

Aug. 27, 1935.

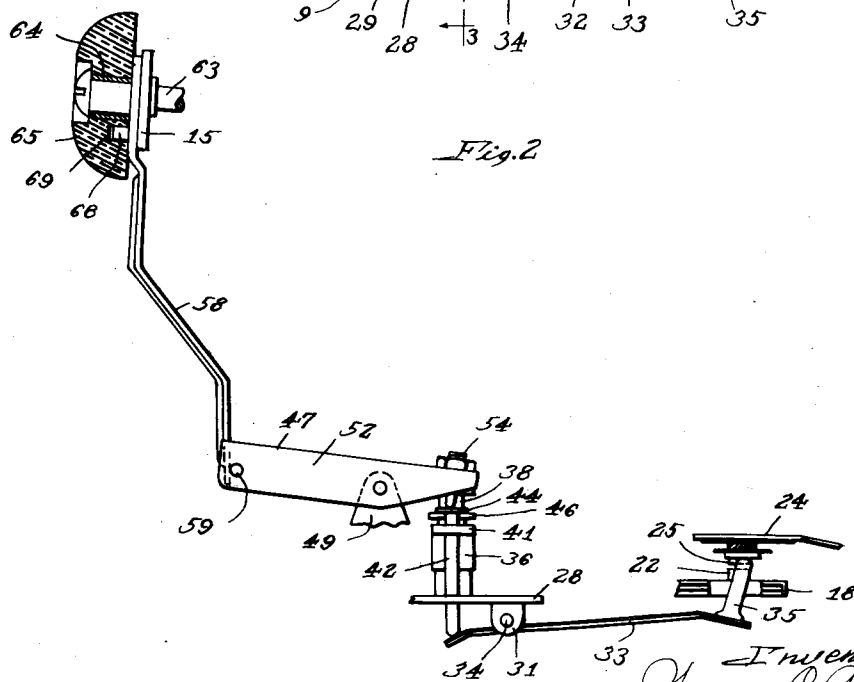
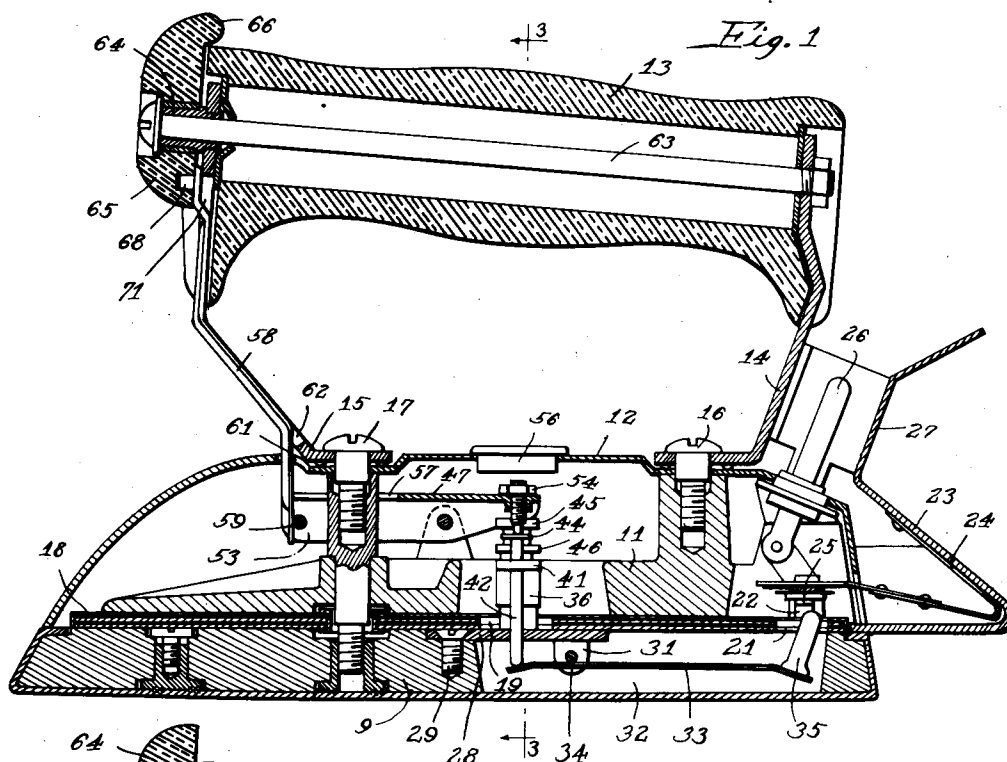
H. C. WRIGHT

