

(19)



(11)

EP 3 610 838 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
19.02.2020 Bulletin 2020/08

(51) Int Cl.:
A61G 13/00 (2006.01) A61G 13/08 (2006.01)

(21) Application number: **18188990.8**

(22) Date of filing: **14.08.2018**

(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**
 Designated Extension States:
BA ME
 Designated Validation States:
KH MA MD TN

(71) Applicant: **Gymna Uniphy**
3740 Bilzen (BE)

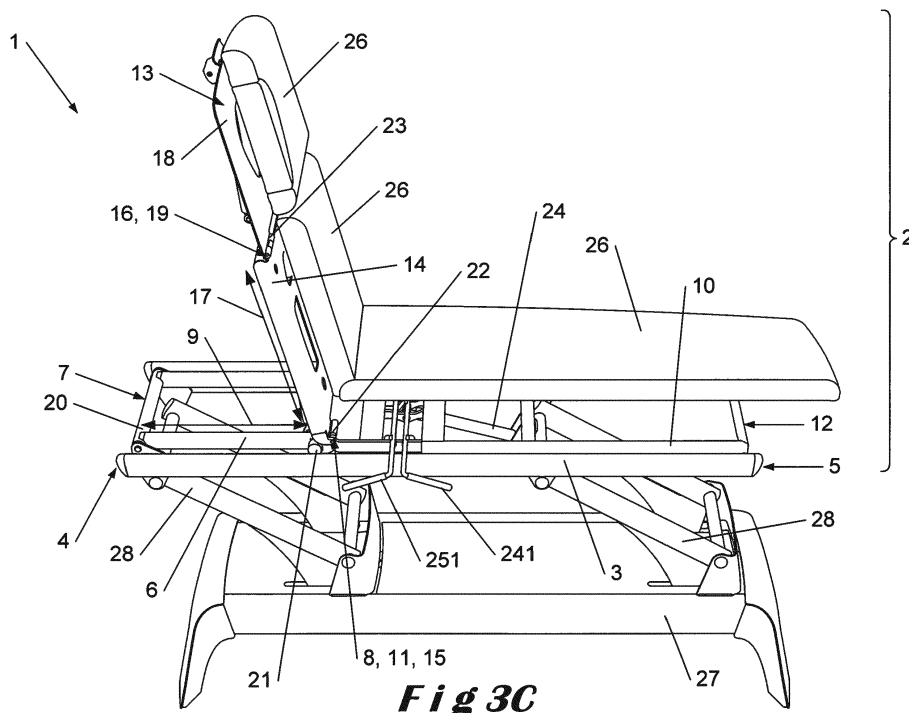
(72) Inventor: **Wijnmaalen, Piet Jacobus**
3740 Bilzen (BE)

(74) Representative: **Gevers Patents**
Intellectual Property House
Holidaystraat 5
1831 Diegem (BE)

(54) TREATMENT COUCH WITH ADJUSTABLE TREATMENT PLATFORM

(57) The invention provides a treatment couch (1) for use in physiotherapeutic treatment of a patient (29). The treatment couch (1) comprises a treatment platform (2) for supporting the patient (29). The treatment platform (2) is adjustable for adjusting the position of the patient (29). The treatment platform (2) comprises a base frame (3). The treatment platform (2) comprises a first adjustable frame (6). A first end (7) of the first adjustable frame (6) is tiltable connected to the base frame (3). The treat-

ment platform (2) comprises a second adjustable frame (10) for supporting the lower body (32) of the patient (29). A first end (11) of the second adjustable frame (10) is tiltable connected to a second end (8) of the first adjustable frame (6). The treatment platform (2) comprises a third adjustable frame (13) for supporting the torso (31) and the head (30) of the patient (29). A first end (14) of the third adjustable frame (13) is tiltable connected to the second end (8) of the first adjustable frame (6).

**Fig 3C****EP 3 610 838 A1**

Description

Technical field

[0001] The present invention relates to a treatment couch for use in physiotherapeutic treatment of a patient, wherein the treatment platform for supporting the patient is adjustable for adjusting the position of the patient on the treatment couch.

Background art

[0002] Treatment couches having an adjustable treatment platform for adjusting the position of a patient on the treatment couch, are known for example from EP 1 920 747 A1 and DE 103 24 038 A1.

[0003] As can be seen in the schematic representation of Figures 1A and 1B, the treatment platform of such treatment couches comprises a base frame and an adjustable frame which is tiltably connected to the base frame. The adjustable frame comprises a head portion for supporting the head of the patient, a torso portion for supporting the torso of the patient and a lower body portion for supporting the lower body, i.e. legs and hips, of the patient. A first end of the head portion is tiltably connected to the base frame at a fixed position on the base frame. A first end of the torso portion is also tiltably connected to the base frame at said fixed position on the base frame. A first end of the lower body portion is tiltably connected to a second end of the torso portion.

[0004] The different portions of the adjustable frame may be adjusted such as shown in Figure 1A to support the patient in a supine position, i.e. a lying position facing upwards. The different portions of the adjustable frame may also be adjusted such as shown in Figure 1B to support the patient in a prone position, i.e. a lying position facing downwards, in which the hips of the patient have been moved upwards to perform certain physiotherapeutic treatments, such as e.g. manual mobilisation of the vertebrae. The latter position is referred to as the flexion position.

[0005] The different portions of the adjustable frame may however also be adjusted such as shown in Figure 1C to support the patient in a seated position. In this configuration however the patient has to move its lower body onto the torso portion and the head portion of the adjustable frame and its head and torso onto the lower body portion of the adjustable frame, i.e. the patient has to rotate or has to be rotated 180° around the sagittal axis. Such rotation of the patient is however cumbersome, time consuming and often requires the support of the practitioner, certainly when the patient is less mobile. In addition, there is a negative effect on hygiene because the feet of the patient rest on the head section. An additional disadvantage is that, in order to provide sufficient support for the lower body, the head portion and the torso portion must be made relatively long, which has the disadvantage that in the flexion position the head of the pa-

tient cannot always be positioned correctly on the head portion because the hip of the patient has to be positioned at the transition between the torso portion and the lower body portion of the adjustable frame.

Disclosure of the invention

[0006] It is an aim of the present invention to provide a treatment couch which overcomes said disadvantages. More specifically, it is therefore an aim of the present invention to provide a treatment couch which does not require a patient on the treatment couch to be rotated around the sagittal axis when switching between the lying and seated position of the patient on the treatment couch.

[0007] This aim is achieved according to the invention with a treatment couch showing the technical characteristics of the first independent claim.

