

No. 872,209.

PATENTED NOV. 26, 1907.

H. J. WIEGAND.
INCLOSED RESISTANCE.
APPLICATION FILED OCT. 30, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

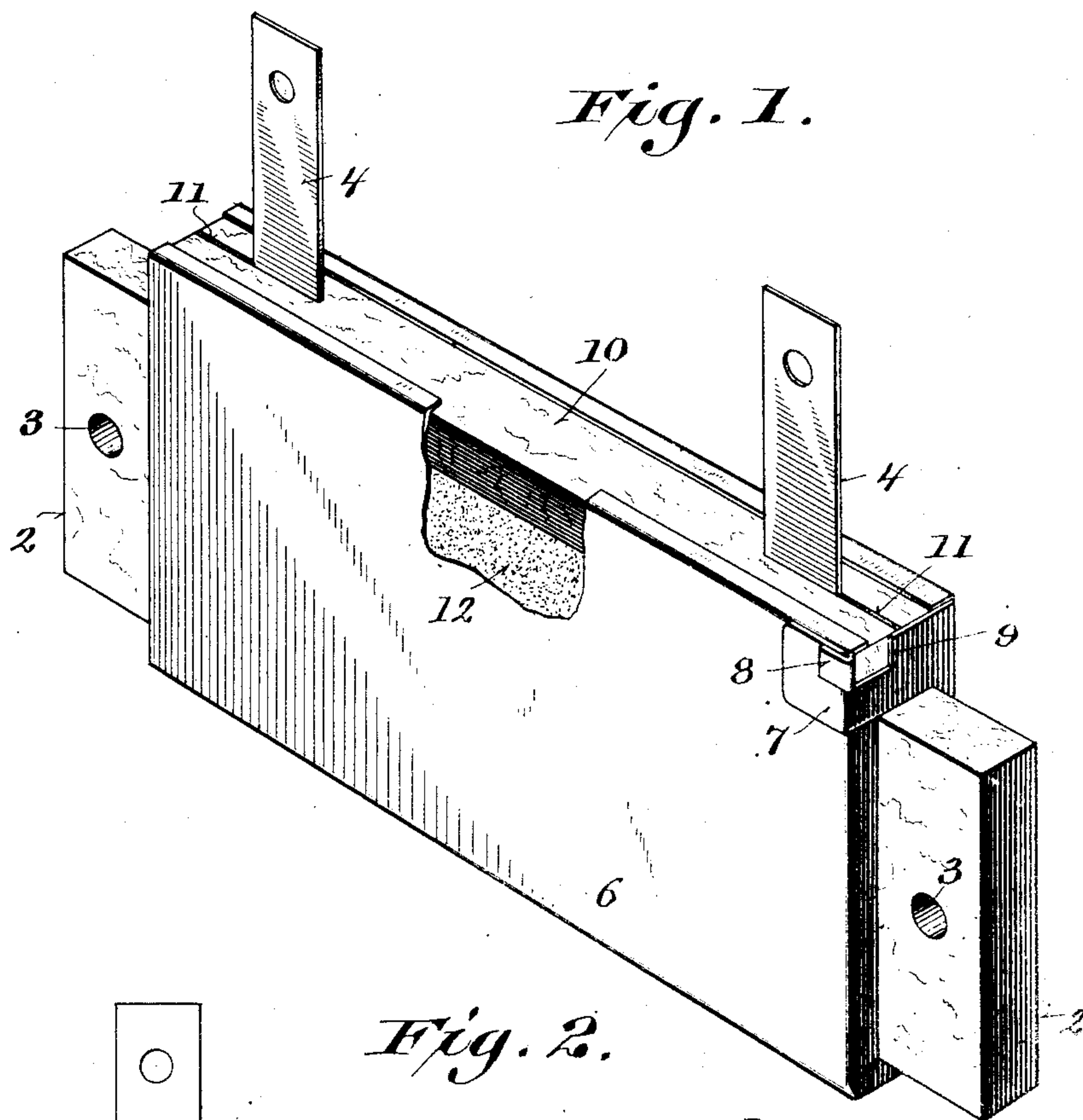
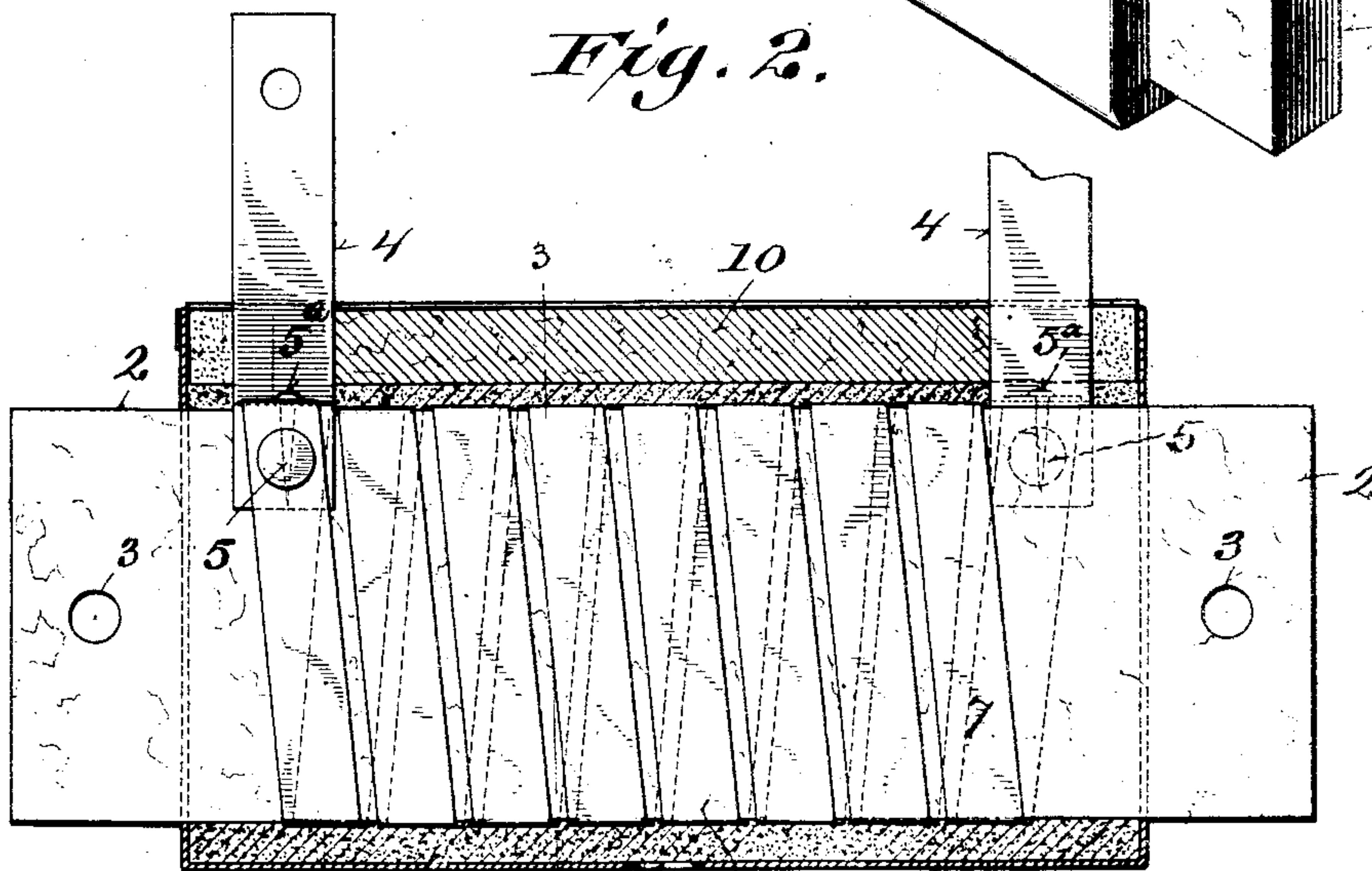


