the coil body (4) ends at the top in a threaded stud (11), to which the rod body (12) is connected by threading, it being possible to disassemble only that body, as it has been indicated above, with the inconveniences that this represents.

Upon using the described anchoring device, the coil body (4) and the rod body (12) can form a unitary assembly to carry out the assembly and disassembly thereof by means of bodies (1) and (2).

On the other hand, the described device can be easily adapted to antennas already existing on the market. In this case it is more feasible to adapt the same between the coil body and the rod body, for which purpose it will suffice to screw on the stud (11) of the coil body (4) a body similar to body (1), but without having to have element (7) for connection to the coil shaft, while a body similar to body (2) can be connected by threading to rod body (12) for mutual quick anchoring.

The described anchoring device is preferably useful for 27 MHz transmitter antennas, though the same can also be adapted to any type of vehicle antenna.

Likewise, the fastening balls (9) can be replaced by a pair of small cylinders, positioned parallel in respective recesses of the side surface of the inside ring, having the same anchoring means as the one described.

The described device is likewise adaptable to rotating or mobile antennas, which are provided with a series of radial elements, that having the same actuation and purpose are mobile in order to capture the signal better, though they have the inconvenience that upon moving them with the rotation of the same the cable bends over itself, something that does not happen in the described device.

If the balls (9) are replaced by a pair of small cylinders, the materialization of the connection of bodies (1) and (2) is done in the same way as described, since said pair of small cylinders will be located in respective slanted recesses, of the side surface of the ring-shaped body (8), in such a way that upon both recesses being made in the slanted position the cylinders urged by a spring can be moved upward (7) and downward in such a way that in the highest position they will extend beyond the inside surface of the ring-shaped ring (8) (just as the balls (9) are shown in figure 2), positioning themselves over the recess (6) (just as the balls (9) are seen in figure 1), thus materializing the connection.

ing said action, the balls (9) remain partially free.

4. Vehicle antenna anchoring device, according to claim 1, characterized in that in the anchoring of body (1) and (2) the balls (9) remain situated in relation to the recess (6) pressed by the outside ring-shaped body (10).
5. Vehicle antenna anchoring device, according to claim 1, characterized in that the anchoring device is capable of adapting to conventional antennas (5), in such a way that the body (1) is fastened by threading to the stud (11) of coil body (4) and body (2) is likewise coupled by threading to the rod body (12) for subsequent connection to each other.
6. Vehicle antenna anchoring device, according to claim 1, characterized in that the means for mechanical anchoring of body (2) to body (1) are formed by a pair of small cylinders, positioned in the inside ring (8), parallel, in corresponding slanted recesses of the side surface of the cited cylinder (8) in which they are housed.

Claims

1. Vehicle antenna anchoring device, it being useful with all automobile radio antennas, and preferably being used for 27 MHz transmitter radio antennas that have a coil body and a rod body that being coupled together are connected to the fixed body of the automobile by threading, characterized in that the anchoring device comprises a pair of bodies (1) and (2) that rapidly connect together, and the body (1) fastened to the automobile has means for mechanical anchoring of the body (2) and means for connection of the coil shaft.
2. Vehicle antenna anchoring device, according to claim 1, characterized in that the body (1) integral to the automobile has a generally cylindrical shape and in its outside side surface it has a recess (6) and in relation to its free base it has the connection element (7) of the shaft of the coil duly insulated.
3. Vehicle antenna anchoring device, according to claim 1, characterized in that the body (2) integral to the coil body (4) is comprised by a ring-shaped body (8), provided with some holes in which corresponding balls (9) actuated by an outside ring-shaped body (10) fit, the body being urged by the action of a spring, in such a way that upon overcoming said action, the balls (9) remain partially free.

