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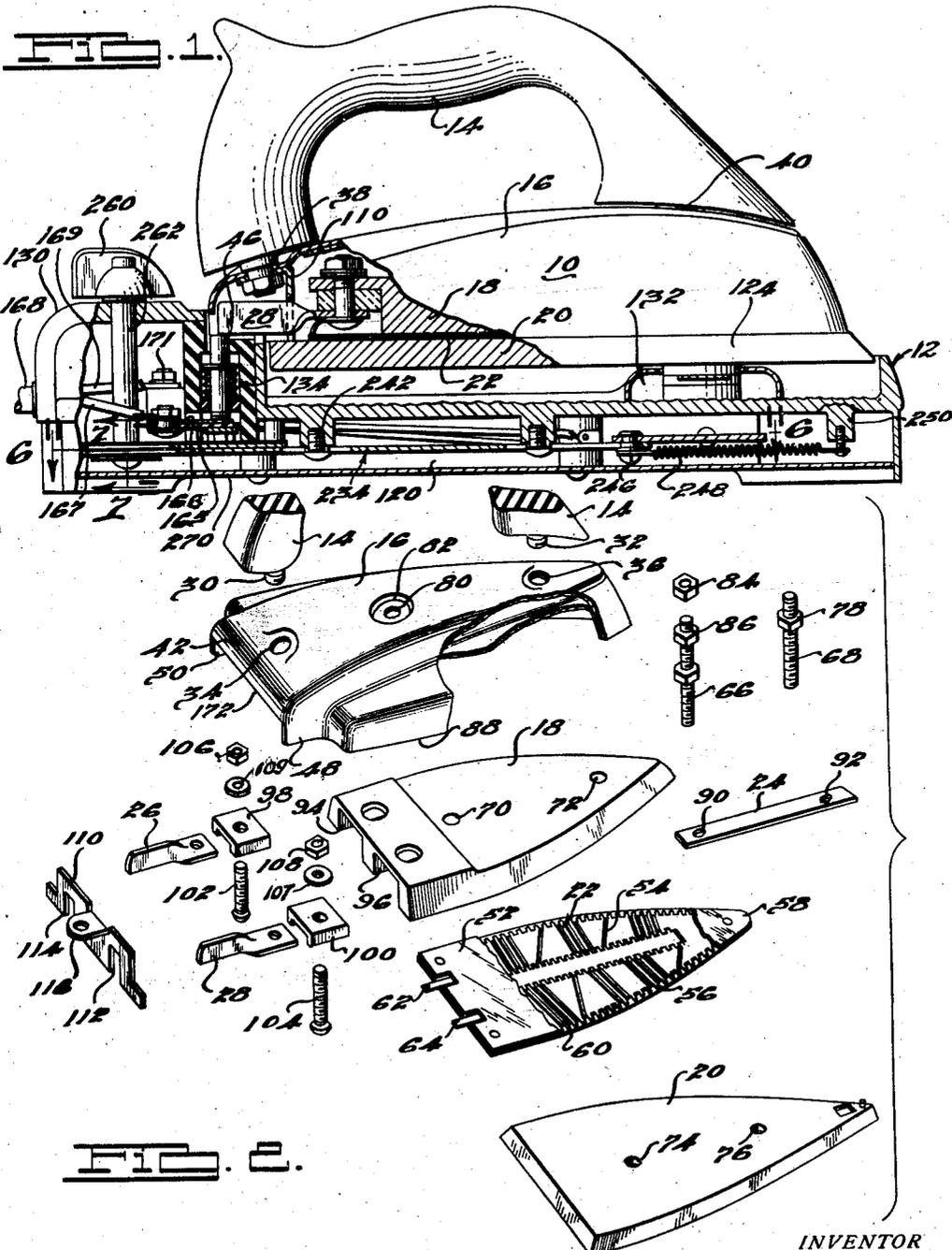
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ELECTRIC IRONING DEVICE

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ELECTRIC IRONING DEVICE

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The present invention relates to electric ironing devices, and in particular provides an electric ironing device of the so-called cordless type, embodying improvements over the construction described and claimed in the co-pending application of Ralph H. Beach, Serial No. 23,616, filed May 27, 1935, now Patent No. 2,151,888, granted March 28, 1939, under which the assignee of the present application is an exclusive licensee.

