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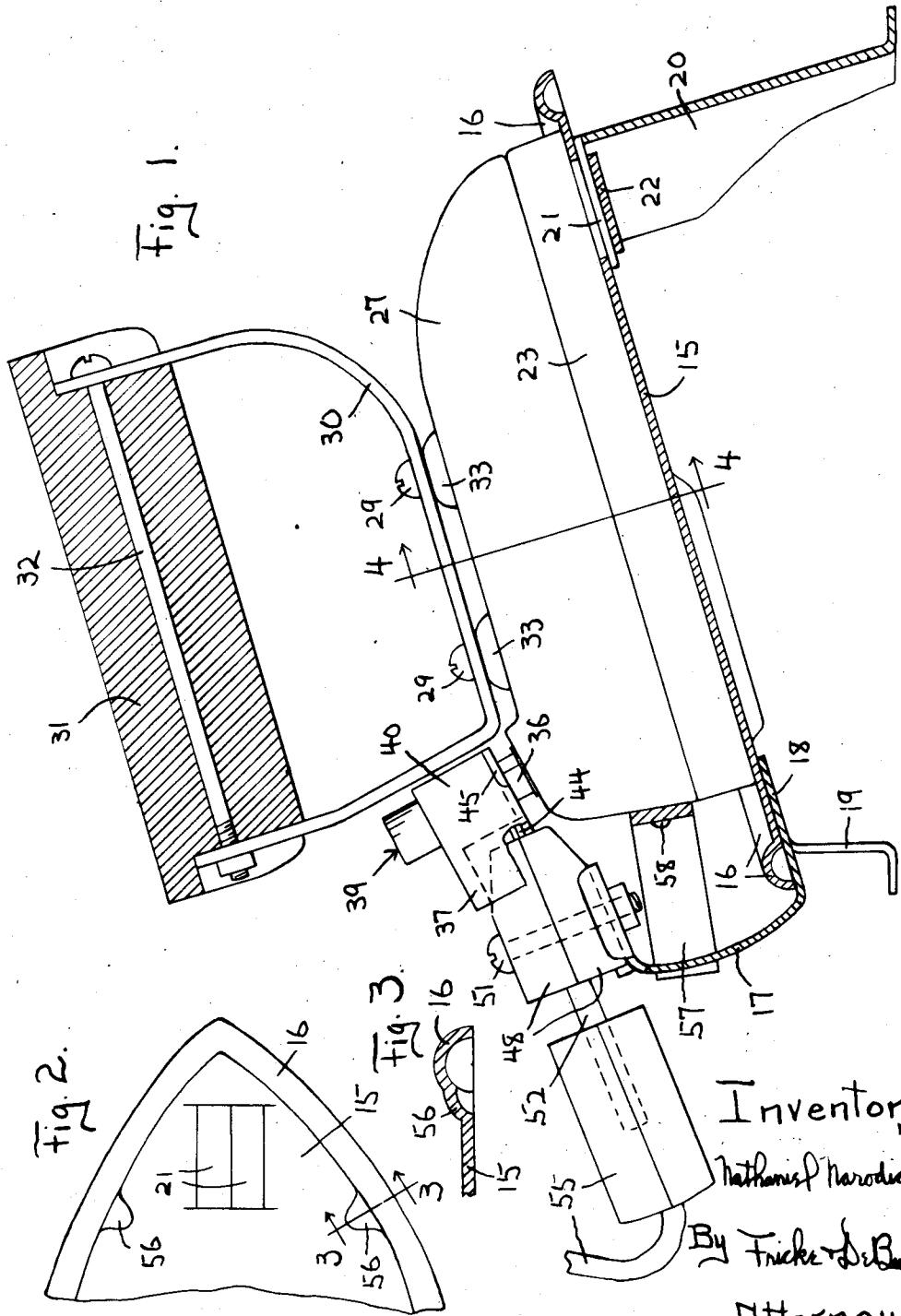
N. NARODICK

