P. J. LINCOLN.

ELECTRIC IRON.

APPLICATION FILED JAN. 16, 1918.

1,289,210.

Patented Dec. 31, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

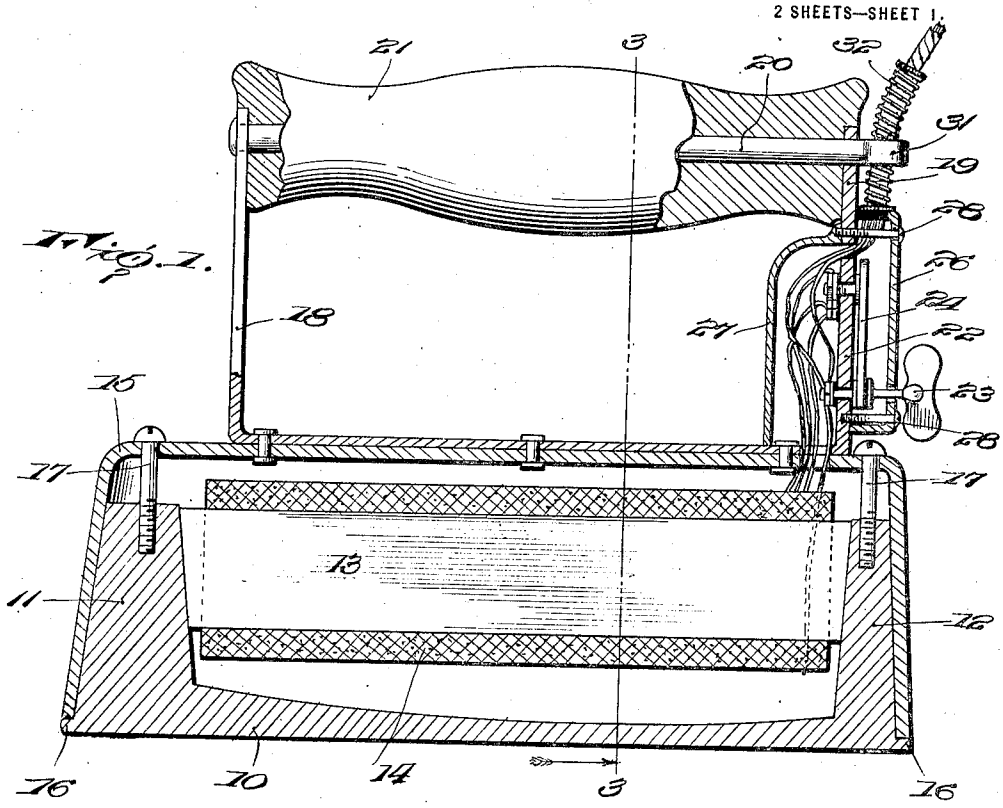
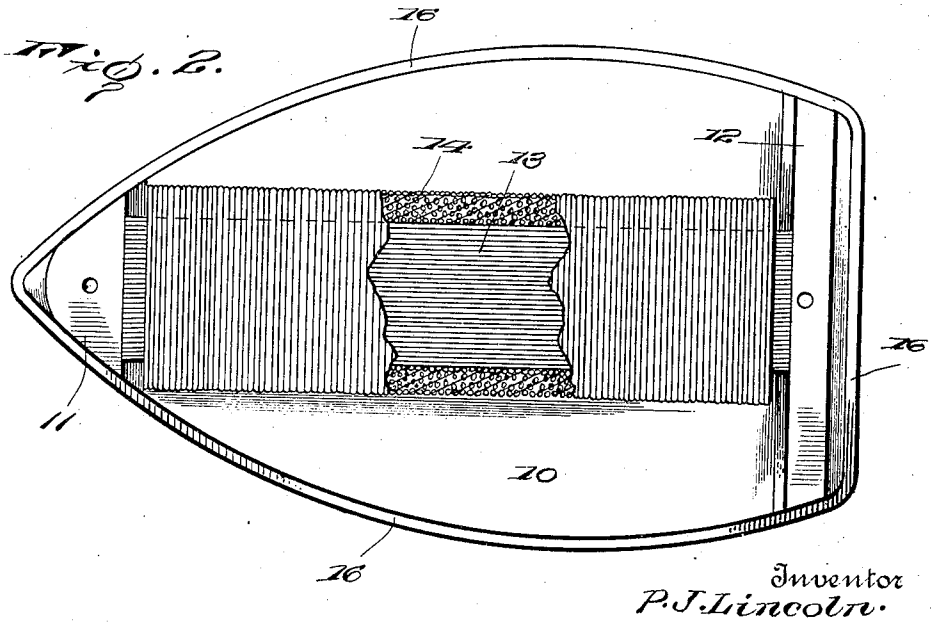


