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TELESCOPIC POLE ASSEMBLY FOR SUPPORTING AN IRONING BOARD

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The invention relates to a telescopic pole assembly (100) for supporting an ironing board (102). The telescopic pole assembly comprises an upper pole (104), and a hollow lower pole (106) having an internal surface (108) that faces the upper pole. The upper pole is slidable inside the lower pole to enable extension and collapsing
- of the telescopic pole assembly. A resilient member (110) is arranged at a lower part of the upper pole. The resilient member comprises a deformable peripheral rim (112) having an outer shape adapted to, at least partially, contact the internal surface of the lower pole. The peripheral rim is inclined downwards.

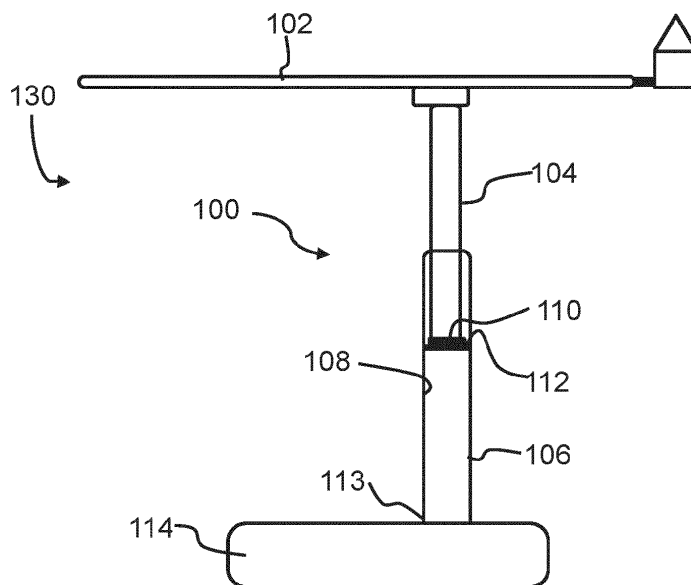


FIG.1A

Description

FIELD OF THE INVENTION

[0001] The invention relates to a telescopic pole assembly for supporting an ironing board.

[0002] The invention also relates to an ironing board assembly and a garment steamer comprising such a telescopic pole assembly.

[0003] The invention may be used in the field of garment care.

BACKGROUND OF THE INVENTION

[0004] Garment steamers are known to be used for ironing or steaming garments to remove creases through the use of heat and moisture from steam.

[0005] One type of garment steamer is a so-called stand garment steamer that comprises a base, which base houses a water tank. A steamer head is connected to the base by a flexible hose through which steam and/or water is delivered to the steamer head. The steam may be generated in the base and/or in the steamer head. The steamer head is provided with a steam plate, also known as a soleplate, delimiting one or more steam vents through which steam is discharged onto a fabric being treated.

[0006] Garment steamers, in particular stand garment steamers, tend to be supplied together with an ironing board, for example an ironing board that can be orientated in both vertical and horizontal orientations to facilitate vertical steaming or horizontal ironing of garments.

[0007] Certain stand garment steamers are equipped with a telescopic pole assembly for supporting an ironing board. Such a telescopic pole assembly can be used to adjust a height of the ironing board according to a user's preference, e.g. to suit the height of the user. The telescopic pole assembly can also collapse, for example to reduce the form factor of the stand garment steamer for storage, or for packaging and transportation.

[0008] A safety drawback of such telescopic pole assemblies is that an upper pole may slide rapidly into a lower pole due to the weight of the ironing board, for example when a locking mechanism is released in order to enable adjustment of the height of the ironing board. Such rapid sliding can risk injury to the user, for example by causing pinching of the user's fingers, and can also risk damage being caused to components of the stand garment steamer.

OBJECT AND SUMMARY OF THE INVENTION

[0009] Alleviating the above-described issues associated with conventional telescopic pole assemblies in a way that minimises user convenience being compromised remains a challenge.

[0010] It is an object of the invention to propose a telescopic pole assembly for supporting an ironing board

that addresses this challenge.

[0011] The invention is defined by the independent claims. The dependent claims define advantageous embodiments.

[0012] To this end, the telescopic pole assembly according to the invention comprises

- an upper pole,
- a lower pole being hollow, the upper pole being slidable inside the lower pole to enable extension and collapsing of the telescopic pole assembly, and the lower pole comprising an internal surface facing the upper pole, and
- a resilient member arranged at a lower part of the upper pole, the resilient member comprising a deformable peripheral rim having an outer shape adapted to, at least partially, contact said internal surface, said peripheral rim being inclined downwards.

[0013] By the peripheral rim of the resilient member having an outer shape adapted to, at least partially, contact the internal surface of the lower pole, with the peripheral rim extending downwards (prior to deformation of the peripheral rim during the collapsing of the telescopic pole assembly), sliding movement of the upper pole into the lower pole can be slowed by the frictional force induced between the peripheral rim and the internal surface of the lower pole. On the other hand, during lifting of the upper pole out of the lower pole during extension of the telescopic pole assembly, the downwardly inclined peripheral rim may not, or only minimally, impede movement of the upper pole for easy extension adjustment.

[0014] This slowing of the sliding movement of the upper pole into the lower pole during collapsing of the telescopic pole assembly assists to make the telescopic pole assembly safer to use, for example by reducing the risk of trapping of a user's fingers during the collapsing of the telescopic pole assembly, and mitigates the risk of damage to components resulting from rapid collapse of the telescopic pole assembly. The lower frictional force exerted by the peripheral rim against the internal surface during the extension nonetheless assists to minimise compromising of user convenience when extending the telescopic pole assembly.

[0015] The resilient member is arranged at a lower part of the upper pole. The term "lower part" in this context may encompass the resilient member being arranged at an extreme bottom part, in other words an end, of the upper pole that is received inside the lower pole. More generally, the term "lower part" may refer to a lowermost fraction, for example a lowermost 10% of the length of the upper pole.

[0016] In some embodiments, the resilient member is arranged to deform from an initial shape during the collapsing and revert to the initial shape during the extension, with less pressure being exerted by the peripheral rim against the internal surface when the resilient mem-

ber is in the initial shape than when the resilient member is deformed. When the resilient member adopts the initial shape, the peripheral rim extends downwardly.

[0017] This pressure difference assists to ensure that a smaller frictional force is exerted by the peripheral rim against the internal surface of the lower pole during the extension than that exerted by the peripheral rim during the collapsing of the telescopic pole assembly.

[0018] In some embodiments, a lateral dimension of the resilient member extending between a first extremity of the peripheral rim and a second extremity of the resilient member opposite the first extremity is equal to or larger than an internal dimension of the lower pole extending between opposite surface portions of the internal surface that, in use, respectively face the first and second extremities. In such embodiments, the lateral dimension is measured when the peripheral rim is undeformed and not received inside the lower pole.

[0019] As a result, the peripheral rim is at least in contact with, or slightly compressed against, the internal surface of the lower pole when the telescopic pole assembly is assembled. Due to friction between an "end/tail" portion of the peripheral rim and the internal surface of the lower pole, movement of the "end/tail" portion of the peripheral rim is impeded when the upper pole moves downwards during the collapsing of the telescopic pole assembly which causes the peripheral rim to deform as the upper pole moves downwards. The deformed peripheral rim is thus squeezed/constrained in a distance/space smaller than its free length which in turn increases its stiffness and consequently further increases the friction between the peripheral rim and the internal surface of lower pole. This helps to prevent the upper pole from free-falling into the lower pole.

