

March 12, 1935.

G. BROWNING

1,993,956

ELECTRIC SADIRON

Filed June 10, 1931

3 Sheets-Sheet 1

Fig. 1.

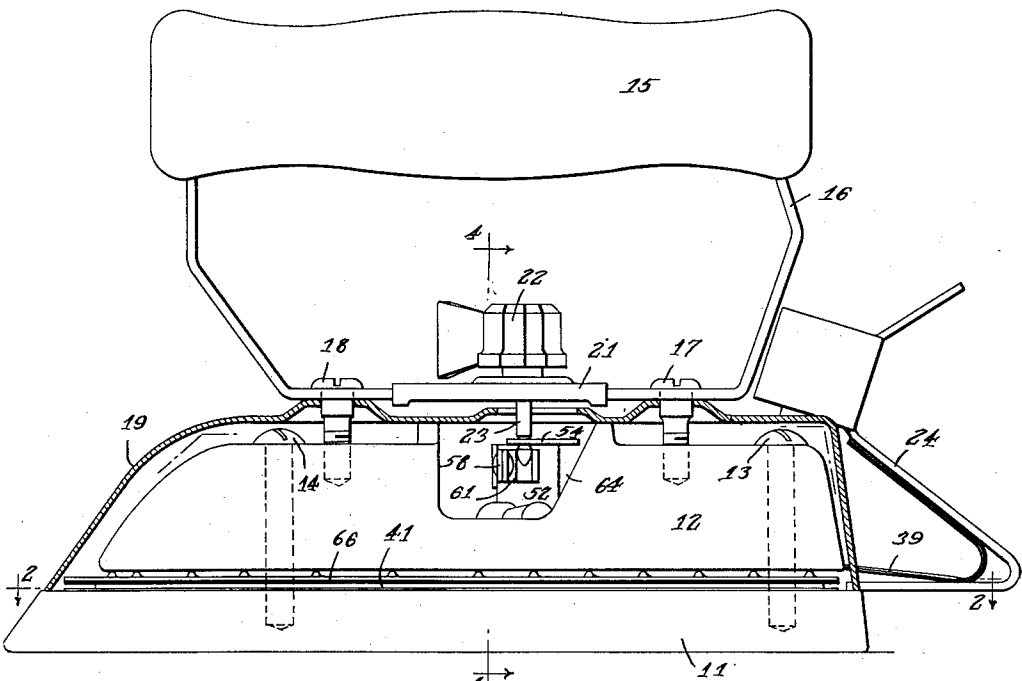
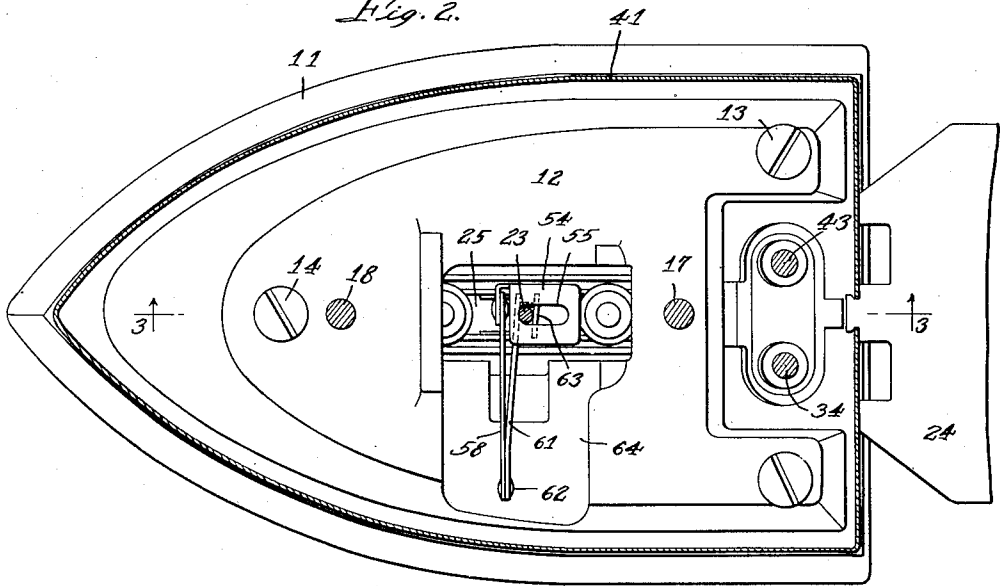


Fig. 2.



Inventor
By George Browning
Wilson, Dawell, McLanna & Rehn
Attys.

March 12, 1935.

