March 16, 1937. T. STOCKTON 2,073,657

ELECTRICALLY HEATED STEAM LAUNDRY AND PRESSING IRON

Filed May 1, 1933

Fig. 1.

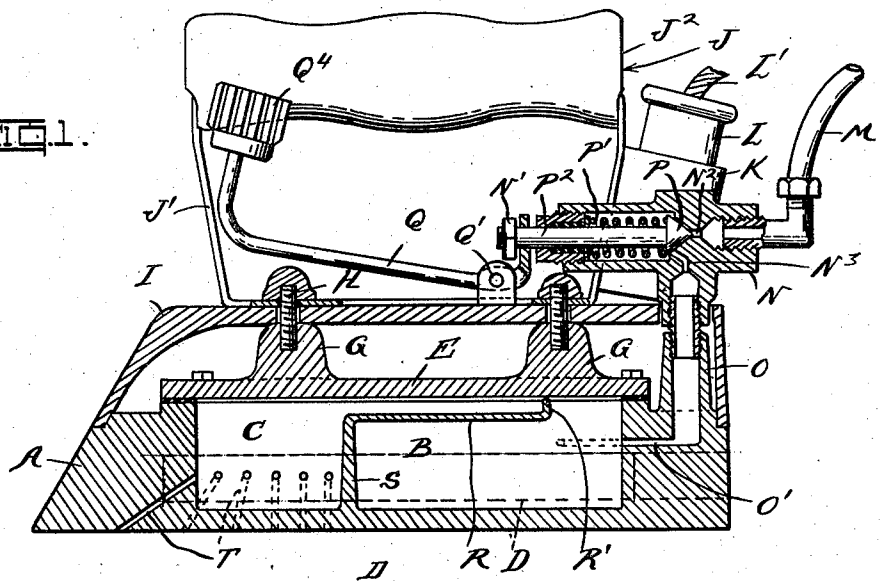


Fig. 2.

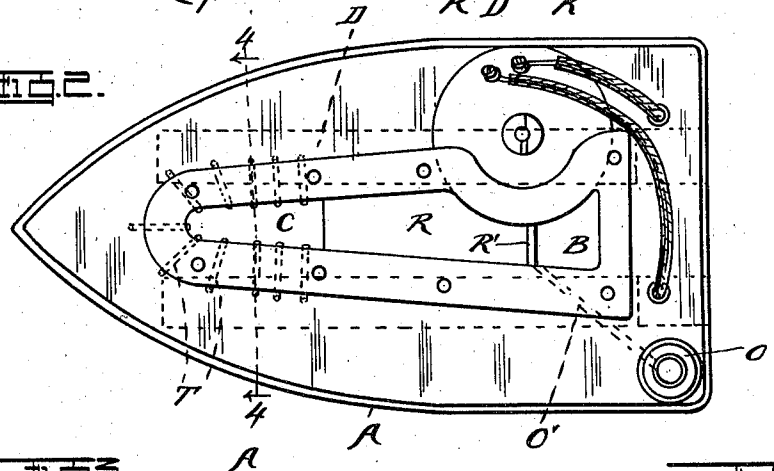


Fig. 3.

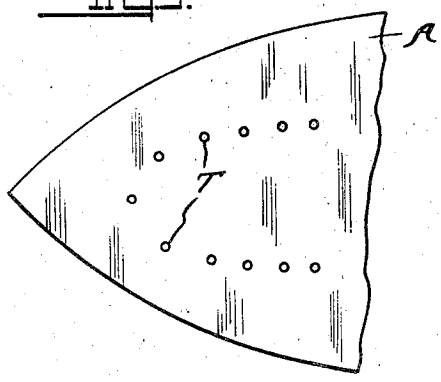
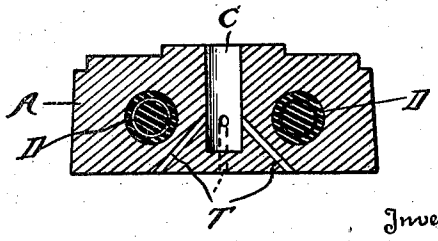


Fig. 4.



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ELECTRICALLY HEATED STEAM LAUNDRY AND PRESSING IRON

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Application May 1, 1933, Serial No. 668,887

6 Claims. (Cl. 38—77)

The invention relates to laundry and pressing irons of that type provided with a source of steam which is discharged through ports in the ironing surface into the fabric being pressed or ironed. Heretofore various constructions of this type have been designed in some of which the steam is generated within the body of the iron while in others it is conveyed from an external source through a flexible conduit into a chamber within the iron. A serious objection to many of these constructions, especially where they are designed for use in the pressing of delicate fabrics, is that condensation from the steam will sometimes pass through the ports in the iron and will produce a spot on the fabric. Attempts have been made to avoid such result by providing traps for the condensation, but these as heretofore constructed do not completely accomplish the purpose. Thus the discharge of even a drop or two of water from the iron may ruin the article which is being pressed.