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ELECTRIC IRON AND STAND

Filed Aug. 3, 1931

2 Sheets-Sheet 1



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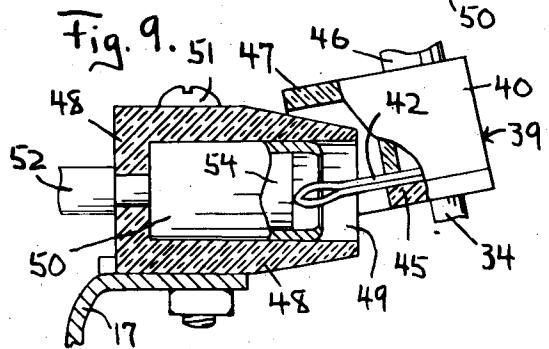
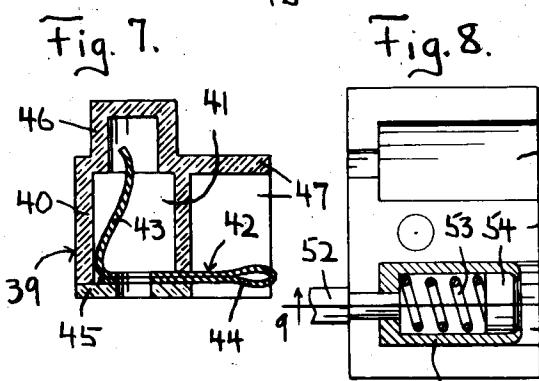
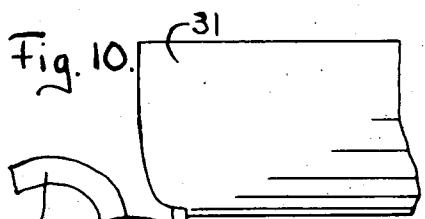
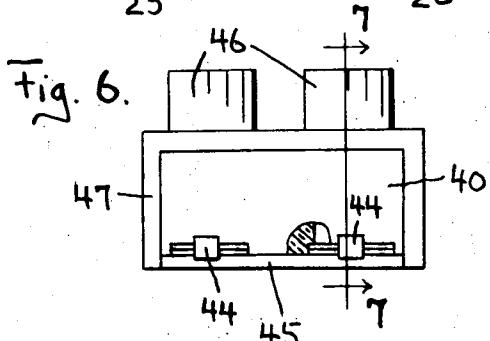
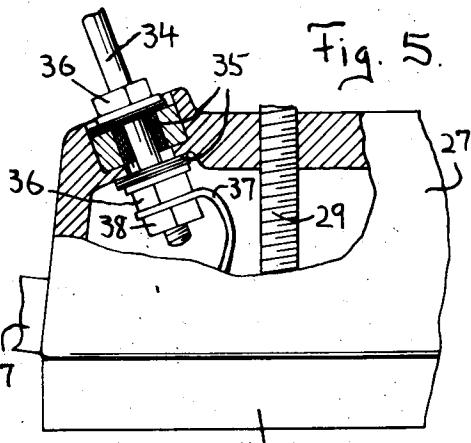
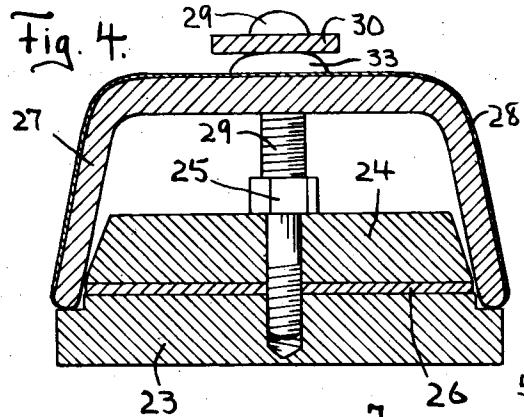
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ELECTRIC IRON AND STAND

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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ELECTRIC IRON AND STAND

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mesne assignments, to Oliver C. Ritz-Weller,
Chicago, Ill.

Application August 3, 1931, Serial No. 554,745

9 Claims. (Cl. 219—25)

My invention relates to electric irons and stands and has for its object the provision of a new and improved form and arrangement of parts, comprising an electrically heated iron, an improved supporting stand for said iron, and improved arrangements for heating the iron while on the stand and preferably so arranged that the iron can be disconnected completely from the heating unit by the mere operation of lifting the iron from the stand so as to be capable of use entirely independently of the heating means. It is another object of my invention to provide an arrangement of this type and so constructed as to enable the user to disconnect the lamp cord from the stand and to attach such cord releasably directly to the iron for use of the iron with the cord when working upon materials holding a comparatively large amount of moisture.

