

(19)



(11)

EP 3 927 875 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
07.08.2024 Bulletin 2024/32

(51) International Patent Classification (IPC):
D06F 75/12 ^(2006.01) **D06F 75/40** ^(2006.01)
D06F 79/02 ^(2006.01)

(21) Application number: **20705971.8**

(52) Cooperative Patent Classification (CPC):
D06F 75/12; D06F 79/02

(22) Date of filing: **19.02.2020**

(86) International application number:
PCT/EP2020/054330

(87) International publication number:
WO 2020/169653 (27.08.2020 Gazette 2020/35)

(54) **STEAM STATION WITH WATER TANK**

DAMPFSTATION MIT WASSERTANK

STATION VAPEUR AVEC RÉSERVOIR D'EAU

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GR
HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL
PT RO RS SE SI SK SM TR**

(30) Priority: **20.02.2019 GB 201902339**

(43) Date of publication of application:
29.12.2021 Bulletin 2021/52

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Description

Introduction

[0001] The present invention is related to a steam station with a water tank.

Background

[0002] Traditionally, ironing (i.e., the smoothing of creases in clothes and other fabric materials) was carried out using a hand-iron having a heated sole-plate (e.g., a stainless-steel plate heated by an electric heating element). To aid in the smoothing of creases, steam-generators were integrated into the construction of the hand-iron, with the steam-generators boiling water to produce steam which is then emitted through holes in the sole-plate onto the fabric.

[0003] However, providing both the steam generator unit and the water-tank holding the water needed for steam production on the hand-iron rendered it excessively heavy and cumbersome. Additionally, water-storage capacity within the hand-iron is limited by the need to keep the hand-iron light enough to lift easily. Finally, since the heat for operating the steam-generator is typically provided by the same heating element used to heat the sole-plate, steam generation capacity is limited and the differing temperatures needed by the sole plate and steam generator rendered temperature-control difficult to properly achieve. Therefore, the steam-station was introduced to address this issue.

[0004] A steam station (also known as an "ironing system") typically comprises a base section having a steam generator and a water-tank, and a hand-iron section provided with steam and electrical power via suitable hoses and cables from the base section. Alternatively, the steam-generator may be located in the hand-iron and supplied with water pumped from the water tank in the base section via a hose.

[0005] Since the base-section is not integral to the hand-iron, but instead connected to it only by hoses and cables, it can be rested on a surface during ironing, rendering the hand-unit much less cumbersome. Additionally, water storage capacity is much less limited in this configuration.

[0006] For the user's convenience, a rest or iron-seat is typically provided on the steam-station base unit on which the hot hand-iron can be loosely rested on in-between periods of use. Since the iron is not stable on an excessively inclined surface, this surface must be either horizontal or only gently inclined (e.g., roughly 30 degrees or less from the horizontal), otherwise the iron may slip off the iron-seat and potentially injure the user.

[0007] However, the need to provide sufficient space on the steam-station to rest the hand-iron on renders the steam station excessively long in the horizontal direction. This is disadvantageous since it means that it takes up an excessive amount of floor-space in storage, and that

when storing the product it is likely to have items placed on top of it, increasing the risk of breakage and the required vertical strength of the device.

[0008] A further disadvantage of the steam stations of the prior art is that, even when emptied of water, the water-tank of the steam station takes up just as much space as when it is full, increasing the space required to store the device.

[0009] Accordingly, there is a need for a steam-station and water tank capable of ameliorating the above-described problems of the prior art.

[0010] US 2010/058625 A1 discloses features falling under the preamble of claim 1. WO 2004/097101 A2 and WO 2014/013360 A2 are further prior art.

Summary of the invention

[0011] The invention is defined by claim 1. The dependent claims define preferred variants of the invention.

[0012] The invention relates to a steam station. A steam station according to the invention comprises a steam generator. A steam generator is a device for turning water into steam, for example by heating it.

[0013] The station further comprises a base which in turn comprises a water tank fluidically connected to the steam generator for providing water to the steam generator, the base preferably having a columnar shape. The base is a part of the steam station which was previously referred to as a base section. It is comparatively fixed in place during ironing whilst the iron itself is moved. By the water tank being fluidically connected to the steam generator, it is meant that a fluid such as water can be led from the water tank to the steam generator, where it is turned into steam. By a columnar shape, it is meant that the base has a shape which is long in one direction, compared with the other two directions orthogonal to that direction. Put differently, columnar means that the base has the form of a column. Preferably, the columnar shape is such that it extends in the vertical direction during use of the steam station.

[0014] The steam station further comprises an iron with a sole plate. The iron is fluidically connected to the steam generator and configured to emit steam provided by the steam generator for facilitating the ironing of clothes. Again, the fluidical connection means that the steam can be led from the steam generator to the iron.

[0015] The steam station further comprises an iron-rest connected to the base via a rotating joint wherein the iron-rest can be moved about the joint from a first configuration where the iron rest extends out from the base for allowing the iron to be rested thereon, to a second configuration where the iron rest extends substantially in parallel with the base. The first configuration is preferably essentially horizontal to allow for resting the iron thereon without slipping. The second configuration is, compared with the first configuration, preferably more vertical to take up less space.

[0016] The iron-rest comprises a storage seat in which

the iron can be received and secured when the iron rest is in the second configuration.

[0017] By providing a capability of folding the steam station up so that the iron-rest sticks out less, namely in the second configuration, one makes sure that during storage, less space is taken up by the steam station. Since one can then also secure the iron to the iron-rest, also the iron can be safely stored away, which allows for also storing that iron in a very compact arrangement.

[0018] It is preferable that the steam generator is located within the base and that it superheats the steam which is provided to the iron. By the steam generator being located within the base, a space saving configuration is achieved. By super-heating the steam, one avoids condensation of the steam as it is led to the iron.

[0019] It is also an option to locate the steam generator within the iron, and wherein the steam station comprises a pump configured to pump water from the water tank to the steam generator. In such a way, since the steam is generated in the iron itself, one also avoids condensation (since the steam does not need to be led from a steam generator which is physically separate from the iron). By having a pump, it becomes possible to lead water to the iron even if the iron were to be provided at a higher location than the water tank.

[0020] In that context, it is preferred that the pump is located in the base. Such an arrangement provides for a lighter iron, which makes ironing easier.

[0021] According to the invention, the storage seat is located on an opposite surface of the iron-rest to an iron rest area. That iron rest area is configured to loosely receive the iron during resting between ironing operations. By providing such an iron rest area, it becomes possible to put the iron down during ironing operations.

[0022] It is preferred that the storage seat comprises a user-actuable lock configured to secure the iron within the storage seat, preferably a sliding lock or a rotating lock. Such a lock aids in holding the iron in place during storage.

[0023] It is preferred that one of the storage seat and the iron comprises a recess configured to receive a protrusion or hook of the other of the storage seat and the iron, for releasably securing the iron in the storage seat. This provides a reliable way of storing the iron between ironing operations.

[0024] It is preferred that the storage seat comprises ribs configured to separate the sole plate of the iron from a main body of the iron-rest when the iron is received in the storage seat. Those ribs space the sole plate from the bottom of the storage seat and thereby avoid a contact between the sole plate, which will most likely be hot after ironing operations, and the storage seat. This avoids overheating of the storage seat, thus mitigating damage, and also allows the iron to cool down more quickly.

[0025] It is furthermore preferred that the rotating joint comprises one of a fabric joint, a flexible joint, a ball-joint, an articulated joint, and a hinge.

[0026] Additionally, the steam station preferably fur-

ther comprises a pedestal configured to retain the steam station in an upright position across the full range of fill-states of the water tank and extension of the iron-rest away from the base. This increases the stability of the steam station.

[0027] It is also preferred that the iron is fluidically connected to the water tank via a flexible hose, wherein the iron is configured to hold the flexible hose against the base when secured in the storage seat. The hose can be used for conducting water to the iron (if the steam generator is provided within the iron), or it can be used to conduct steam to the iron if the steam generator is provided inside the base. By the feature that the iron is configured to hold the flexible hose against the base when secured in the storage seat, it is meant that the steam station is configured such that the hose can be wrapped around the steam station and can then be secured in that wrapped configuration by the iron being secured to the storage seat so that the hose cannot unravel from the base. In such a configuration, the flexible hose can be securely and space efficiently stored between ironing operations. It is further preferred that the water tank is collapsible so that the storage space is reduced when the steam station is not in use and when, accordingly, the water tank is empty.

[0028] Examples of how to achieve this would include: a) a tank comprising a corrugated side-wall, b) a tank comprising a telescoping side-wall, and c) a tank formed of elastic material.

[0029] Preferably, the iron comprises a heat-insulating shell located on an opposite side of the iron to the sole plate, so as to face outwardly from the storage seat when the iron is secured within the storage seat. In this way the steam station is rendered more safe, as the part of the iron facing the user will be less likely to be hot enough to cause injury.

[0030] Optionally, the storage seat is configured to surround the shell so as to prevent finger-access to the sole plate when the iron is secured in the storage seat. This helps prevent fingers coming into contact with the hot sole plate. The storage seat can surround the shell with a gap of less than approximately 1.6cm (i.e., the width of an adult human little finger) and more preferably with a gap of less than approximately 0.8 cm (the width of a child's little finger).

[0031] Preferably the rotating joint can comprise a user-actuable latch configured to lock the joint against rotation at at least one rotary position. In this way the iron-rest is prevented from moving during use. For example, the iron rest may be locked in the second configuration to stop it unexpectedly folding out.

[0032] For added security, the steam station may optionally be configured to automatically de-energise the steam generator and/or a heating element associated with the sole-plate when the iron is secured in the storage seat. This prevents the iron accidentally heating the steam-station when it is stored.

[0033] For the user's convenience the water tank pref-

erably comprises a water-level sensor, and the steam station comprises a user interface configured to communicate a water-level status of the water tank to the user. Thus the steam station can communicate to the user when there is not enough water for ironing. Feedback from the water-level sensor can cause the steam-station to de-energise the steam generator so as to prevent activation of the steam generator when there is not enough water to operate it properly.

