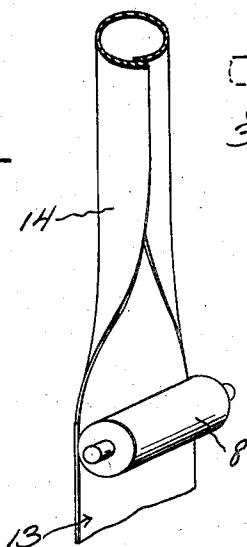
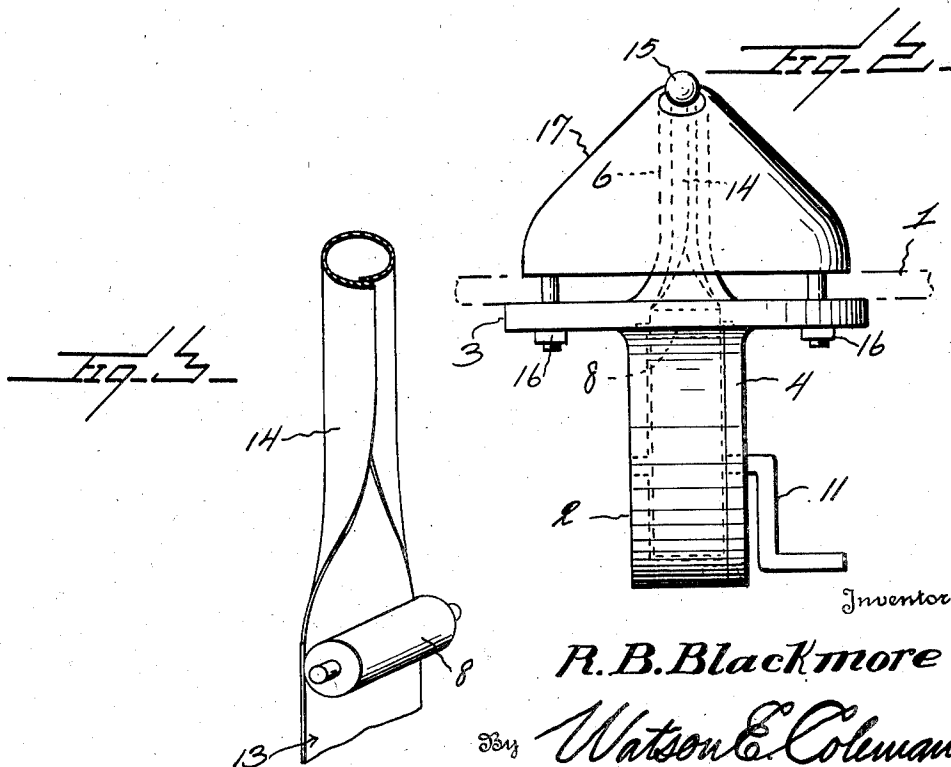
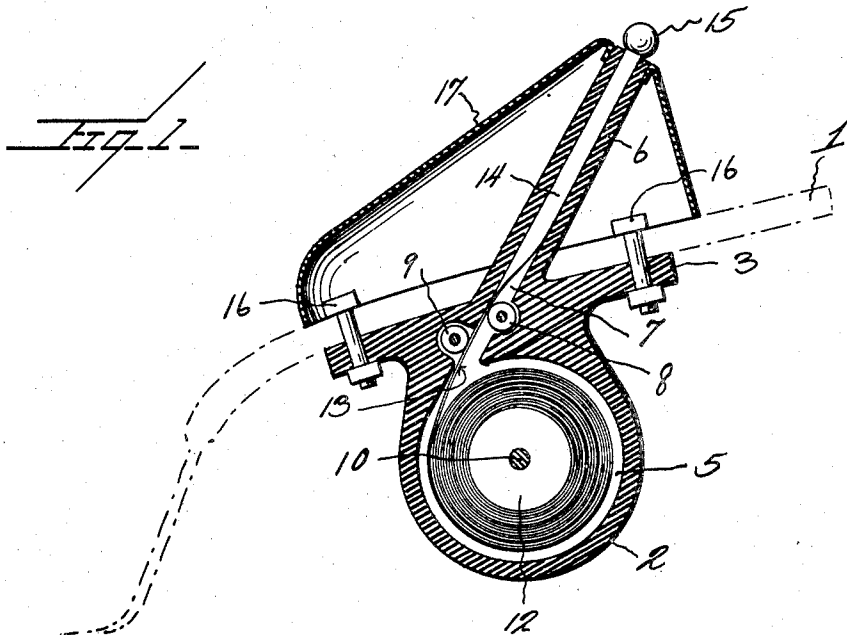


