No. 887,871. PATENTED MAY 19, 1908.

C. L. TAYLOR.

ELECTRIC HEATER.

APPLICATION FILED AUG. 24, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

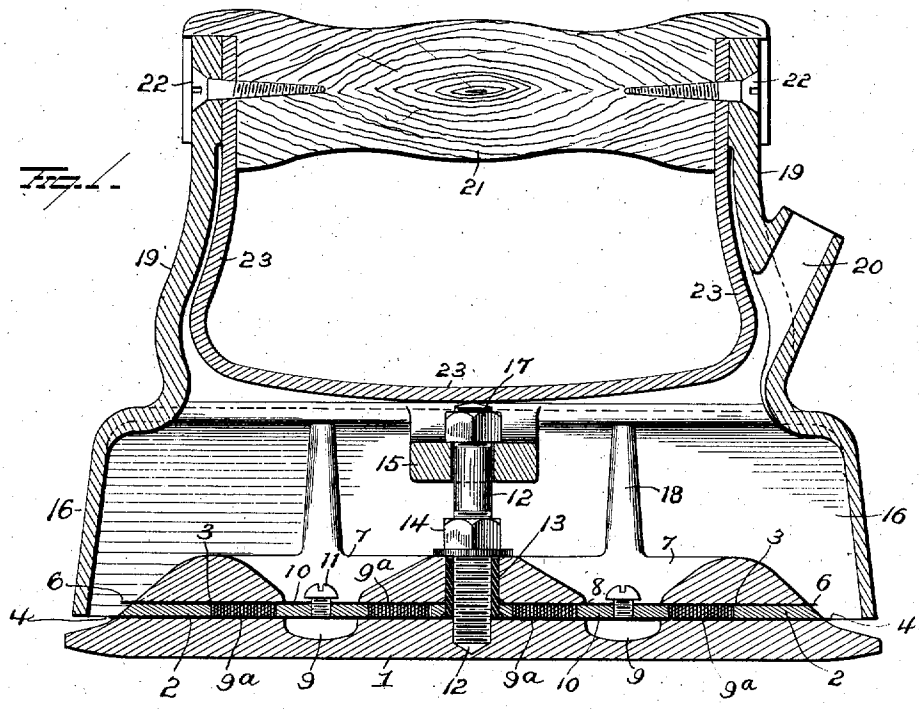
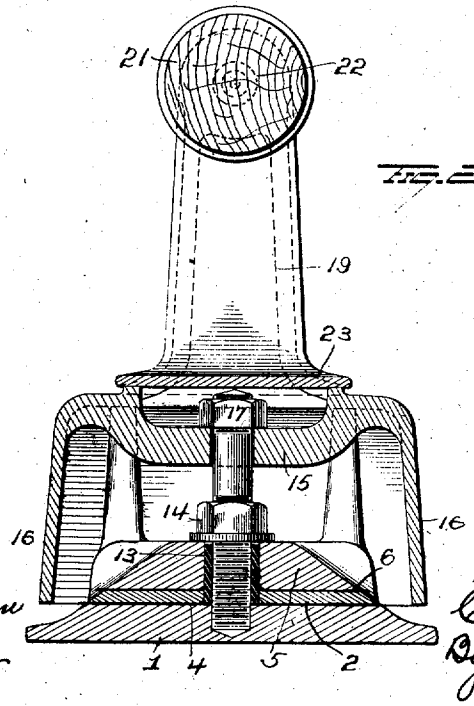


Fig. 2.



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Fig. 3.

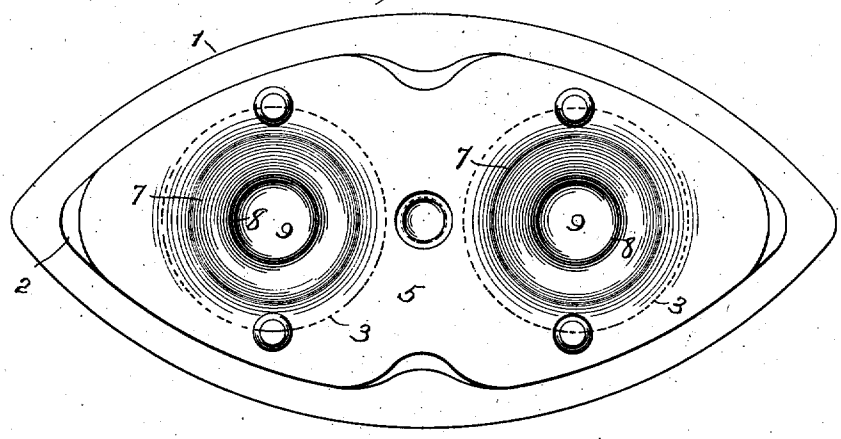
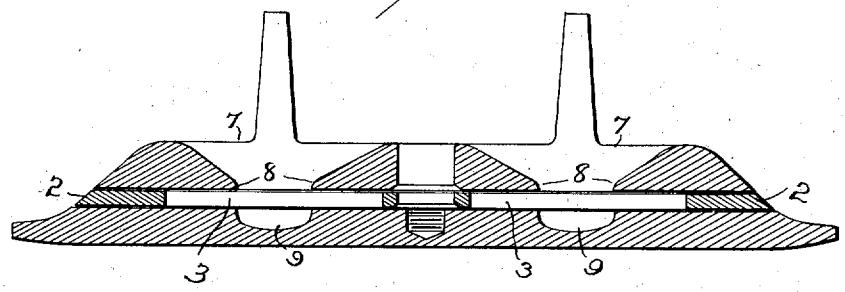


