

(19)



(11)

EP 3 853 405 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
22.06.2022 Bulletin 2022/25

(51) International Patent Classification (IPC):
D06F 81/02 ^(2006.01) **D06F 79/02** ^(2006.01)
D06F 73/00 ^(2006.01)

(21) Application number: **20715396.6**

(52) Cooperative Patent Classification (CPC):
D06F 81/02; D06F 73/00; D06F 79/02

(22) Date of filing: **06.04.2020**

(86) International application number:
PCT/EP2020/059753

(87) International publication number:
WO 2020/207968 (15.10.2020 Gazette 2020/42)

(54) **STAND STEAMER WITH PIVOTABLE BOARD**

STÄNDERDÄMPFER MIT SCHWENKBARER PLATTE

DISPOSITIF À VAPEUR SUR PIED AVEC PLATEAU PIVOTABLE

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

- **LIM, Lid, Jlen**
5656 AE Eindhoven (NL)
- **SIN, Hee, Poh**
5656 AE Eindhoven (NL)

(30) Priority: **08.04.2019 EP 19167721**
13.06.2019 EP 19179886

(74) Representative: **de Vries, Janna et al**
Philips Domestic Appliances Nederland B.V.
High Tech Campus 42
5656 AE Eindhoven (NL)

(43) Date of publication of application:
28.07.2021 Bulletin 2021/30

(73) Proprietor: **Koninklijke Philips N.V.**
5656 AG Eindhoven (NL)

(56) References cited:
EP-A1- 3 173 520 CN-A- 109 322 126
US-A- 3 148 639

(72) Inventors:

- **MA, Kok, Wah**
5656 AE Eindhoven (NL)

EP 3 853 405 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description**FIELD OF THE INVENTION**

[0001] The invention relates to a garment steamer.

[0002] The invention may be used in the field of garment care.

BACKGROUND OF THE INVENTION

[0003] Stand garment steamers with pole(s) to which an ironing board is attached, are known. The ironing board is used to create a back support for the garments being steamed.

[0004] However, in those known devices, the ironing board is hanged vertically, which may create user inconveniences during steaming.

[0005] CN109322126A discloses a hanging ironing and flat ironing integrated ironing device capable of pulling and fixing clothes under negative pressure. The ironing device structurally comprises a steam generating machine body, a steam conveying pipe, a handle, an ironing brush, and a hanging ironing and ironing auxiliary device. One end of the steam conveying pipe is communicated with the steam generating machine body. The other end of the steam conveying pipe is communicated with the ironing brush through the handle. The handle and the ironing brush are of an integrally formed structure. The hanging ironing and ironing auxiliary device is arranged on the upper rear side of the steam generating machine body and perpendicularly and fixedly connected with the steam generating machine body. The hanging ironing and ironing auxiliary device can assist in the hanging ironing work and ensures the smoothness of the hanging ironing work so that hanging ironing can be easily achieved; hanging ironing and flat ironing can be freely switched, and the ironing modes are freely changed through rotation according to the different materials of the clothes; the ironing device can be folded to be placed, and the storage space is reduced.

[0006] EP3173520A1 disclosure an ironing board comprising an ironing board top, and a leg frame arranged to support the ironing board top. The leg frame includes a first leg and a second leg, each being pivotable relative to the ironing board top, which first leg is pivotable relative to the ironing board top about a first pivot axis, which first leg and second leg are connected via a pivot connection forming a second pivot axis, and which first leg has a hinge arranged between the first pivot axis and the second pivot axis, thereby allowing folding of the first leg.

[0007] US3148639A discloses a collapsible ironing board comprising an intermediate board section, a pair of end board sections arranged respectively in substantially coplanar end-to-end relation, a pair of longitudinally collapsible leg assemblies each including an upper portion pivotally connected to the underside of said intermediate board section at the center thereof and a lower ex-

tensible portion.

OBJECT AND SUMMARY OF THE INVENTION

5 [0008] It is an object of the invention to propose an improved garment steamer that avoids or mitigates above-mentioned problems.

[0009] The invention is defined by the independent claims. The dependent claims define advantageous embodiments.

10 [0010] To this end, the garment steamer according to the invention comprises

- a base,
- 15 - a pole assembly mounted on the base, comprising a first vertical pole and a second vertical pole,
- a board connected to the pole assembly via a first pivot coupling extending along an horizontal axis,
- 20 - an arm element arranged between the pole assembly and the board.

[0011] The arm element comprises a foldable structure adapted to take:

- 25 a) a folded configuration in which the length of the arm element has a first value resulting in that the board takes a first angular position compared to the pole assembly,
- 30 b) an unfolded configuration in which the length of the arm element has a second value resulting in that the board takes a second angular position compared to the pole assembly.

35 [0012] The foldable structure comprises a first portion and a second portion being connected with each other via a second pivot coupling, wherein said first portion is connected to said board via a third pivot coupling.

[0013] The garment steamer further comprises a rotatable lever attached to the board for creating a force against said first portion to facilitate the rotation of said first portion around said third pivot coupling between said unfolded configuration and said folded configuration.

40 [0014] This solution provides a simple, preferably one-hand operation board tilting experience, whereby user can conveniently adjust the board angle single-handedly, and at the same time enjoys firm board at locked positions.

[0015] For example, the first angular position of the board defines an angle in the range [0; 10] degrees between the board and the vertical direction, resulting in the board extending nearly vertically. For example, the second angular position of the board defines an angle in the range [10;90] degrees between the board and the vertical direction, resulting in the board having a certain inclination, up to extending horizontally.

55 [0016] Detailed explanations and other aspects of the invention will be given below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] 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 :

Fig.1 depicts a garment steamer according to the invention with a board taking a first angular position, Fig.2 depicts a front view of the garment steamer of Fig.1, Fig.3 depicts the garment steamer according to the invention with a board taking a second angular position, Fig.4A-Fig.4B-Fig.4C depict various views of a garment steamer according to the invention with a board taking different angular positions between a first angular position and a second angular position, Fig.5 depicts a three-dimensional zoomed-in view of a garment steamer according to the invention with a board taking a second angular position, Fig.6 depicts a cross-section zoomed-in view of a garment steamer according to the invention with a board taking a first angular position, Fig.7 depicts a cross-section zoomed-in view of a garment steamer according to the invention with a board taking a second angular position, Fig.8 depicts a zoomed-in view of a garment steamer according to the invention when the board is taking a first angular position, with a catch element in a hooked position, Fig.9 depicts a detailed zoomed-in view of the garment steamer of Fig.8, Fig.10 depicts a zoomed-in view of a garment steamer according to the invention with a board taking a first angular position, with a catch element in a non-hooked position, Fig.11A- Fig.11B depict two views under different angles of a garment steamer according to the invention, with an arm element being detached from a pole assembly of the garment steamer. Fig.12 depicts a preferred embodiment of a garment steamer according to the invention, Fig.13 depicts an exploded view of an ironing board used along with a garment steamer according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0018] Fig.1 depicts a garment steamer 100 according to the invention with a board taking a first angular position, and Fig.2 depicts a front view of the garment steamer of Fig.1.

[0019] The garment steamer 100 comprises:

- a base 101,
- a pole assembly 102 mounted on said base 101,

- a board 103 connected to the pole assembly 102 via a first pivot coupling C1 extending along an horizontal axis X1,
- an arm element 104 arranged between the pole assembly 102 and the board 103.

[0020] The arm element 104 comprises a foldable structure adapted to take:

- a) a folded configuration in which the length L of the arm element 104 has a first value L1 resulting in that the board 103 takes a first angular position compared to the pole assembly 102,
- b) an unfolded configuration in which the length L of the arm element 104 has a second value L2 resulting in that the board 103 takes a second angular position compared to the pole assembly 102.

[0021] The length L corresponds to the straight distance (i.e. span) between the point of connection of the arm element 104 with the board 103, and the point of connection of the arm element 104 with the pole assembly 102.

[0022] Preferably, the first pivot coupling C1 is arranged in an upper half portion of the board 103, as illustrated.

[0023] Fig.3 depicts the garment steamer 100 according to the invention with a board 103 taking a second angular position.

[0024] Fig.4A-Fig.4B-Fig.4C depict various views of a garment steamer 100 according to the invention with a board 103 taking different angular positions between a first angular position and a second angular position.

[0025] Fig.4A depicts the garment steamer 100 according to the invention with a board 103 taking a first angular position. The first angular position of the board 103 defines an angle A1 in the range [0;10] degrees between the surface of the board and the vertical direction YY. In this configuration, the arm element 104 is folded and its length L has a value L1, which may be close to 0.

[0026] Fig.4C depicts the garment steamer 100 according to the invention with a board 103 taking a second angular position. The second angular position of the board 103 defines an angle A2 in the range [10;90] degrees between the surface of the board and the vertical direction YY. In this configuration, the arm element 104 is unfolded and its length L has a value L2. Preferably, the angle A2 is in the range [20;40] degrees.

[0027] Fig.4B depicts the garment steamer 100 according to the invention with a board 103 taking an angular position defining an angle between angle A1 and angle A2. In this configuration, the arm element 104 is between a folded configuration and an unfolded configuration, and its length L has a value between L1 and L2. This illustrates an intermediate situation where user is adjusting the angular position of the board to reach either the first angular position or to reach the second angular position.

[0028] Fig.5 depicts a three-dimensional zoomed-in view of a garment steamer according to the invention with a board taking a second angular position.

[0029] The foldable structure of the arm element 104 comprises a first portion P1 and a second portion P2 being connected with each other via a second pivot coupling C2.

[0030] The first portion P1 is connected to the board 103 via a third pivot coupling C3.

[0031] Preferably, the third pivot coupling C3 is arranged in a lower portion of the board 103, as illustrated.

[0032] A rotatable lever 105 is attached to the board 103 for creating a force F1 against said first portion P1 to facilitate the rotation of the first portion P1 around the third pivot coupling C3 between the unfolded configuration and the folded configuration. The force F1 is illustrated in Fig.7 which depicts a cross-section zoomed-in view of a garment steamer according to the invention with a board taking a second angular position.

[0033] Fig.6 depicts a cross-section zoomed-in view of a garment steamer according to the invention with a board taking a first angular position,

[0034] Preferably, the rotatable lever 105 is spring-loaded with a spring 106.

[0035] The pole assembly 102 comprises at least one vertical pole.

[0036] The first pivot coupling C1 is arranged at a top part of the at least one vertical pole.

[0037] Preferably, as illustrated, the pole assembly 102 comprises a first vertical pole VP1 and a second vertical pole VP2.

[0038] Preferably, the rotatable lever 105 comprises a catch element 107 adapted to hook, in the folded configuration of the arm element 104, a first linking element 108 attached to and extending between the first vertical pole VP1 and the second vertical pole VP2. The first linking element 108 for example takes the form of a rod or a bar.

[0039] Preferably, the first portion P1 comprises a rib 109 adapted to rest, in the folded configuration of the arm element 104, against (the top of) the linking element 108. For example, first linking element 108 extends horizontally. The rib 109 is also illustrated in Fig.9.

[0040] The catch element 107 and the rib 109 both act to keep the ironing board firm (i.e with less movement) when in the vertical direction.