The principal objects of the present invention are to provide an electric ironing device of the above generally indicated character, which is extremely efficient and satisfactory in operation; which may be readily and economically manufactured, assembled, and serviced; which is fully automatic and safe in its operation, and which embodies improved features of adjustability to suit different ironing conditions.

Further objects of the present invention are to provide an ironing device of the above generally indicated character, embodying improved means in the iron construction, whereby heat conductivity between the upper and lower sole plates is improved; to provide such a construction embodying an improved mounting and protective assembly for the controlling bi-metal unit; and to provide such a construction embodying improved mechanism for adjusting the temperature setting of the iron; and to provide a generally improved iron construction as a whole.

With the above as well as other objects in view, which appear in the following description and in the appended claims, a preferred but illustrative embodiment of the invention is shown in the accompanying drawings, throughout which corresponding reference characters are used to designate corresponding parts and in which:

Figure 1 is a view in elevation, with certain of the parts broken away so as to be shown in section, of the improved iron of the present invention;

Figure 2 is an exploded view, showing in detail the structural elements which compose the iron shown in Figure 1;

Figure 3 is a top plan view of the improved stand of the present invention, with the iron removed;

Figure 4 is a view in vertical transverse section, taken along the line 4—4 of Figure 3;

Figure 5 is a view in vertical transverse section, taken along the line 5—5 of Figure 3;

Figure 6 is a view in top plan, taken along the line 6—6 of Figure 1; and

Figure 7 is a fragmentary view in detail, taken along the line 7—7 of Figure 1.

It will be appreciated from a complete understanding of the present invention that certain of the structural improvements thereof may, in the broader aspects, be embodied in electric ironing devices of widely differing constructions and intended for use under widely differing service conditions. In a more restricted sense, however, and in the preferred form thereof, the improvements of the present invention have particular advantage and utility when embodied in electric irons of the so-called cordless type and, in an illustrative but not a limiting sense, such improvements are so disclosed in the present application.

Referring to the drawings, the improved ironing device of the present invention, comprises the iron designated as a whole as 10, and the iron stand, designated as a whole as 12. Stated in a general way, the iron 10 contains the electric heating element, and the stand 12, upon which the iron is adapted to rest, comprises means for forming an automatic temperature controlled connection between the heating element and a source of power. In service, accordingly, the act of resting the iron in predetermined position upon the stand 12 connects the heating element within the iron to the source of heating current, subject however to the action of the hereinafter described thermostatically controlled mechanism, which serves to automatically interrupt the heating current when the temperature of the iron reaches a predetermined value. The removal of the iron 10 from the stand 12 interrupts the heating circuit, since the usual ironing cord is connected only to the stand and not to the iron.

The iron is constructed and arranged to have sufficient capacity to maintain the sole plate at substantially the proper ironing temperature during the usual ironing interval between the time when the iron is removed from the stand and the time when it is replaced thereon for the purpose of readjusting the article being ironed. If at the time the iron is replaced upon the stand, the temperature thereof has fallen below the value to which the thermostatic mechanism is set, such replacement automatically re-completes the heating circuit, which circuit is again broken by the thermostatically controlled mechanism as soon as the proper temperature

has been reached, or is broken by the removal of the iron from the stand.

Referring particularly to Figures 1 and 2, the iron 10 comprises generally a handle 14, an outer shell 16, upper and lower sole plates 18 and 20, a heating element 22, an improved heat conducting element 24, and a terminal assembly comprising the terminals 26 and 28. The handle 14 is preferably formed of a suitable heat insulating material, so that it remains in a relatively cool condition throughout the ironing operation, and at its end is provided with outwardly projecting studs 30 and 32, which are adapted to be passed through openings 34 and 36, formed in the shell 16, so as to form a connection between the shell and the handle. Preferably and as illustrated, insulating washers 38 and 40 (Fig. 1) are interposed between the handle 14 and the shell 16, so that they provide an insulating air space between these members.

