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O. A. COLBY

ELECTRIC IRON

Filed May 9, 1923

Fig. 1.

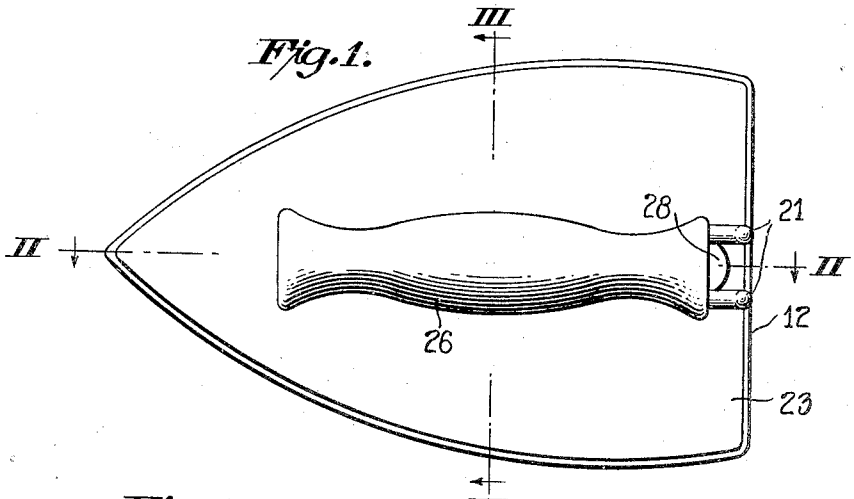


Fig. 2.

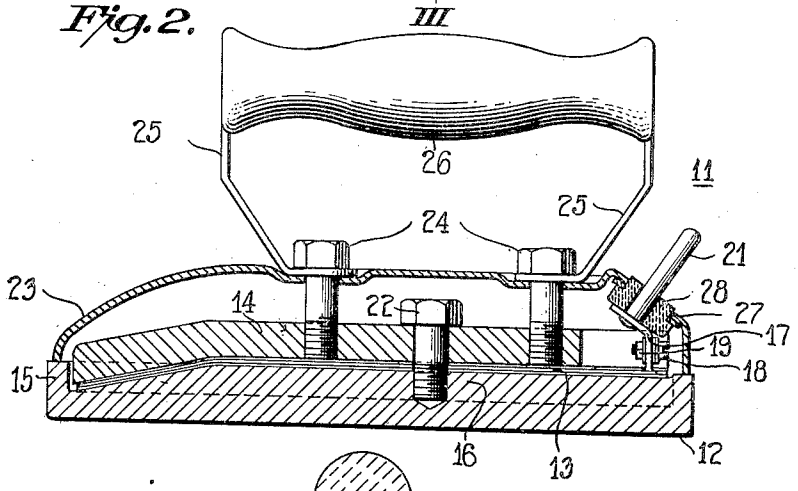
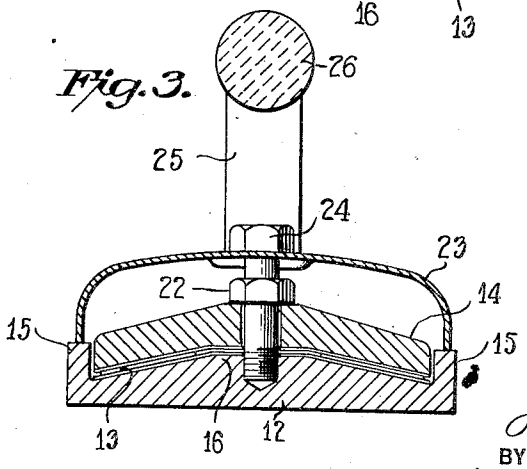


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ELECTRIC IRON.

Application filed May 9, 1923. Serial No. 637,753.

To all whom it may concern:

Be it known that I, ORA A. COLBY, a citizen of the United States, and a resident of Irwin, in the county of Westmoreland and State of Pennsylvania, have invented a new and useful Improvement in Electric Irons, of which the following is a specification.

My invention relates to electrically heated devices and particularly to electric irons.

The object of my invention is to provide a relatively simple electric iron having provision therein for maintaining the temperature of the working surface substantially uniform laterally thereof.

In practicing my invention, I provide a base plate, a heating element, and a top plate clamping the heating element against the base plate. The base plate is provided with an integral upstanding edge flange and the upper surface of said base plate inside of said flange slopes downwardly from a longitudinally extending central ridge toward the sides and also toward the front end. A cover member is located above the top plate, against which it is suitably secured and carries the usual handle member.

In the single sheet of drawings,

Figure 1 is a top plan view of an electric iron embodying my invention,

Fig. 2 is a vertical longitudinal sectional view therethrough, taken on the lines II—II of Fig. 1 and

Fig. 3 is a vertical lateral section therethrough, taken on the lines III—III of Fig. 1.

An electric iron 11 comprises a base plate 12, an electric heating element 13, and a top plate 14. The base plate is substantially triangular in shape and is provided with an upstanding integral peripheral flange 15 that extends from the rear edge of the base plate to the front end at both sides thereof. The base plate is further provided with a longitudinally extending ridge 16 that is constituted by a central portion of the iron being cast relatively thicker than the side portions thereof immediately inside the upstanding flange 15.

