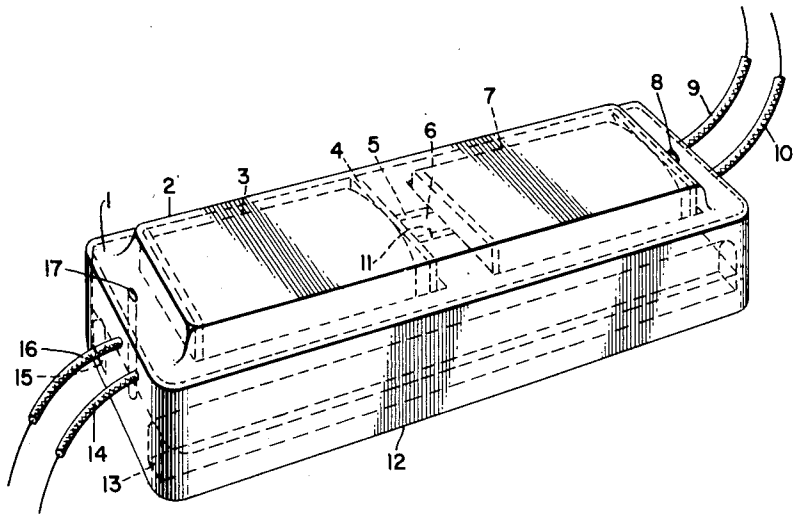
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INSULATION EMBEDDED BALLAST UNIT

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INSULATION EMBEDDED BALLAST UNIT

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1 Claim. (Cl. 175—356)

1

This invention relates to a series impedance in the form of a choke or transformer for electric discharge tubes for illuminating purposes, as for instance light tubes.

A common series impedance for light tubes and similar illuminating tubes consists of an iron core composed of laminae and of suitable choke or transformer windings arranged on the core. Over the unit composed in this manner in all cases known in practice a casing is fitted, by means of which the impedance is installed in the mounting. The vibrations in the laminae cause during operation disturbing sounds, which furthermore can be amplified by the influence of the casing. In some instances the iron core has therefore been cast with its windings into a massive lump of some asphalt composition, but a special outer protective casing is still used for installing the impedance electrically as well as mechanically in the mounting.

Now this invention relates to a special design of a choke or transformer cast into an insulating mass. The impedance referred to is characterized by the feature that its winding and iron core composed of laminae are cast without previous vacuum impregnation of the windings into an envelope, consisting of a hardenable synthetic mass and entirely embedding the above mentioned parts. This envelope has the exterior shape of a choke or transformer casing and is fitted with screw holes and other fastening devices and with cast-in connections for installation of the impedance. The core laminae are furthermore mutually united to a pack solely by their being baked into the synthetic mass.

In a special design of the series impedance according to the invention, longitudinal slots are pressed into its underside for the insertion of wires. These slots may suitably be provided with end walls which can be broken away. The impedance can thus be placed on a flat surface and be traversed by wires.

An impedance designed in accordance with the invention is shown in enclosed drawing. It consists of an iron core composed of laminae 1 in the shape of a rectangular frame with a longitudinal leg 6. The core air gaps are numbered 5 and 11. On the leg are slipped two winding coils 3 and 7, which are shown provided with end supports of pressboard or some other suitable insulating material. The iron core 1 and the windings 3 and 7 are entirely cast into an envelope 12 of a hardenable synthetic mass such as phenol formaldehyde resins. For producing the envelope the iron core with the windings

2

surrounded by pulverous synthetic mass is placed in a press mould arranged for being heated. A press-stamp is dropped and compresses the synthetic mass to form an envelope 12 of such exterior shape that the envelope of synthetic mass serves direct as a casing and consequently an extra protective casing is no longer necessary. The thickness of the envelope can at most points be made about 2 mm. Its upper side is provided with a shoulder 2, the surface of which has been made plane for the greater part to permit stamping in of the impedance marking. For this reason the wall thickness of the envelope there exceeds the thickness by about 2 mm. at some points and therefore does not entirely follow the contour of the baked-in material. The ends of the laminae are provided with holes, through which a mandrel is inserted during the baking-in process. In this way two screw holes 8 and 17 are obtained for installation of the impedance in its mounting position. The windings 3 and 7 have sturdily sleeved wire ends 9, 10, 14 and 16 for electrical connection of the impedance. These sleeved ends are also baked in at their inner ends so that they are securely fixed in the hardened mass, which was originated when pressing the cover. On the underside of the cover longitudinal slots 13 and 15 have been pressed in when the cover was made. They are intended for hiding such connecting wires, which must be drawn past the impedance in connection with installation in mounting position. These slots may be suitably limited by end walls which can be broken away, which gives the cover a closed appearance in cases, where such slots are not utilized.

The casting of the cover under heavy pressure might be expected to expose the windings, which consist of fine wire, to detrimental damage. This is, however, not the case, probably owing to the fact that the pressure is comparatively homogenously distributed. On account of the baking-in process it will be seen that the hitherto usually employed vacuum impregnation of the impedance windings is no longer necessary. The bolts and screws previously used for holding together the pack of laminae can also be abolished, as it has become apparent that the laminae are very effectively held together mutually when being baked into the synthetic mass.

What I claim is:

A ballast for electric discharge tubes for illuminating purposes, comprising a closed core structure consisting of a pile of iron laminae placed directly upon one another devoid of fasten-

ing means therefore and forming a frame having an air gap therein, an inductive unit positioned on a leg of said core structure, an envelope consisting of a baked hardenable synthetic mass entirely embedding and surrounding said core structure and said inductive unit and filling up said air gap, said laminae being mutually united to one another and to the pile solely by said baked synthetic mass, said ballast being provided with mechanically fastening and electrically connecting means anchored in the envelope mass and having longitudinal slots arranged in the underside of said evelope for the insertion of wires, and end walls normally covering said slots and limiting the length thereof, said walls being breakable to expose said slots.

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