

No. 775,714.

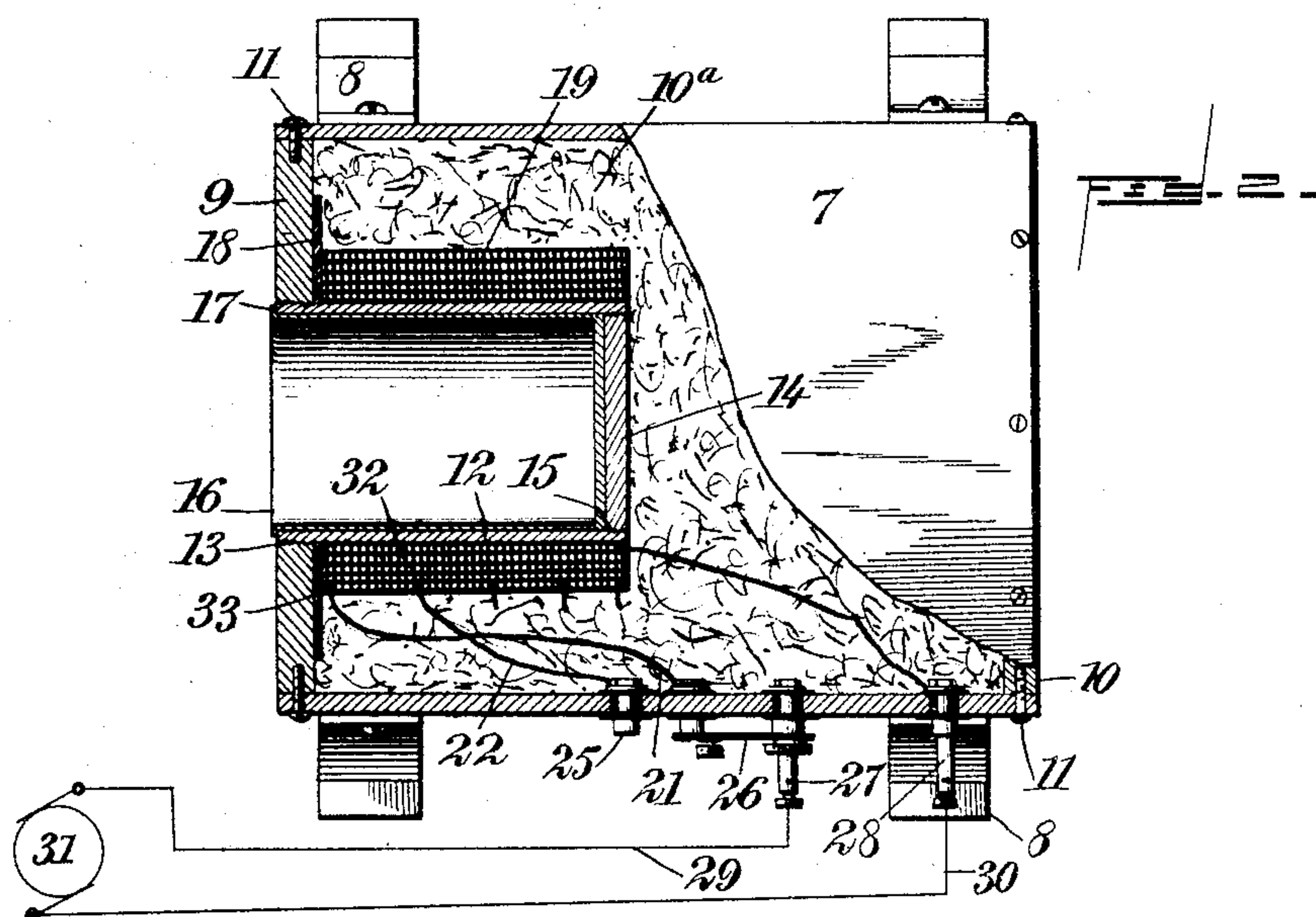
