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2,371,569

COMBINATION STEAMING AND PRESSING IRON

Filed April 14, 1941

Fig. 1.

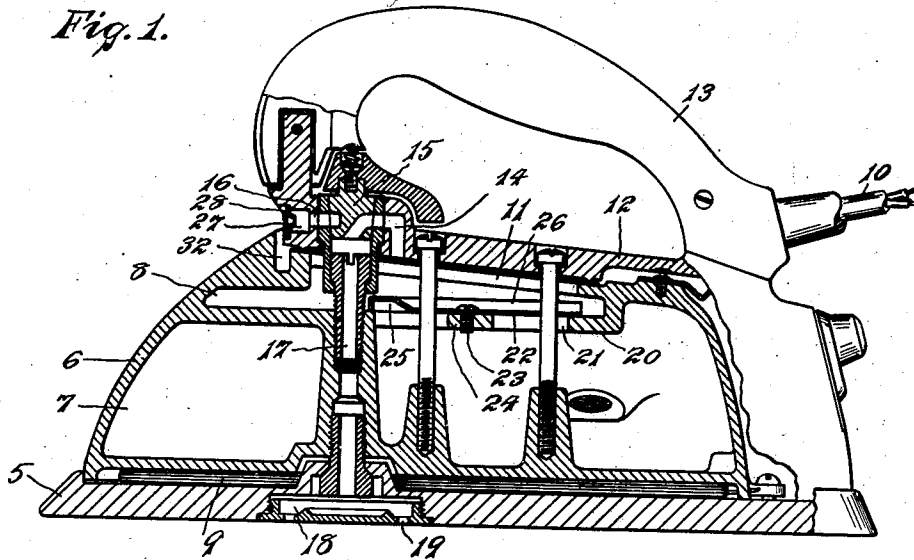


Fig. 2.

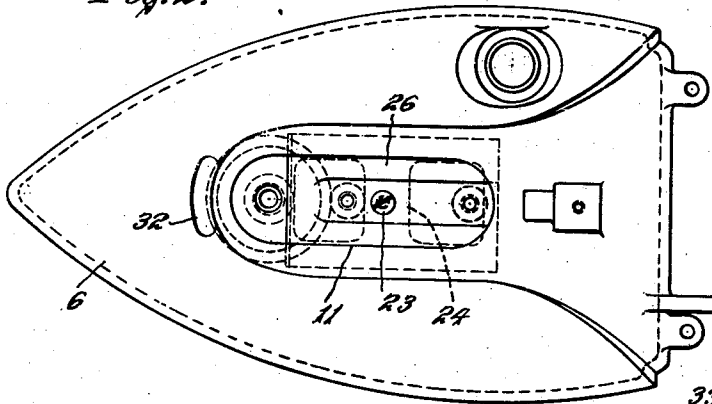


Fig. 3.

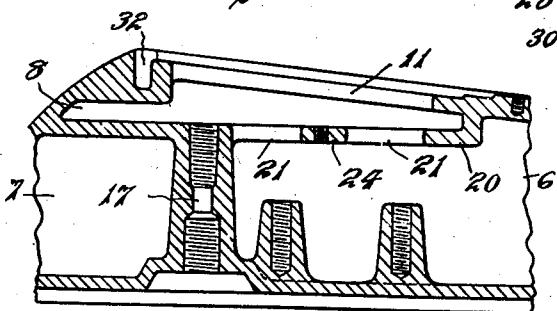


Fig. 5.

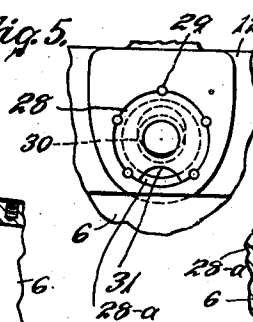
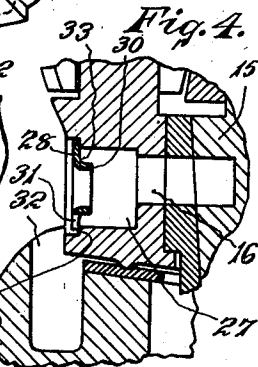


Fig. 4.



