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CORDLESS ELECTRIC IRON

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Fig. 1

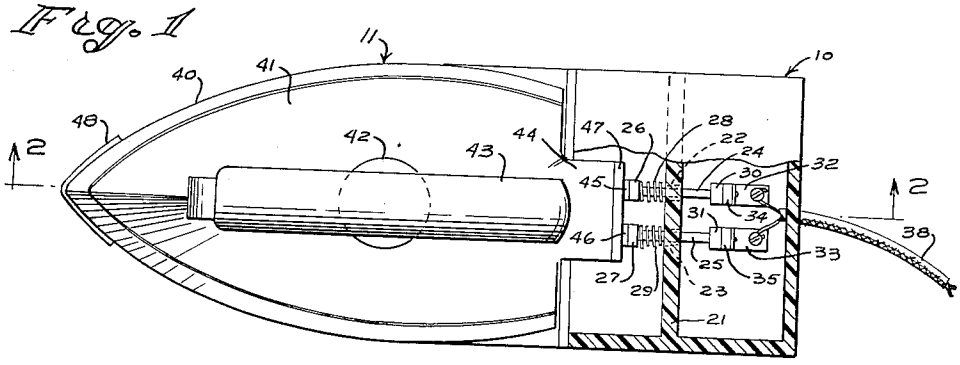


Fig. 2

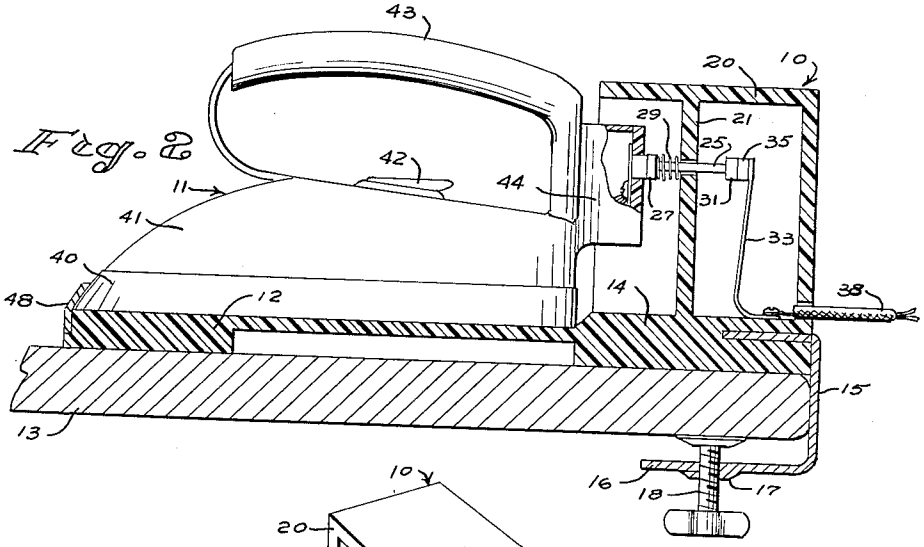
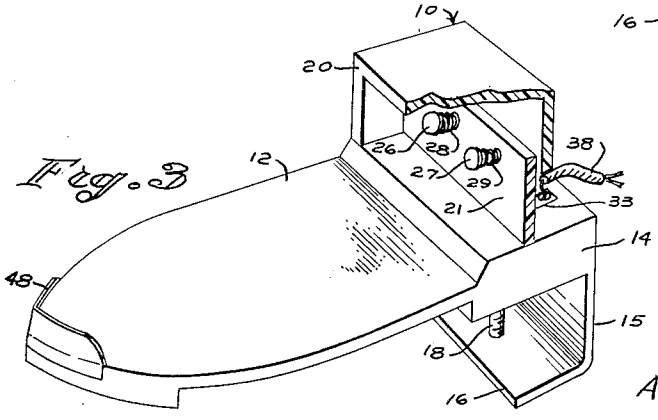


Fig. 3



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CORDLESS ELECTRIC IRON

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2 Claims. (Cl. 219—25)

This invention relates to electric irons and more particularly to an electric iron and a stand for the iron so arranged that heating current is supplied to the iron while it is supported on the stand and the iron does not have an extension cord for supplying heating current thereto while in use.

