

[54] **ANTENNA MOUNTING CLIP**
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[58] Field of Search.....343/702, 715, 888, 892;
174/153, 153 A; 248/40, 41

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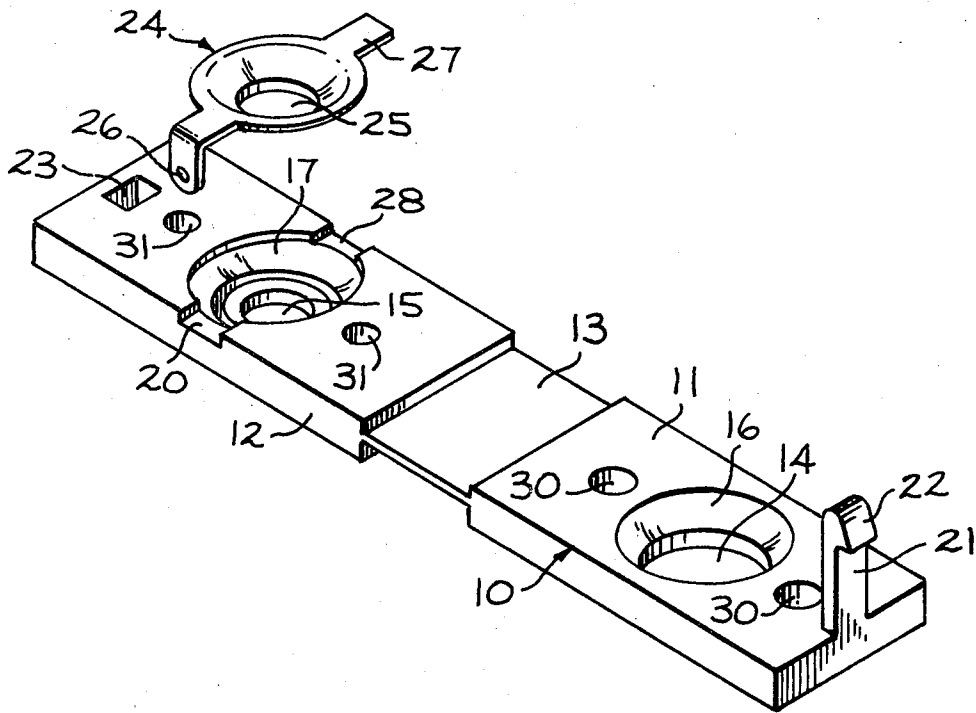
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[57] **ABSTRACT**

A nonconductive mounting clip, to secure an antenna to a cabinet or the like, having two nonconductive members forming a socket to receive a spherical element on the antenna. The members are interconnected at one end by a locking means and at the other end by either a locking means or a resilient hinge. A conductive contact member may be disposed between the spherical element and one of the nonconductive members to provide electrical connection from the conductive spherical element to associated circuitry.