It is the object of the present invention to provide a construction of steam iron which completely guards against any condensation finding access to the ironing face. It is a further object to obtain a construction in which the quantity and the pressure of the steam may be regulated by the operator during the ironing or pressing operation. With these objects in view the invention consists in the construction as hereinafter set forth.

In the drawing:

Fig. 1 is a vertical central longitudinal section through an electrically heated steam iron of my improved construction;

Fig. 2 is a plan view of the base of the iron with the cover removed therefrom;

Fig. 3 is a bottom plan view of a portion of the iron;

Fig. 4 is a cross section through the base portion.

The body of my improved iron is preferably formed of a material having relatively high thermal conductivity, as for instance aluminum. This body A has formed centrally and longitudinally thereof chambers B and C, while upon opposite sides are arranged heating units D preferably of the cartridge type inserted in cylindrical chambers opening at the rear. The chambers B and C are closed by a cover plate E secured to the body A by bolts, and this cover plate is preferably provided with upwardly extending posts G having screw threaded sockets therein for receiving screws H for attachment of the hood cover I and handle J. The handle J may be of any suitable construction but as shown comprises the metallic bail J' having secured between the furcations thereof the hand hold J^2. At the rear of the bail J' is a guide strap K for receiving the plug connector L through which current is conveyed to the electrical heating unit D.

The water from which the steam is to be generated is conveyed to the iron preferably through a flexible conduit M which may be attached to any suitable source such as a water faucet (not shown). The conduit M is connected to a fitting N mounted on the upper end of a tubular post O which projects upward from the body A at one side of the rear end thereof. Within the fitting N is a controlled valve P normally held seated by the pressure of a spring P' which surrounds the valve shank P^2 and abuts against nut N' at the forward end of the fitting. The valve P controls the discharge of water from the conduit M through a restricted port N^2 and a passage N^3 conducts the water discharge through this port to the tubular post O through which it is conducted to a laterally extending passage O' to discharge into the chamber B. The valve P is controlled by a lever Q which is fulcrumed at Q' on the hood cover I and has a bell crank arm engaging nut N' on the stem P^2. The free end of the lever Q is bent upward and is provided at its upper end with a thumb piece Q^4 so located that it may be manipulated by the operator while grasping the hand hold J^2. Thus whenever it is desired to permit water to enter the chamber B, a pressure on the thumb piece Q^4 will open the valve P to accomplish such purpose.

As previously stated, it is one of the objects of the invention to prevent the escape of any unvaporized water or condensation of water vapor to the face of the iron. Even where the temperature in the body through which the vapor passes is higher than the boiling point of water, there may still be danger of mist or fine particles of water being carried by the vapor so as to damage the fabric. This result I have guarded against by the following construction:

The chamber B is of sufficient capacity so as to hold a considerable volume of water if discharged thereto. However, the port N^2 and passages O' are of restricted area so that under ordinary use the water will be discharged into the chamber B at a relatively slow rate. In the upper portion of the chamber B is a horizontally extending baffle plate R which at its forward end is connected to the partition S dividing the chambers B and C from each other and which also extends completely across between the sides of

the chamber B. At its rear end the baffle R has an upturned portion R' which extends into close proximity to the under face of the cover plate E. Thus vapor generated in the chamber B, and which may entrain a certain amount of water mist is obliged to pass through the narrow slit between the upturned portion R' of the baffle and the lower face in said cover plate E, and these parts are maintained at such a temperature that the particles of mist passing through said slit will become completely vaporized. The forward chamber C has connected thereto a series of obliquely extending passages T which pass through the body A to the bottom or ironing surface thereof forming therein a series of discharge ports. As indicated in Fig. 3, the upper ends of the passages T connect with the chamber C through the side walls thereof and at a point raised above the bottom of said chamber. Thus, in case of any condensation in the chamber C, this will not rise to the level of the passages, and as the said passages T are of relatively small diameter and extend through the heated body of the iron, there is no chance for condensation of vapor therein.