[0034] The water tank is preferably removably attachable to the base for the user's convenience when filing and cleaning the tank. The water tank can comprise a connector configured to prevent water out-flow from the water tank via the connector when the water tank is removed from the base so as to prevent spillage.

[0035] Optionally, the iron and the base are electronically connected, and one of the iron and the base is configured to transmit instructions for controlling the other of the iron and the base input by a user. The one of the iron and the base is also preferably configured to receive feedback from the other of the iron and the base and communicate it to the user. In this way the need for separate controls and user-interfaces on each of the iron and the base is avoided.

[0036] In an additional aspect of the present invention, a steam station comprises a base which in turn comprises a water tank fluidically connected to the steam generator for providing water to the steam generator. The base is a part of the steam station which was previously referred to as a base section. It is fixed in place during ironing whilst the iron itself is moved. By the water tank being fluidically connected to the steam generator, it is meant that a fluid such as water can be led from the water tank to the steam generator, where it is turned into steam. The steam station further comprises an iron with a sole plate. The iron is fluidically connected to the steam generator and configured to emit steam provided by the steam generator for facilitating the ironing of clothes. Again, the fluidical connection means that the steam can be led from the steam generator to the iron. The steam station further comprises an iron-rest connected to the base. The iron-rest comprises a storage seat in which the iron can be received and secured when the iron rest is in the second configuration. The water tank is collapsible so that it is capable of assuming a configuration which consumes less space when it is empty than when it is full of water. Such a steam station can be stored space efficiently thanks to the collapsible water tank.

[0037] It is preferred that, in the additional aspect of the invention, the iron-rest is provided on top of the base, with the collapsible water tank interposed between the base and the iron-rest. Such a configuration consumes less floor space than a configuration where the water tank and the iron-rest are horizontally arranged.

[0038] In that preferred variant, it is preferred if the iron-rest is connected with the base via a hinge so that the iron-rest can be swung up and down relative to the base. The iron-rest bears against the collapsible water tank and

compresses it so as to exert a force which drives water out of the water tank. This force creates a pressure inside the water tank which aids in extracting water. Accordingly, the speed of the water flow and the water pressure of water led to the steam generator can be increased.

[0039] In a further preferred variant, the water tank is arranged horizontally adjacent the iron-rest. The section of the base (water tank holder portion) to which the water tank is connected can be pivoted between a first configuration where the section of the base and the iron-rest are essentially aligned and a second configuration where the section of the base and the iron-rest are at an angle to each other. The second configuration can be adopted when the water tank is empty and thus collapsed, so as to save space. The first configuration can be adopted during use, i.e. with a full (and, accordingly, non-collapsed) water tank.

Brief Description of the Drawings

[0040] In order that the invention may be more readily understood, reference will now be made to the accompanying drawings, in which:

Fig. 1a shows a perspective representation of an improved steam-station according to a first embodiment of the present invention with the iron seat folded outwardly;

Fig. 1b shows a perspective representation of the steam-station of Fig. 1a with the lid of the water-tank in a raised position;

Fig. 2a shows a perspective representation of the steam station of Fig. 1a with the iron-seat folded in an upright position and the hand-iron stored on it;

Fig. 2b is a perspective representation of the steam station of Fig. 2a, viewed from a different angle;

Fig. 3 is a perspective representation of the storage-slot of the steam station of Fig. 1a in an upright position;

Fig. 4 is a perspective representation of the steam station of Fig. 1a with the hand-iron lifted away from the iron-seat;

Fig. 5a shows a side-on drawing of a full collapsible water-tank according to a second embodiment of the invention;

Fig. 5b shows side-on drawing of an empty collapsible water-tank according to the second embodiment of the invention;

Fig. 6a shows a side-on drawing of a full collapsible water-tank according to a third embodiment of the

invention;

Fig. 6b shows a side-on drawing of an empty water-tank according to the third embodiment;

Fig. 7a shows a side-on drawing of a full water-tank according to a fourth embodiment of the invention;

Fig. 7b shows a side-on drawing of an empty water-tank according to the fourth embodiment;

Fig. 8a shows a side-on drawing of a full water-tank according to a fifth embodiment of the invention;

Fig. 8b shows a side-on drawing of an empty water-tank according to the fifth embodiment;

Fig. 9a shows a side-on drawing of a combination collapsible water-tank and steam-station according to a sixth embodiment of the invention, with the water-tank full;

Fig. 9b shows a side-on drawing of the combination collapsible water-tank and steam-station according to the sixth embodiment, with the water-tank empty;

Fig. 10a shows a side-on drawing of the combination collapsible water-tank and folding steam-station according to the seventh embodiment, with the water-tank full;

Fig. 10b shows a side-on drawing of the combination collapsible water-tank and folding steam-station according to the seventh embodiment, with the water-tank empty;

Fig. 11a shows a side-on drawing of the combination collapsible water-tank and folding steam-station according to the eighth embodiment, with the water-tank full;

Fig. 11b shows a side-on drawing of the combination collapsible water-tank and folding steam-station according to the eighth embodiment, with the water-tank empty;

Fig. 12a shows a side-on drawing of the combination collapsible water-tank and folding steam-station according to the ninth embodiment, with the water-tank full; and

Fig. 12b shows a side-on drawing of the combination collapsible water-tank and folding steam-station according to the ninth embodiment, with the water-tank empty.

Description

[0041] Fig. 1a shows a folding steam station 100 according to a first embodiment of the invention in a first configuration, with the iron-rest 110 (also called a "flip-board") hinged downwardly about the hinge 112 away from the column (base) 130 so as to extend substantially horizontally away from the column 130. In this substantially horizontal orientation the hand-iron 120 (also called a "hand piece") can be loosely rested on the iron-rest 111 during use without danger of falling off and potentially injuring the user.

[0042] As is illustrated in Fig. 1b, the column 130 has a water tank 131 which the user may fill with water for use in generating steam. The water-tank 131 is preferably made of a transparent material (e.g., a transparent plastic or glass, preferably heat-resistant) and may include graduation marks on the side so that the user can judge how much water is contained in it. The graduation marks may include "MAX" and "MIN" marks to indicate to the user maximum and minimum quantities of water to be placed in the tank 131 during use. The water tank 131 may be integral to the column 130 or it may be removably attached to it.

[0043] As shown in Fig. 1b, the lid 132 may be lifted upwardly away from the tank 131 to facilitate filling of the tank. The column 130 also includes a base 133, this base 133 may include a steam generator for supplying steam to the hand iron 120 via a flexible hose 134. The steam supplied to the hand iron 120 can then be emitted through steam-holes in the sole-plate 121 of the hand-iron 120 onto fabrics being ironed to facilitate ironing.

[0044] Alternatively or additionally to the steam generator located in the base 133, the hand iron 120 may include a steam generator supplied with water from the tank 131 via the flexible hose 134 using a pump located either in the base 133 or in the hand iron 120. Water supplied to the hand iron 120 may also be squirted onto fabrics during ironing in response to a user input (e.g. pressing a button such as trigger 122) for facilitating ironing. Alternatively or additionally, the trigger 122 can have the function to start / stop the steam flow out of the sole plate 121. The steam generators and pumps are preferably electric, and receive power from the mains via flexible cable 135 and an attached plug (not shown), though for squirting small quantities of water onto clothes a small manual pump may be provided on the hand iron 120. Any suitable plug may be used.

[0045] Particularly where the steam generator is located in the base 133, steam produced by the steam generator is preferably super-heated to prevent it transforming back into liquid water due to cooling whilst e.g., travelling through the flexible hose 134 before it is emitted through the steam-holes of the sole plate 121. Whilst the steam generator can be located anywhere within the steam station 100, it is preferably located beneath the tank 131 when the steam station is properly oriented, so that the steam-station can be gravity-fed via e.g., a one-

way valve, and supplies steam to the iron 120 via another one-way valve. These valves may be opened/closed electronically via e.g., solenoids or manually via e.g., a screw or push-button, responsive to user input. The steam generator may be either a drip-type steam generator, where the water drips onto a heated surface and is rapidly evaporated into steam thus aiding super-heating of the steam, or a flooded-type steam generator where the heated surface is immersed in water, or a hybrid device capable of both.

[0046] Whilst the iron rest 110 is shown extending substantially horizontally away from the column 130, it may extend at an angle to the horizontal that is sufficiently shallow for the hand iron 120 to remain resting loosely on the iron-rest 110 (e.g., no more than 45 degrees from the horizontal, and preferably roughly 30 degrees or less away from the horizontal). To promote frictional contact with the hand iron 120 and reduce the contact surface whilst it rests loosely in the iron rest area 118 of the iron rest 110, as shown in Fig. 4 the iron rest 110 may include ribs 117, which are preferably made of a heat-resistant resilient polymer (e.g., a heat-resistant silicone, or a heat-resistant thermoplastic elastomer, or TPE, such as RTP 1200 Series TPUR available from the RTP company of 580 East Front Street, Winona, Minnesota 55987, USA). Additionally or alternatively, the iron-rest area 118 may be of sufficient depth to retain the iron 120 within it.

[0047] Preferably the ribs 117 are heat-resistant to at least the maximum operating temperature of the hand iron 120. For example, the maximum operating temperature used in most irons is for cotton, and is typically in the range of 180-220 degrees centigrade. Where the incline of the iron rest 110 is sufficiently close to the horizontal that the risk of the iron 120 slipping off the iron rest 110 is low, or where an additional locking means is provided to hold the iron on the iron rest 110, the ribs 117 need not be resilient and can instead be a non-resilient heat-resistant material such as e.g., ceramic or hard heat-resistant plastic.

[0048] Whilst only two ribs 117 are shown in Fig. 4, more may be used. As well as promoting grip on the hand iron 120, the ribs 117 also extend away from the iron rest 110 to separate the hot sole plate 121 of the hand iron 120 from the main body of the iron rest 110, preventing excessive heat-transmission to the iron rest 110. To achieve this, the thermal conductivity of the ribs 117 should be relatively low (e.g., preferably 0.25 Watts per metre-Kelvin or less at room temperature and pressure, and more preferably 0.05 Watts per metre-Kelvin or less - i.e., heat-insulating). The iron rest 110 is preferably made of a heat-resistant material such as glass-fibre-reinforced Polybutylene terephthalate (PBT).

