July 11, 1950 H. G. SUTTON 2,515,100

STEAM ELECTRIC IRON

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Fig. 1.

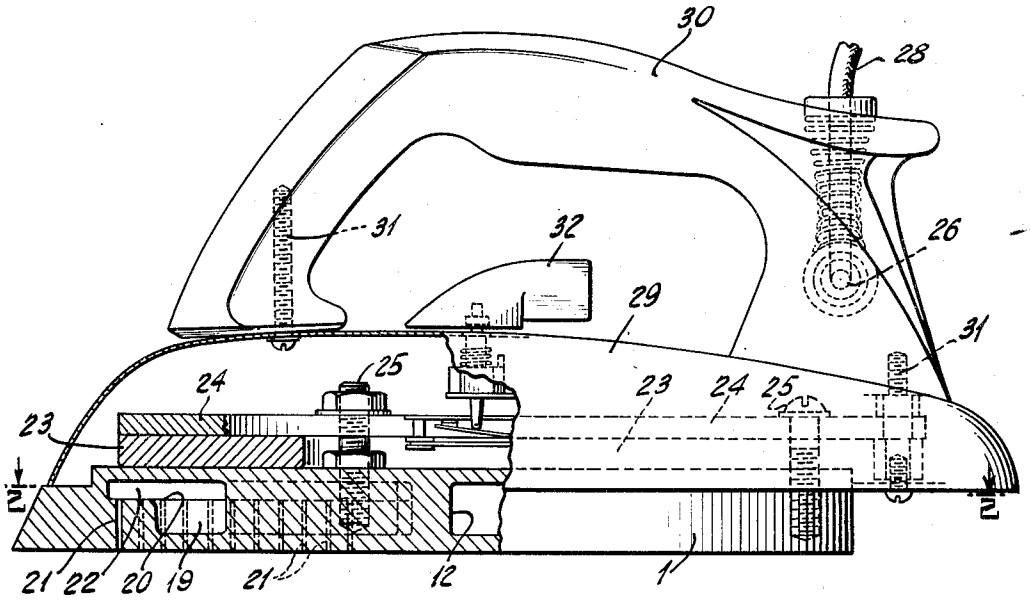
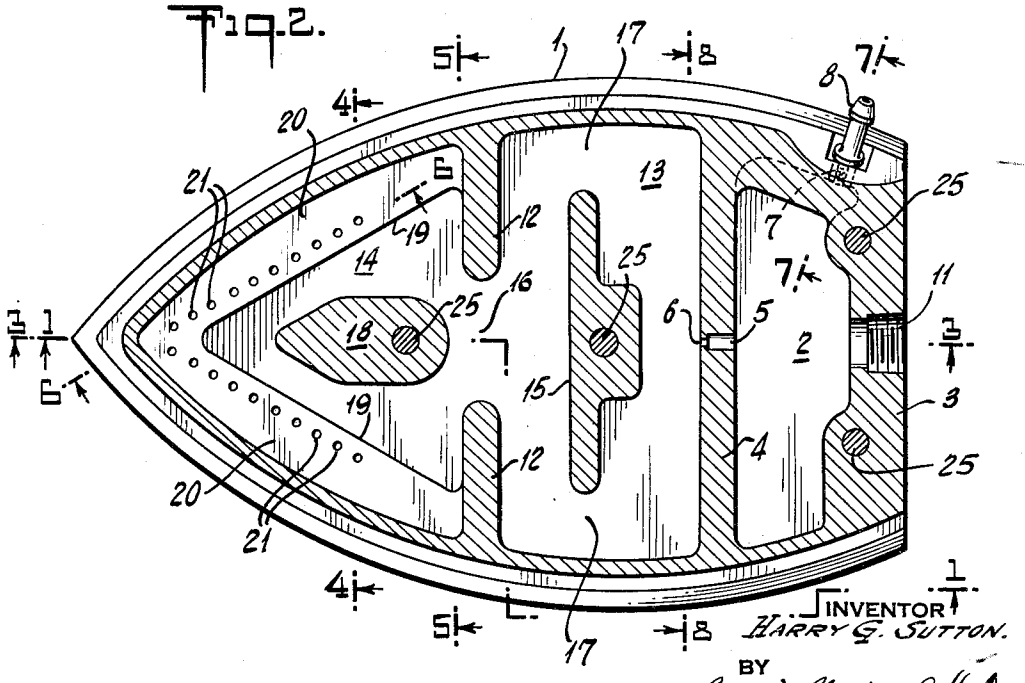


Fig. 2.



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Fig. 3.

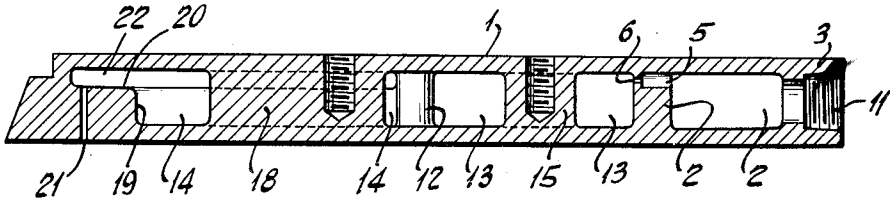


Fig. 4.

