J. J. DANYLCHUK.

TEMPERATURE REGULATOR.

APPLICATION FILED MAR. 30, 1920.

1,380,291.

Patented May 31, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

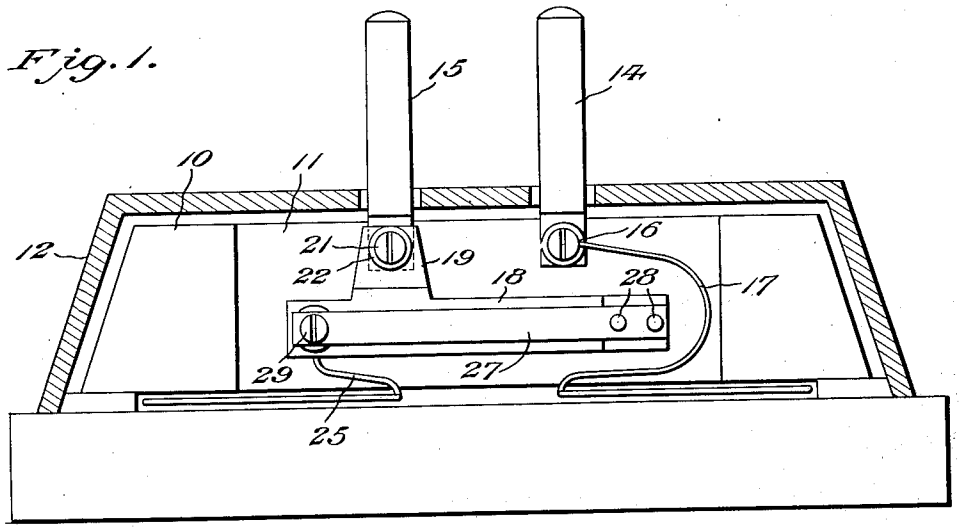
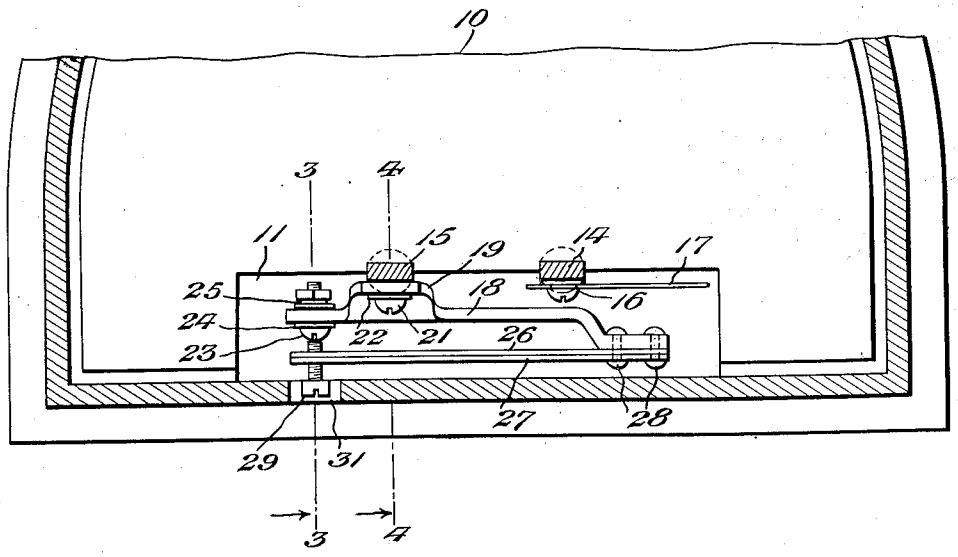


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

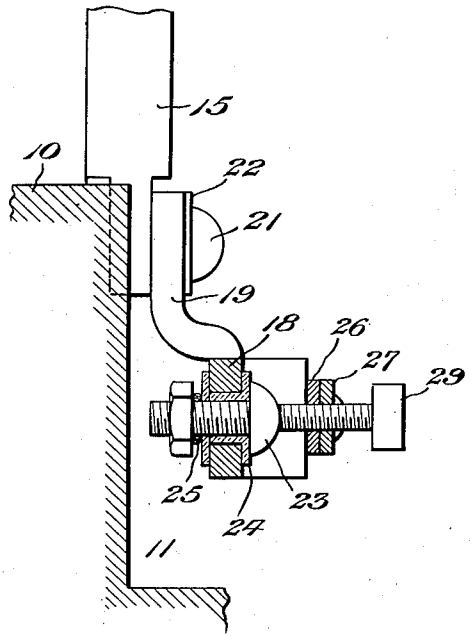


Fig. 4.