[0020] When the upper pole moves upwards subsequently during the extension of the telescopic pole assembly, the deformed peripheral rim will revert back to its initial shape which in turn reduces its stiffness and thus reduces the friction between the peripheral rim and the internal surface of the lower pole. Friction between the peripheral rim and the internal surface of the lower pole will remain low/minimum during further upwards movement of the upper pole because of the peripheral rim remaining in its initial shape. This assists to make upwards movement of the upper pole easier than downwards movement of the upper pole.

[0021] In some embodiments, the peripheral rim is arranged such that a smaller area of contact between the peripheral rim and the internal surface is provided during the extension than during the collapsing. The flexing capability provided via the downward inclination of the peripheral rim in combination with the minimal interference with the internal surface of the lower pole provided by this smaller area of contact may assist to reduce the frictional force exerted by the peripheral rim against the internal surface of the lower pole during the extension of the telescopic pole assembly.

[0022] When the resilient member has reverted to the

initial shape following the extension of the telescopic pole assembly, the peripheral rim preferably extends away from the upper pole towards the internal surface at an angle relative to a central axis of the telescopic pole assembly along which the telescopic assembly extends and collapses. In other words, the peripheral rim extends downwardly towards the bottom end of the lower pole and outwardly towards the internal surface.

[0023] In some embodiments, the angle of extension of the peripheral rim relative to the central axis is in the range of [110; 140] degrees. This angular range may provide a favourable balance between sufficient slowing of the sliding of the upper pole into the lower pole during the collapsing with adequate facilitating of sliding of the upper pole out of the lower pole during the extension of the telescopic pole assembly.

[0024] In some embodiments, the telescopic pole assembly comprises a support base, with the lower pole upstanding from the support base. In such embodiments, height adjustment of the ironing board above the support base is provided by the sliding of the upper pole inside the lower pole to collapse and extend the telescopic pole assembly.

[0025] In some embodiments, the peripheral rim extends, upon reversion of the resilient member to the initial shape following the extension of the telescopic pole assembly, in the direction of the support base.

[0026] Preferably, at least the peripheral rim of the resilient member is formed from an elastomeric material. Such an elastomeric material can provide a relatively straightforward and effective way of providing the deformability/deflectability of the peripheral rim.

[0027] In some embodiments, the resilient member as a whole is formed from the elastomeric material. For example, the resilient member comprises, e.g. is defined by, a rubber pad or a rubber gasket.

[0028] In embodiments in which the resilient member comprises, e.g. is defined by, the rubber pad, the peripheral rim can be provided on opposite sides of the rubber pad. Thus, the peripheral rim need not be provided around the entire periphery of the upper pole.

[0029] In embodiments in which the resilient member comprises, e.g. is defined by, the rubber gasket, the peripheral rim can be provided around at least part, e.g. the entirety, of the upper pole.

[0030] In embodiments, in which the resilient member is arranged along the upper pole from the extreme bottom part, in other words end, of the upper pole, the resilient member in the form of a rubber gasket can delimit an aperture through which the lower part of the upper pole passes.

[0031] The elastomeric material, e.g. rubber, preferably has a Shore A hardness in the range of [40; 50]. The flexing capability provided via the downward inclination of the peripheral rim in combination with such a Shore A hardness, in other words a relatively low material hardness, can assist to minimise impeding of upwards sliding movement of the upper pole by the peripheral rim during

extension of the telescopic pole assembly.

[0032] Alternatively or additionally, the peripheral rim, e.g. elastomeric peripheral rim, preferably has a thickness in the range of [1; 3] mm, such as about 1.5 mm.

[0033] This thickness can, for example, be a maximum thickness of the peripheral rim in the scenario that the peripheral rim has several thicknesses.

[0034] The flexing capability provided via the downward inclination of the peripheral rim in combination with such a thickness, e.g. together with a Shore A hardness in the range of [40; 50], can assist to minimise impeding of upwards sliding movement of the upper pole by the peripheral rim during extension of the telescopic pole assembly.

[0035] In some embodiments, the telescopic pole assembly comprises a stopper member provided on the upper pole, the stopper member being arranged relative to the peripheral rim to define a limit of movement of the peripheral rim during the collapsing. This assists to prevent the peripheral rim deforming/deflecting too far, so as to cause the frictional force to decrease again, during collapsing of the telescopic pole assembly.

[0036] In at least some embodiments, the pole assembly comprises a locking mechanism adapted to releasably fix the position of the upper pole with respect to the lower pole.

[0037] For example, the locking mechanism includes a lever movable by the user to fix the position of the upper pole with respect to the lower pole, and movable to release the upper pole to enable the upper pole to be slid into or out of the lower pole in order to collapse and extend the telescopic pole assembly.

[0038] In such embodiments, the resilient member can assist to slow sliding of the upper pole into the lower pole upon release of the locking mechanism.

[0039] In some embodiments, the telescopic pole assembly comprises a third pole, with the third pole being arranged to couple the ironing board to the upper pole. For example, the upper pole is a middle pole, the lower pole is a bottom pole, and the third pole is a top pole when the telescopic pole assembly and the ironing board supported thereon are orientated for use.

[0040] In such embodiments, the third pole may be adapted to permit the ironing board to be adjusted, e.g. tilted, between different orientations, such as between vertical and horizontal orientations.

[0041] According to another aspect there is provided an ironing board assembly comprising:

- an ironing board; and
- the telescopic pole assembly according to any of the embodiments described herein for supporting the ironing board.

[0042] In some embodiments, the ironing board is tiltably mounted to the telescopic pole assembly, for example via the third pole of the telescopic pole assembly.

[0043] According to a further aspect there is provided

a garment steamer comprising the telescopic pole assembly or the ironing board assembly according to any of the embodiments described herein.

[0044] In some embodiments, the garment steamer further comprises

- a base unit comprising a water tank,
- a steamer head having a treatment plate delimiting at least one steam vent, and
- a hose cord connecting the base unit to the steamer head.

[0045] In some embodiments, the base unit comprises a steam generator and the steamer head comprises a steam chamber arranged to re-heat the steam and/or vaporise heated water received from the steam generator, prior to the steam exiting the steamer head via the at least one steam vent.

[0046] In alternative embodiments, the steamer head comprises a steam chamber arranged to generate steam from water supplied, e.g. pumped, thereto from the water tank included in the base unit.

[0047] In some embodiments, the base unit is supportable on the support base from which the lower pole of the telescopic pole assembly upstands.

[0048] Detailed explanations and other aspects of the invention will be given below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0049] Particular aspects of the invention will now be explained with reference to the embodiments described hereinafter and considered in connection with the accompanying drawings, in which identical parts or sub-steps are designated in the same manner:

Figs.1A and 1B schematically depict a telescopic pole assembly in an extended state and in a collapsed state respectively,

Fig.2 provides a cross-sectional view showing an upper pole and a lower pole of a telescopic pole assembly according to another example,

Figs.3A and 3B provide enlarged views of a resilient member attached to the upper pole during extension and collapsing of the telescopic pole assembly respectively,

Figs.4A and 4B provide views of an upper pole and a resilient member of a telescopic pole assembly according to yet another example,

Figs.5A and 5B provide views of an upper pole and a resilient member of a telescopic pole assembly according to a further example, and

Figs.6A and 6B provide views of a garment steamer according to an example when a telescopic pole assembly included in the garment steamer is in an extended state and in a collapsed state respectively.

DETAILED DESCRIPTION OF THE INVENTION

[0050] Figs. 1A and 1B depict a telescopic pole assembly 100 for supporting an ironing board 102. The telescopic pole assembly 100 comprises an upper pole 104 and a lower pole 106.

