

March 8, 1966

C. F. MULLEN

3,238,650

SOLE PLATE FOR LAUNDERING IRONS

Filed Oct. 15, 1964

Fig. 1

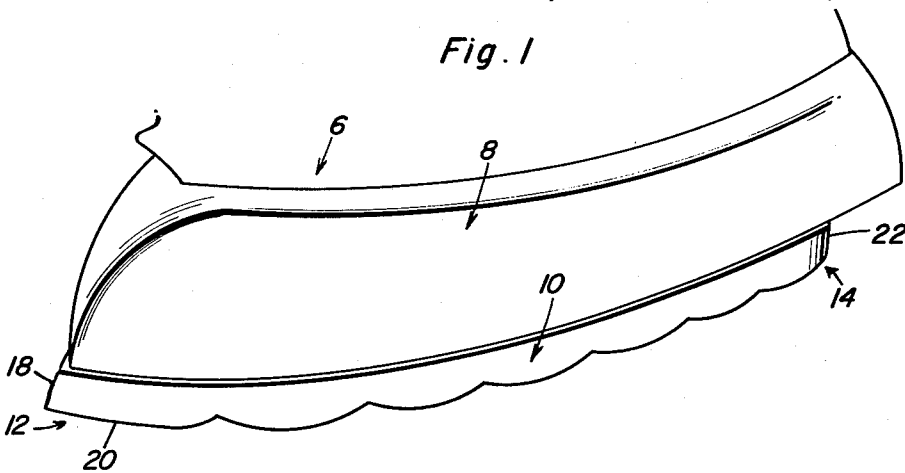


Fig. 2

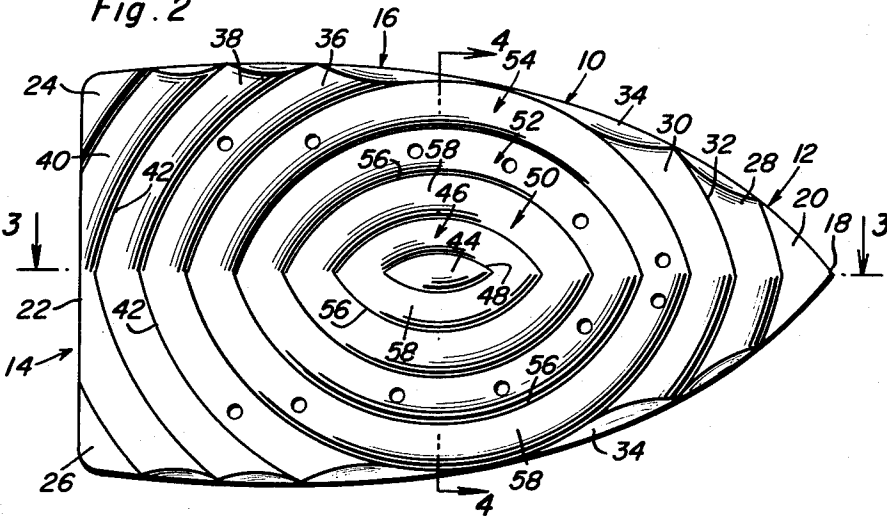


Fig. 3

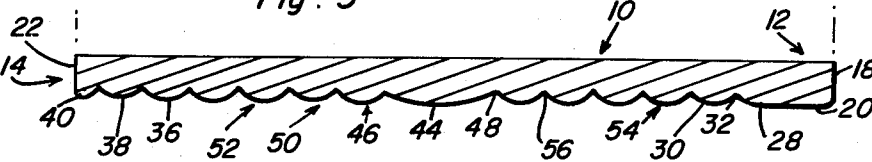
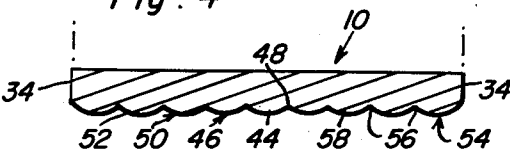


Fig. 4



Charles F. Mullen
INVENTOR.

BY *Almon C. O'Brien*
and *Harvey R. Jacobson*
Attorneys

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SOLE PLATE FOR LAUNDERING IRONS

Charles F. Mullen, Asbury Park, N.J., assignor of one-fourth each to W. Robert Warwick and Anna M. Warwick, Long Branch, N.J., and Henry J. Sander, Neptune, N.J.

Filed Oct. 15, 1964, Ser. No. 404,014

1 Claim. (Cl. 38—93)

This invention relates to laundering irons such as are functionally designed and structurally styled for hand ironing needs. It pertains, more particularly, to an iron having a sole plate which, as usual, is generally semi-ellipsoidal in plan, but is effectually novel in that the pressing and smoothing surface, instead of being flat, is provided with a multiplicity of distributively oriented ribs whose work surfaces are cambered and coordinated for pressing and smoothing performance heretofore unattainable even in modified, other than flat, prior art sole plates.

