Aug. 6, 1929. G. F. BEHRINGER 1,723,965

STAND AND SWITCH FOR ELECTRIC HEATING DEVICES

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Fig. 1.

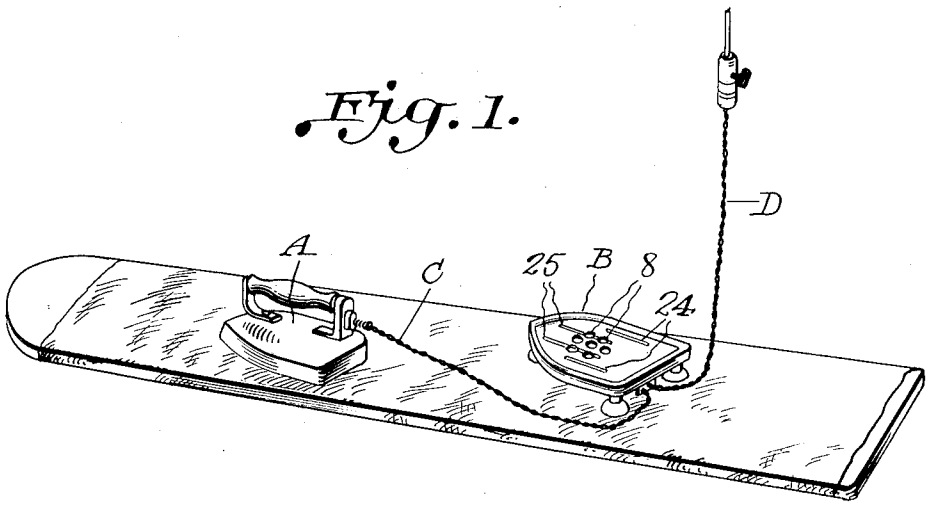


Fig. 2.

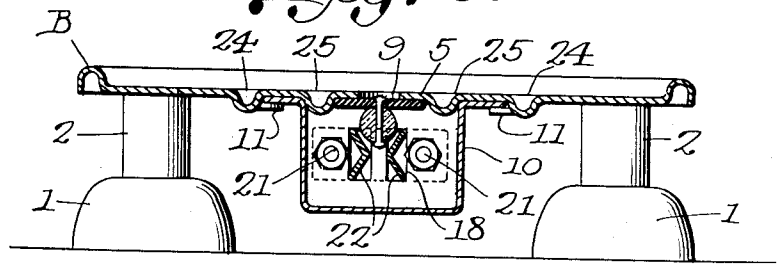
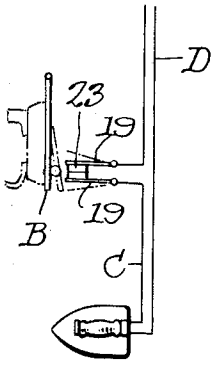


Fig. 3.



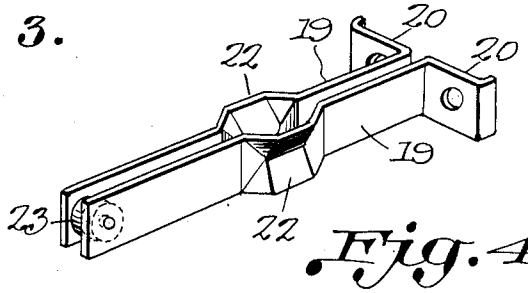


Fig. 4.

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Fig. 5.