The shell 16 is preferably constituted as a single sheet metal stamping, of generally triangular form in plain view, but provided with the integrally formed rearwardly overhanging skirt portion 42. The portion 42 constitutes an enclosure for the terminals 26 and 28, which project rearwardly and outwardly from the heating chamber of the iron for connection to cooperating stationary terminals 44 and 46 (Fig. 3) carried by the stand 12. The rearwardly projecting portion 42 of the shell 16 is provided with lateral downwardly projecting side portions 48 and 50, which serve as lateral enclosures for the terminal 26 and 28 and also serve as guide elements to guide the movements of the iron 10 when it is placed upon the stand, which guiding relation is described in more detail hereinafter.

The heating and heat storage structure for the iron 10 is constituted by the upper sole plate 18, the heating element 22, and the lower sole plate 20. The sole plates 18 and 20 are constructed, preferably of cast iron, or equivalent material having relative high heat storage capacity, and are of generally triangular form, in conformity to the outline of the shell 16. It will be appreciated that the lower surface of the lower sole plate 20 constitutes the ironing surface of the iron 10. The heating element 22, which may be of generally conventional construction, comprises a three layer mica or other insulating frame structure having a base 52, and spaced but forwardly converging legs 54 and 56, which are connected together at their forward ends 58. The current conducting element 60 is conventionally wound upon the intermediate layer of the mica frame structure, it being appreciated that the upper and lower mica sheets serve to electrically isolate the conducting element 60 from the sole plates 18 and 20. The terminals 62 and 64 of the conducting element 60 project rearwardly from the base portion 52 of the heating element 22, for connection to the iron terminals 26 and 28 as hereinafter described.

The heating element 22 is clamped between the upper and lower sole plates 18 and 20, by means of mounting studs 66 and 68, which pass through cooperating openings 70 and 72 formed in the upper sole plate 18, and enter internally threaded openings 74 and 76, which extend partially through the lower sole plate 20. The stud 68 is locked in place by means of the nut 78.

The other mounting stud 66, extends upwardly from the upper sole plate 18 and constitutes the means by which the sole plates 18 and 20 in the heating element 22 are suspended within the

shell 16. The upper end of the stud 66 passes through an opening 80 formed in the base of a depression 82 formed in the upper surface of the shell 16. Lock nuts 84 and 86 are provided on either side of the base 82. It will be appreciated that the lower sole plate 20 is slightly larger than the upper sole plate 18, so that when these two sole plates are connected together, a shoulder is defined therearound, upon which the lower marginal edge 88 of the shell 16 rests. A firm connection between the shell 16 and the sole plates 18 and 20 is thus provided, since the shell is clamped between the nut 84 and the just mentioned shoulder.

A feature of the present invention resides in the provision of the element 24, of good heat conducting material, which is interposed between the upper and lower sole plates 18 and 20, and occupies the longitudinally extending space between the two legs 54 and 56 of the heating element 20. It will be appreciated that the just mentioned space is slightly wider than the strip 24, so that the strip is out of conducting relation and so does not constitute a short circuit between the turns of the current conducting element 60. The element 24 thus constitutes a direct metallic conducting means between the upper and lower sole plates 18 and 20, and is held in place by the previously mentioned studs 66 and 68, which pass through openings 90 and 92 formed therein.

The provision of the just mentioned direct metallic heat conducting relation between the upper and lower sole plates is of particular importance in connection with irons of the present cordless type. This is for the reason that irons of this character are preferably provided with heating elements of relatively high wattage, since the heating action continues only so long as the iron is upon the associated stand and consequently, such irons require sole plate structures having relatively great heat capacity. During the actual ironing interval, heat is of course dissipated from the iron to the article being ironed, the heat dissipation occurring directly by transfer from the lower surface of the lower sole plate 20. Moreover, the thermostatic control mechanism of the present invention is constituted by a bi-metallic element, described below, in direct heat conducting relation to the under surface of the lower sole plate 20 when the iron is upon the stand. In order that the temperature of such lower surface may be maintained as nearly as possible at a temperature corresponding to the temperature of the sole plate structure as a whole, it is of course desirable to maintain an exceedingly good heat conducting relation between the upper and lower sole plate elements. This relation is promoted by the provision of the just mentioned metallic heat conducting relation.