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COMBINATION STEAMING AND PRESSING
IRON

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5 Claims. (Cl. 38—77)

This invention relates to combination steaming and pressing irons and more particularly to that class of such irons from which steam is ejected directly upon the work being ironed and such as described in United States Letters Patent 2,309,427, title "Combination pressing and steaming iron."

In this class of steaming irons, the passage of steam which is preferably generated within the body of the iron, is controlled by means of a valve so that the said steam may be ejected either upon the surface of the work being ironed, or into the atmosphere so as to permit the work to be dry ironed.

It has been found that the steam, when it is ejected directly into the atmosphere, condenses at the mouth of the steam outlet and causes drops of condensate to be thrown onto the surface of the material being ironed. This is objectionable for the reason that, on some materials, such as silks or the like, the said drops of condensate will cause spots which are practically impossible to remove.

An object of our invention therefore is to provide means for preventing the ejection of condensate from the iron.

A further object is to provide means for catching and evaporating, directly in the iron itself, any condensate that may be formed.

A still further object of our invention is to provide improved baffling means for preventing the excessive passage of water into the steam chamber within the iron.

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

Fig. 1 is a side view, partly in central vertical section, of an electric steaming iron embodying our invention.

Fig. 2 is a plan view of only the member comprising the body of the iron.

Fig. 3 is a view of a portion thereof in central vertical section.

Fig. 4 is a fragmentary view, on an enlarged scale and in central vertical section, showing the steam separator and condensate reservoir provided by our invention.

Fig. 5 is a front view thereof.

As shown in the drawing, a steaming iron embodying our invention may comprise a sole plate 5 on which is mounted a body member in the form of a container 6 having a water chamber 7 and a steam chamber 8 therein.

The said container is heated by means of an

electric heating element 9 which is connected to an electric circuit by means of an electric conductor 10.

The top of said container 6 is provided with an opening 11 that is sealed by means of a cover plate 12 on which is mounted the handle 13 of the iron. The said cover plate contains a steam passage 14 therein, for directing steam from the steam chamber 8 to a valve containing a plug 15 whereby the passage of said steam may be controlled so as to be directed either into the atmosphere, through an exhaust passage or duct 16, or downwardly through the passage 17 and into the steam distributing chamber 18, from which it is ejected through jet openings 19 upon the surface of the material being ironed.

The container 6 is cast in one piece to provide a partition 20 between the water chamber 7 and the steam chamber 8. This partition has openings 21 therethrough that are baffled by means of a baffle plate 22 which overlies said openings and is retained in position thereover by means of a screw 23 that is threaded into the bridge portion 24 separating the openings 21.

In the operation of the iron, the heating element 9, being energized, will heat water in the water chamber 7 and thereby generate steam which will pass upwardly through the openings 21 and into the steam chamber 8. Any water which may be carried by said steam or splashed by the movement of the iron, will be separated from the steam when it strikes the baffle plate 22; the steam passing into the steam chamber 8 through spaces, such as at 25 under the baffle plate 22, which are provided by raised portions 26 in the baffle plate.

From the steam chamber 8, the steam will enter the steam passage 14. From this passage, it will pass out of the iron either through the exhaust passage 16 or the jet openings 19, depending upon the position of the plug 15 which has been selected.

When the steam is ejected through the passage 16 into the atmosphere, there is a tendency for condensate to form at the mouth of said passage, due to the lower temperature of the iron structure at this point and to the steam striking the colder air. In order to prevent said condensate from being thrown from the iron onto the surface of the work being ironed, we provide a steam separator consisting of a separating chamber 27 which is larger than the passage 16 and provides, upon the bottom thereof, a horizontal lower wall portion upon which condensate may gravitate. The said chamber is partly closed

by a cover in the form of a washer 28 that is preferably seated against a shoulder 28—*a* at the front of said chamber and held in position by swaging the metal as at 29. The said washer is provided with an inwardly extending flange 30 that is notched, as at 31, to provide a horizontal passage for draining condensate from the said lower wall portion of the separating chamber 27.

