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Iron with curved base surface

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Technical Field

- 5 This invention relates to an iron and more particularly to an iron with a curved base surface for contacting garments to be ironed.

Background Art

- 10 Typically ironing devices are constructed to have a flat base plate for contacting the garments to be pressed or ironed. They generally function by heating the base plate to a elevated temperature which facilitates the removal of undesirable wrinkles and creases in the garment. Additionally, irons are typically constructed such that steam issues from the underside of the base plate onto the garments during the ironing process. The steam aids
15 removal of creases and wrinkles in the garment by providing a moist and humid environment during the ironing process.

- The disadvantage of conventional irons constructed with flat base plates is that the entire surface of the base plate is always in contact with the fabric once the iron is pressed
20 to the garment to be ironed. This is particularly disadvantageous when delicate material is being ironed, as the material may be subject to excessive contact with the base plate resulting in burn marks or destruction of the material.

- The flat base plate also provides that a degree of downward force be applied to the
25 iron as this force is distributed evenly across the surface of the entire base plate and then transferred onto the garment being ironed, thus the resulting pressure applied to the garment for a given downward force is proportional to the entire surface area of the flat base plate.

- 30 Conventional irons are usually constructed with a handle that is horizontally disposed to the ironing surface and which is elongated in the direction of the contacting

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base plate. An operator of an ironing device of this nature would typically grip the handle in a closed grip whereby the operator's fingers are positioned underneath one side of the handle and the thumb loops around the other the other side as if gripping handlebars or the like. This has the disadvantage whereby a person operating the iron is substantially
5 restricted to ironing in the direction in which the handle is orientated.

Disclosure of Invention

The present invention seeks to provide an iron which overcomes the above
10 disadvantages. The present invention also seeks to provide an iron with a handle that allows free movement of the iron in any direction.

According to the present invention there is provided an iron including a curved
base surface.
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Preferably, the cross-section of the curved base surface in the longitudinal
direction is a substantially semi-elliptical shape.

Preferably, the cross-section of the curved base surface in the transverse direction
20 is a substantially semi-elliptical shape.

Preferably, the cross-sections of the curved base surface in the longitudinal and
transverse directions are substantially semi-elliptical shapes.

25 Preferably, the curved base surface is in a substantially semi-ellipsoid shape.

Preferably, the curved base surface is elongated in the longitudinal direction.

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Preferably, the curved base surface consists of a front portion and a back portion wherein the back portion has a greater width in the transverse direction than the front portion.

- 5 Preferably the front portion consists of a point which substantially defines the centre axis of the curved base surface.

Preferably, the curved base surface consists of openings through which steam may be emitted.

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Preferably, the openings are aligned along the central axis of the curved base surface.

- 15 Preferably, the curved base surface includes a steam chamber in connection with said openings.

The base surface can be formed from any suitable materials such as for example metals and alloys such as aluminium, steel or brass.

- 20 Preferably, the iron includes a handle for operating said iron which when operated allows movement of said iron in all directions across a surface.

Preferably, said handle is in a substantially spherical shape and can be formed from any suitable materials such as for example wood or plastic or metals and alloys.

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Preferably, said handle is made from wood.

Preferably, the iron includes a heat resistant layer positioned between the base surface and a main body portion of the iron.

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Preferably, the heat resistant layer is made of a heat resistant plastic.

Preferably, the main body portion includes a steam shield portion situated on the periphery of said main body portion.

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Preferably, the main body portion includes a handle running in a longitudinal direction of the iron wherein the handle allows free movement of the iron in any direction during use.

10 Preferably, the handle includes a pressure sensitive steam operation means.

Brief Description of the Drawings

The present invention will become better understood from the following detailed
15 description of preferred but non-limiting embodiments thereof, described in connection with the accompanying drawings, where in:

Figure 1. illustrates a preferred embodiment of the present invention wherein the figure shows a cross-sectional view of an iron in the longitudinal direction.

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Figure 2. illustrates a preferred embodiment of the present invention wherein the figure shows a cross-sectional view of an iron in the transverse direction.

Figure 3. illustrates a preferred embodiment of the present invention wherein the
25 figure shows an above view of an iron.

