

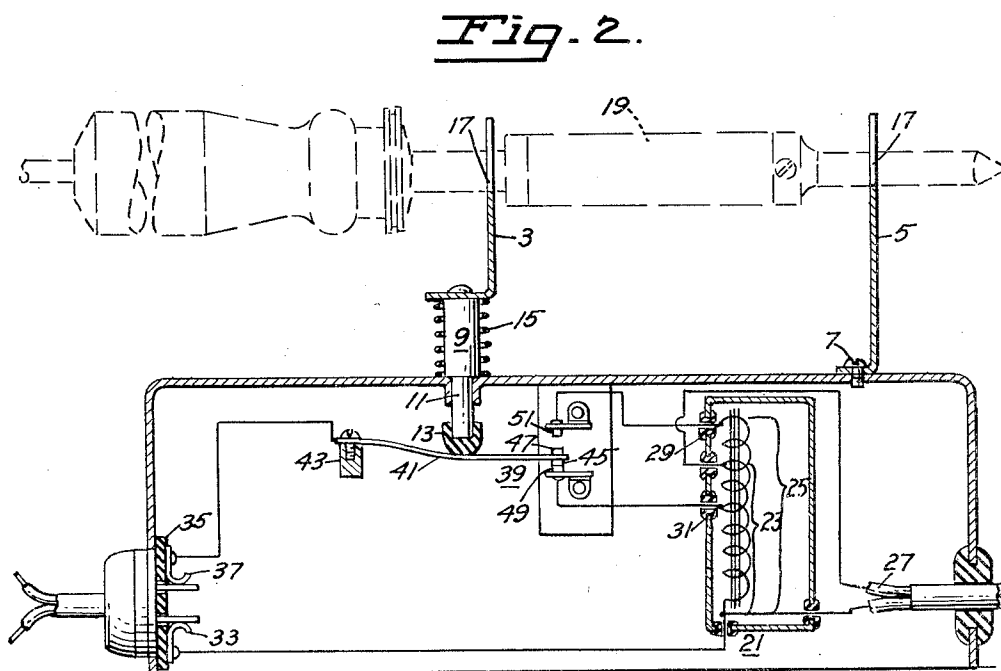
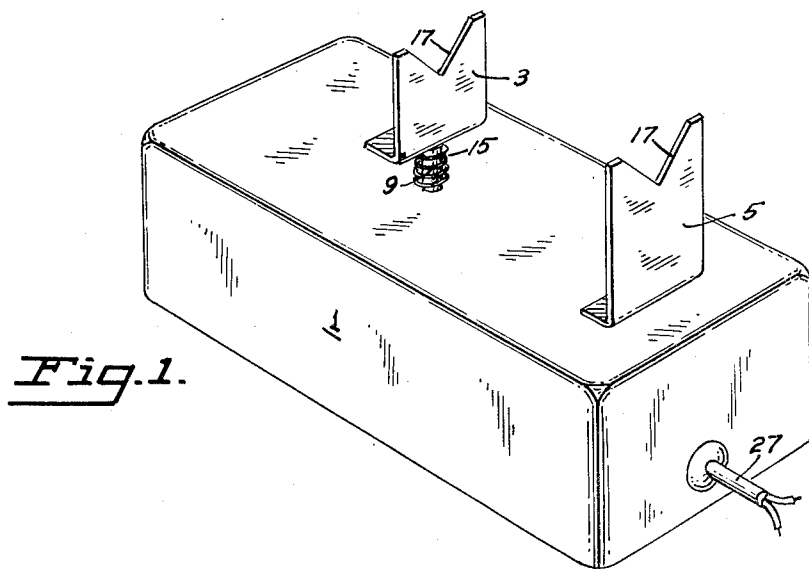
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SUPPORT FOR ELECTRICALLY HEATED DEVICES

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SUPPORT FOR ELECTRICALLY HEATED  
DEVICES

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My invention relates to electrically heated devices such as soldering irons or the like, and more particularly to a support therefor adapted to control the idling temperature of such devices.

That form of my invention illustrated in the drawings has been designed for a soldering iron, for which type of device it possesses added advantages. Accordingly, the invention will be described with respect to such device, although it will be appreciated from the following description of the same, that it is applicable to other electrically heated devices such as electric irons, hair curlers and the like.

During idling periods in the use of electrically heated devices of the aforementioned type, consumption of electrical energy is not desired except to the extent of maintaining a minimum temperature, to thereby minimize the time lag in bringing the device to full operating heat condition for use. With a soldering iron, the matter of economizing on electrical energy consumption, while desirable, is of less importance to the user than the prevention of oxidation of the tip of the iron during such idling periods when the temperature of the device, in the absence of precautionary measures, is apt to rise to oxidation values.

Among the objects of my invention are:

(1) To provide a novel and improved support for electrically heated devices;

(2) To provide a novel and improved support for electrically heated devices, for economizing on electrical energy consumption during idling periods;

(3) To provide a novel and improved support for electrically heated devices adapted to automatically alter the energy input to such heated devices when supported thereon, while the support itself remains cool;

(4) To provide a novel and improved support for electrically heated devices, capable of reducing the energy input to such devices when supported thereon, and without producing a corresponding energy loss within the support.

Additional objects of my invention will be brought out in the following description of a preferred embodiment of the same, taken in conjunction with the accompanying drawings wherein—

Figure 1 is a three-dimensional view of my invention, designed as a support for a soldering iron;

Figure 2 is a longitudinal view in section through the support of Figure 1.

