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(54) **IRON WITH USER INTERFACE**

BÜGELEISEN MIT BENUTZERSCHNITTSTELLE

FER À REPASSER ÉQUIPÉ D'UNE INTERFACE UTILISATEUR

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Description

TECHNICAL FIELD

[0001] The invention relates to an iron for ironing clothes and other textiles. In particular the invention relates to an iron, such as a steam iron, having a user interface. The invention also relates to an ironing station.

BACKGROUND

[0002] Irons for ironing clothes and other textiles are typically provided with a user interface and user controls for the user to be able to set a desired temperature and in some cases other parameters of the iron such as steam and for the user to know when the iron can be used.

[0003] US 2 288 175 A discloses an electrically heated iron having a thermal operated switch means for controlling the temperature thereof, including a plurality of independently operable push buttons.

[0004] A number of different interfaces exist. For example, US2006081588 describes an interface for an iron has a graphic display indicating the current temperature selection, user controls for adjusting the current temperature selection, and a ready indicator adapted to indicate when the iron is at the currently selected temperature.

[0005] To aid the user, a light can sometimes be provided at the front end of the iron. For example, US7181873 describes an iron for use while ironing clothes and other fabrics. The iron is a standard iron with a light attached to the front end of the iron, with the light shining downward and forward while the iron is a downward position and is in use.

[0006] There is a constant desire to improve irons and the user interface for irons. Hence, there exists a need for an improved iron and an improved iron user interface.

SUMMARY

[0007] It is an object of the present invention to provide an improved iron. In particular, it is an object to improve the user interface of an iron.

[0008] These objects and or others are obtained by an iron as set out in the appended claims.

[0009] In accordance with the invention an iron is provided. The iron comprises a heatable soleplate, a handle, and a heat controller user interface. The heat controller user interface comprises at least two different touch controls each corresponding to a different heat setting of the iron. The touch controls are also provided with a light indicator each and wherein the light indicators are configured to indicate the heat setting currently selected. Hereby an improved user interface can be provided in that the currently selected heat setting is displayed by the light indicator located on a touch control. This will enable the user to both in an easy manner change the heat setting and at the same time get instant feedback on the current heat selection. The control and feedback

can then be performed via the same touch control used for changing the heat setting that controls the heat of the heatable soleplate.

[0010] In accordance with one embodiment, the at least two touch controls are located on the handle or a front end of the iron extending up to the handle on a surface facing upwards, towards a user, when in use. Hereby, the touch controls can be located at a location that is easy to view by a user.

[0011] In accordance with one embodiment, the at least two touch controls are located on a forward section of the iron, in front of the middle of the handle. Hereby, the touch controls can be located at a location that is easy to reach by a user.

[0012] In accordance with one embodiment, at least one of said at least two touch controls is located within reach of the thumb of a hand of a user holding the handle. Hereby a touch control can be reached by the thumb of a user holding the handle and the touch control can be manipulated without having to change the position of the hand holding the handle.

[0013] In accordance with the invention, the iron comprises a forward-facing light for illuminating a textile to be ironed. Hereby, the textile being ironed can be illuminated as the user moves the iron over the textile.

[0014] In accordance with the invention, the forward-facing light is lit when the temperature of the soleplate corresponds to the temperature selected by a touch control. Hereby an easy to detect feedback on the temperature can be achieved in that the forward-facing light only starts to illuminate the textile when the temperature of the soleplate is within the correct temperature range. Hereby, the user can easily be made aware of when to start using the iron.

[0015] In accordance with one embodiment, the top cover of at least some of the touch controls is made from a transparent material. Hereby a light can be located beneath the cover of the touch control. The light can then, when lit illuminate the cover of the touch control. Thus, lights can be provided beneath the transparent top cover. The lights can be Light Emitting Diodes, LEDs.

[0016] In accordance with one embodiment, a heating light is activated when the iron temperature is outside a range allowed for the heat setting selected by a user. Hereby a user can be made aware that the temperature of the soleplate is outside a temperature range set by the user. The heating light can be provided at a front end of the iron. Also, the heating light can be configured to be a flashing light that blinks when the temperature of the iron is out of a set temperature range. This can increase the awareness of the user to notice that the temperature is outside the desired temperature range. Further, the front end of the iron can be provided with a generally flat section, and where the light can be displayed at said flat section. In accordance with some embodiments the heating light for illuminating the flat section can be arranged as a light under the flat section and the flat section can be made, at least partially, by a transparent material. The

flat section can have an upwards facing side facing the user when the iron is in use and the light can be displayed on the upwards facing side.

