Jan. 26, 1943. F. E. WOLCOTT 2,309,427

COMBINATION PRESSING AND STEAMING IRON

Filed May 25, 1940

Fig.1.

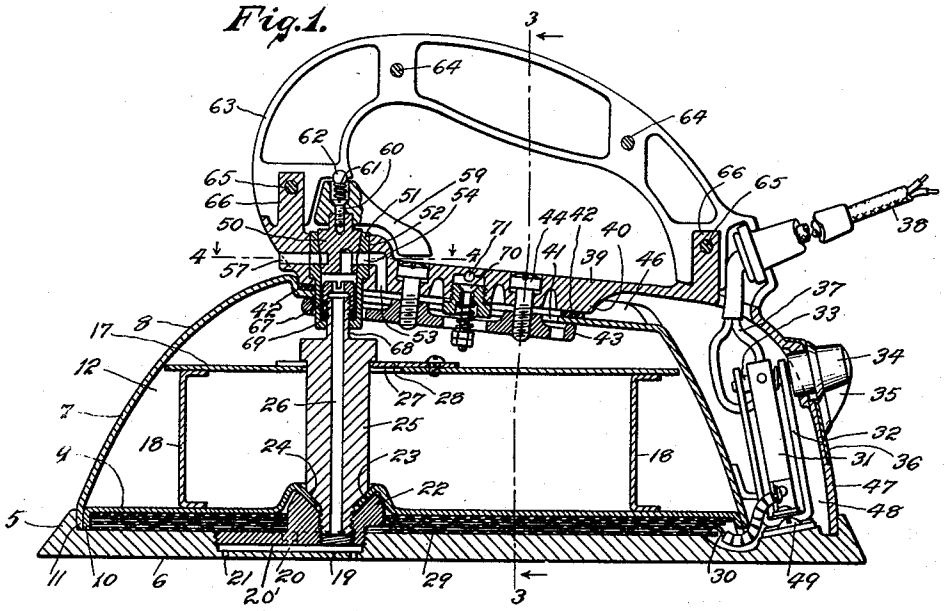


Fig.2.

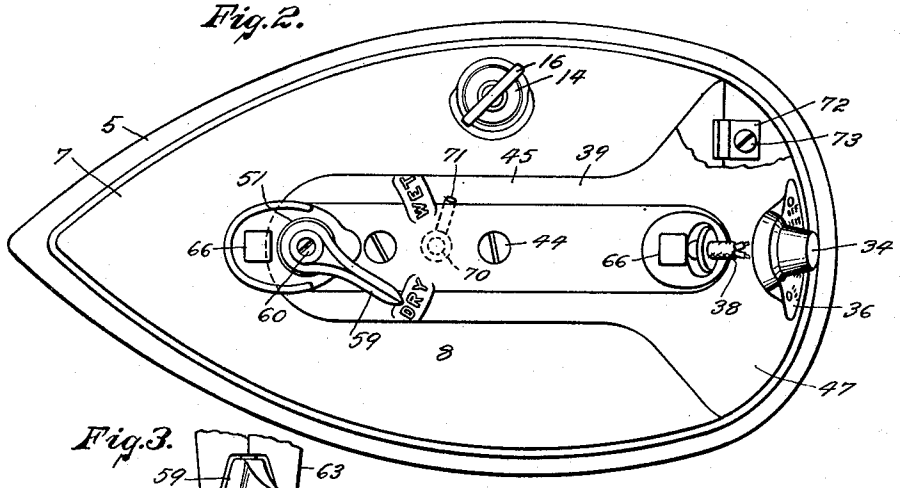


Fig.3.

