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E. H. RICHARDSON.

ELECTRIC LAUNDRY IRON.

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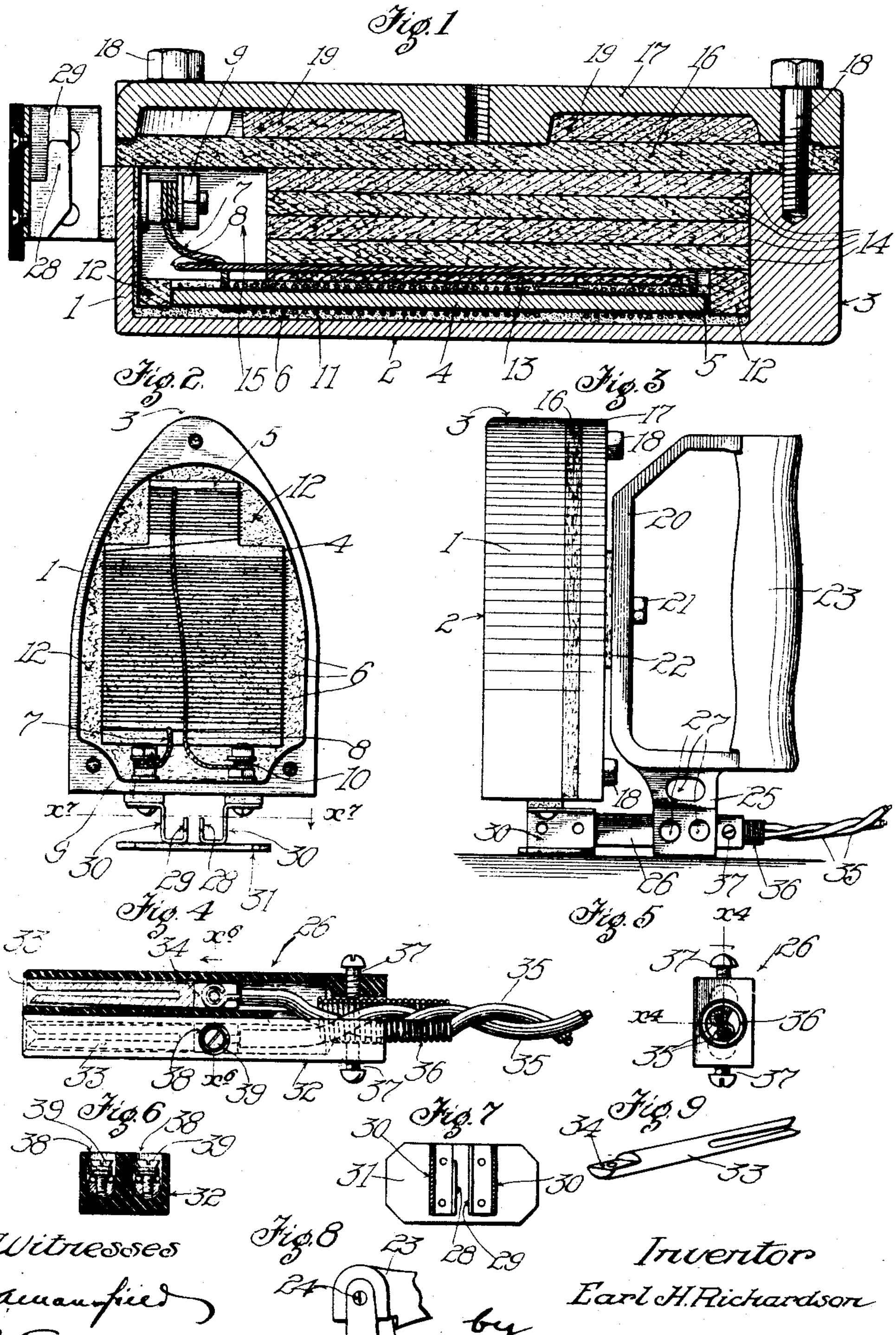

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UNITED STATES PATENT OFFICE.

