Feb. 4, 1941. G. J. BARRY 2,230,923

DEVICE FOR SUPPORTING RADIO COILS AND THE LIKE

Filed May 25, 1937

Fig. 1

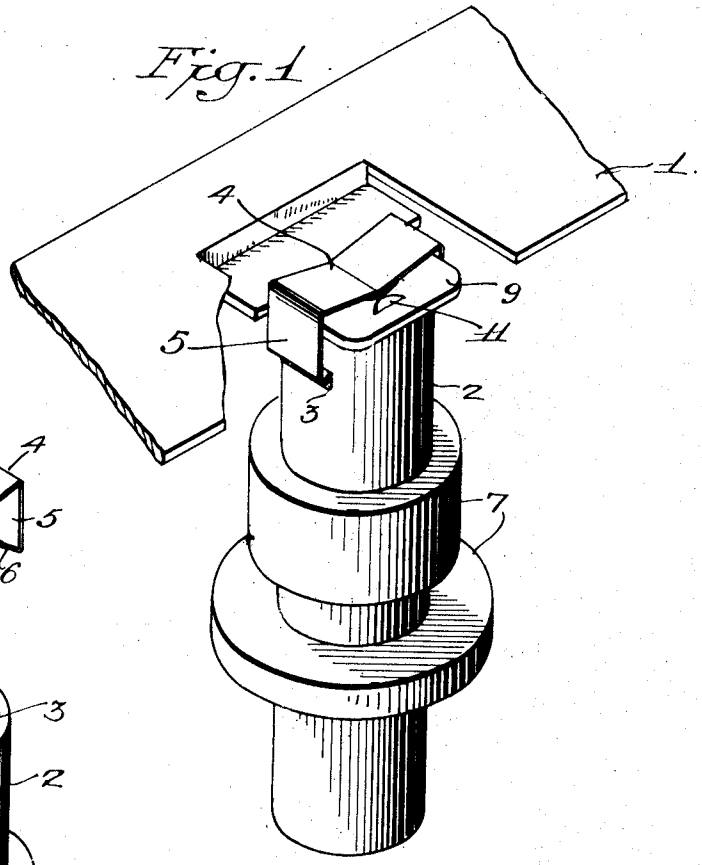


Fig. 3

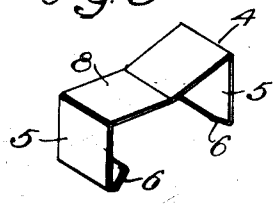


Fig. 4

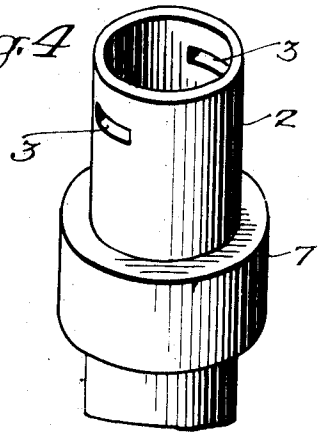


Fig. 2

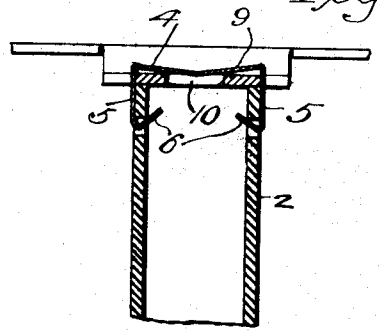
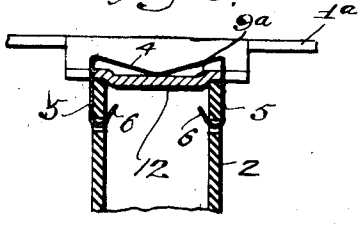


Fig. 5



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2,230,923

DEVICE FOR SUPPORTING RADIO COILS AND THE LIKE

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Application May 25, 1937, Serial No. 144,730

6 Claims. (Cl. 248—309)

This invention relates to a novel device for supporting an object, such as a radio coil unit, and has for its principal object the provision of an efficient device of this character which may be manufactured and assembled very economically.