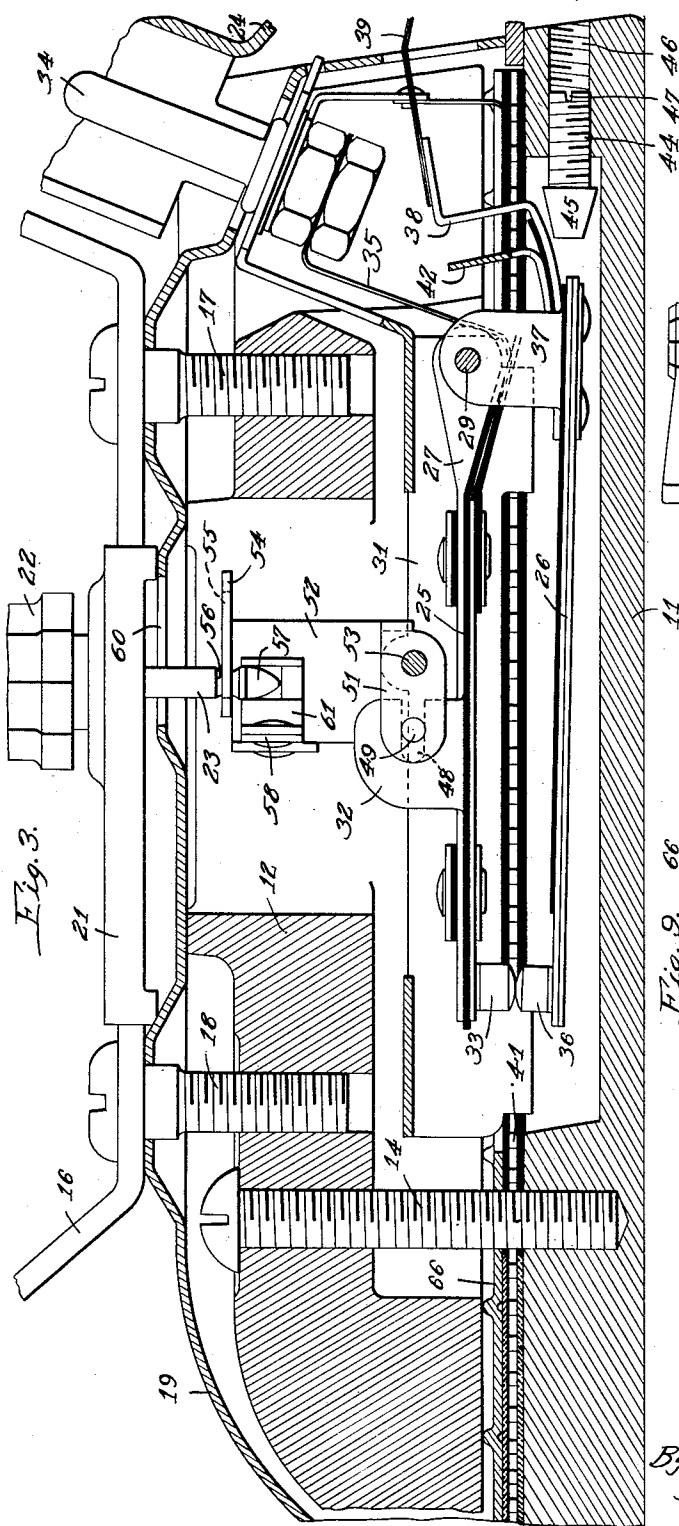
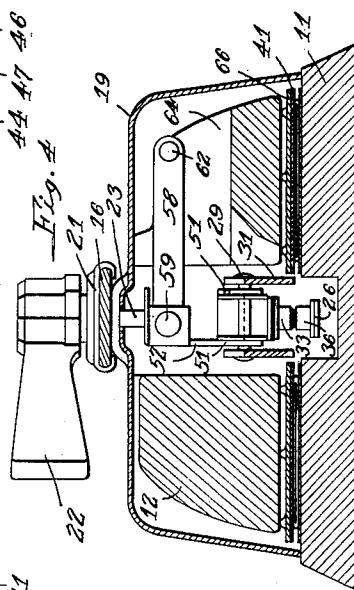
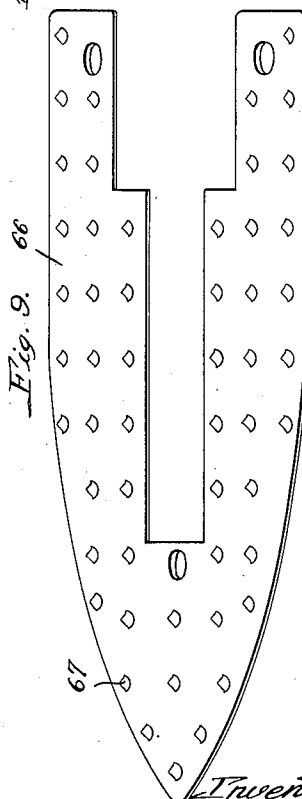
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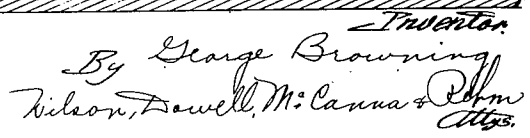
3 Sheets-Sheet 2



