Oct. 19, 1943. E. G. LOFGREN 2,332,468

FLATIRON

Filed Aug. 13, 1941

Fig. 1

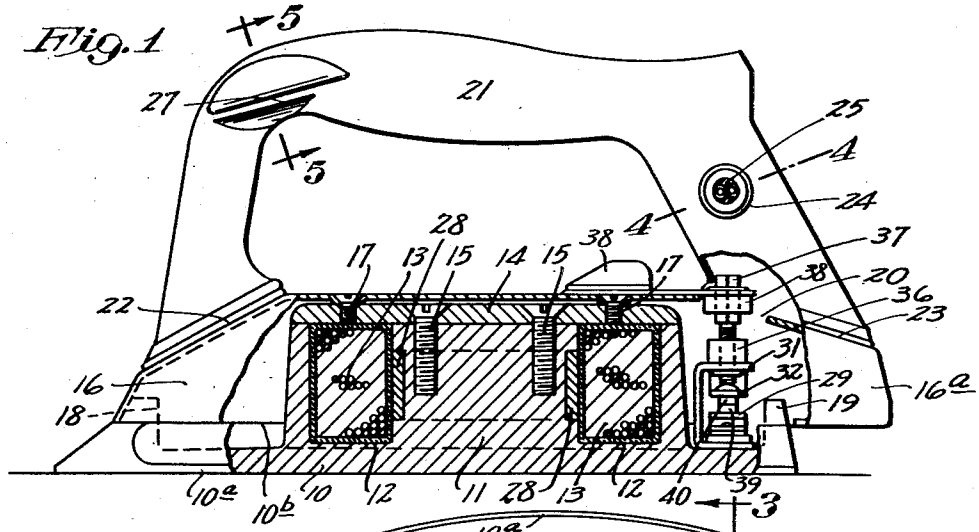


Fig. 2

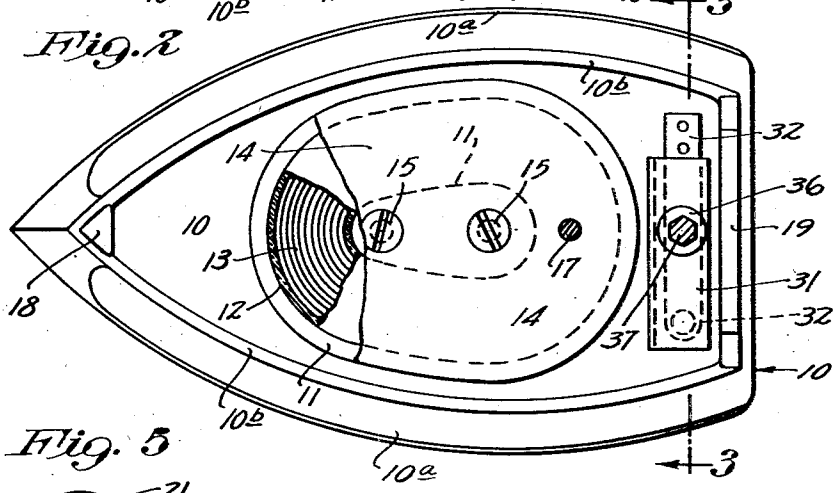


Fig. 5

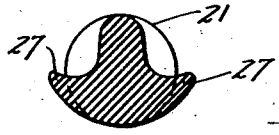


Fig. 3

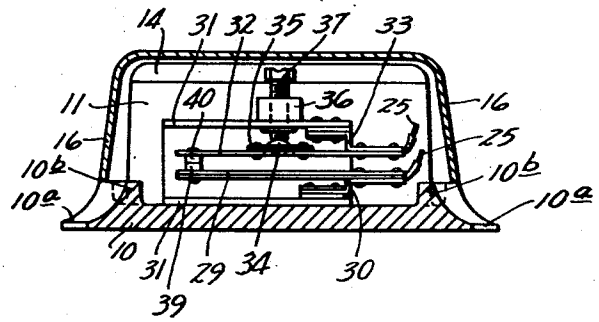
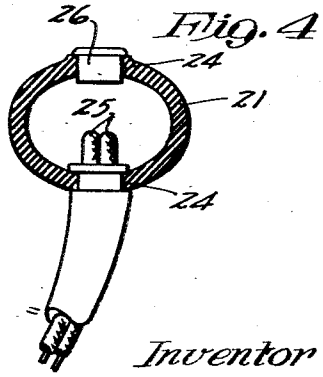


Fig. 4



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UNITED STATES PATENT OFFICE

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FLATIRON

Einar G. Lofgren, Minneapolis, Minn.

Application August 13, 1941, Serial No. 406,630

1 Claim. (Cl. 219—25)

My present invention provides an extremely simple and highly efficient flatiron, this term being used in a broad and liberal sense and, generally stated, the invention consists of the novel construction, combination and arrangement of parts hereinafter described and defined in the claim.

The objects of my invention are to provide a flatiron in which the heat energy is produced in a metallic sole plate, such as cast iron, by the action of an alternating current on a magnetic coil or solenoid; to provide a highly efficient flatiron that may be produced at a relatively small cost; to provide an iron that will be relatively light and the parts of which may be quickly assembled and disassembled; and to provide in such an iron a thermostatic switch that may be applied in an efficient way and conveniently operated to set the iron for predetermined temperatures.

A commercial form of the improved iron is illustrated in the accompanying drawing wherein like characters indicate like parts throughout the several views.

Referring to the drawing:

Fig. 1 is a view in side elevation, with some parts broken away and some parts sectioned, showing the improved iron;

Fig. 2 is a plan view of the iron shown in Fig. 1 with the enclosing shell or casing and handle removed and with some of the other parts broken away;

