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H. H. WILCOX ET AL

INDUCTION COIL MOUNTING

Filed Nov. 22, 1924

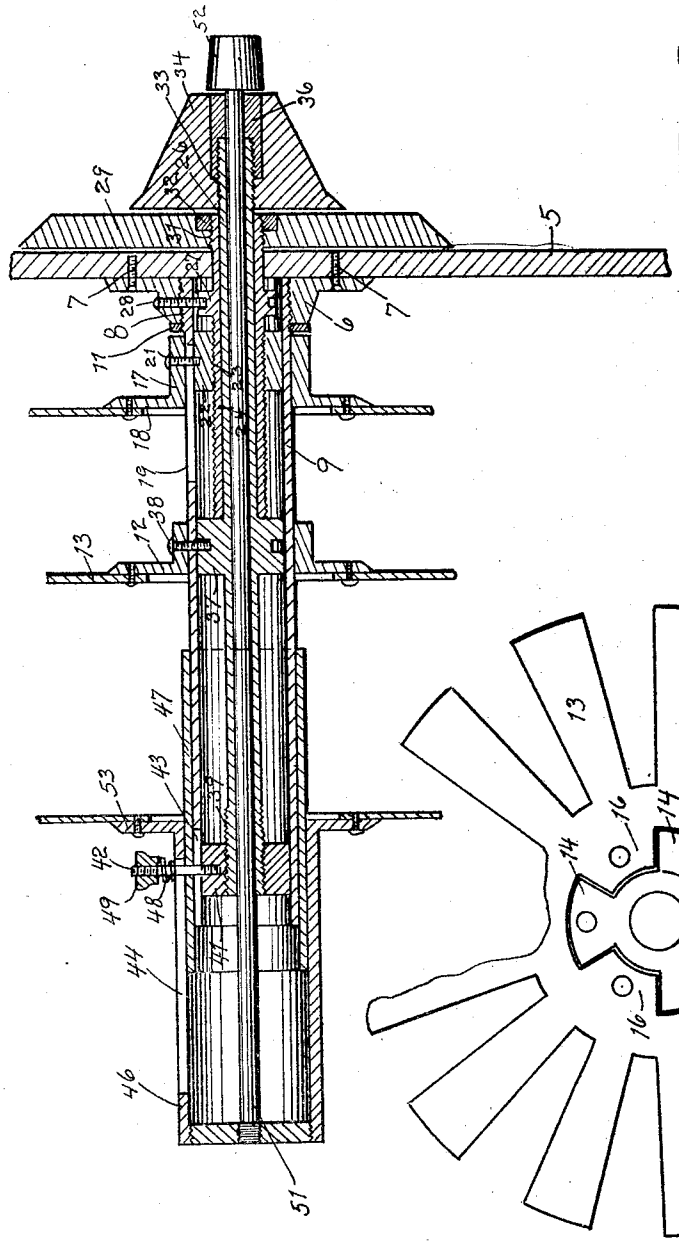


Fig. I.

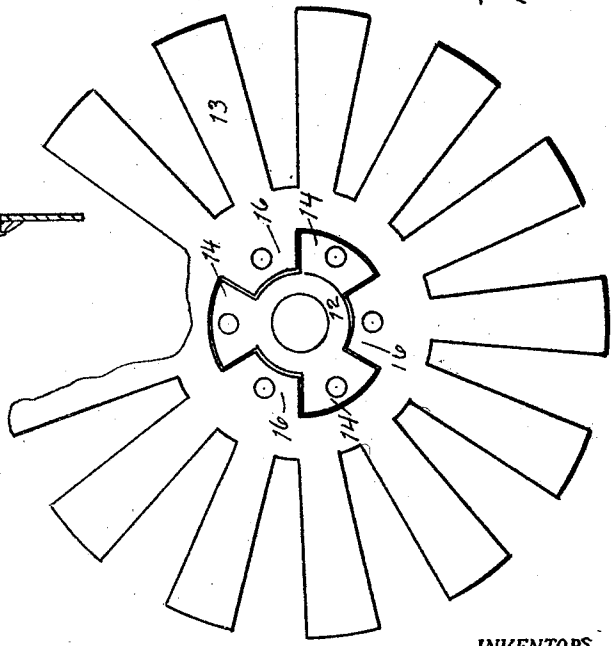


Fig. II.

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INDUCTION-COIL MOUNTING.

Application filed November 22, 1924. Serial No. 751,647.

To all whom it may concern:

Be it known that we, HAROLD H. WILCOX and PETER S. YONKE, citizens of the United States and Austria, respectively, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Induction-Coil Mountings, of which the following is a specification.

This invention relates to improvements in induction coil mountings and has particular reference to a means for mounting so-called spider web coils.

The principal object of this invention is to produce a simple and efficient means for regulating the distance between the coils and at the same time maintaining the coils parallel with each other.

Another object is to provide means for quickly adjusting the tickler coil and further providing means for minutely adjusting the tickler coil after the first or rough adjustment has been made.

A still further object is to produce a device of this character which may be attached to the ordinary radio panel without altering the construction of the panel.

An additional object is to produce a device of this character which may be applied with the customary dials and knobs thereby adding to the attractiveness of the set, rather than marring it in any way.

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

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a vertical cross section of my device, and

Figure 2 is a side elevation of a spider web coil frame, showing the manner of mounting the same on my device.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of our invention, the numeral 5 designates a panel common in ordinary radio sets. To this panel is attached a flange plate 6 as by screws 7. This plate is internally threaded as shown at 8, within which is screwed a tube 9 which is held against rotation as by a lock washer 11. This tube will hereinafter be called the stationary tube.