It is among the objects of the invention to provide an improved electric iron and stand assembly wherein the stand can be clamped onto an ironing board for supporting the iron when not in use and fully protects the ironing board from the heat of the iron; in which the stand is provided with contacts and an extension cord is connected to these contacts for connection to a convenience outlet of a house wiring system, and the iron is provided with contacts engageable with the contacts of the stand when the iron is in place on the stand, and with a heating element connected to the contacts of the iron; in which the iron receives its heating current from the contacts of the stand only and has no extension cord attached thereto; in which the contacts of the stand are fully protected, so that they cannot be short circuited and so that a person using the iron cannot receive an electric shock from these contacts; and which assembly is simple and durable in construction, economical to manufacture, easy to use, and effective and efficient in operation.

Other objects and advantages will become apparent from a consideration of the following description and the appended claims in conjunction with the accompanying drawing wherein:

Figure 1 is a top plan view of an electric iron and stand assembly illustrative of the invention, with a portion of the stand broken away and shown in cross section to better illustrate the construction thereof;

Figure 2 is a longitudinal cross sectional view on the line 2—2 of Figure 1; and

Figure 3 is a perspective view of the stand with a portion broken away and shown in cross section to better illustrate the construction thereof.

With continued reference to the drawing, the assembly comprises an iron supporting stand, generally indicated at 10, and an electric iron, geenrally indicated at 11, removably mounted on the stand 10.

The stand 10 is formed of a suitable heat and electrically insulative material, such as asbestos board, and includes a platform 12 of the size and shape of the bottom surface of the iron 11 and adapted to rest on the upper surface of an ironing board 13 at one end of the ironing board. A mounting block 14 is secured to and extends from the end of the platform 12 adapted to receive the heel end of the iron and a metal C clamp frame 15 has one end embedded in the mounting block 14, its intermediate portion extending downwardly from the end of the mounting block remote from the platform, and its other leg disposed in spaced and substantially parallel relationship to the leg embedded in the block 14. The other leg 16 is provided with a boss 17 having a screw threaded aperture extending therethrough, and a clamp screw 18 is threaded through this boss and is opposed to

the adjacent surface of the mounting block 14 to firmly clamp the stand on one end portion of the ironing board 13.

A housing 20 of rectangular shape is mounted on and disposed above the mounting block 14 and has an open end facing the adjacent end of the platform 12. A partition wall 21 extends transversely of the interior of the housing 20 and is disposed substantially perpendicular to the longitudinal center line of the platform and spaced from the open end of the housing.

The partition wall 21 is provided above the mounting block 14 with spaced apart apertures 22 and 23, the center lines of which are substantially in a plane parallel to the top surface of the mounting block 14, and plungers 24 and 25 of electrically conductive material extend slidably through the apertures 22 and 23 respectively.

Contacts 26 and 27 are mounted on the ends of the plungers 24 and 25 respectively, adjacent the open end of the housing 20 and coiled compression springs 28 and 29 surround the plungers 24 and 25 respectively, between the contacts 26 and 27 and the adjacent surface of the partition wall 21 of the housing.

Contacts 30 and 31 are mounted on the ends of the plungers 24 and 25 respectively, at the side of the partition wall 21 remote from the open end of the housing 20, and resilient conductors 32 and 33 in the form of flat leaf springs, are mounted on the mounting block 14 between the partition wall 21 and the closed end of the housing and extend upwardly from the mounting block to locations opposite the contacts 30 and 31 respectively. Contacts 34 and 35 are mounted on the upper ends of the resilient conductors 32 and 33 for engagement with the contacts 30 and 31 respectively, under operative conditions of the device, as will be later explained. One end of an electric current transmitting cord 38 is connected to the lower ends of the conductors 34 and 35 as by a screw which also secures the lower ends of the conductors to the mounting block 14, as clearly shown in Figure 1. The other end of the cord 38 is plugged into a source of electric current, such as a convenience outlet.

