C. M. E. PRIESTLEY.

PROCESS FOR MANUFACTURING ELECTRIC TRANSFORMERS OF SMALL POWER.

APPLICATION FILED FEB. 11, 1913

1,427,324. Patented Aug. 29, 1922.

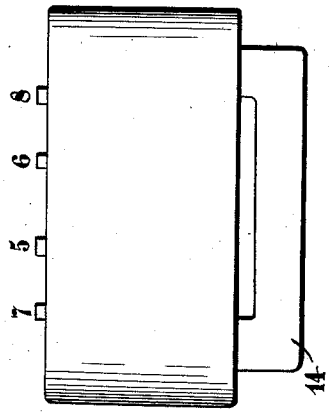


Fig. 4.

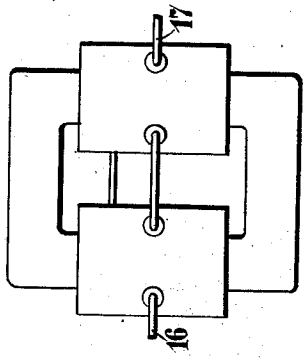


Fig. 5.

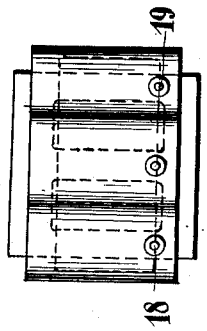


Fig. 6.

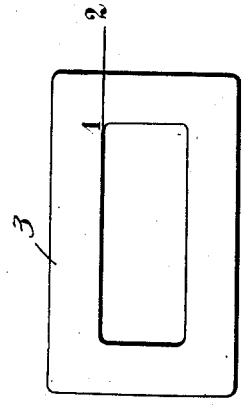


Fig. 1.

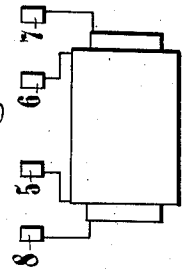


Fig. 2.

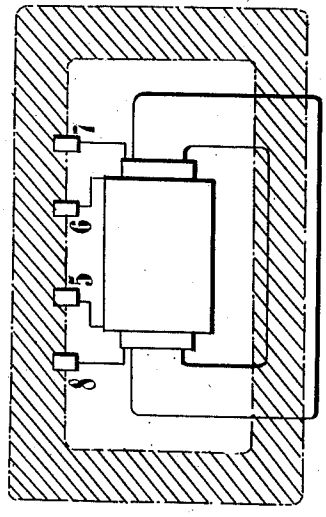


Fig. 3.

WITNESSES:

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PROCESS FOR MANUFACTURING ELECTRIC TRANSFORMERS OF SMALL POWER.

1,427,324. Specification of Letters Patent. Patented Aug. 29, 1922.

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To all whom it may concern:

Be it known that I, CHARLES MARIE EDOUARD PRIESTLEY, a citizen of the Republic of France, and resident of Paris, France, have invented a new and useful Process for Manufacturing Electric Transformers of Small Power, which invention is fully set forth in the following specification.

This invention relates to a process of manufacturing electric transformers of small power.

In order to make the explanation as clear as possible, the accompanying drawings illustrate, by way of example, transformers obtained by the process according to this invention.

Figures 1–4 show the different stages in the manufacture of a transformer, and Figures 5 and 6 relate, one to a transformer with two branches, and the other to a three-phase transformer.

The soft iron blanks used to form the core are cut in the shape of recessed or skeleton rectangles (Figure 1), and the said blanks are afterwards cut along the line 1—2.

The coils (Figure 2) are prepared in such manner as to enable them to be threaded on the members 3 of the blanks. These coils are suitably insulated from each other, and the cable ends are connected to metal terminal parts 5, 6, 7, and 8.

The various elements described having been thus constituted, the thin sheet metal blanks are introduced into the interior of the coil, the edges of the cuts being separated, and the said cuts being successively alternated so as to be opposite each other. This having been done, a structure is obtained having the appearance shown in full lines in Figure 3. The coils and the mass of soft iron constituting the core are then compressed between the two metal sections of a mold, as represented in dotted lines in Figure 3. Then, by means of a powerful hydraulic press, insulating material is injected at a high temperature into the interior of the mold, so as to fill the same, and thereby hold the terminals 5, 6, 7 and 8 firmly in their proper places.

When the mass of insulating material has solidified, the metal mold sections are removed, the same having been properly constructed for the purpose, and the structure shown in Figure 4 is obtained, only the member 14 of the core and the terminals 5, 6, 7 and 8 emerging from the solidified mass. Obviously when the difference of tension between the two windings has to be large, the terminals 5, 6, 7 and 8 could be arranged at a suitable distance apart, and the place where the terminals emerge, would be provided with lines or fluted so as to avoid losses through the surface.

It will be seen that in the process described the mass of soft iron is held in the proper position entirely by the insulating material, and does not require any screws or bolts.

Obviously instead of arranging the winding on a single branch, the windings could be arranged on two branches, or even a three-phase transformer could be obtained in that manner.

Figure 5 shows for instance a transformer with two branches, in which each of the said branches is surrounded by insulating material.

The high tension connections enter at 16 and 17, and the low tension connections which are not shown in the drawing, would be made at the other side.

Figure 6 represents a three-phase transformer in which the outlet terminals alone are shown, the high tension connections being made at 18 and 19, and the low tension connections at the other side.

What I claim as my invention and desire to secure by Letters Patent is:—

A process of manufacturing electromagnets consisting in disposing the coils, terminals and core of the magnet within a mold, with the core and terminals projecting partly beyond the interior surface of the mold, injecting molten insulating material into the mold under pressure, so as to completely fill the interior thereof and thereby surround the coils and the portions of the core and terminals within said interior; and maintaining the pressure on the injected material during solidification, whereby said coils, core and terminals are mechanically joined together by the solidified mass.

CHARLES MARIE EDOUARD PRIESTLEY.

Witnesses:

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HANSON C. COXE.