[0049] Figs 2a and 2b show the folding steam station in a second configuration, with the iron-rest 110 hinged upwardly about the hinge 112 toward the column 130 so as to extend substantially vertically or in parallel with the column 130, and preferably against the column 130 for compactness. A handle 113 is provided at the upper end

of the iron rest 110, and protrudes above the column 130, to allow hand-carrying of the steam station 100 by the user. The handle 113 preferably extends at an angle to the rest of the iron rest 110 such that, when the steam station 100 is positioned on a flat surface and the iron rest 110 is moved to a substantially horizontal orientation the handle 113 contacts the surface to aid with the stability of the device. Stability is also ensured by the way in which the iron rest 110 hinges away from the column 130 near the base 133, which ensures that the iron rest 110 remains near the surface on which the steam station 100 stands ensuring a low centre of gravity.

[0050] The iron-rest 110 is held in the upright position against the force of gravity by the button-operated latch/locking element 136. This button-operated latch 136 can be any rotary latch or ratchet mechanism which prevents the iron-rest 110 from rotating about the hinge 112 from the upright position to the lowered position unless the spring-loaded button of the button-operated latch 136 is pressed. The latch 136 may be indexed so as to only lock in the upright position, leaving the iron rest 110 free to rotate about the hinge 112 so long as it is not returned to the upright position. Alternatively the latch 136 may be indexed so as to lock in two or more positions (e.g., the upright position and the substantially horizontal position) and requires the button to be pressed to rotate the iron rest 110 away from these positions. In a further alternative, the button-operated latch 136 may have a substantially continuous ratchet mechanism or frictional clamp which locks the iron rest 110 at any angle relative to the column 130 unless the button is pressed.

[0051] A storage seat 115 is provided for the iron 120 on an opposite side of the iron-rest 110 to the iron rest area 118. The iron 120 is retained in the storage seat 115 by a sliding lock 114 which slides towards the storage seat 115 once the iron 120 is located within the storage seat 115 to retain the iron within it. The sliding lock 114 is preferably spring-loaded to bias it towards the closed (i.e., locked) position to prevent accidental unlocking.

[0052] As the centre of gravity of the steam station 100 will inevitably change depending on the filling of the tank 131 and whether or not the iron rest 110 is folded up or down, it is desirable to provide a pedestal 137 to support the steam station 100 in an upright position. The pedestal 137 preferably extends beneath the iron 120 when it is locked in the storage seat 115 to protect it. The pedestal 137 also preferably extends a sufficient length underneath the iron rest 110 to maintain the steam station 100 in an upright position even when the iron rest 110 is fully extended away from the column, and even with the iron 120 placed on the iron rest 110, and even with the water tank 131 emptied.

[0053] Prior to locking the iron 120 within the storage seat 115, the flexible cable 135 and/or the flexible hose 134 may be wrapped around the column 130. With the hose 134 and cable 135 wrapped around the column 130, when the iron 120 is located in the storage seat 115 the relatively non-thermally-conductive (i.e., heat insu-

lating) shell of the iron 123 faces outwardly and extends towards the pedestal 137 such that the hose 134 and cable 135 are held in position between the column 130, the shell 123, and the pedestal 137, and cannot easily become unwrapped. For example, the shell 123 may either extend to contact the pedestal 137, or sufficiently close to the pedestal 137 to prevent the flexible hose 134 and/or the cable 135 from escaping through the gap between the shell 123 and the pedestal 137. The shell of the iron 123 may extend sufficiently close to the column 130 to trap the flexible hose 134 between the iron 123 and the column 130 when the iron 120 is locked in the storage seat 115.

[0054] Alternatively or in addition to the sliding lock 114, another locking means may be used to hold the iron 120 in the storage seat 115. For example, a pivoting latch may be used. In another example, the sole plate 121 or another part of the iron 120 may interlock with a recess (e.g., a pocket) in the storage seat 115. In a further example, one of the iron 120 and the storage seat 115 may have hooks that interlock with corresponding recesses in the other of the iron 120 and the storage seat 115.

[0055] As can be seen in Fig. 3, the storage seat 115 may include ribs 116. The composition and function of these ribs 116 is the same as that already described for the ribs 117 of the iron rest area 118.

[0056] One or both of the iron rest area 118 and the storage seat 115 may be shaped so as to closely surround the sole plate 121 of the iron 120 when the iron 120 is placed within them. This helps prevent accidental contact by the user with the hot sole plate 121. Since the iron 120 has an relatively non-conductive upper shell 123, the shell 123 may extend so as to leave only a narrow gap (e.g., less than the width of an average human little finger - ~1.6cm for adults and ~0.8cm for children) between the iron seat 110 and the shell 123 when the iron 120 is securely located within one or both of the iron rest area 118 and the storage seat 115. In this way air may still flow into the space between the iron 120 and the iron seat 110, but fingers cannot reach into this space to contact the sole plate 121. Alternatively the shell 123 may contact the iron seat 110 around part or all of its circumference to substantially close off this space.

[0057] Either or both of the sliding lock 114 and the button-operated latch 136 may have a state-sensor (e.g., a circuit that is completed when they are in an open/closed position, a micro-switch that is pressed by a push-rod when they are in an open/closed position, a reed-switch and magnet arrangement where the read switch is actuated by the magnet when the switch is in a closed position, or other similar switches known in the art) that is in electronic communication with an electronic controller (e.g., a CPU with associated PCB having suitable memory, communication, and processing resources) of the steam station 100. A further state-sensor may detect whether or not the iron 120 is located within the storage seat 115. The water-tank 131 may also include a level-sensor for detecting a level of the water within the tank

131.

[0058] The controller may selectively activate and deactivate functions of the steam-station 100 depending on the output of the above-described sensors. For example, the heating element of the sole plate 121 of the iron 120 and/or the steam generator may be deactivated if the state-sensors detect that the iron 120 is in the storage seat 115. In another example, the steam generator and/or pump of the steam station 100 may be deactivated if the water-level within the tank 131 is too low, and an auditory or visual warning (e.g., warning light) may be communicated to the user. In a further example, activation of the heating element of the sole plate 121, the steam generator and/or the pump may be prevented when the iron-seat is in an upright position and/or not in a substantially horizontal orientation. In an additional example, a warning light is shown when the sensors indicate that the sliding lock 114 is not properly engaged to lock the iron 120 within the storage seat 115.

[0059] The iron 120 may include a user interface 124 such as a rotary dial. The user interface 124 may control only the items within the iron 120 (e.g., the heating element of the sole plate 121, an internal steam generator and/or internal pump of the hand iron 120). Alternatively it may also be used to control, and receive feedback from, the components within the column 130, such as a steam generator, sensor, or pump in the base 133. To achieve control of elements within the column 130, the hand iron 120 communicates electronically via either wires carried by the flexible hose 134, or via wireless communication modules such as wifi modules provided in each of the iron 120 and the column 130. In this way the need for separate user-interfaces on the iron 120 and the column 130 for control of elements in each is avoided by connecting them electronically, and only one user-interface is used - this feature can be advantageously applied in any steam-station separately to other advantageous features described herein. Additionally or alternatively to the user interface 124 provided on the iron 120, a further user interface (not shown) may be provided on the column 130 which can also be used to control either only the components of the column 130 or both the components of the column 130 and the iron 120 in a similar fashion to that already discussed for the user interface 124. In an example configuration, the temperature of the sole-plate may be controlled by the user input 124 and the steam-rate may be controlled by a user-interface on the column 130.

[0060] One or both of the above-described user-interfaces may include a display for providing feed-back to the user. This may include information such as a fill-level of the water-tank 131, and a temperature of the sole plate 121 sensed by a temperature sensor associated with it. Where a sensor located in one of the column 130 and the iron 120 communicates with a processor in the other of the column 130 and the iron 120 to e.g., provide feed-back either to the user or to an electronic controller, this may be done via either wires in the flexible hose 134 or

wirelessly as already described above.

[0061] By locking the iron rest 110 upwards, wrapping the cable 135 and the hose 134 around the column 130, and locking the iron 120 in the storage seat 115, a compact configuration is achieved. The footprint of the steam station 100 in this second, compact configuration is not substantially greater than that of the pedestal 137, thus minimising horizontal storage space taken up by the device. The vertical orientation (i.e., vertical orientation of the major axis) of the iron 120, ensured by the shape of the iron storage seat 115, particularly improves storage.

[0062] Whilst the hinge 112 is described above as being located near to the pedestal 137, at the base of the steam station 100, it may instead be located near the top of the column 130 with the lowermost end of iron rest 110 moving away from the column 130 about the hinge 112. In this case the iron rest area 118 may double as the iron seat, and may include all the features already described for iron seat 115. In this case there is no need to provide a separate iron seat 115 on the opposite side of the iron rest 110 to the iron rest area 118.

[0063] To further reduce storage space taken up by the steam station 100, a collapsible water tank 200 according to a second embodiment of the invention is disclosed in Figs. 5a and 5b. The collapsible water tank 200 has a hollow main body made of a flexible, preferably transparent substance, for example a flexible plastic may be used such as HDPE, LDPE, PET, or Polycarbonate. The main body 201 can collapse from a full state (shown in Fig 3a) to an empty state (shown in Fig. 3b) in which it may be more easily stored.

[0064] A connector 202 (also known as a coupling element) is provided in fluid communication with the main body 201 such that water contained in the main body 201 may flow through it. The connector 202 may also be used to attach the water tank 200 to a device such as a steam-station via either a bayonet or screw-type attachment, or another suitable attachment. The connector 202 preferably, but not essentially, includes a valve for preventing the unwanted out-flow of water from the main body 201. This valve may be a screw-type valve, which is opened and closed by twisting the connector 202 relative to the main body 201. Alternatively the valve may be a spring-loaded valve which is ordinarily kept closed by the spring except when the connector 202 is attached to something in which case during attachment the valve is pushed open against the spring by a protrusion on the device it is being attached to, or by hand for filling.