[0041] The second portion P2 is connected to the pole assembly 102 via a fourth pivot coupling C4. As illustrated, the fourth pivot coupling C4 is arranged around the linking element 108.

[0042] Preferably, the second portion P2 defines a V shape having a first leg directing towards the first vertical pole VP1, and a second leg directing towards the second vertical pole VP2. This specific shape of the second portion P2 is advantageous to uniformly transfer the pressing force onto both vertical poles instead of onto the centre point of the first linking element 108, resulting in better balance of the garment steamer.

[0043] Preferably, the second portion P2 is detachably connected to the pole assembly 102 by means of locking means.

[0044] Preferably, the locking means comprise a first strap element S1 adapted to lock with the first vertical pole VP1 and a second strap element S2 adapted to lock with the second vertical pole VP2.

[0045] Upon locking, strap elements S1 and S2 are adapted to provide sufficient gripping onto the vertical poles VP1 and VP2 respectively to prevent S1 and S2 from sliding down upon usage, due to repeated pressing force from the board 103. Preferably, a rubber pad 111 is inserted inside the strap elements S1 and S2 to provide more effective gripping upon locking. The rubber pad 111 is illustrated in the zoomed-in view of S1 in Fig.11a.

[0046] Preferably, each of the vertical pole VP1 and the second vertical pole VP2 are telescopic in order to vary the overall height of the pole assembly 102. In particular, each of the vertical pole (VP1, VP2) comprises a pair of first and second (hollow) lower parts (VP1_L, VP2_L) cooperating respectively with a pair of first and second upper parts (VP1_U, VP2_U).

[0047] For example, the upper part VP1_U is adapted to slide into the lower part VP1_L, and the upper part VP2_U is adapted to slide into the lower part VP2_L.

[0048] A first locking means TS1 (for example a manually user-actuable latch) is used to lock in position the upper part VP1_U with the lower part VP1_L, and a second locking means TS2 (for example a manually user-actuable latch) is used to lock in position the upper part VP2_U with the lower part VP2_L, as illustrated in Fig.5.

[0049] Preferably, with such types of vertical poles VP1 and VP2:

- the first strap element S1 is locked on the first vertical pole VP1 at a position below the locking means TS1. In other words, as illustrated, the first strap element S1 is locked on the lower part VP1_L.
- the second strap element S2 is locked on the second vertical pole VP2 at a position below the locking means TS2. In other words, as illustrated, the second strap element S2 is locked on the lower part VP2_L.

[0050] This is advantageous as this allows the strap element S1 and S2, upon unlocking, to slide downward along the vertical poles when the upper parts (VP1_U, VP2_U) of the vertical poles VP1 and VP2 are lowered, by telescopically sliding into the lower parts (VP1_L, VP2_L). Once the new height is determined, S1 and S2 have to be locked back.

[0051] The first strap element S1 is slidably attached to the first lower part VP1_L, and the second strap element S2 is slidably attached to the second lower part VP2_L. The first and second strap element (S1, S2) offer sufficient gripping on the first and second lower parts (VP1_L, VP2_L) so that the first linking element 108 stays still compared to the pole assembly 102.

[0052] Fig.8 depicts a zoomed-in view of a garment

steamer 100 according to the invention when the board 103 is taking a first angular position, with the catch element 107 in a hooked position on the first linking element 108.

[0053] Fig.9 depicts a detailed zoomed-in view of the garment steamer of Fig.8.

[0054] Fig.10 depicts a zoomed-in view of a garment steamer according to the invention with a board 103 taking a first angular position, with the catch element 107 in a non-hooked position on the first linking element 108. This situation happens when the user exerts a force on the lever 105 in the direction D1, as illustrated in Fig.7.

[0055] Fig.11A- Fig.11B depict two views under different angles of a garment steamer according to the invention, with an arm element 104 being detached from a pole assembly 102 of the garment steamer.

[0056] Preferably, as illustrated, the first linking element 108 is detachably connected to the first vertical pole VP1 and the second vertical pole VP2. For example, the first linking element 108 extends horizontally between the first lower part VP1_L and the second lower part VP2_L, and is connected to the first lower part VP1_L and the second lower part VP2_L via the locking means comprising a first and second strap elements S1 and S2, respectively. Having the first linking element 108 being detachably connected to the pole assembly 102 is advantageous to easily dismantle and store the garment steamer after use.

[0057] Coming back to Fig.4A-Fig.4B-Fig.4C, below are described how to move the board 103 from the first angular position (e.g. vertical) to the second angular position (e.g. tilted):

1. User presses the lever 105 towards the front direction D1 (as illustrated in Fig.6).
2. The catch 107 at the back of the board 103 which is originally hold on to the first linking element 108 will be unlocked. This releases the board 103 from its locked vertical position.
3. User continues pulling the board 103 with the same hand that presses the lever, and this will bring the board 103 to its tilted position at the end of travelling.
4. The first portion P1 and the second portion P2 are fully extended and they lock the board 103 at its tilted position.
5. The first portion P1 and the second portion P2 form a straight line.
6. The lever 105 can be let go the moment after releasing the catch 107 from the first linking element 108. The spring 106 attached to the lever 105 will bring the lever 105 back to its original position.
7. The whole sequential actions allow user to release the locked vertical board position to its fully tilted position in one hand operation.

[0058] There is nothing to lock the arm 104 in the extended position. Therefore, the straight line joining C3

and C4 preferably does not pass through C2. Preferably C2 should be slight below the straight line joining C3 and C4. That means P1 and P2 form a large angle of slight less than 180 degree for example 177 degree.

[0059] Coming back to Fig.4A-Fig.4B-Fig.4C, and Fig. 7, below are described how to move the board 103 from the second angular position (e.g. tilted) to the first angular position (e.g. vertical):

1. User presses the lever 105 towards the front direction D1.
2. An extended arm 110a (illustrated in Fig.7) from the lever 105 pushes against an extended arm 110b of the first portion P1, resulting in an uplift motion D2-D3 at the pivot coupling C2, and then in the collapsing/folding of the first portion P1 against the second portion P2.
3. User continues pushing the board 103 towards the pole assembly, which will bring the board back to its vertical position, thus completing the one hand operation of bringing the board to vertical position.
4. The vertical position is locked by the catch 107 that hooks onto the first linking element 108. At the same time, the rib 109 from the first portion P1 is resting above the rod first linking element 108. The catch and the rib both act to keep the board 103 firm at its vertical position.

[0060] Fig.12 depicts a preferred embodiment of a garment steamer according to the invention.

[0061] In this preferred embodiment, a second linking element 112 is arranged between the first pivot coupling C1 and the fourth pivot coupling C4 to maintain a fixed distance between the first pivot coupling C1 and the fourth pivot coupling C4.

[0062] By maintaining a fixed distance between the first pivot coupling C1 and the fourth pivot coupling C4, when the user unlocks the locking means TS1 and TS2 in order to adjust the overall height of the pole assembly 102 by having the upper parts of the pole assembly sliding into the lower parts of the pole assembly, the angle of the ironing board 103 is kept the same.

[0063] This is particularly advantageous when the ironing board 103 is already in an inclined (i.e. not vertical) position so that the user can adjust the overall height of the ironing board, without modifying the already set angle of the ironing board.

[0064] Note that the strap elements S1 and S2 do not necessarily need to be unlocked by user if their gripping on the lower parts of the pole assembly still allows, upon a sufficient force exerted by user, a certain sliding along the lower parts of the pole assembly.

[0065] After the user has set the pole assembly to the desired overall height, user has to lock again the locking means TS1 and TS2.

[0066] Preferably, the second linking element 112 comprises an upper extremity 112_U connected with the first pivot coupling C1, and a lower extremity 112_L con-

nected with the first linking element 108.

[0067] For example, as illustrated, the second linking element 112 is • A• shaped. In that case, the lower extremity 112_L has two contact points with the first linking element 108. This improves the stability and robustness of the second linking element 112.

[0068] Fig.13 depicts an exploded view of an ironing board 103 used along with a garment steamer according to the invention.

[0069] Preferably, the second linking element 112 comprises a first part PA1 and a second part PA2. The first part PA1 and the second part PA2 are detachably connected. For example, a snap-fit mechanism SF can be used to this end.

[0070] Having the second linking element 112 in two parts is advantageous in order to minimize the overall size of the packaging of the garment steamer, in particular when the ironing board 103 also comprises two parts detachably connected, as illustrated.

[0071] 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 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. Garment steamer (100) comprising:

- a base (101),
- a pole assembly (102) mounted on said base (101), comprising a first vertical pole (VP1) and a second vertical pole (VP2),
- a board (103) connected to said pole assembly (102) via a first pivot coupling (C1) extending along an horizontal axis (X1),
- an arm element (104) arranged between said pole assembly (102) and said board (103), said arm element (104) comprising a foldable structure adapted to take:

- a) a folded configuration in which the length (L) of the arm element (104) has a first value (L1) resulting in that the board (103) takes a first angular position compared to the pole assembly (102),
- b) an unfolded configuration in which the length (L) of the arm element (104) has a second value (L2) resulting in that the board

(103) takes a second angular position compared to the pole assembly (102),

wherein said foldable structure comprises a first portion (P1) and a second portion (P2) being connected with each other via a second pivot coupling (C2), wherein said first portion (P1) is connected to said board (103) via a third pivot coupling (C3), **characterized in that** the garment steamer further comprises a rotatable lever (105) attached to the board (103) for creating a force (F1) against said first portion (P1) to facilitate the rotation of said first portion (P1) around said third pivot coupling (C3) between said unfolded configuration and said folded configuration.

2. Garment steamer as claimed in claim 1, comprising a first linking element (108) extending between said first vertical pole (VP1) and said second vertical pole (VP2).
3. Garment steamer as claimed in claim 2, wherein said rotatable lever (105) comprises a catch element (107) adapted to hook, in said folded configuration, said first linking element (108).
4. Garment steamer as claimed in claim 2 or 3, wherein said first portion (P1) comprises a rib (109) adapted to rest, in said folded configuration, against said first linking element (108).
5. Garment steamer as claimed in claim 2, wherein said second portion (P2) is connected to said pole assembly (102) via a fourth pivot coupling (C4), said fourth pivot coupling (C4) being arranged around said first linking element (108).
6. Garment steamer as claimed in claim 2, wherein said first linking element (108) is detachably connected to said first vertical pole (VP1) and said second vertical pole (VP2) by means of locking means comprising a first strap element (S1) adapted to lock with said first vertical pole (VP1) and a second strap element (S2) adapted to lock with said second vertical pole (VP2).
7. Garment steamer as claimed in claim 6, wherein:
 - said second portion (P2) is connected to said pole assembly (102) via a fourth pivot coupling (C4), said fourth pivot coupling (C4) being arranged around said first linking element (108),
 - said first vertical pole (VP1) comprises a first upper part (VP1_U) and a first lower part (VP1_L) telescopically coupled,
 - said second vertical pole (VP2) comprises a second upper part (VP2_U) and a second lower

- part (VP2_L) telescopically coupled,
 - said first strap element (S1) is slidably attached to said first lower part (VP1_L),
 - said second strap element (S2) is slidably attached to said second lower part (VP2_L),
 - a second linking element (112) is arranged between said first pivot coupling (C1) and said fourth pivot coupling (C4) to maintain a fixed distance between said first pivot coupling (C1) and said fourth pivot coupling (C4).
8. Garment steamer as claimed in claim 7, wherein said second linking element (112) comprises an upper extremity (112_U) connected with said first pivot coupling (C1), and a lower extremity (112_L) connected with said first linking element (108).
9. Garment steamer as claimed in claim 8, wherein said second linking element (112) comprises a first part (PA1) and a second part (PA2), said first part (PA1) and said second part (PA2) being detachably connected.
10. Garment steamer as claimed in any one of the preceding claims, wherein said first pivot coupling (C1) is arranged at a top part of said first vertical pole (VP1) and said second vertical pole (VP2).
11. Garment steamer as claimed in any one of the preceding claims, wherein:
- said first angular position of the board (103) defines an angle (A1) in the range [0;10] degrees between the board and the vertical direction, and
 - said second angular position of the board (103) defines an angle (A2) in the range [10;90] degrees between the board and the vertical direction.
12. Garment steamer as claimed in any one of the preceding claims, wherein said rotatable lever (105) is spring-loaded with a spring (106).
13. Garment steamer as claimed in any one of the preceding claims, wherein said first pivot coupling (C1) is arranged in an upper half portion of the board (103).
14. Garment steamer as claimed in any one of the preceding claims, wherein said third pivot coupling (C3) is arranged in a lower portion of the board (103).