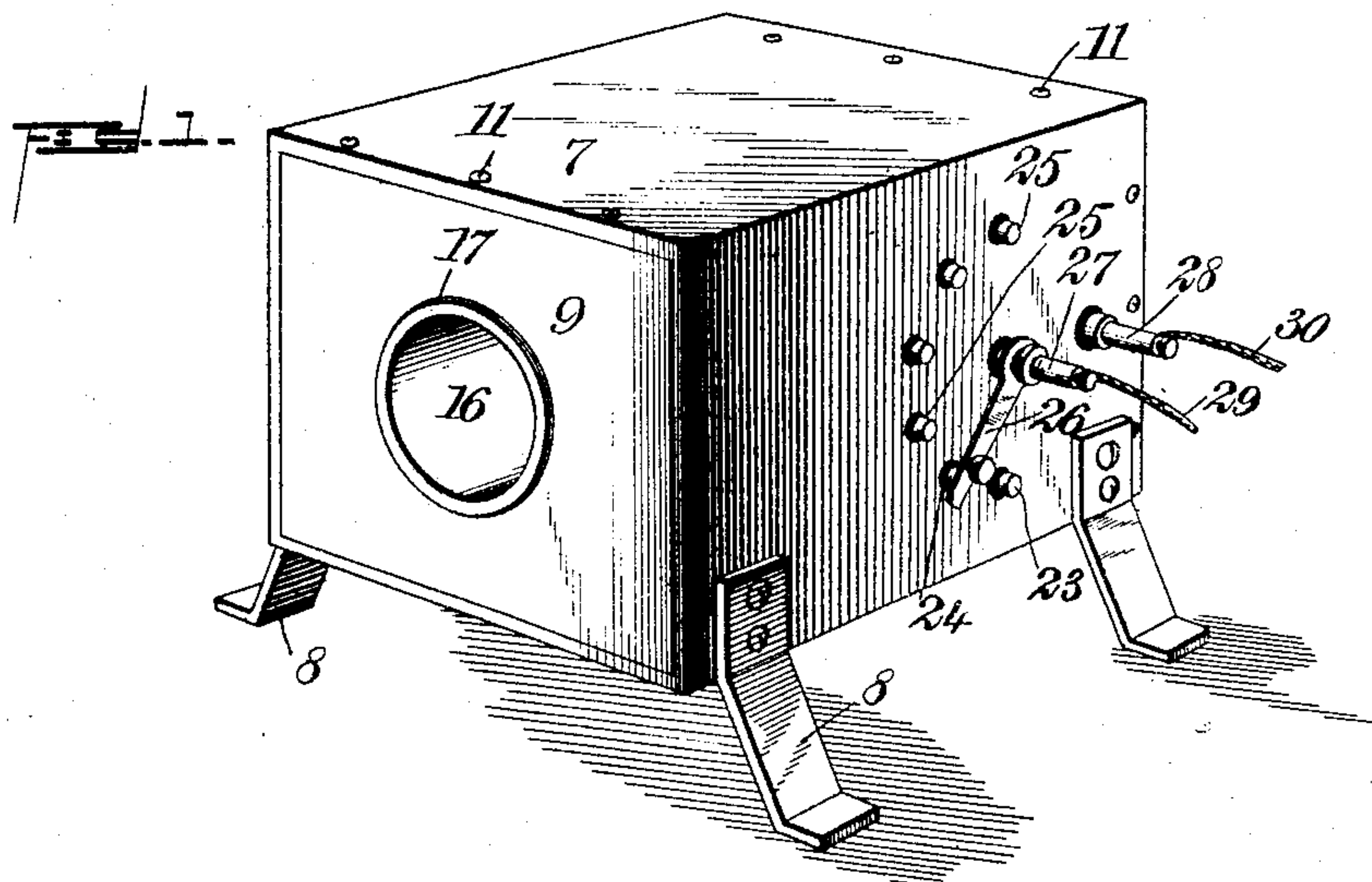
PATENTED NOV. 22, 1904.