Inventor
By George Browning
Wilson, Dowell,
Mc Cann & Rehn
Attys

1,993,956

3 Sheets-Sheet 3



UNITED STATES PATENT OFFICE

1,993,956

ELECTRIC SADIRON

George Browning, Chicago, Ill., assignor to Chicago Flexible Shaft Company, Chicago, Ill., a corporation of Illinois

Application June 10, 1931, Serial No. 543,433

20 Claims. (Cl. 219—25)

This invention relates to electric irons of the automatic type and has particular reference to irons having improved means for maintaining a uniform temperature in the sole plate.

5 In the manufacture of electric sadirons it is essential that the heating element be placed close to the sole plate so that the heat will be transmitted to the ironing surface thereof as rapidly as possible. When the iron is idle and is first
10 connected to a source of electrical energy, the sole plate should heat up more rapidly than the pressure weight situated on the opposite and upper side of the heating element. While heat will be transmitted outward from both sides of the heating element it is desirable to cause as
15 much as possible of the heat to be transmitted to the sole plate, since the purpose of the whole mechanism is to maintain the ironing surface of the sole plate at a suitable ironing temperature under all conditions of use and the major dissipation of heat occurs at the ironing surface of the sole plate. When the iron is put into actual
20 use the ironing surface of the sole plate comes into contact with cold or damp material and the heat is rapidly drawn from the surface of the sole plate. This tends to rapidly reduce the temperature of the plate. However, during operation, heat is being supplied to the sole plate from the heating element and is also being supplied to the
25 pressure weight above. There is, therefore, a wide difference between the amount of heat dissipated from these members while the heat being supplied thereto is much more nearly equal. For this reason, the temperature of the pressure weight increases while, under severe conditions, the temperature of the sole plate decreases which often renders it necessary, when ironing heavy damp pieces, to discontinue ironing or to slow down temporarily to allow the ironing surface of the sole plate to regain sufficient heat for efficient
30 ironing.

With the automatic irons now in common use, the usual thermostatic blade or heat control device is intended to be set so that it will separate the contacts and turn the current off when the
35 ironing surface of the sole plate reaches a predetermined high temperature of not more than about 550° or 600°. However, when the iron is connected to a source of electricity, the sole plate heats up more rapidly than the pressure weight and, in order that the sole plate will not exceed an initial predetermined high temperature of 550° or 600°, it has been found that the thermostatic blade must be set so that it will separate
40 and turn off the current when the blade itself

has reached a temperature of about 500°. Now, when the iron is placed into service with the ironing surface of the sole plate in contact with the cold damp cloth, heat is rapidly drawn from the sole plate at a rate greater than it is being re-
45 placed, whereas, heat is being supplied to the pressure weight at a greater rate than it is being dissipated therefrom, whereby the temperature of the pressure weight increases to from 650° to 750°. This excessive heat of the pressure weight is transmitted to the thermostatic blade and raises it above 500° thereby causing it to separate the contacts and turn off the current while the actual temperature of the ironing surface may be only about 350°. Thus, the current is shut
50 off when it is essential that it remain on to allow the maximum volume of electricity to continue flowing through the iron and supply more heat to the ironing surface of the sole plate for use in the ironing operations.

I have, therefore, aimed to provide an electric iron having improved means for maintaining the sole plate thereof at a uniform temperature.

Another object of the invention is to provide an automatic electric iron having means for
55 keeping the sole plate at a uniform temperature regardless of the temperature of the pressure weight.

Another object of the invention is to provide means in an automatic electric iron for varying the setting of the primary heat control mechanism when the pressure weight reaches or exceeds a predetermined temperature.

A still further object of the invention is the provision of an electric iron having thermostatic means for shutting off the electric current when the sole plate has reached a predetermined temperature and a secondary thermostatic means for preventing the current from being shut off through the effect of temperatures other than that of the sole plate.

Another object of the invention is the provision of an electric iron having improved means for directing the heat from the heating element into the sole plate thereof.

A still further object of the invention is the provision of an automatic electric iron having improved means for setting the primary thermostatic control.