[0051] The lower pole 106 is hollow, and the upper pole 104 is slidable inside the lower pole 106 to enable extension and collapsing of the telescopic pole assembly 100. Fig. 1A shows the telescopic pole assembly 100 when extended, and Fig. 1B shows the telescopic pole assembly 100 when collapsed.

[0052] The terms "upper" and "lower" in the context of the upper pole 104 and the lower pole 106 may refer to an in-use orientation of the telescopic pole assembly 100.

[0053] The upper pole 104 and the lower pole 106 can be alternatively termed without reference to the in-use orientation of the telescopic pole assembly 100 by the term "first pole" being instead used for the upper pole 104, and the term "second pole" being instead used for the lower pole 106. The upper pole 104 and the lower pole 106 can be made of any suitable material provided that the upper pole 104 and the lower pole 106 are capable of supporting the ironing board 102. In some embodiments, the upper pole 104 and/or the lower pole 106 is or are made of at least one selected from a plastic material and a metallic material. Such a metallic material can be a metal, such as aluminium, and/or a metal alloy, such as steel.

[0054] With reference to Figs. 1A, 1B and 2, the lower pole 106 comprises an internal surface 108. The internal surface 108 delimits the hollow interior of the lower pole 106.

[0055] A resilient member 110 is arranged on, for example is attached to, the upper pole 104. The resilient member 110 comprises a deformable, in other words deflectable, peripheral rim 112 that makes contact with the internal surface 108 of the lower pole 106.

[0056] As shown in Figs. 1A, 1B and 2, the resilient member 110 is arranged at a lower part of the upper pole 104. The term "lower part" in this context may encompass the resilient member 110 being arranged at an extreme bottom part, in other words an end 111, of the upper pole 104 that is received inside the lower pole 106. More generally, the term "lower part" may refer to a lowermost fraction, for example a lowermost 10% of the length of the upper pole 104.

[0057] The resilient member 110 is arranged such that during the extension of the telescopic pole assembly 100 a smaller frictional force is exerted by the peripheral rim 112 against the internal surface 108 of the lower pole 106 than that exerted by the peripheral rim 112 against the internal surface 108 during the collapsing of the telescopic pole assembly 100.

[0058] The greater frictional force exerted by the peripheral rim 112 against the internal surface 108 during the collapsing assists to slow down sliding of the upper pole 104 into the lower pole 106 during the collapsing.

This assists to make the telescopic pole assembly 100 safer to use, for example by reducing the risk of trapping of a user's fingers during the collapsing of the telescopic pole assembly 100, and mitigates the risk of damage to components resulting from rapid, e.g. free fall-type, collapse of the telescopic pole assembly 100. The lower frictional force exerted by the peripheral rim 112 against the internal surface 108 during the extension nonetheless assists to minimise compromising of user convenience when extending the telescopic pole assembly 100.

[0059] In other words, sliding movement of the upper pole 104 into the lower pole 106 can be slowed by the frictional force induced between the peripheral rim 112 and the internal surface 108 of the lower pole 106. On the other hand, during lifting of the upper pole 104 out of the lower pole 106 during extension of the telescopic pole assembly 100, the peripheral rim 100 may not, or only minimally, impede movement of the upper pole 104 for easy extension adjustment.

[0060] To this end, the peripheral rim 112 of the resilient member 110 shown in Fig. 2 has an outer shape adapted to, at least partially, contact the internal surface 108 of the lower pole 106, with the peripheral rim 112 being inclined downwards. With reference also to Figs. 1A and 1B, the peripheral rim 112 thus extends towards a bottom end 113 of the lower pole 106. This downwards inclination of the peripheral rim 112 can be regarded as analogous to a piston of a syringe.

[0061] In this case, the upper pole 104 is slidable towards the bottom end 113 of the lower pole 106 during the collapsing of the telescopic pole assembly 100, with the peripheral rim 112, following extension of the telescopic pole assembly 100, extending downwards towards the bottom end 113 and outwardly towards the internal surface 108.

[0062] In some embodiments, such as that shown in Figs. 1A and 1B, the telescopic pole assembly 100 comprises a support base 114, with the lower pole 106 upstanding from the support base 114. In such embodiments, height adjustment of the ironing board 102 above the support base 114 is provided by the sliding of the upper pole 104 inside the lower pole 106 to collapse and extend the telescopic pole assembly 100.

[0063] In such embodiments, the peripheral rim 112 extends, following the extension of the telescopic pole assembly 100, in the direction of the support base 114.

[0064] Fig. 3A shows the peripheral rim 112 extending downwards following extension of the telescopic pole assembly 100, and Fig. 3B shows the peripheral rim 112 being deformed during or following collapsing of the telescopic pole assembly 100. In the scenario shown in Fig. 3B, the resilient member 110 exerts a greater pressure, via the peripheral rim 112, against the internal surface 108 of the lower pole 106 than in the scenario shown in Fig. 3A.

[0065] This pressure difference assists to ensure that a smaller frictional force is exerted by the peripheral rim 112 against the internal surface 108 of the lower pole

106 during the extension than that exerted by the peripheral rim 112 during the collapsing of the telescopic pole assembly 100.

[0066] More generally, the resilient member 110 is preferably arranged to deform from an initial shape, as shown in Fig.3A, during the collapsing and revert to the initial shape during the extension of the telescopic pole assembly 100, with less pressure being exerted by the peripheral portion 112 against the internal surface 108 when the resilient member 110 is in the initial shape than when the resilient member 110 is in the deformed state shown in Fig.3B. When the resilient member 110 adopts the initial shape, the peripheral rim 112 extends downwardly, in other words towards the bottom end 113 of the lower pole 106.

[0067] In some embodiments, such as that shown in Figs.2, 3A and 3B, the peripheral rim 112 is arranged such that a smaller area of contact between the peripheral rim 112 and the internal surface 108 of the lower pole 106 is provided during the extension than during the collapsing of the telescopic pole assembly 100. The flexing capability provided via the downward inclination of the peripheral rim 112 in combination with the minimal interference with the internal surface 108 of the lower pole 106 provided by this smaller area of contact may assist to reduce the frictional force exerted by the peripheral rim 112 against the internal surface 108 of the lower pole 106 during the extension.

[0068] For example, a tip of the peripheral rim 112 has an interference IN1 of between 0-1mm with the internal surface 108 of the lower pole 106, with reference to the cross-sectional view provided in Fig.2.

[0069] In some embodiments, such as that shown in Fig.2, the peripheral rim 112, when the resilient member 110 has reverted to the initial shape following the extension of the telescopic pole assembly 100, extends away from the upper pole 104 towards the internal surface 108 of the lower pole 106 at an angle A1 relative to a central axis CA of the telescopic pole assembly 100 along which the telescopic assembly 100 extends and collapses.

[0070] Preferably, the angle A1 of extension of the peripheral rim 112 relative to the central axis CA is in the range of [110; 140] degrees. This angular range may provide a favourable balance between sufficient slowing of the sliding of the upper pole 104 into the lower pole 106 during the collapsing with adequate facilitating of sliding of the upper pole 104 out of the lower pole 106 during the extension of the telescopic pole assembly 100.

[0071] In other words, the flexible peripheral rim 112 may extend at an angle in the range of [20; 50] degrees, for example about at 34 degrees, with respect to a flat mounting surface MS of the resilient member 110, e.g. rubber pad, whose plane is perpendicular to the central axis CA.

[0072] Preferably, at least the peripheral rim 112 of the resilient member 110 is formed from an elastomeric material. Such an elastomeric material can provide a relatively straightforward and effective way of providing the

deformability/deflectability of the peripheral rim 112.

