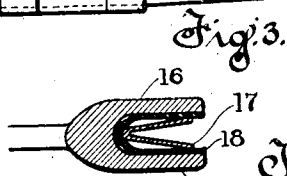
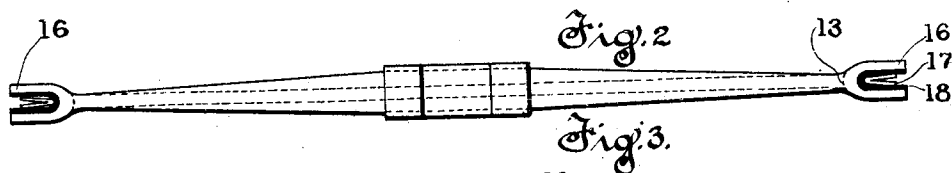
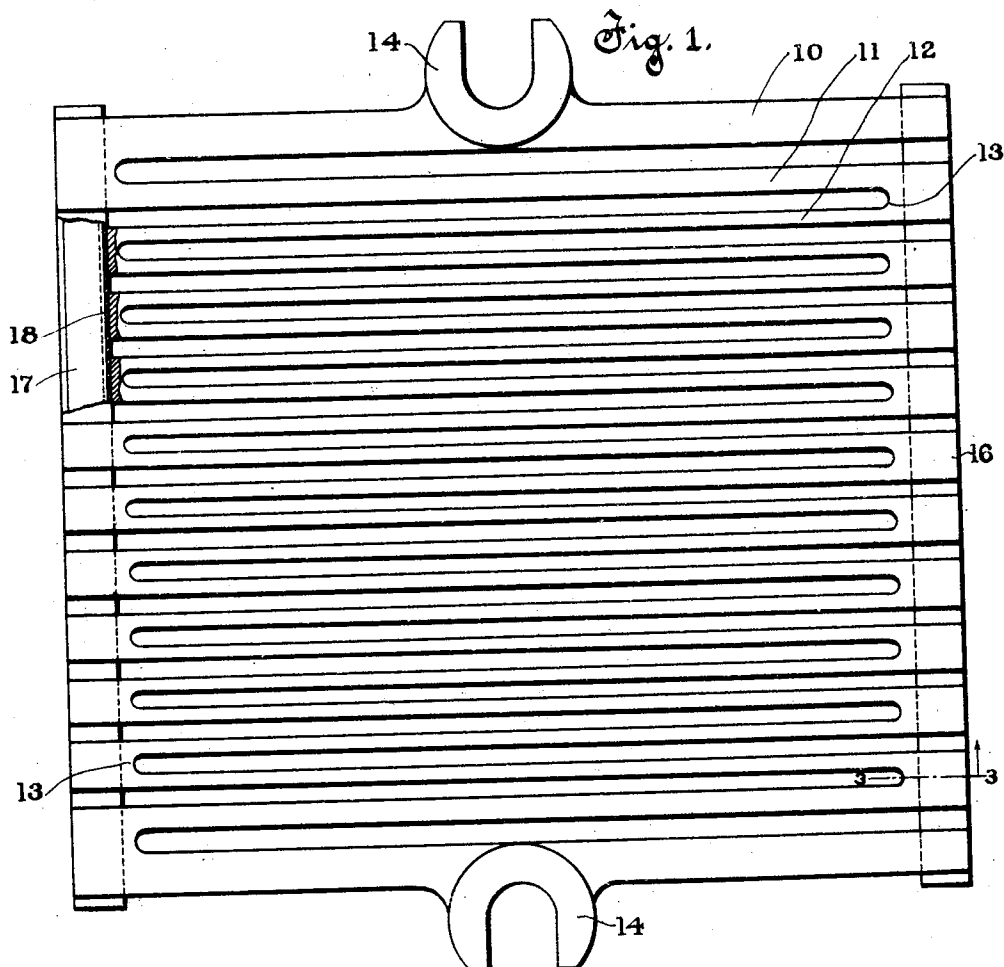


H. W. CHENEY.
RESISTANCE GRID.
APPLICATION FILED JUNE 24, 1909.

Patented Jan. 4, 1910.

945,082.



Witnesses:
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RESISTANCE-GRID.