Other objects and attendant advantages will become apparent to those skilled in the art from the following description and the accompanying drawings, in which—

Figure 1 is a vertical elevation partly in sec-

tion of an electric iron embodying my invention;
Fig. 2 is a top view partly in section;

Fig. 3 is a section on the line 3—3 of Fig. 2, showing the parts in their relative position when cool;

Fig. 4 is a section on the line 4—4 of Fig. 1;

Fig. 5 is a section substantially similar to Fig. 3 showing the parts in the relative positions they occupy when the iron reaches its normal operating temperature;

Fig. 6 is a section on the line 6—6 of Fig. 5 showing the position of the secondary thermostatic device when the iron has just reached its normal operating temperature;

Fig. 7 is a section similar to that shown in Fig. 5 showing the relative position of the parts when the pressure weight has reached a super-heated condition;

Fig. 8 is a section on the line 8—8 of Fig. 7 showing the position of the secondary thermostatic device when the pressure weight has reached a super-heated condition; and

Fig. 9 is a perspective view of the insulating baffle plate.

The invention contemplates in a general way, the provision of an electric iron having automatic primary temperature control mechanism substantially similar to that shown in the copending application of Horace C. Wright, Serial No. 474,934, filed August 13, 1930, and secondary temperature control mechanism adapted to automatically adjust the above mentioned primary control mechanism to compensate for the effect of overheating of the pressure weight.

Referring to the drawings, the iron consists of a sole plate designated generally by the numeral 11 having a pressure weight 12 secured to the upper side thereof by means of bolts 13 and 14. A handle 15, supported upon a handle strap 16, is secured to the pressure weight 12 by means of screws 17 and 18, a cover 19 surrounding the pressure weight 12, being pressed downward against the sole plate 11 by the tightening of the screws 17 and 18. A heat indicating slide 21 is slidably clamped about the handle strap 16 and serves to support a manual control handle 22 and an adjusting pin 23, the slide 21 and the pin 23 being arranged to be moved longitudinally of the strap 16 by rotation of the handle 22 for the purpose of regulating the desired temperature of the sole plate. The lower end of the pin 23 engages a secondary thermostatic device presently to be described. A heel rest 24 is secured to the cover 19 at the rear end of the iron and serves to support the iron in a substantially vertical position when not in use, so that the sole plate 11 will be elevated out of contact with combustible material.

The heel rest and the primary thermostatic control mechanism being shown and described in detail in the above mentioned copending application, it will suffice here to refer to the same in general terms. This device consists of an upper contactor bar 25 and a lower bimetallic contactor bar 26. The upper contactor bar 25 is provided with a pair of spaced ears 27 at one end adapted to pivotally receive a pin 29 fixedly secured in the side walls of a thermostatic mounting bridge designated generally by 31. The contactor bar 25 is provided with a further pair of spaced ears 32 intermediate its ends adapted to receive and be acted upon by a secondary thermostatic device presently to be described. The forward end of the contactor bar is provided with a downwardly projecting contact point 33. Electric contact is

made from a terminal 34 through the contactor bar 25 to the terminal point 33 by means of a lead 35 between the terminal 34 and the bar 25.

The lower contactor bar 26 consists of a bimetallic strip having a contact point 36 at one end thereof adapted to make contact with the contact point 33 of the upper contactor bar and a pair of ears 37 at the rear end thereof pivotally supported on the pin 29. A rearwardly projecting lever 38 is secured thereto and adapted to be engaged by a spring 39 for maintaining the contact point 36 against the contact point 33 during the initial heat period of the iron. The contactor bar is electrically connected to the heating element 41 by means of a lead 42. The heating element 41 is in turn electrically connected to terminal 43 to complete the electric circuit through the iron. As the sole plate 11 of the iron is heated by the heating element 41, heat is communicated to the lower contactor bar 26 which tends to draw the contact point 36 away from the contact point 33 of the upper contactor bar. However, the contactor bar 26 is rotated about the pin 29 by action of the spring 39 upon the lever 38 thereof maintaining the two contact points together until rotation of the lower contactor bar is stopped as will presently be described. When this rotation is stopped, a further rise in temperature of the sole plate will cause the contact points 33 and 36 to separate, thereby shutting off the current through the heating element 41.

Improved means are herein provided for stopping the rotation of the lower contactor bar when the desired temperature is reached. This consists of a screw 44 having a cone shaped head 45, the screw having threaded engagement with a thread opening 46 in the rear of the sole plate 11. A slot 47 permits the screw 44 to be turned to project the head 45 outward or retract it, to vary the amount of movement which may be imparted to the lever 38. It will be seen from Figs. 3, 5 and 7 that this adjustment may be carried out without otherwise disturbing the parts of the iron. That is, access need not be had to the interior of the iron to make this adjustment. On the other hand, the adjustment cannot be accidentally disturbed since the slot 47 is substantially concealed within the opening 46.

