Feb. 24, 1948. F. KUHN ET AL 2,436,753

TERMINAL FOR ELECTRICALLY HEATED IRONS

Filed May 22, 1944

FIG.1.

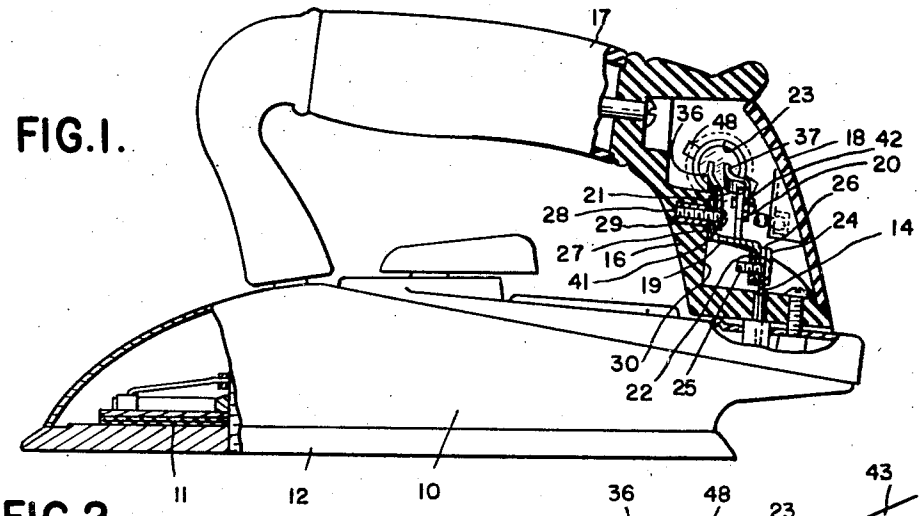


FIG.2.

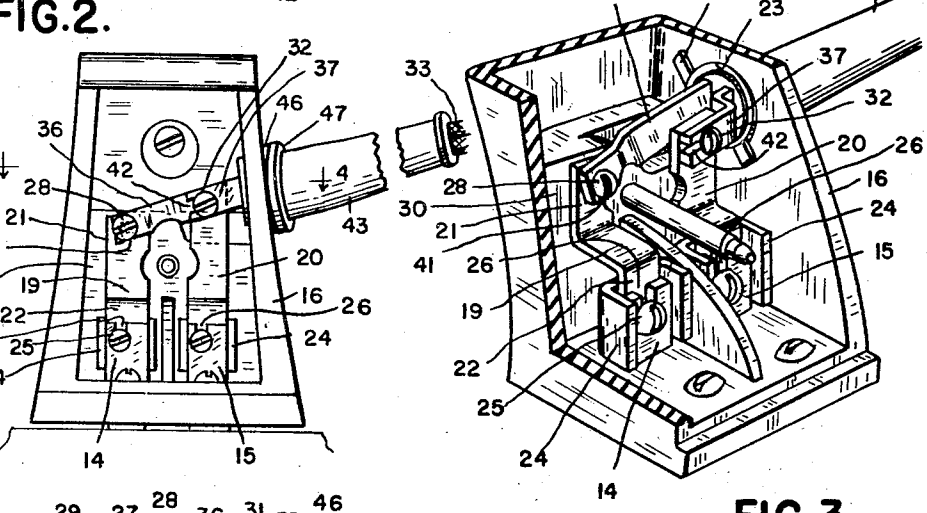


FIG.3.