[0065] The corrugated collapsible water tank 300 shown in Figs. 6a and 6b is similar to the collapsible water tank 200 except that the main body 301 of the water tank 300 is corrugated by corrugations 302 (i.e., ridges and grooves in the wall of the main body 301 which allow the wall sections between the corrugations 302 to fold substantially flat against each other) extending circumferentially around the main body 301. As can be seen in Fig 6a, the corrugations 302 facilitate in the folding of main body 301 to be more compact.

[0066] The telescoping collapsible water tank 400 shown in Figs. 7a and 7b is similar to the water tank 200 except that rather than collapsing by folding, it has a main body consisting of an lower portion 401 and an upper portion 402 where the upper section telescopes away from the lower portion as it fills with water in order to accommodate more. The meeting point between the upper portion 402 and the lower portion 401 may be sealed using e.g., a rubber gasket, in order to prevent water from escaping between the two portions. Since the side walls of the lower portion 401 and the upper portion 402 do not need to flex during the process of telescoping, more rigid, durable materials can be used in their construction. Whilst only two telescoping sections 401 and 402 are shown, three or more may be provided.

[0067] The balloon-style collapsible water tank 500 shown in Figs. 8a and 8b is similar to the water tank 200 except that its main body 501 is made of an elastic material, such as natural or synthetic rubber. Since the material of the water tank 500 expands and contracts, a particularly compact storage-size is made possible. The elastic material also pressurises its contents, thus aiding out-flow of water during use.

[0068] Figs. 9a and 9b illustrate a collapsible water tank 200 of the type already described above with reference to Figs. 5a and 5b connected via the connector 202 to a typical steam-station 600 having a iron 602 resting on a steam station base 601, where the iron 602 can receive steam, water, and power from the base 601 via a hose 603. The connector 202 may be omitted and the tank instead formed with the base 601. The water tank 200 may be equipped with an aperture in its upper surface closed by a removable cap to facilitate filling when the connector 202 is oriented downwardly. Alternatively a filler-aperture may be provided in steam station itself 600 to allow filling and emptying of the tank 200 when it is attached to the steam station 600, particularly when the water tank 200 is integrally formed with the steam station 600.

[0069] As illustrated in Fig. 9b, when the tank 200 is emptied through use of the water in ironing, it collapses into a more compact shape, using the internal volume previously occupied by water as storage space for the tank 200. In this way the steam station 600 and water tank 200 are rendered easier to store.

[0070] Figs. 10a and 10b show a steam station 700 with a concertina/corrugated-type collapsing water tank 706 similar to the collapsible water tank 300 already described above. The steam station 700 has a base unit 701 that is hingedly connected via hinge 705 to iron-rest 704. A hand iron 702 with a hose 703, similar to the hand iron 602 and hose 603, can be rested on the iron rest 704. As the collapsible water tank 706 is located between the base unit 701 and the iron rest 704, and is in fluid communication with either or both of them, the weight of the iron rest 704 and iron 702 on the water tank 706 causes water to flow more quickly from the water tank 706. As with the steam station 600, once the water tank

706 is emptied, the steam station 700 adopts a more compact configuration for storage as shown in Fig. 10b.

[0071] Figs. 11a and 11b illustrate a collapsible water tank 300 of the type already described above connected to a steam station 800. The steam station 800 is similar to the steam station 600 except that, rather than being formed as a single piece, the base of the steam station comprises an iron rest portion 801 and a water tank holder portion 802 that are hingedly and fluidically connected via a hinge 803. As shown in Fig. 11b, when the tank 300 is emptied or removed, the steam station 800 can be folded so as to store more easily. The iron rest 801 can have all of the same features already described for the iron rest 110.

[0072] Figs. 12a and 12b disclose a steam station 900 having a collapsible water tank 300 of the kind already described above. The steam station 900 is similar to the steam station 600 except that the base of the steam station is C-shaped in form, with a base portion 901 connected to an iron rest 902 by an upright portion 903. The water tank 300 is in fluid communication with the base portion 901 and slowly collapses as the water within it is used. As shown in Fig. 12a, when the water tank 300 is completely emptied the space thus liberated can then be used as space in which to store the hose 904 (or other connectors/accessories) without adding to the total storage space of the steam station 900.

[0073] Whilst hinges are described above for use in providing arrangements that allow sections to pivot relative to each other, in each case another way of providing relatively-moveable but connected sections may be used. This can include a flexible joint (e.g., one made of flexible plastic or fabric), an articulated joint, a ball-joint, or any other rotating joint. Where only two relatively-rotating section have been described, three or more relatively rotating sections may be provided. Hollow spaces within one section may be used to accommodate another in a telescoping-type arrangement, for example the base 701 may telescope into the iron-rest 704.

[0074] Each feature disclosed in the description, and (where appropriate) the claims and drawings may be provided independently or in any appropriate combination.

[0075] Reference numerals appearing in the claims are by way of illustration only and shall have no limiting effect on the scope of the claims.

Claims

1. A steam station comprising:

- a steam generator,
- a base (133) comprising a water tank (131) fluidically connected to the steam generator for providing water to the steam generator, the base preferably having a columnar shape,
- an iron (120) with a sole plate (121) fluidically connected to the steam generator and config-

ured to emit steam provided by the steam generator for facilitating the ironing of clothes,

- an iron-rest (110) connected to the base (130) via a rotating joint wherein the iron-rest (110) can be moved about the joint from a first configuration where the iron rest (110) extends out from the base (130) for allowing the iron (120) to be rested thereon, to a second configuration where the iron rest (110) extends substantially in parallel with the base, and
- wherein the iron-rest (110) comprises a storage seat (115) in which the iron (120) can be received and secured when the iron rest is in the second configuration,

characterized in that the storage seat (115) is located on an opposite surface of the iron-rest area (118) configured to loosely receive the iron during (110) resting between ironing operations.

2. The steam station of claim 1, wherein the steam generator is located within the base (133), and configured to super-heat the steam it provides to the iron (120) or

wherein the steam generator is located within the iron (120), and wherein the steam station comprises a pump configured to pump water from the water tank to the steam generator, wherein the pump is preferably located in the base (133).

3. The steam station of any preceding claim, wherein the storage seat comprises a user-actuatable lock (136) configured to secure the iron (120) within the storage seat (115), preferably a sliding lock or a rotating lock.

4. The steam station of any preceding claim, wherein one of the storage seat (115) and the iron (120) comprises a recess configured to receive a protrusion or hook of the other of the storage seat (115) and the iron (120), for releasably securing the iron (120) in the storage seat (115).

5. The steam station of any preceding claim, wherein the storage seat (115) comprises ribs (116) configured to separate the sole plate of the iron (120) from a main body of the iron-rest (110) when the iron is received in the storage seat (115).

6. The steam station of any preceding claim, wherein the rotating joint comprises one of a fabric joint, a flexible joint, a ball-joint, an articulated joint, and a hinge.

7. The steam station of any preceding claim, further comprising a pedestal (137) configured to retain the

steam station in an upright position across the full range of fill-states of the water tank (131) and extension of the iron-rest away from the base (133).

8. The steam station of any preceding claim, wherein the iron (120) is fluidically connected to the water tank (131) via a flexible hose (134), and wherein the iron (120) is configured to hold the flexible hose (120) against the base when secured in the storage seat (115). 5
9. The steam station of any preceding claim, wherein the iron comprises a heat-insulating shell located on an opposite side of the iron to the sole plate (121), so as to face outwardly from the storage seat (115) when the iron is secured within the storage seat, wherein the storage seat (115) is preferably configured to surround the shell so as to prevent finger-access to the sole plate (121) when the iron (120) is secured in the storage seat (115), preferably by surrounding the shell with a gap of less than approximately 1.6cm, more preferably by surrounding the shell with a gap of less than approximately 0.8 cm. 10
10. The steam station of any preceding claim, wherein the rotating joint comprises a user-actuatable latch configured to lock the joint against rotation at at least one rotary position, wherein the at least one rotary position corresponds to the second configuration. 15
11. The steam station of any preceding claim, wherein the steam station is configured to automatically de-energise the steam generator and/or a heating element associated with the sole-plate (121) when the iron is secured in the storage seat (115). 20
12. The steam station of any preceding claim, wherein the water tank (131) comprises a water-level sensor, and the steam station comprises a user interface (124) configured to communicate a water-level status of the water tank to the user, wherein the steam station is preferably configured to de-energise the steam generator responsive to feedback from the water-level sensor. 25
13. The steam station of any preceding claim, wherein the water tank (131) is removably attachable to the base, wherein the water tank (131) preferably comprises a connector (202) configured to prevent water out-flow from the water tank (131) via the connector (202) when the water tank (131) is removed from the base. 30
14. The steam station of any preceding claim, wherein the water tank (131) is configured to be collapsible from a filled configuration to a collapsed configuration for storage, 35

wherein the water tank (131) is preferably one of:

- a) a tank comprising a corrugated side-wall (302)
- b) a tank comprising a telescoping side-wall (401, 402)
- c) a tank formed of elastic material and/or

wherein the steam station is configured to apply pressure to the water tank (131), preferably by using the weight of the iron (120).

15. The steam station of any preceding claim, wherein the iron (120) and the base (131) are electronically connected, and one of the iron (120) and the base (131) is configured to transmit instructions for controlling the other of the iron and the base input by a user, wherein the one of the iron (120) and the base (131) is preferably configured to receive feedback from the other of the iron and the base and communicate it to the user. 40

25 Patentansprüche

1. Dampfstation, umfassend:

- einen Dampferzeuger,
- eine Basis (133), die einen Wassertank (131) umfasst, der mit dem Dampferzeuger fluidisch verbunden ist, um dem Dampferzeuger Wasser bereitzustellen, wobei die Basis vorzugsweise eine säulenartige Form aufweist,
- ein Bügeleisen (120) mit einer Sohlenplatte (121), die mit dem Dampferzeuger fluidisch verbunden und so konfiguriert ist, dass sie vom Dampferzeuger bereitgestellten Dampf abgibt, um das Bügeln von Kleidung zu erleichtern,
- eine Bügeleisenablage (110), die über ein Drehgelenk mit der Basis (130) verbunden ist, wobei die Bügeleisenablage (110) um das Gelenk von einer ersten Konfiguration, in der sich die Bügeleisenablage (110) von der Basis (130) heraus erstreckt, um zu ermöglichen, dass das Bügeleisen (120) darauf abgelegt wird, in eine zweite Konfiguration bewegt werden kann, in der sich die Bügeleisenablage (110) im Wesentlichen parallel zur Basis erstreckt, und
- wobei die Bügeleisenablage (110) eine Lagerungsaufnahme (115) umfasst, in der das Bügeleisen (120) aufgenommen und gesichert werden kann, wenn sich die Bügeleisenablage in der zweiten Konfiguration befindet, 45

dadurch gekennzeichnet, dass die Lagerungsaufnahme (115) auf einer gegenüberliegenden Fläche des Bügeleisenablagebereichs (118) angeordnet

ist, der so konfiguriert ist, dass er das Bügeleisen während des Ruhens (110) zwischen den Bügelvorgängen lose aufnimmt.