Fig. 2.



Witnesses:

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George Felber.

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2 SHEETS—SHEET 2.

Fig. 3.

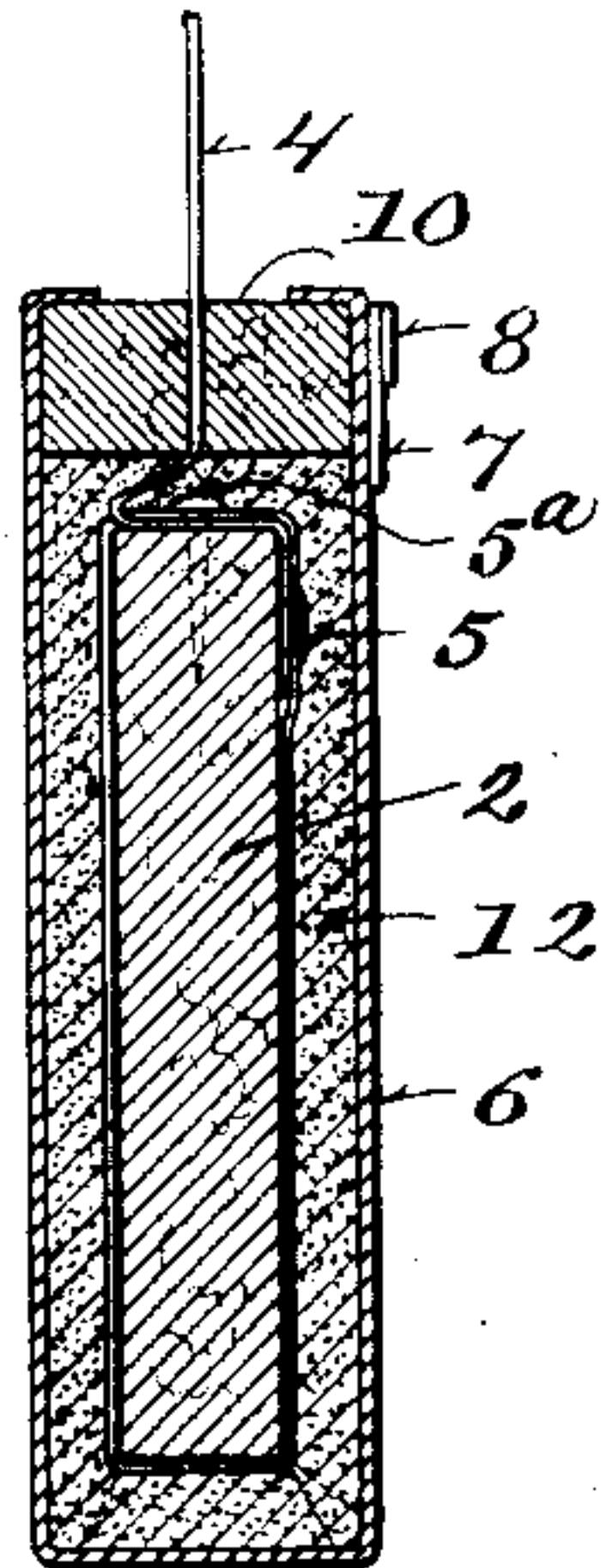
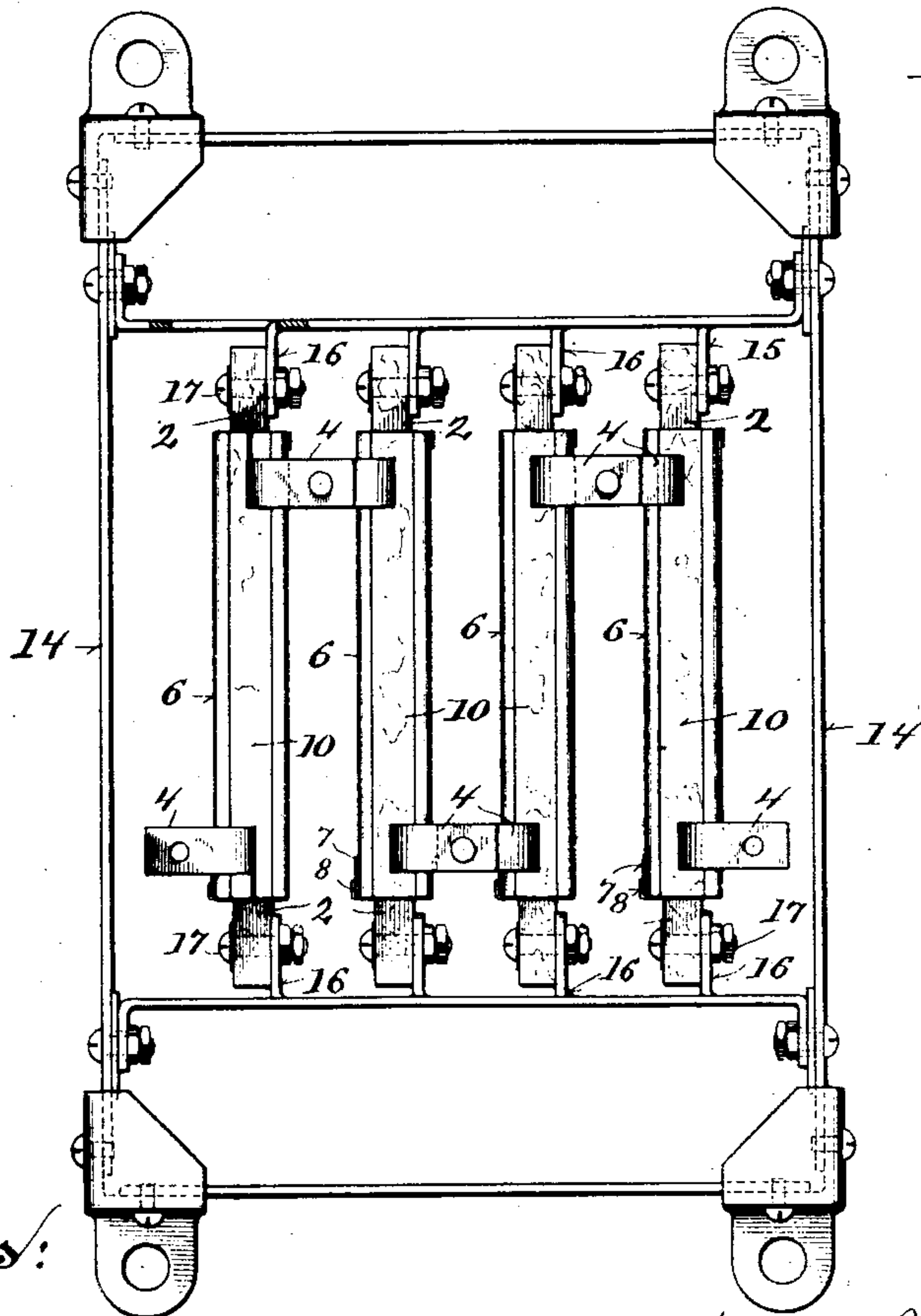