While the invention is capable of use for supporting objects generally, it is particularly directed to the support of coil units in a modern multiband radio receiver, that is, a receiver adapted to receive signals in a plurality of different frequency bands. Such a receiver necessarily involves a substantial number of delicate or sensitive coils, and the support of such coils presents no small problem. In the modern multiband receiver, there is usually provided a high frequency unit comprising a base on which the tuning condensers and other elements are mounted, and the various wave-band coil units are mounted below the said base and are supported thereby.

The present invention provides a novel device by means of which a coil unit may be supported from a support, such as a base, in a very simple and effective manner and without requiring mechanical attachment devices, such as screws, bolts, or the like. By virtue of its simplicity, the device is economical to manufacture and assemble and, therefore, it constitutes a very satisfactory commercially practical means for mounting the coil units in a modern multiband radio receiver.

The invention may be more clearly understood by reference to the accompanying drawing, in which—

Fig. 1 is a perspective view illustrating the supporting device of the invention;

Fig. 2 is a sectional view of the same;

Fig. 3 is a perspective view of the resilient yoke employed in accordance with the invention;

Fig. 4 is a perspective view of a portion of a coil unit which may be supported by the device; and

Fig. 5 is a fragmentary sectional view of a modification.

Referring particularly to Figs. 1 and 2, there is shown a portion of a base 1 which may be formed of sheet metal and which is representative of any supporting means to which a coil unit may be attached in accordance with the present invention. Following the teaching of the invention, there are provided near the upper end of the mandrel 2 of the coil unit a pair of diametrically-opposed slots or openings 3, and there is provided a resilient member or yoke 4 having sides or arms 5, the ends of which are bent as shown at 6 and are adapted to be inserted in the openings 3, as described more fully hereinafter (see Figs. 3 and 4). It will be understood that the mandrel or support 2, together with the coils 7 supported thereby, constitute a coil unit, such as may be employed in the conventional multiband radio receiver.

The resilient member or yoke 4 is preferably formed from a strip of flat resilient metal bent to the shape shown in Fig. 3. The portion 8 which connects the arms 5 is slightly bent or bowed, as clearly illustrated, for a purpose which will be explained later. As may be seen from Fig. 2, the bent end portions of the arms 5 may be inserted in the openings 3 by first inserting one of the bent ends in one of the said openings and then springing the other arm sufficiently to permit the insertion of its bent end in the other opening. Alternatively, the yoke may be inserted by slipping it sidewise on the end of the mandrel. When the bent ends are inserted in the opposed openings, as shown in Fig. 2, the resilient member or yoke is interlocked with the coil support 2 and will remain in such interlocked position until removed. Should it be desired to detach these parts, it is necessary to spring one of the arms of member 4 outward so as to withdraw the bent end thereof from the opening in the coil support, after which the other arm may be readily removed.

In further accordance with the invention, there is provided on the support or base 1 a tab or tongue 9 of such width that it may be inserted snugly between the arms 5 of the resilient member or yoke 4. The tongue 9 may be formed by offsetting a portion of the flat base 1, as shown clearly in Figs. 1 and 2, so that the tongue will be integral with the base. There are also preferably provided on the tongue 9 an opening 10 (see Fig. 2) and a detent 11 (see Fig. 1). The detent may be formed by striking out and raising a small portion of the tongue 9. With the coil unit attached to the resilient yoke 4, the tongue 9 is inserted within the yoke adjacent the end of the coil support or, in other words, the yoke is placed over the tongue. The parts are preferably so dimensioned that it is necessary to force the tongue 9 between the end of the coil support and the bowed portion 8 against the spring action or resilience of the said portion. The yoke is thus moved over the detent 11 and into place with the central bowed portion of the yoke seated in the opening 10. This, together with the detent 11, serves to maintain the parts in assembled relation until they are forcibly detached from one another. It will be apparent,

of course, that the resilient yoke may be removed from the tongue 9 by raising the bowed portion of the yoke sufficiently to clear the detent 11. When the parts are in assembled relation, as shown in Fig. 2, the resilient bowed portion 8 of the yoke maintains the end of the coil support 2 in snug engagement with the tongue 9, and at the same time, the seating of the bowed portion in the opening 10 prevents lateral movement of the coil support.

