(No Model.)

C. E. CARPENTER.

RHEOSTAT PLATE.

No. 492,758. Patented Feb. 28, 1893.

Fig. 1.

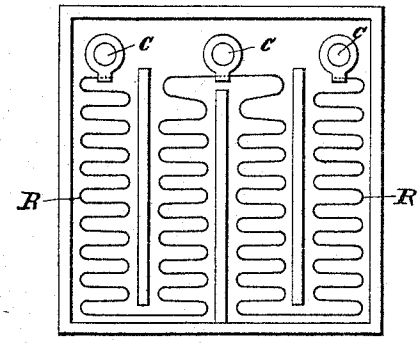
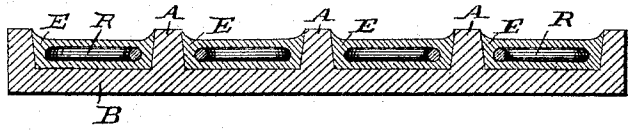


Fig. 2.



WITNESSES:

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CHARLES E. CARPENTER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE CARPENTER ENAMEL RHEOSTAT COMPANY, OF SAME PLACE.

RHEOSTAT-PLATE.

SPECIFICATION forming part of Letters Patent No. 492,758, dated February 28, 1893.

Application filed October 27, 1892. Serial No. 450,123. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. CARPENTER, a resident of the city of Bridgeport, county of Fairfield, and State of Connecticut, have invented a new and useful Improvement in Resistance or Rheostat Plates, of which the following is a specification.

My invention relates to certain new and useful improvements in that class of resistance or rheostats described in my Letters Patent No. 447,023, dated February 24, 1891, wherein the resistance or rheostat consists of a coil or ribbon of wire embedded in enamel or its equivalent which serves to attach said resistance to a base plate.

Heretofore it has been the practice to place the enamel and resistance wire on a plane surface plate, but on account of the expansion of the wire, the enamel is liable to cleave from a plain surface plate.

One of the objects of my invention is to provide a surface plate, such that for a given amount of resistance wire a greater amount of surface is provided for adhesion of the enamel, and one where the enamel shall be so distributed with relation to the plate and resistance wire, that the enamel shall hold the wire more firmly in position against displacement.

In the drawings Figure 1 is a plan view of the improved resistance, or rheostat, plate, and Fig. 2 an enlarged cross section thereof.

R is the resistance, which preferably consists of a wire, connected to two or more terminals C, of any desirable form, which connect the resistance wire with the electric current.

E is the enamel or its equivalent used for securing the restance wire to, but insulating the same from the base plate B, and which further serves to surround the wire, and protect the same from chemical action.

The base plate B is provided on its surface with ribs or projections A for the purpose hereinafter described. Between these ribs A are placed the coils of resistance wire which are then coated with enamel or equivalent material which may or may not fill the channels completely, and in some cases it is desirable to have the ribs or projections completely covered by this insulation.

In the operation of apparatus in which the wires are embedded in enamel, there are two expansions of the wire viz;, diametrical and linear, which operate at right angles to each other, and both of which tend to crack or cleave the enamel from the surface plate. It will be readily seen by reference to Fig. 2 that where the wires are enameled between ribs or projections, as here shown, that it will require a much greater strain to dislodge the enamel so placed, than if the ribs or projections did not exist. As will be seen, the surface is here so formed that portions of the surface are nearly at right angles to each other, and the enamel in cleaving or separating from the base B must also separate from rib A as well, or in other words, it must separate from the sides and bottom of the channel or two or more surfaces of different angle at the same time. Another advantage of this construction in addition to preventing injury to the enamel by expansion of the wires, is in some applications of this apparatus, notably electric railways, these projections serve to hold the enamel firmly to the surface of the metal against being loosened by continual jarring or vibration. The ribs also serve to protect the enanmel from mechanical injury.

It is evident that modifications may be made of the exact construction, as here shown and described, without parting from the spirit of my invention, and my invention is calculated to comprehend all forms of the apparatus in which ribs or projections of any character are used for the purpose herein described.

What I claim, and desire to secure by Letters Patent, is—

1. A resistance, or rheostat, consisting of a base plate provided with ribs or projections, a layer of enamel between said ribs or projections and a conductor buried in said enamel, substantially as described.

2. A resistance, or rheostat, having the conductor embedded in enamel which is affixed

to a base plate having ribs or projections for extending the surface to which the enamel adheres, substantially as described.

3. In a resistance, or rheostat, having the conductor embedded in insulating material a base-plate having projections forming an extended surface for the adhesion of the insulating material, substantially as described.

4. In a resistance plate having a support which is covered by an insulating enamel, said enamel being divided into sections, substantially as described.

CHARLES E. CARPENTER.

Witnesses:
HENRY B. DREW,
A. L. EUGENE.