May 17, 1927. 1,629,148

G. S. CHAUNCEY

INDUCTION COIL CORE

Filed Dec. 20, 1924

Fig. 1

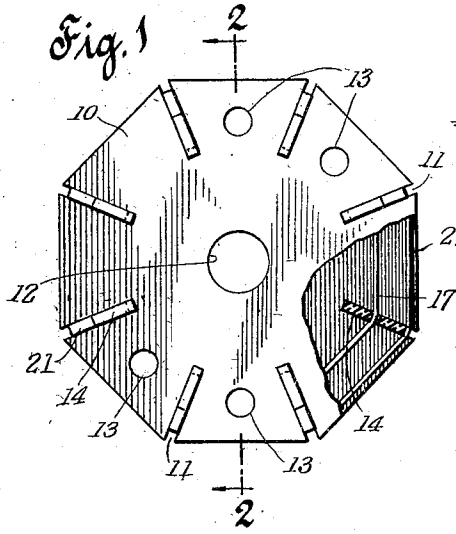


Fig. 2.

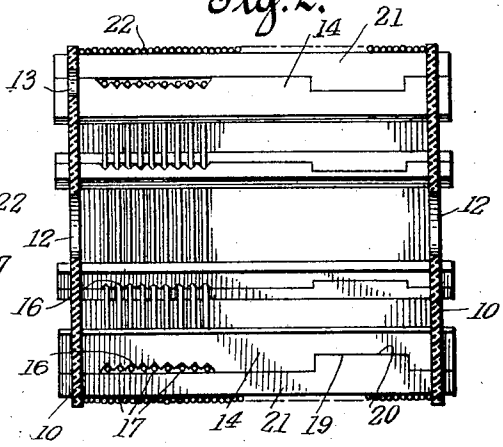


Fig. 3.

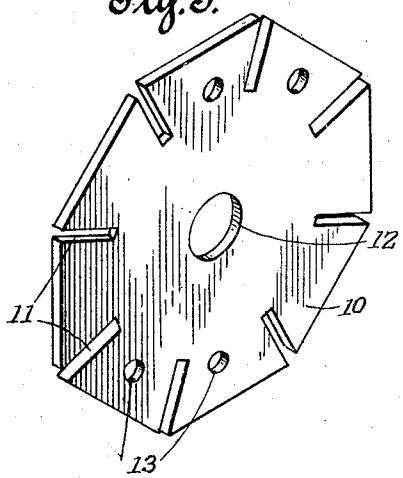


Fig. 4.

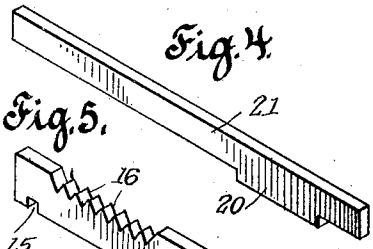


Fig. 5.

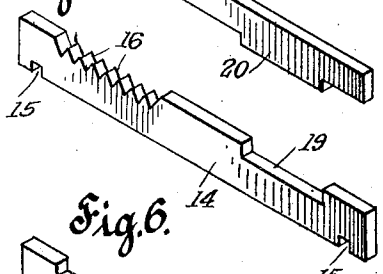
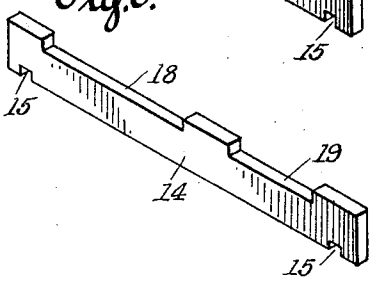


Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE S. CHAUNCEY, OF SOUTH ORANGE, NEW JERSEY.

INDUCTION-COIL CORE.

Application filed December 20, 1924. Serial No. 757,228.

This invention relates to improvements in induction coils, particularly to types used in connection with aerial telephony and radio apparatus, known as tuning coils, and its principal object is to provide a particularly simple and efficient core or frame upon which the coils are wound.

Another aim is in the provision of a core capable of being dismembered before the windings are applied, and packed closely in small compass, and after being wound to present a structure characterized by lightness, strength and effectiveness in operation.

A further feature is to produce a core that can be produced at a far less expense than is usual, by punch press dies, whereby uniformity and interchangeability of parts are assured.

These and other important aims and objects are accomplished by the novel construction, combination and arrangement of parts hereinafter described and illustrated in the accompanying drawing, constituting a material part of this disclosure, and in which:—

Figure 1 is an end elevational view of a coil having a core made in accordance with the invention, parts being broken away to disclose the construction.

