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FLAT-IRON PROVIDED WITH A STEAM EJECTION DEVICE

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Fig. 1

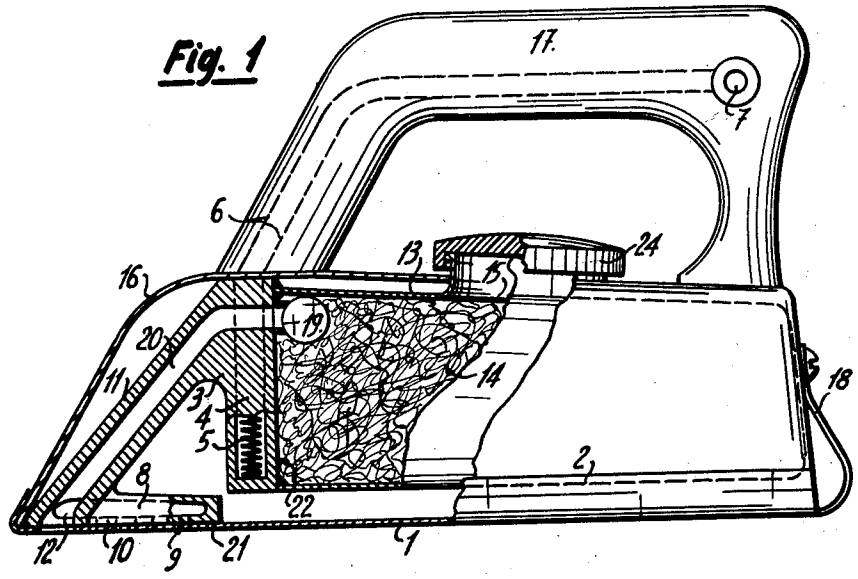
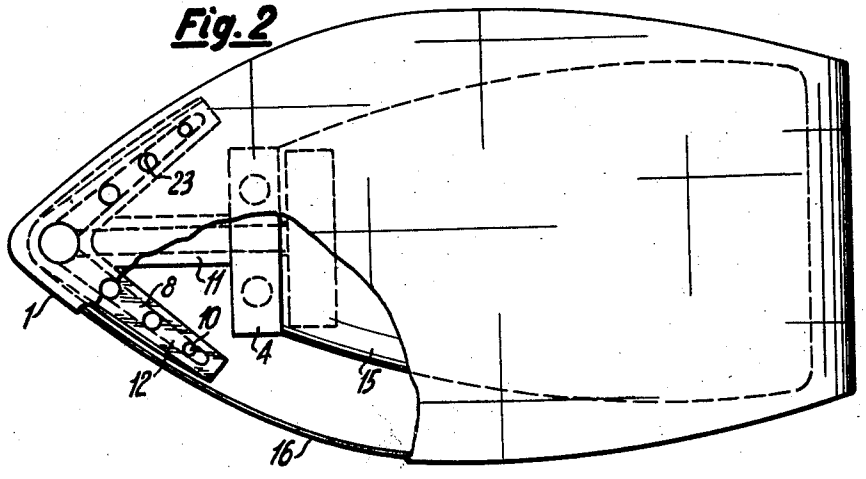


Fig. 2



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FLAT-IRON PROVIDED WITH A STEAM EJECTION DEVICE

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5 Claims. (Cl. 38—77)

In the flat-irons provided with a steam ejection device, the steam is generally ejected under a massive plate the temperature of which reaches 160° C. and more. But it is evident that at this temperature the steam is superheated so that only a small quantity of the ejected steam remains in the cloth and that the greatest part of that superheated steam is instantaneously expelled. Therefore these flat-irons are not adapted to humidify the cloth or the linen to soften the fibers rendering easier the ironing operation.

The present invention has for its object a flat-iron of the type described and which tends to eliminate the mentioned drawback of the known flat-irons by the fact that it comprises a base plate cut in a metal sheet, a heating body disposed in a metallic mass located in the fore end of the flat-iron and wall of which, located in a plane perpendicular to the base plate, constitutes a radiator heating a water supply contained in a container located in the rear part of the flat-iron and on top of the base plate, whereas another face of this metallic mass is located in a plane parallel to that of the base plate, and by the fact that this second face of the metallic mass presents steam ejection openings connected to said container and with openings provided in the base plate.

The attached drawing illustrates schematically and by way of example one embodiment of the flat-iron object of the invention.

FIG. 1 is a side elevation of the flat iron, certain parts being seen in cross section.

FIG. 2 is a view of it from the lower side, certain parts being broken away.

According to the attached drawing, the flat-iron comprises:

A base plate 1 made out of a metallic sheet of 1 to 2 mm. thickness the lateral edges 2 of which are bent upwardly so as to confer on it a sufficient stiffness.

A metallic mass 3 located in the fore end of the flat-iron, and which presents on the one hand a wall 4 perpendicular to the base plate 1 provided with an electric heating body 5 connected through conductors 6 to a flexible wire 7, and on the other hand a hollow body showing the general shape of a V parallel to the base plate and the lower lateral face 9 of which shows bores 10 as well as a tubular connecting member 11 connecting the hollow inside 12 of the V-shaped body to a container 13. The three elements 4, 8 and 11 of this metallic mass are preferably fabricated from one piece of metal.