Patentansprüche

1. Bekleidungs-Dampfglätter (100) mit:

- einen Sockel (101),

- einer Stangenanordnung (102), die auf dem genannten Sockel (101) montiert ist und eine erste vertikale Stange (VP1) und eine zweite vertikale Stange (VP2) umfasst,
- ein Brett (103), das mit der genannten Stangenanordnung (102) über eine erste Schwenkkupplung (C1) verbunden ist, die sich entlang einer horizontalen Achse (X1) erstreckt,
- ein Armelement (104), das zwischen der genannten Stangenanordnung (102) und dem genannten Brett (103) angeordnet ist, wobei das Armelement (104) eine einklappbare Struktur aufweist, die geeignet ist, die Stange zu fassen:

- a) eine einklappbare Konfiguration, in der die Länge (L) des Armelements (104) einen ersten Wert (L1) hat, der dazu führt, dass das Brett (103) eine erste Winkelstellung gegenüber der Stangenanordnung (102) einnimmt,
- b) eine ausklappbare Konfiguration, in der die Länge (L) des Armelements (104) einen zweiten Wert (L2) hat, was dazu führt, dass das Brett (103) eine zweite Winkelposition gegenüber der Stangenanordnung (102) einnimmt,

wobei die genannte einklappbare Struktur einen ersten Abschnitt (P1) und einen zweiten Abschnitt (P2) umfasst, die miteinander über eine zweite Schwenkkupplung (C2) verbunden sind, wobei der genannte erste Abschnitt (P1) mit dem genannten Brett (103) über eine dritte Schwenkkupplung (C3) verbunden ist, **dadurch gekennzeichnet, dass** der Kleidungs-Dampfglätter ferner einen drehbaren Hebel (105) umfasst, der an dem Brett (103) angebracht ist, um eine Kraft (F1) gegen den genannten ersten Abschnitt (P1) zu erzeugen, um die Drehung des genannten ersten Abschnitts (P1) um die genannte dritte Schwenkkupplung (C3) zwischen der ausgeklappten Konfiguration und der genannten eingeklappten Konfiguration zu erleichtern.

2. Bekleidungs-Dampfglätter nach Anspruch 1, umfassend ein erstes Verbindungselement (108), das sich zwischen der genannten ersten vertikalen Stange (VP1) und der genannten zweiten vertikalen Stange (VP2) erstreckt.
3. Bekleidungs-Dampfglätter nach Anspruch 2, wobei der genannte drehbare Hebel (105) ein Fangelement (107) umfasst, das so beschaffen ist, dass es in der genannten eingeklappten Konfiguration das erste Verbindungselement (108) einhakt.
4. Bekleidungs-Dampfglätter nach Anspruch 2 oder 3,

wobei der genannte erste Abschnitt (P1) eine Rippe (109) umfasst, die so angepasst ist, dass sie in der genannten eingeklappten Konfiguration an das genannte erste Verbindungselement (108) anliegt.

5. Bekleidungs-Dampfglätter nach Anspruch 2, wobei der genannte zweite Abschnitt (P2) mit der genannten Stangenanordnung (102) über eine vierte Schwenkkupplung (C4) verbunden ist, wobei die genannte vierte Schwenkkupplung (C4) um das genannte erste Verbindungselement (108) angeordnet ist. 5 10
6. Bekleidungs-Dampfglätter nach Anspruch 2, wobei das genannte erste Verbindungselement (108) mit der genannten ersten vertikalen Stange (VP1) und der genannten zweiten vertikalen Stange (VP2) mittels einer Verriegelungseinrichtung lösbar verbunden ist, die ein erstes Riementelement (S1), das zum Verriegeln mit der ersten vertikalen Stange (VP1) geeignet ist, und ein zweites Riementelement (S2), das zum Verriegeln mit der zweiten vertikalen Stange (VP2) geeignet ist, umfasst. 15 20
7. Bekleidungs-Dampfglätter nach Anspruch 6, wobei:
- der genannte zweite Abschnitt (P2) mit der genannten Stangenanordnung (102) über eine vierte Schwenkkupplung (C4) verbunden ist, wobei die genannte vierte Schwenkkupplung (C4) um das genannte erste Verbindungselement (108) angeordnet ist, 25
- die genannte erste vertikale Stange (VP1) einen ersten oberen Teil (VP1_U) und einen ersten unteren Teil (VP1_L) umfasst, die teleskopisch gekoppelt sind, 30
- die genannte zweite vertikale Stange (VP2) einen zweiten oberen Teil (VP2_U) und einen zweiten unteren Teil (VP2_L) umfasst, die teleskopisch gekoppelt sind, 35
- das genannte erste Riementelement (S1) verschiebbar an dem genannten ersten unteren Teil (VP1_L) befestigt ist, 40
- das genannte zweite Riementelement (S2) verschiebbar an dem genannten zweiten unteren Teil (VP2_L) befestigt ist, 45
- ein zweites Verbindungselement (112) zwischen der genannten ersten Schwenkkupplung (C1) und der genannten vierten Schwenkkupplung (C4) angeordnet ist, um einen festen Abstand zwischen der genannten ersten Schwenkkupplung (C1) und der genannten vierten Schwenkkupplung (C4) beizubehalten. 50
8. Bekleidungs-Dampfglätter nach Anspruch 7, wobei das genannte zweite Verbindungselement (112) ein oberes Ende (112_U), das mit der genannten ersten Schwenkkupplung (C1) verbunden ist, und ein un- 55

teres Ende (112_L), das mit dem genannten ersten Verbindungselement (108) verbunden ist, umfasst.

9. Bekleidungs-Dampfglätter nach Anspruch 8, wobei das genannte zweite Verbindungselement (112) einen ersten Teil (PA1) und einen zweiten Teil (PA2) umfasst, wobei der genannte erste Teil (PA1) und der genannte zweite Teil (PA2) lösbar verbunden sind. 10
10. Bekleidungs-Dampfglätter nach einem der vorhergehenden Ansprüche, wobei die genannte erste Schwenkkupplung (C1) an einem oberen Teil der genannten ersten vertikalen Stange (VP1) und der genannten zweiten vertikalen Stange (VP2) angeordnet ist. 15
11. Bekleidungs-Dampfglätter nach einem der vorangehenden Ansprüche, wobei:
- die genannte erste Winkelposition des Brettes (103) einen Winkel (A1) im Bereich [0; 10] Grad zwischen dem Brett und der vertikalen Richtung definiert und
- die genannte zweite Winkelposition des Brettes (103) einen Winkel (A2) im Bereich [10; 90] Grad zwischen dem Brett und der vertikalen Richtung definiert. 20
12. Bekleidungs-Dampfglätter nach einem der vorhergehenden Ansprüche, wobei der genannte drehbare Hebel (105) mit einer Feder (106) federbelastet ist. 25
13. Bekleidungs-Dampfglätter nach einem der vorhergehenden Ansprüche, wobei die genannte erste Schwenkkupplung (C1) in einem oberen Halbabschnitt des Brettes (103) angeordnet ist. 30
14. Bekleidungs-Dampfglätter nach einem der vorhergehenden Ansprüche, wobei die genannte dritte Schwenkkupplung (C3) in einem unteren Abschnitt des Brettes (103) angeordnet ist. 35 40

Revendications 45

1. Un défroisseur vapeur de vêtement (100) comprend :
- une base (101),
- un assemblage de poteaux (102) monté sur ladite base (101), comprenant un premier poteau vertical (VP1) et un second poteau vertical (VP2),
- une planche (103) reliée audit assemblage de poteau (102) par un premier couplage de pivots (C1) qui s'étend sur un axe horizontal (X1),
- un élément de bras (104) situé entre l'assem- 50

blage de poteau (102) et ladite planche (103), ledit élément de bras (104) comprenant une structure pliable adaptée pour tenir :

- a) une configuration pliée dans lequel la longueur (L) de l'élément de bras (104) possède une première valeur (L1) ce qui permet à la planche (103) de prendre une première position angulaire comparée à l'assemblage de poteau (102),
- b) une configuration dépliée dans lequel la longueur (L) de l'élément de bras (104) possède une seconde valeur (L2) ce qui fait que la planche (103) prend une seconde position angulaire comparée à l'assemblage de poteau (102),

où la structure pliable comprend une première partie (P1) et une deuxième partie (P2) qui sont liées l'une à l'autre par un second couplage de pivots (C2), où la première partie (P1) est liée à ladite planche (103) par un couplage de pivots (C3), **caractérisé par le fait que** le défroisseur de vêtement comprend un levier rotatif (105) attaché à la planche (103) pour créer une force (F1) contre ladite partie (P1) pour faciliter la rotation de ladite partie (P1) autour dudit couplage du troisième pivot (C3) entre ladite configuration dépliée et ladite configuration pliée.

2. Un défroisseur de vêtement comme revendiqué dans la revendication 1, comprenant un premier élément de liaison (108) s'étend entre ledit premier poteau vertical (VP1) et ledit second poteau vertical (VP2).
3. Un défroisseur de vêtement comme revendiqué dans la revendication 2, où un levier rotatif (105) comprend un élément de prise (107) adapté pour s'accrocher, à ladite configuration, ledit premier élément de liaison (108).
4. Un défroisseur de vêtement comme revendiqué dans la revendication 2 ou 3, où ladite première partie (P1) comprend une nervure (109) adaptée pour venir en appui, dans ladite configuration, contre ledit premier élément de liaison (108).
5. Un défroisseur de vêtement comme revendiqué dans la revendication 2, où ladite seconde partie (P2) est liée audit assemblage de poteau (102) par un quatrième couplage de pivot (C4), ledit quatrième couplage de pivots (C4) étant situé autour dudit premier élément de liaison (108).
6. Un défroisseur de vêtement comme revendiqué dans la revendication 2, où ledit premier élément de liaison (108) est relié de manière amovible au pre-

mier poteau vertical (VP1) et au ledit second poteau vertical (VP2) par des moyens d'un dispositif de verrouillage comprenant un premier élément de sangle (S1) adapté pour se verrouiller avec ledit premier poteau vertical (VP1) et un deuxième élément de sangle (S2) adapté pour se verrouiller avec ledit second poteau vertical (VP2).