It is one of the objects of my invention to improve the iron itself so as to conserve the heat in the body of the iron, and to provide an improved bracket attached to the body of the iron by reason of which the iron can be stood on end and supported solidly in position without danger of burning the table upon which it is so supported, such bracket being so arranged as to provide ample clearance with respect to the table for the removable terminal unit by which operative connection is effected between the stand and the iron when in position thereon.

It is one of the objects of my invention to provide an improved stand whereby an effective structure may be produced very cheaply. To this end, it is one of the objects of my invention to provide a structure formed preferably of sheet metal stamped and pressed into shape, comprising improved means for automatically centering the iron on the stand for effective operation of the heating means, comprising further an improved bracket for mounting the heating means in position, and comprising an improved long leg structure removably mounted in position for supporting the front end of the stand in relatively elevated position.

It is one of the objects of my invention to provide an improved form of electric terminals on the stand adapted to be detachably connected with a source of electric current and adapted to have effective co-operation with an improved arrangement of terminal members on the iron. It is one of the objects of my invention to provide improved terminal arrangements fixedly mounted in unit form on the supporting stand, adapted to co-operate effectively with an improved unit form

of terminal connections removably mounted on the iron.

It is another object of my invention to provide an improved arrangement comprising an obliquely disposed supporting stand along which the iron is adapted to slide downwardly toward the fixed terminals thereon, together with improved contact means on the stand and the iron by which an effective completion of the electric circuit through the iron may be assured as desired, the terminal means on the stand being preferably of a type comprising yielding means adapted by their resiliency to hold the contacts in snug engagement for bringing about the desired effective electrical connections.

It is another object of my invention to improve devices of this type in sundry details hereinafter pointed out. The preferred means by which I have accomplished my several objects are illustrated in the drawings and are hereinafter specifically described. That which I believe to be new and desire to cover by Letters Patent is set forth in the claims.

In the drawings,—

Fig. 1 is a side view of my improved iron and supporting stand, showing the iron in position for effective operation of the heating unit therein, the stand being shown largely in vertical section, and the iron being partly shown in section and partly broken away at certain points for clearness of illustration.

Fig. 2 is a top face view of the front end portion of my improved stand.

Fig. 3 is a vertical sectional view taken at line 3—3 of Fig. 2.

Fig. 4 is a vertical cross-section through my improved iron taken at the line 4—4 of Fig. 1.

Fig. 5 is a slightly enlarged detailed view showing the rear end portion of the iron, with the handle removed and with parts broken away for clearness of illustration.

Fig. 6 is a rear face view of my improved removable terminal unit of the iron.

Fig. 7 is a vertical section taken on line 7—7 of Fig. 6.

Fig. 8 is a top view of the bottom portion of the terminal unit fixedly mounted on the stand, and showing in section one of the terminal members in position thereon.

Fig. 9 is an enlarged detailed view being a vertical section through the terminal units of the iron and the stand, being taken at a point corresponding to the line 9—9 of Fig. 8; and

Fig. 10 is a side view of the rear end portion of the iron with the electric cord connected directly

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with the iron rather than connected through the medium of the terminal units.

Referring now to the several figures of the drawings, in which corresponding parts are indicated by the same reference characters, 15 indicates a supporting plate of sheet metal comprising the body of my improved supporting stand, such plate 15 being provided with an upwardly pressed bead 16 about its outer edge serving both to strengthen the plate and to hold an iron in position thereon. At the rear end of the stand (as shown at the left in Fig. 1) a bracket 17 formed of sheet metal is provided rising above the rear end of the bracket for a purpose to be herein-after indicated, such bracket comprising a cross-bar portion 18, the ends of which are provided with downwardly bent legs 19 which are adapted to support the rear end of the plate in elevated position above a table upon which the stand is placed. At its forward end, the plate 15 is provided with a sheet metal leg 20 of considerably greater length than the legs 19, such legs 19 and 20 being adapted to support the plate 15 in inclined position so as to cause an iron in position thereon to slide backwardly toward the left in said Fig. 1 to the limit of its motion. The leg 20 is provided at its upper end with two tongues 21 formed integrally with the leg and standing at an angle with respect thereto, such tongues 21 being adapted to be inserted between the plate 15 and a short strap 22 pressed downwardly from the plate (see Fig. 1) for holding the leg 20 firmly in position with respect to the plate 15.