A container 13 filled with mineral wool 14 is fixed to the rear face 22 of the wall 4. This container extends rearwardly of the flat-iron parallel to the base plate 1 and is provided with a filling opening 15 closed by means of a closure plug 24.

A covering member 16 provided with a handle 17 and covering the container and the metallic mass is fixed by any known fixing means, such as screws, on the metallic mass and to a lug 18 formed by a rear extension bent towards the top of the base plate 1. This covering member engages the bent edge 2 of the base plate 1 and its lower edge rests on the periphery of the inner face of the base plate 1.

A steam collector 19 fixed to the inside of the container communicates with the hollow inside 20 of the tubular connecting member 11.

In the embodiment shown, a joint 21 is disposed between the lower lateral face 9 and the base plate 1. This joint constituted by a thin sheet of asbestos for example, hinders any steam evacuation inside the covering member and further slows down the heat flow from the metallic mass towards the base plate 1. However trials have shown that this joint 21 is not absolutely necessary for the good working of the flat-iron.

The working of the flat iron described is the following:

The user fills the container with water. The mineral wool keeps this water in suspension. The user connects then the heating body by means of the flexible wire to an electric energy power supply. The heating body, preferably of the self-contained type, embedded in the wall 4 heats the metallic mass 3 the rear face 22 of which heats the water which is in contact with it and evaporates it. The steam produced is collected in the collector 19 then directed through the tubular body 11 in the hollow inside of the V-shaped body and escapes finally towards the exterior through openings 23 provided in the base plate 1 and corresponding to the bores 10. Thanks to the capillarity of the mineral wool the supply of water in the zone adjacent to the face 22 is ensured as the steam formation proceeds.

The fore part of the metallic base plate 1 is heated through the metallic mass 3 by radiation and conduction whereas the rear part of this base plate is heated by conduction from its fore part. Therefore the temperature of the base plate 1 decreases progressively from its fore end in the direction of its rear end. Thus the steam ejected through the openings 23 provided in the base plate cannot be superheated and thus humidifiies suitably the cloth or the linen.

The tests made have shown that the ejected steam stays at the surface of the cloth, softens suitably its fibers so that even tailored clothes are ironed without glazing and the folds formed with surprising ease.

One embodiment of the flat-iron according to the invention has been described here with reference to the drawing given by way of non limitative example but it goes without saying that numerous constructive variants could be included without departing from the scope of the claimed protection.

I claim:

1. A flat-iron provided with a steam ejecting device which comprises a base plate comprising a metal sheet, openings provided in said base plate, a metallic mass located in the fore end of the flat-iron and having a heating body, a wall of said mass being disposed in a plane transverse to the base plate and containing said heating body thereby to provide a heating radiator, a container located in the rear part of the flat-iron and disposed above the base plate for containing a water supply, said wall comprising the front wall of said container, said metallic mass having a face located in a plane parallel to the plane of the base plate, said face having steam ejection openings therethrough connecting said container to said openings provided in the base plate.

2. A flat-iron as claimed in claim 1 in which the lateral edges of the base plate are bent upwardly, and in which the lower edge of a covering member, surrounding and protecting the container and the metallic mass, engages this upwardly bent edge of the base plate.

3. A flat-iron as claimed in claim 1 in which the metallic mass is formed by three elements made out of one piece of fabrication; the wall perpendicular to the base plate and in which the heating body is embedded, a hollow element having the general shape of a V parallel to the base plate, one of the lateral faces of which presents said second face containing said steam ejecting openings,

and a tubular connecting element rigidly connecting the said wall to the V-shaped element and placing the hollow inside of this V-shaped element in fluid communication with the water container.

4. A flat-iron as claimed in claim 3 in which the base plate is heated by the heating body embedded in the wall perpendicular to the said base plate through the intermediary of the V-shaped element, so that the temperature of this base plate decreases from its forward end towards its rear end.

5. In a flat-iron comprising a base plate, a casing fastened to said base plate and provided with a handle, a metallic mass, a container protected by said casing and adapted to contain a water supply, a heating body for heating said metallic mass and said base plate, steam ejecting bores extending through said base plate, said metallic mass comprising three integral parts: the first part of said metallic mass being located in the fore end of said casing parallel and contiguous to said base plate and having a hollow interior communicating with said bores, the second part of said metallic mass comprising a duct interconnecting said hollow interior and said container, the second part connecting rigidly and metallically said first part to a third part of said metallic mass constituted by a wall extending in a plane perpendicular to said base plate, said wall containing said heating body and forming a radiator heating the fore end of said container as well as said first part of said metallic mass located parallel to the fore end of said base plate whereby said base plate heated by said first part of said metallic mass solely through its fore end has a temperature decreasing from its fore end toward its rear end.

References Cited by the Examiner

UNITED STATES PATENTS

Re. 21,986	12/41	Wallace	38—77
2,437,571	3/48	Waage	38—77
2,861,365	11/58	Block	38—77
2,940,195	6/60	Jepson	38—77
3,105,314	10/63	Henzirohs	38—77
3,110,975	11/63	Kircher	38—77

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