[0073] The elastomeric material, e.g. rubber, preferably has a Shore A hardness in the range of [40; 50].

[0074] The flexing capability provided via the downward inclination of the peripheral rim 112 in combination with such a Shore A hardness, in other words a relatively low material hardness, can assist to minimise impeding of upwards sliding movement of the upper pole 104 by the peripheral rim 112 during extension of the telescopic pole assembly 100.

[0075] Alternatively or additionally, the peripheral rim 112, e.g. elastomeric peripheral rim 112, preferably has a thickness in the range of [1; 3] mm, such as about 1.5 mm.

[0076] This thickness can, for example, be a maximum thickness of the peripheral rim 112 in the scenario that the peripheral rim 112 has several thicknesses.

[0077] The flexing capability provided via the downward inclination of the peripheral rim 112 in combination with such a thickness, e.g. together with a Shore A hardness in the range of [40; 50], can assist to minimise impeding of upwards sliding movement of the upper pole 104 by the peripheral rim 112 during extension of the telescopic pole assembly 100.

[0078] Any suitable type of elastomeric material can be contemplated, such as EPDM.

[0079] In some embodiments, the resilient member 110 as a whole is formed from the elastomeric material. For example, the resilient member 110 comprises, e.g. is defined by, a rubber pad or a rubber gasket.

[0080] Such a rubber pad or rubber gasket can slide tight along the internal surface 108 of the lower pole 106.

[0081] Figs.4A and 4B provide views of an embodiment in which the resilient member 110 is defined by a rubber pad. In these views, the upper pole 104 is shown upside down for ease of viewing of the resilient member 110.

[0082] In the non-limiting example shown in Figs.4A and 4B, the peripheral rim 112 is provided on opposite sides of the rubber pad. Thus, the peripheral rim 112 need not be provided around the entire periphery of the upper pole 104.

[0083] Figs.5A and 5B provide views of an embodiment in which the resilient member 110 is defined by a rubber gasket. In these views, the upper pole 104 is shown upside down for ease of viewing of the resilient member 110.

[0084] In the non-limiting example shown in Figs.5A and 5B, the peripheral rim 112 is provided around the entire periphery of the upper pole 104.

[0085] In embodiments (not shown in the Figures), in which the resilient member 110 is arranged along the upper pole 104 from the extreme bottom part, in other words the end 111, of the upper pole 104, the resilient member 110 in the form of a rubber gasket can delimit an aperture through which the lower part of the upper pole 104 passes.

[0086] The resilient member 110 can be attached to

the upper pole 104 in any suitable manner. In some embodiments, such as those shown in Figs.2, 3A, 3B, 4A, 4B, 5A and 5B, the telescopic pole assembly 100 includes a bracket 115A arranged to secure the resilient member 110, e.g. rubber pad or rubber gasket, to the end 111 of the upper pole 104 by the resilient member 110 being sandwiched between the bracket 115A and the end 111 of the upper pole 104.

[0087] In such embodiments, one or more fasteners, e.g. screw(s), can secure the bracket 115A and the resilient member 110 to the end 111 of the upper pole 104. As shown in Figs.4B and 5B, a screw hole 115B may extend through the bracket 115A, the resilient member 110, and the end 111 of the upper pole 104.

[0088] Other ways of securing the resilient member 110, e.g. rubber pad or gasket, to the upper pole 104 can also be contemplated, for instance using the one or more fasteners 115B, e.g. screw(s), but omitting the bracket 115A.

[0089] In some embodiments, and referring to Figs.2, 4A and 5A, a lateral dimension LAD of the resilient member 110 extending between a first extremity E1 of the peripheral rim 112 and a second extremity E2 of the peripheral rim 112 opposite the first extremity E1 is equal to or larger than an internal dimension IND of the lower pole 106 extending between opposite surface portions S1, S2 of the internal surface 108 that, in use, respectively contact the first and second extremities E1, E2.

[0090] With specific reference to Figs.4A and 5A, the lateral dimension LAD is measured when the peripheral rim 112 is undeformed and not received inside the lower pole 106.

[0091] As a result, the peripheral rim 112 is at least in contact with, or slightly compressed against, the internal surface 108 of the lower pole 106 when the telescopic pole assembly 100 is assembled. Due to friction between an "end/tail" portion of the peripheral rim 112 and the internal surface 108 of the lower pole 106, movement of the "end/tail" portion of the peripheral rim 112 is impeded when the upper pole 104 moves downwards during the collapsing of the telescopic pole assembly 100 which causes the peripheral rim 112 to deform as the upper pole 104 moves downwards. The deformed peripheral rim 112 is thus squeezed/constrained in a distance/space smaller than its free length which in turn increases its stiffness and consequently further increases the friction between the peripheral rim 112 and the internal surface 108 of lower pole 106. This helps to prevent the upper pole 104 from free-falling into the lower pole 106.

[0092] When the upper pole 104 moves upwards subsequently during the extension of the telescopic pole assembly 100, the deformed peripheral rim 112 will revert back to its initial shape which in turn reduces its stiffness and thus reduces the friction between the peripheral rim 112 and the internal surface 108 of the lower pole 106. Friction between the peripheral rim 112 and the internal surface 108 of the lower pole 106 will remain low/minimum during further upwards movement of the upper pole

104 because of the peripheral rim 112 remaining in its initial shape. This assists to make upwards movement of the upper pole 104 easier than downwards movement of the upper pole 104.

[0093] It is noted that in the non-limiting example shown in Figs.4A and 4B, the first and second extremities E1, E2 are included in portions of the peripheral rim 112 provided on opposite sides of the rubber pad.

[0094] In some embodiments, and as shown in Figs.2, 3A, 3B, 4B and 5B, the telescopic pole assembly 100 comprises a stopper member 116 provided on the upper pole 104, with the stopper member 116 being arranged relative to the peripheral rim 112 to define a limit of movement of the peripheral rim 112 during the collapsing. This limiting of movement of the peripheral rim 112 during the collapsing is schematically depicted in Fig.3B. This assists to prevent the peripheral rim 112 deforming/deflecting too far, so as to cause the frictional force to decrease again, during collapsing of the telescopic pole assembly 100.

[0095] In at least some embodiments, and with reference to Figs.4A, 4B, 5A and 5B, the pole assembly 100 comprises a locking mechanism 118 adapted to releasably fix the position of the upper pole 104 with respect to the lower pole 106.

[0096] For example, the locking mechanism 118 includes a lever movable by the user to fix the position of the upper pole 104 with respect to the lower pole 106, and movable to release the upper pole 104 to enable the upper pole 104 to be slid into or out of the lower pole 106 in order to collapse and extend the telescopic pole assembly 100.

[0097] In such embodiments, the resilient member 100 can assist to slow sliding of the upper pole 104 into the lower pole 106 upon release of the locking mechanism 118.

[0098] In some embodiments, the pole assembly 100 comprises a third pole, with the third pole being arranged to couple the ironing board 102 to the upper pole 104. For example, the upper pole 104 is a middle pole, the lower pole 106 is a bottom pole, and the third pole is a top pole when the telescopic pole assembly 100 and the ironing board 102 supported thereon are orientated for use.

[0099] In such embodiments, the third pole may be adapted to permit the ironing board 102 to be adjusted, e.g. tilted, between different orientations, such as between vertical and horizontal orientations.

[0100] It is noted, referring again to Figs.1A and 1B, that the telescopic pole assembly 100 may be included, together with the ironing board 102, in an ironing board assembly 130. Thus, the telescopic pole assembly 100 and the ironing board 102 may be conveniently provided, e.g. supplied, at the same time to the user.

