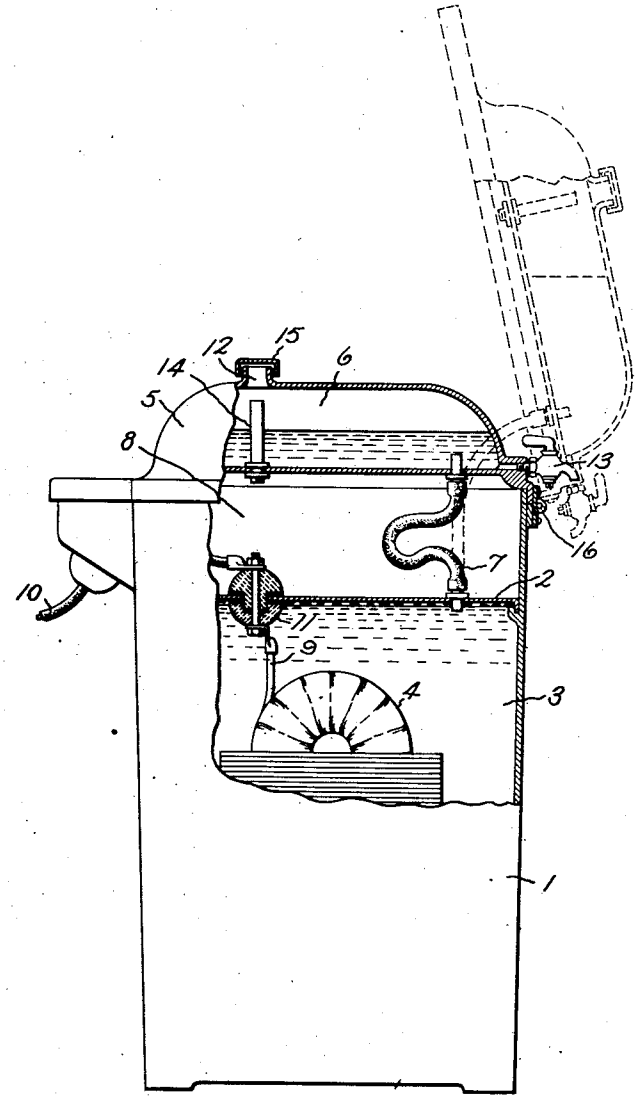
Sept. 9, 1924. 1,508,201

E. D. TREANOR

TRANSFORMER CASING

Filed July 22, 1922



Inventor:
Edward D. Treanor,
by Albert G. Davis
His Attorney.

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UNITED STATES PATENT OFFICE.

EDWARD D. TREANOR, OF PITTSFIELD, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

TRANSFORMER CASING.

Application filed July 22, 1922. Serial No. 576,665.

To all whom it may concern:

Be it known that I, EDWARD D. TREANOR, a citizen of the United States, residing at Pittsfield, county of Berkshire, State of Massachusetts, have invented certain new and useful Improvements in Transformer Casings, of which the following is a specification.

My invention relates to transformer casings adapted to contain insulating liquid in which the transformers are immersed. The insulation and cooling of transformers is commonly made more effective by immersion in a suitable insulating liquid. The general object of the invention is to provide an improved casing of simple construction adapted to hold and protect from contamination the liquid in which a transformer is immersed. Various advantages will appear from the following description.

One embodiment of the invention is shown in the accompanying drawing which is a view of a transformer casing made in accordance with the invention.

In the particular arrangement shown in the drawing a casing 1 has a diaphragm 2 sealed to the wall of the casing to provide a liquid tight compartment 3 for a transformer 4. The casing 1 has a cover 5 which is made double to enclose a space or compartment 6, the purpose of which will appear later. The transformer compartment 3 and the space or compartment 6 within the cover 5 are connected by a flexible tube or pipe 7 which may be of lead, the diaphragm 2 and the under side of the cover 5 being separated a short distance, the space 8 therebetween accommodating the pipe 7. One terminal 9 of the transformer is show as being connected to an external lead 10 through a bushing 11 mounted in the diaphragm 2. Other transformer terminals may be brought out in similar manner if desired. The external lead 10 is carried through a bushing in the side wall of the casing so as not to interfere with removal of the cover 5.