E. P. WEGGEN.
ELECTRIC HEATER.

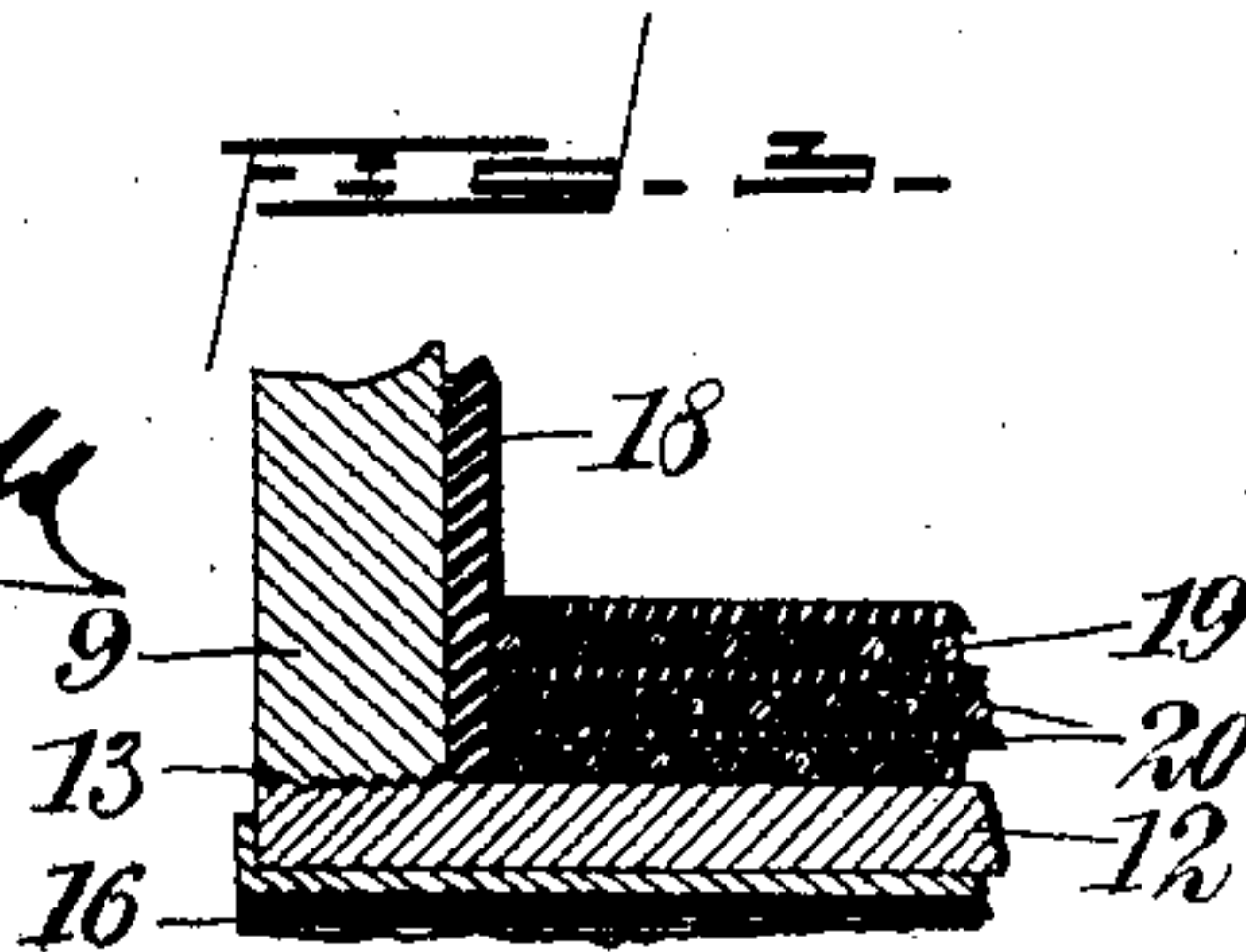
APPLICATION FILED APR. 22, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