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY J. WIEGAND, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE CUTLER-HAMMER MANUFACTURING COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

INCLOSED RESISTANCE.

No. 872,209.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed October 30, 1905. Serial No. 285,035.

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 Inclosed 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 improvements in inclosed resistances.

In order to mount an inclosed resistance in position where it is inclosed within a metallic casing, it has been the practice to attach the casing directly to a support. It is objectionable to mount the resistance in this way, due to the fact that if the insulation between the resistance and the casing be defective, leakage may take place through the casing to the support.

It is the object of my invention to provide a structure wherein the casing will be insulated from the support, and accordingly I preferably mount the casing upon an insulating supporting member which is adapted to be attached to the support.

The other objects of my invention will be apparent from the disclosure thereof, which is hereinafter made.

It will, of course, be understood that the various features of my invention may be applied to structures of different forms and that the parts thereof may be constructed in various ways.

For the purpose of illustrating my invention, I shall show and describe a resistance unit which has been worked out in practice to embody the features of my invention.

The several views in the accompanying drawing are as follows:

Figure 1 is a perspective view of the resistance unit. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a cross sectional view on the line 3—3 of Fig. 2, and Fig. 4 is an elevation of a plurality of resistance units mounted upon a supporting frame.

The resistance 1 is preferably wound upon an insulating supporting base or member 2, which may be composed of any suitable material. The base may be rectangular in form, as shown in the drawing, and it is preferably provided with holes 3 through which bolts may be passed to attach it to a support.

The resistance is preferably provided with leads or terminals 4 which are attached thereto by means of rivets 5. The resistance and the leads are preferably fastened to the base by means of pins 5^a.