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

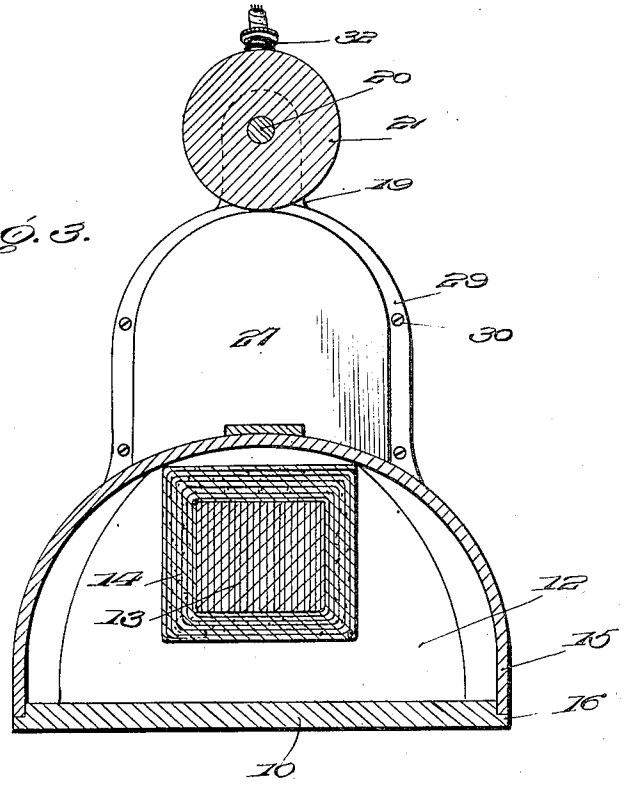
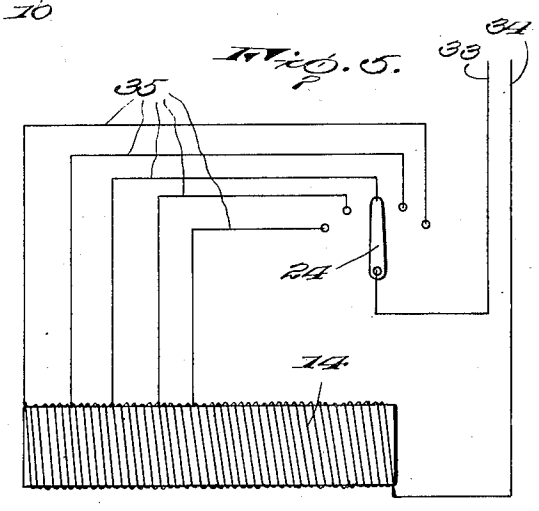


Fig. 5.



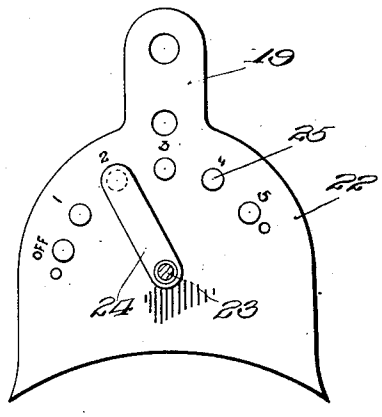


Fig. 4.

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UNITED STATES PATENT OFFICE.

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ELECTRIC IRON.

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Application filed January 16, 1918. Serial No. 212,107.

To all whom it may concern:

Be it known that I, PURD J. LINCOLN, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Electric Irons, of which the following is a specification.

This invention relates to an improved electric iron and has as its primary object to provide a device of this character which will be heated by induction.

The invention has as a further object to provide an arrangement wherein the heat will be generated in the body of the iron so that a minimum amount of current will be required to operate the iron.

The invention has as a still further object to provide a construction wherein the temperature of the iron may be easily controlled.

And the invention has as a still further object to provide an iron which will be simple in construction, which may be easily assembled and which will, owing to the principle employed for heating the iron, be unusually durable in use.

Other and incidental objects will appear as the description proceeds and in the drawings wherein I have illustrated the preferred embodiment of the invention and wherein similar reference characters designate corresponding parts throughout the several views:

Figure 1 is a longitudinal sectional view showing the general construction of my improved iron,

Fig. 2 is a plan view showing the body of the iron or heating element with the cover removed and illustrating the mounting of the primary coil employed.

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1 and looking in the direction of the arrows, this view showing the mounting of the innermost housing plate for the switch of the iron,

Fig. 4 is a detail plan view of the switch, and

Fig. 5 is a diagrammatic view showing the manner in which the leads from the switch are connected with the windings of the primary coil for regulating the heating of the iron.

In carrying out the invention, my improved iron is formed with a body 10 which may be formed of cast iron, steel or other approved material and is provided at opposite ends thereof with front and rear upstanding blocks 11 and 12 integrally formed with the body. These blocks are, as particularly shown in Figs. 1 and 2, provided with beveled inner faces between which is wedged the laminated core 13 of a primary coil for supporting the said core to extend between the said blocks spaced above the bottom portion of the body. The core 13 is preferably constructed of suitable thin sheets or strips of steel. Wound about the core is a primary coil 14, the wire of which is preferably covered by an asbestos insulation to effectually prevent the possibility of short circuiting of the coil.

