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ANTENNA MOUNT

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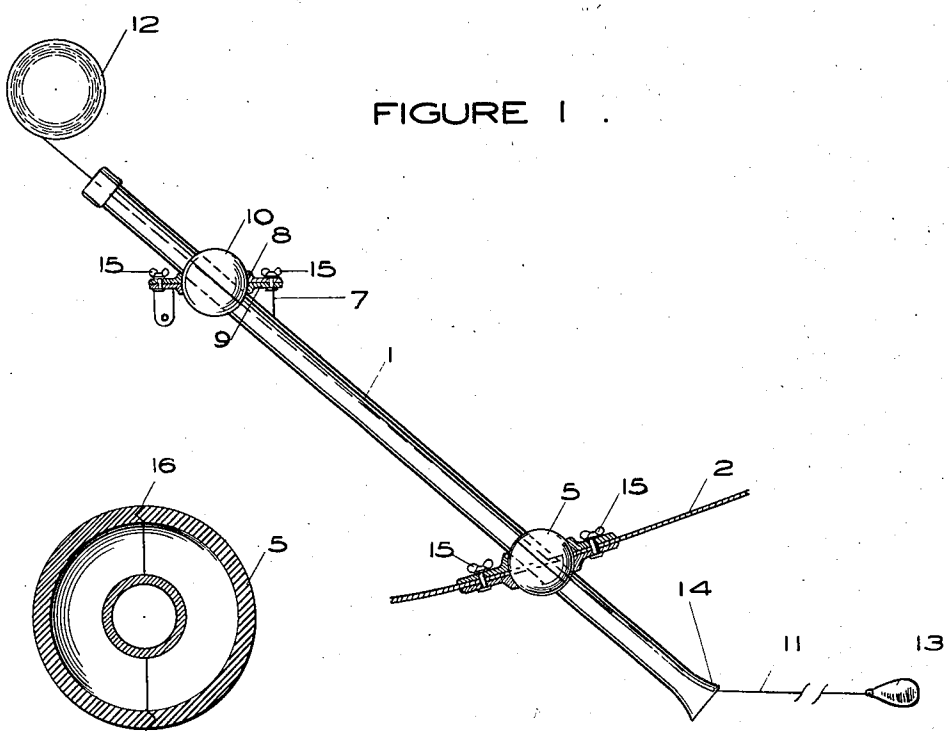



FIGURE 1 .

FIGURE 3 .
(A - A)

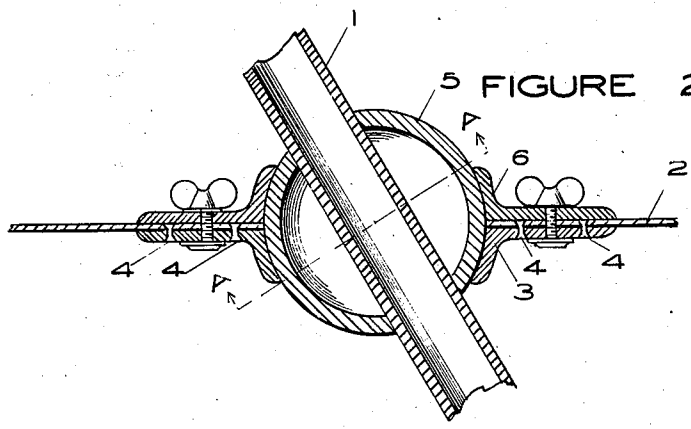



FIGURE 2 .

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## ANTENNA MOUNT

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3 Claims. (Cl. 250—33)

This invention relates to an improved aircraft antenna structure.

In the conventional retractable antenna, in which a weighted antenna wire is released through a fairlead and retracted by means of a reel when not in use, a serious problem arises when the weight breaks from the antenna and it is necessary to have a stand-by installation or wait until repair can be made by a ground service crew.