Referring to the drawings for the details of

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my invention as illustrated therein, it involves a casing 1 on which are mounted a pair of standards 3 and 5 in spaced relationship. Each standard is preferably of sheet metal flanged at the bottom for mounting purposes. One of such standards is mounted directly on the casing by means of a machine screw 7 or rivet while the other is carried on a plug 9 having an end 11 of reduced diameter extending into the casing through a hole provided therein for the purpose. At its inner end there is mounted a tip 13 to preclude withdrawal of the plug. The reduced end of the plug is of sufficient length to permit limited linear movement of the plug, the tip and the portion of larger diameter constituting the limiting factors to such movement.

A coil biasing spring 15 between the mounting flange of the standard and the casing serves to bias the plug to its uppermost position of movement, in the absence of sufficient weight to overcome the biasing action of this spring.

Both standards have a notch 17 in the upper edge to cradle a soldering iron 19 during idling periods. By selection of a sufficiently weak biasing spring and properly apportioning the weight of the iron between the two standards, that portion of the weight of such iron carried by the spring biased standard may be made to exceed the biasing force of the spring, whereupon the plug will be depressed under the weight of the iron when placed on the support.

Within the casing is mounted a transformer 21, preferably of the auto-transformer type, having a primary winding 23 and a secondary winding 25. A plug-in cord 27 extends from the primary winding through the casing, terminating in a conventional type plug (not shown) for connection to a wall socket or the like.

The secondary winding is preferably tapped, two such taps 29 and 31 being normally sufficient for the purpose of the present invention. One end of the secondary winding is connected directly to one terminal 33 on a socket 35 supported in an opening provided in the casing for the purpose, while the two aforementioned contacts of the secondary winding are selectively connectable to the other contact 37 normally provided on such a socket, through a switch 39.

Such switch may comprise a switch arm 41 of relatively light gauge spring material fastened at one end to a fixed support 43 and at its other end, carrying a pair of contacts 45 and 47, one on each side thereof. Such spring arm is adapted to move between a pair of fixed terminals 49 and

51, each being connected to one of the taps on the secondary winding.

The switch arm is normally distorted to contact that terminal 51 which makes connection to the higher voltage tap of the secondary winding, and the entire switch is mounted with the switch arm in the path of movement of the plug 9, such that downward movement of the plug will be sufficient to shift the switch arm from its normal contact with the high voltage terminal 51, into contact with the lower voltage terminal 49.

The soldering iron receives its energy by way of the transformer 21 and associated switch 39, by connecting the soldering iron cord into the socket 35. With the soldering iron in use, it will, accordingly be connected to the high voltage tap of the secondary winding of the transformer and will, accordingly, extract maximum energy from the system.

During idling periods, when the soldering iron is placed on the support, the weight thereof will cause the switch arm to be depressed into contact with the low voltage terminal of the switch and thereby establish connection to the low voltage tap of the transformer, whereby to cut down the energy input to the iron. Through proper location of the taps on the secondary winding, the iron may be caused to operate at desired soldering temperatures when in use, and when placed on the support, the energy input may be reduced to a value which will hold the temperature of the iron down to a point just below that which will cause oxidation of the tip.

By utilizing the transformer as a component of the means for altering the energy input to the iron, the heat loss within the casing during use of the iron is low, and such heat loss is not increased when the iron is placed on the support. If anything, such initially small heat loss is reduced under such conditions by reason of the fact that the current flowing in the transformer windings is of lower value and the I<sup>2</sup>R loss must therefore be somewhat lower.

Thus very little heat will be generated within the casing at any time, and inasmuch as the iron will be supported well above the casing, the support will run cool during use.

From the above description of my invention in its preferred form, it will be appreciated that the same will fulfill all the objects of my invention as previously set forth, and while I have described my invention in considerable detail, the same is subject to modification and alteration without departing from the underlying principles thereof. I, accordingly, do not desire to be limited in my protection to such details, except as may be necessitated by the appended claims.

I claim:

1. A support for an electrically heated device,

comprising a casing, means on said casing for receiving such device, a transformer within said casing, said transformer including a primary winding and a secondary winding having more turns than said primary winding, a plug-in cord extending from said primary winding through said casing, a socket mounted on said casing for connection of such electrically heated device, and means responsive to the weight of such device when placed on said receiving means, for changing the voltage output of said transformer from an operating voltage determined by a greater number of turns than said primary winding to an idling voltage of lower value determined by a lesser number of turns than said primary winding.

2. A support for an electrically heated soldering iron, comprising a casing, means on said casing for receiving such soldering iron, said means including a pair of spaced standards each having a notch in its upper edge to provide a cradle for such iron, a spring biased plug extending into said casing and supporting one of said standards, a transformer within said casing, said transformer including a primary winding and a secondary winding having a high voltage tap and a lower voltage tap, a plug-in cord extending from said primary winding through said casing, a socket mounted on said casing for connection of such electrically heated soldering iron, and means for selectively connecting said socket to the taps on said secondary winding, said connecting means including a switch having a pair of terminals connected respectively to said high voltage and lower voltage taps, and a switch arm normally biased into contact with the high voltage terminal and disposed in the path of movement of said spring biased plug to establish contact with said lower voltage terminal in response to movement of said plug under the weight of such soldering iron.

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