[0008] Therefore, the present invention provides a treatment couch for use in physiotherapeutic treatment of a patient. The treatment couch comprises a treatment platform for supporting the patient. The treatment platform is adjustable for adjusting the position of the patient on the treatment couch. The treatment platform comprises a base frame. The treatment platform comprises a first adjustable frame. A first end of the first adjustable frame is tiltably connected to the base frame. The treatment platform comprises a second adjustable frame for supporting the lower body, i.e. the legs and the hips, of the patient. A first end of the second adjustable frame is tiltably connected to a second end of the first adjustable frame. The second end of the first adjustable frame is opposite of the first end of the first adjustable frame. The treatment platform comprises a third adjustable frame for supporting the torso and the head of the patient. A first end of the third adjustable frame is tiltably connected to the second end of the first adjustable frame.

[0009] The treatment couch has the advantage that the supine position, the flexion position, and the seated position can be achieved without having to rotate the patient around the sagittal axis. In the lying positions, as for example shown in Figures 2A and 2B, the third adjustable frame rests on the first adjustable frame. In these positions the third adjustable frame is thus supported by the first adjustable frame, and may be moved together by tilting the first adjustable frame.

[0010] To go from the supine position, as shown in Figure 2A, to the flexion position, as shown in Figure 2B, the first adjustable frame is tilted upwards with respect to the base frame, thereby also moving the third adjustable frame resting on the first adjustable frame, and the second adjustable frame is tilted downwards to the base frame.

[0011] To go from the supine position, as shown in Figure 2A, to the seated position, as shown in Figure 2C, the third adjustable frame is tilted upwards with respect to the first adjustable frame.

[0012] In an embodiment of the treatment couch according to the present invention the third adjustable frame

comprises a first portion for supporting the torso of the patient. The third adjustable frame comprises a second portion for supporting the head of the patient. A first end of the first portion is tiltably connected to the second end of the first adjustable frame. A first end of the second portion is tiltably connected to a second end of the first portion. The second end of the first portion is opposite of the first end of the first portion.

[0013] The third adjustable frame being divided in a first portion for supporting the torso of the patient and a second portion for supporting the head of the patient, and wherein said portions are tiltably connected to each other, is beneficial for the comfort of the patient on the treatment couch, since it allows to change the position of the head with respect to the torso to the most comfortable position for the patient.

[0014] In an embodiment of the treatment couch according to the present invention the length of the first adjustable frame is approximately the same as the length of the first portion of the third adjustable frame. The length of first adjustable frame extends from the first end of the first adjustable frame to the second end of the first adjustable frame. The length of the first portion of the third adjustable frame extends from the first end of the first portion to the second end of the first portion.

[0015] In an embodiment of the treatment couch according to the present invention the first adjustable frame is tiltably connected to the base frame at a fixed position on the base frame.

[0016] In an embodiment of the treatment couch according to the present invention the first end of the first adjustable frame is tiltably connected to a first end of the base frame.

[0017] In an embodiment of the treatment couch according to the present invention a second end of the second adjustable frame is slideably arranged in the in the base frame along a predetermined direction. The second end of the second adjustable frame is opposite of the first end of the second adjustable frame.

[0018] In an embodiment of the treatment couch according to the present invention the treatment couch comprises first drive means for driving tilting of the first adjustable frame with respect to the base frame.

[0019] In an embodiment of the treatment couch according to the present invention the treatment couch comprises second drive means for driving tilting of the third adjustable frame with respect to the first adjustable frame.

Brief description of the drawings

[0020] The invention will be further elucidated by means of the following description and the appended figures.

Figure 1A shows a schematic representation of a treatment couch according to the prior art adjusted for supporting a patient in a supine position.

Figure 1B shows a schematic representation of a treatment couch according to the prior art adjusted for supporting a patient in a flexion position.

Figure 1C shows a schematic representation of a treatment couch according to the prior art adjusted for supporting a patient in a seated position.

Figure 2A shows a schematic representation of a treatment couch according to an embodiment of the present invention adjusted for supporting a patient in a supine position.

Figure 2B shows a schematic representation of a treatment couch according to an embodiment of the present invention adjusted for supporting a patient in a flexion position.

Figure 2C shows a schematic representation of a treatment couch according to an embodiment of the present invention adjusted for supporting a patient in a seated position.

Figure 3A shows a cutaway view of a treatment couch according to an embodiment of the present invention adjusted for supporting a patient in a supine position.

Figure 3B shows a cutaway view of a treatment couch according to an embodiment of the present invention adjusted for supporting a patient in a flexion position.

Figure 3C shows a cutaway view of a treatment couch according to an embodiment of the present invention adjusted for supporting a patient in a seated position.

Figure 3D shows from another viewpoint the treatment couch as shown in Figure 3C in the seated position.

Modes for carrying out the invention

[0021] The present invention will be described with respect to particular embodiments and with reference to certain drawings but the invention is not limited thereto but only by the claims. The drawings described are only schematic and are non-limiting. In the drawings, the size of some of the elements may be exaggerated and not drawn on scale for illustrative purposes. The dimensions and the relative dimensions do not necessarily correspond to actual reductions to practice of the invention.

[0022] Furthermore, the terms first, second, third and the like in the description and in the claims, are used for distinguishing between similar elements and not necessarily for describing a sequential or chronological order. The terms are interchangeable under appropriate circumstances and the embodiments of the invention can operate in other sequences than described or illustrated herein.

[0023] Moreover, the terms top, bottom, over, under and the like in the description and the claims are used for descriptive purposes and not necessarily for describing relative positions. The terms so used are interchangeable under appropriate circumstances and the embodi-

ments of the invention described herein can operate in other orientations than described or illustrated herein.

[0024] The term "comprising", used in the claims, should not be interpreted as being restricted to the means listed thereafter; it does not exclude other elements or steps. It needs to be interpreted as specifying the presence of the stated features, integers, steps or components as referred to, but does not preclude the presence or addition of one or more other features, integers, steps or components, or groups thereof. Thus, the scope of the expression "a device comprising means A and B" should not be limited to devices consisting only of components A and B. It means that with respect to the present invention, the only relevant components of the device are A and B.

[0025] Figures 3A-3D show a cutaway view of a treatment couch 1 according to an embodiment of the present invention. Schematic representations of the treatment couch 1 according to an embodiment of the present invention are shown in Figures 2A-2C.