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

Figure 3 is a perspective view of one of the heads of the core in detail.

Figure 4 is a similar view of one of the outer bars or slats used in the core construction.

Figure 5 is a like view of one of the inner bars used therein.

Figure 6 is a perspective view showing a modified inner bar.

In general terms, the invention may be described as being composed of a pair of heads, alike in all respects, containing radial slots in which are seated inner and outer layers of bars, having interengaging edges, these bars being held securely in place by the windings of the wire coils, all parts of the core being composed of dielectric sheet material, preferably that known as bakelite.

In the drawing, the numeral 10 designates the end members or heads, the same being cylindrical or polygonal as shown as preferred, and provided with uniformly spaced radial slots 11 in their peripheries, the slots being uniform in width and depth.

A central opening 12 provides for the insertion of an arbor when winding the coils, and afterwards to admit a screw-driver or other like implements in fastening the structure to a panel and such other purposes as may occur, smaller openings 13 providing means to insert securing devices and also for the attachment of binding posts or like terminals.

The inner bars 14 contain notches 15 in their bottom edges adjacent the ends, these notches being of equal depth and of a width equivalent to the thickness of the heads 10, while the thickness of the bars is equal to the width of the slots 11, so that when assembled as to be fairly rigid.

In the opposite, outer edge, are a succession of equi-distant serrations 16, the same being of such depth and so spaced as to receive the windings of a primary coil 17, or, as shown in Fig. 6, a recess 18 may be made in the outer edge for a similar but closer winding, the length of the recess 18 or number of depressions 16, being such as is indicated by good practice.

Also in the outer edges of the inner bars are recesses 19 to engage projections 20 on the inner edges of the outer bars 21, the same being equal in length and thickness to the inner bars, but of less width, as shown, and the secondary coil 22 is wound upon the outer bars as indicated.

All these several parts are obviously cheaply produced by dies, no other finishing being required and the assembling is of simple nature, it being merely necessary to insert the bars 14 into the slots 11, bringing the notches 15 to rest in the bottoms of the slots, and then apply the primary winding 17.

When this has been done, the inner edges of the outer bar 21 are entered into the slots to seat on the inner bars, the projections 20 fitting the recesses 19 to prevent relative end movement, and the secondary windings 22 applied, binding the structure firmly together.

It is considered preferable that the bars 14 and 21, when assembled, do not extend above the slots 11, but rather that there is a small open space at the outer ends of the slots, so that the heads or discs 10 amply protect the coils and avoid damage by possible rough handling, and to the same purpose the ends of the bars extend outward beyond the heads in the manner shown.

It is to be noted that no specific wiring

is claimed, the invention residing in the core, frame or drum as disclosed, but it is advanced that due to the open winding effect obtained, the coil is particularly sensitive and effective in operation.

Although the foregoing is descriptive of the foregoing embodiment of the invention, it will be apparent that minor changes may be made in its construction, without the exercise of invention or conflicting with the scope of the claims hereto appended.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. A coil core comprising a pair of duplicate heads having equally spaced open radial slots in their peripheries, a series of bars fitting the slots and having notches engaging the bottoms thereof, means in said bars to receive the windings of a coil, and a second series of bars disposed in the slots over the first named bars, said second bars receiving the windings of another coil, all of said bars extending uniformly outward beyond said heads.

2. A coil core comprising a pair of duplicate heads having equally spaced open radial slots in their peripheries, a series of bars fitting the slots and having notches engaging the bottoms thereof, and being recessed on their outer edges, a primary coil disposed in one of the recesses, a second series of bars disposed in the slots in said heads over the first bars, projections on said second bars to engage in another of the recesses in the first bars, an another coil disposed on said second bars.

3. A coil core comprising a pair of polygonal heads containing open radial slots at the junctions of the angles and having central openings, bars fitting the slots, said bars having notches engaging the bottoms of the slots, a series of serrations in the outer edges of said bars to receive a primary coil, other bars superimposed on the first bars, the last named bars receiving another coil, and tongue and groove connections between the first and last bars.

4. A coil core comprising a pair of polygonal heads containing open radial slots at the junctions of the angles and having central openings, bars fitting the slots, said bars having notches engaging the bottoms of the slots, means in the outer edges of said bars to receive and segregate the windings of the primary coil, a second series of bars overlying the first named bars, all of said bars extending outwardly beyond the heads and within the profiles thereof, said last named bars receiving the windings of a secondary coil, interengaging means between the juxtaposed bars to prevent relative end movement, and means in said head to receive binding posts.

This specification signed this 19th day of December, 1924.

GEORGE S. CHAUNCEY.