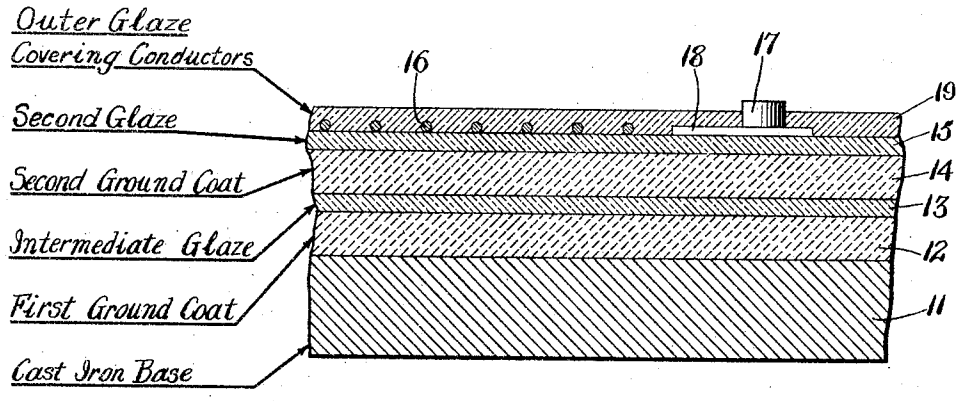
L. KEBLER.

RHEOSTAT.

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RHEOSTAT.

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To all whom it may concern:

Be it known that I, LEONARD KEBLER, a citizen of the United States, residing at Bronxville, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Rheostats, of which the following is a specification.

The principal objects of my invention are to provide a new and improved enameled metal base rheostat and a method of making the same. Another object of my invention is to prepare a suitable insulating coat on the metal base of such a rheostat upon which the resistance conductors will be carried. All these objects and others will be appreciated from the following disclosure of specific practice in accordance with my invention. It will be understood that modifications can be made within the scope of the invention.

In the manufacture of rheostats, it is often desirable to employ a cast iron supporting base or a base of other suitable metal, on account of its strength and rigidity, but since such a base is a good conductor, it becomes necessary carefully to insulate the resistance conductors therefrom. One mode of doing this has been to apply a coat of some refractory insulating material upon the iron base, then apply the resistance conductor to this coating and secure it thereto by the application of another less refractory adherent insulating coating. An advantageous way to secure proper coatings is by firing them at proper stages of their application. Many technical difficulties may be encountered in this work, for example, if the coating applied to the iron is of the same order of refractoriness as the final coating and there is a resistance conductor between them, then when the apparatus is fired to fix the second glaze coating, the first glazed coating may soften to such an extent that the wire may sink down through it and make contact with the iron.

I have found that very satisfactory and serviceable rheostats can be made in accordance with the following disclosure. The drawing is a diagrammatic representation of the assembly of elements making up one of my improved rheostats. On the cast iron base 11, I apply a ground coat 12. This may be practically infusible as a whole, being made up of an infusible ingredient with an admixture of glass in minor proportion. This mixture is applied in finely divided dry condition, or it may be mixed up wet and applied as a paste, or sprayed upon the iron base 11. It is then allowed to dry, whereupon it will hold its shape sufficiently for the next step of the process. This next step consists in the application in dry powdered form or as a wet spray of a coat of glaze 13. The iron base 11 and the two coats 12 and 13 are then fired at the proper temperature in a muffle furnace. The coat 12 bakes to form a hard adherent earthenware coating, but at no stage of the firing process is the heat sufficient to fuse this coat 12 as a whole. The coat 13 actually fuses, so that upon withdrawal from the furnace and subsequent cooling, it constitutes a genuine adherent glaze coat.

Next I apply another ground coat 14 of the same material as the ground coat 12 and in the same way and on top of this another coat of glaze 15 in the dry powdered condition. Again I fire the assembly in a muffle furnace as before and secure a hard adherent insulating earthenware coating 14 covered by a clear impervious glaze coat 15.

Then I apply the resistance conductor 16 and the terminals or taps 17 connected thereto, each with a thin toe 18. Over the parts thus assembled I distribute another coating of powdered enamel 19 and fire the assembly again as before. The result gives another clear impervious enamel coat 19 adhering tenaciously to the coat 15 and securing the conductor 16 and tap 17 firmly in place.

The provision of two ground coats 12 and 14 with an intermediate glaze coat 13 establishes a very secure insulation between the resistance conductors 16 and the iron base 11. I may find it preferable on some occasions to fire the ground coats and the glaze coats separately and successively instead of firing a ground coat and a glaze coat at the same time.

I claim:—

1. In combination, a metal base, two ground coats thereon with an intermediate glaze coat between them, a resistance condutor outside said coats, and a coat of glaze over said conductor.

2. The method of which consists in applying a ground coat to a metal base, then a glaze coat, then another ground coat, then

a resistance conductor and then another glaze coat, firing after each glaze coat.

3. In combination, a metal base, an adherent partially vitrified insulating ground coat thereon, a vitreous insulating coat adhering to said ground coat, another ground coat similar to that first mentioned adhering to said vitreous coat, and a resistance conductor protected from contact with said metal base by said three coats.

4. In combination, a metal base, two ground coats thereon with an intermediate glaze coat between them, a resistance conductor outside said coats, and means to cover said conductor and secure it in place.

5. In combination, a metal base, two ground coats thereon with an intermediate glaze coat between them, and two more glaze coats on the outer ground coat with a resistance conductor between them.

6. The method which consists in applying a ground coat to a metal base, then a glaze coat, then firing, then applying another ground coat, then another glaze coat, then firing again, then applying a resistance conductor and another glaze coat and firing again.

7. The method of insulating a metal base which consists in applying thereto a coat of mixed fusible and infusible insulating material and then a coat of fusible insulating material and then at one firing partially vitrifying the first coat and completely vitrifying the second coat.

LEONARD KEBLER.