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ELECTRIC LAUNDRY-IRON.

SPECIFICATION forming part of Letters Patent No. 792,792, dated June 20, 1905.

Application filed January 25, 1904. Serial No. 190,443.

To all whom it may concern:

Be it known that I, EARL H. RICHARDSON, a citizen of the United States, residing at Ontario, in the county of San Bernardino and State of California, have invented a new and useful Electric Laundry-Iron, of which the following is a specification.

This invention relates particularly to laundry-irons which are heated by means of an electric current which is passed through resistance-wire arranged in the body of the iron.

One object of the invention is to provide a novel and effective means for keeping the coils of resistance-wire separate to prevent short-circuiting and to also secure a good contact with the bottom of the iron to promote the conduction of heat from the wire to the iron and keep the temperature of the wire down to the temperature of the iron.

Another object is to so construct the core upon which the wire is wound, to so arrange the resistance-wire on the core, and to so arrange the core with respect to the iron that the conduction of heat from the core to the iron is promoted to the utmost degree.

Another object is to provide a novel switch-plug and means for readily attaching or detaching the plug, whereby the conducting-wire is not unduly heated and its life is prolonged. Ordinarily the attachment of the conducting-wire to the iron is made inside the body of the iron and is accomplished with more or less difficulty, and the conducting-wire becomes highly heated, and the insulation on the wire burns out, which causes short circuits, which result frequently in burning out the conducting-wire, all of which is avoided in the present construction.

Another object is to provide a novel device whereby the iron may be stood on end without the necessity of employing a separate stand for the iron, as is commonly done, and without danger of burning the table or other support upon which the iron rests and to prevent overheating of the iron.

Another object is to provide a novel connection device so constructed that a perfect connection must be made by the operator when attaching the plug to prevent arcing or burning of the contact-points of the plugs. As ordinarily constructed the contacts are frequently burned on account of the carelessness of the operator in merely pushing the plug in sufficiently to make only a slight contact, and in the manipulation of the iron the plug is caused to move slightly away from the contact-points on the iron, which causes arcing at the contact-points and resultant burning of the points.

Another object is to construct the connection device so that it will be ventilated freely on all sides.

Another object is to provide for regulating the temperature of the iron by means of the plug-switch.

The accompanying drawings illustrate the invention, and referring to the same—

Figure 1 is a vertical longitudinal section through the iron with the handle removed. Fig. 2 is a plan view of the iron with the upper plate and some of the asbestos removed to expose the resistance-wire and core. Fig. 3 is a side elevation of the iron complete, showing it resting upon end. Fig. 4 is an enlarged detail view, partly in section, of the switch-plug, the section being taken on line X^4 X^4, Fig. 5. Fig. 5 is an end view of the switch-plug, the conducting-wires being in section. Fig. 6 is a section on line X^6 X^6, Fig. 4. Fig. 7 is a section on line X^7 X^7, Fig. 2. Fig. 8 is a detail in perspective showing the method of fastening the handle to the yoke. Fig. 9 is a perspective detail of the switch-tongue.

1 designates the body of the iron, which is hollow, as shown, having a smooth sole 2 and rounded nose 3, the said body having sides extending upwardly from the sole to form the open-topped box-like member to receive the heating device.

4 is a core which, as shown in the present embodiment, is constructed with a forward tongue 5 in order to secure a maximum core area upon which the resistance-wire is wound.

6 designates resistance-wire, which is wound

upon the core 5, as shown, and leads 7 and 8 from the respective ends of the wire are attached to their respective binding-posts 9 and 10. The posts 9 and 10 are mounted upon the body portion at the rear of the iron. The wire-wound core lies close to the bottom and is embedded in fire-clay 11, which serves to separate the coils of wire, which prevents short circuits, and also gives good solid contact between the wire and iron for the conduction of heat. Asbestos 12 is packed around the edges of the core within the body 1, as shown.

