Dec. 12, 1950 C. M. CHAPIN 2,533,995

STEAM ELECTRIC PRESSING IRON

Filed June 5, 1946 2 Sheets-Sheet 1

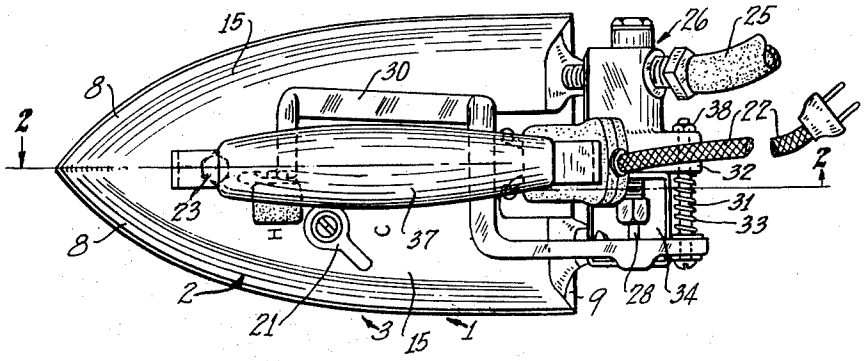


Fig. 1.

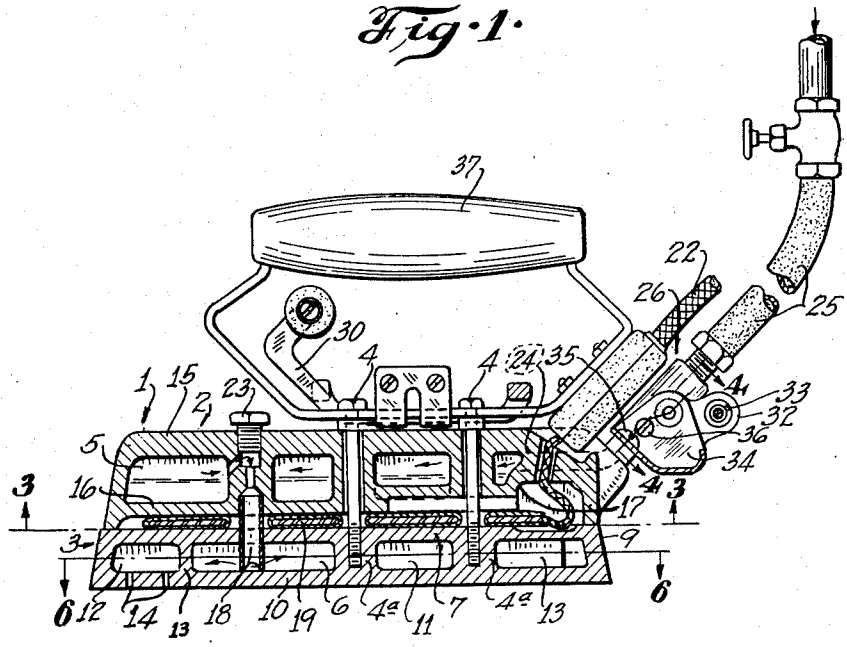


Fig. 2.

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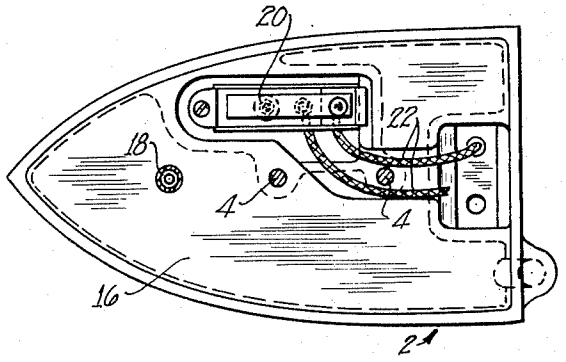


Fig. 3.

