Oct. 21, 1930. W. K. TAVENDER 1,779,149

THERMOSTAT ELECTRIC SWITCH FOR HEATING PADS

Filed April 14, 1928

Fig. 1,

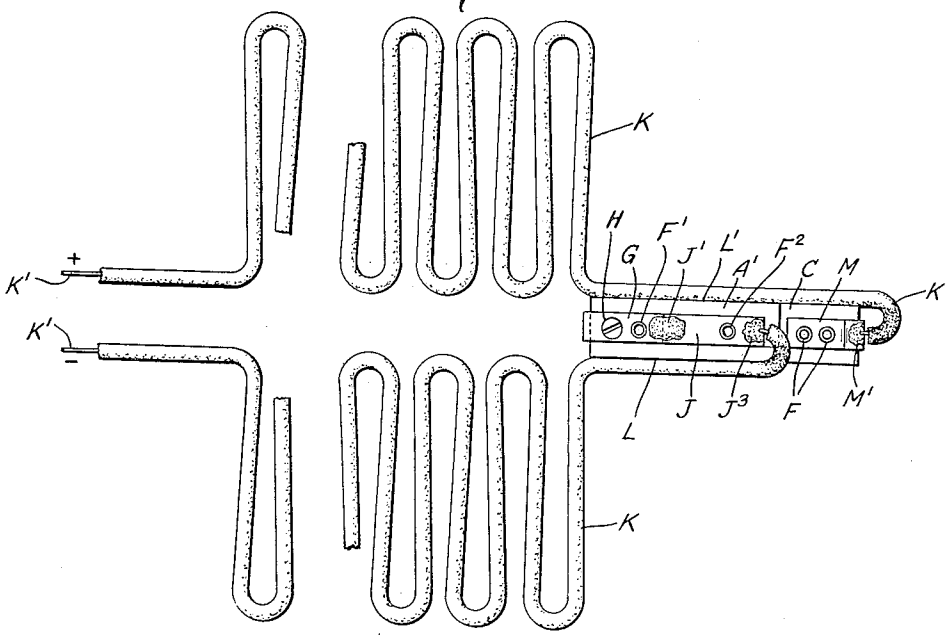



Fig. 2,

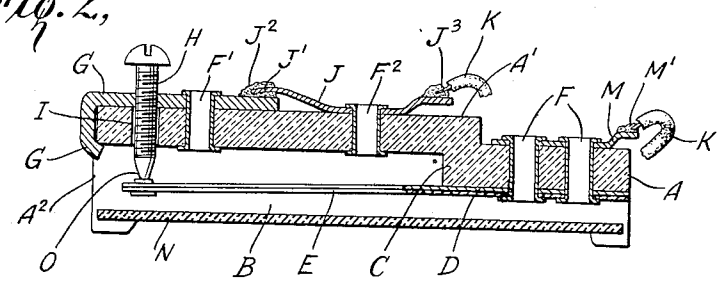



Fig. 3,

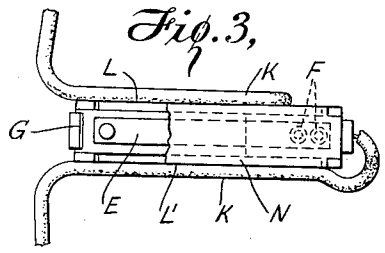
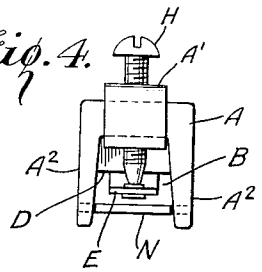



Fig. 4.




INVENTOR

Walter K. Tavender

BY

Frank H. Hobbie

ATTORNEY

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# UNITED STATES PATENT OFFICE

WALTER K. TAVENDER, OF HAWORTH, NEW JERSEY

## THERMOSTAT ELECTRIC SWITCH FOR HEATING PADS

Application filed April 14, 1928. Serial No. 269,946.

My invention relates to electrically heated pads or blankets.

The object of my invention is to provide improved means for automatically controlling the electric circuit thru the heating elements of the pad and to prevent the pad from being heated above a predetermined degree.

My invention comprises a thermostat controlled switch and a fuse controlled cut-out which acts to prevent the thermostat from becoming overheated and also to prevent the pad from being overheated in the event that the thermostat should fail to operate to cut out the current when the pad is heated to the predetermined degree.