[0026] At the bottom, the treatment couch 1 comprises a support base 27 by means of which the treatment couch 1 supports on the ground. At the top, the treatment couch 1 comprises a treatment platform 2 for supporting a patient 29 on the treatment couch 1. The treatment platform 2 is provided with pillows 26 for the comfort of the patient 29. In Figures 3A-3D the pillows 26 have been partially cut away to show the underlying components of the treatment platform 2. Between the treatment platform 2 and the support base 27 the treatment couch 1 comprises a lifting system with lifting arms 28 for moving the treatment platform 2 up and down.

[0027] The treatment platform 2 is adjustable for adjusting the position of the patient 29 on the treatment couch 1. The different components of the treatment platform 2 may for example be arranged for supporting the patient 29 on the treatment couch 1 in three common positions for physiotherapeutic treatment, being a supine position wherein the patient 29 lies on the treatment couch 1 and faces upwards, such as shown in Figures 2A and 3A, a flexion position wherein the patient 29 lies in a prone position on the treatment couch 1 with the torso 31 and the head 30 of the patient 29 flexed towards the legs 32 of the patient 29, such as shown in Figures 2B and 3B, or a seated position, such as shown in Figures 2C, 3C and 3D.

[0028] The treatment platform 2 comprises a base frame 3 which forms the basis on which the other components of the treatment platform 2 are arranged. The base frame 3 is substantially rectangular and extends along a longitudinal direction L and a width direction W of the treatment couch 1.

[0029] The treatment platform 2 further comprises a first adjustable frame 6. The first adjustable frame 6 extends along the longitudinal direction L and the width direction W of the treatment couch 1, and is preferably approximately rectangular. The size 9 of the first adjustable frame 6 along the length direction L is chosen to

roughly correspond with the length of a human torso.

[0030] The first adjustable frame 6 is tiltably connected to the base frame 3 by means of at least one first hinge 20. In the embodiment of Figures 3A-3D two first hinges 20 are used, which are arranged opposite of each other in the width direction W. The at least one first hinge 20 is arranged at a first end 7 of the first adjustable frame 6 along the longitudinal direction L, and at a first end 4 of the base frame 3 along the longitudinal direction L. The at least one first hinge 20 has a fixed position with respect to the base frame 3. The first adjustable frame 6 runs from the first end 4 of the base frame 3 in a direction towards a second end 5 of the base frame 3, which second end 5 of the base frame 3 is located opposite of the first end 4 of the base frame 3 along the longitudinal direction L.

[0031] The treatment platform 2 further comprises a second adjustable frame 10. The second adjustable frame 10 extends along the longitudinal direction L and the width direction W of the treatment couch 1, and is preferably approximately rectangular. The second adjustable frame 10 is provided for supporting the lower body 32 of the patient 29, i.e. the legs and hips of the patient 29. A pillow 26 is arranged on the second adjustable frame 10 for the comfort of the patient 29. The size of the second adjustable frame 10 along the length direction L is chosen to roughly correspond with the length of the human lower body.

[0032] The second adjustable frame 10 is tiltably connected to the first adjustable frame 6 by means of at least one second hinge 21. In the embodiment of Figures 3A-3D two second hinges 21 are used, which are arranged opposite of each other in the width direction W. The at least one second hinge 21 is arranged at a first end 11 of the second adjustable frame 10 along the longitudinal direction L, and at a second end 8 of the first adjustable frame 6 located opposite of the first end 7 of the first adjustable frame 6 along the longitudinal direction L. The second adjustable frame 10 runs from the second end 8 of the first adjustable frame 6 in a direction towards the second end 5 of the base frame 3. A second end 12 of the second adjustable frame 10 is slideably arranged in the base frame 3 along the longitudinal direction L, which second end 12 of the second adjustable frame 10 is located opposite of the first end 11 of the second adjustable frame 10 along the longitudinal direction L.

[0033] With the base frame 3, the first adjustable frame 6 and the second adjustable frame 10 being connected as such, the second adjustable frame 10 is moveable with respect to the base frame 3 by tilting the first adjustable frame 6 with respect to the base frame 3. When the first adjustable frame 6 is tilted with respect to the base frame 3, the first end 11 of the second adjustable frame 10 moves together with the second end 8 of the first adjustable frame 6, and the second adjustable frame 10 slides with its second end 12 in the base frame 3 along the longitudinal direction L. When the first adjustable frame 6 is tilted upwards with respect to the base frame

3, the second end 12 of the second adjustable frame 10 moves towards the first end 4 of the base frame 3. When the first adjustable frame 6 is tilted downwards towards the base frame 3, the second end 12 of the second adjustable frame 10 moves away from the first end 4 of the base frame 3 and towards the second end 5 of the base frame 3.

[0034] For tilting the first adjustable frame 6 with respect to the base frame 3, the treatment couch 1 is provided with first drive means 24, which may for example be an electrical motor, a gas spring, or any other suitable drive means known by the skilled person. The first drive means 24 are provided with activation means 241, such as for example a handle 241 or a button, for activating the first drive means 24.

[0035] The treatment platform 2 further comprises a third adjustable frame 13 for supporting the torso 31 and the head 30 of the patient 29. The third adjustable frame 13 comprises a first portion 14 for supporting the torso 31 of the patient 29 and a second portion 18 for supporting the head 30 of the patient 29. Both the first portion 14 and the second portion 18 are provided with a pillow 26 for the comfort of the patient 29. Both the first portion 14 and the second portion 18 extend along the longitudinal direction L and the width direction W of the treatment couch 1, and are preferably approximately rectangular. The size 17 of the first portion 14 of the third adjustable frame 13 along the longitudinal direction L is chosen to roughly correspond with the length of a human torso. Hence, the length 17 of the first portion 14 of the third adjustable frame 13 is approximately the same as the length 9 of the first adjustable frame 6. The size of the second portion 18 of the third adjustable frame 13 along the length direction L is chosen to roughly correspond with the length of the human head and neck.

[0036] The first portion 14 of the third adjustable frame 13 is tiltably connected to the first adjustable frame 6 by means of at least one third hinge 22. In the embodiment of Figures 3A-3D two third hinges 22 are used, which are arranged opposite of each other in the width direction W. The at least one third hinge 22 is arranged at a first end 15 of the first portion 14 of the third adjustable frame 13 along the longitudinal direction L, and at the second end 8 of the first adjustable frame 6. The second portion 18 of the third adjustable frame 13 is tiltably connected to the first portion 14 of the third adjustable frame 13 by means of at least one fourth hinge 23. In the embodiments of Figures 3A-3D two fourth hinges 23 are used, which are arranged opposite of each other in the width direction W. The at least one fourth hinge 23 is arranged at a first end 19 of the second portion 18 along the longitudinal direction L, and at a second end 16 of the first portion 14 of the third adjustable frame 13 located opposite of the first end 15 of the first portion 14 of the third adjustable frame 13 along the longitudinal direction L. The third adjustable frame 13 runs from the second end 8 of the first adjustable frame 6 in a direction towards the second end 5 of the base frame 3. Thereby, the third

adjustable frame 13 is arranged above the first adjustable frame 6.