The upper sole plate 18 is provided along its rear face with the downwardly presenting pockets 94 and 96, which constitute spaces to receive the inner ends of the terminals 26 and 28. Preferably, and as illustrated, blocks 98 and 100, formed of insulating material, such as porcelain, are interposed between the terminal ends and the surface of the sole plate 18, so as to minimize the transfer of heat from the sole plate structure to the terminals. The terminals 26 and 28 are secured to but insulated from the sole plate 18 by means of the studs 102 and 104, which pass through registering openings formed in the sole plate, the insulating block, and the terminals, and are retained in place by nuts 106 and 108

and insulating washers 107 and 109. The studs 102 and 104 also constitute binding posts for the terminals 62 and 64 of the current conducting element 60.

In assembled position, it will be appreciated that the terminals 26 and 28 project rearwardly from the rear end of the sole plate structure, into the space beneath the previously mentioned skirt 42 formed in the shell 16. It is preferred to interpose a shield, such as 110 between the sole plate structure and the skirt portion. The shield 110 is provided with cut-outs 112 and 114, which accommodate the terminals 26 and 28 and are large enough to be separated therefrom by an insulating air space. The shield 110 is secured to the shield by the previously mentioned handle mounting stud 38, which passes through an opening provided in a laterally turned ear 116 formed in the shield.

With particular reference to the stand 12, and referring particularly to Fig. 1 and to Figs. 3 to 8, the stand 12 is preferably formed as a longitudinally extending platelike structure, having a generally planar upper surface 118 which conforms generally to the shape of the iron, and having a downwardly depending flange 120 which extends entirely therefrom around and may be provided at intervals with inwardly projecting feet, upon which the stand is adapted to rest. The stand 12 is also preferably provided with an upwardly projecting rail portion 122, which extends around the surface area 118. The rail 122 is preferably substantially increased in height throughout the forward portion 124 thereof, so as to constitute a guiding surface to facilitate the placing of the iron 10 upon the stand 12. At its rear end, the stand 12 is provided with the generally horizontal lateral shoulder portions 126 and 128, and an intermediate raised portion which constitutes a housing for the hereinafter described terminal structure and a part of the adjusting mechanism.

In accordance with the arrangement disclosed and claimed in the previously identified co-pending application of Ralph H. Beach, Serial No. 23,616, the iron 10 is suspended upon the stand 12 entirely by means of the bi-metallic element, designated as a whole as 132, and by the fixed terminals 44 and 46, which cooperate with the iron terminals 26 and 28, respectively. The under side, or ironing surface of the iron, is maintained in spaced relation to the generally planar upper surface portion 118 of the stand 12, which relationship is clearly illustrated in Fig. 1, and, for this purpose, the bi-metallic element 132 and the terminals 44 and 46 are, accordingly, positioned above the general level of the surface area 118.

The terminal structure for the stand 12 comprises the previously mentioned terminals 44 and 46, which are resiliently and yieldably supported within an insulating block structure 134, housed within the previously mentioned rearwardly projecting housing part 131 of the stand 12. The housing part 131 is provided with longitudinally extending slots 136 and 138, which open through the upper surface thereof, and afford access to the terminals 44 and 46 therewithin. The corners of the portions 140 and 142 are rounded, as is clearly shown in Fig. 4, so as to facilitate both the passage of the skirt portions 48 and 50 of the shell 16 thereover and also to facilitate the movement of the terminals 26 and 28 into the slots and into engagement with the terminals 44 and 46. In addition, so as to enable the skirt portions 48 and 50 of the shell 16 to have a

definite guiding function, the side areas 144 and 146 of the portions 140 and 142 are slightly inwardly depressed, and the corners 148 and 150 of these portions are rounded. The skirt portions 48 and 50 of the shell 16 are disposed to lie adjacent but in slightly spaced relation to the side areas 144 and 146. In the operation of placing the iron upon the stand, it is preferred to point the nose of the iron toward the front part of the stand 12, allowing the front portion of the lower sole plate 20 to rest upon the bi-metallic mechanism 132, and allowing the rear skirt portion of the shell 16 to rest upon the housing portion 131 of the stand. By virtue of the previously described rounded corner relations and of the skirt portions 48 and 50, these portions of the iron and stand cooperate with each other so as to guide the iron readily into proper position upon the stand. Little if any effort is thus required in order to insure that the terminals 26 and 28 enter into engagement with the terminals 44 and 46.

