G. J. SCHNEIDER.

ELECTRIC HEATER.

APPLICATION FILED NOV. 10, 1911.

1,127,526. Patented Feb. 9, 1915.

Fig. 1.

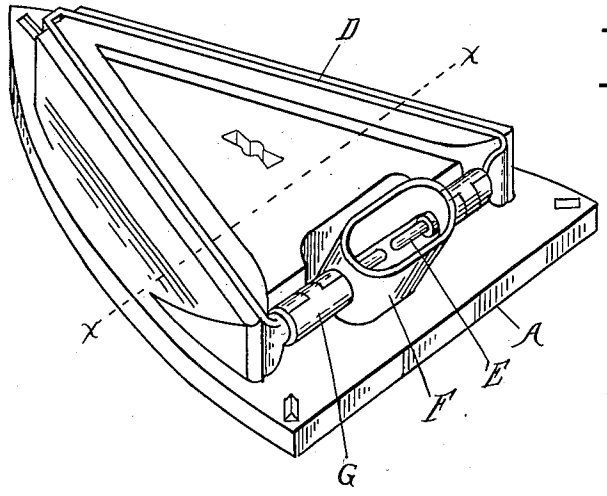


Fig. 2.

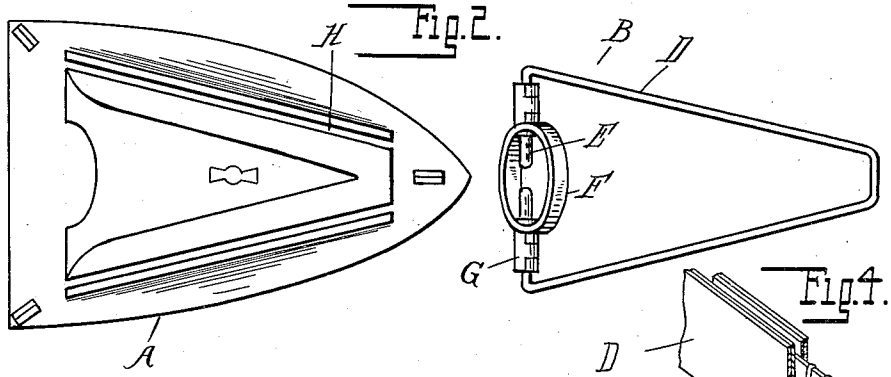
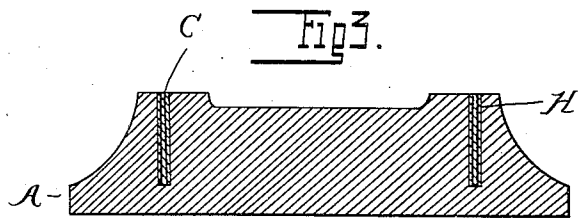


Fig. 4.

Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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ELECTRIC HEATER.

1,127,526. Specification of Letters Patent. Patented Feb. 9, 1915.

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To all whom it may concern:

Be it known that I, GEORGE J. SCHNEIDER, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Electric Heaters, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to electric heaters and has more particular reference to the novel construction of a detachable heating unit, and the means employed for distributing the heat to the work surface.

The invention consists in the construction as hereinafter set forth.

In the drawings,—Figue 1 is a perspective view of the work body and unit in assembled relation; Fig. 2 is a plan view of said parts detached; Fig. 3 is a cross section on line *x*—*x* Fig. 1. Fig. 4 is a perspective view illustrating the construction of the unit.

One of the objects of the invention is to obtain a construction of detachable heating unit from which the heat may be absorbed and distributed to the work surface with as little resistance and great uniformity as possible.

A further object is to provide terminals for the resistance element which are rigidly secured to the detachable unit and held in fixed relation to each other.

A still further feature is the association with the unit and terminals of a guide or holding socket for the connector from the external circuit.

In detail A is the work body which is shown as a sad-iron and the bottom face of which constitutes the work surface, B is a detachable unit comprising an insulated resistance element C arranged to extend tortuously between flat protecting plates or armor D. The plane of the resistance element and armor plate is transverse to that of the work surface and the body A is provided with a slot with which the armored resistance may be engaged. Thus the heat from both sides of the resistance will pass directly into the body A through which it is distributed and passes without obstruction to the work surface.