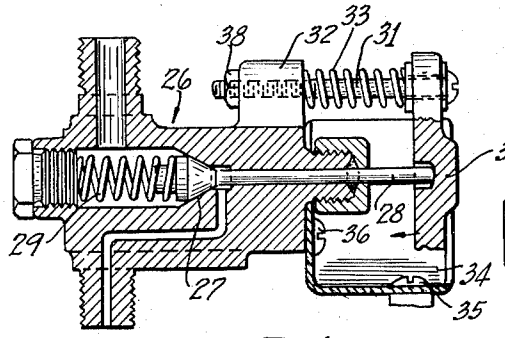


Fig. 4.

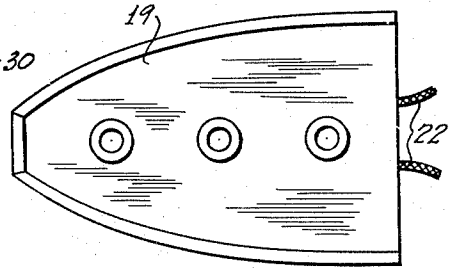


Fig. 5.

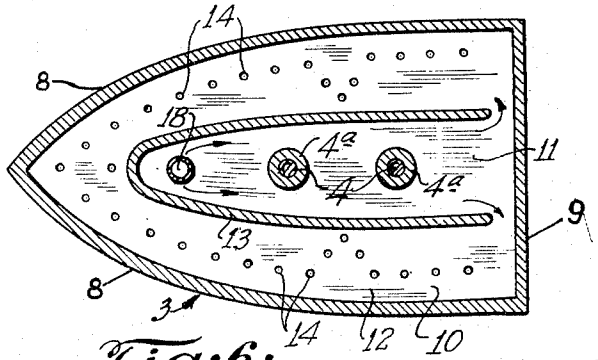


Fig. 6.

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UNITED STATES PATENT OFFICE

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STEAM ELECTRIC PRESSING IRON

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Application June 5, 1946, Serial No. 674,476

2 Claims. (Cl. 38—77)

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The invention relates to steaming irons and more particularly to irons adapted to be used commercially and with an external steam supply.

One object of the invention is to trap moisture condensed in the steam line and to dry the steam as it passes through the iron, thus preventing water contacting and wetting the fabric being pressed.

Another object is to vaporize the trapped moisture, making it unnecessary to bleed water from the iron or hose.

Another object is to eliminate the steam return line from the iron.

These and other detail objects of the invention, as will appear below, are attained by the structure shown in the accompanying drawings, which structure is intended to be illustrative and not exclusive of other arrangements embodying the general inventive principles. In these drawings—

Figure 1 is a top view of an iron constructed according to the invention.

Figure 2 is a longitudinal vertical section taken approximately on line 2—2 of Figure 1.

Figure 3 is a bottom view of the upper member of the iron and is taken approximately on line 3—3 of Figure 2.

Figure 4 is a vertical section drawn to an enlarged scale and taken approximately on line 4—4 of Figure 2 and shows the steam inlet valve.

Figure 5 is a top view of the heating element, and

Figure 6 is a horizontal section taken approximately on line 6—6 of Figure 2.

The steaming iron comprises a body 1 including hollow upper and lower members 2 and 3 having elongated upper and lower chambers 5 and 6, respectively, and fastened rigidly together by screws 4 threaded into lugs 4a on lower member 3. Lower chamber 6 is bounded by a substantially horizontal top wall 7, sloping side walls 8, rear wall 9, and a sole plate 10, and is divided into intermediate and distributing chambers 11 and 12 by a U-shaped rib 13 between sole plate 10 and top wall 7 and positioned with the closed portion of the U near the forward end of the iron and extending rearwardly but terminating short of rear wall 9 to form small connecting passages between intermediate chamber 11 and distributing chamber 12. Sole plate 10 has a series of ports 14 to discharge steam from distributing chamber 12 to the material being ironed.

Upper or primary chamber 5 in upper member 2 is bounded by curved upper walls 15, bottom wall 16 and rear wall 17. Primary and intermediate

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chambers 5 and 11 are connected near their forward ends by a passage 18 through bottom wall 16 of primary chamber 5 and top wall 7 of intermediate chamber 11. Passage 18 opens into primary chamber 5 near the top and into intermediate chamber 11 near the bottom. With this arrangement, moisture condensed in the line is trapped in primary chamber 5.