Surmounting the wire-wound core with its thin layer of fire-clay is a relatively thin layer of asbestos 13, over the top of which layer the leads 7 and 8 are carried. Arranged above the layer of asbestos 13 and leads 7 and 8 are several layers of asbestos 14, which fill the body of the iron from side to side and over the toe, but which at the rear terminate short, as shown, to form a space 15, in which lie the binding-posts 9 and 10. Another layer of asbestos 16 is arranged over the laminated layer 14 and extends to the extreme outside edges of the iron, having a contour similar to the iron, and a top plate 17 is fastened over the layer 16 to the body of the iron by cap-screws 18, there being pieces of asbestos 19 to fill the space between the layer 16 and the top plate 17.

In constructing the iron the asbestos extends considerably above the upper face of the body portion of the iron until the top plate 17 is secured in place. The top plate is drawn into place by squeezing the top plate down by means of a vise, and when squeezed into position the screws 18 are tightened to hold the top plate securely in place. The parts within the iron are thus securely held from displacement, being under considerable pressure produced as described.

A yoke 20 is fastened to the top plate 17 by means of a screw 21, there preferably being a short asbestos strip, as shown, between the yoke and top plate. A handle 23 may be fastened to the yoke by screws 24, and, as shown in Fig. 8, the ends of the handle are hooded to receive the standards of the yoke 20. This protects the hand of the operator from coming in contact with the yoke.

A lug 25, preferably cast integral with the yoke 20, is provided with a slot for the reception of a switch-plug 26, and the lug 25 is preferably provided with holes 27, which allow a free circulation of air to keep down the temperature of the lug and plug.

Contact-blades 28 and 29 are formed preferably integral with sheet-metal clips 30, which are attached to the binding-screws 9 and 10, there being asbestos washers interposed between the clips 30 and the body of the iron, the blades being formed by bending the clips inwardly and upwardly, so that said blades are inclosed by said clips. By reference to Figs. 1 and 7 it will be seen that the contact-blade 28 is shorter than the contact-blade 29.

A stand-plate of fiber or hard rubber 31 is screwed to the clips 30 and forms a stand for the iron, the face of the plate 31 being approximately in the same plane as the rear face of the lug 25, so that the iron may be stood on end, as shown in Fig. 3, without burning the table and doing away with the inconvenience of a separate stand.

The switch-plug 26 comprises an oblong block 32, preferably of fiber. In the present embodiment the plug has two contact-points, and the block 32 is drilled for the reception of two split tongues 33. Each tongue 33 has a flattened end 34, which is drilled, as shown in Fig. 9. The end of the block 32 is also drilled laterally with a large hole which joins the two other smaller holes, and the conducting-wires 35 are twisted where they pass into the block and are reinforced by a coil-spring 36, which is held in place by set-screws 37. The wires 35 after entering the block 32 are attached to the respective tongues 33. The switch-block 32 is drilled laterally, as at 38, to enable screws 39 to be screwed into the flattened ends 34, the ends of the wires 35 being looped around the screws 39.

In making contact the switch-plug is pushed through the slotted lug 25, and the tongues 33 are wedged over the contact-blades 28 and 29. Manifestly if the blades 28 and 29 were of equal length a careless operator might push the plug in only far enough so that the ends of the tongues 33 rested lightly against the ends of the blades 28 and 29, which while closing the circuit would be apt to allow accidental breaking of the circuit. Under such conditions arcing would very likely be caused, which would burn the contact-points; but in the present construction if the switch-plug is merely dropped carelessly into place, so that only one of its tongues 33 rest upon the longest blade 29, no circuit is formed, and to complete the circuit the plug must perforce be pushed in to make the other tongue 33 contact with the short blade 28, and in pushing in the plug the operator naturally pushes it as far as it will go, which makes a perfect contact. It would require a very delicate manipulation to stop the plug short of making perfect contact, so that carelessness in this respect is guarded against.

