

Aug. 28, 1962

M. J. PIFER
U.H.F. LOOP ANTENNA
Filed June 2, 1958

3,051,952

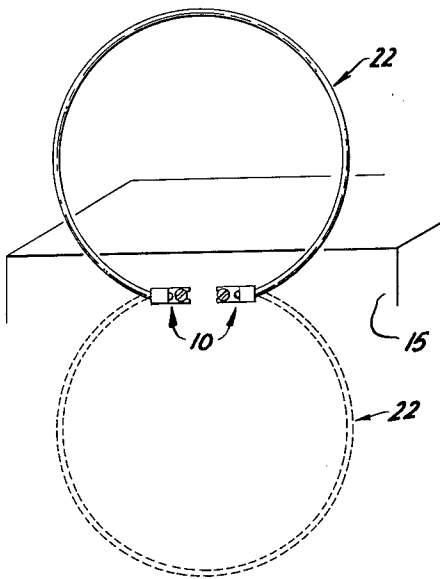


Fig. 1

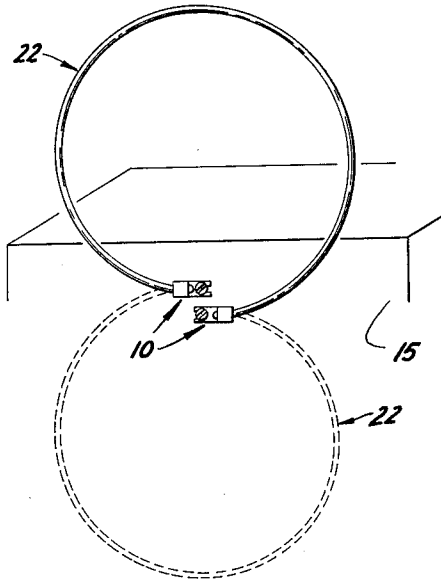


Fig. 2

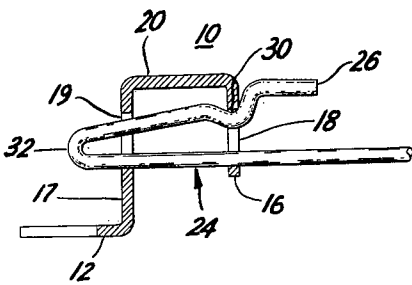


Fig. 3

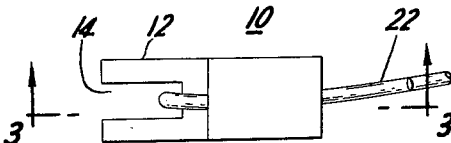


Fig. 4

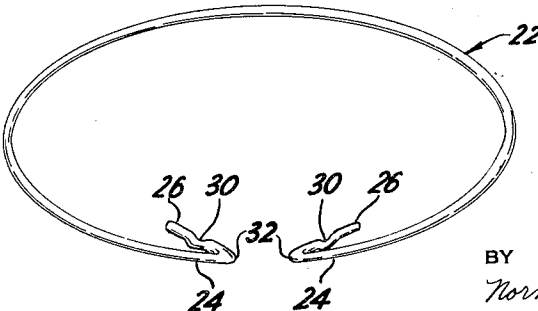


Fig. 5

INVENTOR
MARION J. PIFER
BY
Norman J. O'Malley
ATTORNEY

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3,051,952

U.H.F. LOOP ANTENNA

Marion J. Pifer, Williamsville, N.Y., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Filed June 2, 1958, Ser. No. 739,343
1 Claim. (Cl. 343—741)

This invention relates generally to antenna structures and more specifically to a loop antenna and mounting therefor.

Prior art antennas for use in conjunction with television receivers, especially in the UHF band, have comprised either a relatively expensive combination of adjustable parts or a simple stationary loop of wire without any provision being made for adjustment. Antennas for television receivers of the adjustable type, as a result, have not been furnished by the receiver manufacturer to any great extent because of cost.

It would be desirable to provide a television antenna which is simple in construction with features of adjustability.