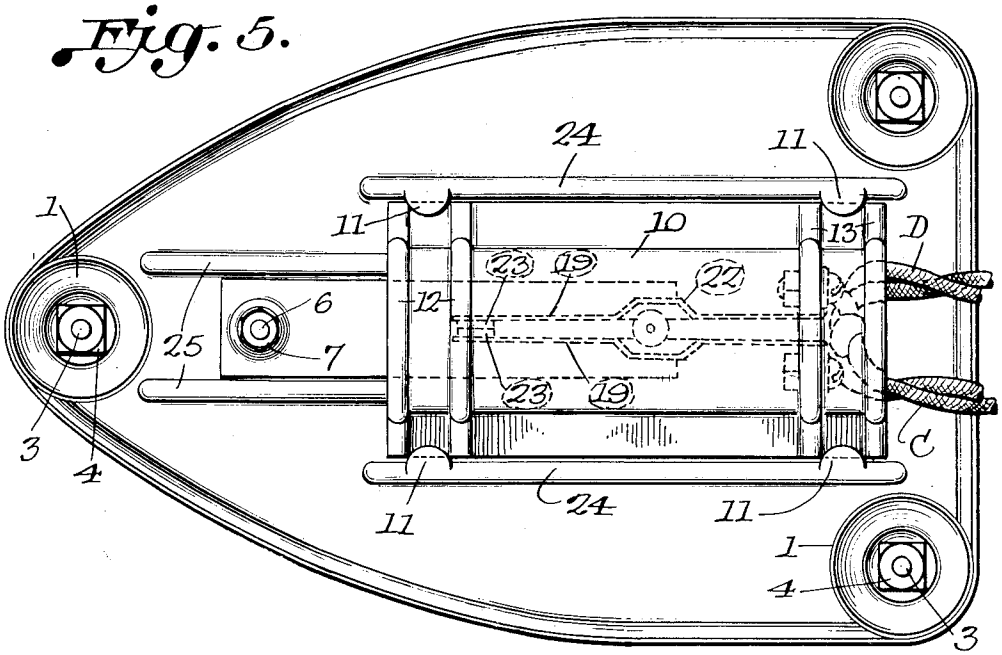
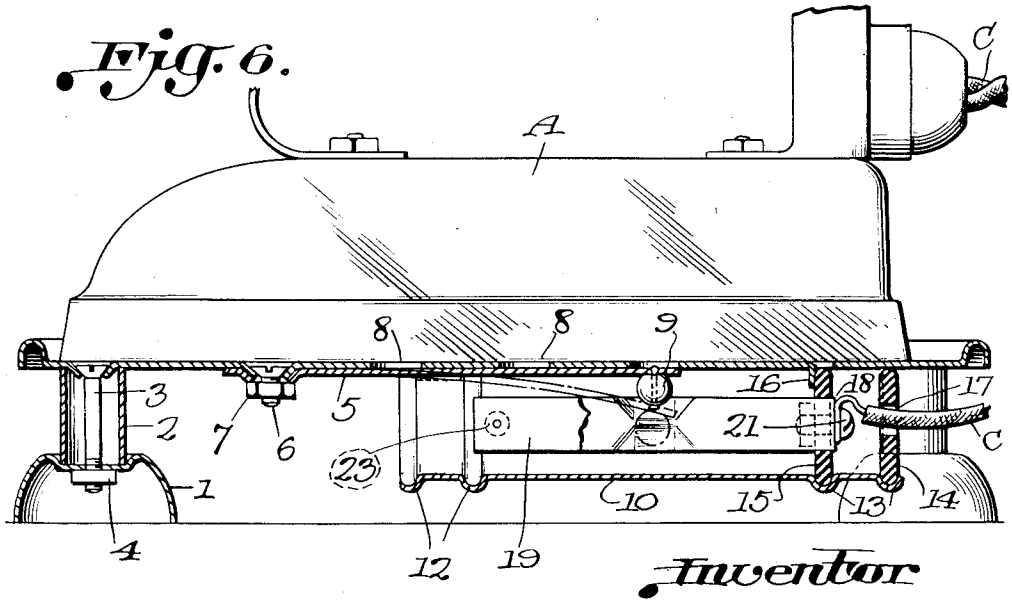


Fig. 6.



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UNITED STATES PATENT OFFICE.

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STAND AND SWITCH FOR ELECTRIC HEATING DEVICES.

Application filed December 21, 1925. Serial No. 76,865.

