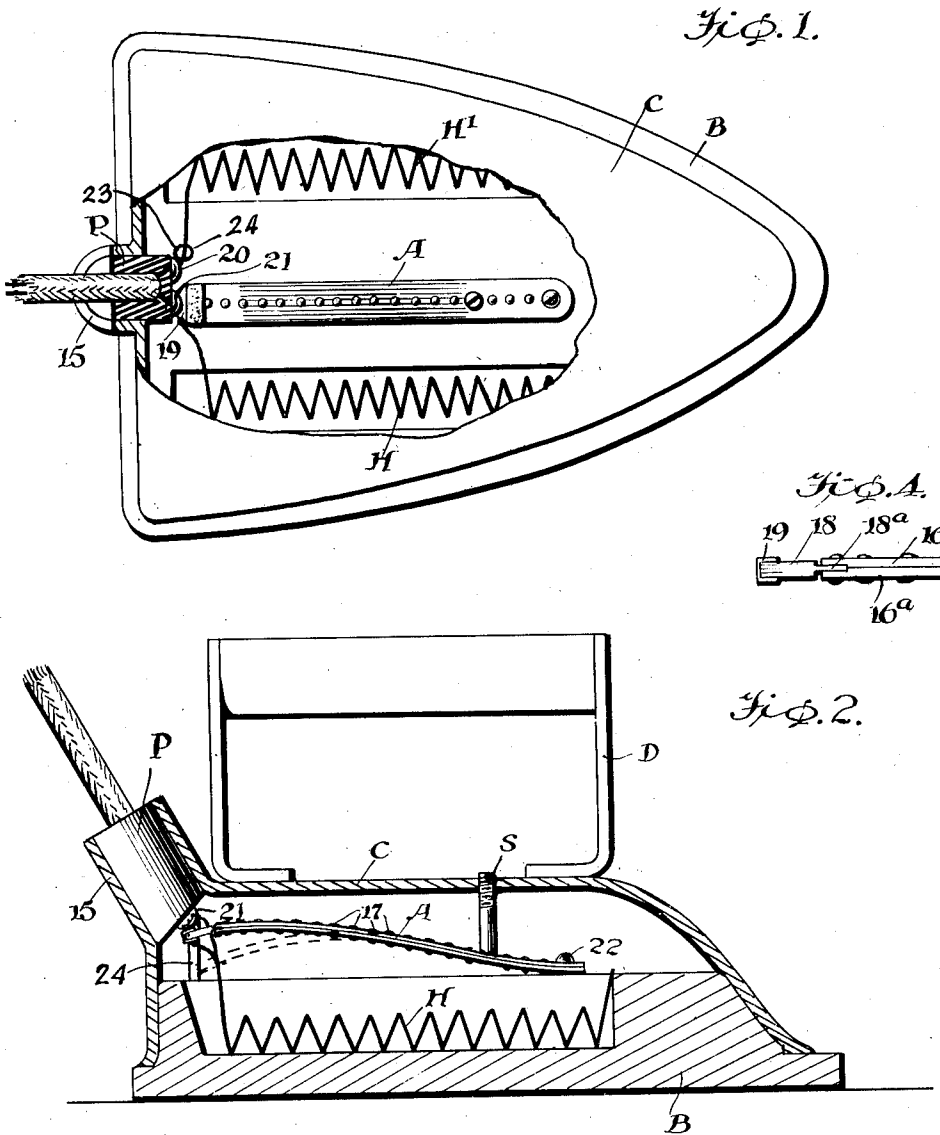


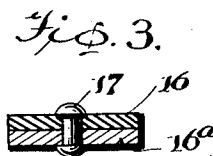
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R. D. HETRICK  
THERMOSTATIC SWITCH FOR FLATIRONS  
Filed March 11, 1921



WITNESSES  
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## UNITED STATES PATENT OFFICE.

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## THERMOSTATIC SWITCH FOR FLATIRONS.

Application filed March 11, 1921. Serial No. 451,645.

*To all whom it may concern:*

Be it known that I, RUSSELL DICK HETRICK, a citizen of the United States, and a resident of Indiana, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Thermostatic Switches for Flatirons, of which the following is a specification.

My invention relates to thermostatic switches and particularly, although not necessarily, to a thermostatic switch for an electric flat iron, the purpose of my invention being the provision of a switch capable of being associated with an electric iron of standard construction in a manner to automatically disrupt the supply of current to the iron when it becomes excessively heated.

It is also a purpose of my invention to provide a thermostatic switch which is adjustable to permit of its being closed or opened when subjected to a heat of a predetermined temperature wherefore in its applicability to an electric iron it can be regulated to disrupt the supply of current when the iron becomes heated above a prescribed temperature.

I will describe one form of switch embodying my invention and one form of electric iron to which it is adapted to be applied, and will then point out the novel features thereof in claims.

In the accompanying drawings:

Figure 1 is a view showing in top plan and partly broken away a conventional form of electric iron having applied thereto one form of switch embodying my invention.

Figure 2 is a central vertical sectional view of Figure 1.

Figure 3 is a transverse sectional view of the arm of the thermostatic switch shown in the preceding views.