7. Un défroisseur de vêtement comme revendiqué dans la revendication 6, comprend :

- une seconde partie (P2) qui est liée audit assemblage de poteau (102) par un quatrième couplage de pivot (C4), ledit quatrième couplage de pivots (C4) étant situé autour dudit premier élément de liaison (108),
- ledit premier poteau vertical (VP1) comprend une première partie supérieure (VP1_U) et une première partie inférieure (VP1_L) couplée de manière télescopique,
- ledit second poteau vertical (VP2) comprend une seconde partie supérieure (VP2_U) et une seconde partie inférieure (VP2_L) couplée de manière télescopique,
- ledit premier élément de sangle (S1) est fixé par coulissement à ladite partie inférieure (VP1_L),
- ledit second élément de sangle (S2) est fixé par coulissement à ladite seconde partie inférieure (VP2_L),
- un second élément de liaison (112), est situé entre ledit couplage du premier pivot (C1) et ledit couplage du quatrième pivot (C4) pour maintenir une distance fixe entre ledit couplage du premier pivot (C1) et ledit couplage du quatrième pivot (C4).

8. Un défroisseur de vêtement comme revendiqué dans la revendication 7, où ledit second élément de liaison (112) comprend une extrémité supérieure (112_U) reliée au couplage du premier pivot (C1), et une extrémité inférieure (112_L) reliée audit premier élément de liaison (108).
9. Un défroisseur de vêtement comme revendiqué dans la revendication 8, où ledit second élément de liaison (112) comprend une première partie (PA1) et une seconde partie (PA2), ladite première partie (PA1) et ladite seconde partie (PA2) sont reliées de manière amovible.
10. Un défroisseur de vêtement comme revendiqué selon l'une quelconque des revendications, où ledit couplage du premier pivot (C1) est situé sur la partie supérieure dudit premier poteau vertical (VP1) et dudit second poteau vertical (VP2).
11. Un défroisseur de vêtement comme revendiqué se-

lon l'une quelconque des revendications précédentes, où :

- ladite première position angulaire de la planche (103) définie un angle (A1) dans la plage [0; 10] degrés entre la planche et la direction verticale, et 5
- ladite seconde position angulaire de la planche (103) définie un angle (A2) dans la plage [10; 90] degrés entre la planche et la direction verticale. 10

12. Un défroisseur de vêtement comme revendiqué selon l'une quelconque des revendications précédentes, où ledit levier rotatif (105) est muni d'un ressort (106) . 15
13. Un défroisseur de vêtement comme revendiqué selon l'une quelconque des revendications précédentes, où ledit couplage du premier pivot (C1) est situé sur la moitié supérieure de la planche (103). 20
14. Un défroisseur de vêtement comme revendiqué selon l'une quelconque des revendications précédentes, où ledit couplage du troisième pivot (C3) est situé sur la moitié inférieure de la planche (103). 25