2,012,490

AUTOMATIC ELECTRIC SADIRON

Filed June 19, 1934

2 Sheets-Sheet 1



Inventor
Harace C. Wright
By
Helen, Lowell, McNamee & Winter
Attorneys

Aug. 27, 1935.

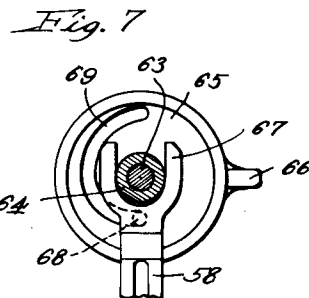
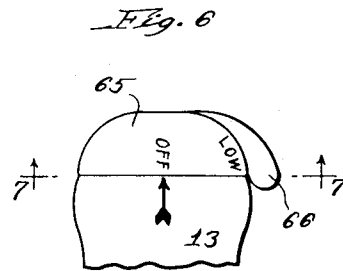
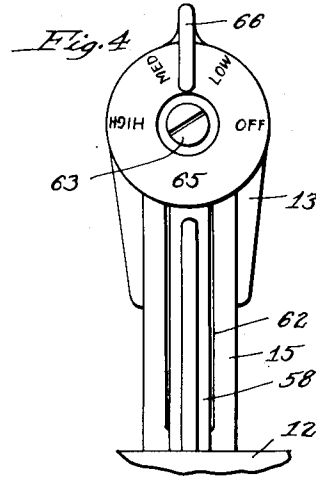
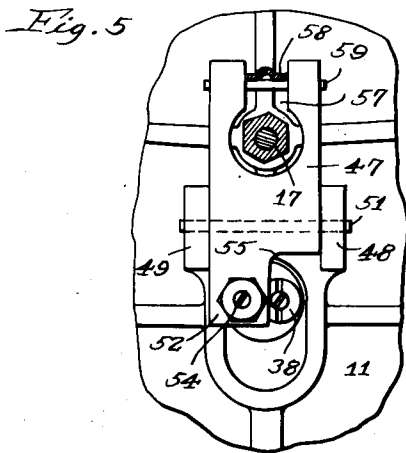
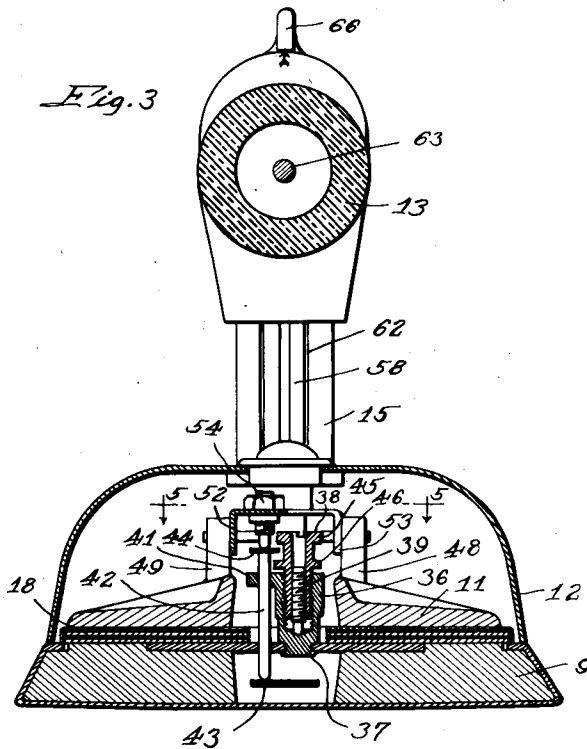
H. C. WRIGHT