Fig. 4.



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CLARENCE L. TAYLOR, OF ALLIANCE, OHIO.

ELECTRIC HEATER.

No. 887,871. Specification of Letters Patent. Patented May 19, 1908.

Application filed August 24, 1907. Serial No. 390,004.

To all whom it may concern:

Be it known that I, CLARENCE L. TAYLOR, a resident of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Electric Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in electric heaters, wherein an electrical resistance conductor is employed as an element to supply heat to the surface of the device in which such element is employed.

The object of my present invention is to so construct and arrange the heating element as to insure such a distribution and circulation of heat that the latter will be directed to or concentrated in the working face of the device with which the heating element is associated.

A further object is to so construct an electrically-heated iron that the heating element will be located in close proximity to the working face of the iron; so that said element shall occupy small space, and so that heat radiating from such element will be made to circulate in such manner as to be directed to said working face.

A further object is to construct an electrically-heated sad iron wherein the results above enumerated will be attained without sacrificing the conventional shape of the iron.

A further object is to so construct an electrically-heated sad iron that the parts thereof shall be distributed in such manner as to cause the heat to flow down to the thin edges of the polishing face of the iron and allow only a minimum amount to be lost by escape through the frame and radiation into the air.

A further object is to construct an electrically-heated iron in such manner that the parts can be readily and quickly assembled, and so that air will be permitted to circulate between the heating element and the lower portion of the frame and thus assist to prevent undue heating of the handle.

With these objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings: Figure 1 is a longitudinal sectional view of a sad iron embodying my invention; Fig. 2 is a transverse sectional view; Fig. 3 is a plan view with the handle portion omitted: Fig. 4 is a sectional view on the line A—A of Fig. 3.

1 represents a comparatively thin plate having the shape of a double-pointed sad iron and the under polished side of said plate constituting the working face of the iron. A plate 2, having openings 3, is disposed upon the plate 1 and insulated therefrom by means of a sheet of mica 4, or similar material, and over the plate 2, another plate 5 is disposed and separate from said plate 2 by means of a sheet of mica 6 or similar material.

The plate 5 is preferably of greater thickness than the plate 1 and is made with recesses 7 terminating in openings 8 over the openings 3 of plate 2 and directly over recesses 9 in the bottom plate 1. The upper plate 5 has a general outline corresponding with that of plate 1 but is of less dimensions than the latter, and the outer portions of the plate 5 are beveled, as shown in the several figures of the drawings. The walls of the recesses 7 of said upper plate 5 are also beveled as shown in Figs. 1 and 4. By thus constructing the plate 5, the heat from the heating element (which is disposed between the plates 1 and 5 as presently explained), will be made to circulate in such manner as to be directed to, and to a great extent concentrated in the bottom plate 1, and in the working under face of said plate.

The openings 3 in the intermediate plate 2 are for the reception of the heating element of the device,—said heating element consisting of two coils 9^a, 9^a, of electrical resistance ribbon. Suitable insulating material is disposed between the convolutions of each coil, and each coil is wound upon a small steel disk 10 with which the inner convolution is in electrical contact, the outer convolution of each resistance coil being in electrical contact with the intermediate plate 2, so that when the terminals of the leading-in wires are connected with screws 11 on the respective core-disks 10, the two coils of resistance ribbon will be connected in series. Each core-disk 10 is disposed over a recess 9 of the bottom plate and under an opening 8 of the upper plate 5, said disks being of slightly greater diameter than said recesses and openings, so that when the plates are secured together, the disks 10 as well as the resistance elements of which they form the cores, will

be securely held in place. For the purpose of securing the several plates 1, 2 and 5 together with the resistance element in place between the plates 1 and 2 and in comparatively close proximity to the working face of the former,—a bolt 12 is employed. This bolt passes through openings in the plates 2 and 5 (from which it is insulated by means of a sleeve 13) and enters a threaded socket in the plate 1,—a nut 14 located on said bolt, being screwed down against the top of plate 5.

