April 28, 1925. 1,535,584

L. DORFMAN

MOLD FOR REACTANCE COIL SUPPORTS

Filed June 16, 1922

Fig. 1.

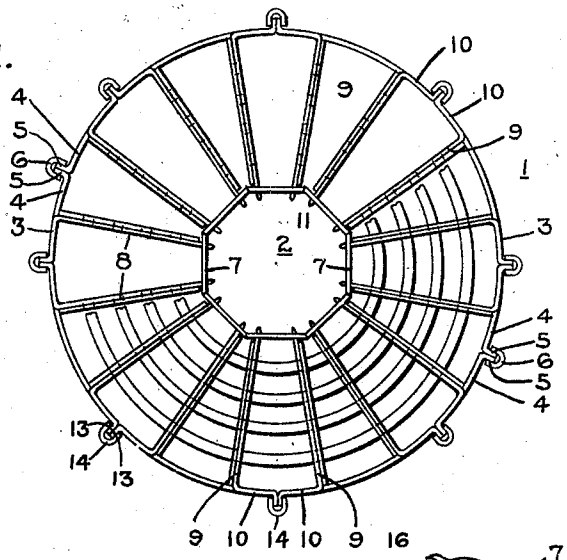


Fig. 4.

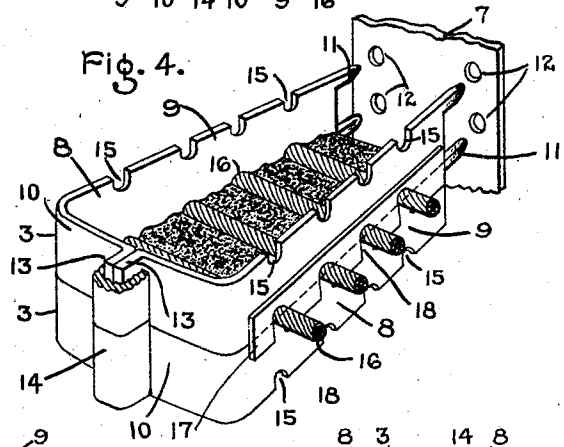


Fig. 2.

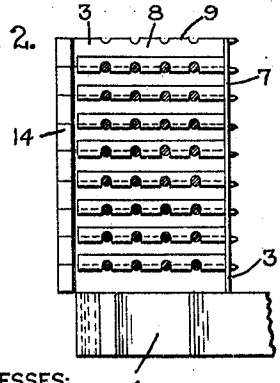
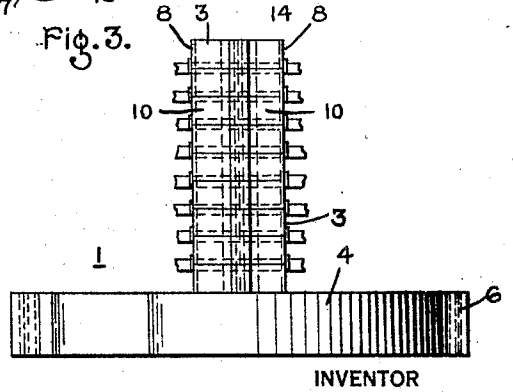


Fig. 3.



WITNESSES:

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Patented Apr. 28, 1925. 1,535,584

UNITED STATES PATENT OFFICE.

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MOLD FOR REACTANCE-COIL SUPPORTS.

Application filed June 16, 1922. Serial No. 568,729.

To all whom it may concern:

Be it known that I, LEO DORFMAN, a citizen of the United States, and a resident of Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Molds for Reactance-Coil Supports, of which the following is a specification.

My invention relates to molds and it has particular relation to collapsible molds for the coil-supporting portions of reactance coils.

Heretofore, it has been customary, in the manufacture of reactance coils, to support the respective convolutions of the coils by means of a plurality of superposed members or cleats provided with recesses or notches adapted to receive and retain the coiled conductors and which are clamped together and arranged in radially-extending stacks or tiers. This method of constructing reactance coils is unsatisfactory in that much time and manual labor is required to successively arrange the layers of cleats in position and to wind the coils thereon. Furthermore, the cleats employed for this purpose are constructed from relatively expensive refractory material, such as asbestos or the like, and the cleats frequently become displaced laterally, which results in an unsightly structure.

One of the objects of my invention is to provide a mold, of the character set forth, by means of which the coil-supporting portions of a reactance coil may be quickly and easily molded from concrete and around a previously wound conductor.

Another object of my invention is to provide a device, of the character described, in which the mold functions to maintain the respective convolutions of a previously wound coil in correct position during the molding operation.

A further object of the invention is to provide a mold, of the character designated, which may be easily assembled in position and removed from a support and from between the convolutions of a coil at the conclusion of the molding operation.

In the accompanying drawing,

Figure 1 is a plan view of a reactance coil constructed in accordance with my invention and with the collapsible mold in position.

Fig. 2 is a fragmentary side elevational view of one of the stacks of superposed molding units.

Fig. 3 is a view of the structure illustrated in Fig. 2, viewed from a position at right angles thereto.

Fig. 4 is a fragmentary enlarged perspective view of two of the superposed molding units.