Means are provided for manually raising or lowering the contact bar 25 and thereby the contact point 33 through the ears 32. Each of these ears is provided with a slot 48 adapted to slidably and rotatably receive a pin 49. The pin 49 is fixedly positioned in spaced ears 51 on a vertical lever 52, the lever 52 being pivotally supported on a pin 53 secured at opposite ends in the side walls of the thermostatic mounting bridge 31. The upwardly projecting lever 52 ends in a horizontal portion 54. The horizontal portion 54 is provided with a slot 55 best shown in Figs. 6 and 8 adapted to receive the pin 23 which is provided with a circumferential depression 56 at the point of contact with the portion 54, and with a conical end 57. A horizontal bar 58 having its upper edge substantially parallel with the portion 54 projects laterally outward and is secured to the upper end of the lever 52 by means of a rivet 59. A bimetallic element 61 is riveted at one end to the outer end of the bar 58 as shown at 62 and normally lies in parallelly disposed relation with the bar 58. At the opposite end of the bimetallic element 61, a right angle plate 63 is secured providing sufficient clearance from the element 61 to receive the cone-shaped end 57 of

the adjusting pin 23. Thus to manually adjust the operating temperature of the sole plate to a desired point, the lever 22 is rotated, moving the pin 23 longitudinally of the iron in the opening 60 of the cover, thereby raising or lowering the contact point 33. Automatic means, responsive to the temperature of the pressure weight 12 independent of the setting of the handle 22 is also provided in the same mechanism for as the bimetallic or thermostatic element 61 is warped, as shown in Fig. 8, by the effect of temperature, the lever 52 will be moved to the left facing Figs. 6 and 8, since pin 23 is held stationary in any position fixed by the handle 22, and the portion 54 will move with respect to the pin 23 to the limiting position shown in Fig. 8. The slot 55 thus determines two limiting positions in which the pin 23 comes into contact with opposite ends of the slot, one in which the pressure weight is at the normal operating temperature of the sole plate or lower, and the other limiting the amount to which the primary thermostat may be set up by superheating of the pressure weight.

In operation it will be seen that the thermostatic element 61 serves to set up or advance the contact bar 25 in proportion to the super-heating of the pressure weight 12. In order to make the thermostatic element 61 as highly responsive as possible to the temperature of the pressure weight, a slot 64 is formed in the top of the pressure weight of sufficient width to permit the necessary movement of the bar 58, and the thermostatic element 61 is positioned in this slot on the laterally extending bar 58. It will be seen that by this arrangement the thermostatic element 61 is made subject, on three sides, to the heat emitted by the pressure weight.

Assuming that the iron is cold and has just been connected to a suitable source of electrical energy, the parts will occupy the position shown in Figs. 3 and 6. As the current flows through the heating element 61 and the sole plate 11 is heated to operating temperature, as determined by the setting of the handle 22, the lower contactor bar 26 moves to the solid line position shown in Fig. 5 in which the lever 38 is in contact with the head 45 of the screw 44 thereby preventing further rotation of the lower contactor bar. As the temperature of the sole plate increases beyond this point, the contactor bar 26 moves to the dotted line shown in this figure, in which the current is shut off by separation of the contact points 33 and 36. It will be observed that the secondary thermostatic element 61 still occupies the position shown in Fig. 6, since this element does not begin to function until the pressure weight equals or exceeds substantially the temperature at which it is desired to maintain the sole plate.

If the iron is now placed on a surface with the sole plate 11 in contact with cold damp material to be ironed, the temperature of the sole plate will rapidly decrease and will correspondingly affect the primary thermostatic element in the lower contactor bar 36 thereby again bringing the contactor point 36 into contact with the contact point 33, and again turning on the current. In the meantime, however, the pressure weight 12 will have had but very little of its heat dissipated so that the renewal of the supply of heat from the heating element will further increase the temperature thereof, while the ironing operations will continue to maintain the temperature of the sole plate at a relatively low point. As the temperature of the pressure weight increases, the

tendency of the weight to supply heat to the primary thermostatic element of the contactor bar 26 increases until it reaches a point at which heat from this source alone will normally be sufficient to separate the contact points 33 and 36, regardless of the temperature of the sole plate 11. This is the state of affairs customarily reached with automatic irons of conventional construction when they are used under severe conditions such as in the rapid ironing of cold damp material of heavy texture. At this point, the current will be switched off even though the sole plate is at a very low temperature and the supply of heat from the heating element will be discontinued at the very time when it is needed most.

However, with my improved construction, as soon as the temperature of the pressure weight increases beyond the temperature for which the iron is set, the secondary thermostatic element 61 begins to function and is caused to warp by the heat of the pressure weight. As this warping continues, the lever 52 and portion 54 are moved forward thereby rotating the ears 51 and the pin 49 about the pin 53. This rotation, acting through the ears 32 rotates the upper contact bar 25 about the pin 29 to lower the contact point 33. This lowering of the contact point 33 is accomplished in proportion to the excess of temperature possessed by the pressure weight. Thus, the greater the thermal effect of the pressure weight upon the primary thermostatic element, the further will the contact point 33 be lowered. Thus during the most severe conditions of operation, the parts will occupy the positions shown in Figs. 7 and 8 in which the portion 54 has moved until the end of the slot 55 is in contact with the pin 23. This acts as a stop to prevent excessive movement of the contact point 33 beyond the normal capacity of the device. Thus, the function of the secondary thermostatic element 61 and associated parts is to so move the contact point 33 as to compensate for the thermal effect of the pressure weight upon the primary thermostatic element, leaving the primary thermostatic element effectively responsive solely to the thermal condition of the sole plate.