The iron 11 has a heating plate 40 and a housing 41 mounted on the heating plate and containing the heating element, not illustrated, of the iron. A thermostat adjusting knob 42 is mounted on the top of the housing for controlling the temperature of the iron, and a handle 43 is also mounted on the top of the housing and extends over the adjusting knob 42. A receptacle 44 of electrically insulative material is mounted on the outer side of the handle 43 at the heel end of the iron, and a pair of contacts 45 and 46 are disposed respectively in spaced apart apertures in the end closure plate 47 of the receptacle 44 and are positioned to respectively engage the contacts 26 and 27 when the iron is supported on the platform 12 of the stand 10.

A metal toe clip 48 is mounted on the front end of the platform 12 and extends upwardly above the top surface of the platform to engage the toe of the heating plate 40 of the iron when the iron is disposed on the platform 12, as illustrated in Figure 2, to hold the iron carried contacts 45 and 46 firmly in engagement with the corresponding contacts 26 and 27 mounted in the housing 21, so that heating current will be supplied to the iron while the iron is disposed on the stand.

When the iron is removed from the stand, the springs 28 and 29 move the plungers 24 and 25 toward the open end of the housing 20, moving the contacts 30 and 31 away from the corresponding contacts 34 and 35 to de-energize the contacts 26 and 27, so that a short circuit of the electrical system cannot be accidentally provided across these contacts, and so that a person accidentally touching either or both of these contacts will not receive an electric shock.

With this arrangement, the iron is heated while on the stand and has no extension cord attached to it to interfere with the use of the iron as it is moved over the ironing board or to become fouled or damaged by the use of the iron.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. An electric iron assembly comprising a stand including an iron receiving platform, a mounting block at one end of said platform, a housing mounted on said mounting block and having an open end facing said platform and means secured to said mounting block for clamping said stand onto a surface, a partition wall disposed perpendicularly and transversely in said housing, spring biased contacts slidably mounted in said partition wall in spaced relation and urged transversely through said wall toward the open end of said housing, an electric iron removably mounted on said platform and having contacts for engaging one end of the spring biased contacts, upstanding resilient conductors disposed within said housing between said partition and the closed end of said housing and having the lower ends of the conductors connected to a source of electric current, contacts carried by said conductors at their upper ends for engagement with the other ends of said spring biased contacts in said partition wall, the contacts on said iron forcing said one end of the spring biased contacts in a direction away from the open end of said housing to connect the spring biased contacts at said other end to the contacts carried by said conductors, the connection between the contacts at said other end of the spring biased contacts and the contacts on said conductors being normally open.

2. An electric iron assembly comprising a stand including an iron receiving platform, a mounting block at one end of said platform, a housing mounted on said mounting block and having an open end facing said platform and means secured to said mounting block for clamping said stand onto a surface, a partition wall disposed perpendicularly and transversely in said housing, plungers slidably mounted in said partition wall in spaced apart relation to each other, contacts mounted on each end of said plunger, resilient means connected between said plungers and said housing resiliently urging said plungers toward the open end of said housing, contacts carried in said housing and engaged by the contacts on the adjacent ends of said plungers when said plungers are moved in a direction away from the open end of said housing against the force of said resilient means, the contacts engaged by said plunger carried contacts being connected to a source of electric power, an iron removably mounted on said platform, and contacts carried by said iron and respectively engaging the contacts on the ends of said plungers adjacent the open end of said housing, the contacts on said iron forcing said plungers in a direction away from the open end of said housing to engage the contacts connected to said source of electric current with the contacts on the adjacent ends of said plungers when said iron is disposed on said platform and said resilient means moving the plunger carried contacts out of engagement with the contacts connected to said source of electric current when the iron is removed from said platform.

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