

A. W. THOMPSON.
COOLING COILS FOR TRANSFORMERS.
APPLICATION FILED AUG. 17, 1920.

1,430,769.

Patented Oct. 3, 1922.

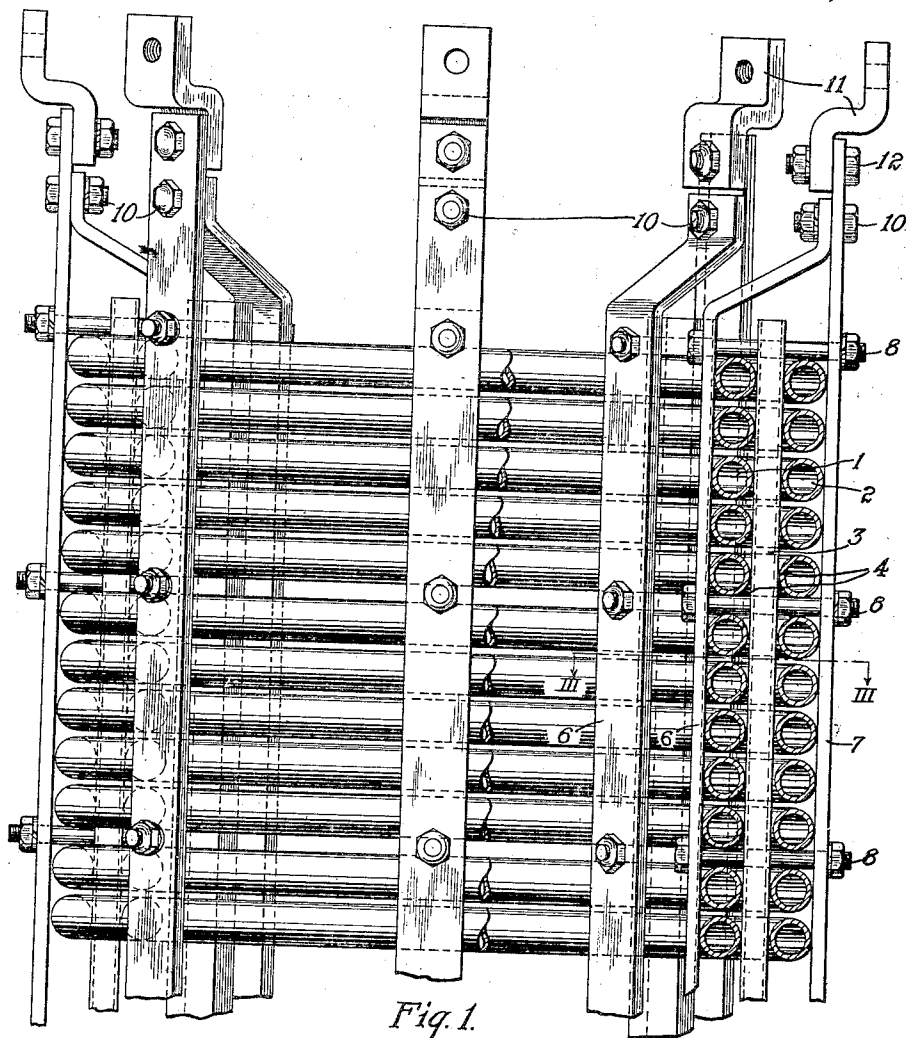


Fig. 1.

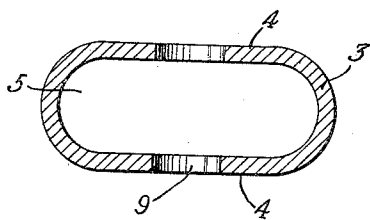


Fig. 2.

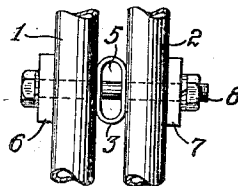


Fig. 3.

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ARTHUR W. THOMPSON, OF EAST MCKEESPORT, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

COOLING COILS FOR TRANSFORMERS.

Application filed August 17, 1920. Serial No. 404,215.

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 Cooling Coils for Transformers, of which the following is a specification.

My invention relates to cooling coils for transformers and it has particular relation to spacing members therefor.

Heretofore, in the assembly of cooling coils for transformers, wooden strips have been utilized to space and retain concentric cooling coils in position. It has been observed, however, that, prior to installing a cooling system in a transformer, and also in disassembling the same cooling coils while resting upon the floor or the like, the spacing members support the entire weight of the assembled coils. This has sometimes resulted in breaking and splitting the spacing members, particularly at their lower ends, thus making necessary a replacement of the injured members, at considerable labor and expense.

The object of my invention is to provide a spacing member of the character described that is strong and durable in construction and one that may be manufactured at a relatively small cost.

Another object is to provide a spacing member of hollow construction and of comparatively light weight without sacrificing the necessary cross-sectional dimensions and without interrupting the flow of oil.

In the accompanying drawings:

Figure 1 is a view, partly in elevation and partly in section, of a transformer-cooling system embodying my invention.

Fig. 2 is an enlarged cross-sectional view of the spacing member.

Fig. 3 is a cross-sectional view on line III—III of Fig. 1.

Referring to the drawings, the numerals 1 and 2 indicate inner and outer concentrically arranged cooling coils, respectively, that are adapted to be submerged within the insulating and cooling coil of a transformer

and through which a current of water may be circulated by any preferred means.

The coils 1 and 2 are retained in the desired concentric and spaced relation by means of spacing members 3, preferably formed of a standard-gauge pipe and so flattened, in any preferred manner, as to form relatively flat sides 4 and having passages 5 extending therethrough. The coils are so bound together as to constitute a rugged unitary structure by means of vertically extending inner and outer straps or bars 6 and 7, respectively, and secured together, at intervals, by bolts 8 which pass between the individual convolutions of coils 1 and 2 and through apertures 9 and the spacing members 3.

The upper end of the inner bars 6 are preferably bent outwardly over the coils 1 and 2 and are secured to the outer bars 7, as at 10. The upper extremities of the bars 7 are secured to fastening members 11, as at 12, which are offset and are adapted to be secured to the inner face of a transformer case (not shown).

By this construction, a transformer-cooling system may be assembled as a unit and afterwards inserted within a transformer. Also, by employing spacing members of the above-specified construction, the weight of the cooling system may be easily supported without injury thereto. Furthermore, the tubular construction of the spacing members permits a free circulation of oil there-through, which is thereby brought into closer contact with the cooling coils.

I claim as my invention:

1. A spacing member for transformer-cooling coils comprising a metal tube having relatively flat coil engaging sides.
2. A transformer-cooling system, comprising a plurality of concentrically arranged cooling coils, means for securing said coils in position, and a spacing member of hollow construction arranged between said coils and having relatively broad flat sides for engagement therewith.
3. In a transformer-cooling system, a plurality of concentrically arranged inner

and outer cooling coils, means for retaining said coils in position, and a metallic tubular spacing member arranged between said inner and outer coils and maintained in position by said retaining means.

5 4. A transformer-cooling system comprising a plurality of concentrically arranged inner and outer cooling coils, supporting means therefor comprising inner and outer

vertically extending bars, tubular spacing 10 members arranged between said coils, and fastening means adapted to secure together said bars and spacing member and clamp said coils therebetween.

In testimony whereof, I have hereunto 15 subscribed my name this 30th day of July, 1920.

ARTHUR W. THOMPSON.