J. F. PETERS.

COOLING SYSTEM.

APPLICATION FILED JULY 30, 1920.

1,424,259. Patented Aug. 1, 1922.

Fig. 1.

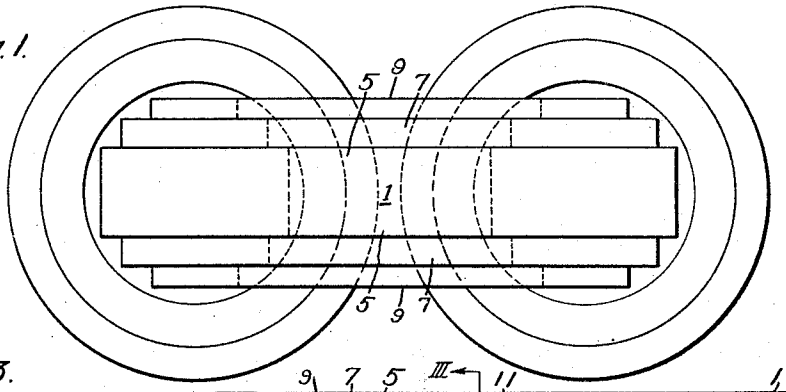


Fig. 3.

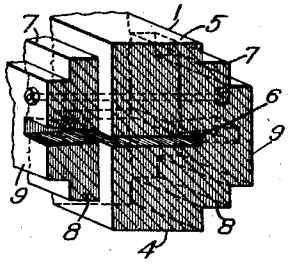
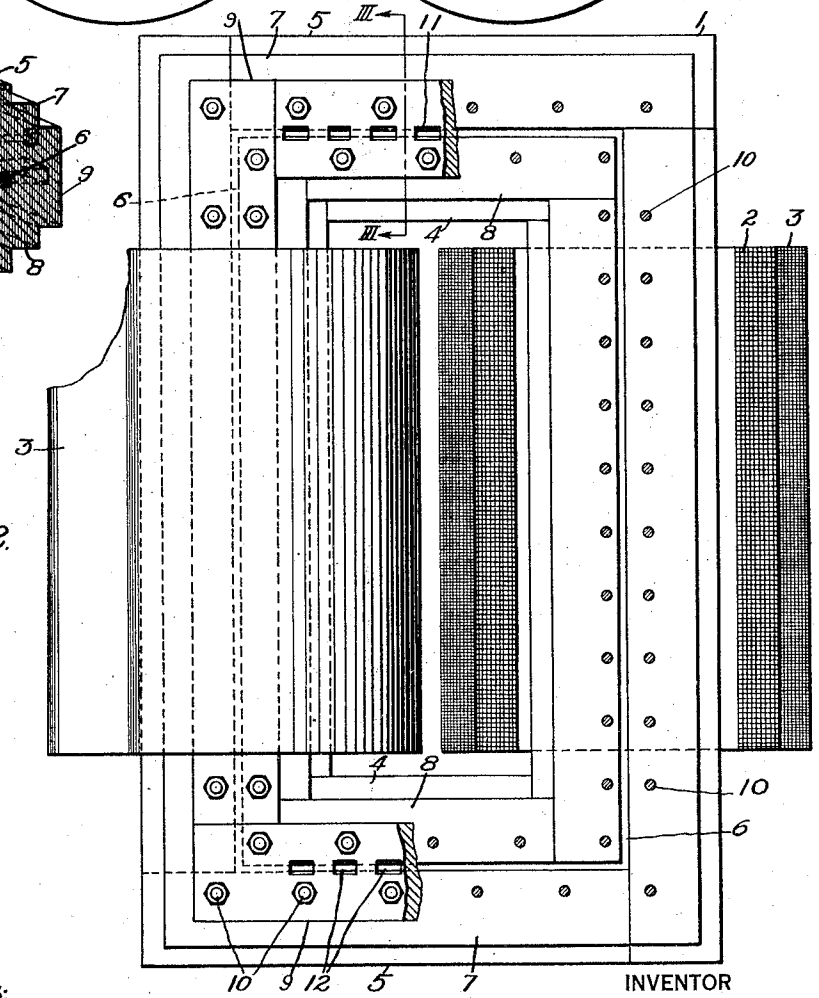


Fig. 2.



WITNESSES:

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JOHN F. PETERS, OF EDGEWOOD PARK, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

COOLING SYSTEM.

1,424,259. Specification of Letters Patent. Patented Aug. 1, 1922.

Application filed July 30, 1920. Serial No. 400,281.

To all whom it may concern:

Be it known that I, JOHN F. PETERS, a citizen of the United States, and a resident of Edgewood Park, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Cooling systems, of which the following is a specification.

My invention relates to cooling systems and particularly to cooling systems such as may be employed in connection with transformers, reactance coils and similar devices having relatively large core members.

The primary object of my invention is to provide a cooling system for transformers or other devices of the character described which permits the circulation of a cooling medium through the interior of the core members thereof and adjacent to such parts as are of highest temperatures.

Another object is to provide a core member having a continuous passage therethrough and comprising a plurality of sections that may be easily and quickly assembled to form a rigid unitary structure.

In the accompanying drawings:

Fig. 1 is a plan view of an assembled core with primary and secondary coils mounted thereon for inductive relation thereto.

Fig. 2 is a view, partially in side elevation and partially in section of the structure of Fig. 1, a portion being broken away.

Fig. 3 is a sectional view on line III—III of Fig. 2.

A core member 1 of laminated structure and preferably of rectangular outline and cruciform cross-section has a primary coil 2 and a secondary coil 3 inductively mounted upon the legs thereof.

The core member 1 comprises inner and outer members 4 and 5 of laminated structure so arranged in spaced relation as to provide a continuous passage or duct 6 therebetween. Members 7 and 8 may be located on each side of the members 4 and 5 to increase the thickness of the core member and the width of the duct 6. Plates 9, also of laminated structure, span the duct 6 and overlap the members 7 and 8 on each side of the core member. The parts are so secured together by means of bolts 10 as to constitute a rigid and unitary structure.

The plates 9 are preferably provided with a plurality of apertures 11 and 12, in the upper and lower yoke portions thereof, which communicate with the duct 6 and permit the cooling medium circulating around the exterior of the cores and coil, to enter the apertures 12 in the lower yoke member and dividing, pass upwards through the duct 6 in the interior of the legs of the core and pass out of the apertures 11 in the upper yoke members.

By means of this structure, the cooling medium may freely circulate both inside and outside of the core, thereby coming into contact with the edges of the laminations thereof where the radiation of heat is the greatest and consequently where an application of the cooling medium has the greatest efficiency.

What I claim as my invention is:

1. A transformer core comprising a plurality of elements disposed one within the other and in spaced relation, and side members secured to said elements and spanning the space therebetween to form a continuous passage in said core, said side members having apertures therefor adapted to communicate with said passage.

2. A transformer core comprising a plurality of substantially rectangular elements disposed one within the other in spaced relation with respect to each other, and side members secured to said elements and spanning the space therebetween to form a continuous passage in said core, said side portions having apertures in the opposite sides thereof which are adapted to communicate with said passage.

3. A transformer core comprising a plurality of substantially rectangular elements disposed one within the other in the same plane and in spaced relation with respect to each other, and side members secured to said elements and spanning the space therebetween to form a continuous passage in said core, said side portions having apertures in the opposite sides thereof which are adapted to communicate with said passage.

In testimony whereof, I have hereunto subscribed my name this 27th day of July, 1920.

JOHN F. PETERS.