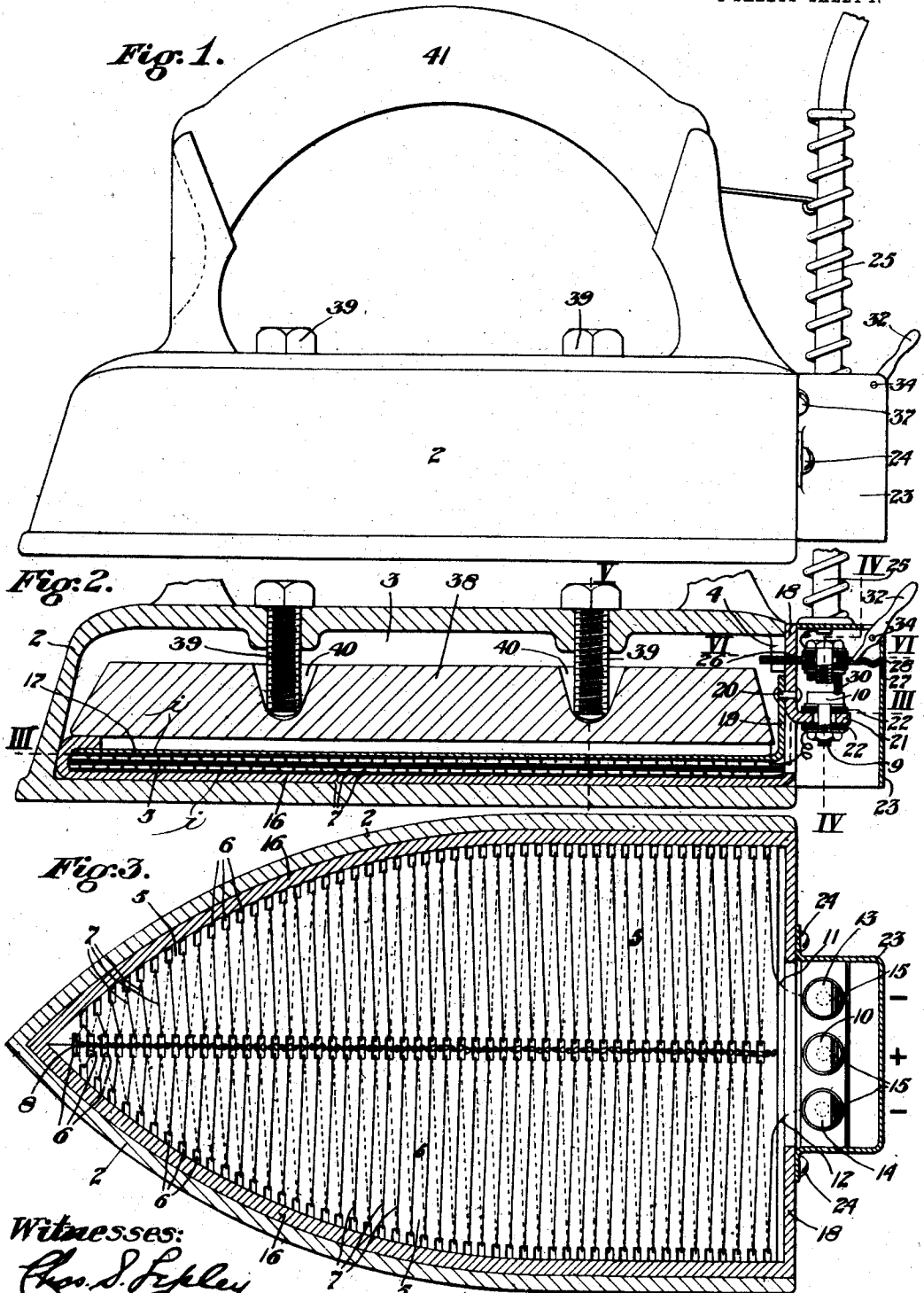


H. VANDERPOOL.
ELECTRIC HEATING IRON.
APPLICATION FILED MAR. 19, 1910.

981,334.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

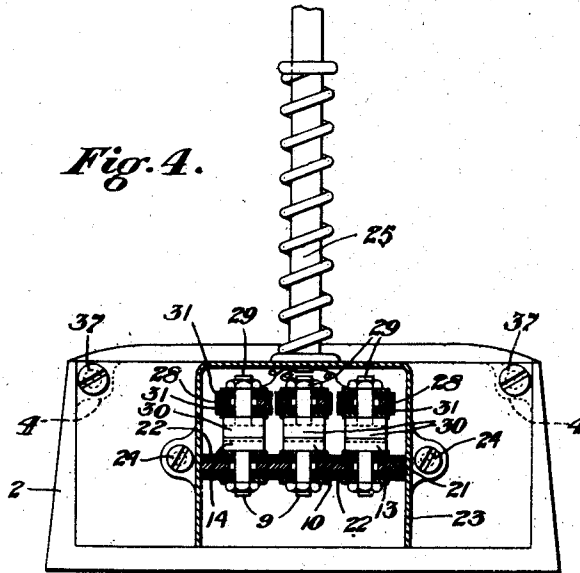


Fig. 5.

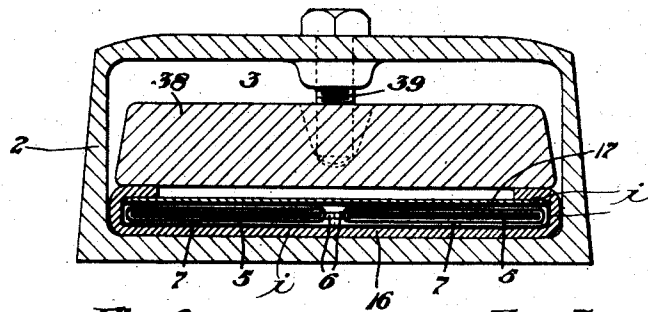


Fig. 6.

Fig. 7.

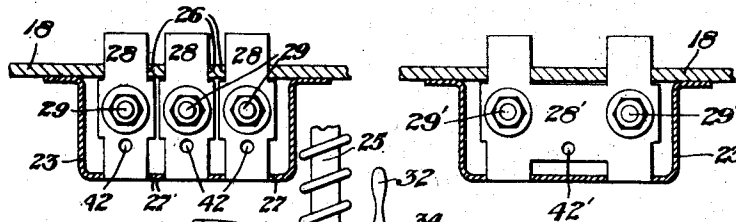
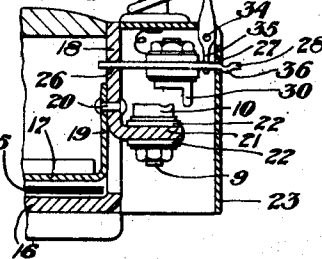


Fig. 8.



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UNITED STATES PATENT OFFICE.

HARRY VANDERPOOL, OF TURTLE CREEK, PENNSYLVANIA, ASSIGNOR TO BRADDOCK ORNAMENTAL IRON AND WIRE WORKS, OF BRADDOCK, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ELECTRIC HEATING-IRON.

981,334.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed March 19, 1910. Serial No. 550,464.

To all whom it may concern:

Be it known that I, HARRY VANDERPOOL, a citizen of the United States, residing at Turtle Creek, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Electric Heating-Irons, of which the following is a specification, reference being had therein to the accompanying drawing.

10 My invention relates to improvements in electric sad irons and has for its object to provide a sad iron in which a variable resistance and the resulting variable heat is secured by means of a separable resistance
15 unit. Also by means of varying the resistance and resulting heat in such a unit by changing the current therethrough by distribution of the current through separably operable contact mechanism.

20 The invention also relates to the combination with the sad iron of variable weights and means for retaining them in position, together with other features of construction and improvement as shall be more fully
25 hereinafter described.

In the drawings:—Figure 1 represents the sad iron in side elevation. Fig. 2 is a central vertical sectional view through the body of the iron. Fig. 3 is a horizontal sectional
30 view indicated by the broken line III. III. of Fig. 2. Fig. 4 is a rear end view of the sad iron showing the contact mechanism in section on the line IV. IV. of Fig. 2. Fig. 5 is a transverse sectional view on the line
35 V. V. of Fig. 2. Fig. 6 is a horizontal sectional view on the line VI. VI. of Fig. 2, showing the shifting contacts. Fig. 7 is a similar sectional view showing a modified construction. Fig. 8 is a detail view similar
40 to the contact mechanism of Fig. 2, showing one of the contacts out of engagement.

2 represents the body of the iron of the usual or suitable form customary in sad irons, having an integral bottom, sides and
45 top and a hollow interior 3. The iron is entirely open at its rear end, with the exception of inwardly extending lugs 4 for the purpose of securing the rear wall of the heating unit in position as hereinafter de-
50 scribed.