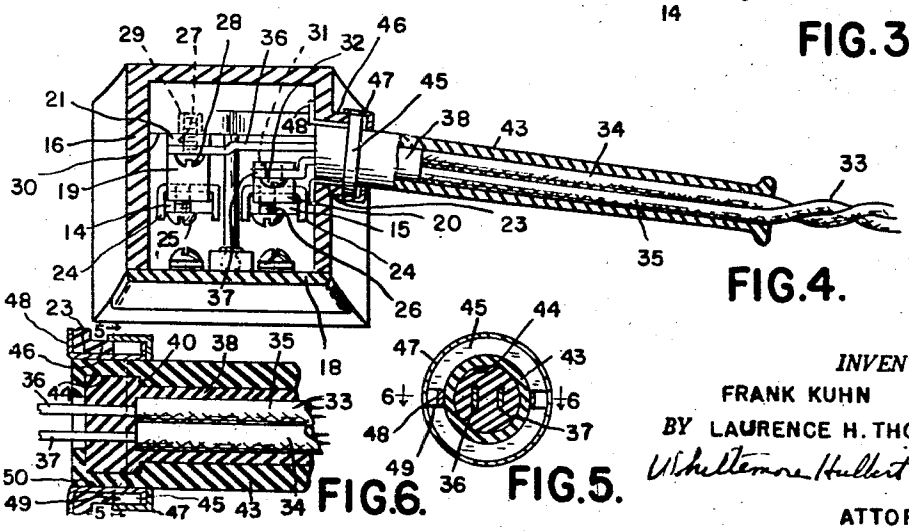


FIG.4.

FIG.6.

FIG.5.

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TERMINAL FOR ELECTRICALLY HEATED IRONS

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2 Claims. (Cl. 173—324)

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The invention relates to terminal constructions for electrically heated devices such as electric laundry irons.

One of the objects of the invention is to provide a terminal cord construction adapted to be attached to the terminals of the iron in a convenient manner by merely inserting the cord and tightening the set screws.

To this end we have provided the construction as hereinafter more fully described and illustrated in the accompanying drawings, in which

Figure 1 illustrates a side elevation of an electric iron with certain portions in longitudinal section;

Figure 2 is an end view of the terminal construction of the electric iron with the electric cord attached thereto;

Figure 3 is a perspective view of the terminal construction within the housing;

Figure 4 is a horizontal section on the line 4—4 of Figure 2;

Figure 5 is a cross section on the line 5—5 of Figure 6;

Figure 6 is a section on the line 6—6 of Figure 5.

As illustrated, 10 is an electric iron of any suitable construction having an electric resistor 11 adjacent the sole plate 12 thereof and having terminal strips 14 and 15 projecting upwardly from the resistor into a housing 16 at the rear of the handle 17. A cover 18 is arranged to be detachably secured to the housing, and the construction as thus far described is similar to that shown in our Patent No. Re. 22,048, March 10, 1942.

In the prior construction the flexible wires of the terminal cord were secured to the terminal strips 14 and 15 by bending the bared ends of the flexible wires around binding screws on each terminal strip.

One of the objects of the present invention is to provide an improved terminal construction for the electric iron of our prior patent whereby the flexible cord may be more easily fastened to the terminals of the electric iron. More specifically, it is the object to provide the terminal cord with rigid instead of flexible ends which are held in predetermined relation with each other and are so arranged as to readily engage the binding screws on the terminals.

Thus, as shown, the vertically extending terminal strips 14 and 15 are provided with upward extensions 19 and 20, each of which is in the form of a metal strip, the upper end 21 of which is displaced laterally from the plane of the lower portion 22 so as to register with the side opening 23 in the housing 16. These extensions are secured

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to the respective terminal strips by suitable clamping means such as the U-shaped yoke 24 and the binding screw 25, the latter extending through a notch 26 in the terminal strip and threadedly engaging the yoke. The extension 19 furthest from the opening 23 has an aperture 27 in its upper portion through which passes a binding screw 28 threadedly engaging a metal insert 29 molded in the rear face 30 of the housing 16. The upper end of the extension 20, which is closer to the opening 23, extends in a vertical plane to the rear of the plane of the first mentioned extension 19 and has a threaded aperture 31 for receiving a binding screw 32.