In order to cause an increased percentage of the heat emitted by the heating element 41 to be transmitted to the sole plate, I have provided an insulating baffle plate designated generally by 66, adapted to be positioned between the heating element 41 and the lower side of the pressure weight 12. This may properly consist of a sheet metal plate of suitable shape characteristics provided with a plurality of upstanding conical projections 67 arranged to support the pressure weight in spaced relation to the heating element and provide an insulating air space therebetween. This space acts as an insulator and tests have shown that an iron fitted with this baffle plate above the heating element throws the heat to the sole plate more rapidly and the sole plate reaches a desired temperature quicker than the same iron does with the baffle plate removed. Due to this result, the heat is slower getting into the pressure weight and, therefore, the secondary heat control does not expand as quickly nor as rapidly as the major heat control. In other words, the secondary heat control is more inclined to wait or be delayed until the major heat control has brought the iron up to near the maximum heat. So far as the thermostatic elements themselves are concerned the same result may be had by adjusting the thermostatic blade in the sec-

ondary thermostatic element so that it does not start to function until a higher temperature is reached.

It will be seen from the foregoing that I have provided an iron having improved automatic means for controlling the temperature of the sole plate and accordingly of the ironing surface, the means being such as to prevent the current from being shut off from the heating element while the sole plate is below its desired operating temperature because of the thermal effect of the super-heated pressure weight. It will be seen that this secondary thermostatic element acts independently of the manual adjusting handle 22. This means that the control mechanism may be set by rotating the handle 22 to maintain the sole plate of the iron at a low medium or high temperature as desired, which will, of course, depend upon the type of work to be done with the iron, after which the primary and secondary thermostatic elements will function to maintain the sole plate substantially at this temperature during the ironing operations. As a result of my invention it is possible to maintain the sole plate at a temperature much nearer a desired operating temperature than has heretofore been possible. The provision of the baffle plate between the heating element and the pressure weight has further facilitated a maintenance of the desired temperature in the sole plate under severe conditions. In addition, improved means have been provided for limiting the rotary movement of the lower contact bar, the means being such as to be capable of adjustment without dismantling the iron in any way.

While I have thus described and illustrated a specific embodiment of my invention, I am aware that numerous alterations and changes may be made therein without materially departing from the spirit of the invention or the scope of the appended claims, in which—

I claim:

1. An electric sadiron comprising a heating element, a sole plate, a primary heat responsive mechanism responsive to the temperature of said sole plate for controlling said heating element, and a secondary heat responsive means for altering the setting of said primary heat responsive means in response to an increase in temperature of a remote part of the iron above a predetermined normal.

2. An electric sadiron comprising a heating element, a sole plate, a bimetallic element responsive to the temperature of said sole plate, a pair of contact points arranged through contact to close an electric circuit through said heating element, one of which is positioned on said bimetallic element, manually operable means for adjusting the position of the second of said contact points, and heat responsive means thermally responsive to other portions of said iron associated with said last mentioned means for altering the position of said second contact point to compensate for variations in temperature of said other portions of the iron.

3. An electric sadiron including, in combination, an iron structure having an ironing surface, an electric heating element, thermostatic means within said structure in close proximity to said ironing surface and responsive to the temperature thereof to turn said heating element off and on at a predetermined temperature, and a second thermostatic means responsive to the temperature of other portions of the iron for varying the setting of said first mentioned thermostatic means

to compensate for the thermal effect of said other portions upon said first mentioned thermostatic means and render it effectively responsive solely to said ironing surface.

4. An electric sadiron comprising, in combination, a sole plate, a pressure weight, a heating element, heat responsive means in close proximity to said sole plate to regulate said heating element and maintain a constant operating temperature in said sole plate and secondary heat responsive means positioned to be thermally acted upon by said pressure weight for varying the setting of said first mentioned heat responsive means to compensate for the thermal effect of said pressure weight upon said first mentioned heat responsive means.

5. An electric sadiron comprising, in combination, a sole plate, a pressure weight, a heating element, heat responsive means in close proximity to said sole plate to regulate said heating element and maintain a constant operating temperature in said sole plate, means for manually changing the setting of said heat responsive means to alter said constant temperature and secondary heat responsive means interposed between said first mentioned heat responsive means and said manual means positioned to be acted upon by the heat of said pressure weight to compensate for the thermal effect of said pressure weight upon said first mentioned heat responsive means, regardless of the position of said manually operated means.