[0017] In accordance with one embodiment, the iron is a steam iron and wherein the touch controls are also configured to set a steam activity of the iron to generate an amount of steam determined by the activated touch control. Hereby the correct setting of a steam iron can be set with only one touch.

[0018] The invention also extends to an ironing station provided with an iron as set out above.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The invention will now be described in more detail, by way of example, and with reference to the accompanying drawings, in which:

Fig. 1 is a side view of an iron.

Fig. 2 is a top view of an iron,

Fig. 3 is a view in perspective of an iron,

Fig. 4 is a detailed view of a touch control panel for an iron, and

Fig. 5 is a view of an ironing station.

DETAILED DESCRIPTION

[0020] The invention will now be described more fully hereinafter with reference to the accompanying drawings, in which certain embodiments of the invention are shown. The invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided by way of example so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. For example, like or similar components of different embodiments can be exchanged between different embodiments. Some components can be omitted from different embodiments. Like numbers refer to like elements throughout the description.

[0021] In Fig. 1, a side view of an iron 10 is depicted. The iron 10 can typically be a steam iron. In accordance with some embodiments the iron 10 is a part of an ironing station. The iron 10 comprises a handle 12 and a heatable soleplate 14. The handle 12 is used by a user for holding the iron 10 when using the iron 10. The heatable soleplate 14 can be heated by a heater located in the iron to a temperature set by a user using a control. The iron 10 can be supplied with power via a cord 24.

[0022] The iron 10 further comprises a front light 16. The front light 16 can be configured to illuminate an area in front of the iron 10. Hereby, a part of a textile being ironed can be illuminated by the front light 16 when the

front light is lit. The iron 10 can further comprise a front end 20 extending up to the handle 12 from the bottom front part of the iron. The front end 20 can house the front light 16. Also, the front end 20 of the iron can be provided with a generally flat section 18. The flat section 18 will be facing upwards towards a user when the iron is in use. Thus, the flat section 18 can have an inclination being less than the inclination of the front end 20 when the iron is in use. The flat section 18 can be arranged to be illuminated to provide a light indication to a user. For example, a light can be arranged to illuminate the flat section 18, and where the light is displayed at said flat section. For example, a heating light can be activated when the iron temperature is outside a range allowed for the heat setting selected by a user. The heating light can then be arranged to be displayed at the front end of the iron. In accordance with some embodiments the heating light for illuminating the flat section can be arranged as a light under the flat section and the flat section can be made, at least partially, by a transparent material. In one embodiment, the heating light is configured to be a flashing light that blinks when the temperature is outside the set temperature range. The flat section can have an upwards facing side facing the user when the iron is in use and the light can be displayed on the upwards facing side.

[0023] The light of the front light 16 can preferably be a white or bright light. The light displayed on the flat section 18 can advantageously be a different colored light than the front light 16. For example, the light displayed on the flat section 18 can be magenta or blue. By providing lights that are clearly different from each other on the front light 16 and the flat section 18 it will be easy for the user to know when the iron is ready to use.

[0024] The iron 10 can further be provided with controller circuitry for controlling different functions of the iron 10. The controller circuitry is in Fig. 1 generally represented by a controller 22. The controller 22 is configured to set different parameters of the iron in accordance with user input. Parameters that can be set are, for example, temperature of the soleplate and amount of steam provided by a steam iron. Also, other parameters such as lighting different lights can be controlled by the controller 22.

[0025] In Fig. 2, a top view of the iron 10 is shown. The iron 10 has a heat controller user interface 26. The heat controller user interface 26 can be located to face upwards, towards a user, when in use. The heat controller user interface 26 can be, at least partly, located on the handle 12 or the front end 20 of the iron extending up to the handle on a surface facing upwards, towards a user, when in use. The heat controller user interface 26 can be provided with touch controls, see Fig. 3 and Fig. 4. In particular, the heat controller user interface 26 is arranged such that the touch controls or at least two touch controls, can be located on a forward section of the iron, in front of the middle of the handle 12. The touch controls or at least some of the touch controls are advantageously located within reach of the thumb of a hand of a user

holding the handle to facilitate manipulation of the touch controls.