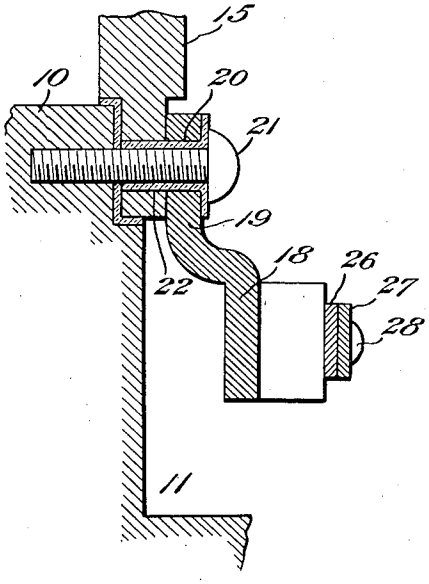
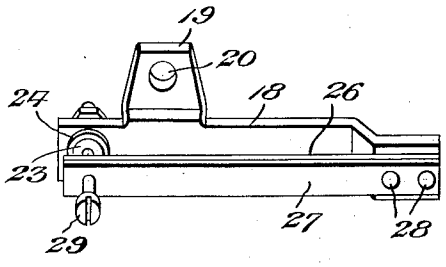


Fig. 5.



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TEMPERATURE-REGULATOR.

1,380,291. Specification of Letters Patent. **Patented May 31, 1921.**

Application filed March 30, 1920. Serial No. 369,946.

To all whom it may concern:

Be it known that I, JOHN J. DANYLCHUK, a subject of the King of Great Britain, residing at Saskatoon, in the Province of Saskatchewan and Dominion of Canada, have invented new and useful Improvements in Temperature-Regulators, of which the following is a specification.

This invention relates to electrically heated sad irons, and comprehends the provision of an automatic operable temperature regulator through the instrumentality of which the circuit is broken when the iron becomes heated above a certain temperature.

Another important object of the invention resides in the provision of a regulator of the above mentioned character, which can be adjusted to maintain the iron while in use, at any desired temperature.

The nature and advantages of the invention will be better understood when the following detail description is taken in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views and wherein:—

Figure 1 is an end elevation of an iron showing the invention applied thereto.

Fig. 2 is a fragmentary plan view.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2 looking in the direction of the arrow.

Fig. 4 is a similar view taken on line 4—4 of Fig. 2 looking in the direction of the arrow.

Fig. 5 is a perspective view of the regulator, removed from the iron.

Referring to the drawings in detail, 10 indicates the body of the iron which is preferably recessed as at 11 to accommodate the temperature regulator forming the subject matter of my invention. The iron is equipped with a cover 12 of any well known construction.

The positive and negative conductor terminals of the structure are indicated at 14 and 15 respectively, the former being connected as at 16 with resistant elements not shown through the medium of a conductor 17. The regulator embodies an arm 18 arranged within the recess 11 and provided at a suitable point in its length with a lug 19. The lug projects an appreciable distance above the upper edge of the arm openings 20 through which is passed a screw 21 for holding the arms associated with the negative conductor terminal 15.

The screw 21 is insulated from the arm 19 and the conductor terminal 15, in any suitable manner as at 22. A fixed contact 23 is carried by one end of the arm 18, this contact being in the form of a screw which passes through an opening in said arm and insulated therefrom as at 24. This contact is connected to the opposite end of the resistant element, not shown through the medium of a conductor 25. Secured to the opposite end of the arm 18 is the adjacent end of a compound bar, made up of two metals such as copper 26 and iron 27. These members are arranged in face to face contact, and are secured to one end of the arm 18, by means of bolts or other suitable fastening elements 28. The opposite end of the compound bar is free from movement toward and away from the arm 18 and carries the movable contact 29 which is also in the form of a screw for adjustment through an opening in the bar as shown. The movable contact 29 normally engages the fixed contact 23 thereby closing the circuit when the circuit is turned on to heat the iron. The cover 12 is provided with a perforation 31 through which the contact 29 passes when the compound bar is expanded to break the circuit in the manner to be presently described.

In practice, proper connection is made with the electric current; the current enters the conductor terminal 14 and is conveyed through the element 17 to the resistant element not shown. Passing through this element and through the conductor 25, the current energizes the fixed contact 23 and the movable contact 29 which normally engages the fixed contact 23. From the movable contact 29, the current passes through the expansible bar into the arm 18 and then through the negative conductor terminal 15 completing the circuit. The iron then is of course heated, and while the heat remains within the limit of a predetermined temperature, the movable contact 29 remains engaged with a fixed contact 23. However, as soon as the temperature of the iron rises

above this predetermined degree, the compound bar, by the unequal expansion of its metals, moves away from the arm 18, thereby separating the contacts 23 and 29 respectively directing the circuits. As the iron cools the expansible bar returns to normal position. By reason of the fact that the contact 29 can be adjusted to vary the distance between the arm 18 and the expansible member when normally positioned, it is apparent that the regulator may be adjusted to maintain the temperature of the iron at any desired degree.

While it is believed that from the foregoing description, the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself in the details herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

Having thus described my invention what I claim as new is:—

In a device of the class described, an electrically heated member having conductor terminals, one of the terminals being connected with one end of the resistant element, a temperature regulator comprising an arm, a lug projecting from said arm and connected to the other of said conductor terminals, a fixed contact carried by said arm and connected with the opposite end of the resistant element, an expansion member associated with said arm and composed of two different metals, a movable contact adjustably mounted upon the expansion member and normally engaged with the fixed contact, said expansion member being actuated by heat radiating from said heated member.

In testimony whereof I affix my signature.

JOHN J. DANYLCHUK.