The terminals 44 and 46 are each of the plunger type, and are spring biased to the illustrated upper position shown in Fig. 4 by compression springs 152 and 154, which are seated between shoulders 156 and 158 formed on the terminals, respectively, and sleeve-like insulating elements 160 and 162, which are pressed or otherwise secured within bores provided therefor in the terminal block 134. In the raised positions of the terminals 44 and 46, the lower ends thereof are out of engagement with cooperating terminals 164 and 166. The terminal 166 is directly connected to the wire 167 of the supply cord 168, as clearly appears in Figure 1. The other fixed terminal 164 is connected, through the hereinafter described thermostatically controlled switch 170 (Figures 5 and 6) to binding post 171. Post 171, in turn, is directly connected to the other wire 169 of cord 168.

It will thus be appreciated that when the iron 10 is removed from the stand 12, the terminals 44 and 46 are separated from terminals 164 and 166 and so are positively disconnected from the source of current, so that even though a conducting instrument should be introduced into engagement with the upper ends of the terminals 44 and 46, no electrical contact would result. On the other hand, when the iron is rested upon the stand, in the position shown in Fig. 1, with the iron terminals 26 and 28 resting upon the upper ends of the terminals 44 and 46, the weight of the iron forces these terminal members downwardly against the forces of the compression springs 152 and 154 (Fig. 4) bringing the lower ends of the terminals into engagement with the cooperating terminals 164 and 166. The latter terminals are preferably slightly yieldable, so that they can give somewhat under the weight of the iron. In their lower positions the contacts 164 and 166 abut an insulating support 165. When the iron is in the just mentioned position, with the terminals 26 and 28 in conducting engagement with the terminals 44 and 46, it will be appreciated that the side portions 48 and 50 of the skirt 42 on the shell 16 completely enshroud the lateral sides of the terminals portion 131 on the stand 12, thus preventing access to the terminals 26 and 28 from the side of the iron. At the same time, the rear marginal edge 172 of the just mentioned skirt 42 on the shell 16 is received in a transversely extending groove 174, formed at the rear edge of the portion 130. The depth of the groove 174 is such that the just mentioned lower

marginal edge lies in spaced relation to the base thereof, so that the proper terminal connecting action is not interfered with. However, the marginal edge 172 effectively shrouds the rear end of the iron and positively prevents access to the terminals 26 and 26 from the rear of the iron. With this relation, it will be appreciated that when the iron is on the stand, all conducting parts thereof are completely shrouded. The above described terminal structure for the stand 12 is supported within the portion 130 of the stand by means of a supporting plate 176, which extends transversely across the back portion of the stand in spaced relation below the under side thereof, and is secured thereto by means of studs 178 and 180, which may be screwed into bosses 181 and 183, which extend downwardly from the under side of the shoulder portions 126 and 128 of the base. A stud 182 extends between the mounting plate 176 and the insulating block 134. In addition, the stud 182 and a cooperating intermediate lock nut 184 act to secure the terminals 164 and 166 of the stand, these contacts being carried on a cross-member 186, which is provided with an opening to accommodate stud 182.