[0026] In Fig. 3, a view in perspective of the iron 10 is shown. In Fig. 3, the heat controller user interface 26 is shown with a number of touch controls 28, 29 located on a forward upper section of the iron 10. Hereby the heat controller user interface 26 can be easily reached by a user and is at the same time always in view of a user of the iron 10. Thus, when a user presses a touch control 28, 29 and activates the function associated with that particular touch control the touch control activated can be lit up to provide visual feedback to the user about what touch control that is currently activated.

[0027] In Fig. 4 the heat controller user interface 26 is shown in detail. The heat controller user interface 26 has a number of touch controls 28, 29. In the example shown in Fig. 4, four different touch controls are arranged on the heat controller user interface 26. The four different touch controls in Fig. 4 can correspond to Linen, Cotton, Wool and Outdoor materials where Outdoor materials can be sport jackets and other high-tech material clothes. The heat controller user interface 26 can comprise light indicators 30 to signal the touch control currently activated. Thus, when a touch controlled is pressed and the associated function of that touch control is activated, the light indicator of that touch control is lit to signal that the touch control has been pressed and that the corresponding function of the iron is activated. For example, in Fig. 4, touch control 29 can be configured to activate a program for ironing Linen. When touch control 29 is pressed, the iron 10 sets the temperature and possibly also the steam function of the iron 10 to a setting that is suitable for ironing Linen. Also, the touch control 29 is lit up by lighting the light indicator 30. The light indicator 30 can be arranged in different ways. In accordance with one embodiment the cover 34 is, at least partially, transparent and lights 32 are located beneath the cover 34. The lights 32 can for example be Light Emitting Diodes LEDs.

[0028] The touch controls 28, 29 can be used as input to the controller 22. The controller 22 can be configured to control one or more of the following settings of the iron 10 based on the input via the touch controls 28, 29:

- The temperature of the iron,
- The amount of steam generated by the iron,
- Lighting the touch control activated,
- Lighting the front light when the temperature of the iron is within a range specified by the program corresponding to the pressed touch control,
- Lighting the heating light when the temperature of the iron is outside a range specified by the program corresponding to the pressed touch control.

[0029] Other settings of the iron can also be controlled by the controller 22.

[0030] The iron 10 can also be used in an ironing station also referred to as a steam station. In Fig 5 an ironing station 80 is shown comprising an iron 10 and a station

84 used for providing steam.

[0031] The invention provides a user interface for an iron that enables the currently selected heat setting to be displayed by a light indicator located on a touch control.

- 5 This will enable the user to both in an easy manner change the heat setting and at the same time get instant feedback on the current heat selection. The control and feedback can then be performed via the same touch control used for changing the heat setting that controls the heat of the heatable soleplate of the iron.

Claims

- 15 1. An iron (10) comprising:
- a heatable soleplate (14),
 - a handle (12),
 - a heat controller user interface (26), comprising at least two different touch controls (28, 29) each corresponding to a different heat setting of the iron and **characterised in that** the touch controls are provided with a light indicator (30) each and wherein the light indicators are configured to indicate the heat setting currently selected, the iron further comprising a forward-facing light (16) for illuminating a textile to be ironed, wherein the forward-facing light is lit when the temperature of the soleplate corresponds to the temperature selected by a touch control.
- 20 2. The iron according to claim 1, wherein said at least two touch controls are located on the handle (12) or a front end (20) of the iron extending up to the handle on a surface facing upwards, towards a user, when in use.
- 25 3. The iron according to claim 2 wherein said at least two touch controls are located on a forward section of the iron, in front of the middle of the handle.
- 30 4. The iron according to claim 3 wherein at least one of said at least two touch controls are located within reach of the thumb of a hand of a user holding the handle.
- 35 5. The iron according to any one of claims 1-4, wherein the top cover (34) of the at least two touch controls is made from a transparent material.
- 40 6. The iron according to claim 5, wherein lights (32) are provided beneath the transparent top cover.
- 45 7. The iron according to claim 6, wherein lights are Light Emitting Diodes, LEDs.
- 50 8. The iron according to any one of claims 1-7, wherein a heating light is activated when the iron temperature
- 55

is outside a range allowed for the heat setting selected by a user.

