June 2, 1925. 1,540,514

O. E. COTE

COIL MOUNTING

Filed June 6, 1923

Fig. 1,

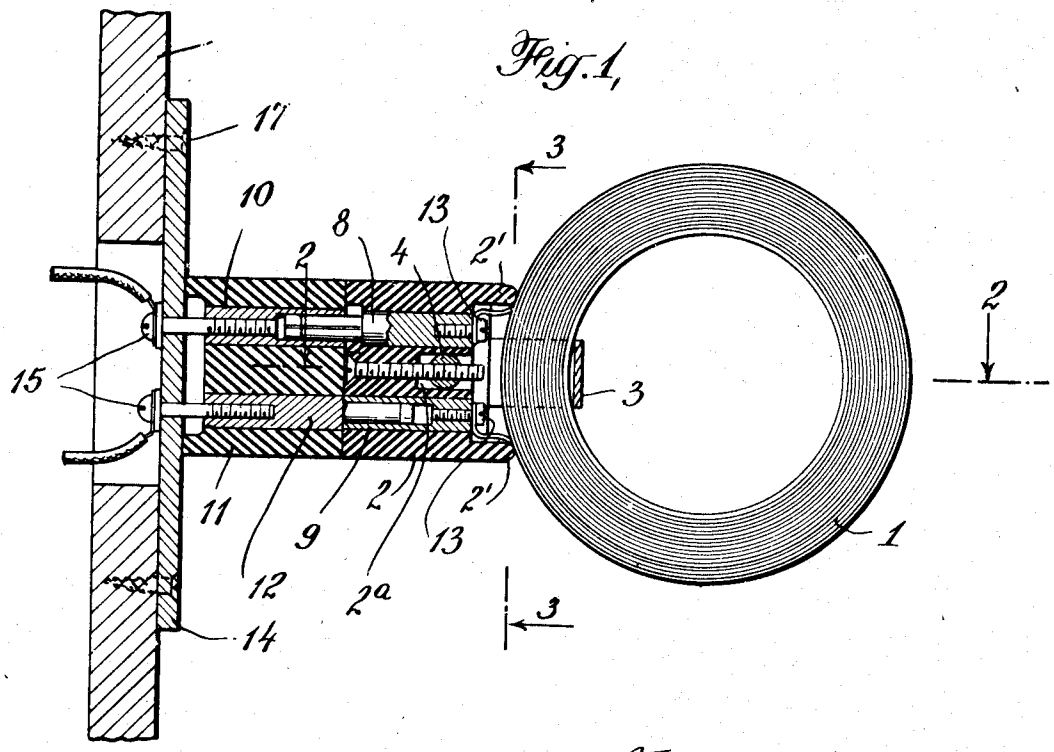


Fig. 3,

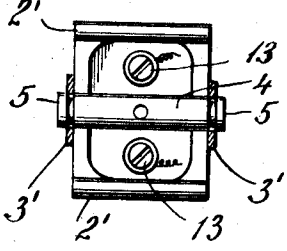


Fig. 2,

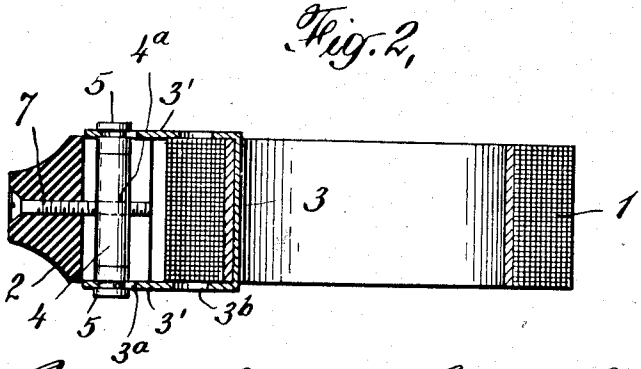


Fig. 4,

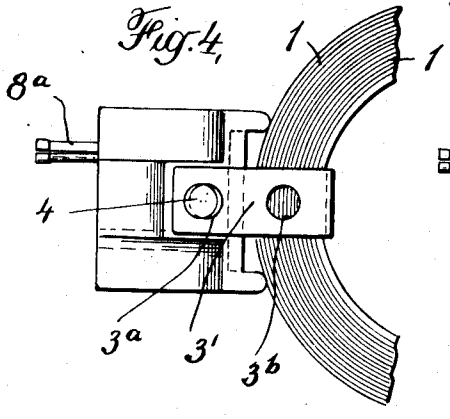


Fig. 5,

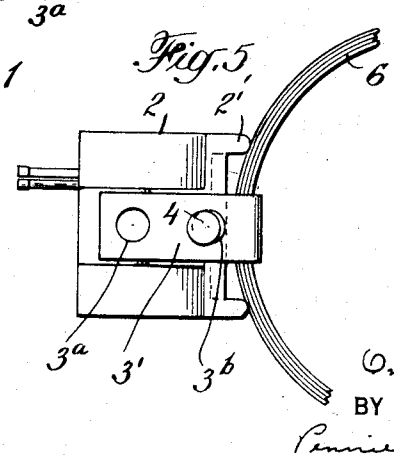
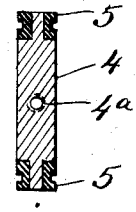


Fig. 6,



INVENTOR

Omer E. Cote

BY

Pennie Davis Marvin & Edmonds

ATTORNEY

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UNITED STATES PATENT OFFICE.

OMER EUGENE COTE, OF PAWTUCKET, RHODE ISLAND, ASSIGNOR TO ELECTRICAL PRODUCTS MANUFACTURING COMPANY, OF PROVIDENCE, RHODE ISLAND, A CORPORATION OF RHODE ISLAND.

COIL MOUNTING.

Application filed June 6, 1923. Serial No. 643,670.

To all whom it may concern:

Be it known that I, OMER E. COTE, a citizen of the United States, residing at Pawtucket, in the county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Coil Mountings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has to do with mountings for inductance coils, and relates, more particularly, to mountings for coils of the "honeycomb" and similar types. These coils are intended more especially for use in radio apparatus, and are made in a large variety of sizes ranging from a few turns up to several hundred turns. Heretofore the mounting of substantially different size coils has necessitated the use of different size straps for attaching the coils to the mounting block. The inherent disadvantage arising from this necessity will be apparent.

One of the objects of the invention, therefore, is the provision of a device adapted for mounting coils of widely different sizes without involving any alteration or substitution of parts in order to accommodate different size coils.

Further objects of the invention are simplicity of design, convenience in operation, and economy in manufacture, all of which are realized in the preferred embodiment hereinafter described in detail.