Referring particularly to Fig. 5, the previously identified bi-metallic unit 132 comprises a usual bi-metallic strip 190, the so-called free end whereof, of generally strip form, extends through an enlarged opening 192 in the surface portion 118 of the stand, and is provided with a suitable adjustable tip 194. Tip 194 comprises a stud, threaded through the bi-metallic strip 190, and held in a selected position of adjustment thereon by means of a lock nut 196. It will be appreciated that the stud 194 may be suitably adjusted to determine the effective position of the free end of the bi-metallic strip 190. The outer end of the bi-metallic strip 190 is rigidly clamped between a pair of cooperating contact discs 198 and 200, the upper one whereof is provided with a downwardly projecting boss portion 202, which is received in an opening provided therefor in the bi-metallic strip 190 and in corresponding openings provided therefor in the lower disc 200 and in the insulating supporting member 204. A stud 205 extends upwardly through an opening in the portion 118 of the stand 12 and is threaded into the upper disc 198, thus drawing the two discs tightly together, and wedging the bi-metallic strip 190 therebetween. It will be appreciated that the upper surface of the disc 198 is of generally planar form, and is in direct surface contact engagement with the under side of the iron 10 when the latter is placed upon the stand. By virtue of the air space between the under side of the iron and the generally planar portion 118 of the stand 12, whereby the only metallic contact between the iron and the stand is through the terminals 44 and 46 and the bi-metallic structure 132, it will be appreciated that substantially all heat dissipated from the iron to the stand is transferred directly to the disc 198 and consequently is transferred directly to the bi-metallic strip 190. The latter strip, accordingly, responds very sensitively to the temperature of the iron.

It will further be appreciated that in service, the point of the iron 10 may be brought into engagement with the bi-metallic structure 132 with some little force, making advisable the provision of the enclosing structure which constitutes an important feature of the present invention. As illustrated, the just mentioned enclosing structure comprises a metallic shroud 206 which may

be, and preferably is, formed of downwardly presenting, generally cup-like shape, having an opening 208 in the base, which is slightly larger than the contact disc 132, whereby an insulating air space is provided between the shroud 206 and the disc. The marginal edge of the shroud 206 abuts the surface 118 of the stand 12, and at intervals, the shroud 206 is provided with tongues 210, which are passed through corresponding openings provided in the surface 118 and are swaged over, so as to hold the shroud 206 in place. With this relation, the shroud 206 constitutes a relatively rigid effective enclosure for the contact disc 198, thus preventing the latter from being subjected to jarring movements when the iron is placed on the stand, and correspondingly preventing injurious jarring movements being transmitted to the bi-metallic strip 190.

The automatic switch unit 170 preferably follows the construction disclosed in the above identified copending application of Ralph H. Beach, Serial No. 23,616, and, for the purposes of the present invention, may be characterized as comprising a suitable housing 220, within which a contact strip 222 is mounted. The contact strip 222 is fixed to the housing at one end thereof by means of the binding post 224, and the otherwise free end of the strip 222 is normally retained by the characteristics of the strip in engaging relation to the other binding post 226. As is described in more detail in the above identified copending application, the strip 222 may be slightly deformed in the region indicated by the reference character X, so that when this deformed area is depressed by the actuating plunger 228, the strip 222 is caused to rapidly snap from a closed to an open position. The plunger 228 extends outwardly of the switch housing 220, and is provided at its outer end with a slotted portion 230, which freely accommodates the free end 232 of the hereinafter described adjusting mechanism 234. The switch 170 is rigidly secured to the under side of the portion 118 of the stand.

The particular connections of the switch 170 to the terminal structure for the iron may follow the arrangement disclosed in detail in the above identified copending application. For the purposes of the present application, it is sufficient to note, as is indicated by the legends appearing in Figure 6, that the binding post 226 is permanently connected to the stand terminal 164. The switch binding post 224, on the other hand, is permanently connected to the stand binding post 171, which binding post, as previously described, is connected to the cord wire 165. With this relation, it will be appreciated that, providing the iron is on the stand, and providing the switch 170 is closed, the heating circuit extends through the switch 170 and the iron heating element in series circuit relation.