My invention consists in the specific construction and arrangement of the parts as combined, being shown in full size in Figures 1 and 3 of the drawings, but I do not wish to be limited to the specific size and dimensions shown.

Referring to the drawings which form a part of this specification,

Fig. 1 is an illustrational plan view of the heating elements of a pad with my device connected therewith; the free ends of the heating elements being connected to a source of electrical energy.

Fig. 2 is a longitudinal sectional view of my device shown on an enlarged scale.

Fig. 3 is an inverted plan view showing the device in size and shape as made for sale for use with heating pads.

Fig. 4 is an end view of the device, shown on an enlarged scale.

A, indicates a housing of insulating material such as vulcanized fibre composition, which is moulded to provide a top portion A′, and two side walls $A^2$—$A^2$, respectively, all formed integral, said side walls being spaced apart as shown to provide a channel B, between them.

The housing is offset at one end to provide a plane surface D, on the under side of the offset portion C, about midway the depth of the channel B, and a straight bi-metallic thermostat E, is clamped at one end to said plane surface D, by eyelets F—F, and extends in a longitudinal direction within the channel nearly to the opposite end of the housing.

Mounted on the top of the housing is a hook-shaped metal strip G, one end of which hooks over the end of the housing as shown at G′, said strip being held to the housing by an eyelet F′. A screw H, screws thru the strip G, and extends thru a hole I, formed in the housing, and its lower end carries a contact point for an electric current flowing thru the thermostat E, to the screw H. By this arrangement a single eyelet serves to hold the strip G, firmly in its proper position on the housing. A sheet metal plate J, of spring material quality, is firmly secured to the top of the housing by an eyelet $F^2$, as shown, and one end J′, is bent downward against the resistance of the spring, and soldered to the strip G, by a low melting fusible metal $J^2$, which will melt at a predetermined temperature, at which point the spring action of the plate will cause the end J′ to spring upward and break the circuit thru the heating elements K comprising the wires of heat resistance metal K′, covered with asbestos, the construction of which is well known to this art.

The end of one wire K is connected at one end by solder to one end of the plate J, at $J^3$, and the adjacent end of the heating element K, is cemented to a side wall $A^2$, of the housing, by suitable material, as illustrated at L, one end of the opposite heating element K, being also cemented to the opposite side wall of the housing as shown at L′, and the wire terminal is soldered to a metal strip M, at M′, said metal strip being held to the top of the housing by the eyelets F—F, respectively, which also serve to conduct the electric current from said strip M, to the thermostat E.

A thin strip of fibre insulating material N, is pressed between the inclined wall surfaces $A^2$, to protect the thermostat.

This strip also serves to provide a closed channel, open only at the ends for the passage of air thru the channel.

The free ends of the wires K′ are connected to a terminal plug for use with the house circuit in the usual manner.

It will be understood that the heating ele-

ments are inclosed in a pad or blanket in the usual manner.

The device operates as follows:

Assuming the screw H, to be properly adjusted relative to the free end of the thermostat E, to break the circuit when the pad is heated to a temperature of 100 degrees Fah. by the action of the thermostat, and that the solder will fuse at 110 degrees Fah.

The current being turned on, the current will flow from the positive side of the circuit thru the heating element K, to M′, and thru plate M and eyelets F—F, to thermostat E, and therethru to the adjustment screw H, and plate G, and fuse solder $J^2$, and strip J, to the end of the heating element K, and therethru to the plug connecting the source of power.

When the temperature of the pad rises to 100 degrees, the thermostat will bend and break the circuit at O, and will close the circuit when the pad cools. In the event that the thermostat should fail to operate to cut out the current when it should, and the temperature rises to 110 degrees, the fuse metal $J^2$ will melt and the spring will react and break the circuit, thus preventing damage to the thermostat thru overheating, and also preventing overheating of the pad.

By leading the heating elements along each side of the housing, a quick and accurate operation is effected.

Having thus described my invention I claim as new:

A device of the character described comprising a housing of insulating material having a channel formed therein, a thermostat located therein having a contact point adjacent its free end, an adjustable contact member adapted to contact therewith to provided an electric switch, a strip secured to the housing and carrying said adjustable member, a resilient plate carried by the housing, and fusible metal connecting said plate to said strip and holding same under spring tension thereto.

In testimony whereof I have affixed my signature.

WALTER K. TAVENDER.