

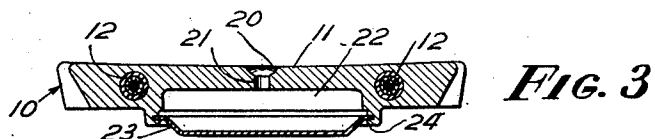
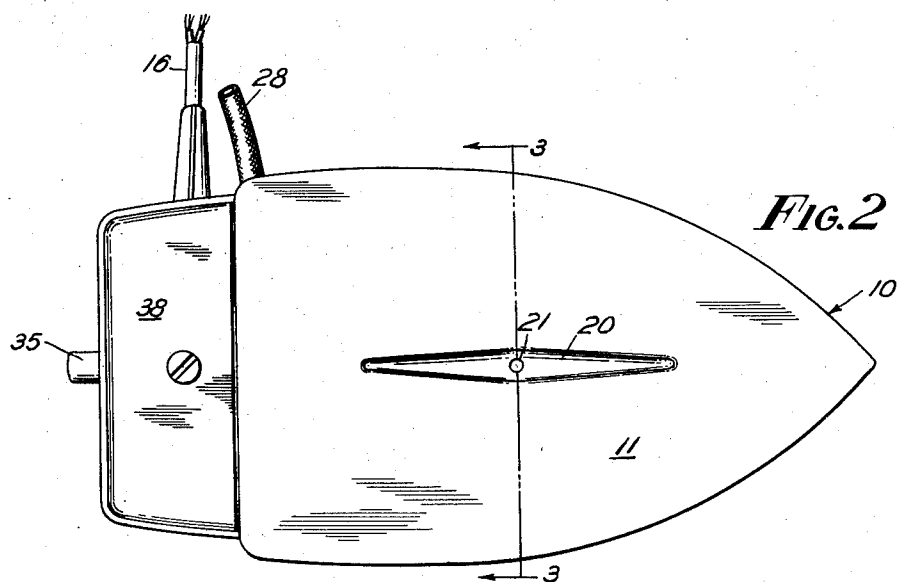
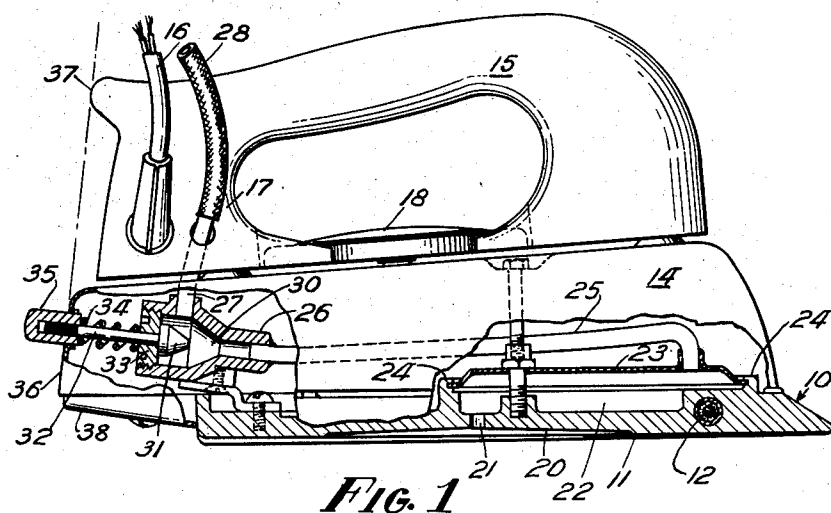
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AIR FLOATED IRON

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AIR FLOATED IRON

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2 Claims. (Cl. 38—75)

The present invention relates to electric irons and more particularly to a means for floating the iron during operation thereof on a cushion of air so as to render its operation more facile. The invention also relates to means for facilitating the drying of the fabric being ironed whether it be pre-dampened or dampened by the use of a steam iron.

Specifically, according to the present invention, the lower ironing surface of the soleplate may be made slightly concave, and air under pressure is led to the area beneath the iron, whereby the iron is floated on a cushion of air so as to render the iron more easily manipulatable.

The air in addition to floating the iron on a cushion of air also acts to carry away moisture in the form of vapor from the fabric beneath the soleplate by evaporating it and carrying it away. In order to augment the latter function, the air is heated as it is led through the iron.

Other objects and advantages of the present invention will become apparent as the description proceeds when taken in connection with the accompanying drawings in which:

Figure 1 is a side view of the iron of the present invention partly in section in order to show the details of construction,

Figure 2 is a bottom view of the iron of Figure 1 showing the air emission opening, and

Figure 3 is a cross-sectional view of the soleplate taken on the line 3—3 of Figure 2.

The iron of the present invention comprises a soleplate 10 preferably of cast aluminum preferably having a slightly concave ironing surface 11 as shown in Figure 3 and an electric heating element 12 of a well known type embedded therein. The heating element 12 is of U-shape having its bight or nexus adjacent the toe of the iron and its legs extending backwardly along the sides thereof. While the ironing surface 11 has been shown as slightly concave and is preferably so, it may be made flat as in an ordinary iron, and the floating effect will be almost the same.