5 Claims, 4 Drawing Figures



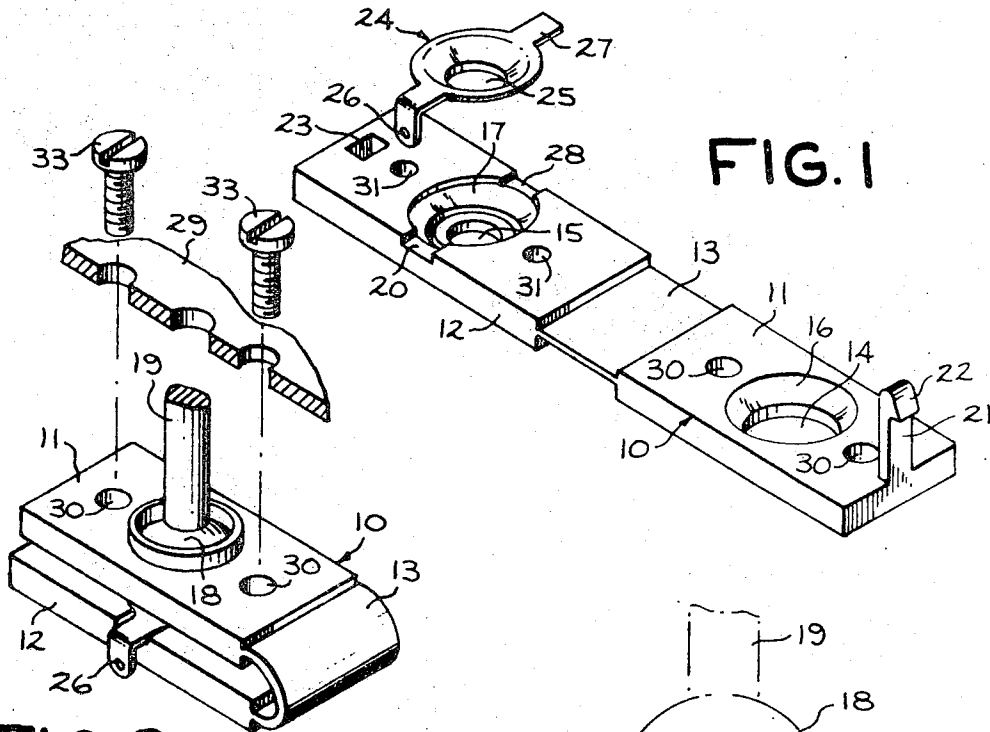


FIG. 2

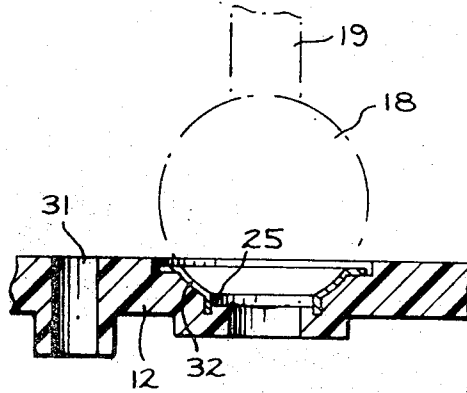


FIG. 3

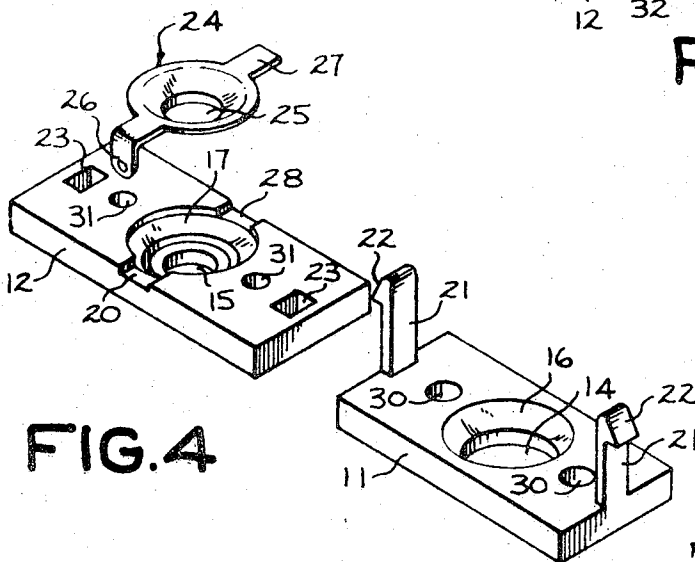


FIG. 4

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ANTENNA MOUNTING CLIP

BACKGROUND OF THE INVENTION

The present invention relates to an improved mounting clip to secure an antenna to a base such as, for example, the cabinet of a television or radio receiver.

In certain types of electronic equipment, such as television receivers and radios, it is desirable to provide integral antenna means. It is well known in the art to provide an antenna comprising a series of telescoping tubular elements which may be telescoped into a cabinet. It is also well known in the art to provide a ball and socket joint in conjunction with the base of an antenna to allow the antenna to swivel about its base in order to best orient the antenna. In the prior art, in order to provide proper frictional engagement between the ball and socket, a metallic resilient clip member was generally used. This metallic member provided both frictional engagement and electrical connection means. Since the base of the antenna was pivotally mounted in the antenna clip's recess, and since the antenna mounting clip provided frictional engagement, a "flaking" phenomenon occurred due to the extensive metal-to-metal contact. The metallic fragments which flaked off were likely to drop into areas of the receiver vulnerable to "short circuits." Moreover, flaking and frictional wear between the metal-to-metal surfaces created a loose fit between the ball and socket so that the antenna became difficult to maintain in any desired orientation. Accordingly, it would be desirable to provide an antenna mounting clip which minimizes or precludes flaking and wear between the ball and socket.

Many of the presently available antenna mounting systems involve relatively difficult assembly procedures as the antenna is secured to the cabinet of a television or radio receiver. These procedures could be simplified by providing an assembly including the antenna and its clip whereby the assembly is secured to the cabinet rather than forming the assembly as the antenna and clip are assembled on the cabinet.

SUMMARY OF THE INVENTION

It is therefore an object of this invention to provide an improved antenna mounting clip.

It is another object of this invention to provide an improved antenna mounting clip which will substantially reduce or eliminate flaking and wear between the ball and socket.

It is further an object of the present invention to provide an improved antenna mounting system wherein the antenna and its mounting clip can be assembled prior to assembly into the cabinet of a television or radio receiver.

Briefly stated, in accordance with one aspect of the invention, there is provided a mounting clip having first and second nonconductive members. Each nonconductive member has a concave surface which together form a socket to receive the spherical element of an antenna when the two members are in an assembled condition. Means are provided to secure the first and second members in an assembled condition and to provide frictional engagement between the clip and the spherical element. Means are also provided to effect electrical connection to the spherical element.