9. The iron according to claim 8, wherein the heating light is provided at a front end of the iron.
10. The iron according to any one of claims 8-9, wherein the heating light is configured to be a flashing light.
11. The iron according to any one of claims 8-10, wherein the front end (20) of the iron is provided with a generally flat section (18), wherein the flat section (18) has an inclination being less than the inclination of the front end and where the light is displayed at said flat section.
12. The iron according to any one of claims 1-11, wherein the iron is a steam iron and wherein the touch controls are also configured to set a steam activity of the iron to generate an amount of steam determined by the activated touch control.
13. An ironing station (80) provided with an iron (10, 82) according to anyone of claims 1-12.

Patentansprüche

1. Bügeleisen (10), umfassend:

- eine beheizbare Sohle (14),
- einen Griff (12),
- eine Wärmesteuerungsbenutzerschnittstelle (26), umfassend mindestens zwei verschiedene Berührungsbedienelemente (28, 29), die jeweils einer anderen Wärmeeinstellung des Bügeleisens entsprechen, und **dadurch gekennzeichnet, dass** die Berührungsbedienelemente jeweils mit einer Lichtanzeige (30) versehen sind und wobei die Lichtanzeigen dazu ausgelegt sind, die aktuell gewählte Wärmeeinstellung anzuzeigen, wobei das Bügeleisen ferner eine nach vorne gerichtete Leuchte (16) zum Beleuchten eines zu bügelnden Textils umfasst, wobei die nach vorne gerichtete Leuchte leuchtet, wenn die Temperatur der Sohle der durch ein Berührungsbedienelement gewählten Temperatur entspricht.

2. Bügeleisen gemäß Anspruch 1, wobei die mindestens zwei Berührungsbedienelemente am Griff (12) oder an einem vorderen Ende (20) des Bügeleisens angeordnet sind, das sich bei Verwendung bis zum Griff auf einer Fläche erstreckt, die nach oben in Richtung eines Benutzers zeigt.
3. Bügeleisen gemäß Anspruch 2, wobei die mindestens zwei Berührungsbedienelemente an einem vor-

deren Abschnitt des Bügeleisens vor der Mitte des Griffs angeordnet sind.

4. Bügeleisen gemäß Anspruch 3, wobei mindestens eine der mindestens zwei Berührungsbedienelemente in Reichweite des Daumens einer Hand eines den Griff haltenden Benutzers angeordnet ist.
5. Bügeleisen gemäß einem der Ansprüche 1 bis 4, wobei die obere Abdeckung (34) der mindestens zwei Berührungsbedienelemente aus einem transparenten Material hergestellt ist.
6. Bügeleisen gemäß Anspruch 5, wobei unter der transparenten oberen Abdeckung Leuchten (32) vorgesehen sind.
7. Bügeleisen gemäß Anspruch 6, wobei die Leuchten Leuchtdioden, LEDs, sind.
8. Bügeleisen gemäß einem der Ansprüche 1-7, wobei eine Heizleuchte aktiviert wird, wenn die Temperatur des Bügeleisens außerhalb eines Bereichs liegt, der für die durch einen Benutzer ausgewählte Heizeinstellung zulässig ist.

9. Bügeleisen gemäß Anspruch 8, wobei die Heizleuchte an einem vorderen Ende des Bügeleisens vorgesehen ist.

10. Bügeleisen gemäß einem der Ansprüche 8-9, wobei die Heizleuchte als Blinkleuchte ausgelegt ist.

11. Bügeleisen gemäß einem der Ansprüche 8 bis 10, wobei das vordere Ende (20) des Bügeleisens mit einem allgemein ebenen Abschnitt (18) versehen ist, wobei der ebene Abschnitt (18) eine Neigung aufweist, die geringer als die Neigung des vorderen Endes ist, und wobei das Licht an dem ebenen Abschnitt angezeigt wird.

12. Bügeleisen gemäß einem der Ansprüche 1 bis 11, wobei das Bügeleisen ein Dampf bügeleisen ist und wobei die Berührungsbedienelemente auch dazu ausgelegt sind, eine Dampfaktivität des Bügeleisens einzustellen, um eine durch das aktivierte Berührungsbedienelement bestimmte Dampfmenge zu erzeugen.