[0101] Alternatively, the telescopic pole assembly 100 may be provided, e.g. supplied, to the user without the ironing board 102, for instance in the scenario that the user intends to use the telescopic pole assembly 100 to

support an ironing board 102 already in the possession of the user.

[0102] Figs.6A and 6B provide views of a garment steamer 150 according to an example. The garment steamer 150 includes the telescopic pole assembly 100

[0103] In such embodiments, and as shown in Figs.6A and 6B, the garment steamer 150 preferably includes a base unit 152 comprising a water tank, a steamer head (not visible) having a treatment plate delimiting at least one steam vent, and a hose cord (not visible) connecting the base unit to the steamer head.

[0104] The garment steamer 150 shown in Figs.6A and 6B can be regarded as a stand garment steamer 150. In this non-limiting example, the garment steamer 150 comprises an ironing board 102 which is tiltable between a vertical orientation, e.g. via the third pole of the telescopic pole assembly 100. The height of the ironing board 102 is also adjustable via the extension and collapsing of the telescopic pole assembly 100, as previously described. In this respect, Fig.6A shows an extended state of the telescopic pole assembly 100, and Fig.6B shows a collapsed state of the telescopic pole assembly 100.

[0105] In some embodiments, the base unit 152 comprises a steam generator (not visible) and the steamer head comprises a steam chamber arranged to re-heat the steam and/or vaporise heated water received from the steam generator, prior to the steam exiting the steamer head via the at least one steam vent.

[0106] In alternative embodiments, the steamer head comprises a steam chamber arranged to generate steam from water supplied, e.g. pumped, thereto from the water tank included in the base unit 152.

[0107] In some embodiments, such as that shown in Figs.6A and 6B, the base unit 152 is supportable on the support base 114 from which the lower pole 106 of the telescopic pole assembly 100 upstands.

[0108] The above embodiments as described are only illustrative, and not intended to limit the technique approaches of the present invention. Although the present invention is described in details referring to the preferable embodiments, those skilled in the art will understand that the technique approaches of the present invention can be modified or equally displaced without departing from the protective scope of the claims of the present invention. In particular, although the invention has been described based on a garment steamer, it can be applied to aid safe height adjustment of any household utensil or device. In the claims, the word "comprising" does not exclude other elements or steps, and the indefinite article "a" or "an" does not exclude a plurality. Any reference signs in the claims should not be construed as limiting the scope.

Claims

1. A telescopic pole assembly (100) for supporting an

ironing board (102), the telescopic pole assembly comprising:

- an upper pole (104),
- a lower pole (106) being hollow, the upper pole being slidable inside the lower pole to enable extension and collapsing of the telescopic pole assembly, and the lower pole comprising an internal surface (108) facing the upper pole, and
- a resilient member (110) arranged at a lower part of the upper pole, the resilient member comprising a deformable peripheral rim (112) having an outer shape adapted to, at least partially, contact said internal surface, said peripheral rim being inclined downwards.

2. The telescopic pole assembly (100) according to claim 1, wherein the resilient member (110) is arranged to deform from an initial shape during the collapsing and revert to the initial shape during the extension, less pressure being exerted by the peripheral rim (112) against the internal surface (108) when the resilient member is in the initial shape than when the resilient member is deformed.

3. The telescopic pole assembly (100) according to claim 1 or claim 2, wherein a lateral dimension (LAD) of the resilient member (110) extending between a first extremity (E1) of the peripheral rim (112) and a second extremity (E2) opposite the first extremity is equal to or larger than an internal dimension (IND) of the lower pole (106) extending between opposite surface portions (S1, S2) of the internal surface (108) that, in use, respectively face the first and second extremities, the lateral dimension being measured when the peripheral rim is undeformed and not received inside the lower pole.

4. The telescopic pole assembly (100) according to any one of claims 1 to 3, wherein the peripheral rim (112), following the extension of the telescopic pole assembly, extends away from the upper pole (104) towards the internal surface (108) at an angle (A1) relative to a central axis (CA) of the telescopic pole assembly along which the telescopic assembly extends and collapses.

5. The telescopic pole assembly (100) according to claim 4, wherein, following the extension of the telescopic pole assembly, said angle (A1) is in the range of [110; 140] degrees.

6. The telescopic pole assembly (100) according to any one of claims 1 to 5, wherein said lower part corresponds to an end (111) of the upper pole (104) that is received inside the lower pole (106).

7. The telescopic pole assembly (100) according to any

one of claims 1 to 6, comprising a support base (114), the lower pole (106) upstanding from the support base, height adjustment of the ironing board (102) above the support base being provided by said sliding of the upper pole (104) inside the lower pole. 5

8. The telescopic pole assembly (100) according to claim 7, wherein, following the extension of the telescopic pole assembly, the peripheral rim (112) extends in the direction of the support base (114). 10

9. The telescopic pole assembly (100) according to any one of claims 1 to 8, wherein at least the peripheral rim (112) of the resilient member (110) is formed from an elastomeric material. 15

10. The telescopic pole assembly (100) according to claim 9, wherein the elastomeric material has a Shore A hardness in the range of [40; 50]. 20

11. The telescopic pole assembly (100) according to any one of claims 1 to 10, wherein a stopper member (116) is provided on the upper pole (104), the stopper member being arranged relative to the peripheral rim (112) to define a limit of movement of the peripheral rim during said collapsing. 25

12. The telescopic pole assembly (100) according to any one of claims 1 to 11, comprising a third pole, the third pole being arranged to couple the ironing board (102) to the upper pole (104). 30

13. An ironing board assembly (130) comprising:

- an ironing board (102); and 35
- the telescopic pole assembly (100) according to any one of claims 1 to 12 supporting the ironing board.

14. The ironing board assembly (130) according to claim 13, wherein the ironing board (102) is tiltably mounted to the telescopic pole assembly (100). 40

15. A garment steamer (150) comprising: 45

- a base unit (152) comprising a water tank,
- a steamer head having a treatment plate delimiting at least one steam vent,
- a hose cord connecting the base unit to the steamer head, and 50
- the telescopic pole assembly (100) according to any one of claims 1 to 12 or the ironing board assembly (130) according to claim 13 or claim 14. 55