:
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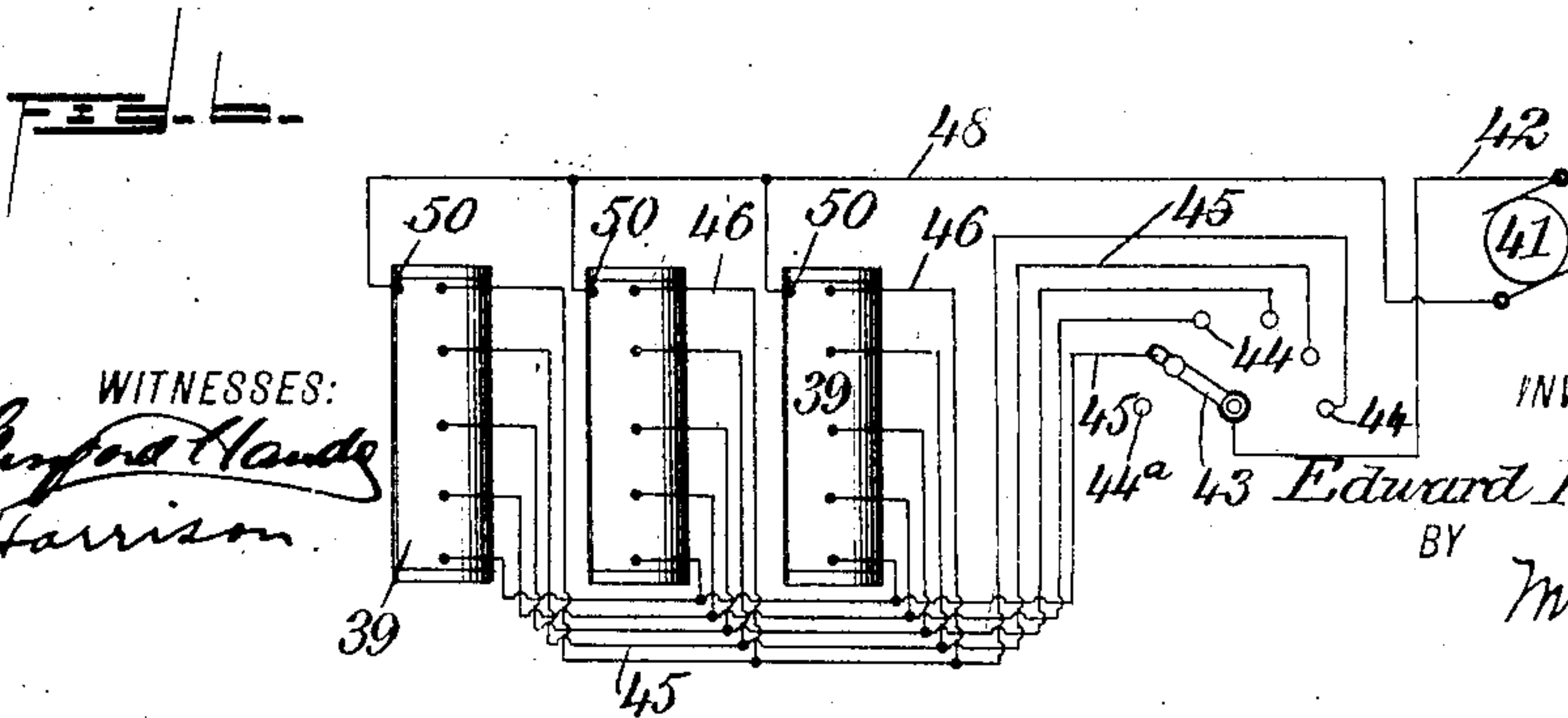
