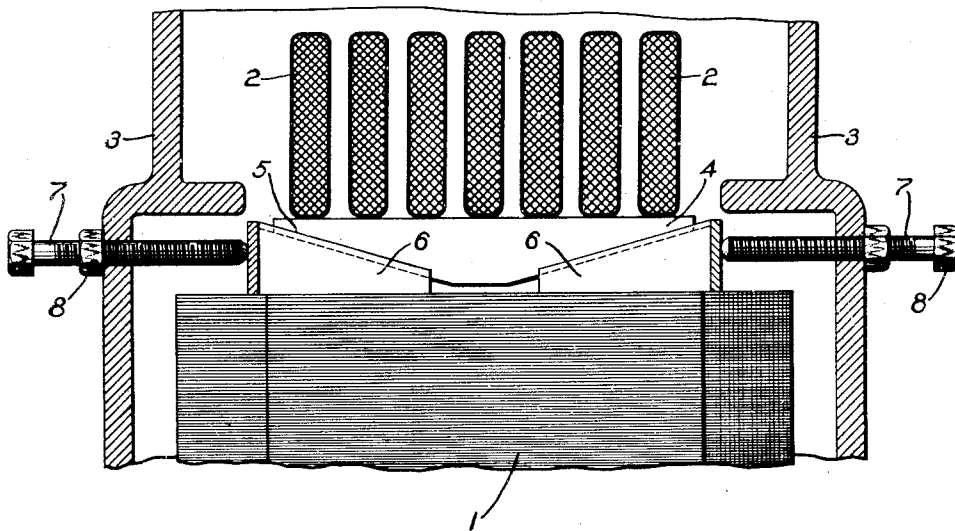


A. W. THOMPSON.
COIL SUPPORTING MEANS FOR TRANSFORMERS.
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1,435,265.

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WITNESSES:

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COIL-SUPPORTING MEANS FOR TRANSFORMERS.

Application filed August 7, 1917. Serial No. 184,814.

To all whom it may concern:

Be it known that I, ARTHUR W. THOMPSON, a citizen of the United States, and a resident of East McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Coil-Supporting Means for Transformers, of which the following is a specification.

My invention relates to the mechanical structure of power transformers, having special relation to devices for positioning and holding the transformer coils, and it has for its object to provide a simple and inexpensive auxiliary device of the character designated whereby the coils may be clamped rigidly in position and held against movement in response to either internally or externally developed forces.

The single figure of the accompanying drawing is a cross-sectional view of an air-cooled transformer provided with another embodiment of my invention.

Heretofore, it has been customary, in constructing transformer windings, to allow the coils to derive their support directly from the transformer core. This construction, while effective under ordinary operating conditions, has been found defective when the coils are subject to severe mechanical strains, such as those arising from electrical short-circuits or the vibration of a locomotive on which they may be mounted. By my invention, I provide a device by which the coils are held firmly in position against displacing forces and which is easily accessible for adjusting the position of coils which have been distorted.

Again, I find that in transformers constructed in the above designated manner the "settling" of the laminations comprising the iron core will frequently allow the coil members, which are mounted thereupon, to sag. In order to prevent this occurrence, I find it necessary to provide adjustable means which will insure the coil member being held in predetermined rigid relation to the core.

Referring to the drawing, a portion of a transformer is shown as comprising a core member 1 having a plurality of coils 2 electromagnetically associated therewith and disposed within a suitable casing 3. The coils 2 are directly supported, in spaced relation with respect to the core member 1,

by means of a member 4 which is disposed between the core and the inner edges of the coils. The edge of the member 4, adjacent to the core 1, is provided with inclined faces 5, at each end thereof, which are adapted to be engaged by coacting wedge members 6 that are slightly mounted between the core 1 and the coil-supporting member 4.

Jack-screws 7 are mounted in the walls of the casing 3 and are adapted to force the members 6 into wedging contact with the inclined faces 5 of the coil-supporting member 4 to initially secure the coils in position and to take up any lost motion or slack that may subsequently develop between the various parts. Lock nuts 8 are provided to maintain the jack-screws 7 in their adjusted positions.

While I have herein described, in detail, a plurality of forms of my invention, I do not wish to be limited thereto except as limitations may be required by the prior art or set forth in the appended claims.

I claim as my invention:

1. The combination with a core member and coils electromagnetically associated therewith, of a common supporting means coacting with the inner surfaces of all of said coils and adapted to support said coils in spaced relation with respect to said core, and horizontally movable screw threaded means disposed adjacent to each end thereof for adjustably maintaining said coils in magnetic axial alinement.

2. In combination with a core member and coils electromagnetically associated therewith, of a supporting member extending through all of said coils and in engagement with the inner surfaces thereof, and horizontally movable means disposed between said supporting member and said core for adjustably maintaining said coils in magnetic axial alinement.

3. The combination with a core member and coils electromagnetically associated therewith, of coil-supporting means disposed between said core member and the inner surface of said coils, longitudinally movable means disposed between said supporting means and said core for maintaining said coils in magnetic alinement against movement in a direction normal to the axis thereof, and means for actuating said movable means.

4. In an electrical structure, the combination with a core member having coils electromagnetically associated therewith, of a vertically movable inflexible member mounted between said core member and the inner edges of said coils, adjustable means disposed between said movable member and said coil for moving said movable member away from said core member, whereby said coils are rigidly positioned with respect to each other, and screw threaded means for actuating said adjustable means.

5. In an electrical structure, the combination with a core member having coils associated therewith, of spacing means disposed between said core member and said coils provided with inclined surfaces, means extending between said spacing means and said core provided with inclined surfaces adapted to coact with the first mentioned inclined surfaces to move said spacing means with respect to said core member.

6. In an electrical structure, the combination with a core member having coils associated therewith, of coil-supporting means disposed between said core member and said coils, a plurality of adjustable members provided with cam surfaces adapted to coact with said supporting means in maintaining said coils in position, and screw-threaded means for actuating said adjustable members.

7. In an electrical structure, a coil, means

for supporting said coil comprising a plurality of spaced members disposed in engagement with the inner surfaces thereof, means movable in a direction normal to the faces of said coils for adjusting the relative positions of said spaced members, and a plurality of jack screws for actuating said movable means.

8. In an electrical structure, a coil of substantially rectangular contour provided with an opening therein, means for supporting said coil comprising two spaced members disposed in engagement with two oppositely disposed inner surfaces of said coil, and a plurality of jack screws movable in a direction parallel to the axis of said coil for adjusting the relative position of said spaced members.

9. In a transformer, a core member, a coil partially surrounding a portion of said core member, inflexible supporting members disposed between the ends of said core member and said coil, a plurality of wedge members disposed between said supporting members and said coil and adapted to position said coil relatively to said core, and a plurality of screw threaded means for actuating said wedges.

In testimony whereof, I have hereunto subscribed my name this 25th day of July 1917.

ARTHUR W. THOMPSON.