6. An electric sadiron comprising, in combination, an iron structure having an ironing surface, a manually adjustable contact point, a thermostatically adjustable contact point arranged to automatically regulate the temperature of said iron by contact with said first mentioned contact point through the thermal effect of said ironing surface, manually operable means for varying the distance between said contact points through movement of said first mentioned contact point, and thermostatic means responsive to the temperature of portions of said iron remote from said ironing surface for moving said first mentioned contact point to compensate for the thermal effect of said remote portions upon the position of said thermostatically adjustable contact point.

7. An electric sadiron comprising, in combination, a sole plate, a pressure weight, an electric heating element, a rotatably adjustable contactor bar, a contact point positioned upon said contactor bar, a bimetallic contactor bar positioned in close proximity to said sole plate, a contact point on said bimetallic contactor bar adapted to be brought into and out of contact with said first mentioned contact point by the thermal effect of said sole plate, to regulate the flow of electric current through said heating element, manually operable means secured to said first mentioned contactor bar for moving said first mentioned contact point to vary the normal temperature of said iron, and thermostatic means responsive to the temperature of said pressure weight for automatically altering the position of said first mentioned contact point to compensate for the thermal effect of said pressure weight upon said bimetallic contactor bar.

8. The combination in an electric iron having an ironing surface, a pair of contact points and thermostatic means responsive to the temperature of said ironing surface for moving said points into and out of contact to regulate the temperature of said ironing surface, of temperature adjusting

means comprising a lever for moving one of said contact points toward and away from the other, a manually operative handle positioned to be moved between a plurality of temperature indicating positions, and thermostatic means interposed between said lever and said handle for moving said lever in response to movement of the handle to set said contact point for desired temperatures, and for moving said lever independently of said handle to move said contact point to compensate for the thermal effects upon said first mentioned thermostatic means of portions other than said ironing surface.

9. The combination in an electric sadiron having a sole plate and a pressure weight, of a pair of contact points and thermostatic means responsive to the temperature of said sole plate for moving said points into and out of contact to regulate the temperature of said sole plate, and temperature adjusting means comprising a lever for moving one of said contact points toward and away from the other, a manually operable handle positioned to be moved between a plurality of temperature indicating positions, and a bimetallic element connecting said lever and said handle, said element serving to move said lever in response to movement of the handle to set said contact point for desired temperatures and also serving to move said first mentioned lever independently of said second lever also serving to move said contact point to compensate for the thermal effect of said pressure weight upon said first mentioned thermostatic means.

10. The combination in an electric sadiron having a sole plate and a pressure weight, of a pair of contact points and thermostatic means responsive to the temperature of said sole plate for moving said points into and out of contact to regulate the temperature of said sole plate, and temperature adjusting means comprising a lever for moving one of said contact points toward and away from the other, a manually operable handle positioned to be moved between a plurality of temperature indicating positions, and a secondary thermostatic element connecting said lever and said handle, positioned to be efficiently thermally responsive to said pressure weight and serving to move said lever in response to movement of the handle to set said contact point for desired temperatures also serving to move said lever independently of said handle to move said contact point and compensate for the thermal effect of said pressure weight upon said first mentioned thermostatic means.

11. The combination in an electric sadiron having a sole plate and a pressure weight provided with a slot, of a pair of contact points and thermostatic means responsive to the temperature of said sole plate for moving said points into and out of contact to regulate the temperature of said sole plate, and temperature adjusting means comprising a pivotally supported bell crank lever having one end connected to move one of said contact points toward and away from the other, a manually operable handle positioned outside said iron to be moved between a plurality of temperature indicating positions, means connected thereto and projecting into the iron arranged to move longitudinally thereof by movement of said handle, a laterally projecting arm connected to said lever and extending into said slot, a bimetallic element connected at one end to the end of said arm within said slot and lying in parallelly disposed relation

thereto, and pivotal means for connecting the free end of said element with said last mentioned means, said elements serving to move said lever in response to movement of the handle to set said contact point for desired temperatures, and also serving to move said first mentioned lever independently of said handle to move said contact point and compensate for the thermal effect of said pressure weight upon said first mentioned thermostatic means.

12. The combination in an electric sadiron having a sole plate and a pressure weight, of a pair of contact points and thermostatic means responsive to the temperature of said sole plate for moving said points into and out of contact to regulate the temperature of said sole plate, and temperature adjusting means comprising a lever for moving one of said contact points toward and away from the other, a manually operable handle positioned to be moved between a plurality of temperature indicating positions, and a bimetallic element connecting said lever and said handle, said element serving to move said lever in response to movement of the handle to set said contact point for desired temperatures and also serving to move said lever independently of said handle to move said contact point and compensate for the thermal effect of said pressure weight upon said first mentioned thermostatic means.