An electrical heating element 19 is positioned between top wall 7 of lower chamber 6 and bottom wall 16 of upper chamber 5 and is arranged to heat primary chamber 5, intermediate chamber 11, and distributing chamber 12 to vaporize entrained moisture as the steam passes through these chambers.

A thermostat 20 regulated by a knob 21 controls the temperature of heating element 19 and is connected in series with heating element 19 and to an electrical outlet by a cord 22.

A screw 23, threaded into upper member 2 at passage 18, is provided to bleed the iron of moisture should this become necessary. Under normal operating conditions, all moisture trapped in primary chamber 5 will be vaporized and it will not be necessary to bleed the iron. Primary chamber 5 has a capacity at least several times that of a six-foot quarter-inch hose, such as is usually used with the iron.

In the rear wall 17 of primary chamber 5 is a steam inlet 24 connected through a hose 25 to a source of steam. The quantity of steam introduced into primary chamber 5 is regulated by a valve 26 threaded into inlet 24 and comprising a valve seat 27 and a valve stem 28 biased to closed position by a compression spring 29 and opened by manually operating a handle 30 engaging an end of valve stem 28 and attached loosely on a screw 31 threaded into a bracket 32 on valve 26 and locked thereon by a lock nut 38. A compression spring 33 on screw 31 urges handle 30 to inoperative position.

A drip pan 34 attached to the rear of upper member 2 by screws 35 and to valve 26 by screws 36 catches any moisture that leaks past valve stem 28 and holds valve 26 against twisting on upper member 2 about inlet 24.

A handle 37 is attached by screws 4 to upper member 2.

From the above description, it will be noted that primary chamber 5, intermediate chamber 11 and distributing chamber 12 are connected in series end to end and steam passes substantially the entire length of primary chamber 5 and intermediate chamber 11 into an end of distributing chamber 12 where it passes through dis-

charge ports 14 in sole plate 10 to the material being pressed. Condensed moisture from the line is trapped in primary chamber 5. Entrained moisture is removed from the steam by heating the steam as it passes through the primary, intermediate and distributing chambers, insuring dry steam. Water trapped in primary chamber 5 is vaporized completely by heating element 19, thus eliminating the need for periodically bleeding the live steam line or providing a return line. The quantity of steam introduced into the iron is regulated by valve 26.

The details of the structure may be varied substantially from the specific disclosure herein without departing from the spirit of the invention and the exclusive use of those modifications coming within the spirit of the claims is contemplated.

What is claimed is:

1. A steaming iron comprising a hollow lower member the entire bottom wall of which forms a sole plate, and a hollow upper member secured thereto with the lower face of the upper member adjacent the upper face of the lower member, said lower member having a vertical wall therein providing distributing and intermediate chambers which are at substantially the same level, the interior of the upper member comprising a primary chamber, the primary chamber overlying the distributing and intermediate chambers with each chamber extending substantially the entire length of the respective members, a heating element confined between those chambers which are at different levels and extending substantially from end to end of the members, a steam inlet at one end of said primary chamber, a steam outlet adjacent the opposite end of the primary chamber, a passage through said members from said outlet to one end of the intermediate chamber, an outlet from the opposite end of said intermediate chamber to one end of said distributing chamber, and discharge outlets spaced along the length of said distributing chamber and leading therefrom through the sole plate to the work.

2. A steaming iron as described in claim 1 in which the sole plate and the lower portion of each of the members have a wide rear end and a pointed forward end and the distributing chamber is formed in part by the sides of the lower member, said vertical wall being an elongated U-shaped partition wall spaced inwardly from the sides of the lower member and generally parallel to the same to form inner walls of the distributing chamber and forming between its sides the elongated intermediate chamber, the passage from the primary chamber to the intermediate chamber opening into the narrow forward end of the latter and the passage from the intermediate chamber to the distributing chamber being between the ends of said U-shaped wall and the wide rear wall of the distributing chamber.

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