30

35

40

45

50

55

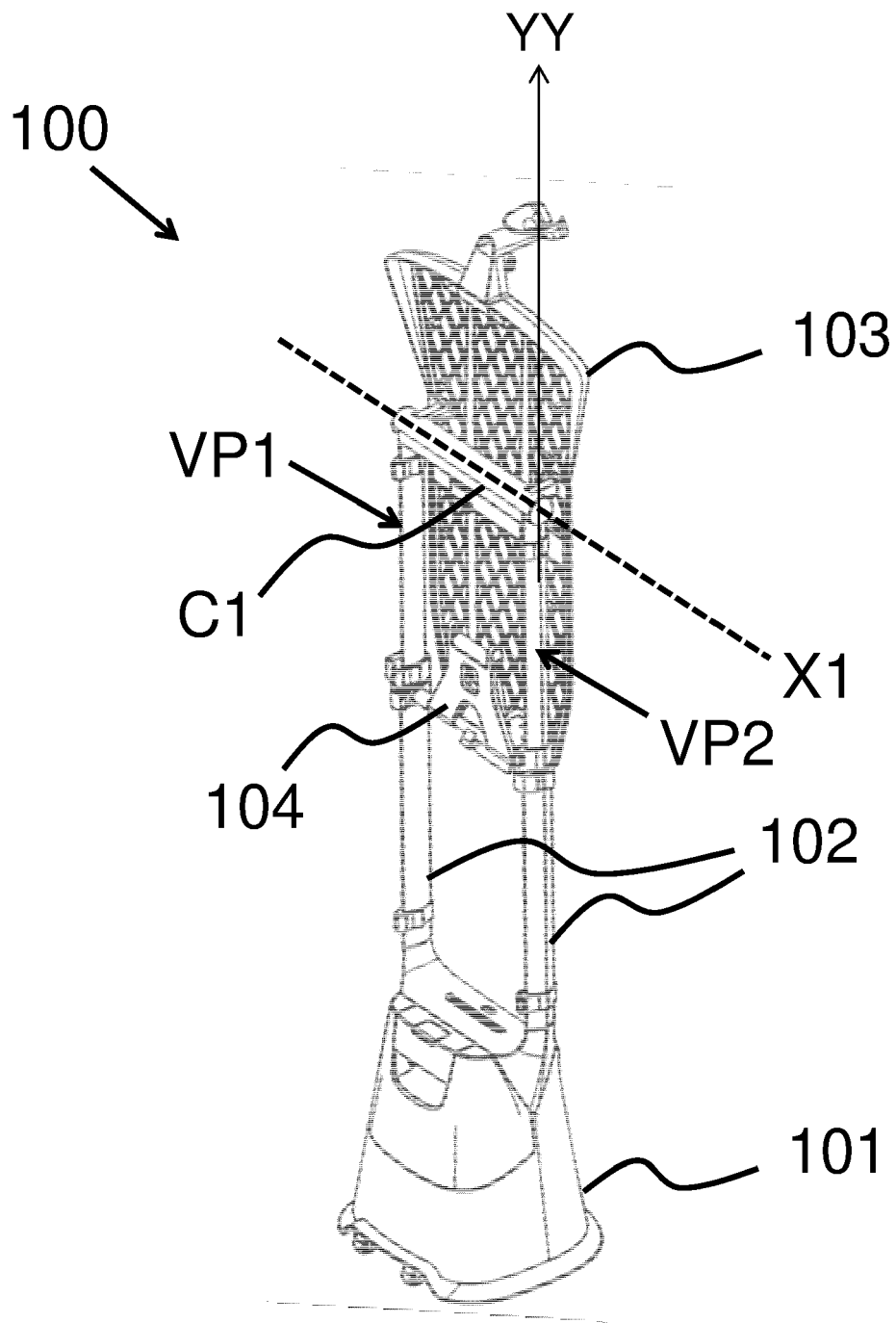


FIG.1

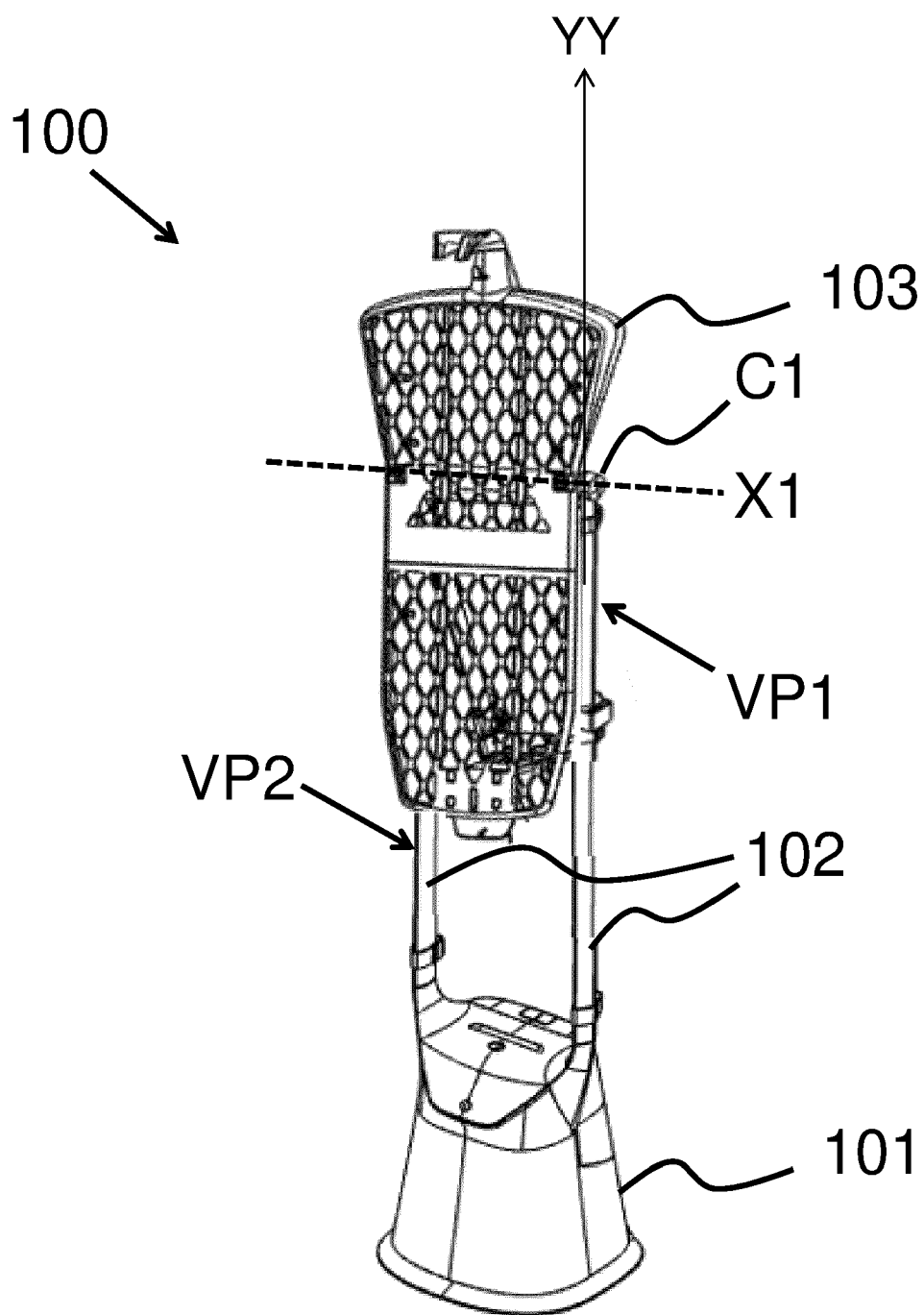


FIG.2

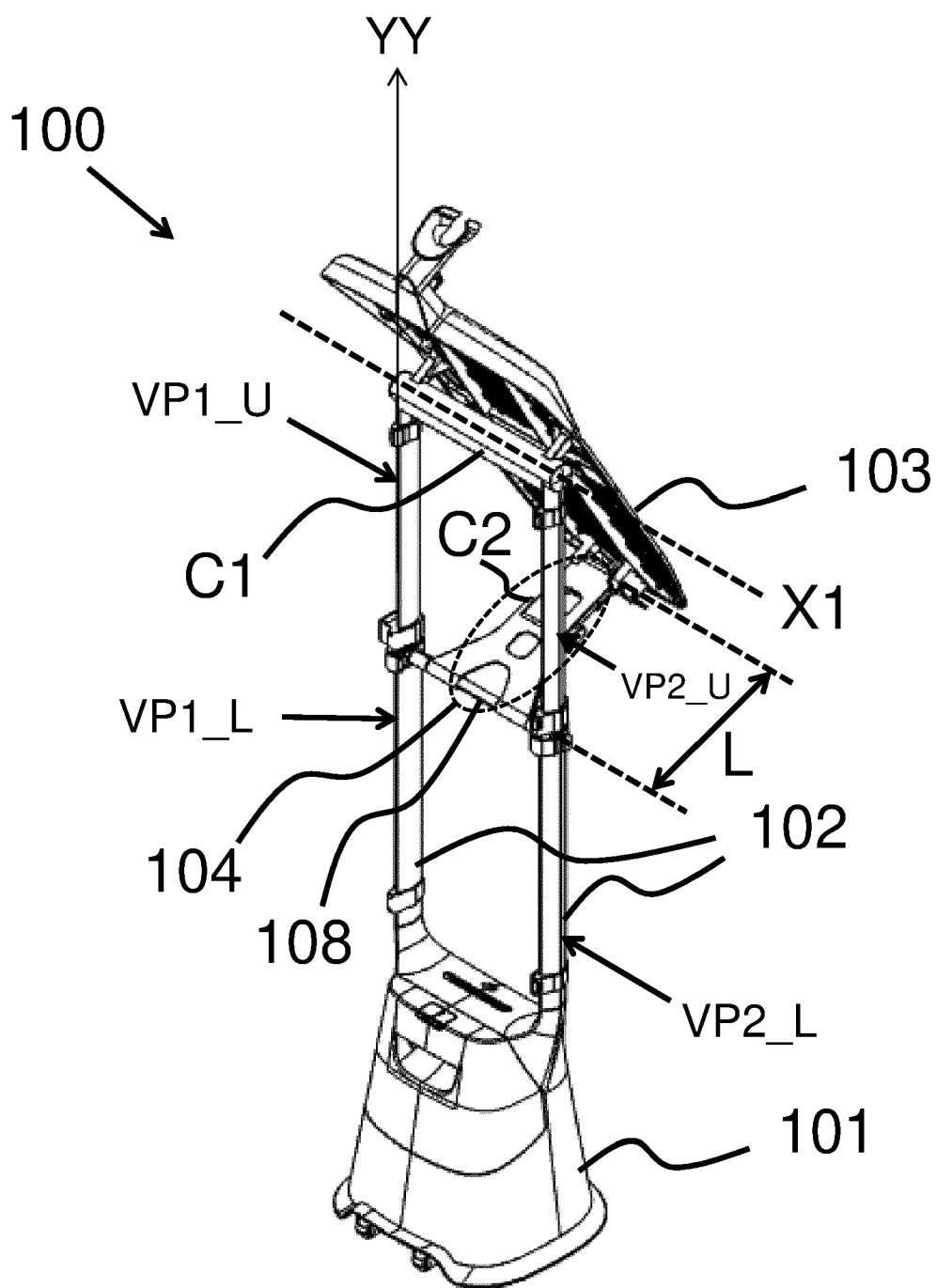
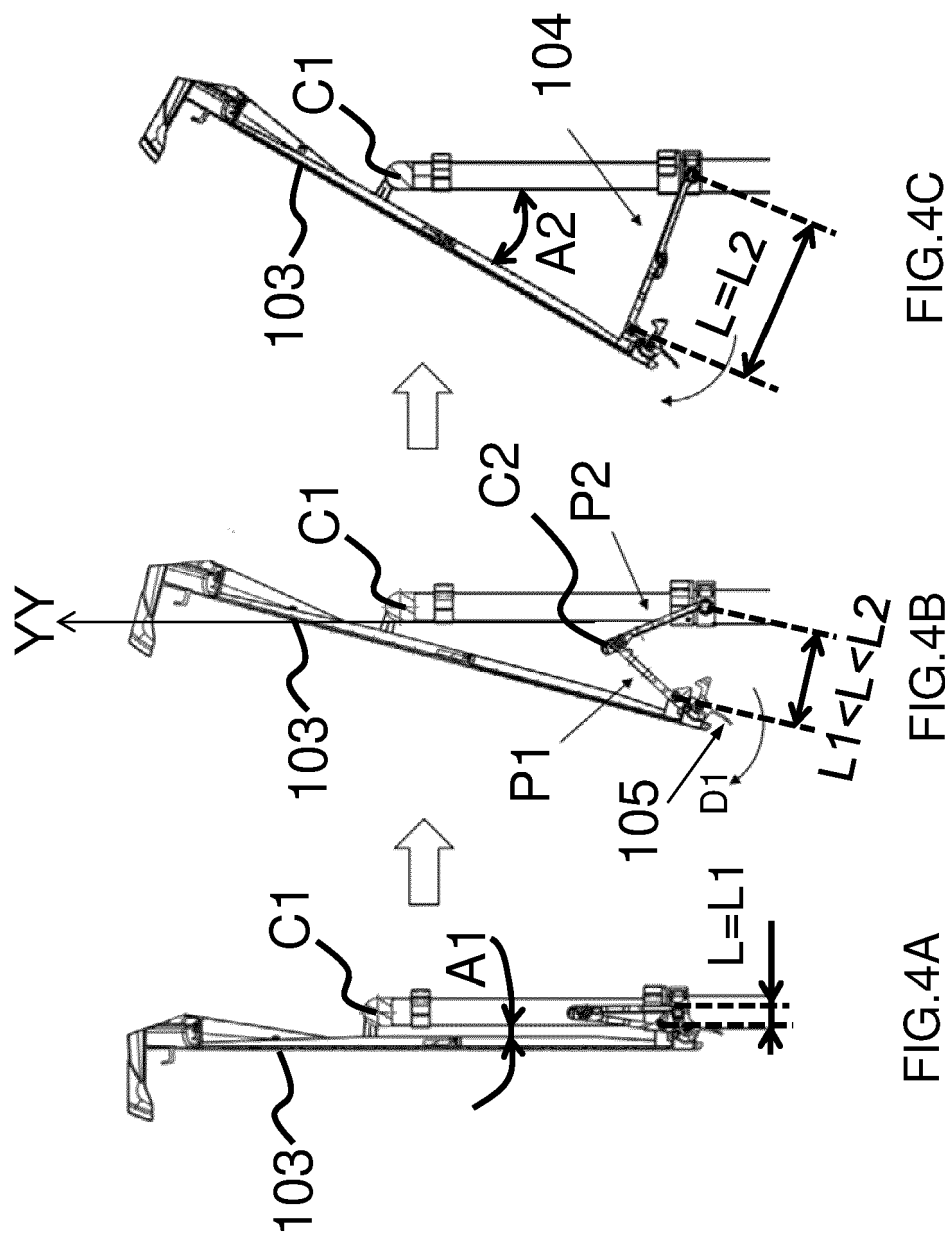