The resistance and the base are preferably surrounded by a casing 6, which may be of any suitable form. The casing shown in the drawing is rectangular in form, and it is preferably constructed from a single piece of sheet metal. The sides and bottom of the casing are bent inwardly at the ends thereof to engage the base 2, thereby closing the ends of the casing and also placing the casing at such a position upon the base that a space is provided between the same and the resistance. The sides of the casing are preferably fastened to each other at the top by means of a clamping strip 7, extending from one side and bent over the other side, it being firmly held in place by means of a bent lug 8, which extends from the latter side and preferably passes through a recess 9.

Along the top of the casing extends an insulating strip or block 10, over which the upper edges of the sides are bent to hold it in place. The strip is provided with slots 11 through which the leads 4 extend, and said leads are insulated from the casing by said strip.

It will, of course, be understood that the base 2 and the casing 6 may be of various forms, and that the same may be associated with each other in different ways.

The casing is preferably filled with a filler 12 which is adapted to insulate the resistance from the casing. The casing is preferably provided with an aperture 13 through which the filler may be inserted. The filler may be composed of any suitable material, but it is preferably made of a cement which will set when it hardens, thereby practically uniting the casing, the base and the resistance, so as to form an integral structure. This feature of my invention is fully set forth and claimed in another application filed October 30, 1905, Serial No. 285,034.

In order to support the resistance unit, I preferably attach the insulating supporting member to a support. Inasmuch as the casing is carried by the supporting member, the same will be insulated from the support, and in consequence, leakage cannot take place through the casing. Of course, it will be

understood that the resistance unit may be attached to the support in any way, so long as the supporting member insulates the casing from the support. Another way in which the resistance unit may be mounted upon a support, so as to have the casing insulated from the support by means of the supporting member, is illustrated in the application which has previously been identified.

Fig. 4 illustrates the way in which the resistance unit may be mounted upon a support, and shows a frame 14, by means of which a plurality of resistance units may be carried. The frame is preferably provided with cross pieces 15. The insulating supporting member of each resistance unit is preferably fastened to lugs 16 by means of bolts 17, said lugs preferably being stamped from the cross pieces. The several resistance units carried by the frame are shown in the drawing as electrically connected in series. Where the resistance units are connected in this way, the strain upon the insulating filler 12 of each unit is very small, by reason of the fact that the casing of each unit is insulated from the supporting frame.

Where the resistance units are used in a rheostat, the leads thereof may be connected to the switch contact in any suitable way. It will, of course, be understood that my invention is applicable to various purposes, and that certain features thereof may be applied to heating coils for electric heaters and other devices.

It is manifest that my invention may be embodied in different types of inclosed resistances, and furthermore, that the structure which I have particularly set forth herein to explain my invention, may be changed in various ways without eliminating the advantageous results which it attains.

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

1. An inclosed resistance comprising a resistance, a casing therefor, and an insulating supporting member having said casing carried thereby.

2. An inclosed resistance comprising a resistance, a casing therefor, and an insulating supporting member, all combined into a unitary structure, said members being adapted to insulate said casing from the support for said structure.

3. An inclosed resistance comprising a resistance, a casing therefor, and an insulating supporting member having said casing carried thereby and adapted to be attached to a support, all combined into a unitary structure, said casing being so mounted upon said member as to be insulated thereby from said support.

4. An inclosed resistance comprising an insulating supporting base adapted to be at-

tached to a suitable support, a resistance wound upon said base, a casing surrounding said resistance and carried by said base so as to be insulated thereby from said support.

5. An inclosed resistance comprising a supporting member, a resistance carried by said member, and a casing surrounding said resistance and carried by said member, said casing being filled with an insulating filler.

6. An inclosed resistance comprising an insulating supporting member, a resistance carried thereby, a casing inclosing said resistance and carried by said supporting member, and a solid insulating filler contained within said casing, all combined to make said casing, said base and said resistance practically an integral structure.

7. An inclosed resistance comprising an insulating supporting base adapted to be attached to a support, a resistance wound upon said base, a casing surrounding said resistance and carried by said base, said casing being arranged upon said supporting member so as to be insulated thereby from said support and an insulating filler contained within said casing.