13. Bügelstation (80), versehen mit einem Bügeleisen (10, 82) gemäß einem der Ansprüche 1-12.

Revendications

1. Fer à repasser (10), comprenant :

- une semelle chauffable (14),

- une poignée (12),
 - une interface utilisateur d'unité de commande de chaleur (26), comprenant au moins deux différentes commandes tactiles (28, 29) chacune correspondant à un différent réglage de chaleur du fer à repasser et **caractérisé en ce que** les commandes tactiles sont pourvues d'un indicateur lumineux (30) chacune et dans lequel les indicateurs lumineux sont configurés pour indiquer le réglage de chaleur actuellement sélectionné, le fer à repasser comprenant en outre une lumière tournée vers l'avant (16) pour éclairer un textile destiné à être repassé, dans lequel la lumière tournée vers l'avant est éclairée lorsque la température de la semelle correspond à la température sélectionnée par une commande tactile.
2. Fer à repasser selon la revendication 1, dans lequel lesdites au moins deux commandes tactiles sont situées sur la poignée (12) ou une extrémité avant (20) du fer à repasser s'étendant jusqu'à la poignée sur une surface tournée vers le haut, vers une utilisateur, lors de l'utilisation.
3. Fer à repasser selon la revendication 2, dans lequel lesdites au moins deux commandes tactiles sont situées sur une section avant du fer à repasser, devant le milieu de la poignée.
4. Fer à repasser selon la revendication 3, dans lequel au moins une desdites au moins deux commandes tactiles est située au sein de la portée du pouce d'une main d'un utilisateur tenant la poignée.
5. Fer à repasser selon l'une quelconque des revendications 1 à 4, dans lequel le couvercle supérieur (34) des au moins deux commandes tactiles est fait d'un matériau transparent.
6. Fer à repasser selon la revendication 5, dans lequel des lumières (32) sont prévues en dessous du couvercle supérieur transparent.
7. Fer à repasser selon la revendication 6, dans lequel les lumières sont des diodes électroluminescentes, LEDs.
8. Fer à repasser selon l'une quelconque des revendications 1 à 7, dans lequel une lumière de chauffage est activée lorsque la température de fer à repasser est en dehors d'une plage permise pour le réglage de chaleur sélectionné par un utilisateur.
9. Fer à repasser selon la revendication 8, dans lequel la lumière de chauffage est prévue à une extrémité avant du fer à repasser.
10. Fer à repasser selon l'une quelconque des revendications 8 et 9, dans lequel la lumière de chauffage est configurée pour être une lumière clignotante.
11. Fer à repasser selon l'une quelconque des revendications 8 à 10, dans lequel l'extrémité avant (20) du fer à repasser est pourvue d'une section généralement plate (18), dans lequel la section plate (18) a une inclinaison inférieure à l'inclinaison de l'extrémité avant et où la lumière est présentée sur ladite section plate.
12. Fer à repasser selon l'une quelconque des revendications 1 à 11, dans lequel le fer à repasser est un fer à repasser à vapeur et dans lequel les commandes tactiles sont également configurées pour régler une activité de vapeur du fer à repasser pour générer une quantité de vapeur déterminée par la commande tactile activée.
13. Centrale vapeur à repasser (80) pourvue d'un fer à repasser (10, 82) selon l'une quelconque des revendications 1 à 12.