In use, the iron has its flexible conduit M connected with the water supply, such as the city water system, and the plug L is connected through the flexible conductors L' to a source of electrical current. The valve P is normally closed; and, therefore, when the iron is not in use no water will find access to the chambers within the body thereof. In operation, after the current has been turned on and the body of the iron heated to the desired temperature, the operator presses his thumb against the thumb piece Q^4 to open the valve P and permit a small quantity of water to pass through the passages N^3 and O' into the chamber B beneath the shield R. The water so admitted will strike against the side walls or bottom of the chamber B which are at such a temperature as to almost instantaneously convert the water into vapor. In case that the discharge of this vapor should entrain a certain amount of water mist, this must pass through the narrow slit between the portion R' of the baffle and the cover plate E, and as these parts also are maintained at a temperature above the boiling point of water, such entrained mist will be completely vaporized. From this point the vapor will pass forward into the chamber C and through the oblique passages T to the face of the iron where it will enter the fabric. The pressure under which the vapor is discharged may be controlled by the operator who can raise this pressure by depressing the lever Q to admit more water or may reduce the pressure by permitting the valve P to seat. The height of the pressure is limited by the water pressure in the conduit M so that even where the operator holds the valve P open, the pressure of vapor within the iron can never rise to a danger point. On the other hand, if the valve P is closed, the vapor within the chambers B and C is soon exhausted and when the iron is removed from the fabric and placed on a stand, no vaporization of water occurs.

What I claim as my invention is:

1. A steam laundry and pressing iron comprising a body having a working face, a recess above said face having a partition dividing the same into two chambers, and a series of ports extending from one chamber to the working face of the iron, a cover plate for said recess completing the enclosure of said chambers, one of said chambers having a water inlet, a handle for said body, a normally closed valve controlling said water inlet, means for operating said valve, said means being adjacent the handle so as to be actuated by the hand engaging said handle, electrical heating means for said body adapted to maintain the same at a temperature above the boiling point of water, and a baffle extending substantially horizontally above the chamber into which the water is introduced and terminating in proximity to said cover plate so as to leave only a narrow slit therebetween whereby any entrained water mist passing from the steam generating chamber to the chamber from which the ports extend will be vaporized during passage through said slit.

2. A steam laundry and pressing iron comprising a body having a working face, a plurality of chambers above said face and a series of ports extending from one of said chambers to the working face of the iron, said ports entering said chamber through the side walls thereof in a plane above the bottom of the chamber, controlled means for introducing a limited quantity of water into another of said chambers, heating means for maintaining said body forming the walls of said chambers at a temperature above the boiling point of water, a baffle plate extending above the chamber into which the water is introduced, said baffle plate terminating in proximity to one of the walls of said chamber so as to leave only a narrow slit therebetween for communication to the chamber from which the ports extend, whereby any entrained water mist will be vaporized during passage through said slit, and whereby any condensation in said first chamber will be trapped and prevented from entering said ports.

3. A steam laundry and pressing iron comprising a body having a working face, a recess within said body above said face having a vertical partition of less height than the recess dividing the same into two chambers, and a series of ports extending from one chamber to the working face of the iron, a cover plate for said recess completing the inclosure of said chambers, one of said chambers having a water inlet, electrical heating means for said body adapted to maintain the same at a temperature above the boiling point of water, and a baffle extending substantially horizontally from the partition and within the chamber into which the water is introduced and terminating in a vertical portion in close proximity to said cover plate so as to leave only a narrow slit therebetween whereby any entrained water mist passing from the steam generating chamber to the chamber from which the ports extend will be vaporized during passage through said slit.

4. A steam laundry and pressing iron having a body, and a unit within said body for heating the same, said unit being substantially midway between the top and bottom of said body and having spaced portions, said body being provided between said spaced portions with adjacent recesses and having a restricted passage for conducting water to one of said recesses so that it will be converted into steam by heat conducted thereto by said body from said unit, a cover for said recesses, means cooperating with the cover and providing a restricted passage for steam from the steam generating recess to the second recess, said means including a portion of said heat conducting body, and means for conducting steam from the second mentioned recess to the working face of the iron.

5. In a steam laundry and pressing iron having a body provided with a working face, a recess in the body above said face, a vertical partition of

less height than said recess dividing the latter into two chambers, a cover for said chambers, controlled means for introducing a limited quantity of water into one of said chambers, and passages connecting the other of said chambers with said working face, means for maintaining all portions of said body forming the walls of said chambers at a temperature above the boiling point of water, including a heating element in the body adjacent said chambers, and a baffle plate extending substantially horizontally from said partition within and over the bottom of the first mentioned chamber having a portion in proximity to the cover aforesaid so as to leave only a narrow slit therebetween for communication to the second mentioned chamber, whereby any entrained water mist will be vaporized during passage through said slit.

6. A steam laundry and pressing iron comprising a body having an ironing face, a steam generating recess in said body above said face, a passage for water extending to said recess, and a passage for steam extending from said recess through said face, a cover for said recess, and means for maintaining all portions of said body at a temperature above the boiling point of water, including a heating element within the body adjacent the recess, a portion of said body extending laterally from a vertical wall over the bottom of the recess and cooperating with the cover to provide a narrow slit for comuunication with the steam passage aforesaid, whereby any entrained water mist will be vaporized during passage through said slit.

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