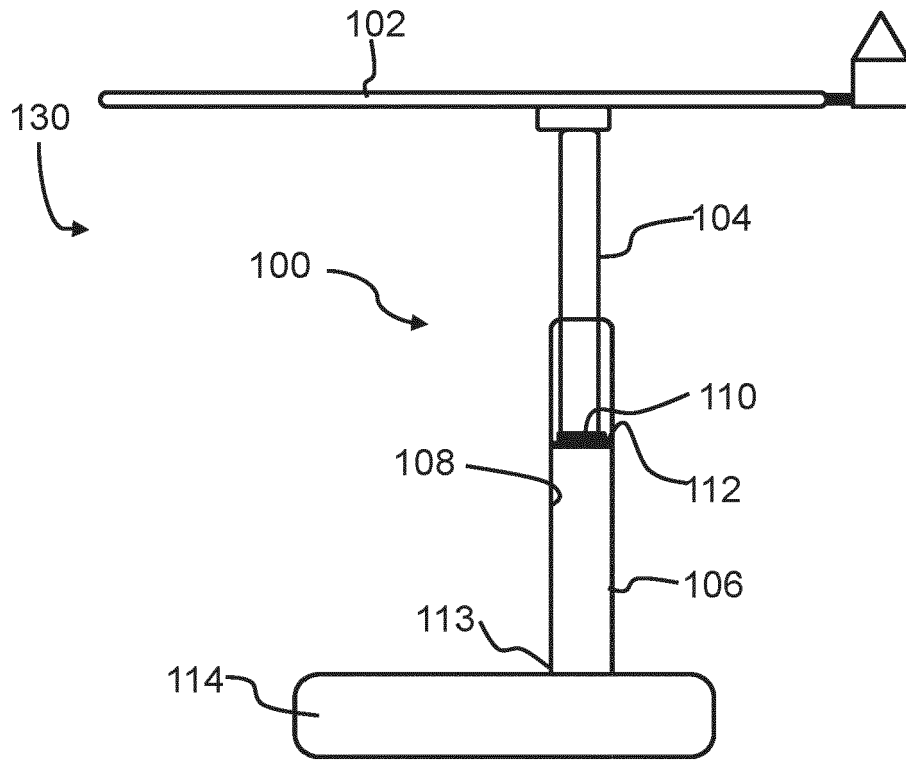


FIG.1A

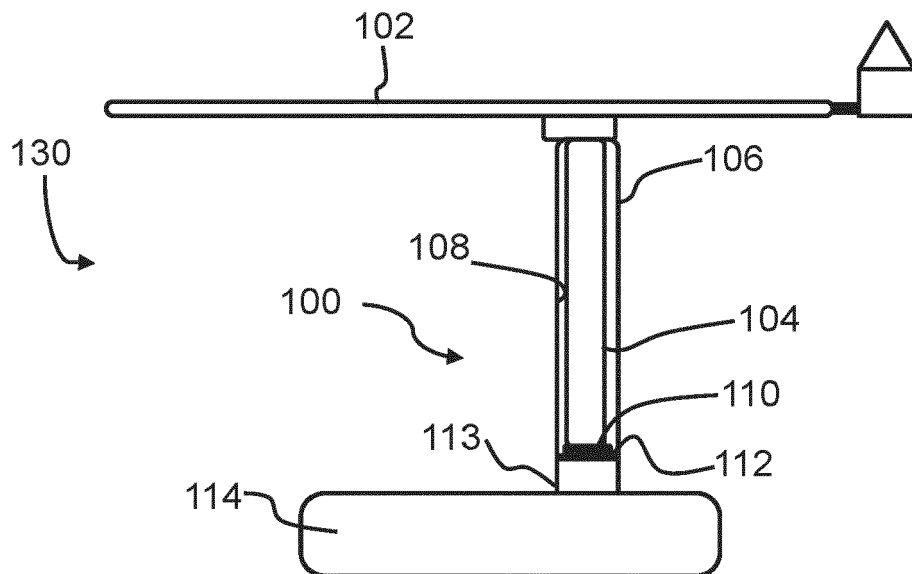


FIG.1B

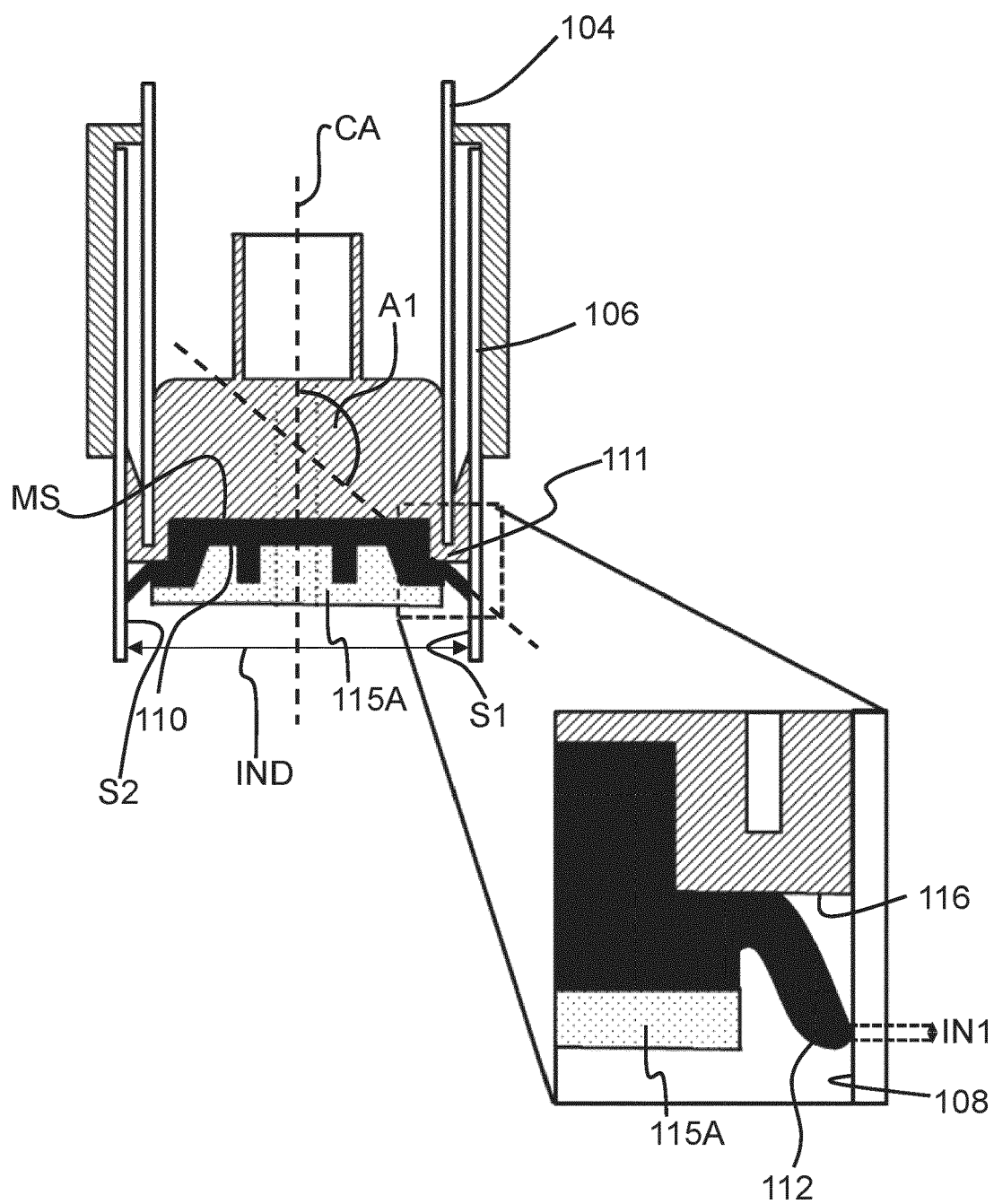


FIG.2

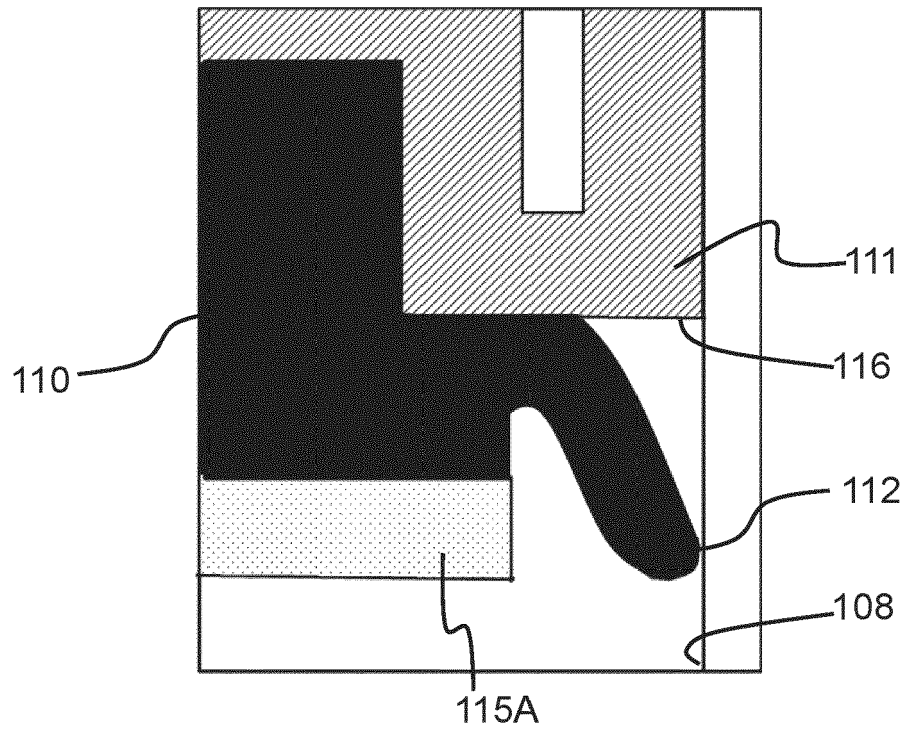


FIG.3A

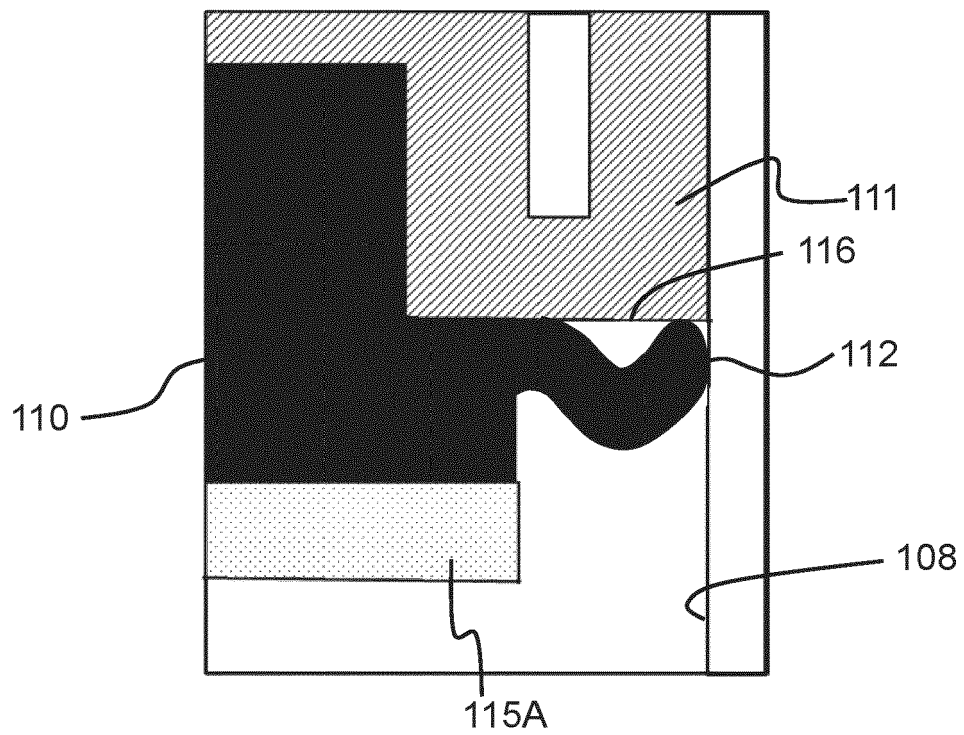


FIG.3B

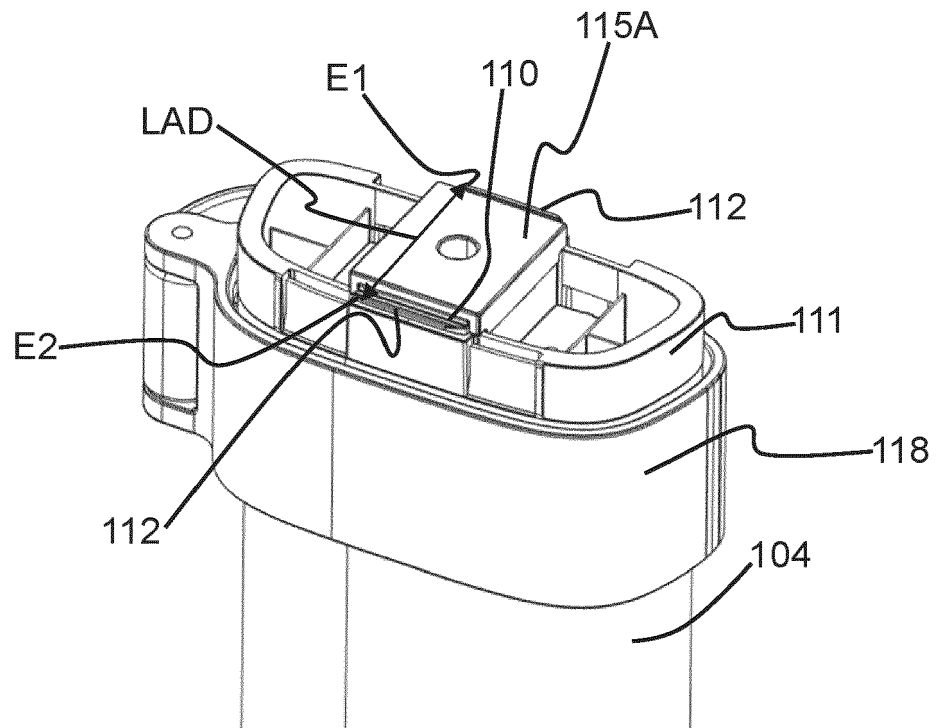


FIG. 4A

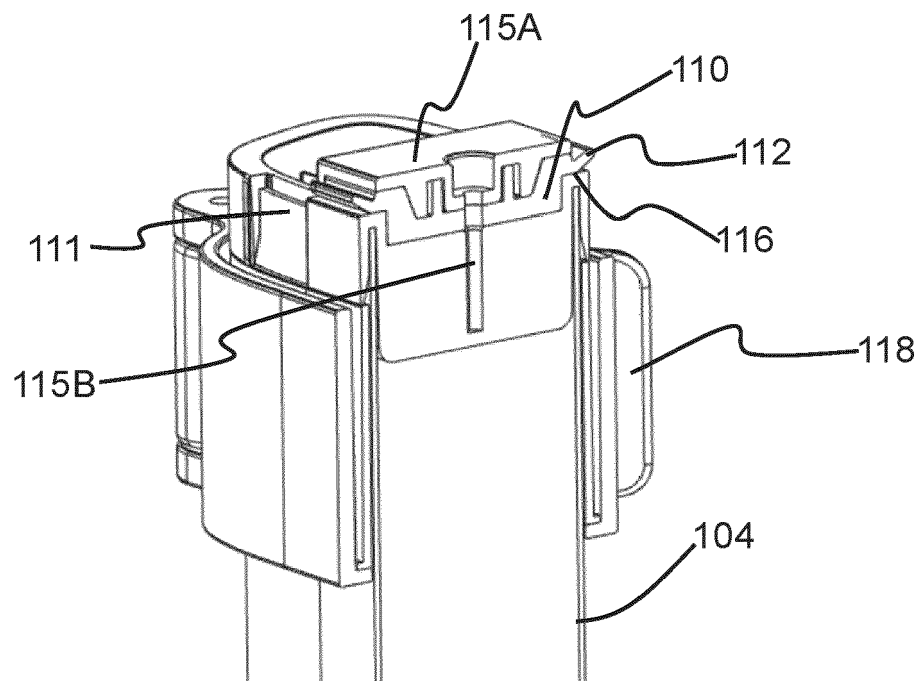