2,012,490

AUTOMATIC ELECTRIC SADIRON

Filed June 19, 1934

2 Sheets-Sheet 2



Inventor:
Horace C. Wright

By
Wilson, Lowell, McLeod, Hinton
Attys

UNITED STATES PATENT OFFICE

2,012,490

AUTOMATIC ELECTRIC SADIRON

Horace C. Wright, Chicago, Ill., assignor to Chicago Flexible Shaft Company, Chicago, Ill., a corporation of Illinois

Application June 19, 1934, Serial No. 731,316

4 Claims. (Cl. 219—25)

This invention relates to sadirons, and has special reference to an automatic sadiron having improved means for manually adjusting the operating temperature of the iron between certain limitations for ironing operations requiring different sadiron temperatures.

The invention has particular reference to the type of sadiron having a body and a handle spaced from the body, the body carrying a thermostatic switch for controlling the supply of current to the iron, the switch being arranged to be manually adjusted to maintain any of a plurality of different iron temperatures dependent upon the type of work. With this type of iron it is customary to place the manual control member on the top of the iron body where it may be manipulated by the operator to select a desired ironing temperature. This type of construction is open to a number of serious objections. For example, the manual control member is usually located so close to the hot cover of the iron that there is eminent danger of injury to the operator through contact with the cover. Furthermore, because of this location, the control member becomes highly heated, even though made of insulating material, since it is necessary that a metallic or similar post extend between the manually controlled member and the thermostat within the iron. This post conducts a considerable amount of heat from the highly heated interior of the iron to at least a portion of the control member which thereby becomes highly heated. This high temperature is not only uncomfortable and dangerous to the operator, but causes failure of the control member which frequently breaks because of the high temperature. A further objection is the fact that the control member, being located between the handle and the body, interferes with the free movement of the operator's hand on the handle, the hands frequently striking the control member, injuring the knuckles of the operator. Likewise, this location of the manual control member is inconvenient, located as it is directly beneath the handle, and because of this inconvenience, the operator is frequently burned in adjusting the operating temperature of the iron.

An object of the present invention is to provide a sadiron wherein the manually operable temperature control member is located on the handle, away from the heated portion of the iron to preserve the member and prevent injury to the operator's hands either accidentally, or upon manipulation of the control member.

Another object of the invention is to provide a

sadiron wherein improved means are employed for operating the thermostatic switch, including means for operating the switch from a remote point wherein the temperature limits are maintained by means operating wholly within the body of the iron. A still further object of the invention is to provide a sadiron wherein the manually operated member is located at a remote point from the body of the iron and an air cooled member connects the manually operated member with the thermostatic switch, whereby to locate the manually operated member in a convenient position for the thumb and forefinger and to maintain the member at a relatively low temperature.

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

Figure 1 is a vertical section through a sadiron embodying my invention;

Fig. 2 is a diagrammatic showing of the temperature control and thermostatic switch;

Fig. 3 is a section on the line 3—3 of Figure 1;

Fig. 4 is a fragmentary front view of the iron showing a manually operated member;

Fig. 5 is a section on the line 5—5 of Fig. 3;

Fig. 6 is a fragmentary view of the front end of a handle showing the manually operated member, and

Fig. 7 is a section on the line 7—7 of Fig. 6.