FIG.3



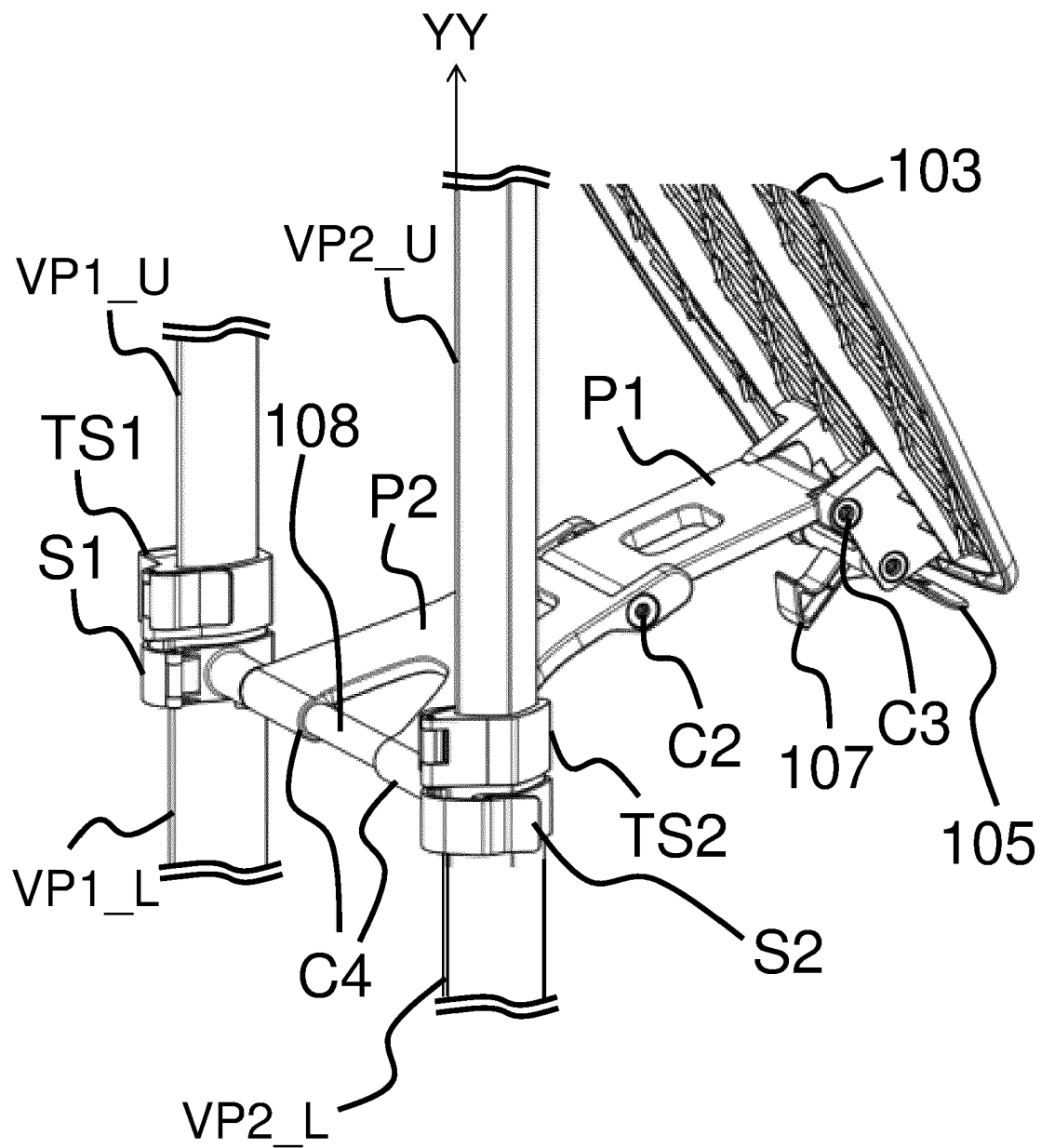


FIG.5

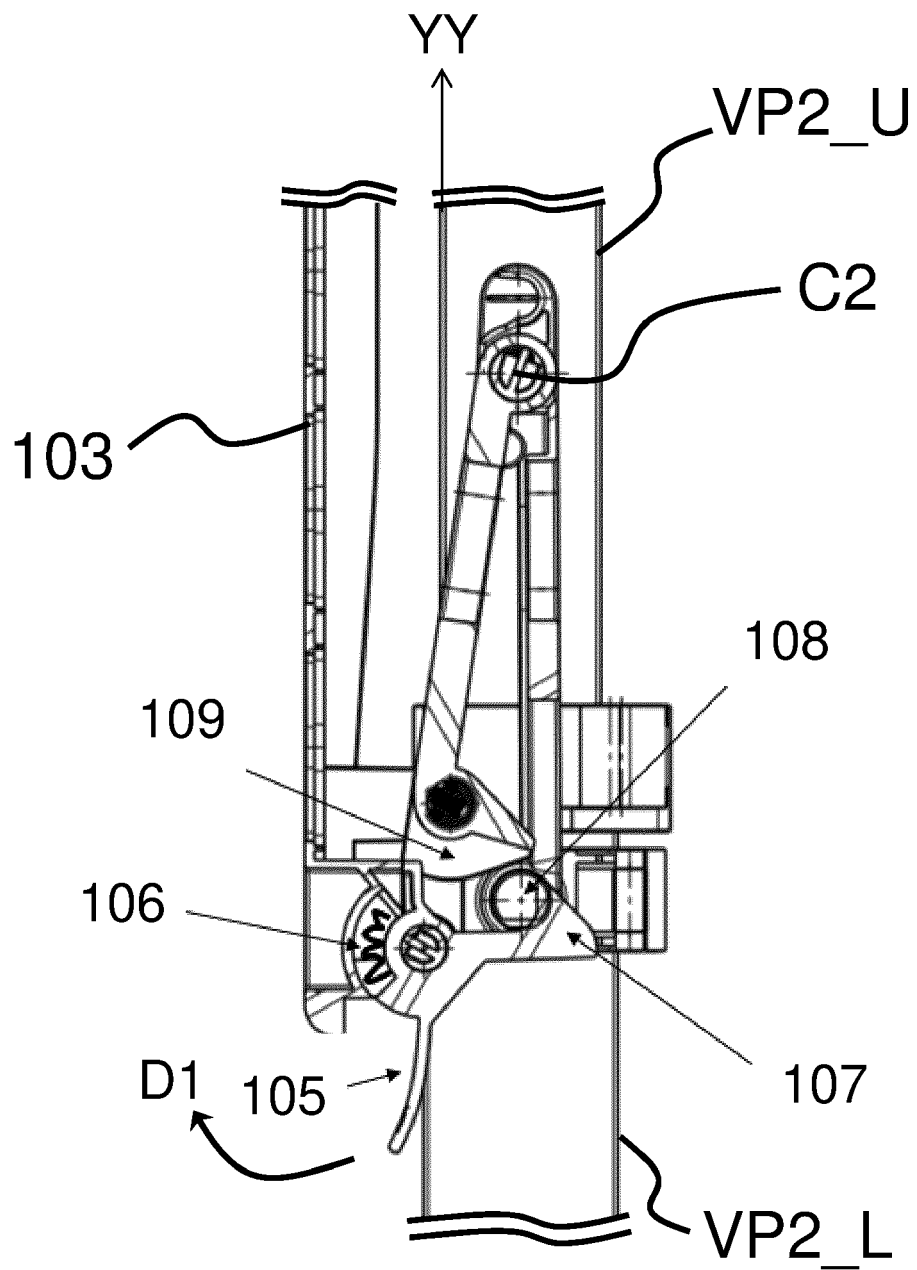


FIG.6

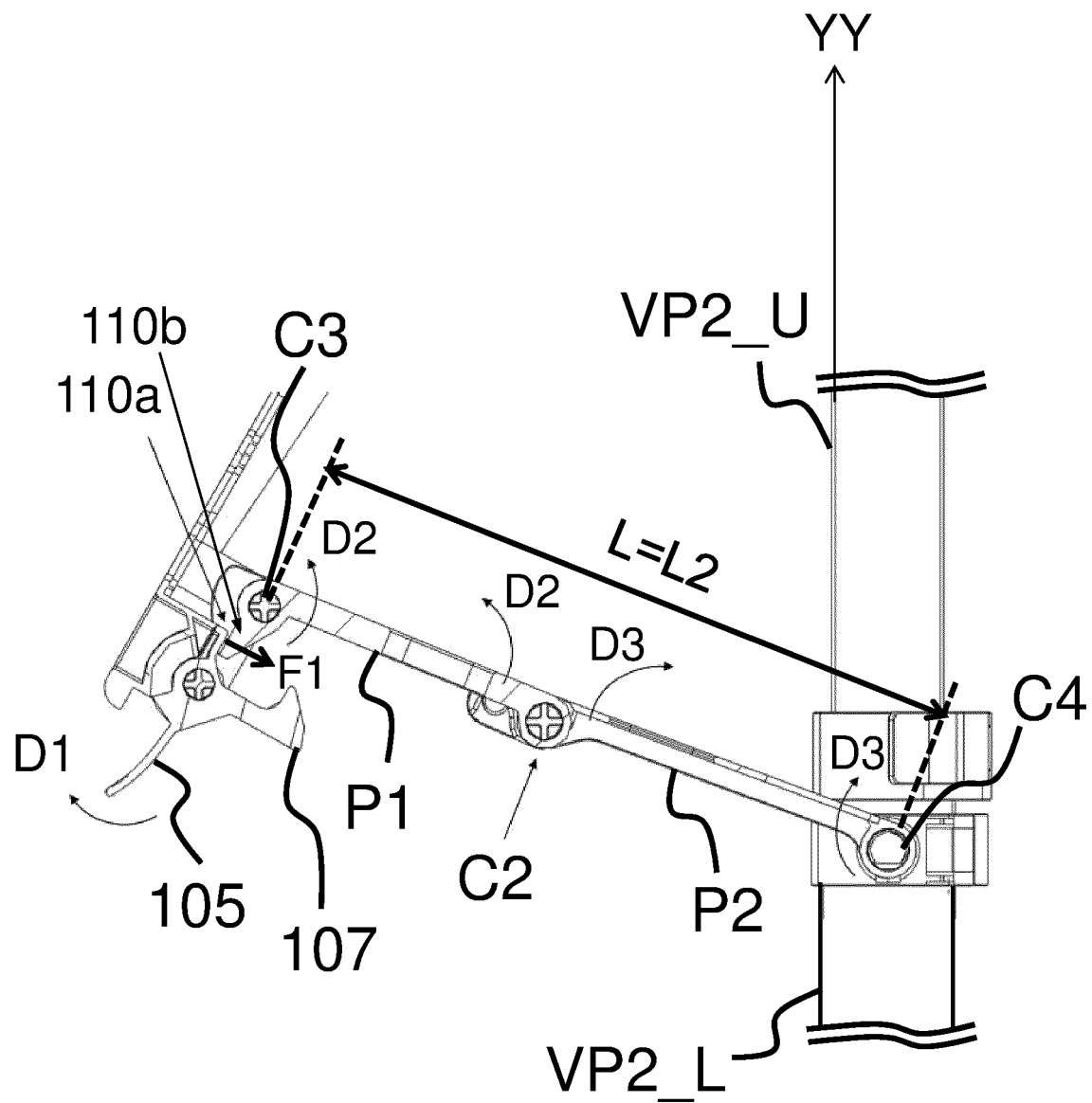


FIG.7

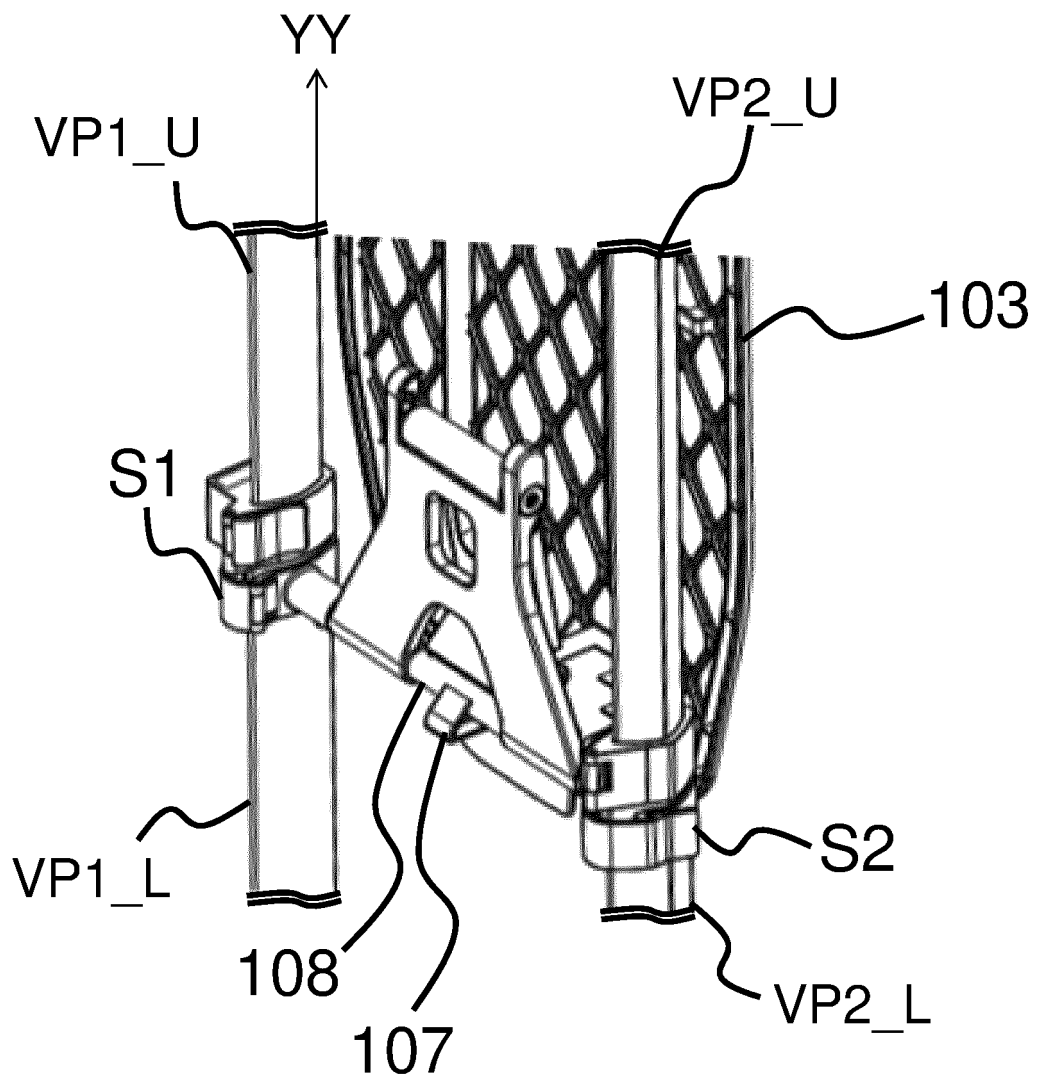


FIG.8