2. Dampfstation nach Anspruch 1, wobei sich der Dampferzeuger innerhalb der Basis (133) befindet und so konfiguriert ist, dass er den Dampf, den er dem Bügeleisen (120) bereitstellt, überhitzt, oder

wobei sich der Dampferzeuger innerhalb des Bügeleisens (120) befindet, und wobei die Dampfstation eine Pumpe umfasst, die so konfiguriert ist, dass sie Wasser aus dem Wassertank zum Dampferzeuger pumpt, wobei die Pumpe vorzugsweise in der Basis (133) angeordnet ist.

3. Dampfstation nach einem vorstehenden Anspruch, wobei die Lagerungsaufnahme ein vom Benutzer betätigbares Schloss (136) umfasst, das so konfiguriert ist, dass es das Bügeleisen (120) in der Lagerungsaufnahme (115) sichert, vorzugsweise ein Schiebeschloss oder ein Drehschloss.

4. Dampfstation nach einem vorstehenden Anspruch, wobei eines von der Lagerungsaufnahme (115) und dem Bügeleisen (120) eine Aussparung aufweist, die so konfiguriert ist, dass sie einen Vorsprung oder Haken des anderen von der Lagerungsaufnahme (115) und dem Bügeleisen (120) aufnimmt, um das Bügeleisen (120) lösbar in der Lagerungsaufnahme (115) zu befestigen.

5. Dampfstation nach einem vorstehenden Anspruch, wobei die Lagerungsaufnahme (115) Rippen (116) umfasst, die so konfiguriert sind, dass sie die Sohlenplatte des Bügeleisens (120) von einem Hauptkörper der Bügeleisenaufgabe (110) trennen, wenn das Bügeleisen in der Lagerungsaufnahme (115) aufgenommen ist.

6. Dampfstation nach einem vorstehenden Anspruch, wobei das Drehgelenk eines von einem Gewebegelenk, einem flexiblen Gelenk, einem Kugelgelenk, einem Knickgelenk und einem Scharnier umfasst.

7. Dampfstation nach einem vorstehenden Anspruch, die weiter einen Sockel (137) umfasst, der so konfiguriert ist, dass er die Dampfstation über den gesamten Bereich der Füllstände des Wassertanks (131) und der Erstreckung der Bügeleisenablage von der Basis (133) weg in einer aufrechten Position hält.

8. Dampfstation nach einem vorstehenden Anspruch, wobei das Bügeleisen (120) über einen flexiblen Schlauch (134) mit dem Wassertank (131) fluidisch verbunden ist, und wobei das Bügeleisen (120) so

konfiguriert ist, dass es den flexiblen Schlauch (120) gegen die Basis hält, wenn es in der Lagerungsaufnahme (115) gesichert ist.

9. Dampfstation nach einem vorstehenden Anspruch, wobei das Bügeleisen eine wärmeisolierende Schale umfasst, die sich auf einer der Sohlenplatte (121) gegenüberliegenden Seite des Bügeleisens befindet, sodass sie von der Lagerungsaufnahme (115) nach außen weist, wenn das Bügeleisen in der Lagerungsaufnahme gesichert ist, wobei die Lagerungsaufnahme (115) vorzugsweise so konfiguriert ist, dass sie die Schale umgibt, um den Zugang von Fingern zur Sohlenplatte (121) zu verhindern, wenn das Bügeleisen (120) in der Lagerungsaufnahme (115) gesichert ist, vorzugsweise durch Umgeben der Schale mit einem Spalt von weniger als etwa 1,6 cm, bevorzugter durch Umgeben der Schale mit einem Spalt von weniger als etwa 0,8 cm.

10. Dampfstation nach einem vorstehenden Anspruch, wobei das Drehgelenk eine vom Benutzer betätigbare Verriegelung umfasst, die so konfiguriert ist, dass sie das Gelenk in mindestens einer Drehposition gegen Drehung sperrt, wobei die mindestens eine Drehposition der zweiten Konfiguration entspricht.

11. Dampfstation nach einem vorstehenden Anspruch, wobei die Dampfstation so konfiguriert ist, dass sie den Dampferzeuger und/oder ein Heizelement, das der Sohlenplatte (121) zugeordnet ist, automatisch abschaltet, wenn das Bügeleisen in der Lagerungsaufnahme (115) gesichert ist.

12. Dampfstation nach einem vorstehenden Anspruch, wobei der Wassertank (131) einen Wasserstandssensor umfasst, und die Dampfstation eine Benutzeroberfläche (124) umfasst, die so konfiguriert ist, dass sie dem Benutzer einen Wasserstandsstatus des Wassertanks mitteilt, wobei die Dampfstation vorzugsweise so konfiguriert ist, dass sie den Dampferzeuger in Reaktion auf eine Rückmeldung des Wasserstandssensors abschaltet.

13. Dampfstation nach einem vorstehenden Anspruch, wobei der Wassertank (131) abnehmbar an der Basis befestigt werden kann, wobei der Wassertank (131) vorzugsweise ein Verbindungsstück (202) umfasst, das so konfiguriert ist, dass es das Ausfließen von Wasser aus dem Wassertank (131) über das Verbindungsstück (202) verhindert, wenn der Wassertank (131) von der Basis entfernt wird.

14. Dampfstation nach einem vorstehenden Anspruch,

wobei der Wassertank (131) so konfiguriert ist, dass er von einer gefüllten Konfiguration in eine zusammengeklappte Konfiguration für die Lagerung zusammenklappbar ist,

wobei der Wassertank (131) vorzugsweise eines der Folgenden ist:

- a) ein Tank, der eine gewellte Seitenwand (302) umfasst,
- b) ein Tank, der eine teleskopierbare Seitenwand (401, 402) umfasst,
- c) ein Tank, der aus elastischem Material gebildet ist, und/oder

wobei die Dampfstation so konfiguriert ist, dass sie Druck auf den Wassertank (131) ausübt, vorzugsweise durch das Gewicht des Bügeleisens (120).

15. Dampfstation nach einem vorstehenden Anspruch, wobei das Bügeleisen (120) und die Basis (131) elektronisch verbunden sind und eines von dem Bügeleisen (120) und der Basis (131) so konfiguriert ist, dass es bzw. sie Anweisungen zur Steuerung des anderen von dem Bügeleisen und der Basis, die von einem Benutzer eingegeben werden, übermittelt, wobei das eine von dem Bügeleisen (120) und der Basis (131) vorzugsweise so konfiguriert ist, dass es bzw. sie eine Rückmeldung von dem anderen von dem Bügeleisen und der Basis empfängt und diese an den Benutzer weitergibt.

Revendications

1. Station vapeur comprenant :

- un générateur de vapeur,
- une base (133) comprenant un réservoir d'eau (131) raccordé de manière fluide au générateur de vapeur pour fournir de l'eau au générateur de vapeur, la base ayant de préférence une forme de colonne,
- un fer à repasser (120) ayant une semelle (121) raccordée de manière fluide au générateur de vapeur et configurée pour émettre de la vapeur fournie par le générateur de vapeur pour faciliter le repassage des vêtements,
- un repose-fer (110) raccordé à la base (130) par l'intermédiaire d'une jonction rotative dans laquelle le repose-fer (110) est apte à être déplacé autour de la jonction depuis une première configuration dans laquelle le repose-fer (110) s'étend à partir de la base (130) pour permettre au fer à repasser (120) de reposer dessus, jusqu'à une seconde configuration dans laquelle le

repose-fer (110) s'étend sensiblement parallèlement à la base, et

- dans laquelle le repose-fer (110) comprend un siège de rangement (115) sur lequel le fer à repasser (120) est apte à être reçu et fixé lorsque le repose-fer est dans la seconde configuration,

caractérisé en ce que le siège de rangement (115) est situé sur une surface opposée de la zone (118) de repose-fer configurée pour recevoir librement le fer à repasser (110) pendant le repos entre des opérations de repassage.

2. Station vapeur selon la revendication 1, dans laquelle le générateur de vapeur est situé à l'intérieur de la base (133) et configuré pour surchauffer la vapeur qu'il fournit au fer à repasser (120) ou

dans laquelle le générateur de vapeur est situé à l'intérieur du fer à repasser (120), et dans laquelle la station vapeur comprend une pompe configurée pour pomper l'eau à partir du réservoir d'eau vers le générateur de vapeur, dans laquelle la pompe est située de préférence dans la base (133).

3. Station vapeur selon une quelconque revendication précédente, dans laquelle le siège de rangement comprend un verrou (136) actionnable par l'utilisateur configuré pour fixer le fer à repasser (120) à l'intérieur du siège de rangement (115), de préférence un verrou coulissant ou un verrou rotatif.

4. Station vapeur selon une quelconque revendication précédente, dans laquelle un parmi le siège de rangement (115) et le fer à repasser (120) comprend un évidement configuré pour recevoir une saillie ou un crochet de l'autre parmi le siège de rangement (115) et le fer à repasser (120), pour fixer de manière amovible le fer à repasser (120) dans le siège de rangement (115).

5. Station vapeur selon une quelconque revendication précédente, dans laquelle le siège de rangement (115) comprend des nervures (116) configurées pour séparer la semelle du fer à repasser (120) d'un corps principal du repose-fer (110) lorsque le fer à repasser est reçu dans le siège de rangement (115).

6. Station vapeur selon une quelconque revendication précédente, dans laquelle la jonction rotative comprend un parmi un rivetage de tissu, une jonction flexible, une jonction à rotule, une jonction articulée et une charnière.

