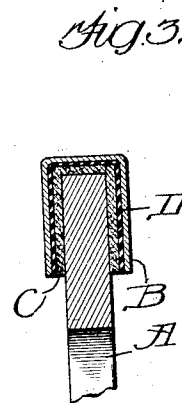
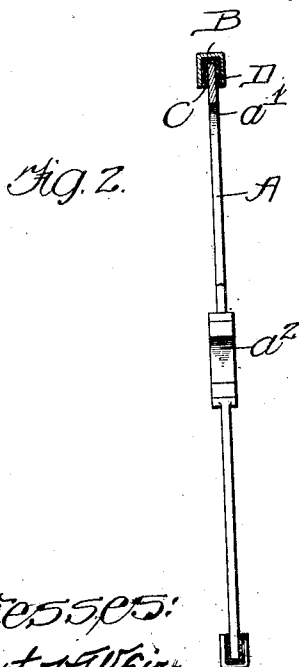
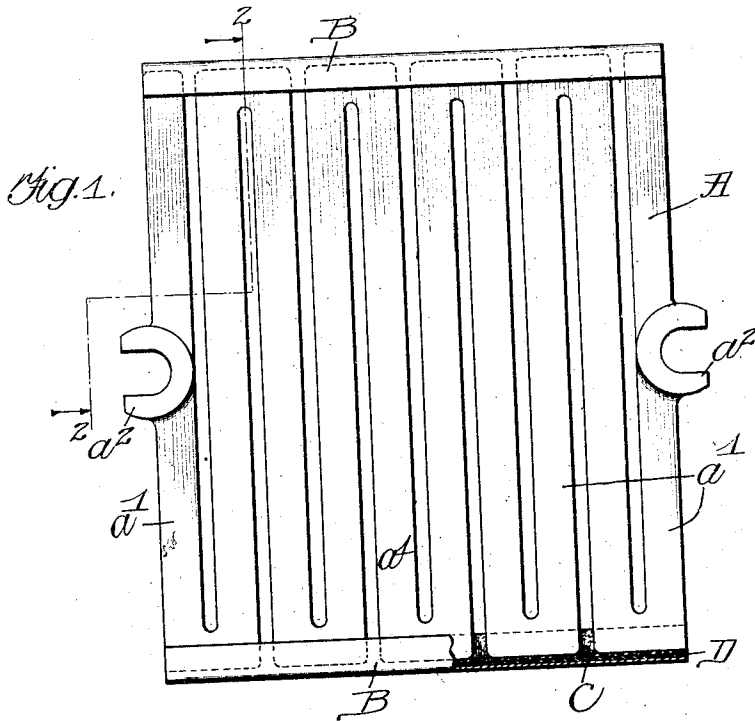


H. J. WIEGAND.
 REINFORCED GRID RESISTANCE.
 APPLICATION FILED MAY 4, 1908.

Patented Sept. 10, 1912.

1,038,252.



Witnesses:
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UNITED STATES PATENT OFFICE.

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REINFORCED GRID RESISTANCE.

1,038,252.

Specification of Letters Patent.

Patented Sept. 10, 1912.

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To all whom it may concern:

Be it known that I, HENRY J. WIEGAND, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Reinforced Grid Resistances, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvement in reinforced grid resistances and those of similar form.

My invention has for its object to provide means for rendering short-circuits through the reinforcing members of the grid impossible under all conditions.

According to the preferred form of my invention I interpose two layers of insulating material between each of the reinforcing members and the grid, one layer comprising a yielding and non-combustible material, and the other comprising a waterproof material. I interpose waterproof material between the reinforcing member and the yielding insulating material to maintain the same out of contact. It should be understood that any insulating materials having the properties mentioned may be employed.

In the accompanying drawing which illustrates the preferred embodiment of my invention: Figure 1 is an elevation of a reinforced grid resistance embodying my invention, part of the reinforcing means being shown in section. Fig. 2 is a sectional view taken on line 2—2, Fig. 1, and Fig. 3 is an enlarged detail view of a portion of Fig. 2.

My invention applies particularly to resistances which comprise a reflexed bar or strip having a series of convolutions, such as a grid resistance A illustrated in the accompanying drawing. This type of resistance is used extensively in practice and is usually made of cast iron, but may be made of any suitable material and formed in any desired manner. The outer bars a' of the grid are provided with terminals a^2 by means of which the grid may be supported and electrically connected in circuit. The outer bars a' are preferably made of the same length as the intermediate bars for the purpose hereinafter set forth. Inasmuch as

the grid comprises a long reflexed bar it is more or less flimsy. To stiffen and strengthen the grid as a whole, reinforcing strips B are placed over the edges thereof, or, in other words, over the ends of the bars thereof.

The reinforcing members may assume any desired form, but in practice, are preferably formed of thin strips of metal so bent as to be U-shaped in cross-section. In practice, it is desirable to interpose a yielding packing between the reinforcing members and the grid, as resistances of this type are rather brittle and are easily damaged if held too rigidly by the reinforcing members. Furthermore, it is necessary to insulate the reinforcing members from the grid. I, therefore, interpose a layer of yielding and non-combustible insulating material C between the grid and each of the reinforcing members. While any suitable material may be employed for this purpose, I prefer to use asbestos. To obviate the danger of short-circuits through a reinforcing member, should the asbestos become wet, I interpose a layer of waterproof insulating material D between the same. The waterproof material should be arranged to completely separate the reinforcing members from the asbestos, and thus render contact between the same impossible. Any suitable waterproof insulating material, such as mica or miconite, may be employed for this purpose, and if desired, the same may assume the form of a paint which may be applied to either the inside of the reinforcing members or the outside of the asbestos strips. The strips of asbestos and a waterproof material are first folded over the edges of the grid and then the reinforcing members clamped thereon in any desired manner. By making the outer bars a' of the grid of the same length as the intermediate bars, the ends thereof will be gripped by the reinforcing strips and this gives additional strength and rigidity to the grid.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a resistance element, of a reinforcing member embracing portions thereof and means interposed between said reinforcing member and said resistance element for providing resilient and waterproof insulation between the same.

2. The combination with a grid resistance, of an elongated sheet metal strip folded over the ends of the convolutions of said grid for reinforcing the same and means interposed between said strip and said grid for providing a yielding and waterproof insulation between the same.

3. The combination with a grid resistance, of reinforcing strips placed over the edges thereof, a layer of yielding insulating material and a layer of waterproof insulating material interposed between each of said reinforcing strips and said grid, the waterproof material being interposed between the reinforcing strips and the yielding insulating material.

4. The combination with a grid resistance, of substantially U-shaped reinforcing strips placed over the edges thereof, a strip of asbestos and a layer of waterproof material interposed between each of said members and said grid, the waterproof material being interposed between the reinforcing strips and the asbestos strips.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

HENRY J. WIEGAND.

Witnesses:

M. L. HOPKINS,
THEODORE LINCOLN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."