Nov. 19, 1940. S. T. WALKUP 2,222,327

ELECTRIC SMOOTHING IRON DEVICE

Filed July 28, 1939

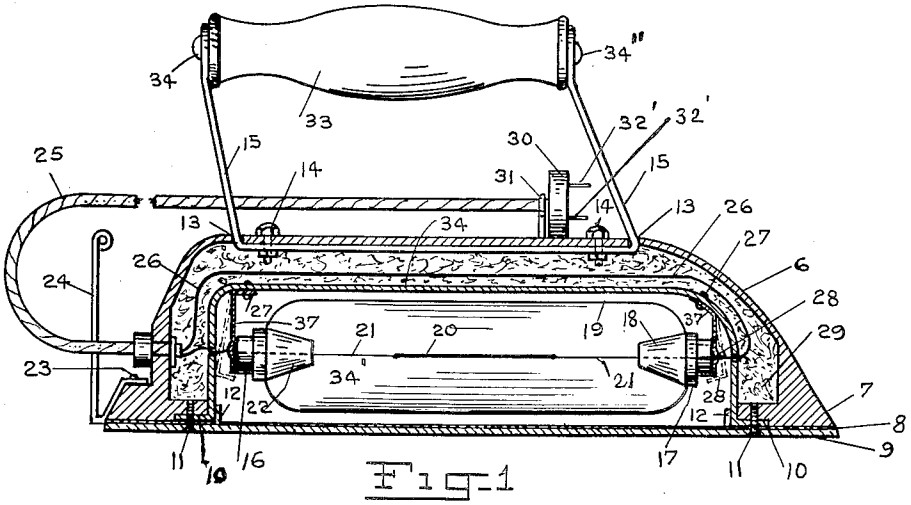


Fig-1

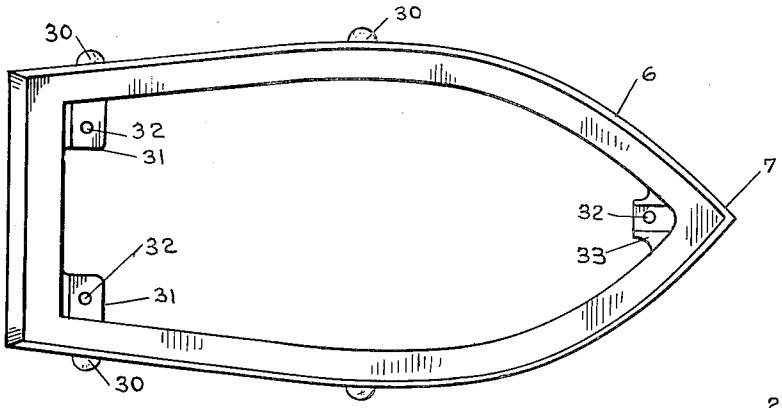


Fig-2

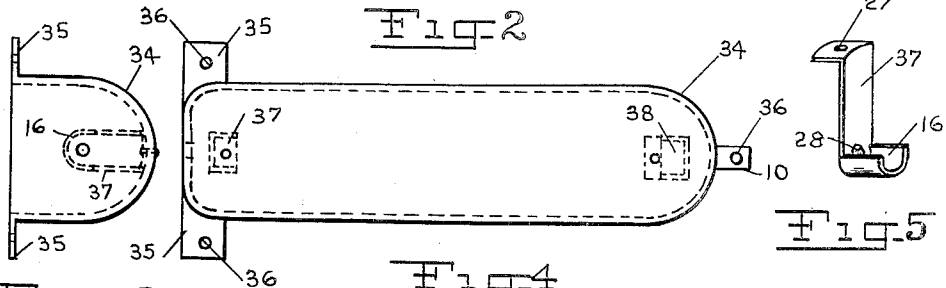


Fig-3

Fig-4

Fig-5

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Patented Nov. 19, 1940 2,222,327

UNITED STATES PATENT OFFICE

2,222,327

ELECTRIC SMOOTHING IRON DEVICE

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Application July 28, 1939, Serial No. 287,159

15 Claims. (Cl. 219—25)

This invention relates to electrically heated smoothing irons and it has special reference to such smoothing irons which are used for household and laundry purposes.