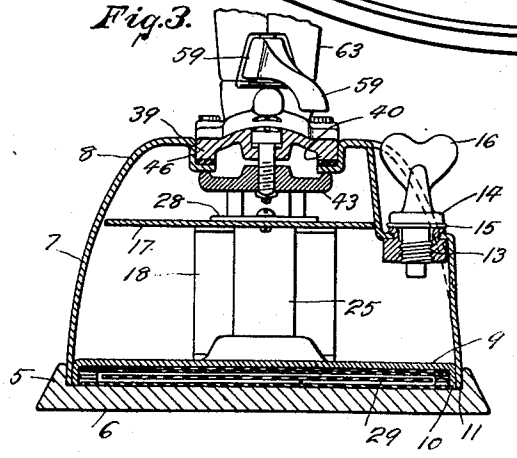
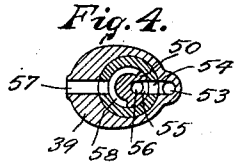


Fig.4.



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COMBINATION PRESSING AND STEAMING IRON

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Application May 25, 1940, Serial No. 337,279

8 Claims. (Cl. 38—77)

This invention relates to hand pressing irons of the type which deliver steam so as to dampen the material that is being ironed thereby; the primary object of the invention being to provide novel means for controlling the delivery of said steam.

A further object is to provide such a pressing iron having novel means including a valve whereby steam may be delivered, as and when desired, to the material being ironed, or released into the atmosphere at a point remote from the surface of said material, so that it may be ironed either dry or damp.

Further objects and advantages of the invention will be clearly understood from the following description and from the accompanying drawing in which:

Fig. 1 is a side view, in central vertical section, of my improved pressing iron, showing some of the parts thereof in elevation.

Fig. 2 is a plan view of the same with the handle thereof removed.

Fig. 3 is a view in vertical section on line 3—3 of Fig. 1.

Fig. 4 is a detailed plan view on line 4—4 of Fig. 1.

In the embodiment of my invention, as illustrated in the drawing, the numeral 5 denotes a base, or sole plate, of a pressing iron having an ironing surface 6. The body 7 of the iron is constructed in the form of a container which comprises a shell 8 having a bottom 9 that is hermetically connected thereto, such as by welding or soldering a depending flange 10 on said bottom to a flange 11 which extends along the edge of the shell 8.

The said shell provides a water and steam chamber 12 in which water is placed through a filler opening 13, which is closed by means of a plug 14 having a sealing washer 15 and a finger grip 16; the said filler opening being so located that it will determine the normal water level, within the chamber 12, at a point below a baffle plate 17 that is supported in said chamber by means of uprights 18.

The sole plate 5 is provided with a recess 19 which is closed by means of a cover plate 20', that is threaded thereinto and spaced from the bottom thereof, to provide a steam distributing chamber 20 which communicates with the ironing surface 6 of the sole plate through orifices 21.

The said cover 20' has a boss 22 with a tapered recess therein to receive the tapered wall 23 in a raised portion of the bottom 9 that is clamped to the boss 22 by means of a tapered seat 24 in the bottom of a post 25 which is threaded into the said boss and thereby provides steam tight communication between the water chamber 12 and the distributing chamber 20 through a port 26 in the post 25.

An opening 27 is provided in the baffle plate 17 to permit assembly of the post 25 to the boss 22 and the said opening is closed by means of a cover 28 which may be secured in place in any suitable manner.

The bottom 9, being spaced from the base 5 by the flange 10 thereof, provides a space in which is positioned an electric heating element 29 that consists of a plurality of laminations of non-conductive material, such as mica, including a core on which is wound an electrical resistance.

The said resistance is connected by means of lead wires, such as indicated at 30, to an electrical circuit which preferably extends through a circuit control including a bi-metal thermostat 31 that is mounted in a frame 32 and contacts with an adjustable contact on the member 33 that is manually operable by means of a knob 34 in the back of the iron; a pointer 35 being provided on said knob to register with insignia on a plate 36 for determining the adjustment of the member 33 for the degree of heat which is required in ironing different materials. The said circuit control means is not illustrated or described herein in detail since it does not comprise a part of the invention; the same, however, is connected to an electric circuit by means of lead wires 37 which extend therefrom through a cord 38 in the usual manner.