To obtain the most advantageous distribution of the heat to a work surface of the form of an ordinary sad-iron, the unit B is of triangular form. The two sides of this triangular unit extend from the apex of the iron toward the rear end thereof, thereby distributing the heat through a progressively increasing cross section of the body. This will result in giving a hot point and will avoid overheating in the central portion of the work surface, which is a common defect in electrically heated sad-irons.

The rear side of the triangle is occupied by the terminal connections and the guide or socket for the connector. As shown, the armor plates D extend around the rear side and are then fashioned into cylindrical form to receive the terminal contact E. This contact is in electrical connection with the resistance element but is insulated from the armor and resistance in alinement with the terminal from the opposite side. To hold the terminals rigidly in this position and with a suitable insulating air space between their ends, a socket or guide member F is arranged to form a rigid mechanical connector. As shown, this socket F has cylindrical extensions G which surround the contacts E and their supporting portions of the armor D are clamped to form a rigid connection.

With the construction as described in use, the unit may be readily inserted or withdrawn from the slots H in the body A and when in engagement will be held with the socket F and the contacts E in a predetermined position. The body may then be covered by a suitable hood (not shown) and is in condition for use. Whenever it is necessary or desirable to renew the unit it may be quickly detached from the slots H, the new unit substituted therefor.

As shown in Fig. 3, the heat generated in the resistance will pass without obstruction and equally from both sides into the body A where it is conducted without further break in molecular contact to the heat distributing surface. Practical tests have demonstrated that with this arrangement the heat may be distributed with less loss than where the unit is arranged with its flat side parallel to the heat distributing surface The reason for this will be apparent when it is considered that the heat generated can only flow by conduction through the body at a lower temperature than that of the unit itself. Thus if the unit is parallel with the work surface the heat from one side only

can pass directly to said surface by conduction, while the heat distributed from the opposite surface of the unit must flow in the opposite direction. Inasmuch as the unit is normally at a higher temperature than the heat distributing body, it is evident that the heat conducted in a direction away from the work surface will not return as it cannot pass through a unit of higher temperature.

What I claim as my invention is:

1. In an electric heater, a detachable heating unit having spaced terminal contact members permanently secured thereto, and a guide for the connector with the external circuit, mechanically coupling said contacts and holding the same in permanently fixed relation thereto, said guide being detachable as a unitary structure with the heating unit.

2. In an electric heater, a detachable heating unit comprising an armored resistance element, terminal contacts permanently secured to opposite ends of said element and arranged in proximity to each other, and a mechanical coupling between said contacts forming a guide for the connector with the external circuit, said guide being detachable as a unitary structure with the heating unit.

3. In an electric heater, a detachable heating unit comprising a flat resistance element having portions in different planes, an insulated armor for said resistance, terminal contacts connected to the portions of said resistance in different planes, and a mechanical connection between the armor of the different portions of said resistance holding said terminal contacts in fixed relation to each other.

4. In an electric heater, a detachable heating unit comprising an armored resistance element having portions in different planes, terminal contacts permanently secured to said portions, and a mechanical connection between and carried by said portions forming an inclosing socket for said terminal contacts and holding the same in fixed relation to each other.

5. In an electric heater, a detachable heating unit comprising an armored resistance element, a terminal contact connected with said element, and a socket secured to the armor of said element inclosing said terminal contact and forming a guide for the connector with the external circuit.

6. In an electric heater, the combination of a heat distributing body having a work surface, and slots in the opposite surface thereof in divergent planes transverse to that of the work surface, and a heating element having portions detachably engaging said divergent slots, and terminals at the divergent ends of said element rigidly secured in fixed relation to each other.

7. In an electric heater, the combination with an integral heat distributing body having a work surface and provided with a slot arranged transverse to the plane of the work surface, of a flat heating element comprising a flat armored resistor engaging said slot with its opposite flat faces in heat-conducting contact with the walls of the slot, and plug-engaging contacts fixedly connected to the resistor and forming therewith a unitary structure, said heating element being detachable as an entirety from said slot.

8. In an electric heater, the combination with an integral heat distributing body having a work surface and provided with slots arranged transverse to the plane of the work surface and in divergent planes, of a flat armored heating element having portions in divergent planes engaging said slots with its opposite flat faces in heat-conducting contact with the walls of the slots, and plug-engaging contacts fixedly connected to the resistor and forming therewith a unitary structure, said heating element being detachable as an entirety from said slots.

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

GEORGE J. SCHNEIDER.

Witnesses:
W. J. BELKNAP,
JAMES P. BARRY.