My improved iron (see Fig. 4) comprises a base plate or sole 23 having a smooth polished bottom face, being formed preferably of cast iron; a second plate 24, also formed preferably of cast iron, secured to the plate 23 by means of a machine screw 25, an electrical heating unit 26 of any approved type being mounted between the plates 23 and 24 and held firmly in position by engagement with said plates; and a heavy housing member 27 also formed of cast iron with a coating of enamel 28 baked on its outer face. The housing member 27 is adapted with the base plate 23 to enclose the heating unit 26 and the plate 24. The housing member 27 is secured in position upon the base plate 23 by means of machine screws 29, such screws being adapted to secure a handle also in position, such handle comprising a yoke bar 30 and a grip piece 31 of wood or other suitable material held in position upon the yoke 30 by means of a long bolt 32. Spacing washers 33 of any suitable type are preferably interposed on the bolts 29 between the yoke bar 30 and the housing member 27.

By the use of a heavy cast iron housing member 27, I am enabled to retain the heat to much better advantage within the body of the iron than is possible in the use of constructions heretofore employed, this retention of heat being expedited greatly by the provision of the coating 28 of enamel which has a marked insulating effect with respect to the escape of heat. With a construction of this type in use and with the heating unit 26 made oversized as compared with constructions in which current is to be fed continuously to the iron during use, the iron is capable of being heated very quickly and is adapted to retain the heat to such a degree as to insure that the iron will normally be kept at the desired temperature even though being subjected to the heating influence during only the intervals when the iron is temporarily out of use during adjustments and replacements of the materials being operated upon.

It will be understood that in the use of an iron of this type the retention of the heat is very important, and this feature of my improved iron is stressed accordingly.

My improved iron is provided with two permanently located terminal pins 34 as is usual in devices of this type. As is best shown in Fig. 5, each of the pins 34 extends through an opening in the upper portion of the housing 27 being insulated from the metal housing by means of 10 insulation parts 35 of mica or other suitable material, and being held in position by means of nuts 36 at opposite faces of the wall of the housing. The heating unit 26 of the iron is connected with the terminal pins 34 by means of 15 metal strips 37 secured upon the lower ends of said pins 34 by means of nuts 38.

Upon the upper ends of the terminal pins 34, I have slidably mounted a terminal unit member 39, such terminal unit member comprising 20 a block of insulating material 40 having openings 41 formed therein for the reception of the pins 34. Contact members 42 are mounted in said openings, each comprising a portion 43 extending into the opening and a portion 44 at 25 an angle projecting outwardly beyond the side faces of the block 40 (see Fig. 7). In the construction shown, the contact member 42 is formed of sheet metal, the portion 44 comprising two plies bent backwardly upon each other, with the 30 portion 43 formed integrally with one of said plies. As is clearly shown in said Fig. 7, the portion 43 normally stands in substantially central position within the opening 41, such portion being adapted to be displaced toward the left 35 in said Fig. 7 against the resiliency of the sheet metal when the pin 34 is inserted into said opening 41. This arrangement assures a tight grip of the contact member upon the pin. In the arrangement shown, the contact members 42 are 40 mounted in notches in the lower face of the block 40 as is best shown in Fig. 6, such contact members being held in position by means of a bar 45 of insulating material secured to the block and extending across the outer faces of said members 42. In the construction shown bosses 46 are provided at the upper face of the block 40 so as to provide for the suitable extension of the openings 41. A shield 47 formed integrally with the block 40 is provided across the top face and 50 opposite the sides of the contact members 42.

Upon the upper end of the bracket 17 carried by the supporting stand for the iron, I have provided a terminal unit comprising a block of insulating material formed of two plates 48 which are similar in construction, each being provided with two grooves 49 on its inner face adapted to receive contact members 50, as shown in Fig. 9. The grooves 49 in the inner faces of the plates 48 are disposed oppositely with respect to each other so that when the two plates are placed in co-operative relation they receive and hold in position two of such contact members 50. A bolt 51 is employed for holding the two plates 48 in operative relation to each other and for holding 65 such plates in position upon the upper end of the bracket 17. As is best shown in Fig. 8, each of the contact members 50 is in the form of a hollow cylinder, each cylinder having a pin 52 projecting from its rear end, the end of the pin 70 52 having preferably a pressed fit in an opening in the end wall of the cylinder. Each of the cylinders 50 in the construction shown is formed from a solid block of metal bored out into shell form. In each cylinder there is a spring 53 bear- 75