A member 39 is provided in the form of a cover which has a depending portion 40 for closing an opening 41 in the top of the container 8. The said cover 39 is secured in position, and over a packing 42, by means of a clamping plate 43, which underlies the margin of the opening 41, and is attached to the cover by means of screws 44 to clamp the said margin and packing against the surface of the depending portion 40 to thereby provide a steam tight seal for the top of the container 8.

The cover 39 has an elongated portion 45 which fits within a recess 46 in the top of the container 8 and extends rearwardly on the iron body to provide a rear wall 47 forming a chamber 48 for containing the circuit control 32 and thermostat 31. The said thermostat is mounted in heat conducting relation upon the base plate 6 by means of screws 49.

This invention includes the use of a valve to

provide for selectively controlling the operation of my improved iron; the said valve comprises a rotatable tapered valve plug 50 which is mounted within a shell 51 that is forced into a recess 52, in the portion 45 of the cover 39, which has an upright port 53 that communicates, through an orifice 54 in the shell 51, orifices 55 and 56 in the plug 50, and the port 26, with the distributing chamber 20.

The port 53 may also communicate with an exhaust port 57, through a groove 58 in the side of the plug 50 when the said plug is rotated to the proper position.

A handle 59 is secured to said plug 50 by means of a screw 60, for rotating the same to operate the valve, and a spring 61 is provided to urge the plug 50 downwardly into sealing engagement with the tapered wall of the shell 51. A ball 62 is mounted within the handle 63 to serve as a pivot for said spring.

A handle 62, preferably constructed of two opposed halves which are joined together by means of dowels 64, is secured to the iron by means of fastening members 65 which extend through uprights 66 on the cover 39.

In the form of my invention illustrated, it is preferred to connect the shell 51 to the post 25 by means of a nut 67, which is threaded to an extension 68 over a packing 69 that seals the connection, and an opening is provided in the top of said nut to permit communication between the valve and the distributing chamber 20.

In order to provide an extra margin of safety in the operation of my improved iron, a safety valve 70, which may be of any suitable construction, is mounted in the bottom of the portion 45 and adapted to open, when a predetermined steam pressure is created within the container 8, to release said pressure through a port 71 which extends laterally in said cover.

It will be understood that the sole plate 5 is secured to the body of the iron by means of the threaded connection between the post 25 and the post 22. If desired, however, additional means may be provided for retaining said plate in assembled position; such as extensions 72 on the rear wall of the container through which screws 73 extend into the sole plate for fastening said container at this point.

In the operation of my invention, the container 7 is first filled with water to the normal water level, by inserting the said water through the opening 13, and the plug 14 is then placed in position to retain said water within said container. An electrical circuit is then established by connecting the cord 28 to a suitable outlet and turning the knob 34 away from the "off" position on the plate 36 to any of the other positions indicated thereon. This will energize the heating element and cause it to heat the sole plate 5. At the same time, a portion of the heat from said element will be distributed to the water within the container and thereby cause the generation of steam which will rise above the water level and the baffle plate 17. The said steam will then pass through openings in the plate 43 and enter the space between it and the cover 39 from which space the steam will enter the port 53 and the orifice 55.

When the valve plug 50 is in the position illustrated in Figures 1 and 2 of the drawing, in which the said handle is shown registering with the insignia "Dry" on the cover 39, the steam will pass, through the said plug and the duct 26, into the distributing chamber 20 and be distributed therefrom, through the orifice 21, upon the work being ironed and thus dampening said work with steam as it is being ironed with the heated surface 6 of the sole plate 5.

If it is desired to discontinue the application of steam upon the work being ironed, the handle 58 is moved to the position illustrated in Fig. 3, wherein it will register with the insignia "Wet" on the handle 39. When the handle is in this position, the plug 50 will be rotated so as to permit passage of the steam through the groove 58 and be ejected into the atmosphere from the top of the iron body through the port 57.

Should, under any possible condition, my improved iron become damaged or impaired in such a manner that passage of steam from the steam chamber in the top of the container 8 is prevented through the port 57 or the orifice 21, an appreciable increase in the pressure of said steam will operate the safety valve 70 and permit the said pressure to be released through the port 71.

