

No. 853,843.

PATENTED MAY 14, 1907.

M. O. TROY.
TRANSFORMER.

APPLICATION FILED SEPT. 21, 1906.

Fig. 1.

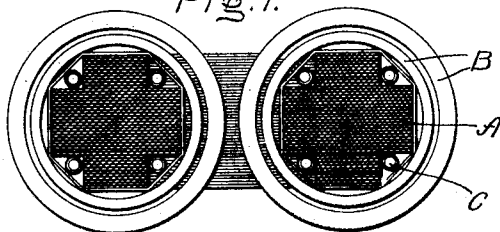


Fig. 2.

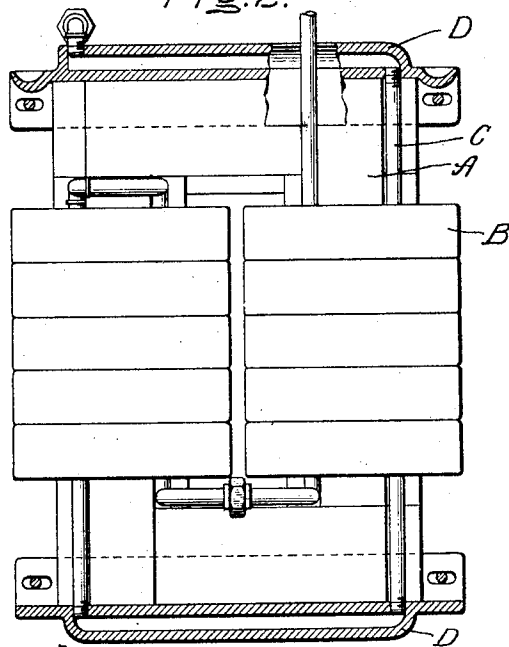
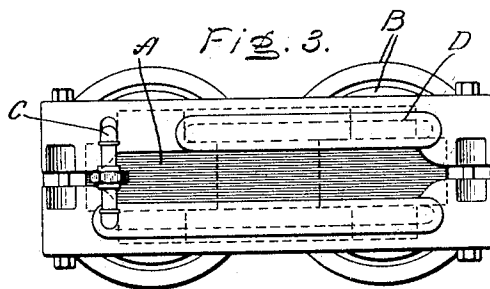
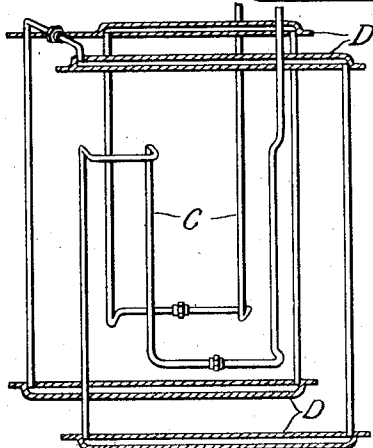


Fig. 4.



WITNESSES:
George A. Thornton.
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UNITED STATES PATENT OFFICE.

MATTHEW O. TROY, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

TRANSFORMER.

No. 853,843.

Specification of Letters Patent.

Patented May 14, 1907.

Application filed September 21, 1906. Serial No. 335,622.

To all whom it may concern:

Be it known that I, MATTHEW O. TROY, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Transformers, of which the following is a specification.

My invention relates to oil-cooled transformers of the core type, and its object is to provide a novel and highly efficient cooling system for such transformers. In oil-cooled transformers the inner layers of the coils ordinarily are the hottest, and my invention in its broadest aspect consists in inserting cooling pipes extending parallel with the coil axis between the coil and the core. By thus disposing the pipes they are brought close to the hottest portions of the coils.

My invention is particularly applicable to transformers having cores of cruciform cross-section and round coils, since this construction affords spaces between the coils and core, in which the cooling pipes may be conveniently placed.

My invention further consists in arranging the end-plates so as to form connections between the cooling pipes on opposite legs of the core.

My invention will best be understood by reference to the accompanying drawings, in which

Figure 1 shows a plan view in cross-section of a transformer arranged in accordance with my invention; Fig. 2 shows an elevation of the same with the end-plates in cross-section; Fig. 3 shows a plan view of the transformer; and Fig. 4 shows a perspective view of the cooling pipe and end-plates, the end-plates being shown in cross-section.

In the drawings, A represents the laminated core of the transformer, which has two parallel legs, each of cruciform cross-section, as shown in Fig. 1.

B represents the round coils mounted on the core.

C represents cooling pipes, which extend parallel with the coil axes in the spaces between the core and the coils.

D represents the end-plates for the core which are made hollow so as to form connections between cooling pipes on the opposite legs for the core. With this arrangement the cooling pipes do not add to the space occupied by the transformer, and at the same time are most effectively disposed for efficiently cooling the coils.

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

1. In a transformer, a magnetic core, a winding surrounding said core, and cooling pipes extending parallel with the winding axis between the winding and the core.

2. In a transformer, a magnetic core having a non-circular cross-section, circular coils surrounding said core, and cooling pipes extending parallel with the coil axis in the spaces between the coils and the core.

3. In a transformer, a magnetic core of cruciform cross-section, circular coils surrounding said core, and cooling pipes extending parallel with the coil axis in the spaces between the coils and the core.

4. In a transformer, a magnetic core having a plurality of parallel legs, a winding surrounding each leg, cooling pipes extending parallel with the winding axes between the windings and the core, and hollow end-plates for the core forming connections between pipes on different legs.

5. In a transformer, a magnetic core having a plurality of parallel legs of cruciform cross-section, circular coils surrounding each leg, cooling pipes extending parallel with the coil axes in the spaces between the coils and the core, and hollow end-plates for the core forming connections between pipes on different legs.

In witness whereof, I have hereunto set my hand this 20th day of September, 1906.

MATTHEW O. TROY.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.