The invention relates to a supporting strand upon which a sad iron may be set when not in use and which is interposed between the electric iron and the source of current and provided with a thermostatic switch which will operate to break the circuit when the sad iron is sitting on the stand if a predetermined degree of temperature is exceeded. In using electric irons of this character it frequently happens that there are interruptions which last for some considerable time, and it is therefore necessary for the user to manipulate a switch and cut off the current, allowing the iron to cool or else there is danger of the iron becoming overheated during such waiting intervals. By the use of this invention, the circuit will be broken whenever the temperature reaches a certain maximum, thus preventing overheating of the iron, while at the same time the circuit will again close when the temperature of the iron drops below a certain point, thereby preventing it from becoming too cool for use.

In the drawings:

Figure 1 is a perspective view of an ironing board, a conventional electric sad iron A, the stand B, circuit wires C connecting the sad iron and stand and circuit wires D connecting the stand with any suitable source of current.

Figure 2 is a cross section through the stand.

Figure 3 is a diagrammatic view of the circuit and the manner in which it is automatically broken.

Figure 4 is a perspective view of the switch elements detached from the stand.

Figure 5 is an inverted plan view of the stand.

Figure 6 is a longitudinal section through the stand showing the iron A in elevation thereon.

The stand B is preferably stamped out of suitable sheet metal and is supported by a plurality of cup shaped members 1, spaced on the stand by cylindrical sleeves 2 and fastened on the stand by means of headed screws 3 which pass through the stand and the top of the cup shaped members, the parts being retained in position by nuts 4. A thermostat 5, which is illustrated as a relatively thin, flat strip of metal composed of any two metals which form a thermostatic couple is attached at one end by a screw bolt 6 to the stand B, the parts being held in position by a nut 7. It may be noted that the metal of which the body of the stand is made is countersunk for the screw heads of all of the above mentioned screw bolts.

At the opposite end of the thermostat 5 there is attached thereto in any suitable manner a ball or cam shaped member 9 shown as being substantially spherical. The precise shape thereof is however immaterial so long as it performs the function hereinafter set forth.

A trough shaped member or casing 10, also preferably stamped from sheet metal, is provided with side flanges which engage the bottom of the stand B and are held thereagainst by ears 11 stamped out of the metal of the stand and bent over said flanges, as clearly shown in Figure 2. Near each end of the trough member 10, it is provided with stamped grooves 12 and 13, respectively which extend around the three sides of the trough member for the purpose hereinafter apparent. At one end insulating members 14 and 15 slide through the grooves 13 and are retained therein. The insulating member 15 also bears against a lug 16 stamped downward from the stand B in order that the trough member with the switch terminals carried thereby may be properly positioned when the parts are assembled without the necessity of paying any particular attention thereto. The insulating member 14 is provided with openings 17 through which the circuit wires pass. The insulating member 15 is provided with a central opening 18 through which pass two contact members included in the circuit.

These contact members 19 are specifically illustrated in Figure 4 and are substantially alike. When assembled, the portions 20 which are bent at right angles to the body of the circuit members 19 lie against the face of the insulating member 15 and are held thereto by screw bolts 21. One of the circuit wires C is also held in place by being engaged by the head of one screw 21, while one of the circuit wires D is held to the other switch member in similar fashion. Each of the circuit members 19 has an outwardly flared central portion which also flares upwardly and downwardly from the center for a purpose hereinafter apparent. The outer and free end of each of the members 19 is provided with a contact member

23 and these members are normally held in contact by the resilience of the members 19 themselves. It will be seen as diagrammatically illustrated in Fig. 3, that one of the wires D from the source of current is attached to one of the members 19, the circuit being completed through the contact members 23 and other member 19 to which one of the wires C is attached, thence to the electric sad iron. It is obvious that to break the circuit and shut off the current from the sad iron, it is only necessary to operate the free ends of the members 19 until the contact members 23 are out of engagement with each other. This result is attained as follows:

When the parts are in assembled relation, the cam member 9 overlies the enlarged portion 22 of the members 19 and fits down between said members nearly into contact therewith as shown in Figure 2. When the iron is placed upon the stand and allowed to remain for any length of time, the thermostat 5 becomes heated and owing to the different coefficience of expansion of the two metals of which it is constructed it will take up a bent position as illustrated in dotted lines in Figure 6. During this movement the member 9, which is of insulating material comes in contact with the flared portions 22 of the member 19 and cams them apart until the contact members 23 are operated and the circuit is broken. Whenever the iron cools to the point at which the thermostat returns substantially to its normal position, the members 19 will move towards each other due to their own resilience and the circuit will be again closed by contact of the members 23.