[0037] With the base frame 3, the first adjustable frame 6 and the third adjustable frame 13 being connected as described above, the third adjustable frame 13 is moveable with respect to the base frame 3 by tilting the first adjustable frame 6 with respect to the base frame 3, and also by tilting the third adjustable frame 13 with respect to the first adjustable frame 6. When the first adjustable frame 6 is tilted with respect to the base frame 3, the third adjustable frame 13 moves together with the first adjustable frame 6, if no tilting of the third adjustable frame 13 with respect to the first adjustable frame 6 takes place. The third adjustable frame 13 can be tilted upwards with respect to the first adjustable frame 6, such that the third adjustable frame 13 is put in an upright position suitable for supporting the patient 29 in a seated position, such as shown in Figures 2C, 3C and 3D. The third adjustable frame 13 can also be tilted downwards towards the first adjustable frame 6, until a position where the third adjustable frame 13 supports on the first adjustable frame 6, such as shown in Figures 2A, 2B, 3A and 3B. This position of the third adjustable frame 13 with respect to the first adjustable frame 6 is suitable for supporting patient 29 in a supine position, such as shown in Figures 2A and 3A, or the flexion position, such as shown in Figures 2B and 3B.

[0038] For tilting the third adjustable frame 13 with respect to the first adjustable frame 6, the treatment couch 1 is provided with second drive means 25, as can be seen in Figure 3D. The second drive means 25 may for example be an electrical motor, a gas spring, or any other suitable drive means known by the skilled person. The second drive means 25 are provided with activation means 251, such as for example a handle 251 or a button, for activating the second drive means 25.

[0039] With the second portion 18 of the third adjustable frame 13 being tiltably connected to the first portion 14 of the third adjustable frame 13, the position of the second portion 18 of the third adjustable frame 13 for supporting the head 30 of the patient 29 with respect to the first portion 14 of the third adjustable frame 13 for supporting the torso 31 of the patient 29 to bring the head 30 of the patient 29 in the for patient 29 most comfortable position with respect to the torso 31 of the patient 29. Such tilting of the second portion 18 of the third adjustable frame 13 with respect to the first portion 14 of the third adjustable frame 13 is for example shown in Figure 2A compared to Figure 3A, and in Figure 2C compared to Figure 3C and 3D.

[0040] For tilting the second portion 18 of the third adjustable frame 13 with respect to the first portion 14 of the third adjustable frame 13, the treatment platform 2 of the treatment couch 1 may be provided with third drive means 33, as can be seen in Figure 3D. The third drive means 33 may for example be an electrical motor, a gas spring, or any other suitable drive means known by the skilled person.

[0041] When the treatment platform 2 is arranged for supporting the patient 29 in the supine position, such as shown in Figure 3A, the first adjustable frame 6, the second adjustable frame 10 and the third adjustable frame 13 lie in an horizontal plane parallel to the base frame 3. Thereby, the second adjustable frame 10 extends from the first adjustable frame 6. The first portion 14 of the third adjustable frame 13 lies above the first adjustable frame 6 and supports on the first adjustable frame 6. This is because the first portion 14 of the third adjustable frame 13 and the first adjustable frame 6 have approximately the same length 9, 17 roughly corresponding to the length of the human torso. The second portion 18 of the third adjustable frame 13 extends from the first portion 14 of the third adjustable frame 13 beyond the first adjustable frame 6, and also beyond the base frame 3 since the first adjustable frame 6 is connected to the first end 4 of the base frame 3. For the comfort of the patient 29, the second portion 18 of the third adjustable frame 13 may be tilted upwards with respect to the first portion 14 of the third adjustable frame 13, such as shown in Figure 2A.

[0042] Starting from the position wherein the treatment platform 2 is arranged for supporting the patient 29 in the supine position, such as show in Figure 3A, the treatment platform 2 may be arranged for supporting the patient 29 in the flexion position, such as shown in Figure 3B, by first rotating the patient 29 to face downwards and then by tilting the first adjustable frame 6 upwards with respect to the base frame 3 using the first drive means 24. Thereby, the first end 11 of the second adjustable frame 10 is moved upwards with respect to the base frame together with the second end 8 of the first adjustable frame 6, and the second end 12 of the second adjustable frame 10 is slid in the base frame 3 towards the first end 4 of the base frame 3 along the longitudinal direction L, such that the second adjustable frame 10 tilts downwards from the first adjustable frame 6 to the base frame 3. The first portion 14 of the third adjustable frame 13 is tilted upwards together with the first adjustable frame 6 and remains supported by the first adjustable frame 6. Thereby, the second portion 18 of the third adjustable frame 13 follows the movement of the first portion 14 of the third adjustable frame 13. Since the second portion 18 of the third adjustable frame 13 extends beyond the base frame, the second portion 18 of the third adjustable frame 13 can be moved into and below the horizontal plane of the base frame 3.

[0043] Starting from the position wherein the treatment platform 2 is arranged for supporting the patient 29 in the supine position, such as show in Figure 3A, the treatment platform 2 may be arranged for supporting the patient 29 in the seated position, such as shown in Figure 3C and 3D, by tilting the third adjustable frame 13 upwards with respect to the first adjustable frame 6 using the second drive means 25. For the comfort of the patient 29, the second portion 18 of the third adjustable frame 13 may be tilted upwards with respect to the first portion 14 of the third adjustable frame 13, such as shown in Figure

2C.

References

5 [0044]

1	treatment couch
2	treatment platform
3	base frame
10 4	first end
5	second end
6	first adjustable frame
7	first end
8	second end
15 9	length
10	second adjustable frame
11	first end
12	second end
13	third adjustable frame
20 14	first portion
15	first end
16	second end
17	length
18	second portion
25 19	first end
20	first hinge
21	second hinge
22	third hinge
23	fourth hinge
30 24	first drive means
241	handle
25	second drive means
251	handle
26	pillow
35 27	support base
28	lifting arm
29	patient
30	head
31	torso
40 32	lower body
33	third drive means
L	longitudinal direction
W	width direction

Claims

1. A treatment couch (1) for use in physiotherapeutic treatment of a patient (29), wherein the treatment couch (1) comprises a treatment platform (2) for supporting the patient (29), wherein the treatment platform (2) is adjustable for adjusting the position of the patient (29) on the treatment couch (1), **characterised in that** the treatment platform (2) comprises:

a base frame (3);
a first adjustable frame (6), wherein a first end (7) of the first adjustable frame (6) is tiltably con-

nected to the base frame (3);
 a second adjustable frame (10) for supporting
 the lower body (32) of the patient (29), wherein
 a first end (11) of the second adjustable frame
 (10) is tiltably connected to a second end (8) of
 the first adjustable frame (6), which second end
 (8) of the first adjustable frame (6) is opposite
 of the first end (7) of the first adjustable frame
 (6); and
 a third adjustable frame (13) for supporting the
 torso (31) and the head (30) of the patient (29),
 wherein a first end (15) of the third adjustable
 frame (13) is tiltably connected to the second
 end (8) of the first adjustable frame (6).