Figure 4 is an enlarged fragmentary detailed view showing in side elevation the free end of the contact arm of the switch shown in the preceding views.

Referring specifically to the drawings, in which similar reference characters refer to similar parts, my invention is shown applied to an electric flat iron of conventional form, and which in the present instance comprises a body B recessed at two points upon its upper side to accommodate heating coils H and H' which are connected in series. A cover C is mounted on the body B in a manner to overlie the recessed portions, such

cover carrying a handle D and provided at its rear end with a socket 15 in which is adapted to fit a plug.

The thermostatic switch forming the subject matter of my invention comprises an arm A made up of two strips of metal 16 and 16<sup>a</sup> having different co-efficients of expansion. In the present instance the strips 16 and 16<sup>a</sup> are formed, respectively, of brass and steel, although it is to be understood that any other metals can be equally well employed so long as they sufficiently differ in co-efficients of expansion to effect the lateral flexing of the arm when subjected to heat. These two strips are secured in superimposed relation by means of rivets 17 arranged at intervals along the longitudinal axis of the strips. As illustrated to advantage in Figure 4, the free end of the arm A is provided with an extension 18 formed of insulating material such as mica or the like, such extension having a tongue 18<sup>a</sup> which is interposed between the strips 16 and 16<sup>a</sup> and secured therein by means of one of the rivets 17. The free end of the extension 18 has riveted thereto a cap 19 formed of conducting material.

The electric switch also includes a plug P formed of insulating material and which is bored to receive electrical conductors that are connected to a pair of contacts 20 and 21.

In the applied position of the switch to the iron, the arm A is secured at one end to the upper side of the body B at a point between the recessed portion by means of a screw 22. As shown in Figure 2, the arm A is normally flexed so that the conducting cap or contact 19 normally engages the contact 21. One terminal of the coil H is welded or otherwise secured to the cap 19. The terminal for the heating coil H' is formed to provide a contact 23 insulatingly supported at 24 in the path of the contact 20. The plug P is adapted to be inserted into the socket 15 in the manner shown whereby, the contact 21 engages the cap 19 and the contact 20 engages the contact 23, thus closing the circuit for the heating coils H and H'.

In order to render the switch adjustable so as to disrupt the circuit for the heating coils when the iron is heated to a predetermined temperature, I provide a set screw S which is threadedly fitted in the cover C in such manner that its lower end contacts with the arm A at a point adjacent the screw 22.

The inherent resiliency of the metals of which the arm A is formed is such as to normally maintain the cap 19 in engagement with the contact 21, and the set screw S engages the arm at such a point within its length that when moved downwardly a downward pressure is exerted upon the arm so as to lessen the pressure with which it engages the contact 21 but without actually moving the contact arm out of engagement with the contact. On the other hand when the screw is adjusted upwardly the full maximum pressure of the arm is exerted upon the contact.

15 In operation, the circuit for the heating coils H and H' is completed by reason of the cap 19 engaging the contact 21, it being noted, however, that the contact arm A is not included in the circuit. When the iron

20 has become excessively heated, the contact arm owing to the coefficients of expansion of the strips 16 and 16<sup>a</sup>, is flexed to the dotted line position shown in Figure 2 so that the cap 19 is moved out of engagement with the

25 contact 21 thereby disrupting the circuit for the heating coils. In order that the switch can operate to disrupt the circuit when the iron has been heated to a predetermined degree, the set screw S is adjusted in the manner previously described so as to increase or

30 decrease the pressure with which the arm engages the contact 21, whereby, it will be seen that a constant predetermined temperature can be maintained by reason of the fact that

35 when the iron is cooled sufficiently to allow of the arm returning to its normal position the circuit is again completed to supply current to the heating coils.

Although I have herein shown and described only one form of thermostatic switch and one form of flat iron in which it is

adapted to be applied, it is to be understood that various changes and modifications may be made in the construction of the switch and that such switch may be applied to other forms of flat irons, all without departing from the spirit of the invention and the spirit and scope of the appended claims.

What I claim is:—

1. In an electric flat iron including a cover having a socket formed therein, a thermostatic switch comprising, a plug insertable in said socket and carrying a contact, an arm formed of strips of metal having different co-efficients of expansion, and a contact supported on and insulated from said arm, said arm being secured to the iron adjacent the heating coils thereof and flexed to cause the contact sustained thereon to normally engage the contact of said plug.

2. In an electric flat iron including a cover having a socket formed therein and including a plurality of heating elements connected in series, a plug insertable in the socket and carrying a pair of spaced contacts at the inner end thereof, a contact secured to the terminal of the heating element at one end of the series, an arm formed of strips of metal having different coefficients of expansion, and being secured at its one end to the iron adjacent to the heating elements, means for insulatingly supporting the contact of the one heating element upon the other end of the arm and in the path of one of the contacts of the plug, adjustable means carried by the cover for engaging the arm to flex the latter and for varying the pressure thereon, and a contact provided at the terminal of the heating element at the other end of the series and disposed in the path of the second contact of the plug.

RUSSELL DICK HETRICK.