945,082.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed June 24, 1909. Serial No. 503,996.

To all whom it may concern:

Be it known that I, HERBERT W. CHENEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Resistance-Grids, of which the following is a full, clear, and exact specification.

My invention relates to the construction of resistance grids for use in electric circuits.

In making and using resistance grids it is important to provide adequate means for reinforcing them, and this is particularly true in the case of grids of high resistance having frail structures.

It is the object of my invention to improve means for reinforcing or stiffening cast resistance grids and making it possible to construct a grid of this type having a great length of conductor and a large amount of resistance in a small space, and one which will be supported so as to be mechanically rigid even should the grid in service be heated to a red heat.

Among other objects of my invention are to obtain strength, durability, compactness, and cheapness of construction.

Figure 1 is a view of one of the grids embodying my invention, with parts broken away; Fig. 2 is an elevation of that shown in Fig. 1; and Fig. 3 is an enlarged sectional view taken along the line 3-3 of Fig. 1.

Resistance grids have been made heavy and bulky in structure in order to withstand jars and tendencies to warp out of shape when excessively heated. The resistance grids shown in these drawings are made light in structure. These grids are made of suitable resistance material in zig-zag form, for example substantially as shown in Fig. 1, so as to reduce into comparatively small space a resistance of considerable length.

The resistance grid consists of a conductor formed substantially as shown and having its elements, such as 11 and 12, parallel and in integral contact to form a number of end-turns such as 13, the conductor terminating in enlarged ends 14 formed of hooks or holes open on one side. These hooked ends fit over insulated cross rods or bolts of a suspending frame. The number of grids may vary as desired. Projections 16 on the end-turns of the conductors provide forks as shown in Fig. 3, the openings between

the projections 16 of the several end-turns being in alinement for the reception of a reinforcing member 17 which is insulated from said conductor. The projections 16 are preferably integral with the grid. The reinforcing member is preferably made of some resilient sheet metal and bent to form a V in cross section. The insulation is obtained by means of a sheet of insulating material 18, such as asbestos, interposed between the projections 16 and the reinforcing member. The asbestos is held securely to the slightly rough surfaces of the projections 16 by means of the spring action of the V-shaped reinforcing member 17. Because of this it is impossible for the insulating and reinforcing members to be dislodged by means of incidental jars or shocks. The same reinforcing or stiffening arrangement is used at opposite edges of the grid. By means of this reinforcing grids which are comparatively frail in structure are mechanically rigid avoiding contact of adjacent grids when jarred or heated and can be used without having their elements warp to such an extent, when excessively heated, as to buckle up or come into contact with each other to form a short circuit.

There may be many modifications of the precise arrangement here shown and described, and I aim in my claims to cover the invention broadly.

What I claim as new is:

1. A resistance grid comprising a conductor having forked end-turn portions, and a reinforcing member located in said forked portions and insulated from said conductor.

2. A resistance grid comprising a conductor having end-turns, said end-turns being each provided with a plurality of projections, and a reinforcing member located between said projections and insulated therefrom.

3. A resistance grid comprising a conductor having forked end-turn portions, and a V-shaped strip of metal located in said forked portion to reinforce said grid, said strip being insulated from said conductor.

4. A zig-zag resistance grid comprising a conductor having forked end-turn portions, and a resilient member located in and insulated from said forked portions to reinforce said grid.

5. In a resistance grid comprising a con-

ductor having end-turns, said end-turns being provided with projections, and a resilient V-shaped strip of metal located between said projections to reinforce said grid, said
5 resilient member being insulated from said grid.

6. A resistance grid comprising a conductor having forked end-turn portions, and
10 a member cooperating with said forked portions to reinforce said grid.

7. A resistance grid comprising a conductor having end-turns, said end-turns being provided with projections, a metallic
15 member cooperating with said projections to reinforce said grid, said grid and said

metallic member being insulated from each other.

8. A resistance grid comprising a conductor having end-turns, projections on said end-turns with openings between said projections of said end-turns in alinement, and
20 a reinforcing member located in the openings between said projections and insulated from the latter.

In testimony whereof I affix my signature, 25
in the presence of two witnesses.

HERBERT W. CHENEY.

Witnesses:

CHAS. L. BYRON,

ROB. E. STOLL.