The objects of my invention are: First, to heat the presser or bottom of a smoothing iron from electric energy radiated in a vacuum container such as glass or aluminum from an incandescent wire at a cost of about one-third of the costs of the electricity consumed by the ordinary open wire conductors now in general use. Second, to conserve, reflect and concentrate the light and heat radiated in a vacuum container on the presser part of the smoothing iron. Third, to insulate in part the heat in an oven of which the presser of the smoothing iron forms a bottom through which sufficient heat is held and escapes so as to efficiently and economically perform its work. Fourth, to predetermine the degree of heat for the presser of the smoothing iron so as not to scorch and burn the material which may be pressed. Fifth, to furnish an aluminum presser to retain and distribute the heat. Sixth, to supply a copper plated aluminum presser so as to prevent any discoloration from the use of aluminum for the presser part. Seventh, to change quickly and economically the heating element for a smoothing iron when necessary and thereby save time and expenses over and above that required by the replacement by the open wire conductors.

Other objects shall appear in the following descriptions of one form which my invention may assume and as illustrated by the accompanying drawing, in which,

Fig. 1 is a longitudinal view of a smoothing iron partly in section.

Fig. 2 is a plan view of the smoothing iron device looking up with the copper plated presser removed.

Fig. 3 is an end view of the heating oven reflector.

Fig. 4 is a plan view of the heating oven and reflector looking downward.

Fig. 5 is a view of the spring bracket which holds the vacuum heating element container in position in the heating oven.

The accompanying drawing and the following description set forth sufficiently in detail certain means which embody the invention. However, they constitute but one form of the various forms in which the principle of the invention may be used.

In the drawing numeral 6 is the top housing for the heating elements for the smoothing iron device. It may be made of plastic material or other suitable material in general use. 7 is the point of the smoothing iron. 8 is a thin plate of isinglass for insertion between the presser 9 and the housing 6 so that heat cannot readily pass from one part to another. 10—10 are the feet support of the bright aluminum heat and light reflector 34 which, together with the rock wool 29 placed between 34 and 6 conserves, reflects and concentrates the heat and light on the presser so as to heat it sufficiently for performing its work efficiently and economically. The presser is made of cast aluminum so as to retain the heat without permitting it to escape too freely, and it is copper plated so that it will not discolor the articles which may be pressed. 11—11 are suitable screws which fasten the presser, the isinglass and the feet of the reflector firmly together. 12—12 are bracket projections of presser 9 to further hold the parts together firmly. 13—13 are holes in the housing for bracket extensions 15—15 for holding hand gripper 33 which is centrally supported by rod 34'' passing through it and the bracket extensions. 34 has rivet heads to securely hold the parts together. 14—14 are bolts through the housing and the horizontal middle section of 15—15 to hold the parts together securely by adjustable nuts for the ends of the bolts. 37—37 are resilient adjustable brackets fastened by bolts 27—27 through holes 27'—27' to the reflector 34. The bracket 37 has a cup shaped support 16 and socket 28 to support and hold in place the round insulation ends of 18 and 22 which tightly hold in position vacuum 34'. 20 is the straight line heat and light element which is tungsten or other like material. It is supported in the vacuum container 34' which is glass or aluminum or like suitable material. The light and heat element is connected to straight line supporting conductors 21 and 21 which continue through sockets in resilient supporting brackets 37—37. The wire conductors are insulated and enter insulation cord 25 with terminals at 32—32 which are connected to the ordinary house lighting wire conductors for supplying electric energy to heat and light element 20. 19 is the heating oven space which can be raised to the proper temperature for transmission of its heat to the presser for ironing by the consumption of the heat and light element of 150 watts of electric energy per hour which is radiated in the glass or aluminum vacuum container. The temperature for the presser is thus regulated by the amount of