2. The treatment couch (1) according to claim 1, where-
 in the third adjustable frame (13) comprises a first
 portion (14) for supporting the torso (31) of the patient
 (29), wherein the third adjustable frame (13) com-
 prises a second portion (18) for supporting the head
 (30) of the patient (29), wherein a first end (15) of
 the first portion (14) is tiltably connected to the sec-
 ond end (8) of the first adjustable frame (6), and
 wherein a first end (19) of the second portion (18) is
 tiltably connected to a second end (16) of the first
 portion (14), which second end (16) of the first portion
 (14) is opposite of the first end (15) of the first portion
 (14).
3. The treatment couch (1) according to claim 1 or 2,
 wherein the length (9) of the first adjustable frame
 (6), extending from the first end (7) of the first ad-
 justable frame (6) to the second end (8) of the first
 adjustable frame (6), is approximately the same as
 the length (17) of the first portion (14) of the third
 adjustable frame (13), extending from the first end
 (15) of the first portion (14) to the second end (16)
 of the first portion (14).
4. The treatment couch (1) according to any one of the
 claims 1-3, wherein the first adjustable frame (6) is
 tiltably connected to the base frame (3) at a fixed
 position on the base frame (3).
5. The treatment couch (1) according to any one of the
 claims 1-4, wherein the first end (7) of the first ad-
 justable frame (6) is tiltably connected to a first end
 (4) of the base frame (3).
6. The treatment couch (1) according to any one of the
 claims 1-5, wherein a second end (12) of the second
 adjustable frame (10) is slideably arranged in the
 base frame (3) along a predetermined first direction
 (L), which second end (12) of the second adjustable
 frame (10) is opposite of the first end (11) of the sec-
 ond adjustable frame (10).
7. The treatment couch (1) according to any one of the

claims 1-6, wherein the treatment couch (1) compris-
 es first drive means (24) for driving tilting of the first
 adjustable frame (6) with respect to the base frame
 (3).

8. The treatment couch (1) according to any one of the
 claims 1-7, wherein the treatment couch (1) compris-
 es second drive means (25) for driving tilting of the
 third adjustable frame (13) with respect to the first
 adjustable frame (6).