The bolt 12 extends some distance above the nut 14 and passes through a cross bar 15 located centrally between the ends of a hollow frame or shell 16, and over said cross bar, a nut 17 is screwed on the bolt. The depending perimeter of the shell 16 terminates a short distance above the perimeter of the plate 1 and is properly held in this position by means of posts 18 projecting upwardly from the upper plate 5 and engaging the top wall of the shell. The shell 16 is provided at its respective ends with arms 19, one of which is made with a perforated boss 20 for the accommodation of the leading-in wires. The upper ends of the arms 19 are secured in the countersunk ends of a handle 21 (preferably of wood), by means of screws 22 or other suitable fastening devices. Between the arms 19 and the ends of the handle, the ends of a guard or shield 23 are secured, said guard or shield being adapted to protect the hand of the user from such heat as might be radiated through the shell or opening in the top of the shell 16. It will be observed however, that considerable space is left over the heating element within the shell and that a free ingress of air into this space will be permitted between the lower edge of the shell and the plate 1. This circulation of air will tend to prevent any appreciable amount of heat reaching the handle.

In order to avoid inductive effect in the heating coils, each of said coils may be wound with a portion of its convolutions running in one direction and the remaining portions of its convolutions running in the reverse direction.

By means of the construction and arrangement of parts above described, the heating element is rendered very compact; is located a considerable distance from the handle, and is in close proximity to the working face of the device, and the metal is so disposed with relation to the heating coil and the working face of the device, as to insure the thorough and effective heating of the latter.

Various slight changes might be made in the details of construction of my invention, and the form of the parts may be altered to adapt the heater to devices other than sad irons, without departing from the spirit of my invention or limiting its scope, and hence I do not wish to limit myself to the precise details herein set forth.

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

1. An electric heater, comprising three superimposed plates insulated from each other, the intermediate plate having an opening therein, and a flat resistance coil disposed in the opening in the intermediate plate.

2. An electric heater, comprising three superimposed plates insulated from each other, the intermediate plate having a series of openings, resistance coils disposed in the openings in the intermediate plate and having their outer convolutions in electrical contact with said plate, and means for connecting the terminals of leading-in wires to the inner convolutions of said coils, whereby said other coils are included in series with each other.

3. An electric heater comprising a series of three plates insulated from each other, the intermediate plate having an opening, and the upper plate provided with an opening over the opening in the intermediate plate and having its wall converging toward the center of the opening in said intermediate plate, and an electrical resistance element disposed in the opening in the intermediate plate.

4. An electric heater comprising a series of three plates insulated from each other, the intermediate plate having an opening, the upper plate having greater thickness than the other plates and provided with an opening over the opening in the intermediate plate, and an electrical resistance element in the opening in the intermediate plate.

5. An electric heater, comprising three plates insulated from each other, the intermediate plate having an opening, the lower plate having a recess under the opening in the intermediate plate, and the upper plate having an opening over the opening in the intermediate plate, and an electrical resistance element disposed in the opening in the intermediate plate.

6. An electric heater comprising three superimposed plates insulated from each other, the intermediate plate having openings therein, and the upper plate having openings communicating with the openings in the intermediate plate, disks located centrally within the openings in the intermediate plate and in line with the openings in the upper plate, resistance ribbon wound on each of said disks between the upper and lower plates and having their convolutions insulated from each other, the outer convolution of each coil in electrical contact with the intermediate plate, and means for connecting electrical terminals to said disks.

7. The combination with superimposed plates, electrical heating means between said plates, and a bolt securing said plates together and the heating means between them,

of a shell over said plates and secured in place by said bolt, posts on the upper plate engaging the upper portion of said shell, and a handle connected with said shell.

8. In an electric heater, the combination of superimposed plates and electrical heating coils disposed between said plates, one of said plates having recesses provided with beveled walls converging to the center of the interposed electrical heating coils, said plate also having beveled outer walls, and means for securing the plates together with the electrical heating coils held in place between them.

9. The combination with superimposed plates and electrical heating coils secured between them, one of said plates having the working face of the device and the other plate constructed to direct heat thereto, means for securing said plates together and means for including said coils in an electric circuit, of a shell over said plates, means for spacing said shell from said plates and securing it in position relatively to the plates, arms projecting from said shell, a handle secured to said arms and a guard between said handle and the shell.

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

CLARENCE L. TAYLOR.

Witnesses:
N. C. FETTERS,
L. W. HEWITT.