Figure 4. illustrates another preferred embodiment of the present invention wherein the figure shows an above view of a base surface of an iron with the main body portion removed.

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Figure 5. illustrates another preferred embodiment of the present invention wherein the figure shows the underside of a base surface of an iron.

Figure 6. illustrates another preferred embodiment of the present invention
5 wherein the figure shows a cross-sectional view of an iron in the longitudinal direction.

Figure 7. illustrates another preferred embodiment of the present invention wherein the figure shows a cross-sectional view of an iron in the transverse direction.

10 Figure 8. illustrates another preferred embodiment of the present invention wherein the figure shows an above view of an iron.

Figure 9. illustrates another preferred embodiment of the present invention wherein the figure shows an iron in the longitudinal direction in connection with a hand
15 positioned for operation of the iron.

Figure 10. illustrates another preferred embodiment of the present invention wherein the figure shows a cross-sectional view of an iron in the transverse direction.

20 Figure 11. illustrates another preferred embodiment of the present invention wherein the figure shows an underside view of an iron.

Figure 12. illustrates an exploded view of a preferred embodiment of the present invention.

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Detailed description of the Invention

A preferred, but non-limiting embodiment of the present invention is shown in figures 1,2 and 3. The iron 1 consists of a base surface 2 which has a curved surface for
30 contacting the garments or material to be ironed. The base surface 2 is connected to a

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main body portion 3 which houses a heating mechanism and/or steam generation mechanism. The heating mechanism transfers heat to the base surface 2 to facilitate in the ironing process and the steam generation mechanism generates steam which may be pushed out of orifices 4 located on the curved surface of the base surface 2. The main
5 body portion 3 is coupled to a handle 5 which is in the form of a sphere such that the ironing device 1 may be held in a fashion that allows the iron 1 to be operated in any direction the operator so wishes.

As can be seen from figure 1, the cross-section of the base surface 2 in the
10 longitudinal direction is a semi-elliptical shape, and, as can be seen from figure 2, the cross-section of the base surface 2 in the transverse direction is also a semi-elliptical shape.

Referring to figures 4 and 5, there is shown another preferred embodiment of the
15 present invention. Figure 5 shows an above view of a base surface 2a of an iron, including a curved surface for contacting clothes to be ironed, with the main body portion removed. The heating element 6 of the heating mechanism is in direct contact with a substantial part of the base surface 2 and transfers the heat generated by the heating mechanism to the base surface 2. Steam generated by the steam generation mechanism
20 passes through steam ports 8,7 into a steam cavity drilled out of the base surface along a central axis of the iron. The steam may issue out of the base surface from the orifices 4 which are located on the curved surface of the base surface 2 along a central axis, and, which are in connection with the steam cavity. The position of the orifices 4 along a central axis is advantageous for the base surface 2 from a construction perspective as the steam
25 cavity may be simply drilled out of a die cast base plate.

Referring to figures 6, 7 and 8 there is shown a further preferred embodiment of the present invention. Figure 6 shows a cross-sectional view of an iron 1b in the longitudinal direction with a handle 9 shaped to provide for a particular hand grip similar to that
30 depicted in figure 9 and which allows free movement of the iron 1b in any direction. A

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Power cable 12 and a steam tube 11 enter the iron 1b from a rear sealing cap 10 which is composed of polypropylene moulding. In this embodiment the steam is generated externally from the iron 1b and travels to the iron 1b via the steam tube 11 where it is pushed into a steam cavity 13 and expelled via orifices 4b. A steam control button 15 can be operated to control the expulsion of the steam as desired. The curved base surface 2b in this embodiment could be composed of any suitable material such as for example die cast aluminium.

A thermostat 14 is used to control how much heat is transferred onto the base surface 2b. The body of the iron 1b directly supporting the base surface and steam chamber is composed of suitable material which can withstand high temperatures and which has insulating properties.