On this tube is mounted a frame carrying plate 12 upon which a spider web frame 13 is positioned. By referring to Figure 2, it will be noted that the plate 12 is provided with ears 14 and that the frame 13 is provided with ears 16. This permits the frame being given a partial rotation so that the ears 16 will pass the ears 14, when it is desired to move one of the coils past one of the plates, for the purpose of changing inductances.

Slidably mounted on the stationary tube 9 is a collar 17 having a flange 18 corresponding to the flange 12 just described, to which the inductance frame is also attached.

A slot 19 formed in the stationary tube permits a screw 21 to pass therethrough and slide therein, which screw enters a block 22, which block threadedly engages, as at 23, a tube 24, which is rotatable on the periphery of the vernier tube 26. This tube 24 is provided with a recessed collar 27, within which a screw 28 enters. This screw prevents lateral movement of the tube, which tube is rotated by a dial 29 threadedly held thereon as at 31 and locked against rotation by a lock nut 32.

The vernier tube 26 is threadedly engaged as at 33 to a knob 34 and is held against rotation by a lock bushing 36. This tube is provided with a bearing 37 substantially mid-way of its length which is grooved to receive the end of the screw 38. This screw prevents endwise movement of the vernier tube. The free end of this tube is screw threaded as shown at 39 so as to engage a travelling block 41, which travelling block has a pin 42 secured therein, which pin passes through a slot 43 in the stationary tube 9.

This slot permits lateral movement of the pin 42, which pin also passes through a slot 44 formed in a telescopic tube 46, which telescopes upon an intermediate tube 47, which intermediate tube is slidable upon the

end of the stationary tube 9 and the pin 42 passing through the intermediate tube so as to move therewith.

A spring 48 surrounds the pin 42 and contacts the telescopic tube 36 and is compressed by a nut 49 threadedly positioned on the pin 42. An adjusting rod 51 is secured to the end of the tube 46 in any convenient manner and passes through the vernier tube 26 to a point outside of the knob 34, where a knob 52 is threadedly secured thereto.

The telescopic tube is provided with a flange 53 to which an inductance frame may be attached.

The operation of our device is as follows:—

Assuming that the parts are in the position shown in Figure 1 and that an inductance frame carrying a primary winding is mounted upon the flange 18, that an inductance frame carrying a secondary winding is positioned on the flange 12 and that an inductance frame carrying a tickler winding is mounted upon the flange 53, and that the operator desires to tune his set, he will then rotate the dial 29 which, in turn, will rotate the tube 24 causing the block 22 to move along the screw thread 23. Due to the fact that the screw 21 cannot rotate, it must necessarily travel in the slot 19. This action causes the primary winding to approach or move away from the secondary winding, depending upon the direction of rotation of the dial 29.

Assuming that the primary and secondary windings have been properly adjusted, the operator then grasps the knob 52 and draws the same away from the knob 34. This causes the telescopic tube 46 carrying the tickler winding to rapidly approach the secondary winding. As it is a very difficult matter to secure the proper tickler coupling in such a rough manner after an approximate setting has been accomplished, the operator ceases to move the knob 52 and its connected parts and starts rotating the knob 34, which rotation rotates the vernier tube 26, with a result that the screw threads 39 cause the block 41 to move to the right or the left of the drawing, depending upon the direction of rotation of this knob.

As the pin 42 is passed through the slot 43, the block 41 cannot rotate and, consequently, must move longitudinally. As the spring 48 has been inserted over the pin, and the nut 49 tightened, the friction between the spring and the intermediate tube will be sufficient to cause the whole telescopic tube, together with its tickler winding to move with the intermediate tube 47. As this movement is very slow it will be readily seen that a very fine or micrometer adjustment may be made.

Thus, it will be noted that we have constructed a device which will mount spider-web coils in an efficient manner and one wherein the coils may be quickly adjusted and at the same time a fine adjustment may also be obtained.

It is to be understood that the form of our invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described our invention, we claim:—

1. In a device of the character described, a tube, a flange immovably positioned on said tube, and carrying an inductance frame, a second flange slidably positioned on said tube and carrying an inductance frame, a rotatable tube positioned in said first mentioned tube, means for preventing lateral movement between said tubes, a block slidably positioned in said first mentioned tube, screw threads formed on said second mentioned tube and engaging said block, means for connecting said slidable flange to said block, means for rotating said second mentioned tube, a vernier tube positioned within said second mentioned tube, a third flange slidably held on said first mentioned tube, and means for slidably positioning said third mentioned flange when said vernier tube is rotated.

2. In a device of the character described, a tube, a flange immovably positioned on said tube and carrying an inductance frame, a second flange slidably positioned on said tube and carrying an inductance frame, a rotatable tube positioned in said first mentioned tube, means for preventing lateral movement between said tubes, a block slidably positioned in said first mentioned tube, screw-threads formed on said second mentioned tube and engaging said block, means for connecting said slidable flange to said block, means for rotating said second mentioned tube, a vernier tube positioned within said second mentioned tube, means for preventing lateral movement of said vernier tube with respect to said first mentioned tube, means for rotating said tube located on one end of said tube, a screw-thread positioned on the opposite end of said tube, a block engaging said screw-thread, a pin radially positioned in said block and extending through a slot formed in said first mentioned tube, an intermediate tube slidably positioned on said first mentioned tube and engaged by said pin, a telescopic tube slidably positioned on said intermediate tube and having a slot formed therein, through which said pin is adapted to pass,

tension means surrounding said pin and engaging said telescopic tube, a flange formed on said telescopic tube and adapted to have an inductance frame attached thereto, and means for slidably actuating said telescopic tube, said means comprising a rod attached to said telescopic tube and extending from said vernier tube and having a knob secured thereto.

In testimony whereof we affix our signatures.

HAROLD H. WILCOX.
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