The structure constituting the preferred embodiment of the invention comprises a block preferably molded of insulating material to which are secured a plug and jack or other suitable conductive connecting means whereby the block can be quickly plugged in or otherwise connected both electrically and mechanically to an appropriate fixed supporting member and likewise quickly detached therefrom. A U-shaped strap of suitable design to receive the coil to be mounted and having end portions of sufficient length to accommodate coils of the greatest number of turns which are likely to be used is provided, being referred to hereinafter as a tie member inasmuch as its function is to tie the coil to the block. Each of the two end portions of the U-shaped tie member has a plurality of apertures which are adapted to be engaged by a cross member in the form of a rod which is tapped laterally at its center for engaging a clamping screw. The cross member and clamping screw together are referred to herein as a take-up device.

In the specific structure shown in the accompanying drawing and described hereinafter each end portion of the U-shaped tie member has two apertures of the same size with either of which the cross member may be engaged, depending upon the size of the coil to be attached to the mounting. For large and medium size coils the apertures near the ends of the tie member are utilized and for small coils the apertures farther away from the ends are used. The cross member is preferably made of metal such as brass and provided with grooved insulators at its ends for engaging the metal tie member. The function of the insulators is to interrupt the continuity of the circuit which would otherwise be formed by the tie member and cross member together and thereby prevent the setting up of serious eddy current effects which might otherwise result.

A feature of considerable merit forming a part of the preferred embodiment of the invention resides in the design of the connector plug per se, and consists in providing the plug with a head or end portion of slightly larger diameter than the remaining part. By reason of this provision the necessity for a high degree of accuracy in positioning the block in the plug is obviated without detriment from the standpoint of operation.

