April 14, 1931. E. J. VON HENKE 1,801,214

EDGEWISE COIL AND METHOD OF MAKING THE SAME

Filed April 28, 1928

Fig. 1.

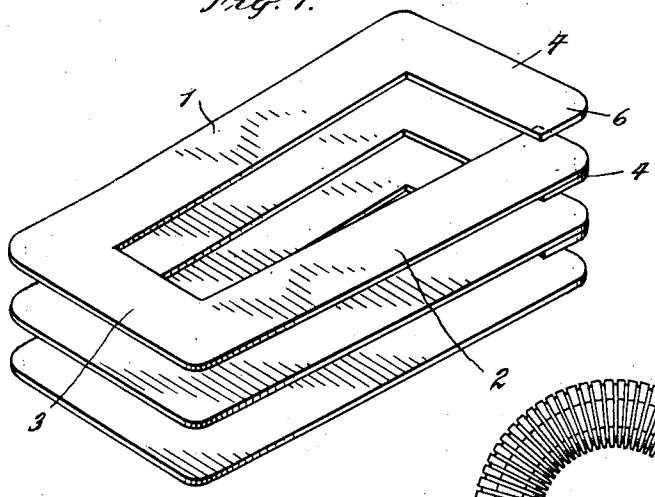


Fig. 5.

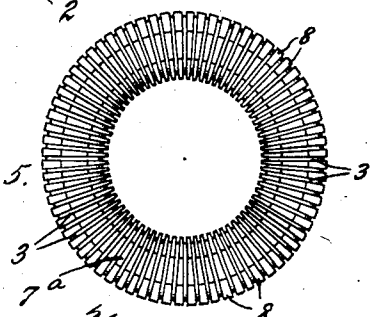


Fig. 2.

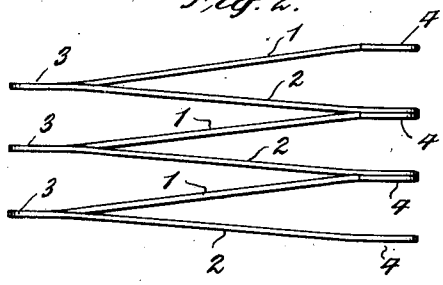
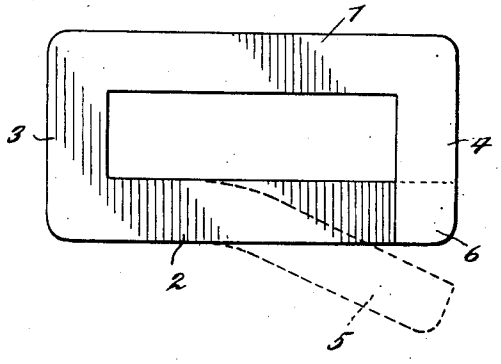


Fig. 3.



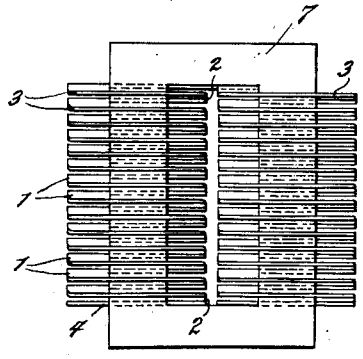


Fig. 4.

Edmund J. von Henke INVENTOR.

BY Gifford & Scull

His ATTORNEYS.

Patented Apr. 14, 1931

1,801,214

UNITED STATES PATENT OFFICE

EDMUND J. VON HENKE, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN ELECTRIC FUSION CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

EDGEWISE COIL AND METHOD OF MAKING THE SAME

Application filed April 28, 1928. Serial No. 273,673.

My invention relates to edgewise coils and method of making the same and is particularly directed to such a coil made from stampings.

There are many uses in the arts for coils of this type, perhaps the principal use being in transformers.

Heretofore such coils have been made by taking a ribbon of conducting material and winding the same edgewise, but this involves not only considerable difficulty in the winding operation, but places severe strains upon the metal ribbon itself. Furthermore, an edgewise-wound coil made from a continuous ribbon cannot be applied to a closed core, but some arrangement must be made whereby the core may be opened, the coil slipped in place and the core closed again. This reduces the efficiency of the core by increasing magnetic reluctance thereof.

By my method the individual turns are stamped from a sheet of conducting material, the turns placed individually on the core and then united into a coil. This process has the advantage of producing a coil which can be placed upon a closed magnetic core and also such a coil may be placed upon a core, which is in position in the transformer, without dismantling the transformer and other apparatus that may be connected with it.

My invention will be better understood by reading the following description taken in connection with the accompanying drawings, showing one form of the invention, and in which—

Fig. 1 is a perspective view of a coil of three turns;

Fig. 2 is a side view of the same;

Fig. 3 is a plan view of one of the turns showing its original shape as punched out in dotted lines and its final shape in solid lines;

Fig. 4 is a plan view of a closed magnetic core with a coil placed thereon; and

Fig. 5 is a top plan view of a circular core with my coil applied thereto.

Referring to the drawings, the article shown in Fig. 3 is stamped from a sheet and has sides 1 and 2 and ends 3 and 4. As originally stamped the side 2 bends outwardly, as shown in dotted lines at 5. This enables the side 2 to be stamped of equal length and identical shape to the side 1. After being stamped the bent portion 5 of the side 2 is placed in a die or other suitable means and bent to the full-line position shown in Fig. 3. This provides a stamping of the desired size having identical sides and identical ends, but open at the corner 6, as clearly shown in Fig. 1. The device shown in Fig. 3 is a single turn and because of the opening at the corner 6 this may be placed in position on the transformer core 7 and then the side 2 of one coil be soldered or otherwise attached to the end 4 of the adjacent coil, as shown in Fig. 1. This produces a continuous coil and obviously the coil may be made so as to contain as many turns as desired.

In Fig. 5, I have illustrated a circular core 7^a made from stampings built up to the desired size with a coil thereon and made up as heretofore described and the adjacent parts of which are held apart by blocks 8 of wood or other suitable insulating material. Obviously the core may take any other desired form without departing from the spirit of my invention.

My invention has many obvious advantages, as will be apparent to those skilled in the art, and while I have shown one specific form, I desire to have it understood that I am not to be limited to the exact form or shape of the individual turns or of the transformer core, as the same advantages may be secured with other forms and shapes, both of the turns of the coil and of the transformer core.

I claim:

1. An edgewise coil comprising a plurality of turns, each turn consisting of a single piece of flat metal having one end overlapping and connected to an end of an adjoining turn.

2. An edgewise coil comprising a plurality of turns, each turn consisting of a single piece of flat metal having one end overlapping the other end of the same turn, one end of each turn being connected to an end of an adjoining turn.

3. The method of forming an edgewise coil which comprises stamping from a sheet of metal a turn of the coil, with one end of the

turn spaced from the other end, and then bending one of said ends in the plane of said sheet to a position wherein it overlaps the other end.

4. The method of forming an edgewise coil having a plurality of turns, each of substantially rectangular form, which comprises stamping from a sheet of metal a single turn of the coil, with three of the sides of the rectangle in their final position with respect to each other but with a portion of the fourth side displaced in the plane of the sheet, said displaced side having one end disconnected from an adjacent side of the rectangle, and bending said displaced side in the plane of the sheet to bring said end under the end of said adjacent side.

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