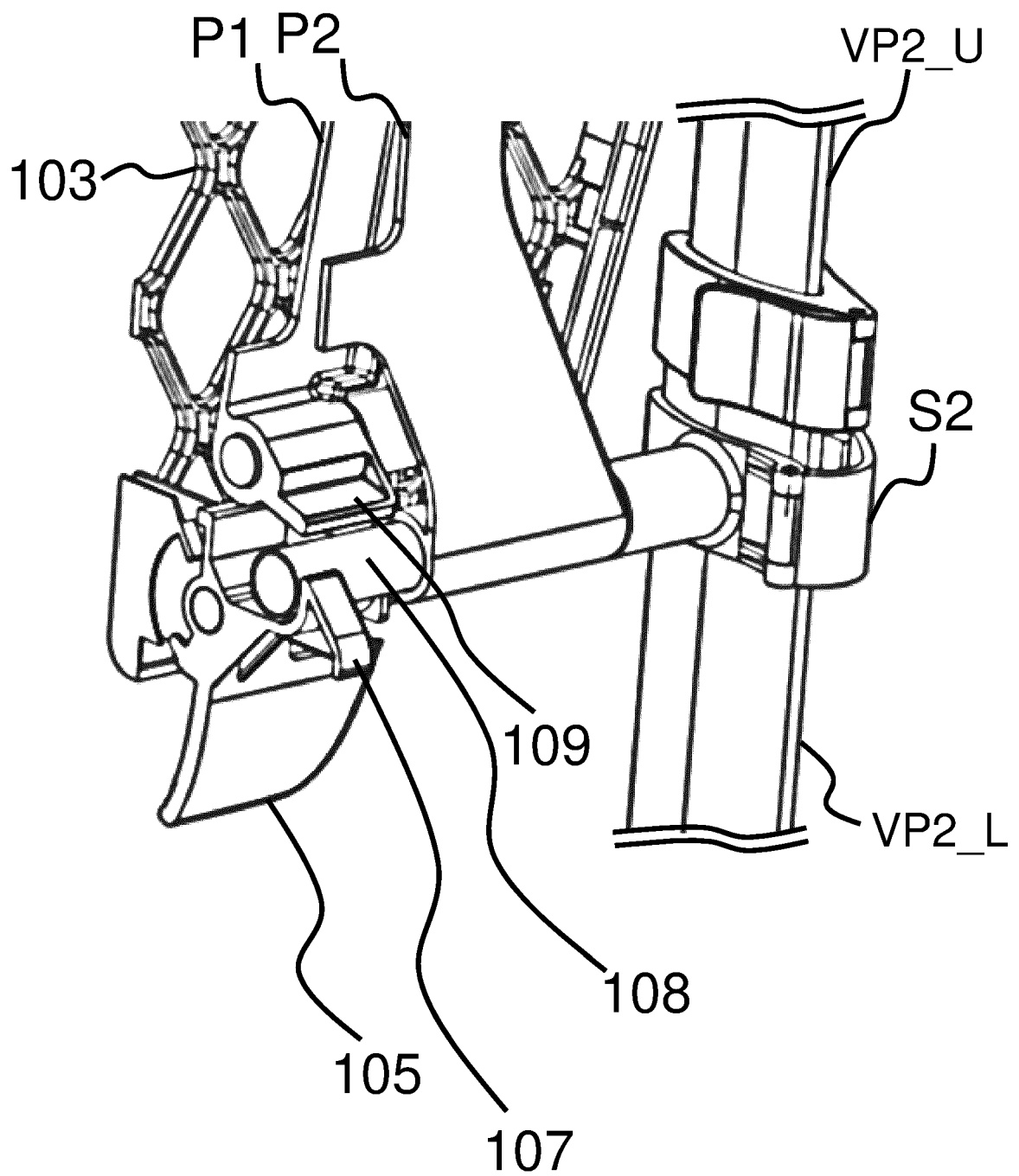


FIG.9

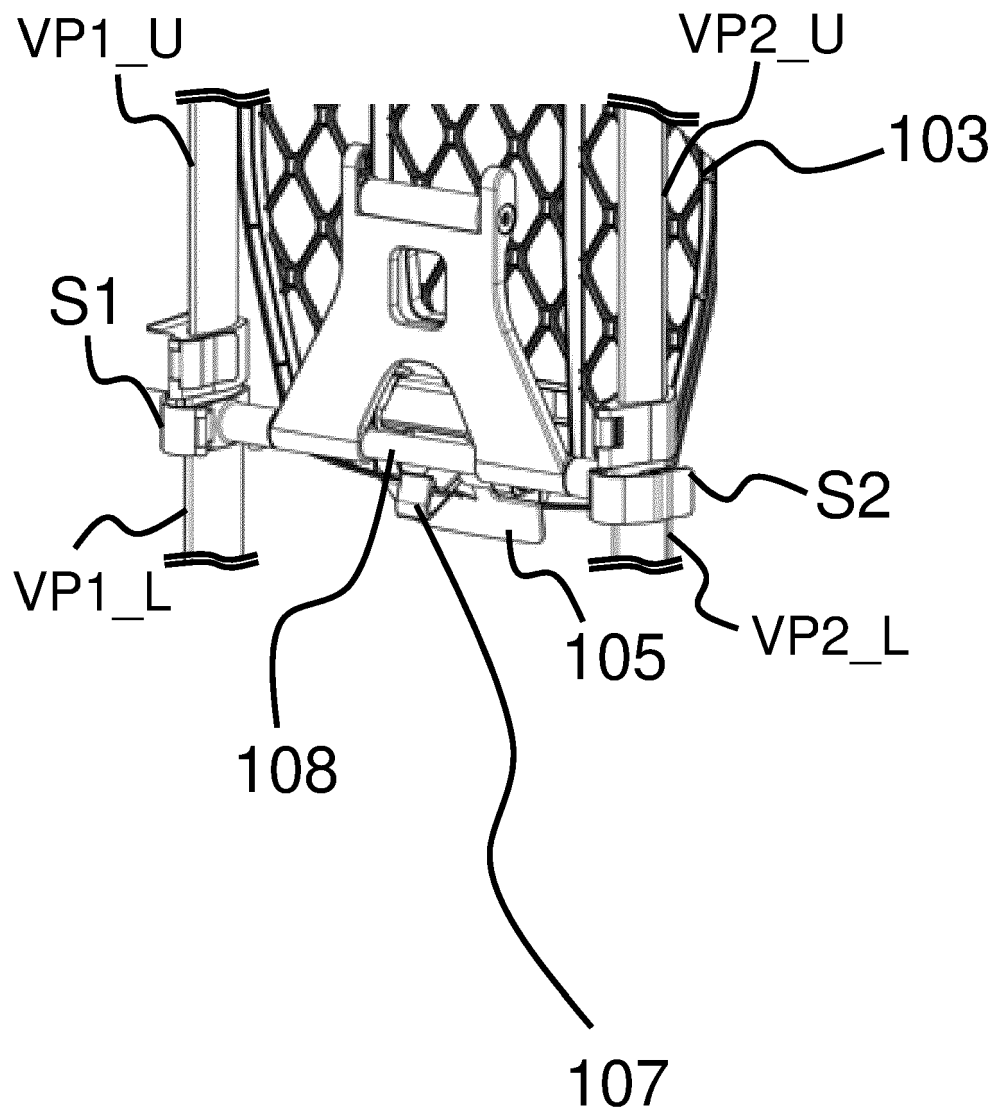


FIG.10

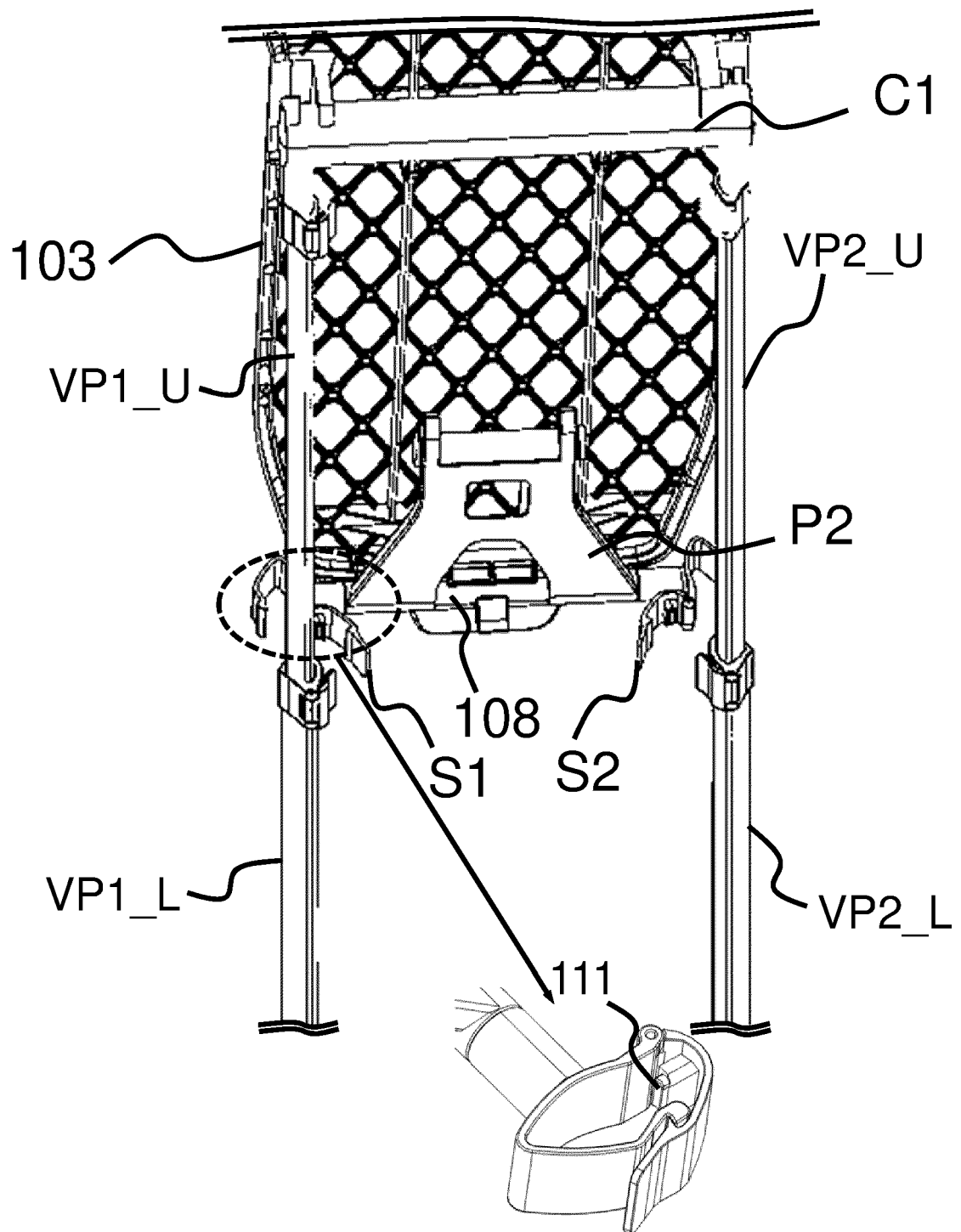


FIG.11A

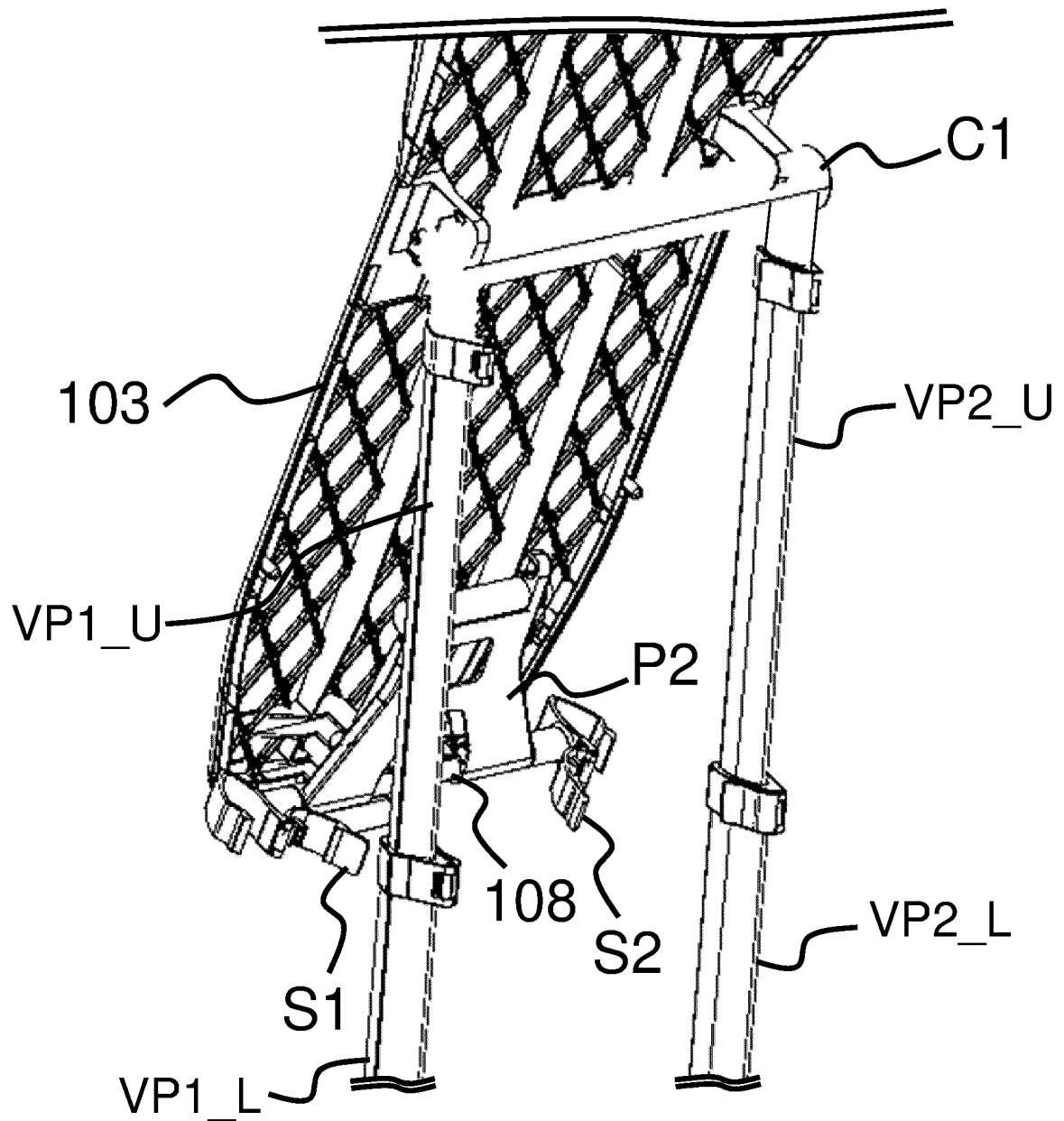


FIG.11B