As long as the temperature of the bi-metallic strip 190 is below a certain value, it will be appreciated that the free end 194 thereof occupies a position such as that shown in Fig. 5, in which the plunger 228 is freely spaced from the switch contact strip 222, so that the latter occupies its normal closed position. If, under these conditions, the iron is placed upon the stand, the heating circuit is completed therethrough, and the temperature of the iron is correspondingly increased. By virtue of the relatively high wattage of the iron heating element, the temperature of the iron rapidly rises, which rise in temperature is accompanied by a bending or flexing

of the bi-metallic strip 190, which flexure causes the free end 194 thereof to move to the right, as viewed in Fig. 5, and ultimately to force the plunger 228 to the right into forcible contact with the switch contact strip 222. This action, as previously described, causes the switch to snap from the closed to the open position, interrupting the heating circuit. As the temperature of the bi-metallic strip 190 falls, the free end 194 thereof moves to the left, as viewed in Fig. 5, and ultimately this movement progresses to such an extent that the switch 170 is enabled to snap to the closed position, such closure recompleting the heating circuit, providing the iron 10 is still located upon the stand.

Referring now more particularly to Figures 6, 7, and 8, the previously described temperature adjusting mechanism for the iron comprises a bar structure 234, formed of two bars 232 and 236. The bar 236 extends between the rear end of the stand and the forward portion thereof, and is provided at its forward end with the previously mentioned tapered bar 232. The bar 236 is provided along its length with elongated slots 238 and 240, and these slots accommodate studs 242 and 244, respectively, which are screwed into appropriate bosses provided therefor in the base structure. A relatively loose fit is provided between the slots 238 and 240 and the just mentioned studs, thus permitting the bar 236 to slide longitudinally of the iron. It will be appreciated that a movement to the right of the bar 236 brings portions of the bar 232 of increasing width between the ends of the bi-metallic strip 190 and the switch actuating plunger 228. In its extreme right hand position of adjustment, the portion of greatest width of the bar 232 is thus effective to control the switch operation and in the extreme left hand position of the adjusting mechanism, the portion of minimum width of the bar 232 is effective to control the switch operation. It will be appreciated that the degree of movement of the bi-metallic strip 190, which is required to actuate the switch 170 depends upon the width of the effective portion of the bar 232. Accordingly, the left hand position of the adjusting mechanism corresponds to a high temperature setting of the iron and the right hand limit position thereof corresponds to a low temperature setting of the iron.

A feature of the present invention resides in the provision of a lost motion connection between the bars 236 and 232 of the adjusting mechanism. As illustrated, this lost motion connection is afforded by extending the slot 240 very nearly to the end of the bar 236, and forming a pin connection, by means of the pin 246, between the bars 232 and 236. A tension spring 248, connected between the pin 246 and a boss 250 secured to the depending flange 120 of the stand 12, serves to continuously urge the pin 246 and bar 232 to the right, but permits bar 236 to be moved to the right independently of bar 232.

The just mentioned lost motion connection in the adjusting mechanism is of particular importance. It will be appreciated that in changing the setting of the iron from the relatively high temperature setting shown in Figure 6 to a somewhat lower temperature setting, it is necessary to move the bars 232 and 236 to the right, thus bringing a wider portion of the bar 232 between the switch actuating stud 228 and the bi-metallic strip 190. If this adjustment occurs at a time when the bi-metallic strip 190 is at a relatively low temperature, sufficient space is afford-

ed between the plunger 228 and the bi-metallic strip 190 to accommodate such additional width. If such adjustment is made, however, at a time when the iron is on the stand and the bi-metallic strip 190 is at a relatively high temperature, it will be appreciated that the adjusting movement could only be effected by forcibly separating the plunger 228 and the bi-metallic strip. Such forcible separation might damage the bi-metallic strip and the switch. With the present arrangement, however, utilizing the lost motion connection, the bar 236 may be moved to the right to the selected position of adjustment, during which movement the bar 232 remains stationary. As soon as the temperature of the bi-metallic strip 190 has fallen sufficiently to provide room for the bar 232, the tension spring 248 associated therewith becomes effective to move it to the right, again bringing the pin 246 into abutting relation to the end of the slot 240.

In accordance with the present illustrated embodiment of the invention, the movements of the bars 232 and 236 to the right and to the left, as viewed in Figure 6, are effected by means of a manually operated control member 260, conveniently mounted at the rear of the iron in upwardly projecting relation to the housing portion 130 of the stand 12. The control member 260 is connected to a stud 262, which extends downwardly through the housing portion 130, and through an opening provided therefor in the previously mentioned base plate 176. At its lower end, the stud 262 is suitably keyed to a pinion 264, which meshes with rack teeth 266 formed at the end of the bar 236. The pinion 264 is maintained in correct axial position on the stud 262 by means of a washer 268, which also is disposed beneath the end of the bar 234 and serves to retain the pinion and rack teeth in meshing relation to each other.