Referring to the drawings, a mold constructed in accordance with my invention is illustrated as comprising an annular divided band 1 and a centrally-disposed collapsible core portion 2 upon which a plurality of spaced and radially extending collapsible units 3 are mounted in superposed relation in spaced stacks or tiers.

The band 1, which constitutes a supporting base for the outer ends of the units 3, preferably consists of a plurality of arcuate sections 4 the extremities of which are provided with flanges 5 adapted to be detachably secured together in abutting relation by means of vertically extending channel members 6.

The core member 2 is shown as comprising a plurality of separate, vertically extending walls 7 which are maintained in position, during the molding operation, by any suitable bracing means, such as wooden blocks, not shown.

Each of the units 3 comprises two complementary side portions 8, of substantially L shape, and are provided with side walls 9 and front walls 10. The inner extremities of the side walls 9 are provided with tongue portions 11 which are adapted to engage apertures 12 provided in the walls 7 of the core member 2 and which prevent the lateral displacement of the rear extremities of the walls 9 when the molding material is introduced into the units 3.

The front walls 10 of the units 3 are provided with outwardly extending flanges 13 which are adapted to be detachably secured together in abutting relation by means of vertically extending channel members 14.

The upper and lower edges of the side walls 9 of the units 3 are provided with a plurality of spaced, substantially semicircular, notches or recesses 15 which are adapted to receive and retain the convolutions 16 of the concentrically-disposed coils, which, when wound therein, prevent the radial displacement of the units 3

Flanges 17 are secured to the lower edges of the side walls 9 and are adapted to overlap the upper edges of the side walls 9 of the adjacent units. The flanges 17 are also provided with notches 18 which register with the notches 15 formed in the lower edges of the walls 9 and coact with the notches 15 formed in the upper edges of the walls of the adjacent units to embrace the convolutions 16 of the coils and to prevent the displacement thereof.

In operation, the arcuate sections 4 of the band 1, the walls 7 of the core member 2 and the lowermost units 3 of each of the tiers are first disposed in position in the order named. It will be understood that the band 1, when assembled, constitutes a supporting base for the outer ends of the lowermost units 3, the inner ends of the latter being supported by the walls 7. The units 3 are spaced from the molding floor a distance equal to the width of the band 1. The initial convolutions of the concentric conductors are then wound about the core and within the notches 15. The next layer of units 3 is then disposed in position and the second series of convolutions of the coil is wound in the notches 15 thereof. The described operations are successively repeated until the desired number of turns of the conductors are wound. Concrete, or other suitable molding material, is then introduced within the band 1, to form a disk having the width of the band 1 which constitutes the base for the coil, and within the superposed and communicating units 3 and around the portions of the conductors disposed therein, to form supporting columns for the windings of the coil.

When the concrete is set, the sections 4 of the band 1 and the side walls 7 of the core portion of the mold are first removed. The channel members 14, which secure the outer edges of the units 3 together, are then removed and the complementary side portions 8 withdrawn, commencing with the uppermost units of each stack, by turning the same about a radial axis sufficiently to disengage the notches 15 from the convolutions of the conductor.

A very inexpensive, efficient and easily assembled collapsible mold is thus provided by means of which the labor and expense incidental to the manufacture of reactance coils is considerably reduced.

I claim as my invention:

1. A mold comprising a base portion and a plurality of spaced tiers of radially extending superposed sections mounted thereon.

2. A mold comprising a divided base portion, a collapsible centrally-disposed core portion and a plurality of radially extending divided molds mounted on said core portion and arranged in superposed relation above said base portion.

3. A mold comprising a divided base portion, a collapsible core portion disposed within said base portion and extending upwardly therefrom and a plurality of divided molds removably mounted upon said core portion and extending in a radial direction over said base portion.

4. A mold comprising a plurality of radially disposed tiers of superposed sections.

5. A mold comprising a plurality of superposed layers of radially disposed sections.

6. A mold comprising a base portion consisting of a plurality of sections detachably secured together, a vertically extending collapsible core member, a plurality of superposed separate divided molds arranged radially about said core member, and means for securing said divided molds in operative position and in alignment with each other.

7. A mold comprising a collapsible core member, a plurality of superposed divided molds provided with means for detachable engagement with said core member, said divided molds consisting of a plurality of portions adapted to support a conductor and means for detachably securing said portions together.

8. A mold comprising a centrally-disposed collapsible support, a plurality of radially extending divided molds carried thereby, and arranged in superposed relation in spaced tiers, each of said divided molds comprising a plurality of complementary members provided with flanged front walls, and side walls provided with a tongue portion adapted to engage apertures in said collapsible support, and a vertically extending channel member adapted to embrace the flanged portion of superposed members of each tier to maintain said members in operative position and in alignment with each other.

9. A mold comprising a plurality of superposed divided sections, one of the edges of the side walls of said sections being provided with notches adapted to receive and retain a conductor and the other edges thereof being offset and adapted to telescopically engage the edge of the side wall of the adjacent section.

In testimony whereof, I have hereunto subscribed my name this 8th day of June 1922.

LEO DORFMAN.