(No Model.)

C. E. CARPENTER.

RHEOSTAT PLATE.

No. 492,757. Patented Feb. 28, 1893.

FIG. 1.

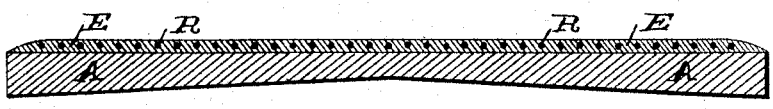


FIG. 2.

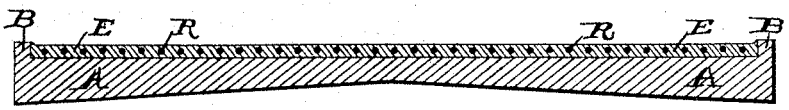
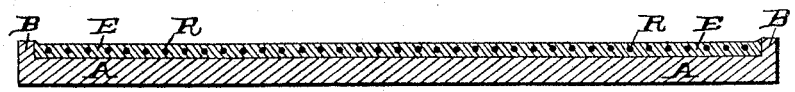


FIG. 3.



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. 492,757, dated February 28, 1893.

Application filed October 27, 1892. Serial No. 450,122. (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 certain new and useful Improvement in Resistance or Rheostat Plates, of which the following is a specification.

My invention relates to an improvement in resistance plates, or rheostats, for use with dynamo machines and other electrical apparatus, and consists of the novel construction hereinafter more fully described and claimed.

The class of plates to which my present invention relates is that in which the resistance or rheostat consists of a wire embedded in enamel which is baked or fused on to a base plate of metal, substantially in the manner set forth and described in my Letters Patent No. 447,023, of February 24, 1891.

One of the objects of the present improvement is to construct the base plate of varying thickness in cross sections so that during the process of firing in the furnace the base plate is heated uniformly throughout and the enamel thereby evenly baked on to its surface.

My invention is illustrated by the accompanying drawings in which:—

Figure 1 is a cross-section of one form of my improved rheostat or resistance plate. Fig. 2 a similar view of one modification thereof, and Fig. 3 a similar view of another modification.

E represents the enamel, or its equivalent, which serves to secure the resistance to, but insulate it from the surface plate, and protects it from chemical action.

R is the resistance wire embedded in said insulating material, A the supporting surface plate, and B the flange, which serves to prevent the flowing off of the enamel, as above described, and also serves to protect the edges of the enamel from mechanical injury.

In Fig. 1 the rheostat plate, embodying my invention, is thickened at the edges. In this figure is shown the manner in which the enamel is deposited where no flange is provided at the edges. Fig. 2 is also a section of a plate, embodying my invention, but said plate is provided with a flange B, around its edges, for the purpose hereinafter described.

Fig. 3 shows a supporting surface plate in which the edges of the plate are not increased in thickness, except the flange for confining the enamel as hereinafter more fully described.

Heretofore in the preparation of resistance plates of the kind described it has been a difficult matter to bake or fuse the enamel evenly and of uniform depth upon the surface of the base plate, because certain portions, notably the edges or sides of the plate would heat more rapidly, and in consequence the enamel or insulation thereon, would be overheated before the inner portion or center of the plate was sufficiently heated to properly fuse or bake the enamel thereon. To obviate this difficulty, the edges or outside portions of the plate A are made thicker or of greater cross section, than the inner portion as shown in Fig. 1, so as to provide a greater bulk of the metal for counter-acting the, otherwise, more rapid heating of the edges. With this construction it will be seen, that the plate will be more uniformly heated throughout at the same time, and consequently the enamel will fuse alike throughout all portions of the surface.

Another object of my invention is to so construct the base plate A that the enamel will be of uniform thickness throughout. In the application of enamel to the surface plate, the enamel while wet, as in what is known as the "wash-process," will not be deposited at the edges of the plate so thick as at other portions of the surface because it drains off, and sufficient enamel is not left at the edges of the plate to insulate the wires properly and otherwise protect them. For this reason I provide a rim B at the edges of the plate A, which prevents the enamel from flowing off, and tends to confine it to the proper place, resulting in a more perfect insulation and better protection to the wires. This rim also serves to protect the enamel at the edges of the plate from mechanical injury.

I claim—

1. A resistance, or rheostat, consisting of a base plate having thickened edges, a coating of enamel baked on the surface thereof, and resistance coils embedded in said enamel, substantially as and for the purpose described.

2. In a resistance, or rheostat, a support

plate having thickened edges and a flange around said edges, in combination with a coating of enamel, upon the surface of said support plate, substantially as and for the purpose described.

3. In a rheostat in which the resistance is embedded in enamel, or its equivalent, a supporting plate which is thicker at the edges than at the center, substantially as described.

4. A resistance or rheostat having a base plate provided with a rim or flange at the edges of the plate and an insulating material confined by said flange, substantially as described.

5. A resistance or rheostat having a base plate provided with a rim or flange at its edges and coating of enamel insulating the conductor buried therein said enamel being confined by the rim or flange, substantially as described.

CHARLES E. CARPENTER.

Witnesses:
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A. L. EUGENE.