Insulating liquid such as oil is introduced into the compartment 6 through an opening 12 in the top of the cover, some of this liquid flowing on through the pipe 7 into the transformer compartment 3. Enough liquid is introduced to fill completely the pipe 7 and the space around the transformer in the transformer compartment 3 and to fill partially the compartment 6 in the cover as shown in the drawing. As the transformer compartment 3 is completely filled with the insulating liquid, no air can come into contact with the liquid in this compartment to oxidize or otherwise contaminate it or to form explosive mixtures with its vapor. The expansion and contraction of the liquid in the transformer compartment 3 due to variations in temperature as the load on the transformer is changed cause a flow of liquid through the pipe 7 to and from the compartment 6 in the cover, this latter compartment thus serving as an expansion compartment. Undue pressure of the liquid is thus avoided within the casing and the transformer compartment is kept completely full of liquid at all times. The pipe 7 is preferably extended slightly above the bottom of the expansion compartment 6 so that moisture and sediment settling in this compartment will be retained therein without passing on into the transformer compartment. Such moisture and sediment may be drawn off when desired through the drain 13.

A pipe 14 connects the space or compartment 8 under the cover with the space above the liquid in the expansion compartment 6 and the opening 12 in the cover is preferably closed tightly by a cap 15. This permits an interchange of air between the compartment 8 and the expansion compartment 6 as the level of the liquid in the latter compartment is raised and lowered. This assures that any air coming into contact with the liquid in the expansion chamber 6 can come only from the compartment 8 where it is warmed and dried by the heat generated in the transformer and where it is protected from outside moisture and dust.

The cover 5 is preferably hinged to the body of the casing as by the hinge 16 so that it may be tipped up as indicated by dotted lines in the drawing. This gives easy access to the connections at the bushings 11. It is obvious that the cover may be raised without removing any of the insulating liquid from the casing, the flexibility of the pipe 7 allowing it to accommodate itself to the movement of the cover. The pipe 7 is of course long enough to reach the cover in its raised position.

The invention provides a construction which is self contained, and easily handled

and installed, and which is simple and efficient for the purposes for which it is intended.

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

1. A transformer casing including a body portion having a transformer compartment, an expansion compartment spaced above said transformer compartment, a flexible pipe connecting said compartments, and insulating fluid within said transformer compartment and extending through the pipe into the expansion compartment.

2. A transformer casing including a body portion having a transformer compartment, an expansion compartment spaced above said transformer compartment, a flexible pipe connecting said compartments, insulating fluid within said transformer compartment and extending through the pipe into the expansion compartment, and means providing communication between said expansion compartment and the space between the expansion and transformer compartments.

3. A transformer casing including a body portion having a transformer compartment, a hollow cover therefor, a flexible pipe connecting the transformer compartment with the space within the hollow cover, and insulating fluid within the transformer compartment and extending through said pipe into the space within the cover.

4. A transformer casing including a body portion, a hollow cover therefor, a diaphragm spaced below said cover whereby a transformer compartment is provided below said diaphragm, a flexible pipe connecting said transformer compartment with the space in the hollow cover, and insulating fluid within the transformer compartment and extending through said pipe into the space within the cover.

5. A transformer casing including a body portion, a hollow cover therefor, a diaphragm spaced below said cover whereby a transformer compartment is provided below said diaphragm, a flexible pipe connecting said transformer compartment with the space in the hollow cover, insulating fluid within the transformer compartment and extending through said pipe into the space in the hollow cover, and a pipe connecting the space between the cover and diaphragm with the space above the liquid in the hollow cover.

In witness whereof, I have hereunto set my hand this 18th day of July 1922.

EDWARD D. TREANOR.