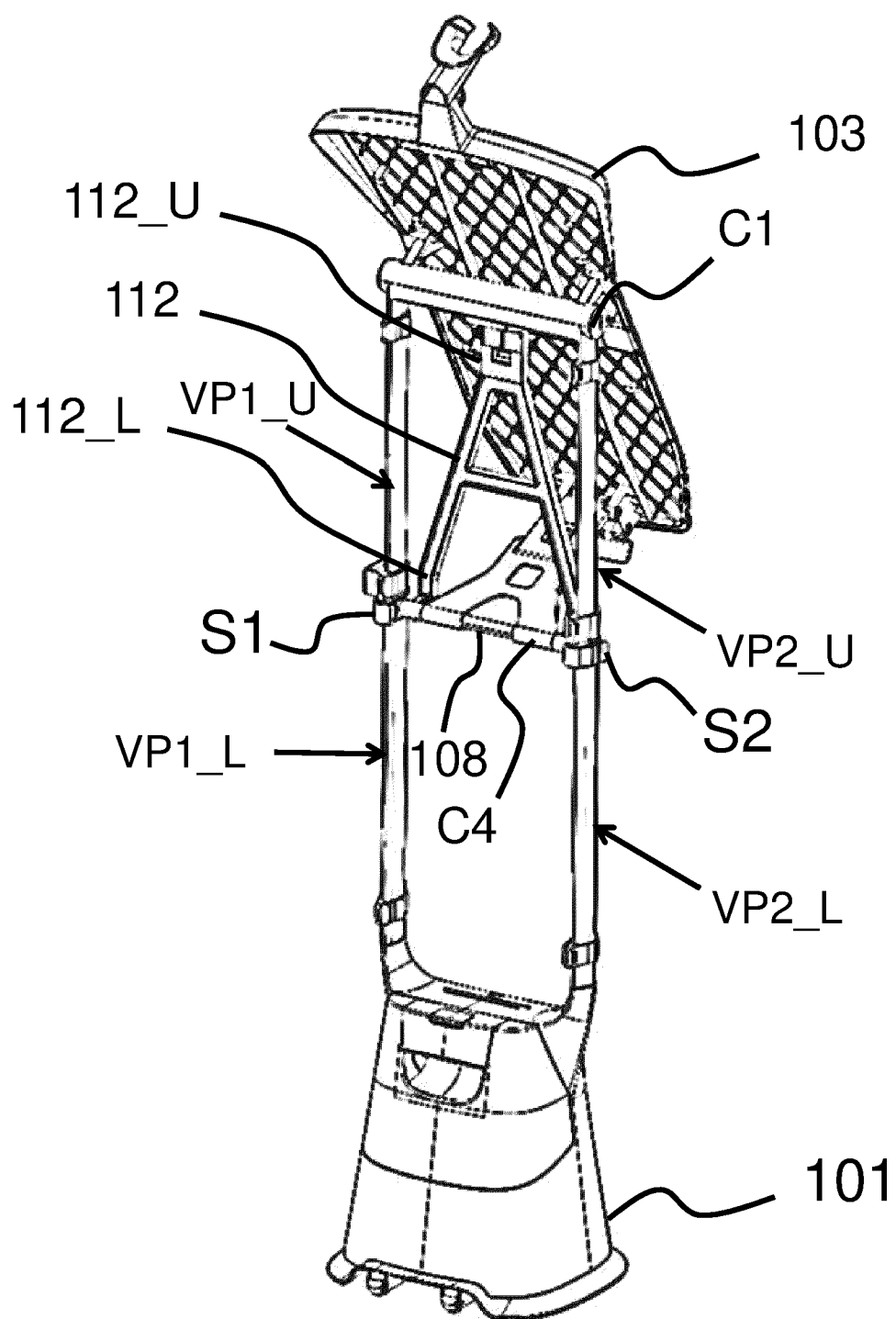


FIG.12

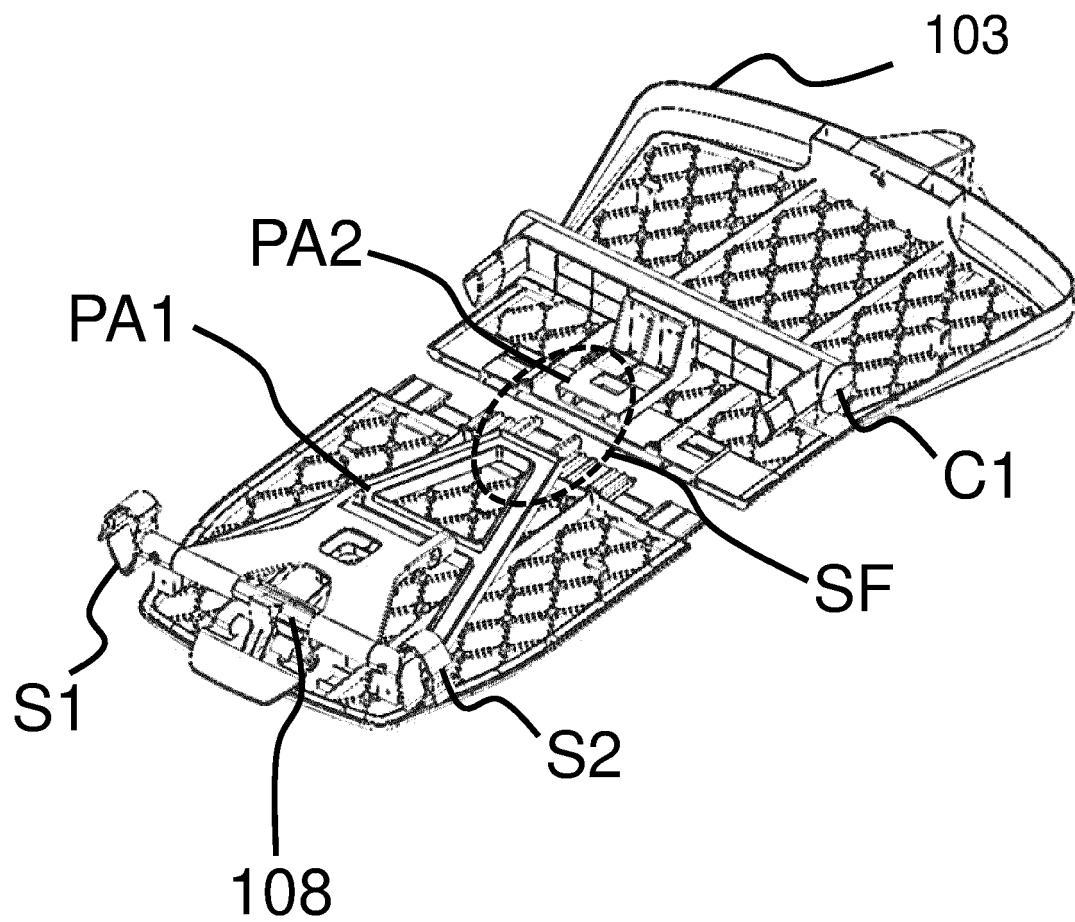


FIG.13

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 109322126 A [0005]
- EP 3173520 A1 [0006]
- US 3148639 A [0007]