Oct. 12, 1926. 1,603,208

W. H. KEITER

ELECTRIC FLATIRON

Original Filed Oct. 25, 1922

FIG. 1

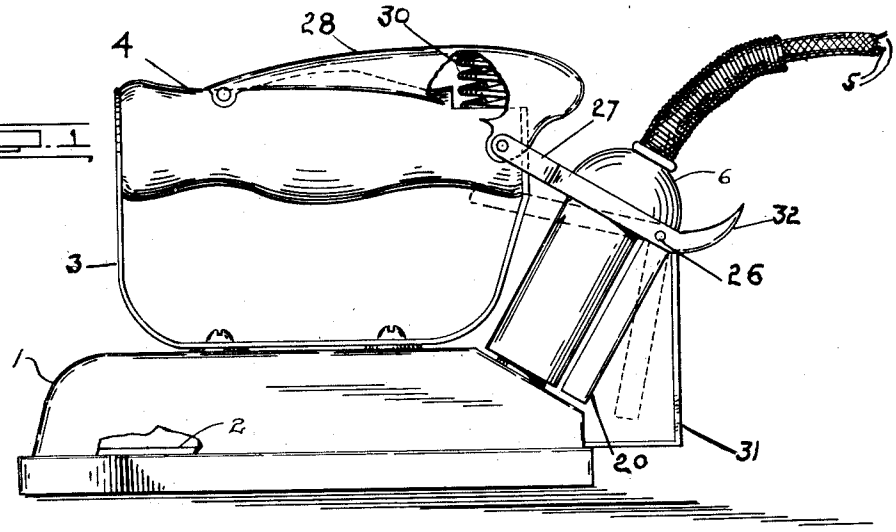


FIG. 2

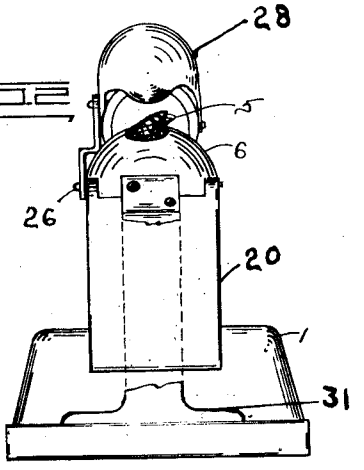


FIG. 3

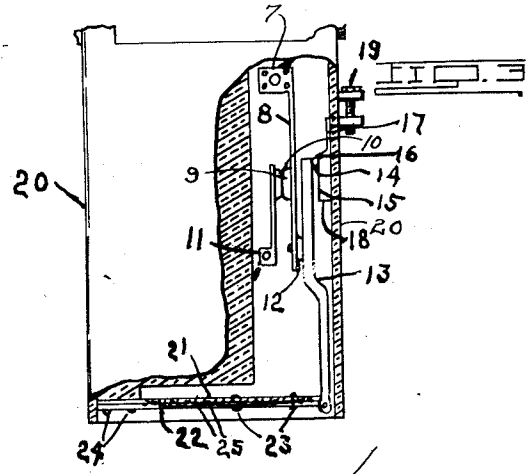
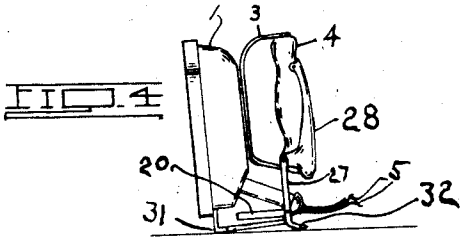


FIG. 4



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ELECTRIC FLATIRON.

Application filed October 25, 1922, Serial No. 596,917. Renewed February 6, 1926.

This invention relates to features of control for apparatus to be heated.

This invention has utility when incorporated in electrically heated flat irons for operation in automatically cutting in and cutting out the heating.

Referring to the drawings:—

Fig. 1 is a side elevation, with parts broken away, of an embodiment of the invention in an electric flat iron for domestic use;

Fig. 2 is an end elevation, with parts broken away, of the iron of Fig. 1 from the right;

Fig. 3 is a detail view showing features of the thermostat and switch controlled thereby, and

Fig. 4 is a view showing the iron set on end for remaining heated during short intervals between uses.

Housing 1 of the flat iron is shown as having therein an electric heating element 2. From this housing 1 rises upright 3 for main grip or handle portion 4. Electric supply lines 5 extend to the socket 6 having slip connection with the housing 1 of the flat iron.

One of the supply lines 5 is here shown as extending to terminal 7 (Fig. 3) from which extends electric conductor spring arm 8 having contact 9. This spring 8 normally tends to swing the contact 9 away from contact 10. The contact 10 is connected to fixed terminal 11 of the lead line to the heating element 2. These contacts 9, 10, are held in engagement by lug 12 on the arm 8 having sliding coaction with arm 13. This thermostat arm 13 has bearing or lug 14 which may ride along slide way 15, pause at ridge portion 16 to snap over to depressed portion 17 of cam guide 18, which may be adjusted by set screw 19 for shifting in thermostat housing 20. This shifting of the cam 18 changes the working range of the arm 13 at which the switch contacts open and close.

