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HIGH FREQUENCY IRON CORE COIL

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Fig. 1.

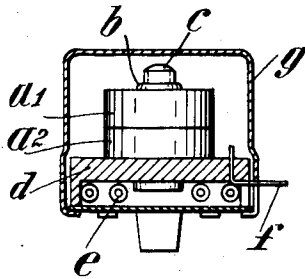
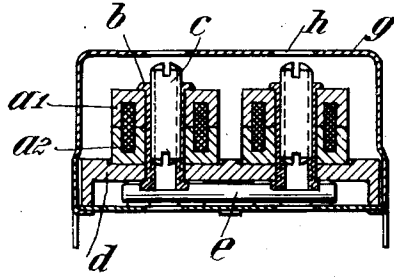


Fig. 2.



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HIGH FREQUENCY IRON CORE COIL

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3 Claims. (Cl. 171-242)

This invention relates to high frequency iron core coils having a core consisting of two or more parts.

The invention is preferably applied to coils possessing an annular core. In the known high frequency iron core coils having several cores, the core members, if none of them are movably disposed for balancing, are united by pasting or cementing them together, so that when an exchange of coils is required the core members thereof are easily destroyed. This defect is eliminated by a coil constructed according to the invention, which, furthermore, makes it possible to arrange the balancing means of the coil in a conveniently accessible manner and to construct it in a very simple manner without requiring additional fittings.

According to the invention, the core members are held together by a bushing made of material poor in electric loss, wherein a balancing core of high frequency iron is displaceably arranged so as to be adjustable from both front parts of the coil core and preferably provided with pressed or cut thread and with slots on both faces. The use of such threaded balancing cores requires of course a corresponding female thread on the bushing to connect the core members. Compared with known types, a balancing core according to the invention affords the advantage that no special adjusting means are needed, except a screw-driver.

The bushing is preferably made from polystyrol (polymerized phenyl ethylene) or a similar cold or hot moldable material (artificial resin). The coils according to the invention can be used to particular advantage in intermediate frequency transformers by securing two coil systems according to the invention by means of the bushings to a base consisting of material that is poor in electric loss and preferably ceramic and attaching the parallel condensers on the underside of the base. Intermediate frequency transformers built up in the manner described require very little space, are extremely resistant to mechanical stresses and, owing to the possibility of balancing the coils from both sides, can be installed even at difficultly accessible points in high frequency devices without the least trouble.

By way of example, the invention is illustrated in the accompanying drawing, in which Figures 1 and 2 are sectional views of an intermediate frequency transformer provided with coils according to the invention.

In the embodiment shown, the core parts are

annular with coil-receiving grooves in their adjacent faces, though other types of cores may be used if they consist of two or more parts and have a central bore.

Referring to the drawing, through the halves *a1*, *a2* a bushing *b* of polystyrol or a similar cold or hot moldable material is passed and provided with internal thread. The ends of the bushings *b* are slightly hot or cold upset and will then insure firm connection of the pot halves *a1*, *a2*. It is further possible to employ ceramic bushings having a collar at one end and being cemented or pasted together with the corresponding core member at the other end, or one end of the bushing may have a collar, so that only one end thereof need be upset. The bushing *b* contains an adjustable balancing core *c* of high frequency iron provided with pressed or cut thread and slotted at both ends so as to be adjustable from both sides of the coil by means of a screw-driver.

In the construction shown two coils are arranged in an intermediate frequency transformer, and the bushings *b* serve also for securing the coils side by side to the base *d* made of ceramic material poor in electric loss. The base *d* carries on its side turned away from the pot-shaped coils the necessary parallel condensers *e* which are of tubular construction to save space. The base *d* is further provided with openings for the reception of the coil connections or contact lugs *f*. The entire set is surrounded by the shielding casing *g* whose bottom and cover possess openings *h* through which the balancing cores *c* can be adjusted.

The invention is not limited to the embodiment described and shown in the drawing, but can be varied in many ways without exceeding its scope.

A particular feature of the invention, independently of the construction of the core members and the connection thereof, is the provision of the balancing cores with pressed or cut thread.

I claim:

1. An intermediate frequency transformer coil system comprising a base member of insulating material having two parallel bushings of insulating material projecting from one side thereof, a two part core surrounding each bushing, said core comprising two annular members providing a cavity between them, a coil within the cavity provided by said core members and a balancing core threaded into each of said bushings.

2. In a high frequency coil, two core members each having an annular groove in the face thereof, a bushing of dielectric material passing axially

through the members and holding them together with said grooves superposed, a coil in said grooves, and a core of iron low in dielectric loss displaceably arranged in the bore of the bushing.

- 5 3. Apparatus in according with claim 2, in which the balancing core is threaded into the bushing and has each of its ends provided with a

transversely extending slot, and a casing enclosing said apparatus having a pair of spaced aligned openings each being disposed with respect to an adjacent slotted end of the core so that the latter can be readily engaged by an adjusting tool.

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