MULTI-BAND MOBILE ANTENNA LOADING COIL

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Filed March 20, 1951

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ATTOREYS
MULTI-BAND MOBILE ANTENNA LOADING COIL

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Application March 20, 1951, Serial No. 216,485

2 Claims. (Cl. 250—33)

This invention relates to radio communication equipment, and more particularly to a multi-band antenna loading coil.

The object of the invention is to provide a multi-band mobile antenna loading coil for use on mobile radio communication equipment, whereby the antenna or radiator system can be resonated to several widely separated frequencies with only one loading coil.

Another object of the invention is to provide a multi-band mobile antenna loading coil whereby only one loading coil is required in order to cover several widely separated operating frequencies, the apparatus of the present invention being provided with rugged, positive, low-loss switching contacts, the coil operating at high efficiency, and whereby losses due to long leads from desired turns and shorting switches are eliminated, and whereby critical tuning adjustments can be obtained.

A further object of the invention is to provide a multi-band mobile antenna loading coil which is extremely simple and inexpensive to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a longitudinal sectional view taken through the loading coil constructed according to the present invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a diagrammatic view showing the circuit diagram that corresponds to the structure of Figure 1.

Referring in detail to the drawings, the numeral 10 designates a hollow, elongated support member which is tubular and which may be fabricated of a suitable insulating material, such as Bakelite. Wound around the exterior of the support member 10 is a coil form or wire 11, Figure 1, and a metal end piece 12 serves to close the lower end of the support member 10.

Mounted in the upper end of the support member 10 is a metal end piece 14. Mounted for adjustable or sliding movement through the support member 10 is a vertical antenna or radiator 15, and a "banana" plug 16 is mounted on an end of the antenna 15. Projecting from the end piece 14 or secured thereto is a split sleeve 18, the splits in the sleeve 18 being indicated by the numeral 19, Figure 2. A portion of the split sleeve 18 is threaded exteriorly, as at 20, and arranged in threaded engagement with the threaded portion 20 is a knurled lock nut 17. By tightening the lock nut 17, the antenna or radiator 15 can be locked or maintained immobile in any of its adjusted positions.

It will be seen that the end piece 14 and its sleeve 18 are both provided with a bore for slidably receiving there-
and the loading coil is in free space as is the antenna, and critical tuning adjustments can be obtained, since the long plug and jack permit adjusting the physical length of the radiator without disengaging the plug from the jack.

What is claimed is:

1. In a loading coil, a support member, a first end piece mounted in one end of said support member, a second end piece mounted in the other end of said support member, a coil winding wound around said support member, a plurality of spaced shorting jacks arranged in said support member, antenna slidably arranged in said second end piece and having a plug therein for movement into and out of engagement with said shorting jacks, a sleeve projecting from said second end piece, a lock nut arranged in threaded engagement with said sleeve for preventing accidental movement of said antenna, and screws providing electrical contact between the coil winding and the end pieces and shorting jacks.

2. In a loading coil, a support member, a first end piece mounted in one end of said support member, a second end piece mounted in the other end of said support member, a coil winding wound around said support member, a plurality of shorting jacks arranged in said support member, an antenna slidably arranged in said second end piece and having a plug therein for movement into and out of engagement with said shorting jacks, a sleeve projecting from said second end piece, a lock nut arranged in threaded engagement with said sleeve for preventing accidental movement of said antenna, and screws providing electrical contact between the coil winding and the end pieces and shorting jacks.

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