For convenience in illustration, I have herein shown my invention as applied to a sadiron having a body comprising a sole plate 9, a pressure weight 11, and a cover 12 carrying a handle 13 supported on the cover by means of straps 14 and 15 secured to the pressure weight 11 by means of screws 16 and 17 which also serve to hold the cover in position. An electric heating element 18 is positioned between the pressure weight and the sole plate for the purpose of providing heat to the iron. The heating element is provided with apertures 19 and 21 for purposes presently to be disclosed, and carries electric contact points 22 on opposite sides of the aperture 21. The body also carries a heel rest 23 within which is secured a spring 24 projecting through the cover and carrying a pair of contact members 25 on its free end for cooperation with contact points 22 to close the electric circuit through the motor. The usual terminals 26 are enclosed in an angular portion 27 of the heel rest which serves as a guide and support for the conventional cord plug. A plate 28 is countersunk in the top of the sole plate 9 and attached thereto by means of screws 29.

This plate carries a pair of spaced ears extending downwardly into a well 32 in the sole plate for the purpose of supporting a bimetallic element 33 having trunnions 34 pivotally supported in the ears 31. One end of the bimetallic element 33 carries an upwardly extending finger 35 projecting through the aperture 21 and arranged through warpage of the bimetallic element to raise and lower the contact points 25 and thereby open and close the circuit through the heating element.

The plate 28 also carries an upwardly extending boss 36 (Fig. 3) which is riveted at its lower end to the plate, as shown at 37, and is internally threaded for the reception of a screw 38. The screw 38 is also internally threaded to receive a set screw 39 which bears against the bottom of the bore in the boss 36 to prevent accidental rotation of the screw 38. The boss 36 has a laterally disposed arm 41 having a vertical opening for the reception of a pin 42 which extends downwardly therethrough and through the plate 28 for contact with the end 43 of the bimetallic element 33. The upper end of the pin 42 has a head 44 of such radius as to extend into close proximity with the screw 38 while the screw 38 has flanges 45 and 46 limiting the travel of the head 44 and, consequently, of the pin 42. The flanges 45 and 46, therefore, limit the movement of the bimetallic element about the pivotal points 34 under the influence of the pin 42 which serves to limit the operating temperatures of the iron.

A lever 47 (Fig. 5) is carried on trunnions 48 and 49 on the top of the pressure weight 11 through a pin 51 which pivotally carries the lever for rotation on a horizontal axis. The lever is of channel iron form and has downwardly projecting sides 52 and 53 through which the pin 51 passes. One end of the lever extends over the upper end of the pin 42 and carries an adjustable screw 54 for adjusting the distance between the end of the lever and pin 42. This end of the lever is cut away as shown at 55 for access to the upper end of the screw 38 through an opening in the cover closed by means of a friction plug 56. The opposite end of the lever 47 is slotted, as shown at 57, for the passage of the bolt 17 and associated parts, and for the reception of the lower end of a translation member 58 which is pivotally carried on the end of the lever by means of a transverse pin 59 extending through the sides 52 and 53. The translation member 58 extends upward through an opening 61 in the cover and lies within a slot 62 in the handle strap 15, terminating in the handle, as will presently be described.

The handle straps 14 and 15 are secured to the handle by means of a bolt 63 which passes through the handle from end to end. The upper end of the strap 15 carries a sleeve 64 through which the bolt 63 passes and the end of the bolt bears against the outer end of this sleeve, as best shown in Figure 1. A knob 65 is rotatably carried on the sleeve 64 and has a finger 66 adapted for convenient rotation between the thumb and forefinger. The upper end of the translation member 58 carries a fork 67 (Fig. 7) receiving the sleeve 64 and guided between the knob 65 and the upper end of the handle strap 15. The translation member 58 carries a forwardly extending projection 68 and the knob 56 has a spirally disposed slot 69 for the reception thereof. Thus, upon rotation of the knob 65, the presence of the pin 68 in the slot 69 causes the translation member 58 to be moved verti-

cally, thereby tilting the lever 47 to adjust the position of the pin 42 and, consequently, the temperature at which the contact points 22 and 25 will be separated. As shown in Fig. 6, the knob 65 may advantageously carry suitable temperature notations, such as "Off", "Low", "High", and "Medium", and the handle 13 may be provided with an arrow or other indicating means to indicate the position of the knob 65. As shown in Figure 1, the forward end of the handle is relieved as shown at 71 for the reception of the upper end of the handle strap 15 and the translation member 56 so that the knob 65 will rest directly against the end of the handle, as shown in Fig. 6 for convenience in operation by the thumb or finger while grasping the handle and also to improve the appearance of the iron.