This housing 20 encloses a thermostat which reciprocates the arm 13. This thermostat comprises a cast iron strip 21 disposed in opposing relation to a cast aluminum strip 22, held together by rivets 23, and anchored to the thermostat housing 20 by rivets 24. These two strips 21, 22, on their adjacent faces have grooves 25 to permit circulation of air and thereby make them more readily responsive to temperature change. As the temperature builds up, the thermostatic couple tends to buckle and thereby thrusts the arm 13 to slide along the cam 15, 16, 17. In adjusting the position of the cam by means of the screw 19, the temperature at which the contacts 9 and 10 may be opened or closed is changed and the heating control of the iron is thus simply controlled as to range for use.

This thermostat housing 20, is mounted by pivot pins 26 against the socket 6 of the flat iron. Forming a bell crank lever with this thermostat housing 26 is arm 27 having pivotal connection with handle section 28 provided with fulcrum 29 fixed with the main handle 4 of the flat iron. This handle section 28 is normally forced away from the main handle section 4 by the compression helical spring 30 coacting between the handle sections.

This feature means that the spring 30 in its action in swinging the thermostat housing 20 into position close to the flat iron housing 1 thereby makes the thermostat more quickly responsive to the heating of this flat iron and automatically cuts out the heating at a lower range of temperature for the housing 1 than when the thermostat is spaced therefrom. When the operator uses the flat iron by gripping of the handle section 28 to compress the spring 30, the thermostat housing 20 swings away from the housing 1 of the flat iron, thereby requiring a higher temperature for opening the switch in the thermostat. This means that in operation the flat iron automatically will run under higher temperature than when the current is on and the handle not gripped with the iron left flat. This is a safety device against injury to cloth or ironing board and is automatic.

When the user of the flat iron wishes to set the iron down so that adjustments of the garment being ironed may be had such setting down of the iron may be upon heel portion 31. As so set up extension 32 fixed with the arm 27, will hold the thermostat housing 20 into position away from the iron housing 1, thereby resulting in keeping the higher temperature of the iron automatically. The operator thus has a hot iron maintained for use.

The feature of automatically cutting out the heating supply occurs at both positions of the thermostat. The embodiment herein of shifting the thermostat for the two temperatures has as its purpose the variation

in the effective radiation to the thermostat by changing the distance instead of interposing a nonconductor screen. The thermostat away from the housing may act at lower temperature and thus be of prolonged life.

What is claimed and it is desired to secure by Letters Patent is:—

1. A flat iron embodying a heater, a housing therefor, means providing a supply of heat for the heater, control means for the supply, a thermostat for controlling said control means and disposed to be affected by the heating of the housing, and means for varying the influence of the housing on said thermostat by shifting one relatively to the other independently of adjusting the thermostat in itself.

2. A flat iron embodying a heating element, a housing therefor, an electric supply, a switch for controlling the supply, a thermostat for operating said switch as disposed to be affected by the heating of the housing and means for shifting the thermostat as to the housing independently of adjusting the thermostat in itself.

3. A flat iron embodying an electric heating element, a housing therefor, an electric supply, a switch for controlling the supply, a thermostat for operating said switch, and a handle for the iron having a movable section for affecting the operation of the switch by said thermostat.

4. An electric flat iron having a housing, a thermostat for the iron having an independent thermostat enveloping housing spaced from the iron housing, and a handle for the iron provided with connections for varying the action of the thermostat as to the iron.

5. An electric flat iron, a handle therefor, a thermostat for the iron mounted by the handle and spaced from and out of contact with the iron, said handle for the iron being movable relatively to the iron, and a connection operable by said movement of the handle for affecting the thermostat.

6. An electric flat iron, a rockable thermostat therefor, and a handle for the iron, movable for rocking the thermostat.

7. An electric flat iron having a handle, an automatic low temperature control effective upon release of the handle, and means coacting on iron set up on end, to hold the iron in high temperature position.

8. An electric flat iron, a thermostat therefor, a handle for the iron, means coacting upon release of the handle for moving the thermostat in low temperature controlled position for the flat iron.

9. An electrical flat iron, provided with a relatively movable handle section, and a spring normally drawing the thermostat toward the iron for holding the heating of the iron to a lower temperature.

10. An electric flat iron provided with a heating element, a housing therefor, a relatively shiftable thermostat for the heating element, a switch for the heating element, and a handle for the iron including a section shiftable as to the iron housing for varying the action between the switch and the thermostat by shifting the thermostat as to the housing.

11. A tool, an electric heater for the tool, a housing fully enveloping the heater, a thermostat for controlling the heating of the tool and mounted exterior of the housing and out of contact with the housing, and means coacting with tool operation to control the thermostat action as to the heating of the tool.

In witness whereof I affix my signature.

WILLIAM H. KEITER.