Although only a specific embodiment of the invention has been described, it will be appreciated that various modifications of the form, member, and arrangement of parts thereof, may be made within the spirit and scope thereof.

What is claimed is:

1. In thermostatic control mechanism including a thermostatically responsive element, a switch operator disposed to be actuated by said element, an adjusting element interposed between said first mentioned element and said operator and adjustable as to position therebetween so as to determine the temperature setting of said mechanism, a control member for adjusting the position of said adjusting element, and means forming a lost motion connection between said control member and said adjusting element.

2. In thermostatic control mechanism including a thermostatically responsive element, a switch operator disposed to be actuated by said element, an adjusting element interposed between said first mentioned element and said operator and adjustable as to position therebetween so as to determine the temperature setting of said mechanism, a control member for adjusting the position of said adjusting element, connections between said control member and said adjusting element adapted to permit an adjusting movement of said control member without requiring an adjusting movement of said adjusting element, and means acting on said adjusting element to urge it to take up said adjusting movement.

3. In thermostatic control mechanism, including a thermostatically responsive element and a

switch operator disposed for movement by said element, the combination of an adjusting element interposed between said thermostatic element and said operator and movable in a predetermined direction to adjust the temperature setting of said mechanism, said adjusting element being of progressively increasing width transversely of said direction, a control device operable to move said adjusting element in said direction so as to selectively interpose parts of increasing and decreasing width thereof between said thermostatic element and said operator, and connections between said control device and said adjusting element constructed and arranged so that a movement of said adjusting device in a direction to cause a portion of increasing width of said adjusting element to be interposed between said thermostatic element and the said operator can be made without requiring a corresponding adjusting movement of said adjusting element.

4. In thermostatic control mechanism, including a thermostatically responsive element and a switch operator disposed for movement by said element, the combination of an adjusting element interposed between said thermostatic element and said operator and movable in a predetermined direction to adjust the temperature setting of said mechanism, said adjusting element being of progressively increasing width transversely of said direction, a control device operable to move said adjusting element in said direction so as to selectively interpose parts of increasing and decreasing width thereof between said thermostatic element and said operator, and connections between said control device and said adjusting element constructed and arranged so that a movement of said adjusting device in a direction to cause a portion of increasing width of said adjusting element to be interposed between said thermostatic element and the said operator can be made without requiring a corresponding adjusting movement of said adjusting element, said connections being such that an adjusting movement of said control device in an opposite direction positively causes a corresponding movement of said adjusting element.

5. In thermostatic control mechanism, including a thermostatically responsive element and a switch operator disposed for movement by said element, the combination of an adjusting element interposed between said thermostatic element and said operator and movable in a predetermined direction to adjust the temperature setting of said mechanism, said adjusting element being of progressively increasing width transversely of said direction, a control device operable to move said adjusting element in said direction so as to selectively interpose parts of increasing and decreasing width thereof between said thermostatic element and said operator, connections between said control device and said adjusting element constructed and arranged so that a movement of said adjusting device in a direction to cause a portion of increasing width of said adjusting element to be interposed between said thermostatic element and the said operator can be made without requiring a corresponding adjusting movement of said adjusting element, said connections being such that an adjusting movement of said control device in an opposite direction positively causes a corresponding movement of said adjusting element, and means acting on said adjusting element to urge it to take up said adjusting movement of said control device in said first direction.

6. In a device of the class described, the combination of a longitudinally extending stand, a thermostatic element disposed upon said stand adjacent one end thereof, a switch operator disposed on said stand in a position to be actuated by said thermostatic element, an adjusting element interposed between said thermostatic element and said operator and disposed to control the temperature setting thereof, a control device carried by said stand adjacent the other end thereof, and lost motion connections extending between said control device and said adjusting element.

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