ing at its forward end against a head 54 which is slidably mounted in the cylinder and is held against withdrawal by a turned edge portion of the shell. As is clearly shown in Figs. 8 and 9 the cylinders 50 terminate some little distance from the forward ends of the openings 49, with the result that the plates 48 serve as insulating protection with respect to the electric current fed to such cylinders. It is understood, of course, that the plates 48 do not protect fully and completely with respect to the contact members 50 but a very definite protection is provided sufficient under any ordinary circumstances for preventing accidental contact with the members 50. As shown in Fig. 1, a standard cord and plug 55 of any approved form is adapted to be mounted upon the terminal pins 52 projecting from the rear face of the terminal unit member as above described for feeding current to the contact members 50.

With the terminal contact 39 in position upon the terminal pins 34 of the iron as shown in Fig. 1, when the iron is placed upon the stand in approximately centered position thereon and the iron moves downwardly to the limit of its motion toward the left in said Fig. 1, the projecting contacts 44 of said terminal unit 39 are brought into contact with the front faces of the heads 54, serving to press such heads backwardly against the action of the springs 53 into approximately the position as shown in Fig. 9. By the use of the springs 53, the heads 54 are caused to press continuously against the contact members 42, serving to complete the circuit for the iron through the contact pins 34 for feeding energizing current to the heating unit 26 of the iron.

For centering the iron by gravity upon the supporting stand for insuring proper engagement of both of the contact members 42 with the corresponding heads 54 of the fixed terminal unit of the stand, I have provided obliquely disposed lugs 56 at opposite sides of the plate 15, as is best shown in Fig. 2. Such lugs 56 have their inner faces obliquely disposed converging downwardly so that the iron has a tendency to center itself by gravity between such lugs.

Whenever it is desired, the cord and plug 55 can be slid out of engagement with the terminal pins 52, and such plug can be inserted in operative relation upon the terminal pins 34 of the iron for direct and continuous heating of the iron as shown in Fig. 10. The heating unit 26 of the iron as above described, is such that the iron cannot be used with the continuous heating by the cord connected as shown in Fig. 10 except when the work is such that the ironing can be kept substantially continuous and when the goods being operated upon hold a considerable amount of moisture, since the heating unit 26 is larger than is necessary for maintaining the heat of the iron under normal operating conditions on average work.

Upon the lower edge of the housing 21 at the rear end of the iron, I have provided a sheet metal bracket 57 held in position upon the housing by means of one or more rivets 58, extending rearwardly beyond the end of the iron to such a distance as to enable the iron to be rested on end on said bracket 57 and the handle 31 whenever it is desired to put the iron down on a table without the use of the supporting stand. The arrangement is such that when the iron is supported upon the bracket 57 suitable clearance is provided for either the plug 55 or the

terminal unit 39 upon the terminal pins 34 so as to prevent contact of such part with the table.

While I prefer to employ the form of construction as shown in my drawings and as above described, it is to be understood that my invention is not limited to such form as shown except so far as the claims may be so limited by the prior art. It will be understood that changes might well be made without departing from the spirit of my invention.

I claim:—

1. A stand for an electric iron, comprising in combination a supporting member, means for holding said member in inclined position so as to cause the iron to move by gravity to the limit of its motion rearwardly, terminal means mounted on the stand adapted by co-operation with terminal means of the iron to feed an energizing current to said iron for heating it when in normal position on the stand, and guides having faces extending downwardly and inwardly at the forward end portion of the supporting member adapted by engagement with the side edges of the base of the iron near its forward end to center the iron into normal operative position on the supporting member when the iron is placed thereon for directing the terminal means of the iron into operative engagement with the terminal means of the stand as the iron slides backwardly.

2. A stand for an electric iron, comprising in combination a supporting member, means for holding said member in inclined position so as to cause the iron to move by gravity to the limit of its motion rearwardly, terminal means mounted on the stand adapted by co-operation with terminal means of the iron to feed an energizing current to said iron for heating it when in normal position on the stand, and obliquely disposed bearing lugs having their inner faces converging downwardly with respect to each other at the forward end portion of the supporting member for centering the iron into normal operative position on said member when the iron is placed thereon.

