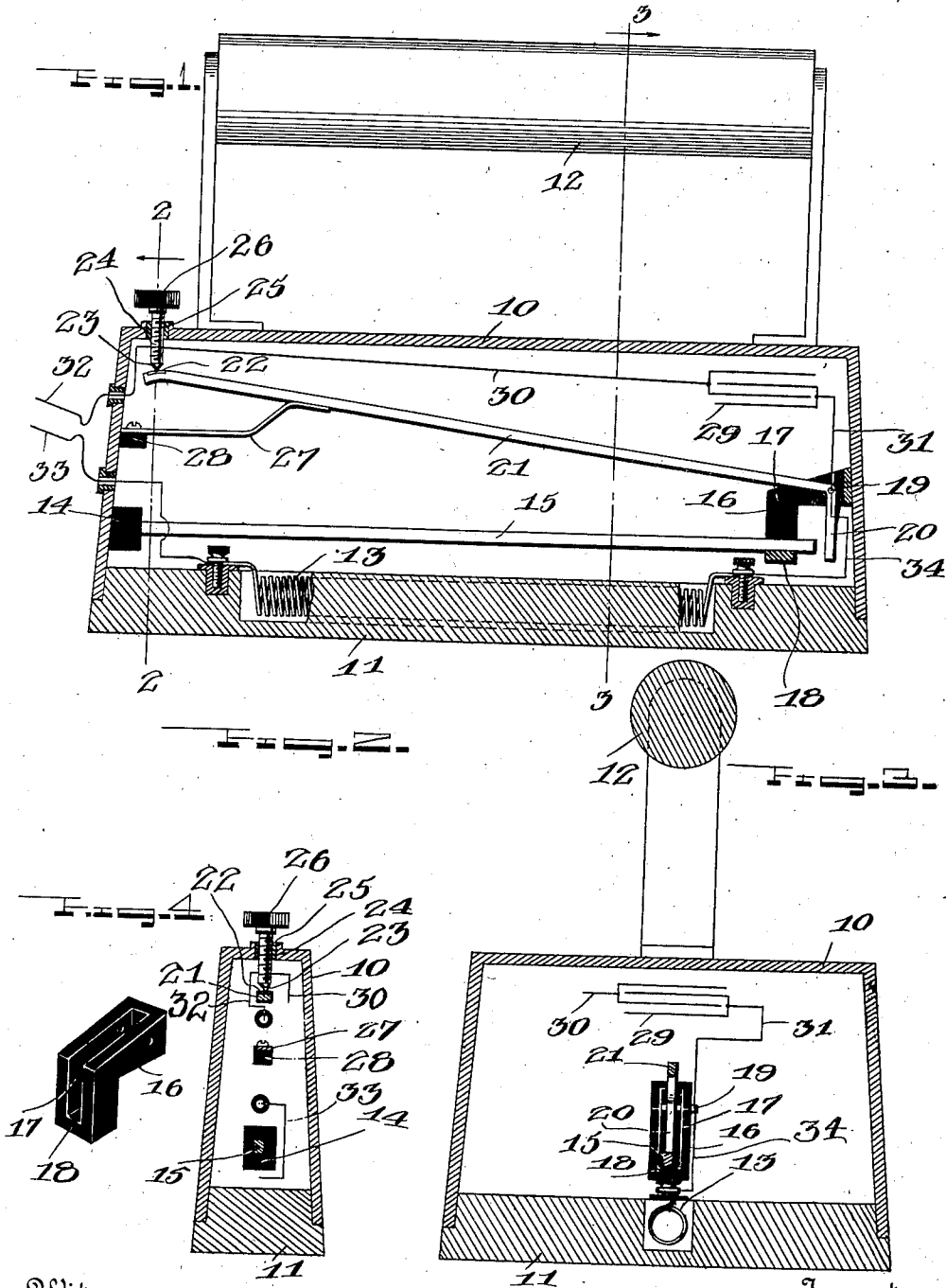


C. E. TEETERS.  
THERMOSTATIC REGULATOR.  
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1,016,795.

Patented Feb. 6, 1912.



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# UNITED STATES PATENT OFFICE.

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## THERMOSTATIC REGULATOR.

1,016,795.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed April 27, 1911. Serial No. 623,696.

### *To all whom it may concern:*

Be it known that I, CHARLES E. TEETERS, a citizen of the United States, residing at Canal Dover, in the county of Tuscarawas, State of Ohio, have invented certain new and useful Improvements in Thermostatic Regulators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved thermostatic regulator for an electric iron or similar devices and the principal object of the invention is to provide a novel device for regulating the heating of the iron or varying the temperature thereof whereby the best results with different kinds of materials ironed may be procured and injury to the fabrics prevented.

Another object of the invention is to provide a novel regulating device adapted to prevent excessive heating of the iron or more especially the heating unit thereof and consequently preventing resultant destruction of the heat unit.

Another object of the invention is to provide an improved regulating means in which continued excessive heating of the unit beyond a desirable temperature is prevented and so regulated that the amount of current consumed is greatly reduced, as the device prevents excessive heating of the iron.

With these and other objects in view the invention consists of certain other combinations and arrangements of parts as will be hereinafter more fully described and claimed, it being a still further object to provide a device which will not be likely to get out of working order.