8. An inclosed resistance comprising an insulating supporting base, a resistance wound thereon, a casing surrounding said resistance and carried by said base, said casing being so arranged upon said base as to be insulated thereby from said support, and a solid insulating filler contained within said casing, thereby making said casing, said base and said resistance practically an integral structure.

9. An inclosed resistance comprising an insulating base adapted to be attached to a support, a resistance wound upon said base, a casing surrounding said resistance and carried by said base, said casing being so arranged upon said base as to be insulated thereby from said support, leads connected to said resistance and a solid insulating filler contained within said casing, thereby making said casing, said base and said resistance practically an integral structure.

10. An inclosed resistance comprising a substantially rectangular base, adapted to be attached to a support, a resistance wound upon said base and a substantially rectangular casing surrounding said resistance, said casing being filled with an insulating filler.

11. An inclosed resistance comprising a resistance, a casing surrounding said resistance and formed from a single piece of metal, parts of said casing being fastened together by means of clamping strips 7 and 8.

12. An inclosed resistance comprising a resistance, a casing surrounding said resistance, an insulating strip 10 and terminals extending through said strip and connected to said resistance, said leads being insulated from said casing by said strip.

13. An inclosed resistance comprising a

base, a resistance carried by said base, a casing surrounding said resistance and formed from a single piece of metal, parts of said casing being bent to engage said base so as to hold said casing in such a position upon said base as to provide a space between said resistance and said casing.

14. An inclosed resistance comprising a base, a resistance carried thereby, a casing surrounding said resistance and formed from a single piece of metal, a strip 10 and leads extending through said strip and connected to said resistance, said leads being insulated from said casing by said strip.

15. An inclosed resistance comprising an insulating base, a resistance carried thereby a casing surrounding said resistance, parts of said casing being bent to engage said base so as to hold said casing upon said base in such a position as to provide a space between said resistance and said casing, and an insulating filler arranged within said space to insulate said resistance from said casing.

16. An inclosed resistance comprising an insulating base adapted to be attached to a support, a resistance carried by said base, a casing surrounding said resistance and formed from a single piece of metal, said casing being so arranged upon said base as to be insulated thereby from said support and parts of said casing being bent to close the ends thereof and also to engage said base so as to hold said casing in such a position upon said base as to provide a space between said resistance and said casing, an insulating filler arranged within said space, a strip 10 arranged within said casing and leads extending through said strip and connected to said resistance, said leads being insulated from said casing by said strip.

17. An inclosed resistance comprising a substantially rectangular base adapted to be attached to a suitable support, a resistance wound upon said base, a substantially rectangular casing surrounding said resistance and formed from a single piece of metal, said casing being so arranged upon said base as to be insulated thereby from said support and parts of said casing being bent to close the ends of said casing and also to engage said base so as to hold said casing in such a position upon said base as to leave a space between said resistance and said casing, an in-

insulating filler arranged within said space, a strip 10 arranged within said casing, and leads extending through said strip and connected to said resistance, said leads being insulated from said casing by said strip.

18. An inclosed resistance comprising a substantially rectangular insulating supporting base adapted to be attached to a suitable support, a resistance wound upon said base, a substantially rectangular casing surrounding said resistance and formed from a single piece of metal, said casing being so arranged upon said base as to be insulated thereby from said support and the sides and bottom of said casing being bent to close the ends of said casing and also to engage said base so as to hold said casing in such a position upon said base as to leave a space between said resistance and said casing, clamping strips 7 and 8 bent to fasten said sides to each other, a strip 10 arranged within the space between said casing and said resistance, and leads attached to said resistance and extending through passages in said strip, said leads being insulated from said casing by said strip.

19. An inclosed resistance comprising a casing, a resistance arranged within said casing and an insulating member adapted to insulate said casing from a support, all combined into a unitary structure.

20. An inclosed resistance comprising a casing, a resistance inclosed within said casing, and an insulating supporting base or member having said casing carried thereby and adapted to be attached to a support, said base being adapted to insulate said casing from said support.

21. An inclosed resistance comprising a casing, a resistance arranged within said casing and surrounded by an insulating filler, and an insulating supporting base or member having said casing carried thereby and adapted to be attached to a support, said casing being insulated from said support by said base.

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

HENRY J. WIEGAND.

Witnesses:

A. H. BARNICKEL,
J. F. HAWKINS.