BRIEF DESCRIPTION OF THE DRAWING

While the specification concludes with claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention, it is believed the invention will be better understood from the following description of the preferred embodiment taken in connection with the accompanying drawing, in which:

FIG. 1 is a perspective view of the mounting clip of the present invention prior to assembly;

FIG. 2 is a perspective view of the mounting clip assembled to the spherical base of an antenna;

FIG. 3 is a fragmentary sectional view showing the spherical base of an antenna sitting in one member of the mounting clip; and,

FIG. 4 is a perspective view similar to FIG. 1 but showing a second embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 2, a mounting clip 10 is formed of a nonconductive first or upper member 11 and a nonconductive second or lower member 12 connected by a resilient hinge 13. Hinge 13 is shown in its relaxed position in FIG. 1 and in its tensioning position in FIG. 2. Upper member 11 is provided with a bore 14 and a concave surface 16. The lower member 12 is provided with a bore 15 and a concave surface 17. When resilient hinge 13 is in its tensioning position, the bore 14 in upper member 11 and concave surfaces 16 and 17 face one another to form a socket joint in which a spherical element 18 of an antenna 19 is received.

Means are provided to lock members 12 and 13 in the assembled or tensioning position of FIG. 2 and comprise the combination of a latch and an aperture 23. The latch includes a leg 21 and a head 22. Leg 21 is substantially at right angles to the top of upper member 11, leg 21 being substantially at right angles to head 22. Leg 21 and head 22 pass through the locking aperture 23. The locking means and hinge 13 bias members 11 and 12 to frictionally engage the spherical base 18 of antenna 19. Proper biasing allows spherical base 18 to be pivotally mounted in the socket in order to provide proper antenna orientation.

A contact member 24 is disposed between concave surface 17 and the conductive spherical element 18. The contact member 24, although shown disposed in the lower member 12 for convenience in aiding with the description, may be disposed in concave surface 16 of upper member 11 or in both the concave surfaces 16 and 17 of members 11 and 12. The contact member 24 includes an axially aligned bore 25 in order to allow the antenna's spherical base 18 to have an axially extended bore adapted to accept any tubular extensible members telescoped within base 18. Bore 25 allows the storage of any tubular extensible member substantially beneath the antenna mounting clip 10. Contact member 24 provides for electrical transfer from spherical element 18 to any associated electrical circuitry. The means for electrical transfer consists of tab 26 which is electrically connected to the contact member 24 and adapted to receive any connection from associated circuitry such as spade-type clips, or solder. Tab 26 may be bent in order to facilitate its connection with associated cir-

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cuitry. A recess 20 is provided for tab 26. The contact member 24 is adapted to rest on concave surface 17 by having its surface 32 conform to the concave surface 17. An extension tab 27 may be provided, which, when placed in recess 28 provides assurance that contact member 24 will register with concave surface 17.

Fastening means 33 here in the form of threaded fasteners, may extend through apertures 30 of member 11 and through axially aligned threaded apertures 31 of member 12. The fastening means 33 will allow adjustment of the frictional engagement members 11 and 12 and spherical element 18. The fastening means 33 may also serve to mount clip 10 to a support 29.

The alternate embodiment of FIG. 4 is substantially the same as that of FIG. 1 the only difference being that resilient hinge 13 is replaced by a second locking leg 21 and associated head 22. Lower member 12 has two corresponding locking apertures 23 instead of one.

As will be evident from the foregoing description, certain aspects of the invention are not limited to the particular details of construction of the examples illustrated, and it is contemplated that various other modifications or applications will occur to those skilled in the art. It is therefore intended that the appended claims shall cover such modifications and applications as do not depart from the true spirit and scope of the invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A mounting clip adapted to be secured to a supporting structure for retaining an antenna having a conductive spherical element at one end thereof, comprising:

first and second nonconductive members;
said first nonconductive member having a first concave surface therein and said second nonconductive member having a second concave surface

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therein, said first and said second concave surfaces together forming a socket to retain the spherical element therewithin when said members are in an assembled condition;

first latching means integral with said first nonconductive member and extending therefrom;

second latching means formed in said second nonconductive member for engaging said first latching means;

said first and said second latching means being adapted to secure said first and said second nonconductive members in an assembled condition for producing frictional engagement between said first and said second concave surfaces and the spherical element; and

means to provide electrical connection to the spherical element.

2. The invention of claim 1 wherein said means to provide electrical connection comprises a conductive member disposed adjacent one of said concave surfaces and in conducting engagement with the spherical element when said first and second members are in the assembled condition.

3. The invention of claim 1 further including a resilient hinge interconnecting one end of said first member to one end of said second member and locking means adapted to the other end of said second member.

4. The invention of claim 3 wherein said second latching means comprises an aperture in said second member and said first latching means comprises an element projecting from said first member adapted to pass through said aperture and engage said second member in locking fashion.

5. The invention of claim 3 wherein said first and second members and said resilient hinge comprise a single molded plastic part.

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