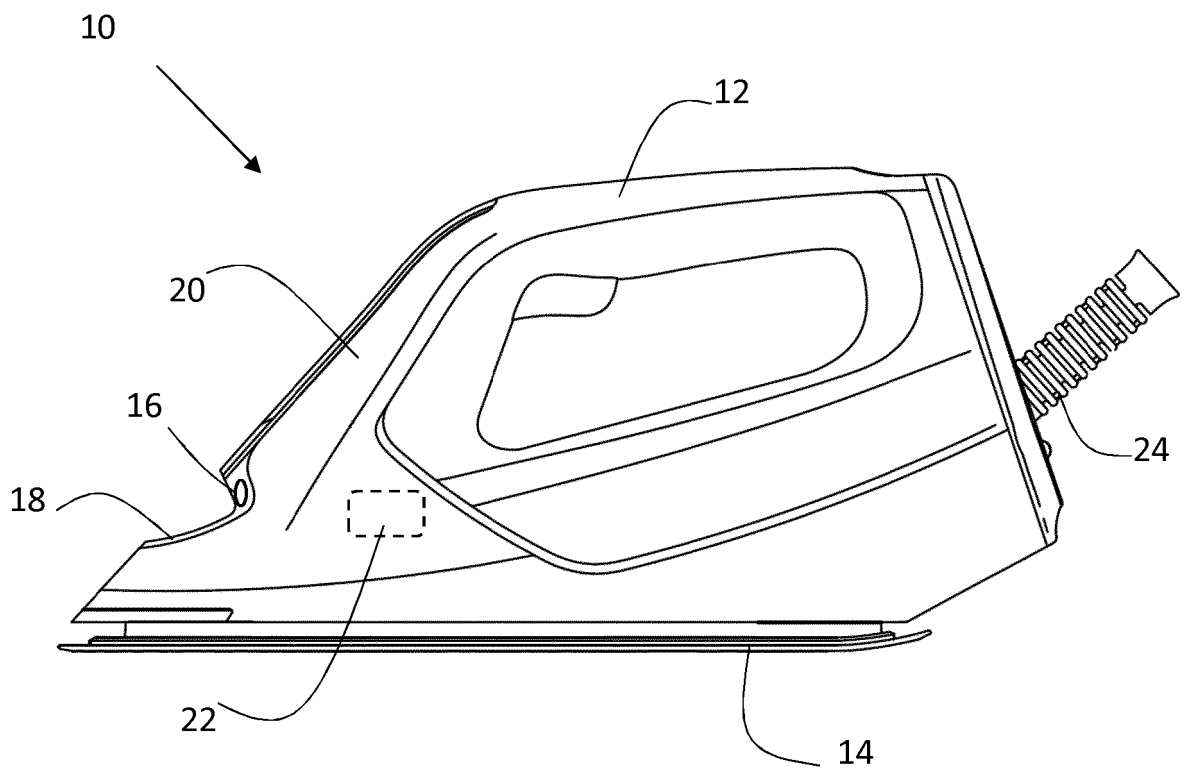


Fig. 1

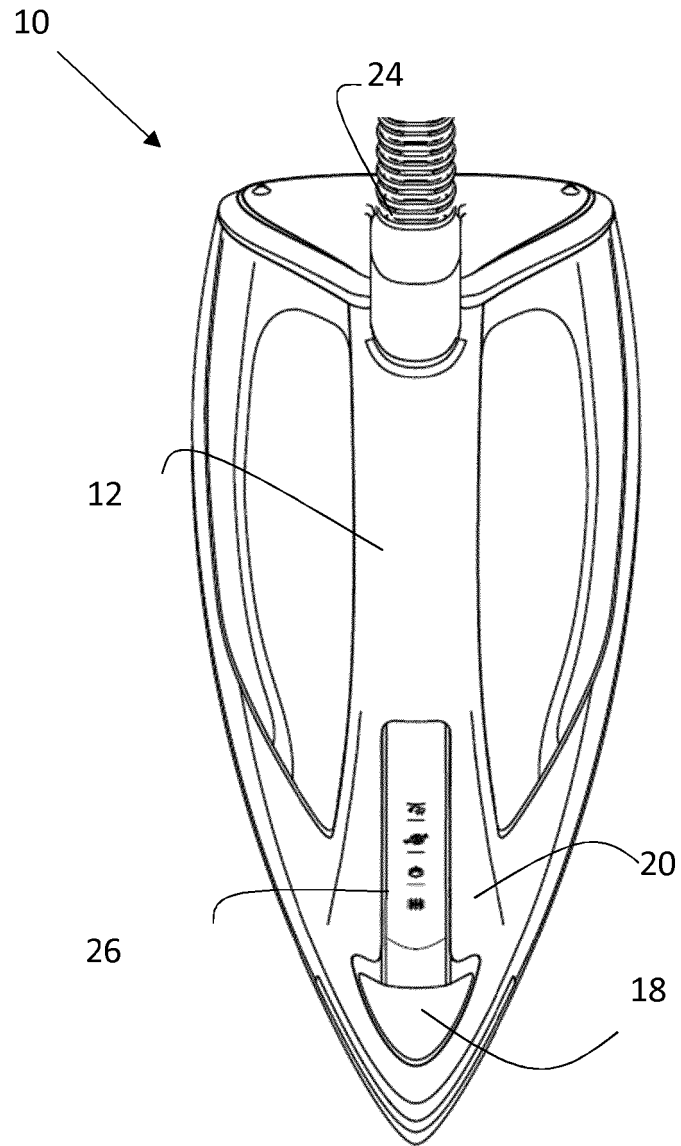


Fig. 2