The terminal cord 33 has each of its two conductors 34 and 35 permanently connected to the metal strips 36 and 37 respectively. In order to maintain these two strips in approximately fixed relation to each other, there is provided a molded ferrule 38 surrounding the portion of the cord where the strips are connected to the conductors. This ferrule may be made of a rubber composition or a plastic or other suitable material having electrical insulating qualities and adapted to permit slight flexibility of the strips while maintaining them in approximately fixed positions. Preferably the ferrule has a cylindrical end portion of slightly enlarged diameter forming a shoulder 40. The strip 36 has on its lower edge a notch 41 adapted to engage the binding screw 28 and to be clamped against the extension 19 by the head of said binding screw. The other strip 37 is laterally spaced from the strip 36 and is of shorter length, having a notch 42 in its outer end adapted to engage the binding screw 32 and to be clamped by the head of said screw against the extension 20.

With the construction described, the cord may be quickly assembled to the terminals of the iron by merely inserting the end of the cord through the opening 23 and simultaneously or successively engaging the notches in the strips 36 and 37 with the binding screws 28 and 32 respectively and while thus engaged tightening said binding screws. The slight flexibility of the ferrule 38 permits the assembler to make whatever slight adjustment is necessary to facilitate the quick engagement of the strips with the respective binding screws.

43 is a flexible sleeve of rubber or flexible plastic composition which may be slipped over the cord 33. It has at one end the slightly enlarged bore 44 adapted to fit over the enlarged end of the ferrule 38. It also has a flange 45 at the same end for engaging the boss 46 surrounding

the opening 23 in the housing 16. For retaining the sleeve in position there is provided a metal retainer 47 engaging the flange and having prongs 48 extending through notches 49 in the flange and notches 50 in the periphery of the opening 23 so that they may be clamped on the inner wall of the housing 16. Thus the terminal cord may be simply connected to the electric iron and held firmly to the housing 16, relieving any strain on the connecting strips 36 and 37.

The sleeve 43 prevents the excessive bending of the electric cord adjacent to the electric iron.

With the construction as described, if the electric cord becomes defective it may be quickly removed and a new cord of identical construction substituted therefor. However, in the event that a substitute cord having the terminal construction described is not readily available, the terminal construction hereinbefore described lends itself readily to the temporary insertion of an ordinary electric cord. Such cord may be slipped through the sleeve 43 and the bared ends of the flexible conductors may be clamped to the terminal strips 18 and 19 by means of the binding screws 25, it being preferable to first disengage and remove the two extensions 19 and 20 during this temporary expediency.

What we claim as our invention is:

1. The combination with a housing having an aperture through a side wall thereof and also provided with a removable closure, electrical terminals within said housing in spaced planes and in registration with said aperture and an attachable service connection comprising a flexible insulated conductor cord, rigid conductor strips connected to the conductors of said cord, a ferrule of molded insulating material surrounding a portion of said flexible cord and having an apertured head portion for the passage of said conductor strips therethrough to hold the latter in spaced relation substantially corresponding to the spacing of said terminals, a flexible insulator sleeve surrounding said ferrule and extended over a portion of said flexible conductor, said sleeve having a portion for fitting into said aperture and a flange adjacent to said portion for abutting against the housing, a fastener having a portion engaging said flange and a prong extending through said aperture and bendable into clinching engagement with the wall of said housing, and clamping screws for centering said rigid conductor strips respectively to said terminals accessible when said closure is removed.

2. The combination with a housing having an aperture boss on a side wall thereof and also provided with a removable closure of terminals within said housing, electrical terminals within said housing in spaced planes and in registration with said aperture and an attachable service connection comprising a flexible insulated conductor cord, rigid conductor strips connected to the conductors of said cord, a ferrule of molded insulating material surrounding a portion of said flexible cord and having an apertured head portion for the passage of said conductor strips therethrough to hold the latter in spaced relation substantially corresponding to the spacing of said terminals, a flexible insulator sleeve surrounding said ferrule and extending over a portion of said flexible conductor, said sleeve having a shoulder abutting the end of said ferrule and also provided externally with an annular flange for abutting against said apertured boss, a fastener having a portion engaging said flange and prong portions extending through the aperture and engaging grooves on diametrically opposite sides thereof, said prongs being bendable into clinching engagement with the inner face of the wall of said housing, and clamping screws for securing said rigid conductor strips respectively to said terminals, said screws and said prongs being accessible when said closure is removed.

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