In Fig. 5, there is shown a modification in which the tongue 9a of the support or base 1a is offset or depressed, as shown at 12, so as to provide a downwardly projecting circular protuberance over which the end of the mandrel 2 snugly seats. The coil support is thus held firmly in position. The resilient bowed portion of the yoke 4 extends into the recess at the top of portion 12 and engages the said portion, as clearly shown, thus maintaining the end of the coil support snugly against the tongue 9a. This interlocks the parts together as will be clearly understood from the preceding description. It will be apparent that the parts of the device may be assembled or disassembled in substantially the same manner as described above.

It will be noted that in both of the embodiments illustrated and above described, the resilience of the arms of the yoke maintains the yoke in interlocked relation with the coil support or mandrel, while the resilience of the bowed portion of the yoke maintains the end of the mandrel in snug engagement with the tab or tongue 9.

It will be seen from the above description that the invention provides a very simple device which may be manufactured and assembled very economically without the necessity of employing mechanical attachment devices requiring tightening or manipulation and which serves to hold a coil unit firmly in position. It will be understood, of course, that the invention is not limited to the specific forms of the device herein illustrated and described for the purpose of disclosure but that various other modifications of the device may be made within the scope of the invention.

I claim:

1. A device for supporting a tubular object, such as a radio coil unit, comprising a resilient yoke having a pair of arms with turned ends and a bowed portion connecting said arms, said yoke being adapted to extend around an end of said object with said ends inserted in openings of said object, a supporting element adapted to extend between said bowed portion and said end, said element having an offset portion forming a protuberance over which the said end of said object seats, said bowed portion seating in the recess of said offset portion, whereby said object is held firmly in position.

2. A device for supporting a tubular object, such as a radio coil unit, comprising a resilient yoke having a pair of arms with turned ends and a bowed portion connecting said arms, said yoke being adapted to extend around an end of said object with said ends inserted in recesses in said object and said portion bowed toward the end of the object, and a support having a tongue insertable between said bowed portion and the end of the object with the bowed portion pressing resiliently against said tongue.

3. A device for supporting a tubular radio coil form, comprising a spring clip formed from a strip of flat resilient metal and having a pair of arms with turned ends and a bowed portion connecting said arms, said spring clip being adapted to extend around an end of said tubular form with said turned ends inserted in recesses in said form and said bowed portion bowed toward the end of said form, and a support having a tongue insertable between said bowed portion and the end of said tubular form with said bowed portion bearing resiliently against said tongue, said tongue having a width which is substantially equal to the outside diameter of said tubular radio coil form.

4. A device for supporting a tubular object, such as a radio coil unit, comprising a resilient yoke having a pair of arms with in-turned ends and a bowed portion connecting said arms, said yoke being adapted to extend around one end of said object with said in-turned ends inserted in recesses in said object, said bowed portion being bowed toward said end of said object, and a support having a tongue insertable between said bowed portion and said end of said object, there being an opening in said tongue in which a central part of said bowed portion resiliently and positively seats, whereby said object is held firmly in position.

5. A device for supporting a tubular object, such as a radio coil unit, comprising a resilient yoke having a pair of arms with in-turned ends and a bowed portion connecting said arms, said yoke being adapted to extend around one end of said object with said inturned ends inserted in recesses in said object, said bowed portion being bowed toward said end of said object, and a support having a tongue insertable between said bowed portion and said end of said object, with the bowed portion pressing resiliently against said tongue, and detent means on said tongue for limiting lateral movement of said object on said tongue.

6. In combination, a clip-like fastener member comprising a pair of spaced arms having hook-like portions at their free ends adapted to engage an article of manufacture through apertures located near an end thereof whereby said fastener member is secured to said article; a resilient connecting portion joining said arms at their ends opposed to the free ends thereof, a portion of said connecting portion being bulged toward said hook-like portions and toward the adjacent end of said article; and a support member of a width sufficient to extend over a substantial portion of said end of said article and disposed between said bulged portion and said end of said article, the normal distance between said bulged portion and the adjacent end of said article being less than the thickness of said support member, whereby when said support is disposed between said bulged portion and the adjacent end of said article said bulged portion will force said adjacent end of said article tightly against said support member.

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