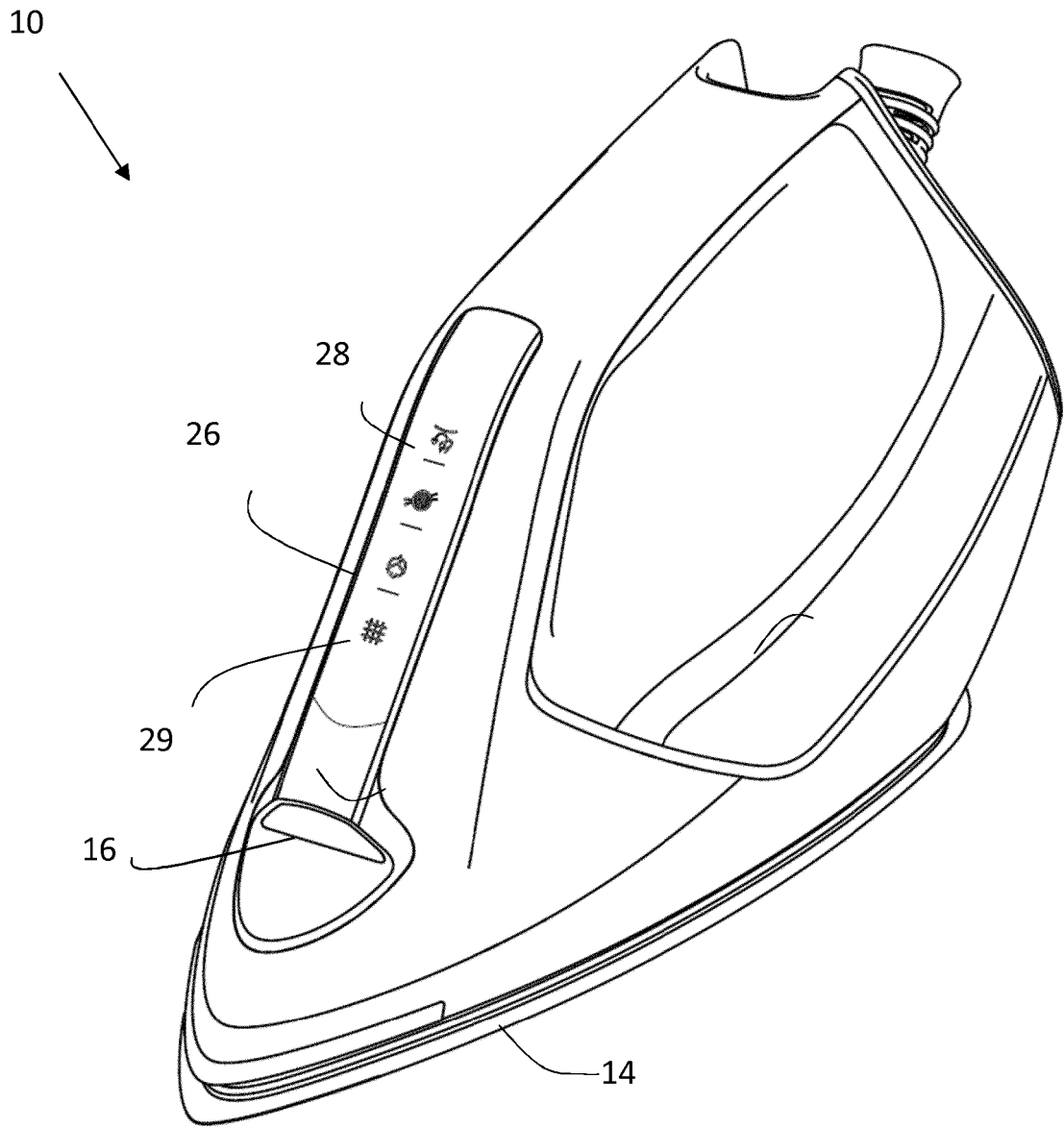


Fig. 3

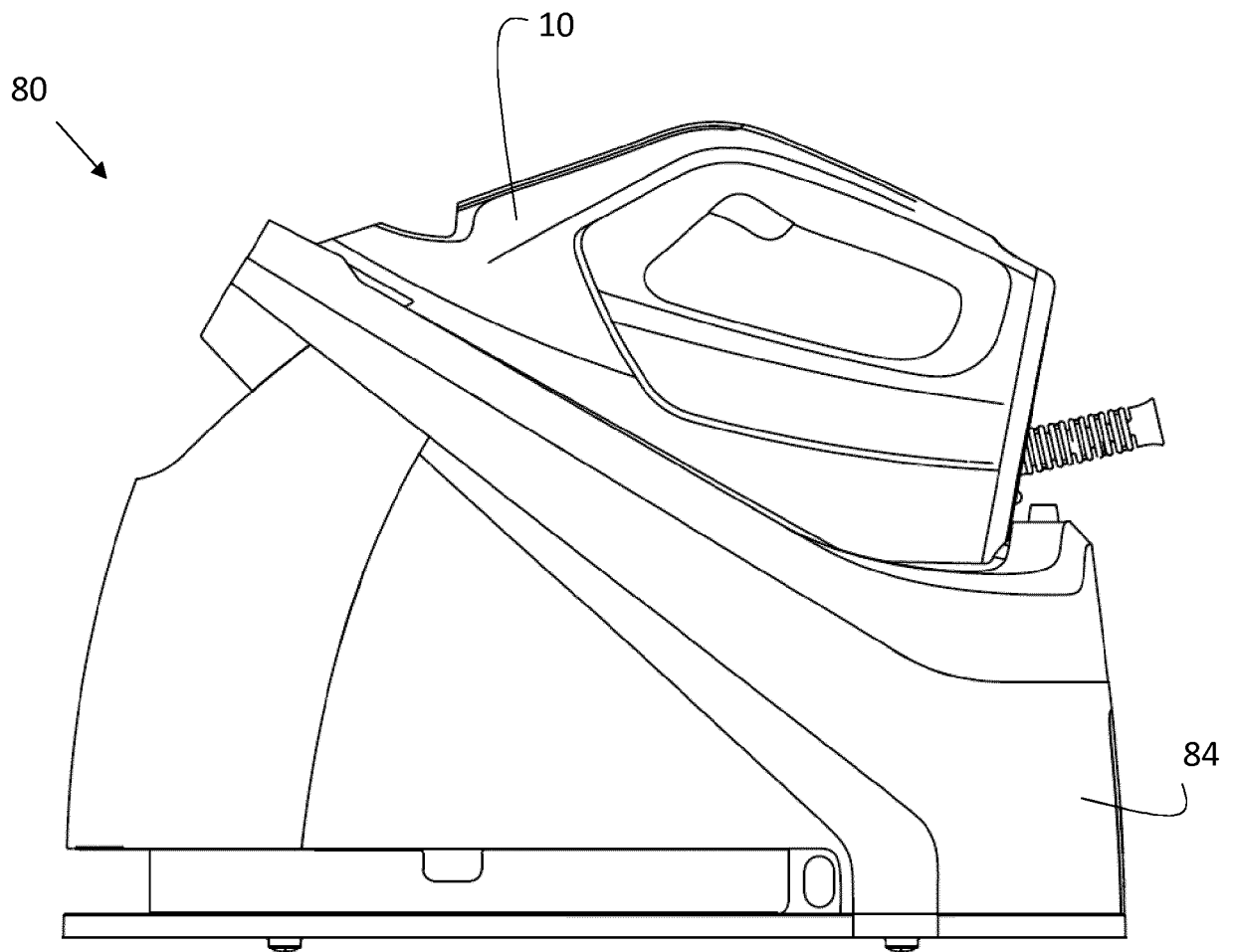


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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