Thus it is an object of this invention to provide antenna adjustment in a structure suitable for mass production at low cost.

For a better understanding of the invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following description and appended claim in connection with the accompanying drawings in which:

FIG. 1 is a perspective view of one embodiment of a loop antenna mounted on a receiver cabinet,

FIG. 2 is another perspective view of a loop antenna shown connected to staggered terminals,

FIG. 3 is a view of a mounting bracket and a portion of a loop antenna mounted thereon,

FIG. 4 is a top view of a bracket and portion of the antenna loop shown in FIG. 3, and

FIG. 5 is a view of an antenna loop.

Briefly, one aspect of the invention comprises an antenna loop provided with ends bent to cooperate with a generally U-shaped bracket for adjustable attachment to the antenna terminals of a television receiver.

Now referring to the drawings in greater detail, a mounting bracket 10 is fabricated from a flat conductor bent into a modified U-shape with an outturned lip 12. The lip 12 is slotted as at 14 to produce a mounting terminal so that the antenna may be mounted on a receiver 15. The opposed legs 16 and 17 of the U-shaped portion have openings 18 and 19 centrally located widthwise of the legs and at an equal distance from the bight 20.

The loop 22 itself, as best shown in FIG. 5, is formed from a length of resilient conductor, such as piano wire, and has each of its ends connected with a bracket such as described. Though a circular loop has been shown in the drawings it is to be understood that any other antenna loop shape having two ends may be used. For example only, the loop may be formed as a folded dipole. Other loop formations will occur to those skilled in the art and the term loop as used herein is to be construed broadly to include any two-ended configuration which may be

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shaped out of a length of conductive material such as wire or tubing.

To effect connection to the receiver each end of the loop is bent into a hook 24 with the free side 26 forming an acute angle with the other side, preferably in a plane perpendicular to the loop. A bow 30 is formed in the free side 26 intermediate the end thereof and the bend 32 of the hook 24. The antenna loop is assembled by inserting the hooked ends 24 into the mounting brackets 10 as shown in FIG. 3 and FIG. 4. This is accomplished by compressing the hooked end 24 until the free side 26 is almost parallel to the adjoining segment of the loop 22 and inserting it, while compressed, into the openings 18 and 19 in the brackets. The hooked end 24 is inserted until the center of the bow 30 is in registration in the opening 18 and the bend 32 passes through the second opening 19. The free side is then released and the resiliency of the loop 22 material causes the bow 30 to seat tightly against one wall of the opening 18 and the loop 22 section to seat against the opposing wall of the opening. Due to the spring action of the hooked end 24 it is retained in the openings of the mounting bracket 10.

As can be seen in FIG. 2, the receiver terminals need not have a side by side relationship. Further, the antenna may be rotated in the bracket to a desired angular position, as to the position shown in dotted lines in FIGS. 1 and 2. Because the bow portion 30 is pressing against the upper edge of the opening 18, the portion of the resilient loop 22 opposite the free end portion engages both openings 18 and 19 affording better frictional engagement between the loop and bracket. This is particularly true since the wire is resilient and is in the form of a loop, thus straining the end of the wire adjacent the bend downwardly, as viewed in FIG. 3, against the wall of the opening 19.

The size and shape of the antenna loop is governed by desired electrical characteristics. In other words, according to usual conventional practice, the antenna may be electrically tuned to approximately the center of the frequency band desired to be received.

While there has been shown and described what is at present considered a preferred embodiment of the present invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the scope of the invention as defined by the appended claim.

What is claimed is:

In a loop antenna, the combination of a pair of mounting brackets each of a substantially U-shaped configuration and each having an out-turned mounting lip lying in a given plane at the end of one of the legs, openings in the opposed legs of the U-shaped member, and a resilient conductive antenna member of wire bent in the form of a loop and having a hook at each end, each hook having a bow in the free side thereof and each hook being inserted into the pair of openings in the opposed legs of a respective bracket with the bow in registration with one of said openings and with the bight portion of the hook within the other of said openings and frictionally engaging a wall thereof whereby the position of said antenna member relative to said plane of said bracket lips may be adjusted.

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