7. Station vapeur selon une quelconque revendication précédente, comprenant en outre un socle (137) configuré pour maintenir la station vapeur dans une

position verticale sur toute la distance d'états de remplissage du réservoir d'eau (131) et pour étendre le repose-fer à l'écart de la base (133).

8. Station vapeur selon une quelconque revendication précédente, dans laquelle le fer à repasser (120) est raccordé de manière fluide au réservoir d'eau (131) par l'intermédiaire d'un tuyau flexible (134), et dans laquelle le fer à repasser (120) est configuré pour maintenir le tuyau flexible (120) contre la base lorsqu'il est fixé dans le siège de rangement (115). 5
9. Station vapeur selon une quelconque revendication précédente, dans laquelle le fer à repasser comprend une coque d'isolation thermique située sur un côté du fer à repasser opposé à la semelle (121), de manière à faire face vers l'extérieur depuis le siège de rangement (115) lorsque le fer à repasser est fixé à l'intérieur du siège de rangement, dans laquelle le siège de rangement (115) est de préférence configuré pour entourer la coque de manière à empêcher l'accès des doigts à la semelle (121) lorsque le fer à repasser (120) est fixé dans le siège de rangement (115), de préférence en entourant la coque avec un espace inférieur à environ 1,6 cm, de préférence en entourant la coque avec un espace inférieur à environ 0,8 cm. 10 15 20 25
10. Station vapeur selon une quelconque revendication précédente, dans laquelle la jonction rotative comprend un verrou actionnable par l'utilisateur configuré pour verrouiller la rotation de la jonction à au moins une position de rotation, dans laquelle la au moins une position de rotation correspond à la seconde configuration. 30 35
11. Station vapeur selon une quelconque revendication précédente, dans laquelle la station vapeur est configurée pour mettre automatiquement hors tension le générateur de vapeur et/ou un élément chauffant associé à la semelle (121) lorsque le fer à repasser est fixé dans le siège de rangement (115). 40
12. Station vapeur selon une quelconque revendication précédente, dans laquelle le réservoir d'eau (131) comprend un capteur de niveau d'eau, et la station vapeur comprend une interface utilisateur (124) configurée pour communiquer un état de niveau d'eau du réservoir d'eau à l'utilisateur, dans laquelle la station vapeur est de préférence configurée pour mettre hors tension le générateur de vapeur en réponse à un retour d'informations provenant du capteur de niveau d'eau. 45 50
13. Station vapeur selon une quelconque revendication précédente, dans laquelle le réservoir d'eau (131) peut être fixé de manière amovible à la base, dans laquelle le réservoir d'eau (131) comprend de 55

préférence un raccord (202) configuré pour empêcher l'eau de s'écouler du réservoir d'eau (131) par l'intermédiaire du raccord (202) lorsque le réservoir d'eau (131) est retiré de la base.

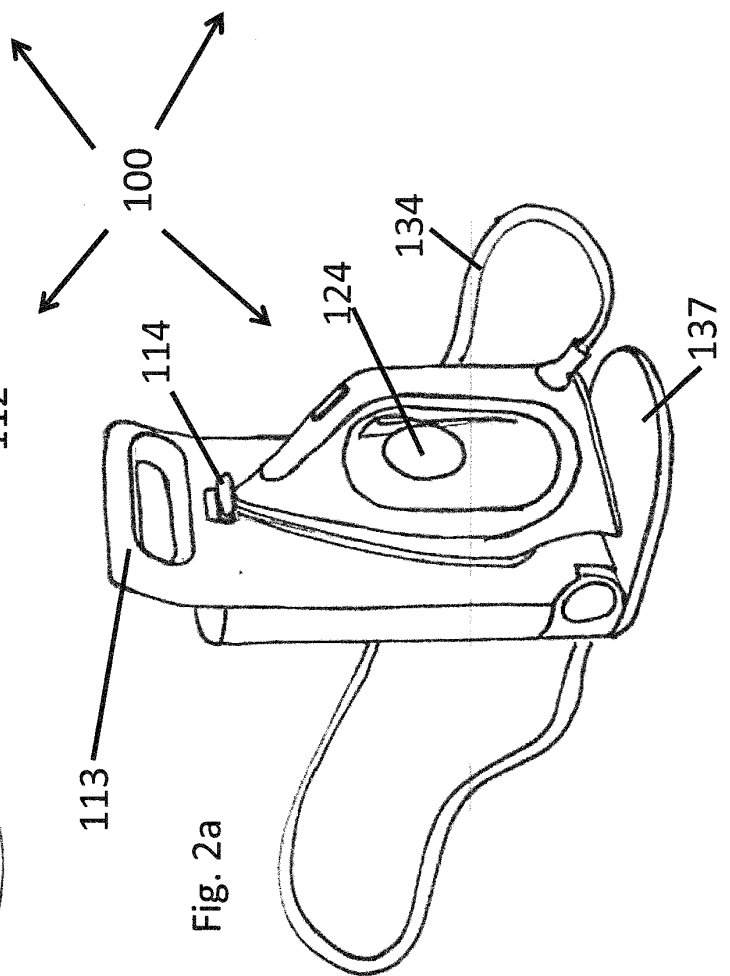
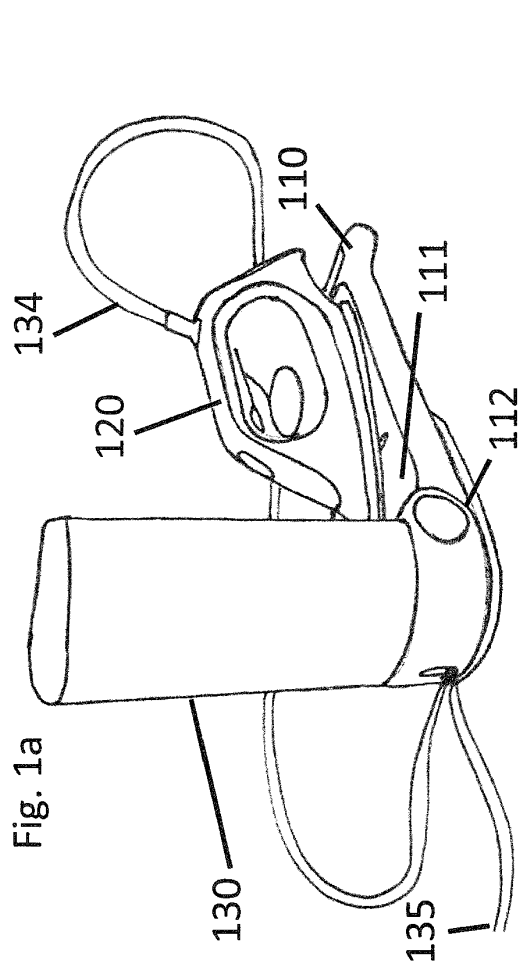
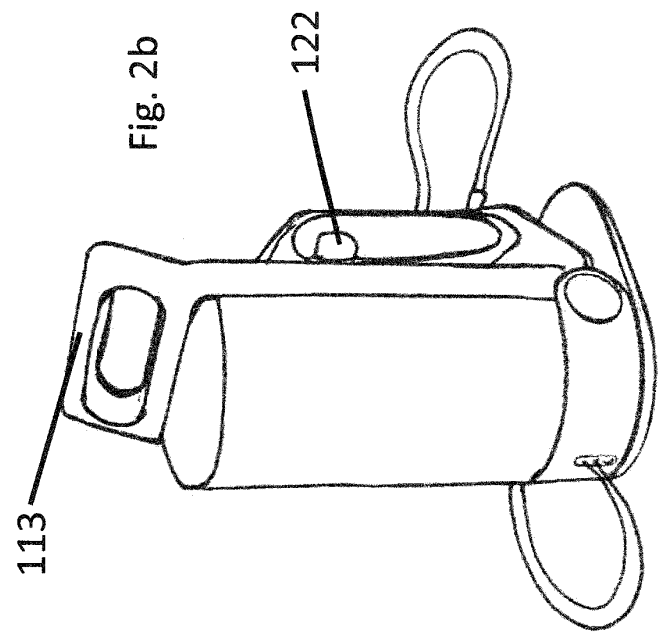
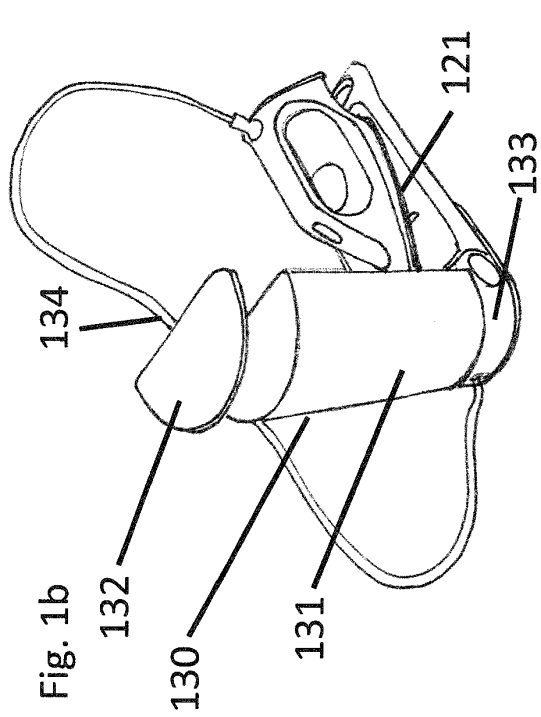
14. Station vapeur selon une quelconque revendication précédente, dans laquelle le réservoir d'eau (131) est configuré pour être repliable d'une configuration remplie à une configuration repliée à des fins de stockage, 5