Attention is directed to the fact that the manually operated member or knob 65, for adjusting the ironing temperature, is located on the handle at some distance from the body of the iron and is connected to the thermostatic switch within the body of the iron by means of the translating member 58. The translating member 58 is subject, throughout a considerable portion of its length, to the cooling effect of the surrounding air, and, consequently, does not transmit any great amount of heat to the knob 65. As a result of this location of the knob and of the cooling of the translation member, the knob never becomes excessively heated or heated to a point which might in any wise injure the operator in manipulating the same. Furthermore, this location of the knob is of materially greater convenience than where the knob is located on the body directly above the thermostatic switch. It will also be observed that by this location greater space is allowed between the handle and the body of the iron, without increasing the overall height of the iron, so that there is no danger of the knuckles of the operator accidentally coming into contact with heated portions of the iron.

Attention is further directed to the fact that I have provided independent means for limiting the temperature range of the iron. The pin 42 and the screw 37 with its shoulders 45 and 46 serve to limit the temperatures of the iron regardless of the position of the translating member 58. With this construction, even though the translating member 58 should be damaged and bent out of shape due to rough treatment of the iron, the thermostat could not be adjusted to operate above a certain predetermined maximum and no damage would be occasioned to the iron due to over-heating. The construction serves to limit the temperature range and prevent damage to the iron regardless of what may happen to the manual temperature control. Furthermore, it should be noted that the construction is such that this temperature range is set at the factory and can only be changed thereafter with considerable difficulty which precludes the possibility of the device being tampered with by the user and thus throwing off the permanent adjustment.

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 departing from the spirit of the invention and the scope of the appended claims, in which

I claim:

1. The combination in an electric sadiron having a body and a handle spaced therefrom, of a thermostatic switch including a bimetallic blade for opening the electrical circuit through the

iron, pivotally supported for determining the circuit opening temperature, a pivotally supported lever arranged to rotate said bimetallic blade to predetermine the switch opening temperature, 5 means extending from the lever to the handle, means on the handle for actuating said last mentioned means to control the position of said lever and set the switch opening temperature, and means independent of said lever to limit the rotation of the bimetallic blade to maintain the 10 temperature of the iron within safe operating limits upon damage to said first mentioned means.

2. The combination in an electric sadiron having a body and a handle including handle straps 15 attached to the body spacing the handle therefrom, one of said straps having a longitudinally disposed slot, of a thermostatic switch located in the body for automatically maintaining a predetermined ironing temperature therein, a manually operated control member on the handle, and 20 a translation member extending between the manually operated control member and the thermostatic switch to translate motion between said parts to predetermine said ironing temperature, 25 said translation member being positioned in said slot for free circulation of air around said member.

3. The combination in an electric sadiron hav-

ing a body and a handle spaced therefrom, of a pivotally supported bimetallic blade located in close proximity to the ironing surface rotatable to determine the operating temperature of the iron, control means carried on the handle ex- 5 tending into the body and terminating adjacent the top of the body, means within the body acting between the control means and the bimetallic blade to rotate the blade upon actuation of the control means, and means associated with said 10 last mentioned means positioned for access thereto through the cover, to set the position of the bimetallic blade with respect to the control means.

4. The combination in an electric sadiron having a body and a handle spaced therefrom, of a 15 pivotally supported bimetallic blade located in close proximity to the ironing surface and rotatable about a horizontal axis to determine the operating temperature of the iron, a vertically 20 disposed member reciprocable longitudinally to rotate said blade, means to limit the amplitude of said reciprocation, control means carried on said handle and lever means within the body 25 acting between the control means and said member for imparting reciprocation to said member to set the operating temperature of the iron.

HORACE C. WRIGHT.