For a detailed description of the preferred embodiment of the invention reference will now be made to the accompanying drawing, in which

Fig. 1 is a sectional view through an inductance coil mounting and a fixed supporting member therefor;

Fig. 2 is a sectional view along the line 2—2 of Fig. 1;

Fig. 3 is a view, partly in cross section, along the line 3—3 of Fig. 1;

Fig. 4 is an elevational view of the mounting including a portion of a coil having a relatively large number of turns;

Fig. 5 is an elevational view similar to Fig. 4 including a coil having a relatively small number of turns; and

Fig. 6 is a longitudinal sectional view of the cross member.

In Fig. 1 an inductance coil 1 of the "honeycomb" or "duolateral" type is shown attached to the mounting. This coil is of about medium size. The mounting comprises a block 2 of molded insulating material such as hard rubber or bakelite having a pair of integral lugs 2′ against which the coil bears.

A U-shaped metal part 3 which may be appropriately referred to, in view of its function as a tie member, firmly holds the coil against the lugs 2′. As shown in Figs. 4 and 5 the end portions 3′ of the tie member 3 are each provided with apertures 3^a and 3^b with which the cross member 4 is adapted to engage by means of the grooved insulating end pieces 5. In Figs. 1 and 4 the cross member 4 is engaged with the two apertures 3^a. These latter apertures are utilized for mounting the larger size coils, while the apertures 3^b are utilized for mounting smaller coils, as indicated in Fig. 5, wherein is shown a coil 6 having but a few turns. A flat head machine screw 7 passes through an aperture in the block 2 and engages the tapped hole 4^a in the cross member 4. The screw 7 is referred to as a clamping screw in view of the fact that it operates to apply tension to the tie member 3 through the medium of the cross member 4 for clamping the coil against lugs 2′. The clamping screw 7 is preferably of such length that the largest standard size coil may be mounted. The facility with which coils may be mounted and dismounted on this device will be readily apparent from a consideration of the drawing, it being seen that the only operation necessary in removing the coil from the block is the removal of the screw 7. This releases the tie member 3 and cross member 4, which two members are readily separable. The block 2 is provided with a metal plug member 8 and a metal jack member 9. These two members are preferably molded into the block 2 and are thereby held very securely. The plug member 8 has an external portion 8^a which is preferably provided with two diametrical sawcuts arranged at right angles. The end of the portion 8^a is preferably of slightly larger diameter than the remaining part. By reason of this provision the plug will readily engage with a corresponding jack 10 in the fixed supporting block even though the center to center distance between the plug 8 and jack 9 may be somewhat inaccurate. This is due first, to the fact that only the enlarged end of the plug bears against the wall of the jack, and second, to the resiliency of the plug resulting from the sawcuts. The plug will therefore bend upon being inserted sufficiently to compensate for any reasonable commercial inaccuracy in the spacing. It will be noted that the jack 10 in the fixed supporting block 11 corresponds functionally with the jack 9 in block 2, and likewise the plug 12, which is molded into the block 11, corresponds functionally with the plug 8 in the block 2. The two plugs 8 and 12 may therefore be substantially identical, and likewise the jacks 9 and 10. The plug 8 and jack 9 are each provided with a fillister head screw 13 by means of which the wire terminals of the coil are connected respectively to the plug 8 and jack 9. The fixed block 11 is secured to a plate 14 by means of the round head screws 15, and the plate 14 may in turn be attached to a suitable panel 16 by means of screws 17.

It will be noted that the block 2 is formed with a suitable slot 2^a, in which the cross member 4 may slide forward and back for the purpose of accommodating different size coils.

I claim:

1. The combination with an annular wire coil having wire terminals, of a block having electrical terminals therein connected to said wire terminals, a U-shaped tie member extending through the opening in said coil for securing said coil to said block, a cross member engaging the two end portions of said U-shaped tie member, and a clamping screw engaging said cross member, said clamping screw being operable to effect variable tension on said tie member.

2. The combination with an annular wire coil having wire terminals, of a block having electrical terminals therein connected to said wire terminals, a U-shaped tie member extending through the opening in said coil for securing said coil to said block, each of the end portions of said tie member being provided with a plurality of apertures, a cross member adapted to engage the end portions of said tie member through the medium of said apertures, said cross member being engageable with different ones of said apertures to accommodate different size coils, and a clamping screw engaging said cross member, said clamping screw being operable to effect variable tension on said tie member.

In testimony whereof I affix my signature.

OMER EUGENE COTE.