While I have shown and described the preferred embodiment of my invention, it should be understood that various modifications and changes may be made therein without departing from the spirit of the invention.

When not in use and the iron is rested flat on a stand, as ordinarily employed, owing to the extremely high conductivity of heat from the wire to the sole of the iron the sole becomes overheated, as heat is not radiated off from the bottom or sole, but pockets there-

under; but by standing the iron on end the heat radiates freely from the sole and the iron does not become overheated.

What I claim is—

1. In an electric laundry-iron an open-topped hollow body, a core in the body, resistance-wire wound on the core, a bedding of insulating material for said wire, insulating-packing above the core, an insulating layer extending above said packing and above the sides of the hollow body, and a cover-plate adjustably fastened to the hollow body to hold the insulating layer between said cover-plate and the sides of the body and to compress the insulating-packing.

2. In an electric laundry-iron, an open-topped hollow body, a core in the body, resistance-wire wound on the core and a filling of fire-clay forming a bed for the wire-wound core, and a filling of fire-clay over the core between the coils, asbestos filling above the core, an asbestos sheet extending over the asbestos filling and over the sides of the hollow body, and a top plate holding the sheet against the sides of the hollow body and compressing the asbestos filling.

3. In an electric laundry-iron, a hollow body, a core in the body, resistance-wire wound on the core, and a filling of fire-clay forming a bed for the wire-wound core, and a filling of fire-clay over the core between the coils, asbestos packing above the core, an asbestos layer extending over said packing and over the sides of the hollow body, and a top plate for the hollow body holding said asbestos layer against the sides of the hollow body and compressing the asbestos, the asbestos terminating short of the rear wall of the body forming a space, and suitable binding-posts, projecting into the space.

4. In an electric laundry-iron, a body, electric heating means in said body, a stand connected to said body to hold same in upright position, and electric terminals on said stand connected to said heating means.

5. In an electric laundry-iron, a body, electric heating means in said body, a handle secured to said body, a stand fastened to said body, an extension on the handle forming with said stand a support to hold the body in upright position and an electric terminal adjustably supported on said stand and adapted to have connection with the heating means in said body.

6. In an electric laundry-iron, a body, electric heating means in said body, a handle secured to said body, a stand fastened to said body, and an extension on the handle forming with said stand a support to hold the body in upright position, said stand being provided with terminals connected to the electric heating means and the handle extension having a passage to receive and guide the plug for connection with said terminals.

7. In an electric laundry-iron, a body, electric heating means in said body, a handle secured to said body, a stand fastened to said body, and an extension on the handle forming with said stand a support to hold the body in upright position, said stand being provided with terminals connected to the electric heating means and the handle extension having a passage to receive and guide the plug for connection with said terminals, and said stand and handle extension being perforated for the purpose set forth.

8. In an electric laundry-iron, a body, electric heating means therefor, clips secured to and insulated from said body and connected to the electric heating means, and contact-blades formed on the respective clips and inclosed thereby, one of said blades being longer than the other for the purpose set forth.

9. In an electric laundry-iron, a body, electric heating means in said body, contact-blades secured to said body and connected to the electric heating means, one of the blades being longer than the other, and a detachable plug having spring-contacts for engagement with the respective contact-blades.

10. In an electric laundry-iron, a body, electric heating means in said body, a set of contact devices connected with the heating means, and a detachable plug having a set of contact devices for engagement with the first set, one contact device of one of said sets being longer than the other contact device of that set.

11. In an electric laundry-iron, a body, electric heating means in said body, a detachable plug for making electrical connection with said heating means, and means for slidably supporting the plug free from connection with the heating means whereby the plug may be slid in either direction on the said supporting means to make or break the electrical connection with the heating means.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, in the county of Los Angeles and State of California, this 18th day of January, 1904.

EARL H. RICHARDSON.

Witnesses:
GEORGE T. HACKLEY,
JULIA TOWNSEND.