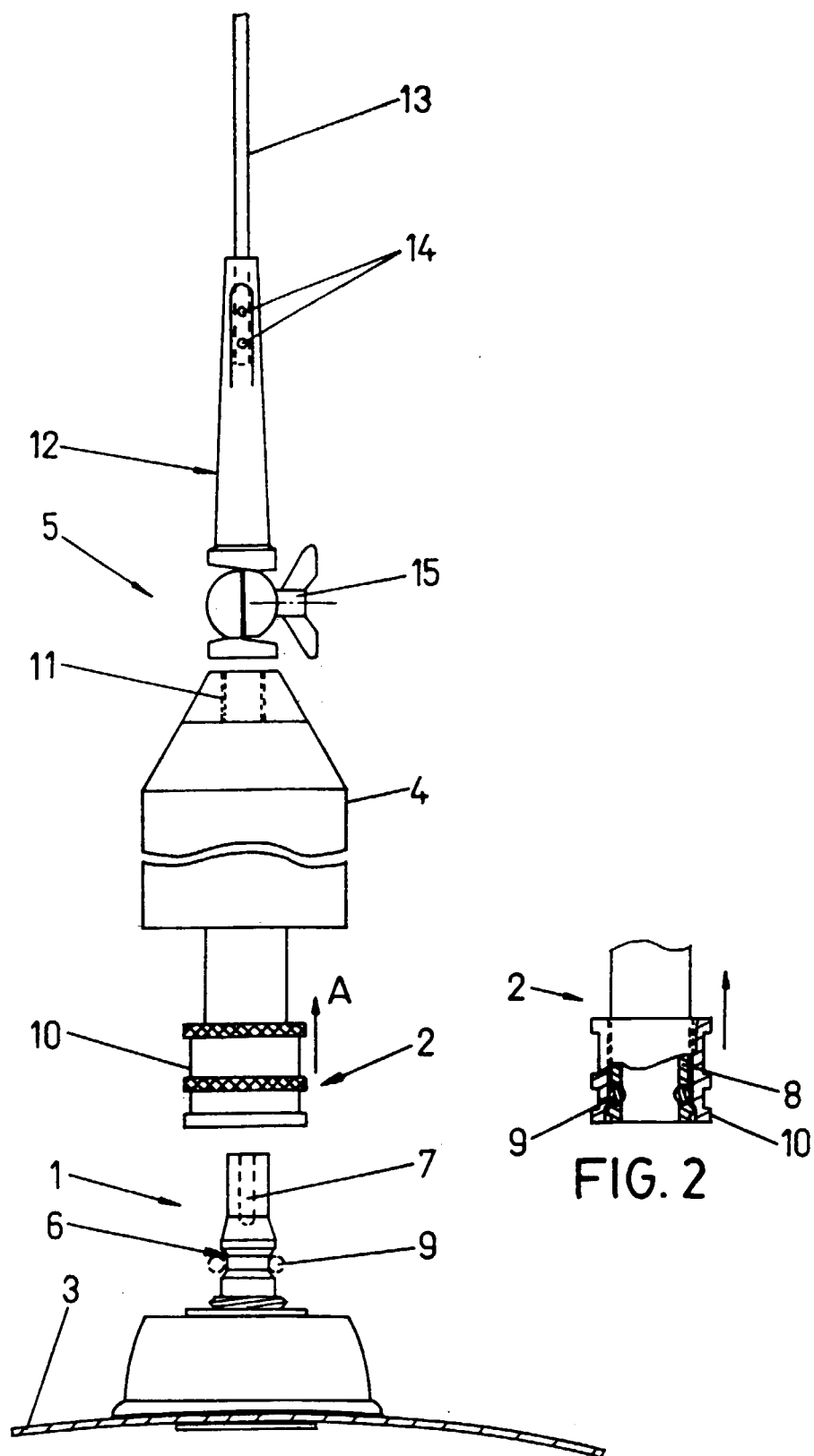


FIG. 1

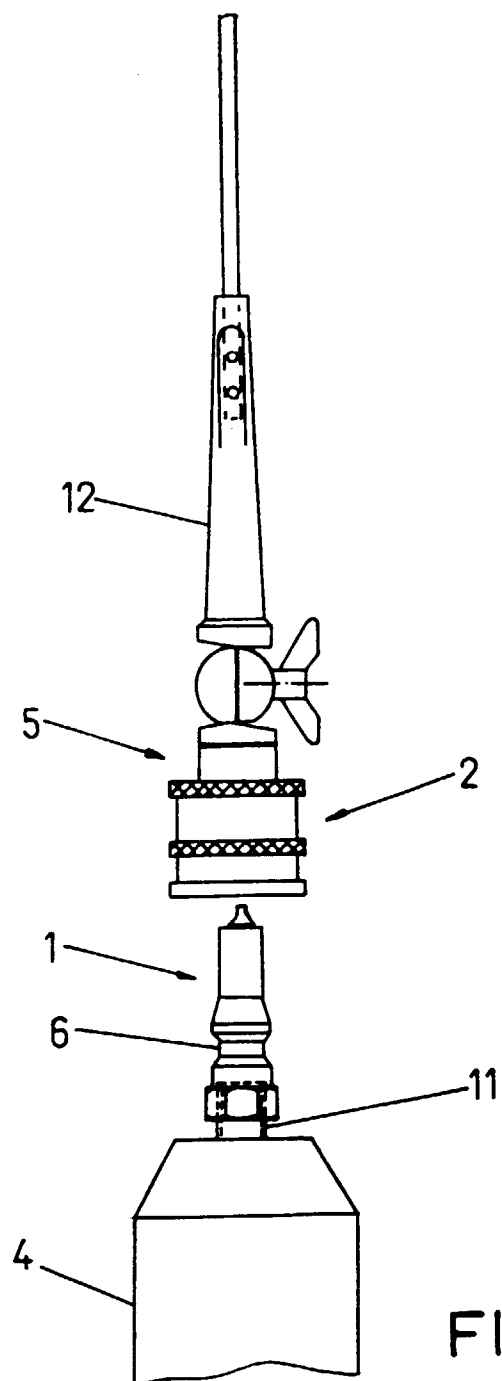


FIG. 3