Removably fitted over the body 10 and holding the primary coil and its core against displacement is the cover 15 of the iron. This cover is formed of a suitable non-magnetic material such as aluminum or copper and at its lower edge is rested upon a flange 16 formed on the body 10 for supporting the said cover. Detachably connecting the cover with the body are screws or other suitable fastening devices 17 threaded into the blocks 11 and 12 of the said body. Connected in any approved manner to the cover, as by a plurality of rivets, is a handle bracket having front and rear upstanding arms 18 and 19 respectively. Extending between the said arms at their upper extremities, is a rod 20 upon which is mounted a handle 21 which may be formed of wood.

As will now be noted upon reference to Fig. 4 of the drawings, the arm 19 of the handle bracket is formed with an enlarged switch plate 22 the lower edge of which is curved to fit against the cover 15. Rotatably mounted upon the said switch plate of the arm is a switch key 23 which carries a switch 24 arranged to coöperate with a plurality of switch points 25 upon the switch plate 22. The switch key 23 as well as the switch points 25, are, of course, insulated with respect to the said switch plate of the bracket arm. Seating against opposite sides of the switch plate are coacting housing caps 26 and 27 for the switch, it being observed that the switch key 23 is arranged to project freely through the cap 26 so that the said key may be easily operated. Connecting the cap 26 with the switch plate are a plurality of screws or other suitable fastening devices 28 the uppermost of which extend, as particularly shown in Fig. 1,

through the switch plate to engage a lateral flange 29 formed on the cap 27 to seat against the inner side of the switch plate. This cap 27 is further connected with the switch plate by a plurality of screws or other suitable fastening devices 30 engaging through the said flange. The housing caps for the switch may thus be readily removed at any time desired.

At its rear extremity, the supporting rod 20 for the handle 21 of the iron is formed with a loop 31 and fitted through this loop to engage through the top of the housing cap 26 is a flexible protecting coil 32 for the cable carrying the circuit wires of the iron. This construction provides a convenient arrangement for mounting the said coil as well as an arrangement tending to prevent the breaking off of the circuit wires at the iron. The said circuit wires may, of course, be equipped with any suitable plug for connecting the iron with a source of electrical energy.

For the sake of clarity, I have, in Fig. 5 of the drawings, shown the manner in which the circuit wires are connected with the switch as well as with the primary coil of the iron. One of the said circuit wires, indicated at 33, is suitably connected with the switch key 23. The other of the said circuit wires, indicated at 34, is connected with one terminal of the winding of the coil 14. Extending from the switch points 25 are a plurality of leads or circuit wires 35 each connected to the winding of the coil so as to include a different number of turns in circuit. Consequently, as will be well understood, when the switch key 23 is operated to engage the switch 24 with any one of the switch points 25, current will flow through the primary coil. Circulation of said current through the coil will, as will also be well understood, set up a magnetic flux through the core 13 and through the body 10. The body being solid, such magnetic flux will set up induced currents in the body tending to heat the said body. The heat will therefore be generated directly in the body where the heat is to be utilized. Consequently, less current will be required to operate the iron as compared with any construction wherein the heat of the iron is not generated in the portion of the iron used for ironing purposes. Furthermore, it will be seen that I provide an arrangement wherein the tendency of the iron to burn out will be reduced to a minimum as the primary coil will at no time become sufficiently heated to cause injury. The temperature of the iron is, of course, regulated by means of the switch 24 in connection with the switch points 25 to include either a greater or less number of turns of the winding of the primary coil in circuit. I thus further provide an arrangement wherein the heating capacity of the iron may be easily varied. In this connection, attention is directed to the fact that since the cover 15 for the body is formed of non-magnetic material, such cover will tend to direct any stray lines of force through the heating element to thus effect the utilization of practically the total energy of the primary coil.

Having thus described the invention, what is claimed as new is:

1. A device of the character described including a body, an exciting coil supported to coöperate with the body, a cover for the body, a handle bracket carried by the said cover and formed to provide a switch plate, and a switch mounted upon the said plate for controlling the flow of current to the said coil.

2. A device of the character described including a body, an exciting coil supported by its core to coöperate with the body, a cover for the heating element, a handle bracket connected with the said cover and formed to provide a switch plate, a switch mounted upon the said plate for controlling the flow of current to the said coil, and housing caps connected to the plate for inclosing the switch.

3. A device of the character described including a body, an exciting coil supported by its core to coöperate with the body, a cover for the body, a handle bracket connected with the cover and formed with spaced arms, a handle supporting rod extending between the said arms and provided at one end with a loop, one of the said arms being formed to provide a switch plate, a switch mounted upon the said plate for controlling the flow of current to the said coil, and a cable supporting member carried by said loop for receiving circuit wires to the said switch.

4. A device of the character described including a body, coil supporting means carried thereby and formed with confronting beveled faces, and an exciting coil having the extremities of its core wedged between the beveled faces of said means for supporting the coil to coöperate with the body.

In testimony whereof I affix my signature.

PURD J. LINCOLN. [L. S.]