In carrying out a preferred embodiment of the concept the ribs are cooperatively associated with each other in a novel manner and are individually designed so that the over-all layout is not only ribbed but also characterized by grooves between contiguous ribs thus providing a ridge and dale pattern which is advantageous and resultful. Accordingly, the ribbed-grooved arrangement achieves maximum pressure in pounds per square inch on the textile fabric, cloth or other surface being pressed and ironed.

The interrelated ribs and intervening grooves or channels function singly and collectively whereby the sole plate of the iron facilitate uninterrupted and unhampered gliding and passage of the convex crests or lands of the ribs over the perimeter edges of the material without displacing (picking up or wrinkling) the material and interfering with ironing ease.

The iron exerts a greater inherent pressure because of the reduced over-all contact area of the ribs on the top of the article (apparel, clothing, etc.) being ironed. The downward pressure exerted by the operator is likewise proportionately increased. The total pressure on the article thus produces an ironing and spreading out action which is outstandingly advantageous by comparison to the conventional flat iron. Thus, fewer passes of the iron's sole plate are required, and time, effort and energy are conserved and significantly saved.

One improvement has to do with a sole plate provided at its axial center with an integral ellipsoidal boss having a convex surface, said boss being marginally surrounded by a first contiguous ellipsoidal rib having a convexly cambered crest, a second ellipsoidal rib marginally surrounding said first rib and likewise having a correspondingly convexly cambered crest, and a plurality of supplemental ellipsoidal ribs surrounding said second rib and each other in a concentric pattern and likewise constructed, all of said ribs being progressively and proportionally increased in diameter and providing intervening ellipsoidal grooves, all of the respective convex crests being in a common plane.

Additionally, the present invention comprehends the provision on an iron of a horizontal sole plate embodying a toe portion having a pointed leading tip, a heel portion having the usual straight-across trailing edge, and opposed curvate lengthwise marginal edge portions joining said heel and toe portions, the bottom of said toe portion having a generally triangulate flat-faced sector relatively small in area, the major part of said bottom being completely covered with a multiplicity of smoothing ribs, said ribs being contiguous to each other.

These together with other objects and advantages which

will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a perspective view showing a fragmentary portion of a laundering iron (regular sad-iron or hollow electrically or otherwise heated iron) provided with a sole plate featuring the invention herein shown, described and claimed;

FIG. 2 is a bottom plan view of the improved iron shown in FIG. 1 and illustrating all of the cooperating components or features;

FIG. 3 is a central longitudinal section on the section line 3—3 of FIG. 2; and

FIG. 4 is a transverse or cross-sectional view taken at right angles on the plane of the section line 4—4 of FIG. 2.

Referring to FIG. 1 it will be seen that the laundering iron is denoted as an entity by the numeral 6 and is characterized by a conventionally-shaped base and body portion 8 which is here provided with the improved sole plate.

FIG. 2 provides and shows the structural features which characterize the sole plate by itself, the latter being denoted generally by the numeral 10 in all of the views. It will be further evident from the views of the drawing that all essential features of the over-all concept are illustrated in FIG. 2 from which it will be evident that the toe portion is denoted at 12, the heel portion at 14 and the main or body portion therebetween, this being designated, for convenience of description here, by the numeral 16. With further reference to the toe portion it will be evident that it is of customary plan configuration and therefore has a leading pointed end 18, the bottom surface adjacent thereto being smooth finished and flat as at 20 and providing a generally triangulate sector. The heel portion 14 embodies the customary transverse or straight across trailing edge 22 having corner portions which are also horizontal and flat thus to provide additional triangulate surfaces 24 and 26. All three surfaces 20, 24 and 26 are generally similar in area, plan configuration and are in a common plane. With further reference to FIG. 2 it will be noticed that there are approximately three distinguishable ribbed areas or regions and that the forward one is characterized by a pair of elongated progressively proportioned ribs. There are two ribs, one at 28 and a second and similar rib at 30, there being an intervening marginal or peripheral groove 32 therebetween. These two ribs are disposed in coincident relationship and extend transversely between the longitudinally extending or arcuate marginal edges 34 in the manner shown. There are three similarly constructed and performing rearward transverse ribs and these are denoted at 36, 38 and 40 respectively. These ribs are similar in length with each other and constitute the second group of ribs and they likewise extend crosswise between the two marginal side edges 34 and they have intervening grooves or channels which are denoted at 42. A third group of ribs is also provided and this group constitutes the main rib assembly and it embodies an axial or centrally disposed ellipsoidal boss or embossment which is denoted at 44 and which has its respective pointed ends lined up with the long axis of the over-all semi-ellipsoidal sole plate 10. Closely associated with this boss I provide a plurality of associatively cooperable longitudinally elongated ribs. To be more specific these elongated ribs are fashioned into ellipsoidal components. The expression "component" or "component units" is used here to assist in pointing the details of construction and wherein it will be evident that the innermost ellipsoidal component or member is de-

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noted at 46 and this completely circumscribes the centralized embossment 44 and provides and encompassing first groove or channel 48. As a matter of fact this component 46 is referred to as the first ellipsoidal rib. Here again and since the ribs are not truly elliptical and have pointed ends they are being described as ellipsoidal in delineation or configuration. In any event the second ellipsoidal component is denoted at 50 and this encircles or surrounds the first one 46 and in addition it is, in turn, surrounded by additional or complemental ellipsoidal ribs 52 and 54. It follows that these ellipsoidal ribs concentrically surround each other and provide intervening ellipsoidal channels or grooves referred to generally at 56.