Fig. 3 is a transverse section taken on the line 3—3 of Fig. 2, showing the outer shell or casing in position but with the handle removed;

Fig. 4 is a detail in section taken on the line 4—4 of Fig. 1; and

Fig. 5 is a fragmentary section taken on the line 5—5 of Fig. 1.

The base or sole plate of the improved iron is indicated by the numeral 10 and in plan view is substantially the customary forwardly tapered outline. This sole plate 10 is of cast grey iron and preferably is formed integral with a relatively thick body block 11, the perimeter of which is spaced quite distant from the rim of the sole plate. This body slack or portion 11 is formed with a deep endless channel or valley 12 that leaves a solid hub that is surrounded by said channel.

The sole plate 10, being forwardly tapered, it is very desirable for high efficiency that the body block 11 and the channel 12 thereof, in plan view, be made substantially in the form of an egg-shaped ellipse with the tapered portions extended far into the front portion of the iron. Located within the elliptical channel 12 is a correspondingly formed induction coil 13 which, of course, closely surrounds the elliptical hub of the said block. Fitted onto the top of the block 11, and hence, of correspondingly elliptical outline, is a cover plate 14 preferably of cast iron that is rigidly but detachably secured in place by machine screws 15 passed through perforations in said cover and screwed into the hub of the block 11.

A shell-like casing 16 covers the said elements 11 and 14 and is detachably secured to the latter preferably by short machine screws 17 passed through perforations in the top of the shell and screwed into said cover. The lower edge of the shell-like casing 16 is seated upon the sole plate 10 very considerably inward of the rim of said sole plate. Otherwise stated, the sole plate has a beveled rim portion 10*a* that projects beyond the lower edge or rim of said casing, as shown in Figs. 1 and 3.