The primary object of this invention is to provide antenna and fairlead mounting structure which readily permits the replacing of the antenna weight in flight.

Another object of the invention is to provide a readily removable, mounting structure for the antenna fairlead where close tolerances in the alignment of parts are not necessary.

Further and other objects will become apparent from the description of the accompanying drawing which forms a part of this disclosure and in which like numerals refer to like parts.

In the drawing:

Figure 1 shows an assembly view of the weighted antenna and fairlead.

Figure 2 is a sectional view through the fairlead mounting structure.

Figure 3 is a section taken on the line A—A of Figure 2.

In the drawing, fairlead 1 extends through skin 2 and is supported by a ball and socket construction which is illustrated in Figure 2. Member 3 is secured by rivets 4 to the skin of the aircraft. Member 3 has an opening, the internal contour of which is a portion of a hemisphere, to receive the ball 5. The ball, as shown in Figure 3, consists of two similar members which when placed together form a spherical shell. This shell has diametrically opposite openings on the longitudinally split or parting line so that it may be clamped around the fairlead tube. The tongue and groove structure shown at 16 in Figure 3 permits the construction of sphere or ball 5 from two similar halves.

Fitting 6 also has an opening of internal hemispherical contour fitting over ball 5 and, when clamped in registration with member 3, forms a spherical socket which clamps and secures the ball 5 in place on fairlead 1. The tolerances are such that the halves of ball 5 hold the fairlead against displacement when member 6 is secured to member 3.

A bracket generally indicated as 7 may be used to afford a second point of support for the fairlead and may be secured to a bulkhead or rib in the aircraft construction. Members 8 and 9 are similar in construction to members 3 and 6, and afford a spherical socket for ball member 10 which is identical in construction with ball member 5.

The antenna 11 is extended or retracted by reel 12. The weight 13 is secured to the antenna. The end of fairlead 1 is flared as shown at 14 to afford a smooth curved path for the antenna and the fairlead, in the retracted or inoperative position, may fit into this flared portion of the tube, thus closing the end of the tube.

If the weight 13 is lost in flight, and it is desired to replace it, from the above described construction, it will be seen that it is merely necessary to undo the wing nuts 15 from the two ball and socket joints. The balls and the fairlead tube may then be removed from the supporting structure and the fairlead retracted within the aircraft. A new antenna weight may be readily secured in the supporting socket structure by means of plates 6 and 8.

It is to be understood that certain changes, alterations, modifications and substitutions can be made without departing from the spirit and scope of the appended claims.

I claim as my invention:

1. In an antenna assembly for an aircraft, an antenna, a fairlead therefor extending through the skin of said aircraft, a weight on the outer end of said antenna, ball and socket mounting means for removably securing said fairlead to the skin of said aircraft, said socket comprising two portions, one of which is secured to the aircraft structure having an aperture large enough for the antenna weight to pass therethrough, the other being detachably secured to the first mentioned portion from within the aircraft, said ball comprising a longitudinally split, spherically shaped shell adapted to be placed around said fairlead, whereby the fairlead may be detached and retracted within the aircraft for repair of the antenna.

2. An antenna assembly for an aircraft comprising an antenna wire, a reel therefor located within the fuselage of the aircraft, a fairlead extending through the skin of the aircraft, a weight on the outer end of said antenna, and ball and socket mounting means for removably securing said fairlead to the skin of the aircraft, said ball comprising a longitudinally split spherically shaped shell adapted to be placed around said fairlead for mounting in said socket.

3. In combination an aircraft fuselage, a weighted antenna mounted in said fuselage, a fairlead for said weighted antenna extending through the skin of the aircraft, one end of which is removably supported in the skin of the aircraft, the other end of which is removably supported within the aircraft, said removable supports comprising, longitudinally split spherically shaped shells surrounding the fairlead, said shells being supported in spherically shaped clamping brackets which facilitate alignment and replacement of said fairlead.

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