July 22, 1952 C. A. TROWBRIDGE 2,604,593

PORTABLE ANTENNA CONSTRUCTION

Filed April 28, 1949

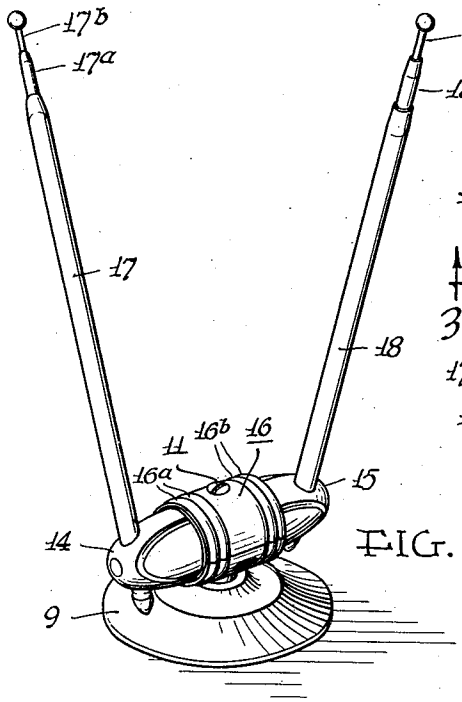


FIG. 1.

FIG. 2.

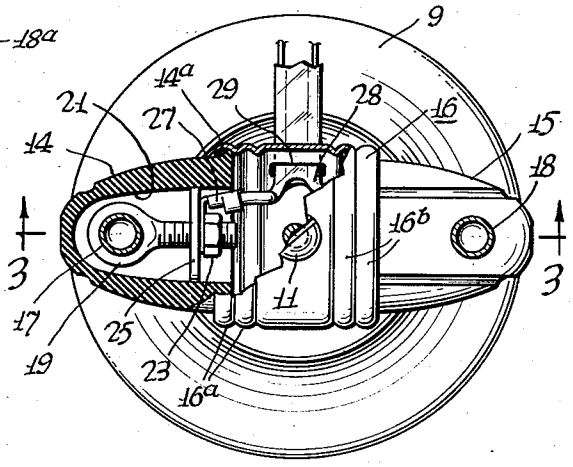
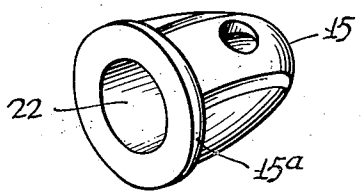


FIG. 5.



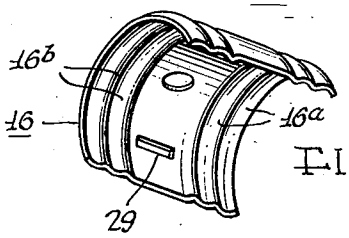


FIG. 6.

FIG. 3.

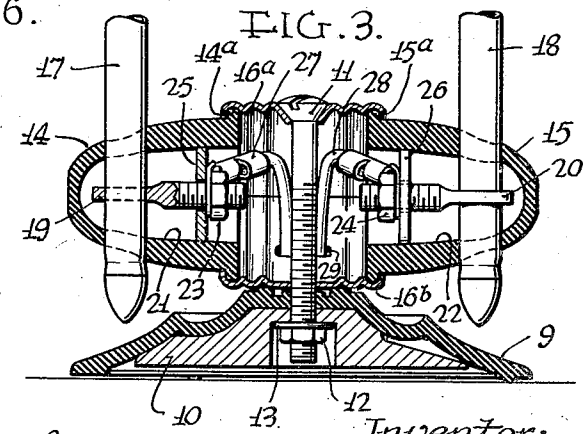
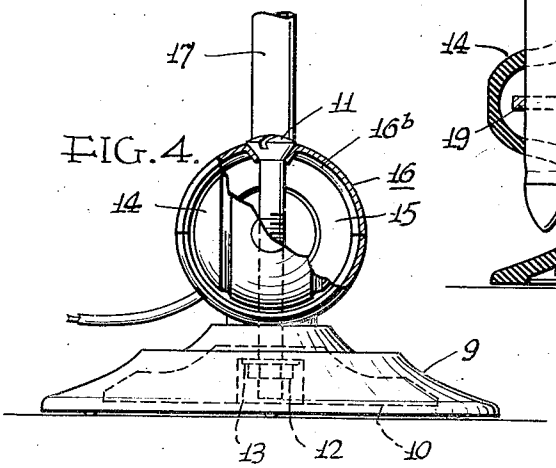


FIG. 4.



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PORTABLE ANTENNA CONSTRUCTION

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4 Claims. (Cl. 250—33)

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This invention relates to portable antennas for television and radio receiving apparatus.

Portable television antenna units of the type referred to herein must be adjusted in a plurality of planes in order to obtain proper reception on any particular channel and in order to change from one channel to another. Specifically, it is necessary to rotate the antenna arms in vertical planes so that both arms of he antenna have the proper angle with respect to each other, as well as with respect to the horizontal. The arms themselves are telescopically extensible so that their length may be varied in accordance with the angular position of the arms and the channel which is being received. In the case of a portable antenna assembly, it is also important that the arms be rotatable in a horizontal plane as well as a vertical plane so that the device should be light in weight, yet have sufficient stability to maintain the antenna assembly in a stable position. The present antenna assembly fulfills the above requirements and is in addition rugged and inexpensive.