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AUTOMOBILE RADIO AERIAL
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AUTOMOBILE RADIO AERIAL

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5 Claims. (Cl. 250—33)

This invention relates to improvements in radio aerials or antennae and pertains particularly to a novel and improved extensible antenna.

The primary object of the present invention is to provide an improved extensible antenna which is so designed that when extended, it will assume a form which will impart to it a rigidity which will enable the antenna to withstand shocks or strains, thus making it particularly suitable for use where it is exposed to high winds or used upon moving objects such as motor vehicles or the like, the device being particularly designed for application to a motor vehicle roof.

Another object of the invention is to provide an improved wind-up radio antenna in the form of a strip of resilient metal, such as steel or the like, which is so formed that as it is unwound from a carrying drum and extended through a guide into the air, it will assume a tubular form and thus become relatively rigid so that it will not become easily bent but will maintain its upright position to which it may have been extended.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not to be confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Fig. 1 is a view in vertical section through the device embodying the present invention, the same being shown applied to a motor vehicle roof or top.

Fig. 2 is a view in elevation of the device per se.

Fig. 3 is a view in perspective of a portion of the formed antenna, showing the manner in which it is flattened out for winding upon the supporting drum.

Referring now more particularly to the drawing, the numeral 1 generally designates a supporting structure to which the present device is secured, such structure representing the roof of a motor vehicle or any other similar structure through which the antenna is to be projected into the air.

In carrying out the present invention, there is provided a receptacle or casing 2 preferably formed of insulation material, which is formed integral with a plate 3 which is employed for

securing the receptacle to the supporting structure 1. The receptacle may be provided at one side with a removable wall 4 by which access may be had to the interior which is in the form of a flat circular chamber 5.

Formed integrally with the plate portion 3 is a sleeve or guide 6 which is disposed obliquely with respect to the plate 3 so that the passageway 7 through this sleeve enters the chamber 5 tangentially, as shown in Fig. 1.

Adjacent to the inner end of the passage 7 there are disposed transversely of the passage and at opposite sides thereof, the rollers 8 and 9. These rollers are set in suitable recesses in the body 2 and each has a portion exposed in the passage 7 for the purpose hereinafter described.

A shaft 10 extends axially through the chamber 5 and carries upon one end a crank 11 by means of which its rotation is effected and supported within the chamber 5 upon the shaft 10 is a drum 12 upon which the antenna is wound.

The antenna which is carried upon the drum 12 consists of a strip or ribbon of metal of suitable character, which ribbon is generally indicated by the numeral 13. One end of this ribbon is suitably attached to the drum 12, so that when the drum is wound in the proper direction, the ribbon will be wound up thereon, as shown in Fig. 1. This strip or ribbon of metal is initially formed so that it will naturally roll itself transversely when it is unwound from the drum, to form a tubular body or mast, such as is indicated at 14, and such transverse curling or rolling of the ribbon is permitted to take place after the ribbon has passed from the chamber 5 outwardly through the passage 7 past or beyond the spaced rollers 8 and 9.