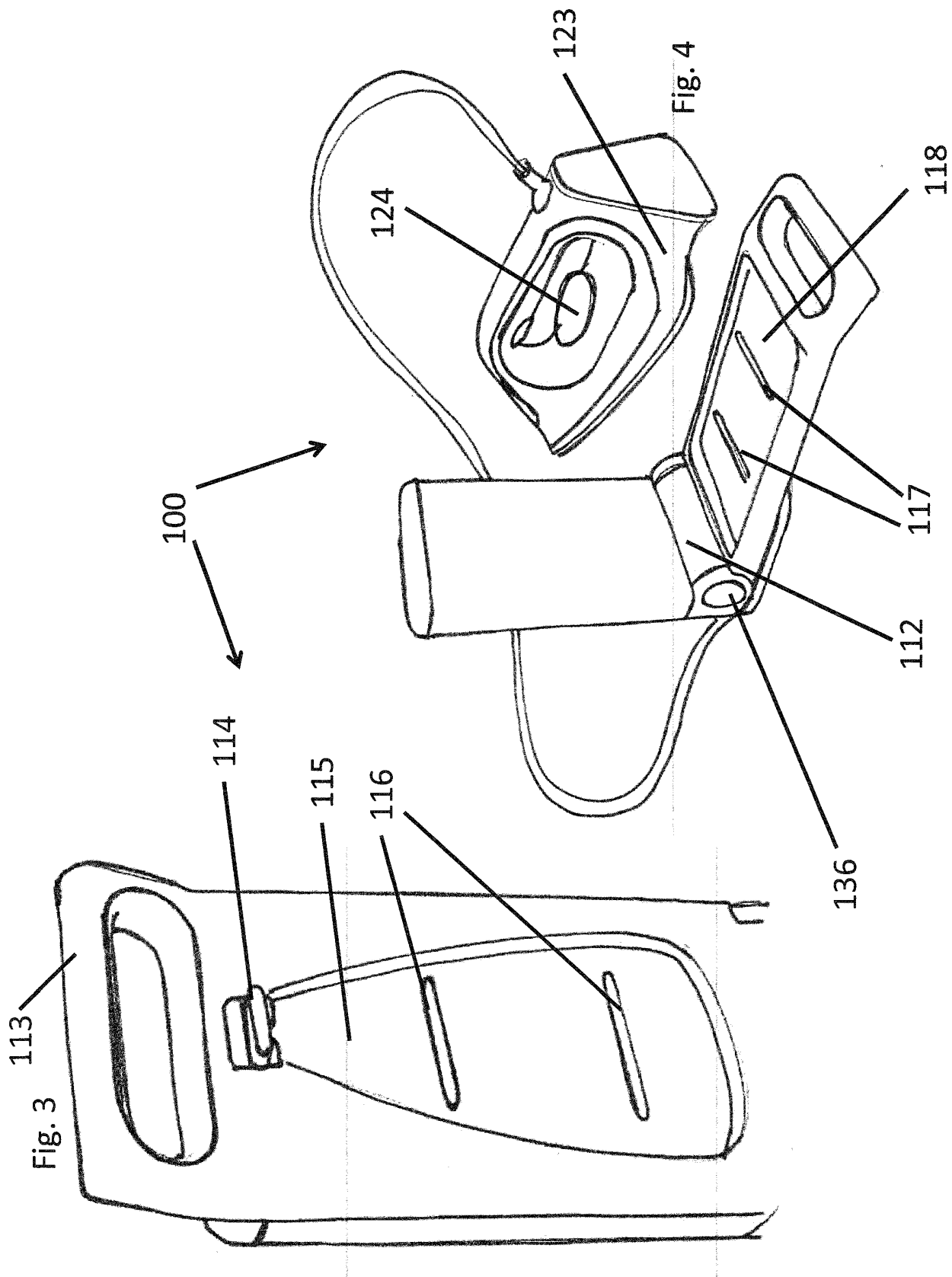
dans laquelle le réservoir d'eau (131) est de préférence l'un des suivants :

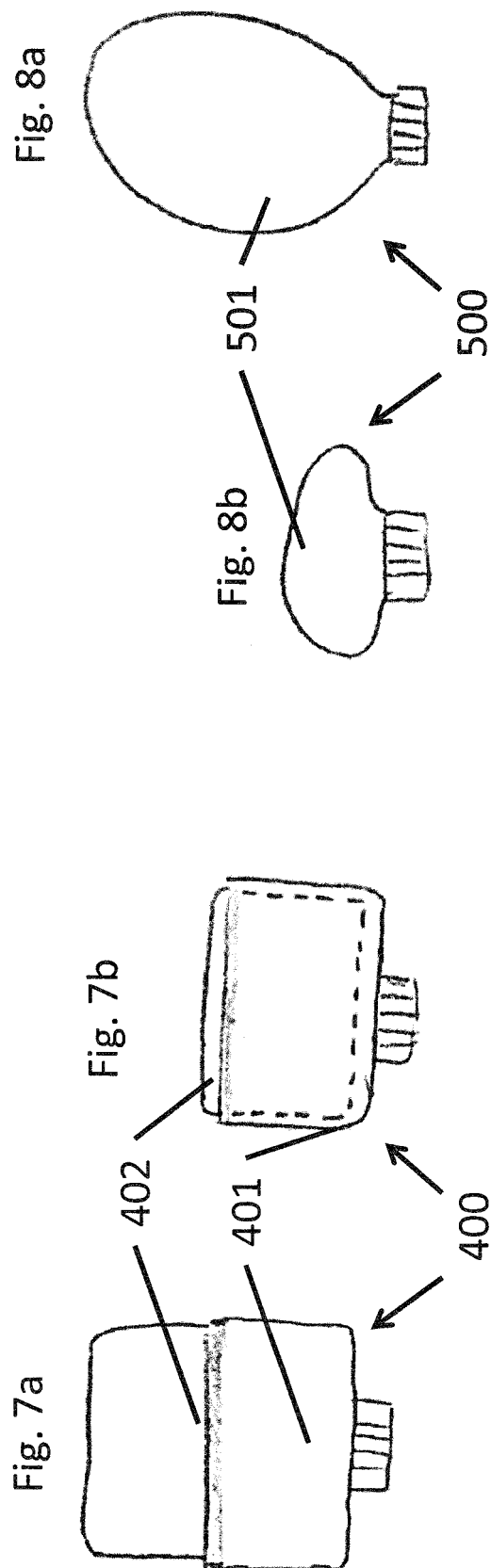
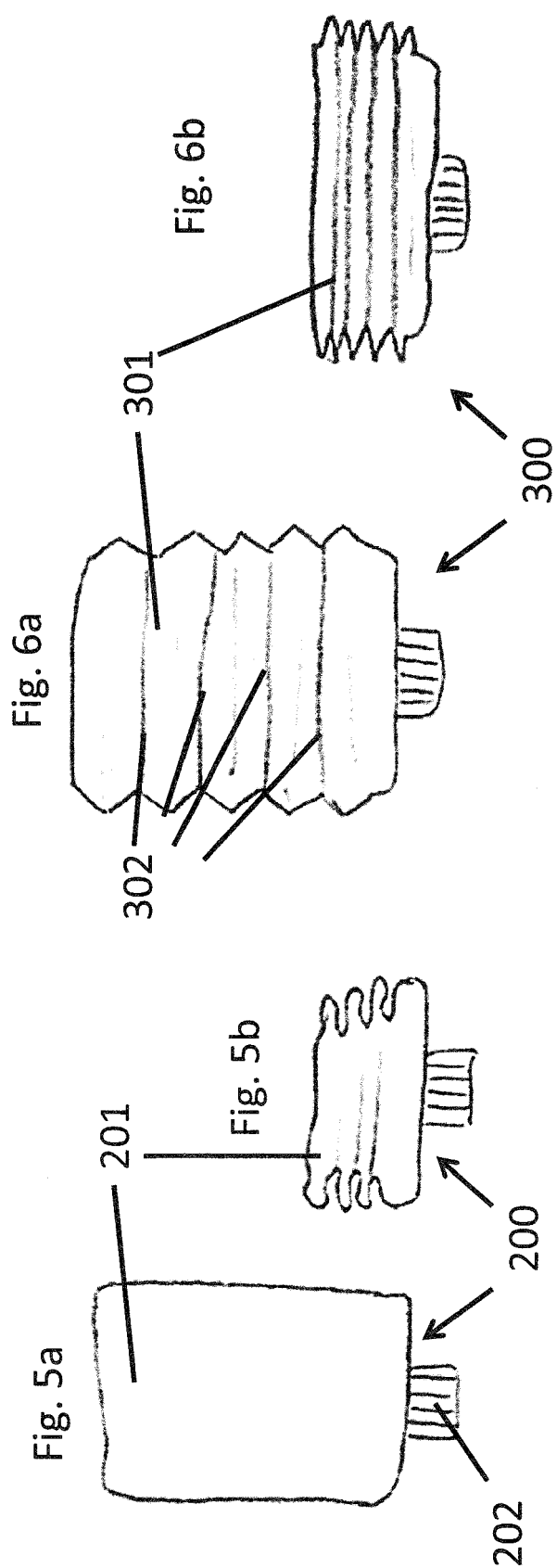
- a) un réservoir comprenant une paroi latérale ondulée (302)
- b) un réservoir comprenant une paroi latérale télescopique (401, 402)
- c) un réservoir formé d'un matériau élastique et/ou