The top of the soleplate is covered by an appearance cover shell 14 to which is secured a manipulating handle 15. Electricity is supplied to the heating element 12 by means of an electric cord 16 extending through the side wall of the rear leg 17 of the handle 15 and having one of its wires connected to one rear leg of the heating element 12 and its other wire connected to a thermostat (not shown) of well known construction, which is in turn connected to the other leg of the heating element 12. The temperature setting of the thermostat is controlled by control dial 18 rotatably mounted on top of the cover shell 14 and lying between the front and rear legs of the handle 15.

The ironing surface 11 of the soleplate 10 is provided centrally with an elongated groove 20 communicating with an opening 21 leading to a chamber 22 at the bight of the heating element 12 where it is subjected to con-

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centrated heat. A closure plate 23 of poor heat conducting material such as stainless steel is staked to the soleplate 10 as shown at 24.

A tube 25 is soldered or otherwise secured to the plate 23 and communicates at one end with the chamber 22. At its opposite end, the tube 22 communicates with the interior of a valve body 26. A tube 27 extends through the side of the valve body 26 and also communicates with its interior. The tube 27 extends upwardly into the hollow rear leg 17 of handle 15 and through the side thereof where it is connected to a small flexible tube 28 which leads to a source of air under pressure. A valve for shutting off the air flow through tube 28 may be provided independent of the valve 26. The valve 26 is interiorly formed with a valve seat 30 adapted to be closed by a conical plug 31 carried by a stem 32 which extends through the rear closure 33 of the valve body 26 and is spring biased to open position by a compression spring 34 acting between the closure 33 and a valve operator 35 which extends through the rear end 36 of the cover shell 14. The rear end 36 of the cover shell and the rear end 37 of the handle 15 form a heel rest by which the iron may be supported on its heel. The valve actuator 35, valve stem 32, plug 31 and valve seat 30 are so made that when the iron rests on its heel rest the valve will be closed, and no air will flow into chamber 22.

The bottom of the cover shell 14 to the rear of the soleplate 10 is closed by a closure plate 38.

While the invention has been shown as applied to a dry iron, it may also be applied to a steam iron or to a steam and dry iron of any known construction.

Operation

The tube 28 is connected to a source of air under pressure and a valve provided to regulate the quantity of air flowing through the tube 28. The air pressure and the air flow needed will depend upon the weight of the iron and soleplate area and to some extent upon the type of fabric being ironed.

With a 4 pound iron having a 30 square inch soleplate, it has been found that pressure in the neighborhood of 10 pounds per square inch is sufficient with an air flow of from 5 to 8 cubic feet per minute. Under such conditions, it has been found that the pushing effort required is reduced to about one fourth that required using an ordinary iron of that size.

When it is desired to use the iron, the air is turned on to the proper rate of flow. The air will then flow through hose 28, tube 27, valve 26, tube 25 into the chamber 22 where it will be heated by heat exchange relationship with the heating element 12. It will then flow through the opening 21 and recess 20 and beneath the ironing surface 11.

The air pressure will raise the iron on a cushion of air and thus make the iron more easily manipulatable and in flowing towards the edges of the iron will facilitate the evaporation of water in the fabric being ironed both by applying heat and by carrying away the evaporated moisture. That is true whether the fabric is pre-dampened, or the invention is applied to a steam iron.

With ordinary irons, it has been found that the evaporated moisture is trapped beneath the soleplate and does not escape until the iron is moved away from the area upon which the iron is then resting. The present invention thus increases ironing speed.

When the iron is not in use, it is turned on its heel rest whereby the operating button 35 will contact the supporting surface and automatically close the valve 26 as is obvious.

From the foregoing, it can be seen that the present invention provides a simple arrangement by which an electric iron is floated on a cushion of air, and the air flow-

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ing over the surface being ironed aids in removing the evaporated moisture.

While I have shown and described but a single embodiment of my invention, it is to be understood that that embodiment is to be taken as illustrative only and not in a limiting sense. I do not wish to be limited to the specific structure shown and described, but wish to include all equivalent variations thereof except as limited by the scope of the claims.

I claim:

1. A laundry iron comprising, a sole plate having an ironing surface, a heating element for said sole plate and air flow means for leading air under pressure beneath said ironing surface, said iron normally resting on said ironing surface when said air flow means is not in operation, said ironing surface being formed with a closed annular portion extending sidewardly in all directions from the center of gravity of said iron and to restrict the flow of air from beneath said sole plate, the area of said ironing surface within said annular portion being so related to the weight of said iron and to the quantity of air led beneath said ironing surface that a cushion of air is formed beneath said ironing surface under sufficient

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pressure to support said iron on a cushion of air, said air cushion reacting between the surface being ironed and said ironing surface and being so related to the center of gravity of said iron that said iron is supported on said air cushion in a stable position on the surface being ironed when said air flow means is in operation.

2. A laundry iron according to claim 1 in which said air flow means passes the air into heat exchange relationship with said heating element before it is led beneath said ironing surface.

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