The heating element 13 comprises a usual resistor member that is insulated from the top and the bottom plate in any suitable or desired manner usually employed in electric irons. I may divide the heating element into two parallel extending portions as illustrated in Fig. 3 or I may employ a single portion extending over the entire upper surface of the base plate. The ends of the resistor wire are brought out to terminal members 17 formed by metal bars bent to substantially L-shape, the ends of the resistor wire being suitably secured against the lower ends of the respective members 17 by machine screws 18 and co-operating nuts 19 mounted thereon. Terminal pins 21 are suitably secured to the respective bars 17 at the upper ends thereof and are located in spaced relation laterally of the iron at the rear edge thereof. While I have illustrated and described a specific embodiment of heating element and of terminal construction, I do not desire to be limited thereto as these constitute no part of my invention.

The top plate 14 is of such dimensions as to fit within the upstanding flanges 15 and its lower surface is beveled from a central longitudinal portion thereof laterally outwardly and downwardly in order that its lower surface may suitably conform to the upper surface of the sole plate 12. I may leave the upper beveled surface of the sole plate 12 rough just as is obtained in the casting operation, and I may also leave the lower surface of the top plate 14 in a rough condition. This permits of dispensing with such machining operations as are usually performed on such parts of the electric iron in order that their surfaces may be relatively smooth before they are assembled in the iron. The bottom or sole plate 12, the heating element 13 and the top plate 14 constitute what may be termed the body portion of the iron and these three members may be suitably clamped together by a single relatively heavy machine bolt 22 extending through the top plate and the heating element into the sole plate.

A cover member 23 is provided, having its lower edge in close operative engagement with the flanged portion of the sole plate and held in its proper operative position thereagainst by suitable securing means such as a plurality of spaced machine bolts 24 extending through the cover member and into the top plate. A plurality of handle straps 25 have their respective lower ends clamped against the cover member by the respective bolts 24 or the lower ends may be suitably secured against the cover member by welding. A handle 26 is supported by

the upper ends of the two handle straps 25 in any desired manner usually employed in the art.

An opening 27 is provided in the cover member 23 adjacent the rear edge thereof through which the terminal pins 21 may extend and a block 28 of suitable electric-insulating material is provided, the block surrounding the pins 21 and fitting in the opening 27 to firmly hold the pins 21 in their proper operative spaced positions.

I am aware that attempts have been made to obtain a substantially uniform temperature laterally of the bottom surface of the sole plate of the electric iron by suitably forming the heating elements to generate a greater amount of heat adjacent to the outer edges of the sole plate. By making the vertical depth of the sole plate relatively less immediately adjacent to the lateral edges of the iron and securely clamping a heating element against the upper beveled surface of such a sole plate, I find it possible to obtain substantially the same results as have heretofore been obtained by other means. The lateral surfaces of the electric iron are effective to radiate a certain amount of heat when the heating element of such an iron is energized and the construction embodying my invention makes it possible to compensate for such radiation by relatively simple means.

As illustrated in Fig. 2 of the drawing, I may make the depth of the sole plate at the front end thereof relatively small and so shape the lower surface of the top plate at the front end thereof as to cause it to conform closely to the top of the sole plate. It has been thought desirable in some cases to provide means for causing the temperature of the working surface of the front end of an electric iron to be somewhat higher than the temperature of other parts thereof during the ironing operation, as it is the surface of this end that first comes in contact with the material to be ironed. The construction disclosed in the present application permits not only of compensating for the radiation from the side surface of the iron, and of either maintaining the temperature of the front end of the iron at substantially the same value as in the intermediate portions thereof, but also permits, if desired, of making this temperature somewhat higher than in the other parts of the bottom surface of the sole plate.

Various modifications may be made in the device embodying my invention without departing from the spirit and scope thereof and I desire that only such limitations shall be placed thereon as are imposed by the prior art or specifically set forth in the appended claims.

I claim as my invention:

1. An electric iron comprising a base plate, and an electric heating element located on the upper surface of said base plate and co-operating with integral means in said base plate to cause the temperature at the working surface of said sole plate to be substantially uniform laterally thereof.

2. An electric iron comprising a heating element and a base plate having integral means for maintaining the temperature of the working surface thereof substantially uniform laterally thereof.

3. An electric iron comprising a heating element and a base plate in close operative engagement with said heating element, said base plate having embodying means for co-operating with the heating element to maintain the temperature of the working surface of the base plate substantially uniform over the entire surface thereof during the operation of the iron.

4. An electric iron comprising a heating element and a base plate in close operative engagement therewith, said base plate having integral means for co-operating with said heating element to compensate for the radiation of the side surfaces of the base plate, whereby the temperature of the working surface of the base plate is maintained substantially uniform laterally thereof during the operation of the iron.

5. An electric iron comprising a uniform heating element and a base plate having its mass so distributed that the under side of the base plate is uniformly heated.

In testimony whereof, I have hereunto subscribed my name this 7th day of May 1923.

ORA A. COLBY.