The heating or resistance unit comprises in its entirety, in the preferred form, two grids laid side by side, of the general outline when assembled, of the interior cavity 3 of the iron, as clearly shown in Fig. 3. 55 These grids are composed of sheets of mica 5 or other suitable insulating material, the inner adjacent edges of which are preferably straight as shown, the outer edges being curved at their front portions to the outline of the interior face of the side walls, and all of said edges being provided with closely adjacent serrations or slots 6. These
60 grids are separably wound with resistance wires 7, 7, embracing and surrounding the insulating grids 5 throughout their entire length as shown, said wires being connected at the front end at 8 and together brought back and connected with the central contact button 10. The other terminals 11 and
70 12 of the resistance wires of each of the grids are separately connected with similar terminal binding posts and buttons 13 and 14 respectively, each of said buttons preferably having transverse grooves 15 for en-
75 gagement of the movable contact terminal of the switch. For the purpose of identification of each of said terminals I have employed the signs minus, plus and minus for the several terminals, as indicated. The
80 grids as thus constructed are mounted between a lower plate 16 of sheet metal and an upper plate 17, the lower plate being bent up around the edges of the upper plate so as to firmly embrace the entire resistance
85 mechanism between the two as clearly shown, while at the outer end the plate 16 is bent upwardly at right angles for the full width of the end opening of the sad iron, providing a wall 18. Insulation ϵ is
90 interposed between the coils 7 and plates 16 and 17. The end of upper plate 17 is bent upwardly in the same manner providing an end flange 19 which is riveted to end plate 18 as indicated at 20, whereby the two
95 plates are firmly connected together and, with the inclosed resistance, constitute a single unit.

A portion of the upwardly turned end 18 of the bottom wall is cut out to provide a 100

shelf 21 which is bent backwardly at right angles as shown, for a width sufficient to provide a mounting for the contact terminals 13, 10 and 14 with which the terminals of the resistance wires are connected as has been stated, and these terminal contacts are provided with suitable insulation 22 as clearly shown and fixedly mounted in the supporting shelf 21.

23 is a containing box or case of light sheet metal secured upon the upwardly turned flange of wall 18 by screws 24, said case being of sufficient width and height to embrace the contact mechanism and to provide for the mounting upon its top portion of the main conductor 25. Said conductor constitutes the current supply and is of any suitable construction, preferably having an outer wrapping or insulating tube and mounted with a stiffening armor for convenience, as will be readily understood.

Mounted in bearing slots 26 and 27 in the end wall 18 and shell 23 respectively are a plurality of slides 28 corresponding with the stationary contact terminals, each of said slides, in one form of the device, being provided with a binding screw 29 to which one of the terminals of the conductor wire is attached, and having a contacting terminal lip 30 in electrical connection therewith and mounted by suitable insulation 31 in the slide 28.

32 is a shifting lever pivoted in case 23 at 34 and engaging by its terminal 35 in a hole 42 in the front portion of plate 28, which is also preferably provided with a transverse ridge 36. By means of the lever 32 it will be seen that either plate 28 and its contact terminal may be shifted into or out of electrical engagement with its companion terminal button 13, 10 or 14 so as to make or break the current therethrough and to establish the circuit through the resistance grids. By shifting one or more of the levers 32, it will be seen that the currents can be so distributed through the resistance as to vary the same. Thus, by combining the two minus terminals, throwing the current around both grids in series, will give a resistance of 72 ohms. By establishing the circuit through the wires of either grid singly as minus and plus, or plus and minus, a resistance of 36 ohms is produced. By establishing the circuit in parallel by throwing in all three contacts minus, plus and minus, a resistance of 18 ohms is secured. By connecting terminals 13 and 14 to the supply line, the terminal 10 serving to connect the two coils, the grids may be connected in series.

By reason of the compact construction of the resistance unit comprised between the plates 16 and 17 and incorporated with the terminal and switch mechanism and the cas-

ing 23 it will be seen that it can be entirely removed from the sad iron or replaced by another resistance unit. For such purpose the end wall 18 is merely screwed to the lugs 4 by means of securing screws 37, and a particular advantage of this construction is that the sad iron is thus capable of use with resistances of any desired capacity dependent upon the local conditions, as current voltage, or the different uses to which the sad iron is to be put with currents of the same voltage. In other words, its construction enables of very considerable latitude accomplished by the different possible windings of the grids for different voltages; plurality of the grids; the combination with them of the double set of windings, and the plurality of contact mechanism. An additional feature of the device which is of value and importance is the facility with which its weight may be varied. This is accomplished by means of weights 38 which, like the grids, are preferable of the outline of the interior cavity 3 of the sad iron, but of different thicknesses.