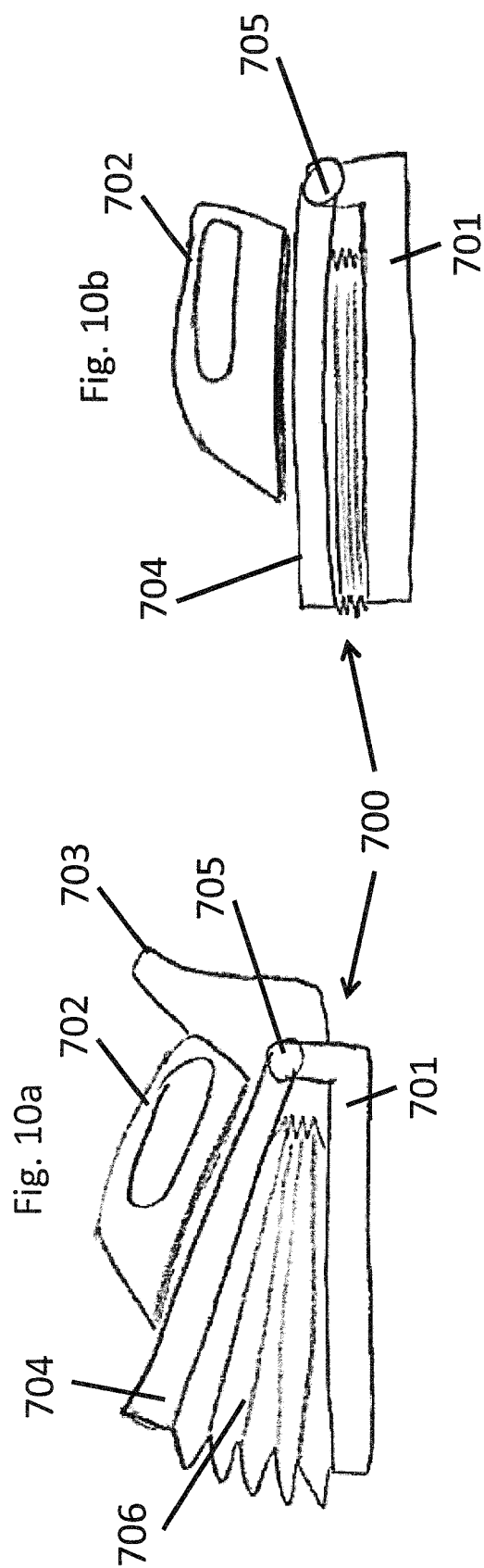
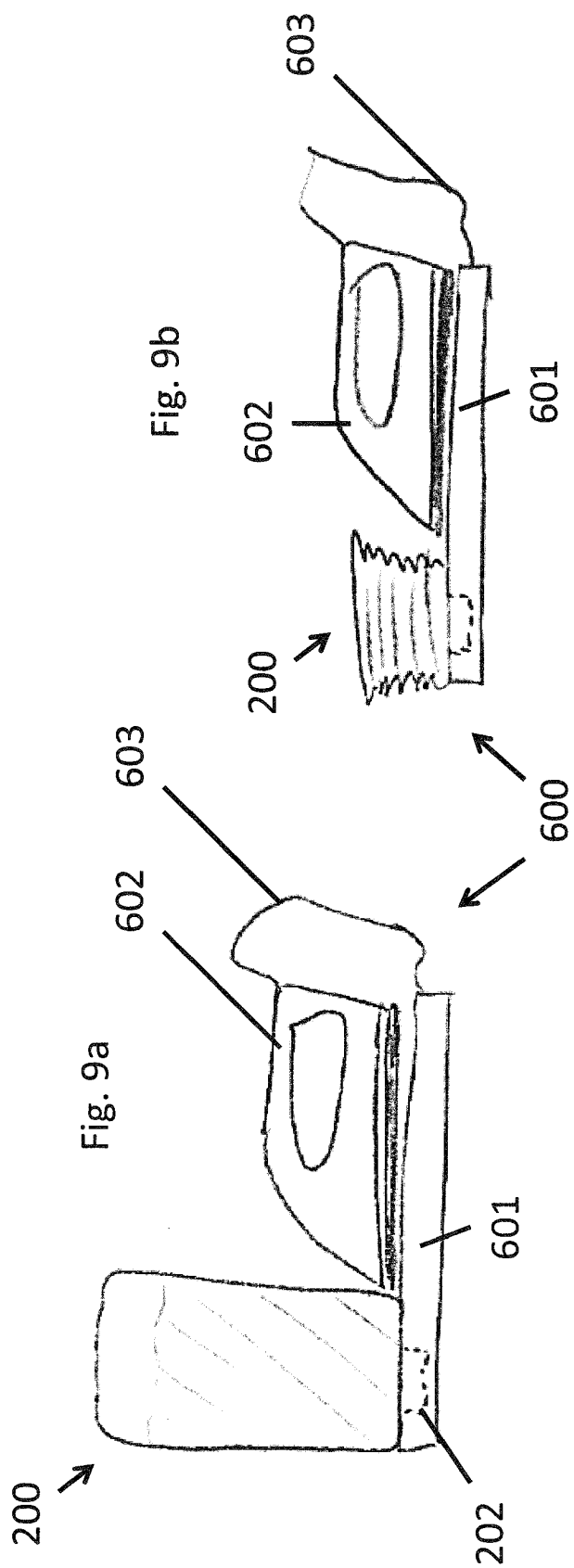
dans laquelle la station vapeur est configurée pour appliquer une pression au réservoir d'eau (131), de préférence en utilisant le poids du fer à repasser (120).

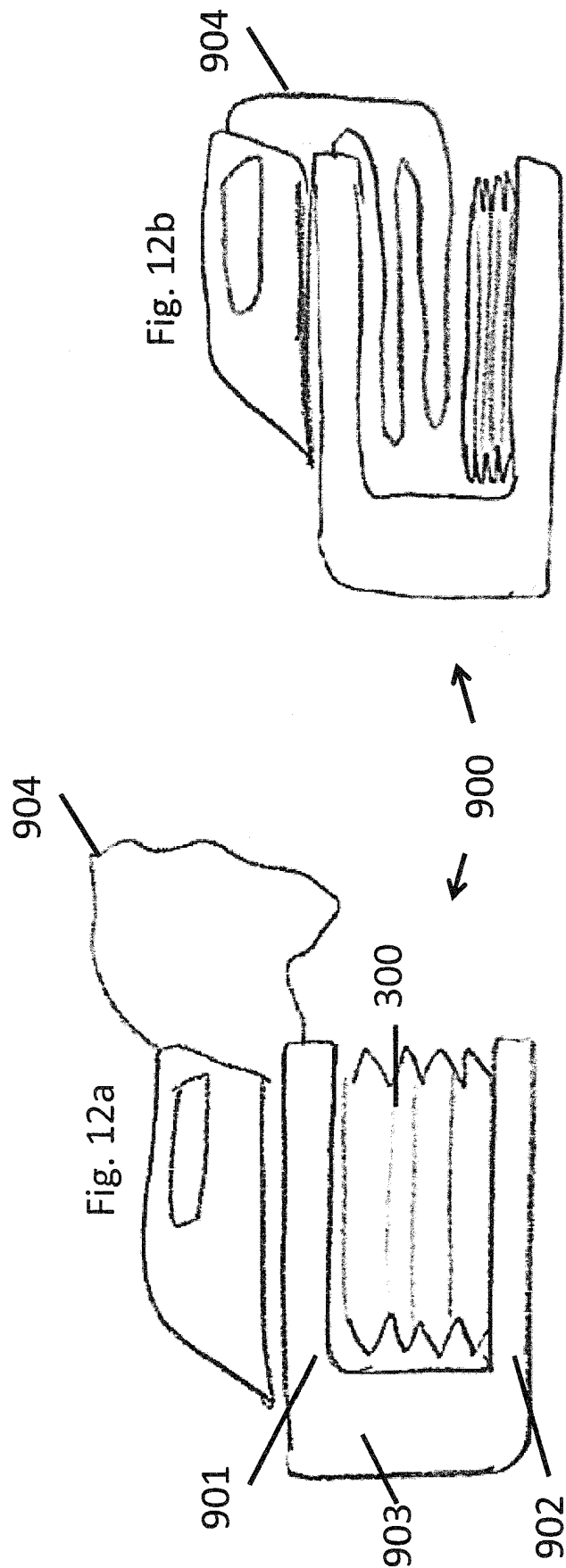
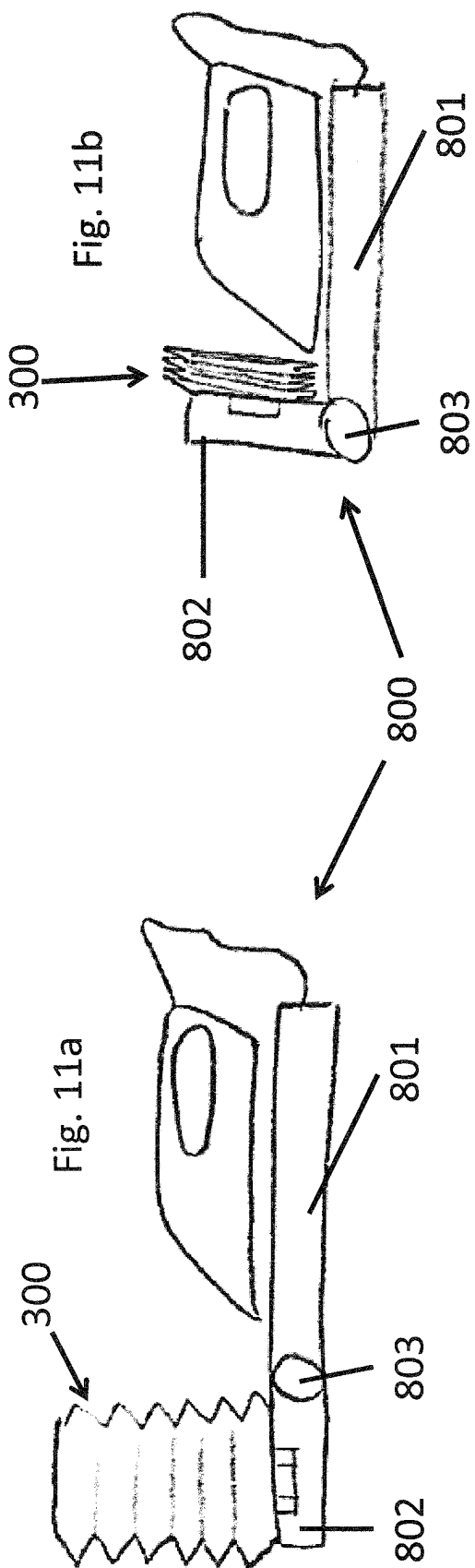
15. Station vapeur selon une quelconque revendication précédente, dans laquelle le fer à repasser (120) et la base (131) sont connectés électroniquement, et un parmi le fer à repasser (120) et la base (131) est configuré pour transmettre des instructions pour commander l'autre parmi le fer à repasser et la base entrées par un utilisateur, dans laquelle un parmi le fer à repasser (120) et la base (131) est de préférence configuré pour recevoir un retour d'informations depuis l'autre parmi le fer à repasser et la base et le communiquer à l'utilisateur. 5











REFERENCES CITED IN THE DESCRIPTION

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