Just inward of the beveled portion of its rim 10*a*, sole plate 10 is preferably formed with a raised rib 10*b* on which the lower edge of the casing 16 is seated; and to align and hold the shell thus seated, the sole plate 10 is provided at its front end with a raised aligning lug 18 and at its rear end with a raised aligning rib 19. At the rear end of the iron the casing 16 is projected at 16*a* beyond the rear end of the sole plate and near its rear end it is formed with an opening 20 through which parts of a thermally-actuated switch is adapted to be passed. The handle 21 is preferably a shell-like structure, the front end of which is flared and rigidly secured to the front portion of the casing 16 at 22. At its rear end the handle is beveled and rigidly secured, either permanently or detachably, by suitable means such as spot welding, screws or any other suitable means, as indicated at 23.

The rear portion of handle 21 is formed in opposite sides with holes 24 through which supply wires 25 may be passed from either side of the handle. The perforation not used for the passage of the wires will usually be closed by a detachable plug 26, as shown in Fig. 4.

To adapt the iron for convenient use, either with the right or left hand, the handle 21, at its front portion, is provided with projecting lugs or knobs 27. When the handle is held by the right hand the left hand lug 27 would be engaged by the thumb, produce downward pressure on the front end of the iron, and when the handle is engaged by the left hand, the thumb would be engaged by the right hand lug 27.

To increase the power factor of the iron, a

copper band 28 is preferably placed around the block 11 within the coil 13. Preferably, and as shown, this copper band 28 is cast into a recess formed in the said block.

So far as this present invention is concerned, the thermostatic switch for controlling the maximum temperature at which the iron is set, may take various forms, but as an important feature, such thermostatic switch is placed in the space at the rear of the iron and at or under the rear portion of the hollow handle 21. Of the parts of the thermostatic switch shown, the numeral 29 indicates a lower bi-metallic bar, one end of which is supported from the bottom of the iron by a small bracket 30 which, in turn, is insulated from but secured to the lower flange of a channel-shaped bracket 31 secured on the bottom of the iron at the rear portion thereof and just forward of the rear flange 19. Overlying the bi-metallic bar 29 is a resilient metal bar 32, one end of which is anchored to a small bracket 33 which, in turn, is insulated from but secured to the upper flange of the main bracket 31. At its intermediate portion resilient bar 32 is provided with a rivet-like bearing head 34 that is insulated from the said bar 32 by a small plate 35 of insulating material such as mica.

The upper flange of the main bracket 31 is shown as provided with a hub 36 through which works an adjusting screw 37. A small lever 38 is attached to the upper end of the adjusting screw 37 and is extended immediately over the top of the casing 16. The bars 29 and 32, respectively, are provided with contacts 39 and 40 which, when engaged, close the circuit through the coil 13. One of the supply wires 25 is connected to the coil 13 through the bi-metallic strip 29 and the other is connected to the coil 13 through the resilient bar 32. Obviously, adjustment of the screw 37, which is easily accomplished by movement of lever 38, will set the thermostatic switch for the desired temperature.

The beveled projecting edges of the sole plate adapt the iron to reach and iron out extended portions of garments such as the pleats that would prevent the whole body of the iron being extended so as to properly iron such places.

A preferred embodiment of the invention has been illustrated but it will be understood that various alterations in the details of construction and arrangement of parts may be made within the scope of the invention herein disclosed and claimed.

It will be understood that alternating current is the medium intended to be used to energize the induction coil.

What I claim is:

A flatiron involving a sole plate provided with a raised body block formed with an endless channel, an induction coil in said channel, a cover plate detachably secured on top of said body block, a casing enclosing said body block, coil and cover and seated on said sole plate outward of said body block, said body block being located inward of the sides, end and rear of said casing, thereby leaving air space around said block and coil, a supply circuit to said coil including a thermostatic switch that is located in the enclosed space at the rear of said body block but within the rear portion of said casing, and a handle applied to the front and rear portions of the casing, the rear portion of the handle being hollow and receiving a portion of said thermostatic switch, the said thermostatic switch having an adjusting element provided with an arm that is extended over the top of the rear portion of the casing.

EINAR G. LOFGREN.