It will be evident that the sole plate is characterized by the usual semi-ellipsoidal shape and plan, that it has three triangulate sectors 20, 24 and 26 with the sector 20 at the pointed or leading toe portion and the other two at the heel portion. The boss 44 and ellipsoidal ribs 46, 52 and 54 provide a group covering the major body portion and the other shorter ribs 28 and 30 at the front and 36, 38 and 40 at the rear cooperate in making up the novel pressing, tautening and smoothing ribbed surface. It will be noted that all of the ribs, singly and collectively, are substantially arcular in cross-section as brought out in FIGS. 3 and 4. Also, the crest or crown portions of these ribs denoted at 58 are uniformly convex and constitute the structure for increasing ironing pressure by reducing the sole plate area. All of these lands are in common plane which is, when in use, in the same plane as the three triangulate areas 20, 24 and 26.

The concept of the invention takes into consideration the fact that the pressures exerted by the weight of an object on the object's supporting surface is inversely proportional to the area of the object residing atop the supporting surface. The design and construction of the herein disclosed sole plate of a hand or laundering iron applies the foregoing principle with the result that the surface of the sole plate contacting the cloth or other material being ironed is reduced to a practical minimum while at the same time affording the user the greatest usable pressure in pounds per square inch for any given weight of hand iron and will result in a corresponding increase in pressure commensurate with hand applied pressure being exerted on the iron. In actual practice, it has been found that by constructing the sole plate in the manner illustrated or in an equivalent manner, the pressure exerted by a three pound iron is equivalent to the ironing pressure exerted by a fifteen pound iron having a flat surface on the sole plate. This increase in pressure is accomplished by using the contact surfaces which, in effect, forms lines of contact. When using an iron having a sole plate constructed in accordance with the present invention, it is desirable that the cloth being ironed be placed on a relatively hard surface as compared with a very soft surface. While advantages are obtained when using a soft surface, the most pronounced advantages are obtained when a relatively hard ironing surface is provided.

Also, while an electric-type iron having steam holes is illustrated, it is pointed out that the device may be used with a dry iron as well as a steam iron. When the device is used as a steam iron, the ribs and grooves do not have any particular function for enabling flow of steam although there will be a tendency for the steam to be more evenly distributed over the sole plate area.

However, the sole plate in the present invention consists of a series of or at least one convex surface. When a series of convex surfaces are used, they are arranged in a similar parallel pattern. For purposes of illustration, an ellipsoid arrangement is employed. However,

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it is pointed out that various layouts may be provided. For example, the convex ridges or ribs may define a herring bone configuration or may extend transversely in parallel relation to each other and perpendicular to the longitudinal axis of the iron. Many various arrangements may be provided depending upon economic factors relating to the cost of manufacture and the manufacturing procedure used in forming the sole plate.

The basic advantages derived from use of an iron incorporating the present invention therein is that a greater inherent pressure is exerted due to the small area of the sole in contact with the material being ironed. In view of this high inherent pressure, little or no pressure need be exerted on the iron by the operator thereof. Thus, a conventional iron obtaining a comparable pressure to the iron of the present invention would have to be considerably heavier than the iron incorporating the present invention therein. The increase in pressure also enables the operator to iron with fewer passes across the material. Due to fewer passes being required, the ironing operation may be accomplished in less time thereby increasing the efficiency of the ironing operation.

It is submitted that a careful consideration of the specification and claims in conjunction with the figures of the drawing will enable the reader to obtain a clear and comprehensive understanding of the subject matter of the invention, the features and advantages, and the best mode of using the same. Accordingly a more extended description is regarded as unnecessary.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

A laundering iron comprising a weighted body having a horizontal sole plate provided at its axial center with an integral substantially ellipsoidal boss having a convex surface, said boss being marginally surrounded by a first contiguous substantially ellipsoidal rib having a convexly cambered crest, a second substantially ellipsoidal rib marginally surrounding said first rib and likewise having a corresponding convexly cambered crest, and a plurality of supplemental substantially ellipsoidal ribs surrounding said second rib and each other in a concentric pattern, and likewise constructed, all of said ribs being progressively and proportionally increased in diameter and providing intervening substantially ellipsoidal grooves, all of the respective convex crests being in a common plane and coacting to increase the ironing pressure by reducing the area in contact with an ironing surface, and all of said ribs being arcuate and of the same cross-sectional dimension, said sole plate having flat heel and toe portions disposed in the same plane as the crests of the ribs, said ribs and grooves occupying substantially the entire area of the sole plate.

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JORDAN FRANKLIN, *Primary Examiner.*