wattage consumed by the heat and light element. The ordinary open long wire circuit conductors now used for heating smoothing irons consume on an average 750 watts per hour. The straight line circuit conductors in the vacuum containers save some heat which is wasted at the conductor stem and socket of the ordinary electric lamp. **35—35** are back fingers for fastening to the presser the aluminum reflector. **36—36** are holes in the back fingers for the fastening bolt. **32—32** are holes in the base plates. **31—31** and **33** for the purpose of holding the presser and isinglass to the base of the housing. **30** is plug. **32'—32'** are plungers for socket connections of house lighting wire conductor. **25** is conductor cord with bracket support **31** fastened to the housing. **30—30** are insulation knobs at the sides for the iron at rest. **24** fastened by bolt **23** at the back of the housing is also for the iron at rest. **26** is wire conductor.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. In an electric smoothing iron device the combination of a tungsten lamp of approximately 150 watts for heating a smoothing iron, a heating oven in which said lamp is enclosed, said oven having an aluminum bottom adapted for forming the presser portion of said iron and an aluminum body surrounded by rock wool adapted for insulating, conserving and concentrating the radiated heat within said body and the dead air spaces in said rock wool surrounding it and for conducting said heat through said body into the presser for ironing, a housing surrounding the body of said oven adapted for holding said rock wool insulation in normal position against the body of said oven and in the dead air space between said housing for operating said iron.

2. In an electric smoothing iron device the combination of electric heating means for heating said iron, a heating oven enclosing said heating means, an aluminum bottom for said oven adapted for forming the presser and for receiving the heat radiated in said oven and conducting it through said presser to the material for ironing, an aluminum body for said oven surrounded by rock wool having dead air spaces therein and adapted for insulating, conserving and concentrating the radiated heat in the atmosphere in and surrounding said body through which heat is conducted into said presser for heating it, a housing surrounding the body of said oven adapted for holding in normal position said rock wool insulation in the dead air space between said housing and said body of the oven and for supporting said oven and means for operating said iron.

3. In an electric smoothing iron device the combination of electric heating means for heating a smoothing iron, said heating means comprising an aluminum vacuum tube container having insulation ends through which, at the center, extension wire conductors pass in a circuit for supplying electricity from its source to a tungsten heating element which is supported at its opposite ends by said extension wire conductors in the longitudinal middle section of said vacuum container, spring resistance bearings with open tops and with sockets through their sides for mounting therein the sides and ends of said insulation of said container, an extension cord enclosing insulated wire conductors connected in circuit, at the heel of said iron, to the ends of said extension conductor wires leading to and from said tungsten element which conductors pass through parts of said iron to suitable connections with said circuit conductors enclosed in said cord having an insulation plug supporting terminal plungers for connecting in said circuit to the house lighting wire socket terminals, a support mounted on the top of said iron for holding the end of said cord and its plug in a positive position when at rest, a heating oven enclosing said heating means and having a body surrounded by rock wool adapted to insulate, conserve and concentrate said radiated heat and for conducting said heat through the metal body of said oven into an aluminum presser, a film of copper covering the smoothing surface of said presser, an insulated housing surrounding the body of said oven,—means for operating said iron, and insulation knobs mounted on the sides of said housing for supporting said iron at rest.

4. In an electric smoothing iron device the combination of a tungsten heating element in a circuit from the source of electricity, adapted for heating a smoothing iron, a vacuum container enclosing said heating element, a heating oven, enclosing said vacuum container, having the body of said oven surrounded by rock wool adapted for insulating, conserving and concentrating said heat in the air spaces in and around said body which is adapted for conducting said heat into the presser portion of said oven, a housing insulated by rock wool adapted for holding it in normal position in the dead air space between said housing and the body of said oven and for supporting said oven and means for the operation of said iron.

5. In an electric smoothing iron device the combination of a tungsten straight line electric heating element having conductors, in circuit to the source of electricity, supporting it in the central section of a vacuum aluminum tube with insulation ends through which heat and light is radiated, adjustable supports for mounting therein said insulation ends, an aluminum oven enclosing said heating device, rock wool insulation adapted for storing in and around the body of said oven the radiated heat from said heating element, means for conducting said heat through the metal body of said oven into the aluminum presser of said iron and an insulated housing for supporting said oven, the insulation material surrounding the body of said oven and a hand gripper for operating said iron.