In order to collect the condensate dropping from the condensate outlet, we provide a reservoir 32 in the top of the body member 6 and directly under the said outlet.

The operation of our invention is as follows.

When the valve 15 is selectively positioned to eject the steam into the atmosphere through the passage 16, any condensate formed by contact with the walls of the said passage will be caught by the surface of the plate or washer 28, surrounding the flange 30 and indicated at 33, as the said condensate is carried outwardly by the movement of the steam through the separating chamber 27. The said condensate will then gravitate around the flange 30, still against the said surface 33, until it settles upon the bottom of the separating chamber 27. From there, it will pass outwardly through the passage 31 and drop into the reservoir 32. When the condensate has entered this reservoir it will be retained therein until evaporated therefrom by the heat in the body member 6.

Our improved steam separating means also serves to minimize the condensation of the steam, as it passes through the exhaust passage 16, for the reason that the enlarged chamber 27 prevents the jet of passing steam from contacting the wall of the exhaust passage at a point nearest to the mouth thereof, where it is coldest and where most of the condensation would be caused; the central opening through the washer 28 being so short that a minimum amount of surface is contacted by the steam as it passes therethrough.

From the above description it will be clearly understood that we have provided novel and efficient means for eliminating the ejection of steam condensate from a steaming iron, and that the particular embodiment of the said invention, as disclosed herein, may be modified to a greater or lesser extent without departing from the scope of the invention as set forth in the appended claims.

We claim:

1. A combination steaming and pressing iron of the character described comprising a steam chamber, a steam duct leading from said chamber into the atmosphere, and means adjacent the mouth of said duct for causing condensate and steam to be discharged separately therefrom, said means including a substantially horizontal lower wall portion in said duct upon which condensate

may gravitate, and a horizontal passage adjacent to said wall portion to permit drainage of said condensate.

2. A combination steaming and pressing iron of the character described comprising a sole plate, a body having a steam chamber, a steam duct leading from the chamber into the atmosphere, and means within the mouth of said duct for preventing condensate therein from being discharged therefrom with the steam, said means including a passage for draining condensate from said duct and a reservoir in an exterior portion of said body for collecting said condensate to be evaporated therein.

3. In a steaming iron of the character described comprising a sole plate, a body member having a steam chamber therein and an opening in the top thereof, a cover sealing said opening, a steam passage in said cover for expelling steam from said steam chamber into the atmosphere, and a reservoir including a recess in the top of said body member and underlying the mouth of said steam passage for collecting condensate from said passage and retaining the same to be evaporated therein.

4. A steaming iron of the character described including a sole plate, a body member having a water heating chamber, a steam chamber and an opening in said body, a cover sealing said opening, a steam passage in said cover communicating said steam chamber with the atmosphere, means in said passage for separating condensate from steam passing therethrough, and a recess in the top of said body member in heat conducting relation with said steam chamber and underlying the mouth of said steam passage for collecting condensate therefrom and retaining the same to be evaporated in said recess.

5. In a steaming iron comprising a container having a water chamber and a steam chamber communicating therewith and means for heating said water to generate steam therefrom; the combination of a baffle plate between said steam chamber and water chamber, a steam passage communicating with said steam chamber, a steam exhaust passage opening into the atmosphere, steam conduit means communicating with steam jets in the bottom of said iron, a valve for selectively communicating said steam passage either with said exhaust passage or steam conduit means, means at the mouth of said exhaust passage for preventing condensate on the wall of said passage from being expelled from said iron with the steam, and a reservoir comprising a well in the top of said container for collecting the said condensate and retaining the same to be evaporated therein.

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