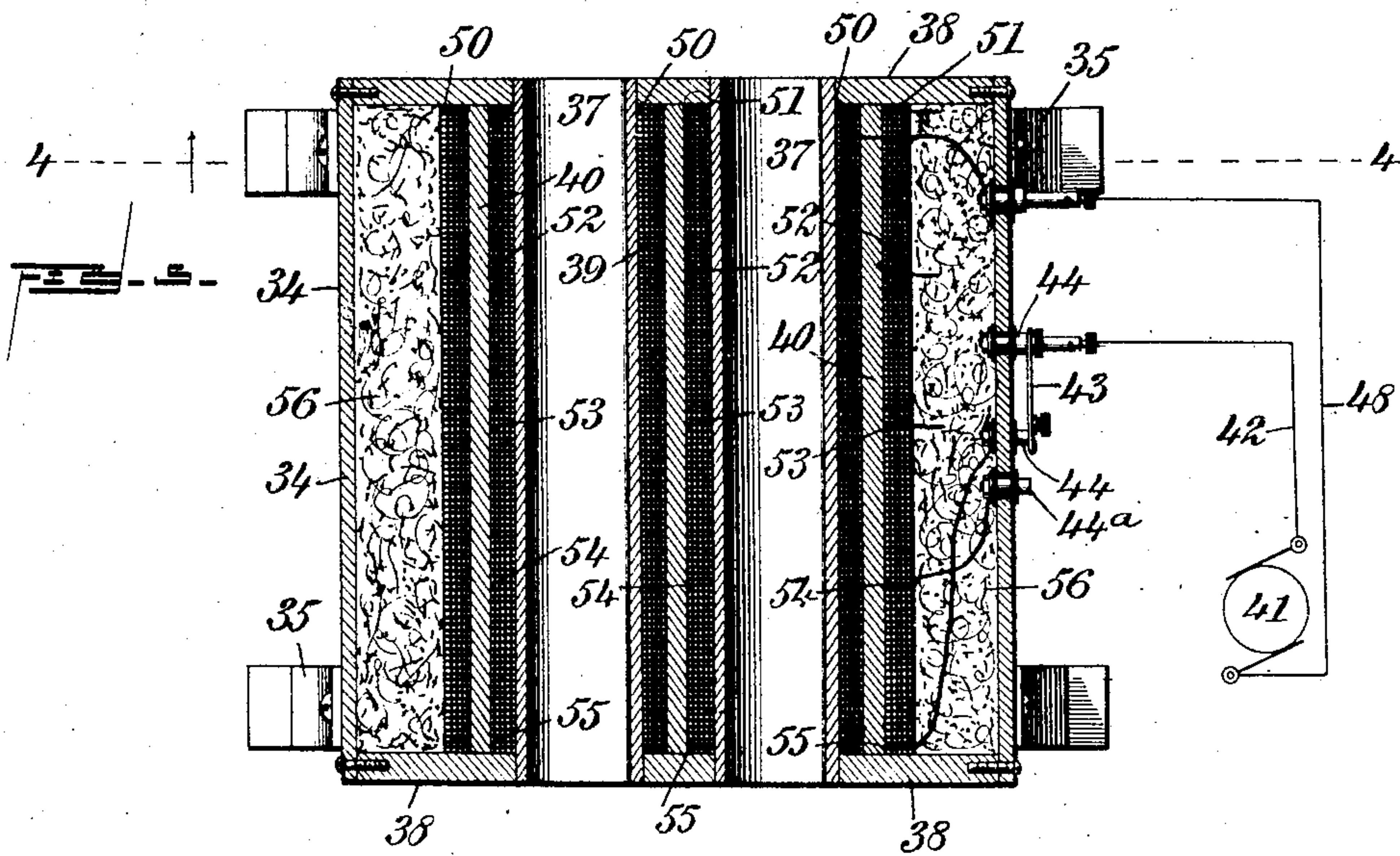
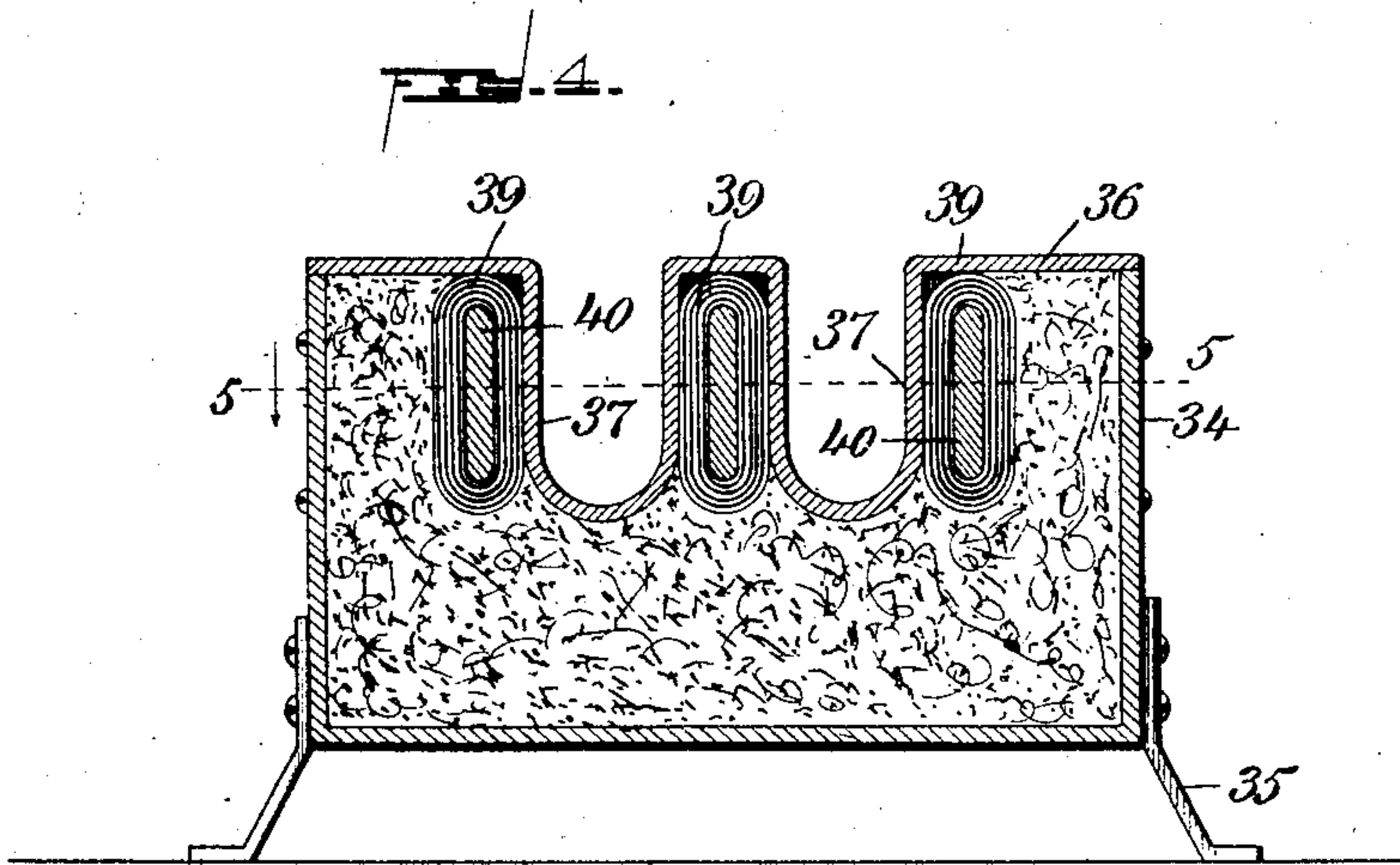
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NO MODEL.