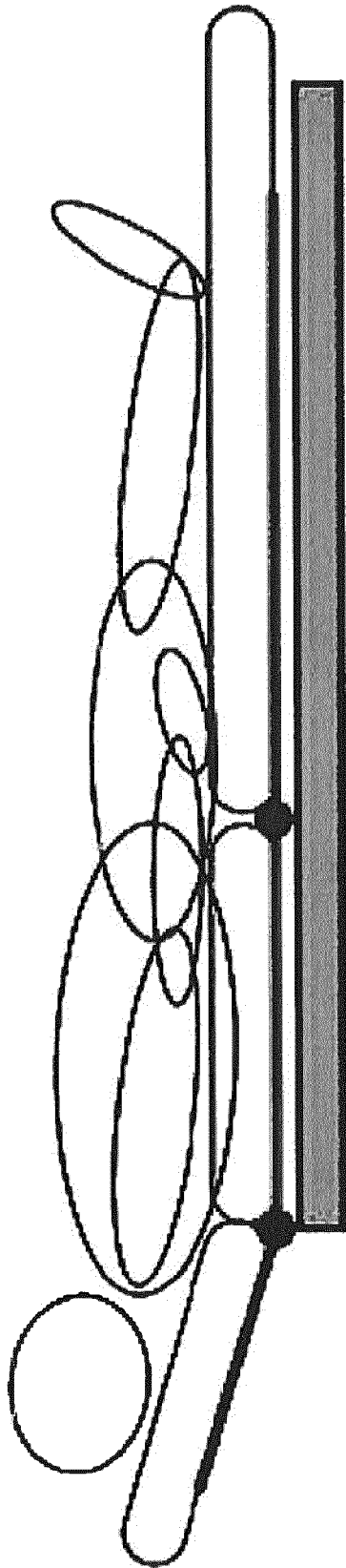


Fig 1A

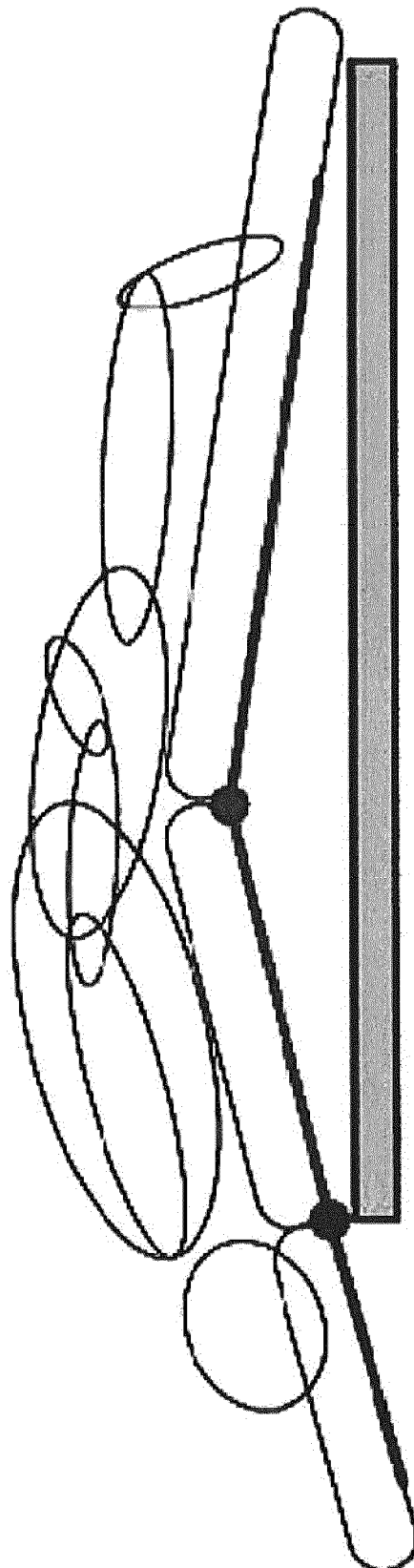


Fig 1B