When the ribbon 13 is wound up upon the drum as shown in Fig. 1, it will be drawn between the rollers 8 and 9 by which it will be flattened out, so that it may be conveniently wound up on the drum in the manner shown. However, a portion of the outer end of the ribbon is left permanently rolled into a tube, as shown in Fig. 1, and this outer end portion has secured thereto the ball or head piece 15 which serves the double function of preventing the entrance of dirt and moisture into the end of the tubular antenna and prevent the ribbon from being drawn entirely into the chamber 5.

In mounting the casing 2 upon the inner side of the top of a motor vehicle body or similar structure, the plate 3 is secured to the top by means of bolts 16 or in any other suitable manner, and it is preferred that the device be ar-

5 ranged so that the sleeve 6 will be directed upwardly and rearwardly with respect to the structure upon which it is mounted. Thus, if this structure is the top of a motor vehicle or the roof of a boat cabin or any other structure which has movement, the antenna when extended will be directed toward the rear so that the effect of air pressure thereon will not be as great as if the antenna were directed straight upwardly or forwardly.

10 In order that the securing elements 16 may be hidden and that the exterior or exposed portion of the device may present an attractive appearance, there is provided the conical hood 17 which is mounted upon the top of the structure 1 and is formed to enclose the projecting end of the sleeve 6, the hood being secured in any suitable manner to the upper end of this sleeve, as shown.

20 From the foregoing, it will be readily apparent that there has been provided an antenna structure which may be easily and quickly wound up or retracted in the form of a ribbon or band upon a suitable supporting drum, which antenna when in extended or operative position, assumes the form of a tubular mast whereby it attains a greater strength than it would have if extended into the air in the form of a band or ribbon and is thus prevented from swinging or swaying to any considerable extent.

I claim:

1. An extensive antenna of the character described, comprising a casing, a guide sleeve leading from the interior of the casing, a ribbon-like metal strip wound up within said casing and adapted to be extended therefrom through said guide passage, said ribbon-like strip having the inherent characteristic of naturally rolling transversely when straightened out as it is unwound to assume a tubular form, and means supporting the strip in the casing for extending and retracting the same through said guide.

2. An antenna of the character described, comprising a ribbon of metallic material having the inherent characteristic of rolling transversely to form a tube when it is straightened out, means for winding up said ribbon, and means for unrolling the ribbon from its tubular form to a substantially flat form to adapt it for winding up.

3. An extensible antenna of the character described, comprising a ribbon-like strip of metallic material suitable for use as an antenna, said strip having the inherent characteristic of rolling transversely when straightened out to assume a tubular form, a casing, a winding drum within the casing, a guide leading from within the casing through which said strip is extended to the exterior of the casing, and roller members disposed at opposite sides of said guide between which said strip passes as it is extended from the casing or retracted thereinto, said rollers operating to open the tube formed by the strip and flatten the strip preparatory to winding upon the drum.

4. An antenna of the character described, comprising a casing, a drum rotatably supported within the casing, means for rotating the drum, a guide sleeve forming a part of the casing and having a passage leading tangentially into the casing, a pair of guide rollers at opposite sides of said passage adjacent the end nearest the casing, and a strip of resilient metallic material adapted to be wound up in the casing upon said drum and to be extended from the casing through said guide sleeve between said rollers, said strip having an inherent tendency to roll transversely as it is unwound from the drum and extended from the sleeve to assume a tubular form.

5. An antenna of the character described, comprising a casing, a drum rotatably supported within the casing, means for rotating the drum, a guide sleeve forming a part of the casing and having a passage leading tangentially into the casing, a pair of guide rollers at opposite sides of said passage adjacent the end nearest the casing, a strip of resilient metallic material adapted to be wound up in the casing upon said drum and to be extended from the casing through said guide sleeve between said rollers, said strip having an inherent tendency to roll transversely as it is unwound from the drum and extended from the sleeve to assume a tubular form, the said strip having a portion of its outer end permanently in the form of a tube, and a cap member secured to the tubular end and engageable with the outer end of the sleeve to prevent the said tubular end of the strip from being drawn through the sleeve between said rollers.

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