A primary object therefore, of the invention, is to provide a multi-adjustable, lightweight radio antenna which is both rugged and portable.

A further object is to provide an improved base and hub construction for a portable television antenna, in which the antenna arms may be quickly adjusted to any desired position and positively retained therein merely by a fixed frictional mounting.

A further object of the invention is to provide a television antenna having a pair of hubs adapted to carry two antenna arms, and a split mounting collar for the hubs so that the hubs may be rotated in the collar under predetermined friction.

A still further object of the invention is to provide an improved means for retaining the antenna arms in an antenna assembly of the character described, and to provide a suitable electrical connection for the arms.

Further objects will be apparent from the specification and drawings in which:

Fig. 1 is a perspective showing a portable television antenna constructed in accordance with the invention;

Fig. 2 is an enlarged plan, partly sectioned, of the structure of Fig. 1;

Fig. 3 is a vertical section as seen at 3—3 of Fig. 2;

Fig. 4 is an end elevation of the structure of Fig. 2;

Fig. 5 is a perspective of one of the arm supporting hubs; and

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Fig. 6 is a perspective of one of the mounting collars for the hubs.

My antenna assembly comprises a hollow base 9 having a weight 10 clamped inside the base by means of machine screw 11, nut 12, and spring washer 13. A pair of hubs 14 and 15 are supported on base 9 by means of a split clamping collar 16 having an upper section 16*a* and a lower section 16*b*. Screw 11 extends diametrically through sections 16*a* and 16*b* as shown in Fig. 3. The inner ends of hubs 14 and 15 have radially extending flanges 14*a* and 15*a* which are retained in an annular rolled groove on collar sections 16*a* and 16*b* so that hubs 14 and 15 are rotatable in collar 16 about a horizontal axis. The frictional engagement between the collar and the hubs is adjusted by means of nut 12 to such a degree that the hubs can be readily rotated in the collar but retained in any desired radial position with respect thereto without further manipulation.

The outer portions of hubs 14 and 15 carry antenna arms 17 and 18 which may be of conventional construction and which are provided with telescoping sections 17*a*, 17*b*, and 18*a*, 18*b* respectively. The arms 17 and 18 are retained in hubs 14 and 15 by means of screw eyes 19 and 20 which also serve as the electrical connections to the arms. Hubs 14 and 15 are made of electrically non-conductive material and have substantially tapering bores 21 and 22. With the arms 17 and 18 inserted through screw eyes 19 and 20, they are held securely in place by tightening nuts 23 and 24 against washers 25 and 26 which jam in the bores 21 and 22 of the hubs. The electrical connection to each arm 17 and 18 is made through leads 27 and 28, securely clamped between nuts 23 and 24 and washers 25 and 26. Leads 27 and 28 are carried through a slot 29 in lower collar 16*b* from whence they are attached to the receiving instrument. For the sake of appearance, upper collar 16*a* is countersunk to accommodate the oval head of screw 11.

The large base of hubs 14 and 15 and the ample clearance inside collar 16 permit rotation of hubs 14 and 15 through an arc of 180° without danger of chafing the electrical connections to the arms.

It will thus be apparent that I have provided an extremely simple mounting for a portable television antenna which enables the antenna arms to be turned in any desired relative position and retained in that position. The electrical connections to the arms are foolproof and so designed to insure proper connection over long

periods of use. The entire assembly, including the electrical terminals, is held together by only three nuts which require no adjustment in operation.

Having thus described my invention, I claim:

1. A radio antenna assembly comprising a base member, a split collar rigidly attached to and supported on said base member, a hub frictionally and rotatably clamped in each end of said collar, an antenna arm rigidly mounted in each of said hubs, and means for clamping the collar and hubs to the base member to provide predetermined clamping tension between the collar and the hubs.

2. A portable antenna assembly comprising a base member, a split collar rigidly attached to and supported on said base member having a pair of annular grooves at each end thereof, a pair of hollow hub members partially enclosed by said collar, an annular flange around the inner terminus of each hub member, said flanges positioned to have rotatable frictional movement in the grooves, and clamping means extending diametrically through the collar to the base member, whereby the collar and both hubs are secured to the base.

3. A portable antenna assembly comprising a base member, a pair of hollow hub members supported on said base member walls defining a bore in each hub member, an annular flange around the inner terminus of each of said hub members, a split collar having a pair of annular grooves to clear said annular flanges, clamping means extending diametrically through said collar to the base, whereby the collar and both hubs are retained on the base, an antenna arm mounted in each of said hub members, a screw eye in the bore of the hub members through which the arms are inserted, a washer positioned to seat in the bore of each hub member and through which the screw eye extends, an electrical lead connected to each screw eye, and a nut on each screw eye to clamp each arm in its associated hub and to clamp the electrical connection to the washer.

4. A portable antenna assembly comprising a base member, a pair of hub members having tapered bores supported on said base member, an annular flange around the inner terminus of each of said hub members, a split collar having a pair of annular grooves to clamp said annular flanges, clamping means extending diametrically through said collar to the base, whereby both hubs are rotatably clamped in the collar and the collar and hubs are clamped to the base, an antenna arm mounted in each of said hub members, a screw eye in the bore of the hub members through which the arms are inserted, a washer positioned to jam in the tapered bore of each hub member and through which the screw eye extends, an electrical lead connected to each screw eye, and a nut on each screw eye to clamp each arm in its associated hub and to clamp the electrical connection to the washer.

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