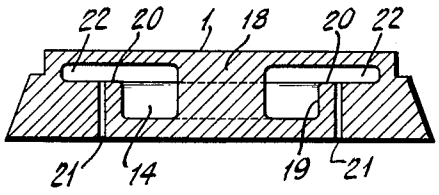


Fig. 5.

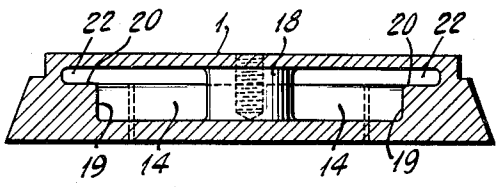


Fig. 6.

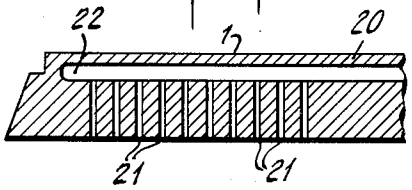


Fig. 7.

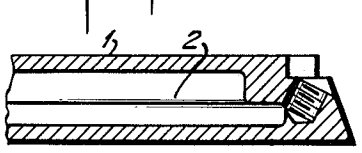
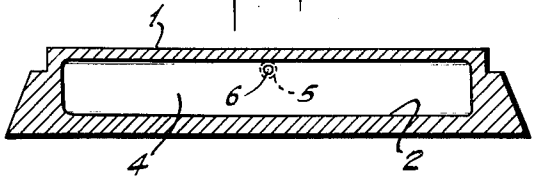


Fig. 8.



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STEAM ELECTRIC IRON

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Application March 26, 1949, Serial No. 83,541

4 Claims. (Cl. 38—77)

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This invention relates to improvements in flat irons which comprise self-contained heating units, preferably electrical, and are provided with means for emitting live steam through the face of the iron to the fabric being ironed. The invention comprises means for supplying steam to the iron and certain passages and chambers for the steam within the base or body of the iron with vents opening through the bottom or sole of the iron, and means associated with the said chambers to provide substantial steam expansion within the body of the iron between the source of steam supply and the vent passages, such associated means serving to trap any condensation of the steam that may occur.

An object of the invention is to provide combined and associated means for preventing the emission of water with the steam upon or into the material being ironed.

With the foregoing object and others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be further referred to and illustrated in the accompanying drawings wherein is shown a preferred embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Fig. 1 is a side elevation and partial longitudinal section of an iron taken on line 1—1 of Fig. 2 embodying the invention, and showing accessories for supplying the heating current and steam;

Fig. 2 is a horizontal section on line 2—2 of Fig. 1;

Fig. 3 is a longitudinal vertical section of the body of the iron on line 3—3 of Fig. 2;

Fig. 4 is a transverse vertical section on line 4—4 of Fig. 2;

Fig. 5 is a similar section on line 5—5 of Fig. 2;

Fig. 6 is a vertical section of the body on line 6—6 of Fig. 2;

Fig. 7 is a similar section on line 7—7 of Fig. 2, and

Fig. 8 is a transverse vertical section on line 8—8 of Fig. 2.

Formed in the rear or heel portion of the base member 1 is a wide steam receiving chamber 2 disposed between the rear wall 3 of the casting and an integral partition wall 4 which extends from side to side of the interior of the body and is furnished at its center upper part with an aperture 5 which terminates at its forward end in

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a constricted portion 6 of smaller diameter. This chamber communicates with a steam passage 7 in a steam fitting 8 to which a suitable steam hose may be attached. As shown in Fig. 2 a pipe threaded and tapped hole 11 is provided in the rear wall of the iron in suitable alignment with the aperture 5 to facilitate the drilling of the latter. This hole and other suitable openings, if desired, may be employed for the removal of core sand from the interior of the casting. The opening 11 eventually will be tightly stopped by means of any suitable pipe plug in a well known manner.

Forwardly of the wall 4 a central chamber 13 is formed and is disposed between the said wall 4 and a pair of inwardly extending baffle walls 12. This chamber occupies the full width of the interior of the iron at this point and connects centrally with a chamber 14 located in the front or toe of the body. The communication between the central and toe chambers is made through the passage 16 between the inner ends of the baffles 12, and, as shown, is of approximately the same transverse width as the similar dimension of each of the baffles 12. A baffle wall 15 extends transversely across the steam chamber 13 into a suitable closeness to the internal side walls of the iron to provide a pair of lateral steam passages 17. A longitudinally extending baffle wall 18 occupies the central portion of the chamber 14 and serves to divide the steam entering the chamber 14 and disperse it against and over the inner walls 19 of a pair of forwardly joining ledges 20 which extend inwardly from the sides of the iron in this region of the base. Steam passing over the ledges 20 is then carried from the shallow spaces 22 to and through the sole of the iron by means of a plurality of apertures 21 drilled through the ledges 20, as indicated in the drawings.