13. The combination in an electric sadiron having a sole plate and a pressure weight provided with a slot, of a pair of contact points and thermostatic means responsive to the temperature of said sole plate for moving said points into and out of contact to regulate the temperature of said sole plate, and temperature adjusting means comprising a pivotally supported bell crank lever having one end connected to move one of said contact points toward and away from the other, a manually operable handle positioned outside said iron to be moved between a plurality of temperature indicating positions, means connected thereto and projecting into the iron arranged to move longitudinally thereof by movement of said handle, a laterally projecting arm connected to said lever and extending into said slot, a bimetallic element connected at one end to the end of said arm within said slot and lying in parallelly disposed relation thereto, and pivotal means for connecting the free end of said element with said last mentioned means, said element serving to move said lever in response to movement of the handle to set said contact point for desired temperatures, and also serving to move said lever independently of said handle to move said contact point and compensate for the thermal effect of said pressure weight upon said first mentioned thermostatic means, and means acting between said lever and said means connected to said handle for limiting the independent movement of said lever.

14. An electric sadiron comprising a sole plate having a threaded opening extending from the exterior to the interior of the iron, a heating element therefor, a thermostat including a contact point movable in response to temperature changes, a contact point cooperable therewith and a rotatable contact bar carrying one of said points, a stop member therefor arranged to be projected and retracted on the interior of the iron from outside the iron to determine the maximum rotative position of said bar to determine the opening temperature of said contact

points comprising a body portion having threaded engagement in said threaded opening, and a slot in the outer end of said body portion for engagement by a screw driver for moving said head and adjusting the normal operating position of said bar, said stop member being of such length that said slot falls within and between the ends of the threaded opening to prevent accidental or malicious tampering with said stop member.

15. An electric sadiron comprising a heating element, a sole plate, a primary heat responsive mechanism responsive to the temperature of said sole plate for controlling said heating element, a secondary heat responsive means for altering the setting of said primary heat responsive means in response to an increase in temperature of a remote part of the iron above a predetermined normal, and means for limiting the amount of such alteration.

16. An electric sadiron comprising a sole plate, a pressure weight, a heating element, a primary heat responsive mechanism for controlling said heating element, and a secondary heat responsive means inoperative at normal ironing temperature of the pressure weight but operative at temperatures thereabove to control the operation of the primary heat responsive mechanism.

17. An electric sadiron comprising a heating element, a sole plate, a pressure weight, a primary thermostatic means responsive to the temperature of said sole plate for controlling said heating element, secondary thermostatic means responsive to said pressure weight unresponsive at temperatures below the normal operating temperature of said pressure weight, said secondary thermostatic means acting at temperatures above said normal temperature to alter the setting of said primary thermostatic means.

18. An electric sadiron comprising a heating element, a sole plate, a pressure weight, a primary

thermostatic means responsive to the temperature of said sole plate to normally open and close the circuit through said heating element at predetermined temperatures of said sole plate, and secondary thermostatic means responsive to the temperature of said pressure weight acting at pressure weight temperatures above said predetermined temperatures to delay the opening of said circuit.

19. An electric sadiron comprising a heating element, a pressure weight, a sole plate, a bimetallic element thermally responsive to the temperature of said sole plate, contact points arranged through contact to close an electric circuit through said heating element, one of which is positioned on said bimetallic element, manually operable means for adjusting the position of the second of said contact points, and heat responsive means thermally responsive to the pressure weight to advance said second contact point in proportion to the excess of temperature of said pressure weight above a predetermined normal operating temperature.

20. An electric sadiron comprising a sole plate, an electrical heating element therefor, and thermostatic means for controlling the heating element comprising a contact point movable in response to changes in temperature of the sole plate, a contact point cooperable therewith, a rotatable contact bar carrying one of said points, spring means for rotating said bar to maintain said points in contact upon movement of said movable contact point under changing temperature, and a stop comprising a threaded body portion positioned in said sole plate for rotation from outside the iron, and the tapered head portion inside the iron arranged by contact to stop the rotation of said bar at a point determined by the position of said head.

GEORGE BROWNING.

CERTIFICATE OF CORRECTION.

Patent No. 1,993,956.

March 12, 1935.

GEORGE BROWNING.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 5, first column, line 30, claim 9, strike out the words "also serving"; line 50, claim 10, after "temperatures" insert the word and; second column, line 6, claim 11, strike out the words "first mentioned"; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 23rd day of April, A. D. 1935.

Leslie Frazer

(Seal)

Acting Commissioner of Patents.

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Patent No. 1,993,956.

March 12, 1935.

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(Seal)