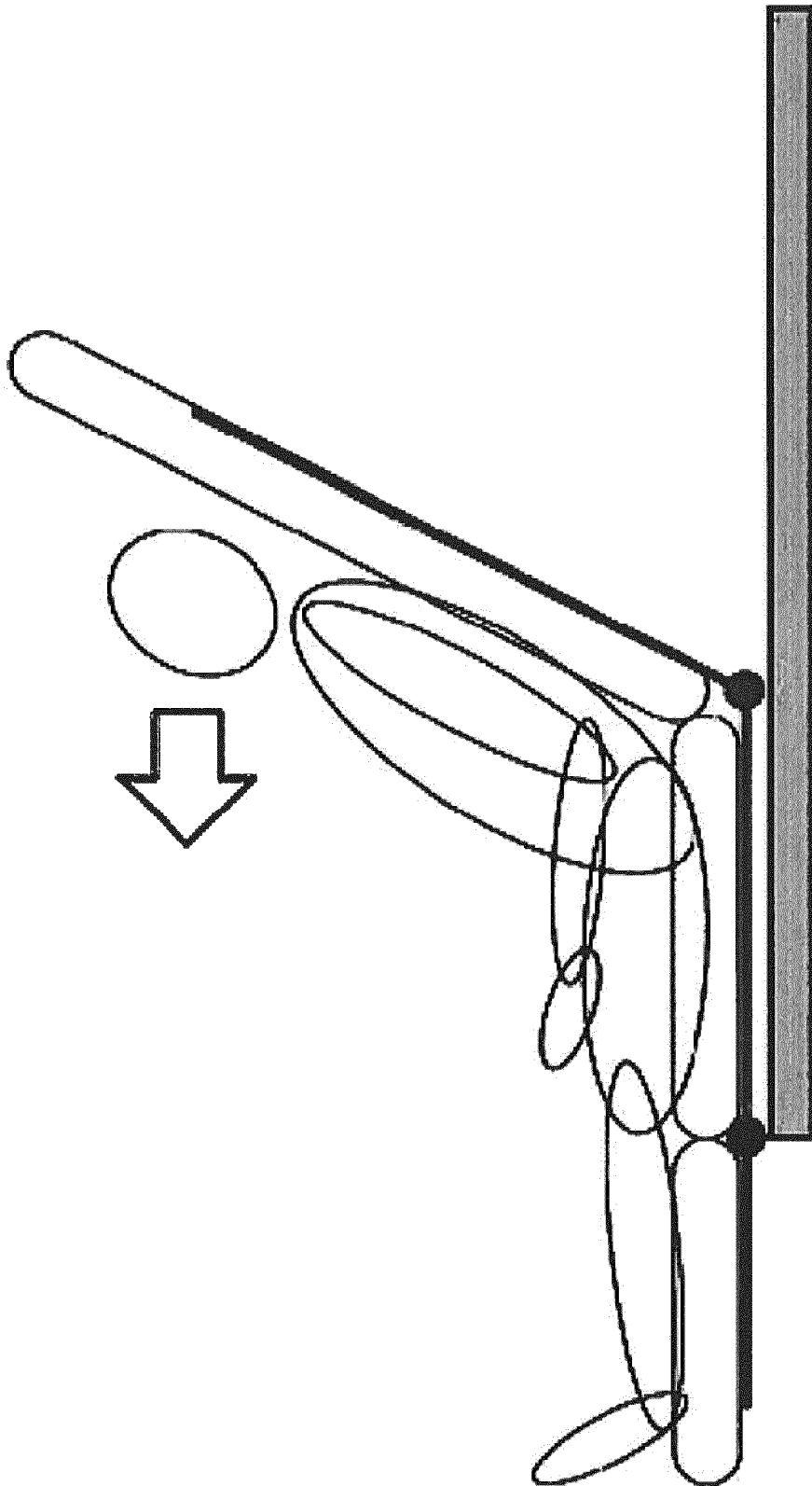


Fig 1C

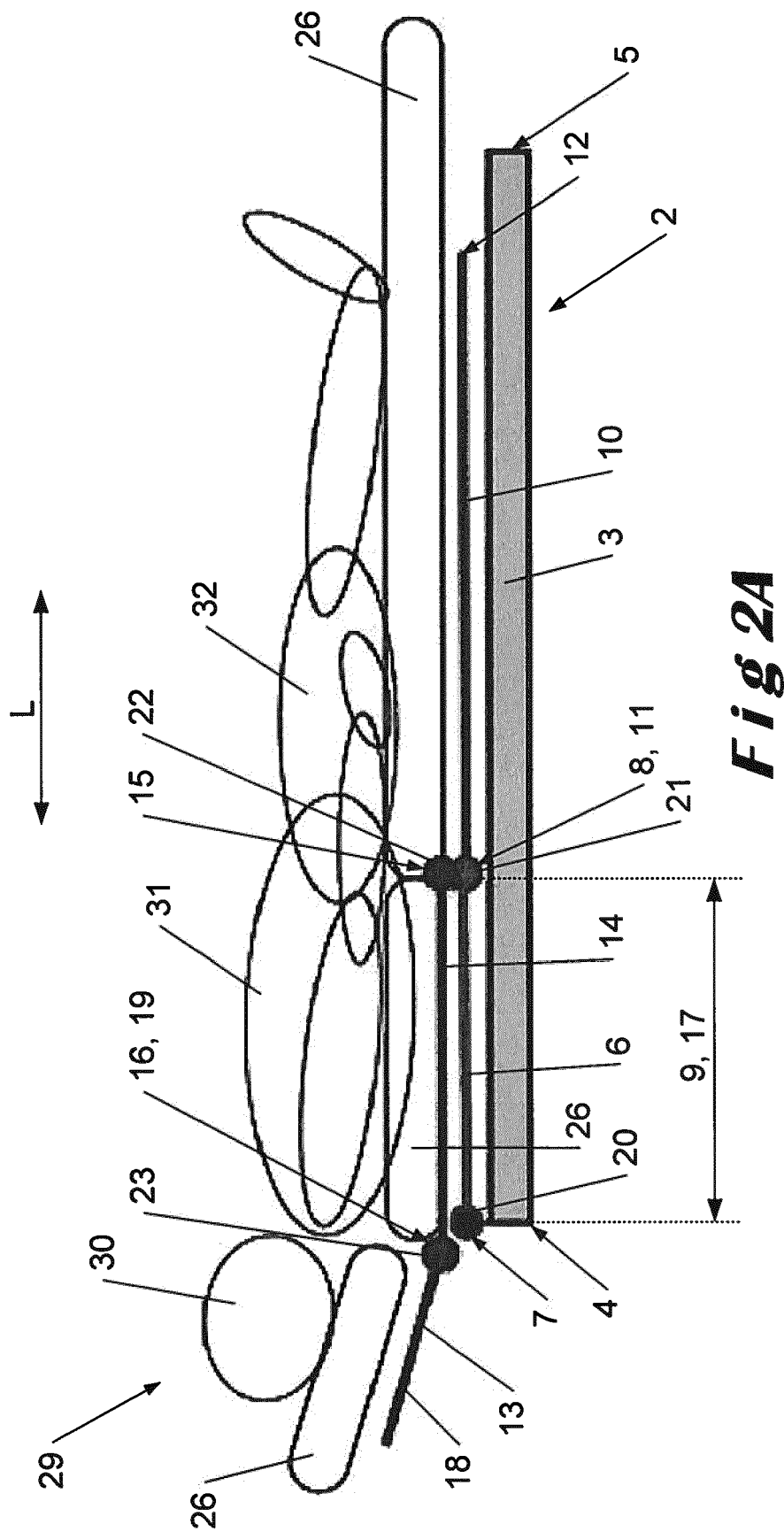


Fig 2A