In the drawings:—Figure 1 is a central longitudinal sectional view of an electric iron with my improved regulator applied thereto. Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 is a detailed perspective view of an insulated arm employed in connection with the device.

Referring to the drawings in detail, there is indicated an electric iron having a hood 10 which is adapted to fit over the base 11 and be secured thereon in any desired manner, said hood having the usual handle 12 by which the iron may be manipulated. Embedded within the base 11 is the heat

unit 13 in the form of a resistance element through which an electric current is passed in order to generate heat which is communicated to the ironing surface of the base and my improved regulator is adapted to control the heating of the iron to prevent excessive heating thereof and destruction of the heating element as well as to regulate the temperature of the iron for use in connection with fabrics requiring different temperatures.

Secured at one end of the hood 10 is an insulated block 14 in which one end of a rod 15 is rigidly secured or embedded, said rod being constructed of some metal having a high coefficient of expansion, such as aluminum and being extended longitudinally for some distance above the base 11 to a point adjacent the opposite end of the hood and freely received between the sides of an angular insulated arm 16 which is also secured to one end of the hood opposite to the block 14. The arm 16 is provided with a vertical slot 17 and the bottom wall which is adapted to support the free end of the rod 15 and to permit expansion thereof under the action of heat by the passage of an electric current through the heat units disposed directly therebeneath and allowing the free endwise expansion of the rod but preventing any lateral movement thereof. A bell crank lever is also pivoted between the sides of the arm 16 upon a pin 19 which also serves as a terminal or binding post as will be later described and the shorter arm 20 of the lever extends downwardly adjacent to the end of the rod 15 and is adapted to be contacted by the end of the rod when the latter expands. The longer arm 21 of the lever is directed at an inclined position to the upper corner of the hood above the block 14 and is provided with a platinum contact point 22 adapted to be engaged by a contact point 23 also preferably formed of platinum at the lower end of a screw 24 which is threaded through an insulating bushing 25 in the top of the hood 10 and which is provided with an insulated operating head 26 to protect the operator from shock of the electric current. A band spring 27 is adapted to engage the underface of the longer arm 21 to hold the contact points in engagement with each other at all times when not overcome by pressure on the short arm 20 and said spring is mounted upon an insulated terminal block

28 also secured to one end of the hood above the block 14 and a condenser 29 is connected in circuit by the conductors 30 and 31 to the screw 24 and the bell crank lever at the terminal 19 so as to prevent arcing when the contact is broken. Feed and return wires 32 and 33 are connected to the screw 24 and the heat unit 13 respectively and the circuit is normally closed by contact of the arm 21 with the screw, thence to the base by the conductor 34 and returning by the conductor 33 to any suitable source of electric energy (not shown).

In the operation of the device when in use, and the current is flowing in the circuit just traced, the heat produced causes the expansion of the rod 15 resulting in an elongation thereof and if excessive heat occurs, the contact of the free end of the rod with the short arm 20 will depress the longer arm 21 and disengage the contacts 22 and 23, thus breaking the circuit through the heating element and allowing the iron to cool and the rod to contract and permit the spring 27 to return the arm 21 to its normal position and automatically close the electric circuit through the heating element. It is also apparent that the condenser prevents arcing of current when the contact is broken and it is further evident that the adjustment of the screw 24 may be made to vary the gap or distance between the free end of the rod 15 and the short arm 20 of the bell crank lever, thereby enabling the operator to obtain any desired temperature.

The advantages of a device of this character over the common expansive band which is rigidly secured at both ends and which is adapted to arch and break the electric contact are readily apparent, inasmuch as such devices could not be regulated to a certain standard and the adjustment heretofore necessary rendered the iron very expensive. In such devices, the expansion band finally becomes permanently affected due to the frequent molecular strains produced when heated thereby rendering the same inefficient for use. Especial attention is also called to the fine range of adjustment which can be accomplished by varying the relative lengths of the arms 20 and 21 and the comparative slight movement neces-

sary in order to break the contact at the screw 24, it being obvious that by varying the length of the arms, any desired adjustment or regulation of the heat may be obtained. The expansion rod by being freely mounted at one end will resume its former length when cooled and no permanent change thus produced, thus rendering the parts capable of being standardized and the simplicity of construction preventing any derangements thereof of parts.

I claim:—

1. In an electric iron, the combination with a base and a heating element embedded therein; of a hood arranged upon the base, an expansible rod secured at one end of the said hood, the other end being free, a lever pivoted adjacent the free end of the rod, one of the arms of the lever extending downwardly and spaced from the rod and the other arm extending upwardly in an inclined position, an adjustable terminal member, means to hold the inclined arm in contact therewith and an electric circuit including the adjustable member, the heat unit and the lever whereby expansion of the rod will contact with the downwardly extending end of the lever to disconnect the other arm from the adjustable terminal member.

2. A heater of the class described comprising the combination with a heating element and a hood arranged thereon, of an expansible member insulated from and anchored at one end of the hood, a screw insulated from and adjustable in a bore in the hood, a pivoted member arranged to be contacted by the expansible member, said pivoted member normally contacting with the screw and adapted to be disengaged therefrom by the longitudinal expansion of the expansible member, a condenser connected in circuit with the screw, the pivoted member and the heating element and means for preventing lateral movement of the expansible member.

In testimony whereof, I affix my signature, in presence of two witnesses.

CHARLES E. TEETERS.

Witnesses:

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