Mounted on top of the base member 1 is the electrical heating unit 23, of any preferred type, provided with the usual thermostatic control and which is held in position by means of a clamp plate 24 and stud assembly 25. The heating unit is provided as usual with terminal posts 26 which are adapted to receive a socket of known construction carried at the end of an electrical supply conduit 28. A shaped sheet metal cover 29 is secured to the clamp plate 24 by suitable screws (not shown) and a suitable handle 30 is also secured to the clamp plate, as by means of studs 31.

Any suitable flexible steam conduit may be attached to the member 8 to bring steam from

its source to the interior of the iron chamber 2.

Now referring to Fig. 2 for an understanding of the operation of the iron when in use it will be understood that the operator first turns on the electric current by means of the switch 32 (Fig. 1) which causes the one piece walls of the iron body to become heated to the desired operating temperature at which they are held by the thermostatic control mentioned above. He then admits dry steam to iron at a suitable rate, by means in the supply lines (not shown) and steam flows into the first or heel chamber 2 of the body. Here it expands to ensure evaporation of any water of condensation which may have accompanied the steam. The heat continually supplied to the body by the electric means prevents a drop in temperature within the body and dry steam then will be carried into the middle chamber 13 of the iron through the constricted opening 5, 6. As the size of the said opening determines the rate at which the steam supplied to the chamber 2 passes into chamber 13, this size may be so selected with reference to the normal pressure of the steam supply, as to ensure the entry of dry or slightly super-heated steam into the latter space. This steam will now progress without hindrance through the passages 17 and 16 into the chamber 14, and to the spaces 22 above the ledges 20 and thence via the perforations 21 through the sole of the iron and into the fabric being treated. It will be understood that the tortuous course pursued by the steam in its passage through the iron body ensures constant contact with the heated walls and baffles described above, and thus tends to prevent condensation at any point within the iron. However, if for any reason drops of water should be carried into the chamber 14, such water will collect upon the floor of said chamber and dry steam alone will pass to the spaces 22 and through the apertures 21.

It will be seen from the above description, that without the necessity of raising the temperature of the iron to an excessive temperature, which might damage the fabrics being treated, an iron made in accordance with the present invention will, in use, insure the delivery of dry steam and the complete assurance that drops of water will be prevented from entering the vents which deliver the steam to the fabric.

What I claim is:

1. In a steam electric flatiron, a unitary base casting having top, bottom, rear and side walls and comprising heel, central and toe steam chambers disposed within the casting, extending laterally substantially the full width of the interior of the casting in their respective longitudinal locations and separated by transversely extending walls, the wall between said heel and central chambers extending from side wall to side wall and provided with a constricted opening as the only means of communication between said chambers; steam inlet means connecting with said heel chamber, a ledge extending inwardly from the side walls of said toe chamber and raised above the bottom of said chamber; and a plurality of apertures piercing said ledge and the bottom of said casting.

2. In a steam electric flatiron, a unitary base casting having top, bottom, rear and side walls and comprising heel and toe steam chambers disposed within the casting; steam inlet means connecting with said heel chamber; a wall between said heel and said toe chambers extending from side wall to side wall and provided with a constricted opening as the only means of communication between said chambers; a ledge extending inwardly from the side walls of said toe chamber and raised above the bottom of said chamber and a plurality of apertures piercing said ledge and the bottom of said casting.

3. In a steam electric flatiron, a unitary base casting having top, bottom, rear and side walls and comprising heel, central and toe steam chambers disposed within the casting and extending laterally substantially the full width of the interior of the casting in their respective longitudinal locations; steam inlet means connecting with said heel chamber; a wall between said heel and central chambers extending from side wall to side wall and provided with a constricted opening as the only means of communication between said chambers; a ledge extending inwardly from the side walls of said toe chamber and raised above the bottom of said chamber; a plurality of apertures piercing said ledge and the bottom of said casting and a pair of opposed baffles extending inwardly from the side walls of the casting and separating the side portions of said toe chamber from said central chamber.

4. In a steam electric flatiron, a unitary base casting having top, bottom, rear and side walls and comprising heel, central and toe steam chambers disposed within the casting; steam inlet means connecting with said heel chamber; a wall extending between said side walls, disposed between said heel and central chambers and provided with a constricted opening as the only means of communication between said chambers; a ledge extending inwardly from the side walls of said toe chamber and raised above the bottom of said chamber; a plurality of apertures piercing said ledge and the bottom of said casting; a pair of baffles extending inwardly from the side walls of the casting and separating the side wall portions of said toe chamber from said central chamber; and central baffles within said toe and central chambers for directing steam passing through said chambers toward the side walls thereof.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
Re. 21,986	Wallace	Dec. 23, 1941
970,788	Buskard	Sept. 20, 1910
1,799,281	Cissell	Apr. 7, 1931
2,137,387	Chapin	Nov. 22, 1938