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WITNESSES:
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UNITED STATES PATENT OFFICE.

EDWARD PAUL WEGGEN, OF JEFFERSON CITY, MISSOURI, ASSIGNOR OF TWO-THIRDS TO CHARLES TWEEDIE, OF JEFFERSON CITY, MISSOURI, AND WILLIAM J. SCHOTT, OF TOPEKA, KANSAS.

ELECTRIC HEATER.

SPECIFICATION forming part of Letters Patent No. 775,714, dated November 22, 1904.

Application filed April 22, 1904. Serial No. 204,394. (No model.)

To all whom it may concern:

Be it known that I, EDWARD PAUL WEGGEN, a citizen of the United States, and a resident of Jefferson City, in the county of Cole and State of Missouri, have invented a new and Improved Electric Heater, of which the following is a full, clear, and exact description.

My invention relates to electric heaters admitting of general use, but more particularly to a type of heater used to a great extent in the boot, shoe, and leather-working trades, but capable of other uses, as will be apparent.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view showing one form of my heater ready for service. Fig. 2 is a plan view of the same, showing the heating parts in section. Fig. 3 is an enlarged section showing the manner of insulating the heating-wires. Fig. 4 is a vertical cross-section through another form of my heater, taken upon the line 4 4 of Fig. 5 looking in the direction of the arrow. Fig. 5 is a horizontal section upon the line 5 5 of Fig. 4 looking in the direction of the arrow, and Fig. 6 is a diagram of the wiring used in the structure represented in Figs. 4 and 5.

By the use of my invention a rheostat is dispensed with, a resistance-coil serving the joint purpose of raising the temperature and of cutting down the current to a suitable degree, the wiring being such that the length of the resistance-wire thrown into the circuit of the heating-coils is adjustable within certain limits.

The casing 7 is provided with feet 8, whereby the same is supported, and is also provided with heads 9 10, secured in position by means of screws 11. Mounted within the head 9 by means of a thread 13 is a cup 12, of iron, provided with a bottom 14, secured thereto by means of a thread 15, as shown more particularly in Fig. 2. A copper lining 16 is disposed within the iron cup 12 and is spread outward so as to form a flange 17. A