3. In combination, an electric iron having terminal pins projecting upwardly at the rear end portion, a terminal unit member slideable downwardly upon said pins having contact members projecting rearwardly and having a shield about the upper face and at the sides of said contact members, a stand adapted to support said iron in inclined position so as to cause the iron to move by gravity to the limit of its motion rearwardly, a second terminal unit member mounted on said stand at its rear end portion and having spring mounted contact members thereon in position to engage the contact members of the terminal unit of the iron when the iron is in normal position on the stand, and terminal pins electrically connected with said second named contact members and projecting from said second terminal unit member, said two sets of terminal pins having substantially similar arrangements so as to enable a single cord and plug to have operative relationship to either of said sets alternatively.

4. A terminal unit member for use with an electric iron, comprising in combination a block of insulating material having openings therein for the reception of the terminal pins of an iron, contact members secured on said block with portions extending into said openings and other portions projecting at an angle beyond the side

face of the block, and shield means of insulating material extending from said block about said projecting contact portions.

5. A terminal unit member for use with an electric iron, comprising in combination a block of insulating material having openings therein for the reception of the terminal pins of an iron, contact members secured on said block in notches at the outer ends of said openings, and a bar of insulating material secured across the outer faces of said contact members for holding them in position, each of said contact members comprising a portion extending into one of said openings and another portion projecting at an angle beyond the side face of the block, and shield means formed integrally with the block extending from the face of the block about said projecting contact portions.

6. A terminal unit member for use with an electric iron, comprising in combination a block of insulating material having openings therein for the reception of the terminal pins of an iron, sheet metal contact members secured on said block in notches at the outer ends of said openings, and a bar of insulating material secured across the outer faces of said contact members for holding them in position, each of said contact members comprising a portion extending into one of said openings and another portion projecting at an angle beyond the side face of the block, the portion of each contact member extending into said opening having its free end portion normally disposed substantially centrally with respect to said opening in position to be displaced against the resiliency of the sheet metal upon the insertion of the terminal pin into said opening.

7. In combination, a block of insulating material in the form of two separately formed plates having registering grooves in their adjacent faces for providing openings in spaced relation to each other partially through the block, contact members in said openings spaced substantially back from the open ends of the openings and substantially filling the openings thereacross, terminal pins connected with said contact members and extending through openings of reduced size at the opposite face of said block for feeding current to said contact members and having shoulder means adapted by engagement with the rear face of the block to hold the contact members and pins against movement longitudinally, a supporting stand for an electric iron, a bracket

rising from the rear end of said stand, and a bolt securing said two plates in operative relation to each other upon said bracket in position to insure engagement between said contact members and the contact members of an electric iron in position upon said stand.

8. In combination, an electric iron having terminal pins projecting upwardly at the rear end portion, a terminal unit member having a body of insulating material slideable downwardly upon said pins and having contact members adapted to engage said pins and projecting rearwardly therefrom, a stand adapted to support said iron in inclined position so as to cause the iron to move by gravity to the limit of its motion rearwardly, a block of insulating material mounted on said stand at its rear end portion and having openings in spaced relation to each other at its front face, contact members in said openings spaced substantially backwardly from the front face of the block so as to be given insulation protection thereby, said contact members being in position for engagement with the contact members of said terminal unit member of said iron in position on said stand, and means for feeding current to the contact members carried by said block, said terminal unit member on the iron having a shield extending backwardly from the body portion adapted to enclose the forward portion of said block of insulating material at the top and sides.

9. A stand for an electric iron, comprising in combination a supporting member, terminal means mounted on the stand adapted by cooperation with terminal means of the iron to feed an energizing current to said iron for heating it when in normal position on the stand, guiding means having face portions extending obliquely upwardly and outwardly from the top face of the supporting member at its forward end portion for centering the iron into normal operative position on the supporting member by engagement with the side edges of the base of the iron when placed in position on the supporting member, and means for holding said supporting member in inclined position for causing the iron to move by gravity to the limit of its motion rearwardly for directing the terminal means of the iron into operative engagement with the terminal means of the stand as the iron slides backwardly on the stand.

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