It will be understood, from the above description, that I have provided a novel electric pressing and steaming iron which provides numerous advantages in the production thereof, such as reduction of the cost of manufacture by reason of the fact that the major portion of the mechanism is contained within the cover 39 which can be assembled apart from the rest of the iron, and which permits selective control of the operation thereof for applying steam to the surface being ironed, or ironing said surface dry and ejecting the steam through another portion of the iron which is remote from the ironing surface.

This manner of control is of particular importance in that it also permits intermittent application of steam, to the surface being ironed, in such cases as when it is desired to apply steam to the surface and then disconnect the said steam and continue the ironing operation to dry the surface being ironed, by simply moving the handle 58 from the "Dry" to the "Wet" position, or vice versa.

The structure described also provides for economy in construction by reason of the fact that the container can be produced from sheet metal by a stamping operation, the baffle plate inserted therein and the bottom 9 welded thereto in a manner which is considerably less expensive than the casting of such a structure by the well known moulding process.

I claim:

1. In a steaming and pressing iron of the character described the combination of a base, a hollow body on said base having a steam chamber therein and an opening in the top thereof, a cover for sealing said opening, a valve in said cover for controlling the passage of steam from said steam chamber, and pressure releasing means carried by said cover for releasing pressure from said chamber; the said means being accessible, for adjustment or replacement, only from the bottom of said cover.

2. A steaming and pressing iron of the character described comprising a base, a hollow body on said base including a steam chamber having an opening in the top thereof, and a cover for sealing said opening; said cover including steam passages entirely therein for the passage of steam from said steam chamber, a valve in said cover for controlling the said passage of steam, and pressure responsive means detachably secured to said cover from the bottom thereof and responsive to pressure in said chamber for releasing pressure from said chamber.

3. A steaming and pressing iron of the character described comprising a base, a hollow body having a steam chamber therein and an opening in the top thereof, a cover for sealing said opening, a handle comprising two upright portions and an intermediate portion extending between said upright portions and spaced above said cover, and a valve in said cover for controlling the passage of steam from said chamber, and means extending under said handle from one of said upright portions for manual operation of said valve.

4. A pressing iron of the character described comprising a base, a container having an opening therein and mounted on said base, means for heating said iron, a cover on said container for confining steam therein, a handle for said iron, a valve supported by said cover for selectively controlling the ejection of steam from said container, and a rotatable plug in said valve retained in operable position therein by said handle.

5. A pressing iron of the character described comprising a hollow body having a steam chamber therein, a valve including a tapered plug for controlling the passage of said steam from said chamber, an operating handle on said plug, a handle on said body overlying said operating handle, and spring means between said handles urging said plug into seated position in said valve.

6. In a steaming and pressing iron of the character described a base, a hollow body mounted on said base and a steam chamber in said body having an opening in the top thereof, a cover sealing said opening, a clamping plate underlying the marginal portions of said opening, fastening means extending from said cover into said clamping plate for clamping said cover in sealing position and a handle for said iron secured to said cover.

7. For an iron of the character described, a body formed of sheet metal having an opening in the top thereof, a baffle plate located within said body, a bottom having the marginal portion thereof hermetically attached to the marginal portion of said body, support means between said bottom and baffle plate for positioning said baffle plate in said body, means in said bottom for hermetically connecting the same to a sole plate of the said iron, a cover for said opening, a clamping plate in said body having abutment means engaging the marginal portion of said opening and fastening means extending through said opening into said clamping plate for securing said cover on said body.

8. A pressing iron of the character described comprising a base, a body on said base having a steam chamber therein and an opening for said chamber, a heating element between said body and base for heating said iron and generating steam within said chamber, a steam distributing chamber in said base, an orifice communicating said distributing chamber with the surface of said base, ducts connecting said steam chamber with said distributing chamber, a baffle plate in said steam chamber and above the normal level of water from which said steam is generated, a cover for sealing said opening, means for securing said cover providing a second baffle plate in the upper portion of said steam chamber and a valve in said cover for selectively controlling the passage of steam from said steam chamber to the orifice in said base.

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