FIG. 4B

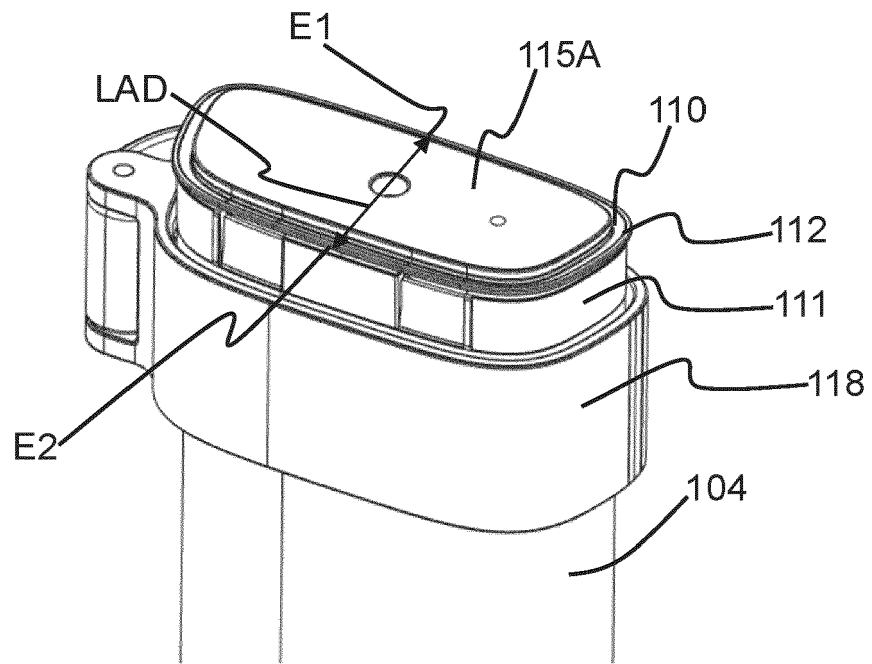


FIG. 5A

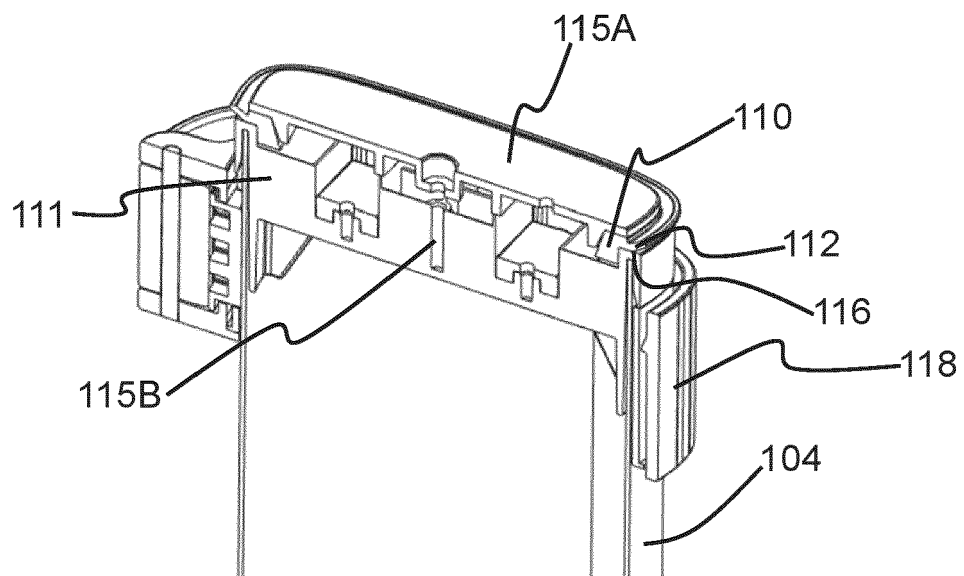


FIG. 5B

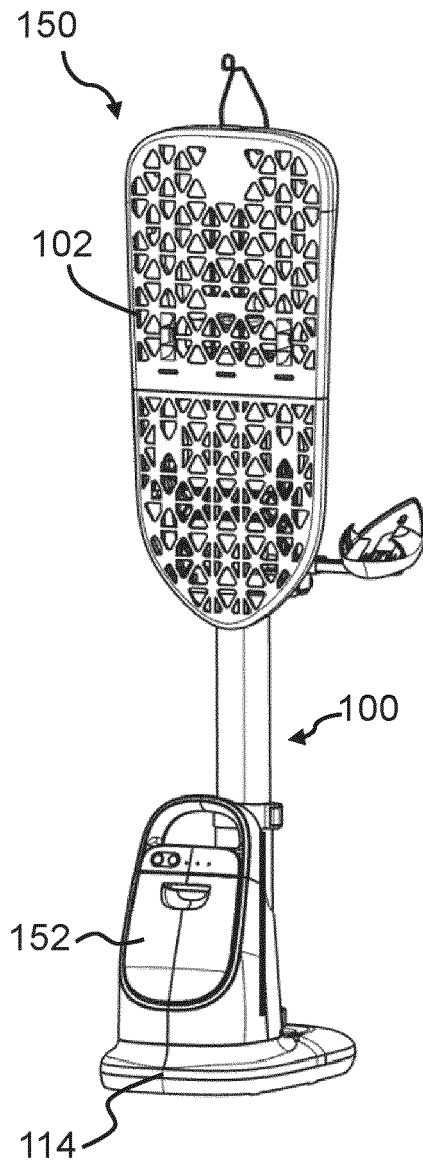


FIG. 6A

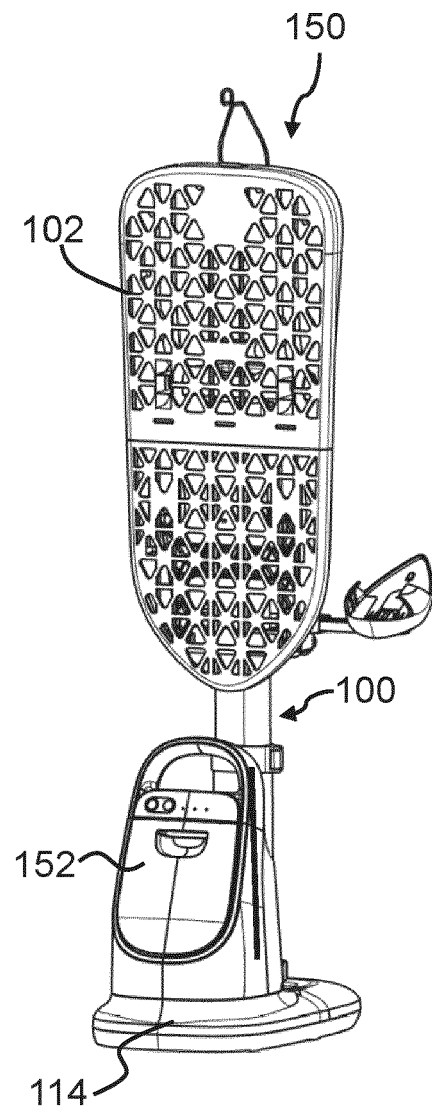


FIG. 6B



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Application Number

EP 22 20 6612

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SEARCHED (IPC)

D06F

The present search report has been drawn up for all claims

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Place of search

Munich

Date of completion of the search

18 April 2023

Examiner

Diaz y Diaz-Caneja

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