

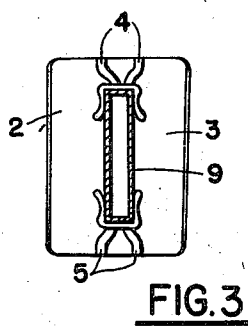
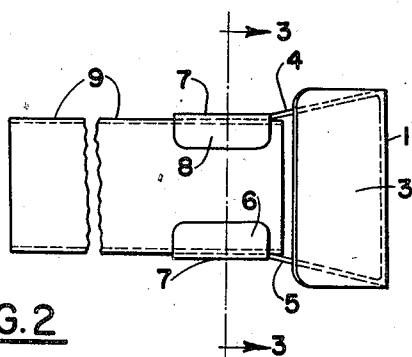
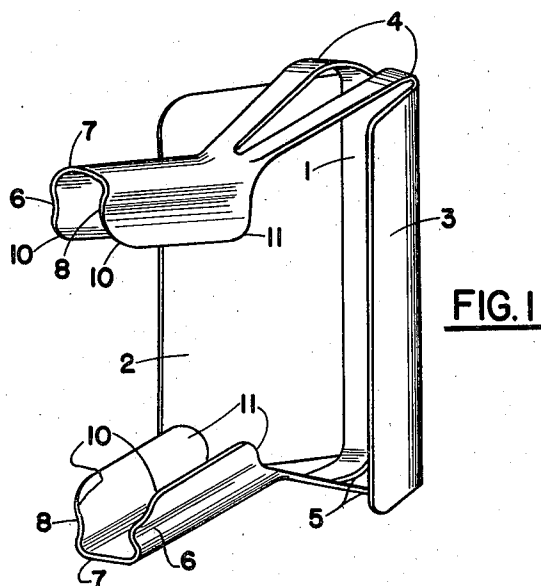
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ANTENNA CAP

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ANTENNA CAP

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The present invention relates to antenna caps, more specifically, to a termination cap for use on a wave guide.

An object of the invention is to provide a reflector cap for reflecting the energy emerging from the end of the wave guide against a large parabolic reflector.

A particular use of the invention is in connection with a nutating or nodding radar antenna. Such an antenna is subject to severe stresses created by the reciprocating motion applied thereto, and it is necessary that the cap be firmly affixed in order to prevent dislodgment.

A further object is to provide a device which is light in weight and readily attachable and removable without tools, thus permitting easy inspection of the end of the guide. The presence of small quantities of moisture or other foreign matter has a detrimental effect on its operation, making it necessary that the end of the wave guide be readily accessible for inspection and cleaning.

A still further object is to provide a device which is in addition capable of adjustment along the guide for tuning purposes, and which is mountable on any guide, regardless of the material of which the guide is constructed.

The preferred form of cap is made of a single piece of sheet metal, fabricated entirely by punching and bending to proper shape and size in a press.

While the exact shapes and sizes of the caps are subject to change, one particular form at present contemplated is described in detail in the present specification and illustrated in the drawings, wherein:

Figure 1 is a perspective view of the antenna cap.

Figure 2 is an elevation of the end portion of a wave guide with the cap applied thereto, and

Figure 3 is a section through the wave guide and cap indicated by line 3—3 of Figure 2.

The cap comprises a front panel 1, and two lateral wings, 2 and 3, adjoining the front panel. In the cap chosen for illustration, these wings form a dihedral angle of approximately 45° with one another, but the vertex of said angle is cut off bluntly by the panel, 1.

At each end of the panel is a resilient bifurcated portion 4 and 5, normally tending to spring out-

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ward, so that when the cap is not attached, these portions will assume the positions shown in Figure 1.

Beyond each bifurcated portion, there is a wave guide gripping portion having three sides, 6, 7, and 8, that are approximately perpendicular to each other in succession. The three sides of each gripping portion form a channel.

The material constituting these channels is also resilient and the two sides, 6 and 8, are longitudinally corrugated or grooved and spaced apart a distance slightly less than the thickness of the wave guide, 9. The corners of the channels are rounded as shown at 10 and 11.

In use, the cap is applied to the end of the wave guide by forcing the channels over the same, where they will be held firmly by the resilience of the said channels, in the position shown in Figures 2 and 3.

The cap may be removed readily by forcing the channel-shaped clips off the wave guide. It may also be slid forcibly along said guide into the exact position desired. However, the grip of the clips is very strong, and will not yield accidentally, so that even when subjected to severe vibration in a nutating antenna, there is no danger of slippage of the cap.

I claim:

1. A detachable antenna cap adapted to be attached to the end of a wave guide comprising a pair of wings forming a dihedral angle, a panel truncating said dihedral angle, a plurality of arms attached to said panel, and resilient clips adapted to frictionally engage said wave guide carried by said arms and constituting the sole support for said antenna cap.

2. A detachable antenna cap adapted to be attached to the end of a rectangular wave guide comprising a rectangular panel, a pair of rearwardly extending wings attached to opposite sides of said panel and forming equal angles with said panel, an arm attached to each remaining side of said panel extending rearwardly from said panel and forming an angle therewith greater than 90° and a clip attached to each of said arms adapted to frictionally engage the exterior of said wave guide.

3. For use with a rectangular wave guide, a detachable one-piece antenna cap comprising a rectangular front panel, wings extending rear-

wardly and outwardly from opposite sides of the panel, a supporting arm extending rearwardly from the other opposite sides of said panel, and a channel-shaped clip formed on the end of each of said arms and adapted to frictionally engage parallel exterior sides of said rectangular wave guide.

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