6. In an electric smoothing iron device the combination of an electric lamp for heating a smoothing iron, an insulated oven enclosing said electric lamp, rock wool for storing heat in and around the body of said oven, a metal body on said oven adapted for conducting said heat into said presser for ironing, a housing insulated by rock wool for supporting said insulated oven, and means for operating said iron.

7. In an electric smoothing iron device the combination of an electric lamp for heating a smoothing iron, a heating oven enclosing said heating means, said oven comprising a cast aluminum bottom adapted for forming its presser and a bright aluminum body, surrounded by rock wool which is adapted for insulating, conserving and concentrating said heat in and around said bright aluminum body which is also adapted for reflecting and concentrating said heat and the light of said heating means upon said presser for heating it, said presser having its smoothing surface coated with copper for the purpose of preventing discoloration of the ironed article, an

insulated housing adapted for supporting said oven and means for operating said iron.

8. An electric smoothing iron device consisting of an aluminum vacuum container, a tungsten heating element consuming approximately 150 watts of electricity supported by conductors and enclosed at the central section of said container within a smoothing iron adapted for heating its presser and a suitable housing for said device supporting means for operating it.

9. An electric smoothing iron device consisting of a vacuum container enclosing a resistance element consuming approximately 150 watts of electricity supported by straight line conductors mounted in the ends of said container which encloses said element adapted for heating a presser, an insulated housing for said presser and means for operating said device.

10. An electric smoothing iron device consisting of a vacuum container enclosing a resistance element consuming approximately 150 watts of electricity for heating a presser, a heating oven surrounding said container, a chamber enclosing suitable insulation surrounding the body of said heating oven and means for operating said device supported by said chamber.

11. An electric smoothing iron device consisting of an aluminum vacuum container enclosing a resistance heating element for the radiation of heat to the surrounding atmosphere, an aluminum oven enclosing said atmosphere, the body of which oven is adapted to concentrate, conduct and transfer the heat in and about it into the presser which is the bottom of said oven which reflects and concentrates the radiated heat directly for said presser, a chamber having its outside wall insulated from the presser and supporting the operating means and its inside wall adapted for forming the body of said oven, insulation means inclosed by said chamber, adapted for concentrating and storing said heat in and about the body of said aluminum oven and for controlling and accelerating the flow of heat in all directions into said presser for distribution and transfer to articles for ironing and adapted for increasing the efficiency and usefulness of the inherent properties of aluminum for concentrating and storage, conduction, distribution and acceleration of the supply of heat for articles requiring it.

12. An electric smoothing iron device comprising means for operating said device, a tungsten heating element enclosed in a vacuum container adapted for distributing and transferring the radiated heat to the surrounding atmosphere, an oven enclosing said atmosphere which conducts and transfers the heat to the body of said oven and to the bottom which forms the presser of said smoothing iron device, an insulation chamber, surrounding the body of the oven, enclosing rock wool and dead air adapted for insulating the radiated heat in and about the body of said oven and causing it to flow from all directions into and through the the presser, which is not insulated, adapted as a pre-determined section of said oven for the escapement of heat for ironing.

13. An electric smoothing iron device consisting of a vacuum container enclosing a resistance heating element of approximately 150 watts for heating an aluminum presser having a coating of copper at its smoothing surface, a heating oven surrounding said container, an insulation chamber surrounding the body of said oven, and a housing insulated from the presser having means for operating said device.

14. An electric smoothing iron device having a predetermined section of a heating oven with its body insulated adapted for forming a presser and the escapement of heat generated by a resistance element of approximately 150 watts in a vacuum container enclosed by said heating oven within said device and means for operating it.

15. An electric smoothing iron device consisting of a chamber of which the outer wall is adapted for forming the housing and the support for the operating means for said device, and the inside wall is adapted for forming the common body of a heating oven, and heat insulation enclosed by said chamber adapted for concentrating, storing heat in and about the body of said oven, impelling and accelerating the flow of said heat, generated by an electric heating element enclosed in a vacuum container within said oven, into the bottom and presser of said oven adapted for heating articles outside of said oven for ironing.

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