washer 18, of insulating material, is disposed immediately adjacent to the head 9 and is encircled by a coil 19, of resistance-wire, made, for instance, of German silver or of some alloy thereof, the different layers of this resistance-wire being separated by cylinders 20, of insulating material, or in any equivalent manner. The winding 19 is encircled by a mass 10^a, of comminuted asbestos, which is filled into the casing, as indicated in Fig. 2. A number of wires 21 22 are connected at different points 32 33 with the outer layer of wire, as indicated in the figure just mentioned. These wires are also connected with buttons 23, 24, and 25, distributed, preferably, in the form of a semicircle, as indicated in Fig. 1. A radially-movable arm 26 is free to move consecutively over these buttons and is pivotally mounted upon a post 27, serving as a binding-post. This binding-post, together with a binding-post 28, is connected, by means of wires 29 30, with a suitable source of electricity 31—such, for instance, as a dynamo. By turning the arm 26 so as to bring the same into engagement with the different buttons successively the length of the resistance-wire included in the active portion of the circuit may be varied; but the inner layers of wire are not disturbed, the current always passing through them when the device is in operation. By this arrangement any inequality of heating due to the exclusion of certain portions of the winding used for cutting resistance out or not is in the extreme layer, where it does not affect the uniformity of the heat as distributed throughout the cup 12 and the lining 16. In other words, the inequalities of temperature due to adjustment are caused to take place at a point where their abruptness is reduced to a minimum.

The form of heater just described is of peculiar value to boot and shoe factories for the purpose of heating the tools used for removing wrinkles from the toes or tips of boots and shoes or for leveling up any bulge or depression in the boot or shoe while the same is yet damp and on the last. This

form of heater is also of great value in boiling water, in cooking, in heating soldering-irons, and like purposes.

In the form shown in Figs. 4, 5, and 6 the casing 34 is mounted upon feet 35 and is provided with a top 36, having integral portions 37 of substantially U shape in cross-section and depending therefrom, as indicated in Fig. 4. The casing 34 is provided with heads 38, made of iron, engaging these depending portions, as indicated in Figs. 4 and 5. The windings 39 are preferably elliptical in cross-section and encircle the respective cores 40, made of iron. From a dynamo 41 or equivalent source of electricity a wire 42 leads to a movable arm 43, this arm being movable radially by hand, so as to successively engage the several buttons 44. An idle button 44^a is also provided for totally excluding the current from the coils. From the buttons 44 wires 45 46 run to the coils, as shown more particularly in Figs. 5 and 6. The other terminal of the dynamo, 41, is connected, by means of wiring 48, with the outer ends of the respective windings 39, the several points of connection being indicated in Fig. 3 by the numeral 50. The wires 45 are respectively connected with the loops 51, 52, 53, 54, and 55, all of which are disposed in the innermost layer of the respective windings. It will be noted that by this arrangement not only are the several windings connected in parallel with respect to the dynamo and switch, but that the windings are all adjustable simultaneously—that is to say, a movement of the switch-arm 43 in cutting down the current in one necessarily cuts down the current in the others. The casing 34 is filled with comminuted asbestos 56, which partially encircles the several coils. It will be noted that in the form of heater just described the adjustment of the resistance caused by cutting in or cutting out portions of the wire takes place at such a point as to make the distribution of the heat as uniform as possible relatively to the depending members 37. For instance, if a section of wire disposed between the connecting-points 51 and 52 be comparatively cool this section of wire, being disposed at a point comparatively remote from

the surfaces to be heated, does not materially affect the uniform distribution of the heat where the heat is desired. This form of heater is of especial value for heating burnishing-irons for ironing the bottoms or soles of boots and shoes and for treeing-irons used for ironing the uppers of boots and shoes, as well as for the other uses hereinbefore mentioned.

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

1. In an electric heater, the combination of a member to be heated, a coil disposed adjacent to said member for heating the same, said coil being provided with windings, and conductors connected with one of said windings at divers points remote from said member to be heated, said divers points being selected from different parts of a winding remote from said member to be heated, for the purpose of rendering uniform the distribution of heat within said member to be heated.

2. In an electric heater, the combination of a receptacle of substantially cylindrical form, a winding of substantially cylindrical form encircling the same, said winding being provided with an outermost layer remote from said receptacle, separate wires connected with different portions of said outermost layer, and means controllable at will for energizing all of said windings except predetermined portions of said outermost layer.

3. In an electric heater, the combination of a member to be heated, a resistance-coil disposed adjacent to said member for the purpose of heating the same, said resistance-coil being provided with a layer of wire disposed comparatively remote from said member to be heated, and means controllable at will for cutting in or out certain predetermined portions of said layer for the purpose of effecting a uniform distribution of the heat relatively to said member to be heated.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD PAUL WEGGEN.

Witnesses:

CHAS. TWEEDER,
E. E. WARD.