

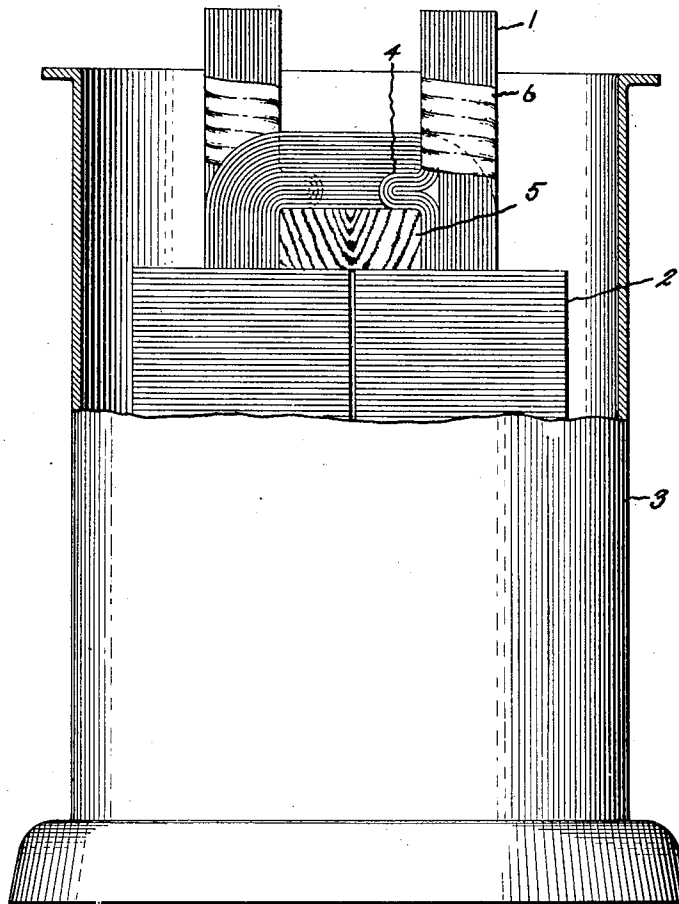
Aug. 5, 1924.

1,503,977

L. H. BURNHAM

WINDING FOR ELECTRICAL APPARATUS

Filed Sept. 26, 1921



Inventor:
Locke H. Burnham,
by *Alvin D. Davis*
His Attorney.

UNITED STATES PATENT OFFICE.

LOCKE H. BURNHAM, OF PITTSFIELD, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

WINDING FOR ELECTRICAL APPARATUS.

Application filed September 26, 1921. Serial No. 503,247.

To all whom it may concern:

Be it known that I, LOCKE H. BURNHAM, a citizen of the United States, residing at Pittsfield, in the county of Berkshire, State of Massachusetts, have invented certain new and useful Improvements in Windings for Electrical Apparatus, of which the following is a specification.

My invention relates to windings for electrical apparatus and more particularly to an improved construction and arrangement of parts for supporting or securing such windings in position.

One object of the invention is to provide an improved construction whereby an electrical conductor or winding may be secured in position so as to prevent sagging or displacement as a result of its weight or because of mechanical stresses due to magnetic influences.

One embodiment of the invention is illustrated in the accompanying drawing which shows a primary winding of a transformer with its end coils supported in accordance with the invention, the secondary winding and a portion of the tank being omitted to reveal details of construction.

As shown in the drawing, the primary winding or coil of a transformer is wound on the winding leg of the core 2, and both are housed in a tank 3, the secondary winding of the transformer and the cover and a portion of the tank wall being omitted in order to reveal the construction and arrangement whereby the primary winding is secured in position on the core. The primary winding 1 is shown as composed of a plurality of strands wound in parallel in the form of a bundle on the winding leg of the core 2. The two ends of this bundle of strands extend above the top face of the core to convenient points where connections may be made leading to outside apparatus. A short distance above the top face of the core 2, a number of the strands of the conductor 1 are bent outwardly and, in the particular arrangement shown in the drawing, preferably at a right angle from their original direction, then back upon themselves, and finally along their original path. In the case of a conductor or winding composed of

a sufficient number of strands as shown in the drawing, only a part of the strands need be bent and separated from the others as described. By bending, folding or distorting the strands or a portion of them in this manner, a projection or lug 4 is provided which has the form of a flattened loop projecting from one side of the conductor. A block or support 5, of suitable insulating material such as wood, is inserted under the lug 4 and fitted between this lug and the top face of the core 2 to prevent any sagging or displacement of the conductor 1 which might otherwise occur as a result of its weight or because of mechanical stresses due to magnetic action between the turns of the conductor and the core or other conductors.

In order to give the lug 4 additional strength and rigidity and to prevent its opening under stress, the sections of the strands which are bent or deformed to form the lug are preferably stripped of insulation and finally united by soldering them together into a strong rigid unit projecting from the face or edge of the conductor. The strands of the conductor may then be bound together close to the lug by winding them with suitable insulating material 6.

This construction and arrangement, one particular form of which has been described in detail, provides a simple and economical support for the conductor and the block or support 5 may be made thin enough so as not to interfere appreciably with the circulation of air or oil which may be used for cooling purposes. Neither is it necessary that the conductivity and resistance characteristics of the coil be impaired in any way, as in providing the form of lug which has been described, the cross section of the conductor is increased rather than diminished.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A transformer including a core having a winding leg, a winding surrounding said winding leg and having a straight section extending along one face thereof, the straight section of the winding being deformed to provide a projection at an angle to the direction of said straight winding

section, and means engaging said projection to prevent displacement of said straight winding section.

2. A transformer including a core having
5 a winding leg, a winding including a plurality of parallel strands surrounding said winding leg and having a straight section extending along one face thereof, a portion of said strands being bent away from and

then back into the direction of said straight winding section to provide a projection at an angle to the direction thereof, and means engaging said projection to prevent displacement of said straight winding section. 10

In witness whereof, I have hereunto set
my hand this 23rd day of Sept., 1921. 15

LOCKE H. BURNHAM.