Referring to figures 9, 10 and 11, there is shown yet another preferred embodiment of the present invention. Figure 9 shows a cross-sectional view of an iron 1c where an image of a hand 22 has been superimposed to show how the iron may be held to allow free movement in any direction during use. This iron 1c also includes a steam shield 18 which can be made out of any suitable material such as for example polypropylene. The shield 18 prevents the fingers from being heated beyond a comfortable level by the steam which may issue from the bottom of the iron 1c. A heat shield 17 between the curved base surface 2c and the steam shield 18 is provided to protect the steam shield from direct contact with the curved base surface and to prevent the shield from reaching a temperature that would be uncomfortable to the touch. The heat shield 17 can be composed of any suitable heat resistant material.

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Referring to figure 12, there is shown an exploded view of an iron 1d in accordance with another aspect of the present invention. A base surface 2d, which includes a curved surface for contacting material to be ironed, is shown to include contact points for the heating mechanism 27 and steam entry points 28, 29 to a steam cavity located on a central axis within the base surface 2d. The base surface 2d would

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normally be attached to a heat shield layer 26 which in turn would normally be attached to the main body portion 24 of the iron and a rear sealing cap 25 which includes an entry point 30 for steam and/or power supply. The heat shield layer can be composed of any suitable material that is suitably heat resistant and has suitable insulating properties.

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A handle 23 is shown which provides that the iron may be held to allow free movement in any direction during use. The handle 23 may be composed of any suitable material such as for example wood. The handle 23 is normally attached to the main body portion 24 of the iron and includes a steam control button 22 which may control the
10 steam expulsion from the base surface 2d.

Throughout this specification the word "iron", will be understood to imply a device or iron which is used to contact garments or materials for the purposes of removing creases or wrinkles in either a domestic or commercial environment.

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The reference to any prior art in this specification is not, and should not be taken as, an acknowledgment or any form of suggestion that that prior art forms part of the common general knowledge in Australia.

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Although several preferred embodiments have been described in detail, it should be understood that various changes, substitutions, and alterations can be made herein by one ordinarily skilled in the art without departing from the spirit or scope of the present invention.

Claims

1. An iron including a curved base surface.
- 5 2. An iron according to claim 1 wherein the cross-section of the curved base surface in the longitudinal direction is a substantially semi-elliptical shape.
3. An iron according to either one of claims 1 or 2 wherein the cross-section of the curved base surface in the transverse direction is a substantially semi-elliptical
10 shape.
4. An iron according to claim 1 wherein the cross-sections of the curved base surface in the longitudinal and transverse directions are substantially semi-elliptical shapes.
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5. An iron according to claim 1 wherein the curved base surface is in a substantially semi-ellipsoid shape.
6. An iron according to any one of claims 1 to 5 wherein the curved base surface is
20 elongated in the longitudinal direction.
7. An iron according to any one of claims 1 to 6 wherein the curved base surface consists of a front portion and a back portion wherein the back portion has a greater width in the transverse direction than the front portion.
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8. An iron according to any one of claims 1 to 7 wherein the front portion consists of a point which substantially defines the central axis of the curved base surface.
9. An iron according to any one of claims 1 to 8 wherein the curved base surface
30 includes openings through which steam may be emitted.

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10. An iron according to claim 9 wherein the openings are aligned along the central axis of the curved base surface.
11. An iron according any one of claims 10 and 11 wherein the curved base surface
5 includes a steam chamber in connection with said openings.
12. An iron according to any one of claims 1 to 11 wherein the base surface is formed from metals and alloys chosen from aluminium, steel or brass.
- 10 13. An iron according to any one of claims 1 to 12 wherein the iron includes a handle for operating said iron which allows movement of the iron in all directions across a surface.
14. An iron according to claim 13 wherein said handle is a substantially spherical
15 shape.
15. An iron according to either of claims 13 and 14 wherein said handle is made from wood.
- 20 16. An iron according to any one of claims 1 to 12 wherein the iron includes a heat resistant layer positioned between the curved base surface and a main body portion of the iron.
17. An iron according to claim 16 wherein the heat resistant layer is made of a heat
25 resistant plastic.
18. An iron according to any one of claims 16 or 17 wherein the main body portion includes a steam shield portion situated on the periphery of said main body portion.

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19. An iron according to any one of claims 16 to 18 wherein the main body portion includes a handle running in a longitudinal direction of the iron wherein the handle allows free movement of the iron in any direction during use.
- 5 20. An iron according to claim 19 wherein the handle includes a pressure sensitive steam control means.