It may be noted that the stand may be provided with openings 8 to permit heat to pass to the thermostat more readily. It is also noted that the stand member is provided with four longitudinal grooves 24 and 25. The grooves 24 are formed by pressing the metal downwardly forming ribs on the under surface and these two ribs lie adjacent the edges of the flange portion of the trough member 10, while ribs formed by the grooves 25 engage the inner side of the trough member, thus facilitating the assembly of the parts and holding the same in exact position. It is further noted that the two insulating members 14 and 15 can be removed readily from the trough member and when so removed can be placed in either end thereof thus enabling the device to be assembled without any particular care being taken to position the parts in their proper relationship. Similarly, the two circuit members 19 are substantially the same in form and can be used interchangeably with either side up. All of these parts cooperate to produce a stand which can be manufactured at a relatively small cost and rapidly assembled or disassembled if necessary. When assembled, the flared portions 22 of the circuit members 19 will always underlie the cam member 9 so that the parts will necessarily be in proper operative relationship.

Although the invention has been disclosed and illustrated as embodied in a stand and switch for electric sad irons, it is obvious that it is not limited in use to a sad iron. The principle involved is precisely the same whatever might be the purpose of the heating device supported upon the stand.

Various changes can be made without in any way departing from the spirit of the invention, and it is to be understood that the invention is limited only by the scope of the appended claims.

I claim as my invention:

1. A supporting stand having a switch thereon biased to constantly seek a closed position, said switch being adapted for connection with a device in the same electric circuit therewith for support at times on said stand, and a thermostatic means on said stand normally free of said switch whereby the latter is normally closed, said thermostatic means being subject to the heat of a device supported as aforesaid so as to open said switch when the device is heated above a predetermined temperature.

2. In combination, a supporting stand member having a switch thereon biased to constantly seek a closed position, an electrically operated member adapted for connection with said switch and for support at times on said stand, a thermostatic means on one of said members out of electrical relation with any of the parts normally free of said switch whereby the latter is normally closed, said thermostatic means being subject to the heat of said electrically operated member supported as aforesaid so as to open said switch when the device is heated above a predetermined temperature.

3. A supporting stand provided with a plate, a casing carried by the latter, contacts carried by and insulated from the casing, said contacts being biased to constantly seek a closed position and adapted for connection with a device in the same electric circuit therewith for support at times on said plate, and a thermostat on said plate normally free of said contacts whereby the latter form a normally closed switch, and said thermostat being subject to the heat of a device supported as aforesaid so as to open said switch when the device is heated above a predetermined temperature.

4. A supporting stand provided with a plate having depending spaced ribs, a casing having side walls contacting with said ribs and fastened to the plate outwardly thereof, insulation in said casing, contacts carried by said insulation, said contacts be-

ing biased to constantly seek a closed position and adapted for connection with a device in the same electric circuit therewith for support at times on said plate, and a thermostat on said plate between said ribs subject to the heat of a device supported as aforesaid so as to open said switch when the device is heated above a predetermined temperature.

5. A supporting stand provided with a plate, a casing depending from the lower surface thereof, insulation in said casing, substantially horizontally disposed contacts carried by said insulation, said contacts being biased to constantly seek a closed position and adapted for connection with a device in the same electric circuit therewith for support at times on said plate, and a thermostat on said plate substantially vertically movable within the casing and subject to the heat of a device supported as aforesaid so as to open said switch when the device is heated above a predetermined temperature.

6. A stand and switch for electric heating devices, comprising a support, a thermostat fastened at one end thereto, a non-conducting cam member carried by the other end of the thermostat, a trough shaped member adapted to be secured to the under side of said support, an insulating plate carried thereby, two spaced members each provided with a contact at one end, attached at the other end to said plate, and having an intermediate flared portion, and means for positioning said trough shaped member on said support so that the cam member will register with the flared portions of the strips.

In testimony whereof, I have hereunto subscribed my name.

GROVER F. BEHRINGER.