In Fig. 2 one such weight is shown of medium size, which is laid upon the top of the resistance unit and introduced into the sad iron, and then secured in place, as is also the grid, with considerable firmness, by the means of securing screws 39 preferably one at each side of the middle portion centrally of the iron as shown. Each weight 38 is provided with a deeply recessed cavity 40 into the bottom of which screw 39 is inserted, the depth of said cavity varying with weights of different thicknesses, so that the bottom of each cavity shall be a uniform distance above the lower surface of the weight. By this means, each weight of different size will receive the securing screws when screwed down to their full limit of travel, so that their heads have a proper bearing and do not project unnecessarily upward from the top surface of the iron.

In Fig. 7 I have shown a construction in which a double contact plate 28' is provided for establishing a circuit through both grids in series, having contact members at each side for the terminal connections 13 and 14 which will now be minus and plus and corresponding binding posts 29', said plate being slidably mounted in the case 23 and operable by the terminal lever 32 engaging hole 42', as will be readily understood. In such construction the middle connection 10 is not used, the grid being wound to give a resistance of 18 ohms. By this means the double contacts may be effected by the use of a single lever. It will be understood that posts 29' are provided with insulation in the same manner as binding posts 29. The iron is provided with the usual handle 41 of any suitable construction and the general design or proportions of the iron may be varied to suit the use to which it is to be put.

The advantages of the invention will be readily appreciated by all those familiar with this class of utensils, and it will be found to provide for a wide variety of adaptations as indicated.

Having described my invention, what I claim is:—

1. An electric sad iron having a removable resistance unit provided with attached terminal connecting devices and shifting make-and-break switch mechanism for establishing variable currents through the resistance unit.

2. An electric sad iron having a removable resistance unit provided with a plurality of current terminal contacts, and terminal attaching devices and switch mechanism incorporated with and forming a part of the resistance unit.

3. An electric sad iron having a removable resistance unit arranged for insertion in the interior of the iron, means for securing it therein, and switch mechanism for establishing varying currents through the resistance unit incorporated with and forming a part of the resistance unit.

4. An electric sad iron having a removable resistance unit arranged for insertion in the interior of the iron, a weight superimposed upon the resistance unit having recesses in its upper portion, and screws engaging said recesses for securing the weight and unit in position.

5. A resistance unit comprising an insulating grid or base provided with edge recesses and a conducting wire wound thereon, inclosing plates therefor having switch supporting extensions, and current terminal and switch mechanism mounted thereon.

6. A resistance unit comprising an insulating grid or base provided with edge recesses and a conducting wire wound thereon, inclosing plates therefor having switch supporting extensions, and terminal binding posts, and switch mechanism incorporated

with said extensions and forming a portion of said unit.

7. A resistance unit comprising an insulating grid or base provided with edge recesses and a conducting wire wound thereon, a lower and upper plate inclosing the grid and firmly associated together and providing an upturned end wall, and terminals and switch mechanism mounted in said end wall.

8. A resistance for an electric sad iron comprising a single portable unit embodying grids, heat developing resistance wound thereon, insulation, and a casing therefor; and terminal attaching and switch mechanism incorporated with said parts and forming an integral part of the unit.

9. The combination with the hollow sad iron body, of a removable resistance within the sad iron body having attached current supply and switch mechanism, a removable weight partially filling the space within the hollow iron body, and means for securing the weight within the hollow sad iron body downwardly against the said resistance.

10. The combination with the hollow sad iron body, of a removable resistance therein, a removable weight within the hollow iron superimposed on the resistance and spaced downwardly from the inner top of the hollow iron body, and means incorporated with the top of the hollow iron body for securing the weight in position.

11. The combination with the hollow sad iron body, of a removable resistance therein, a removable weight within the hollow iron superimposed on the resistance having a set screw bearing, and a set screw mounted in the sad iron engaging said bearing.

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

HARRY VANDERPOOL.

Witnesses:

C. M. CLARKE,

CHAS. S. LEPLY.