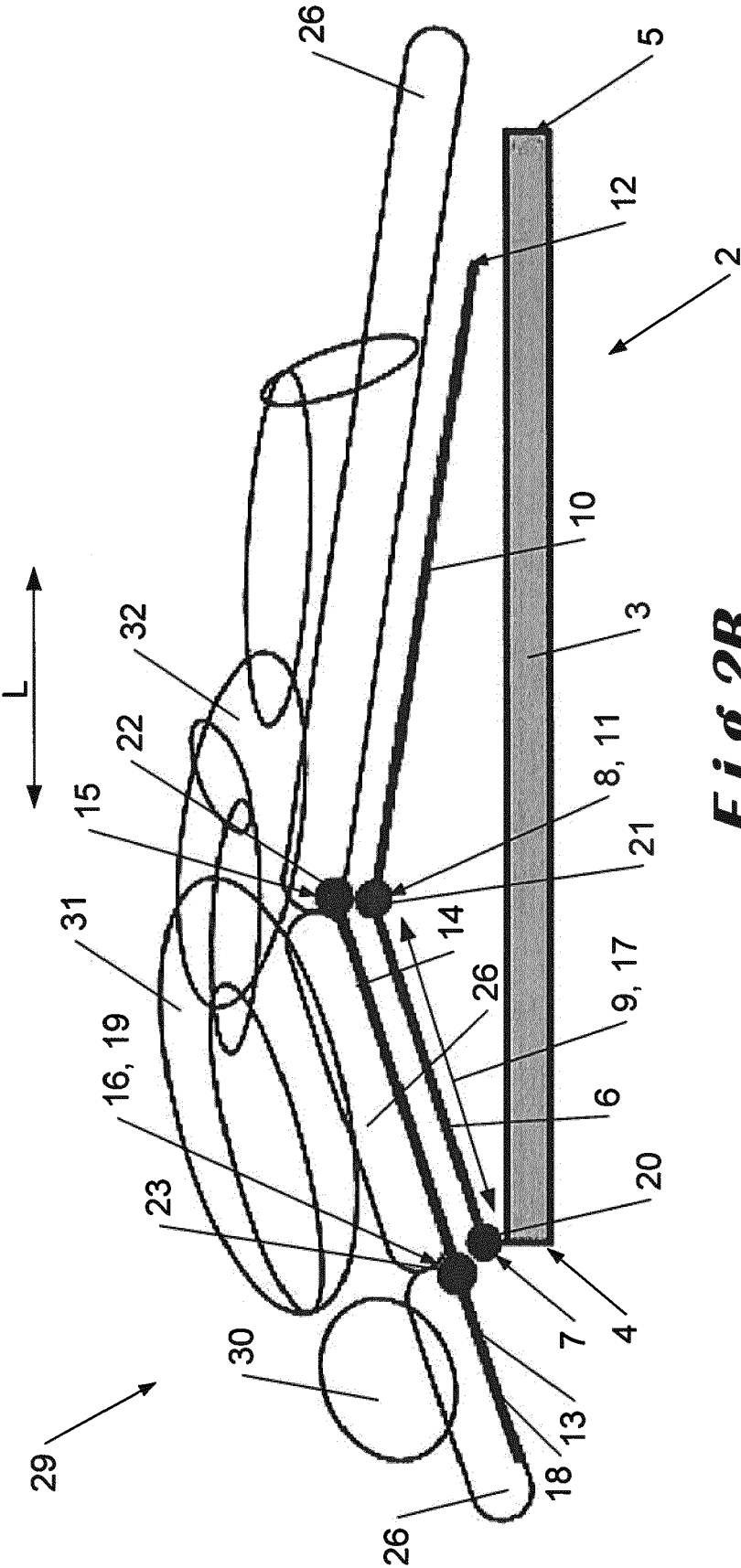
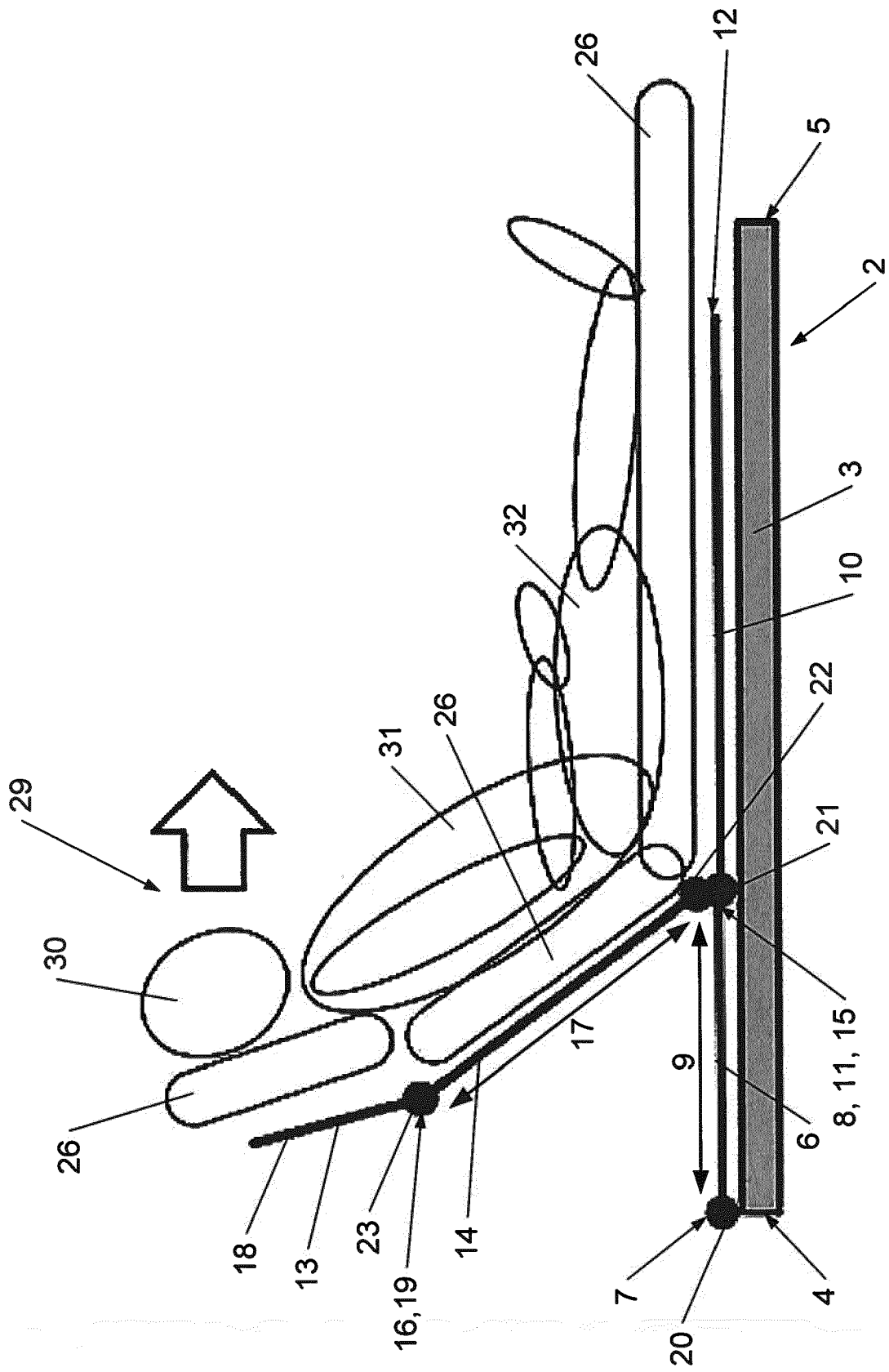
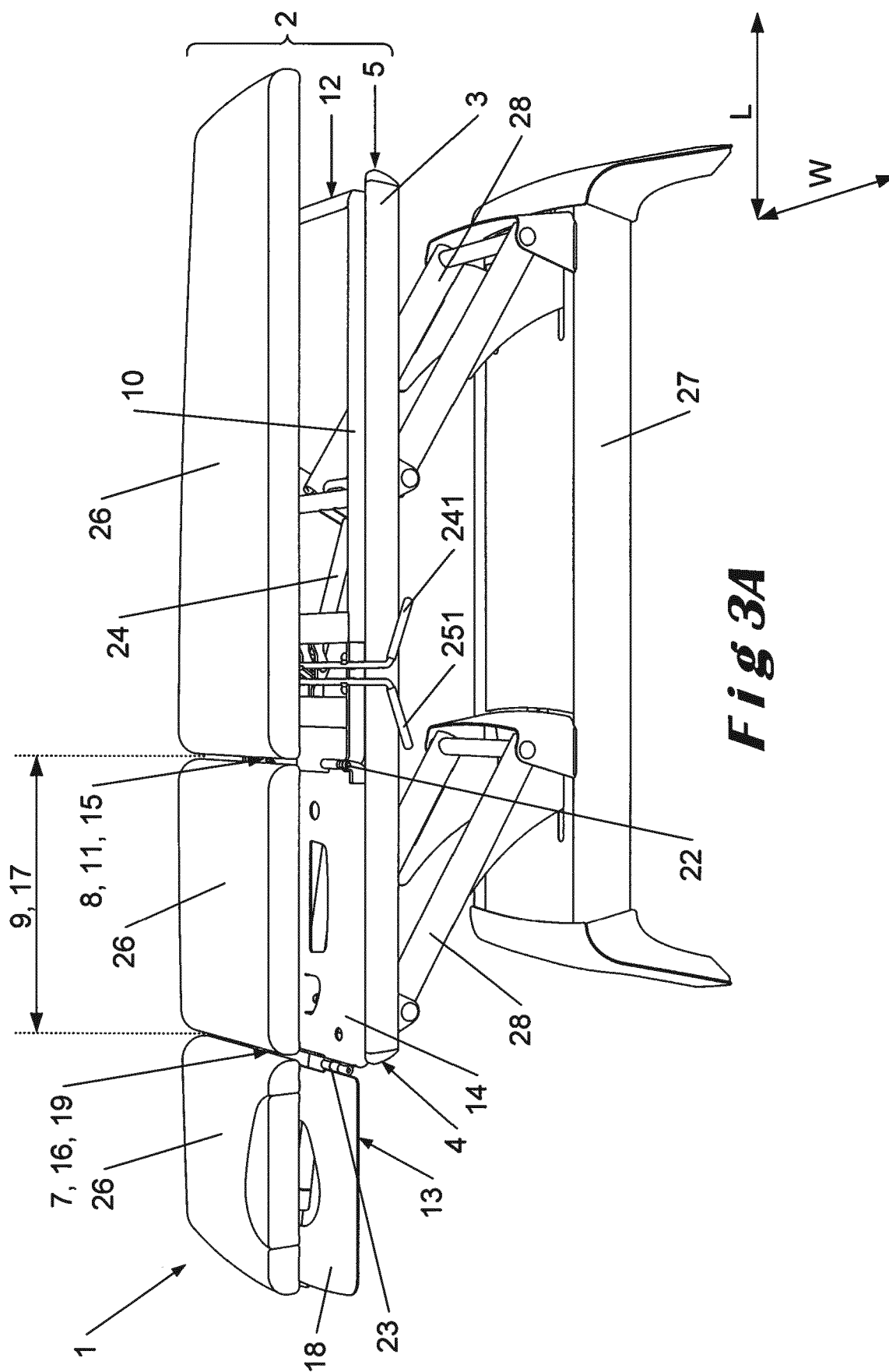
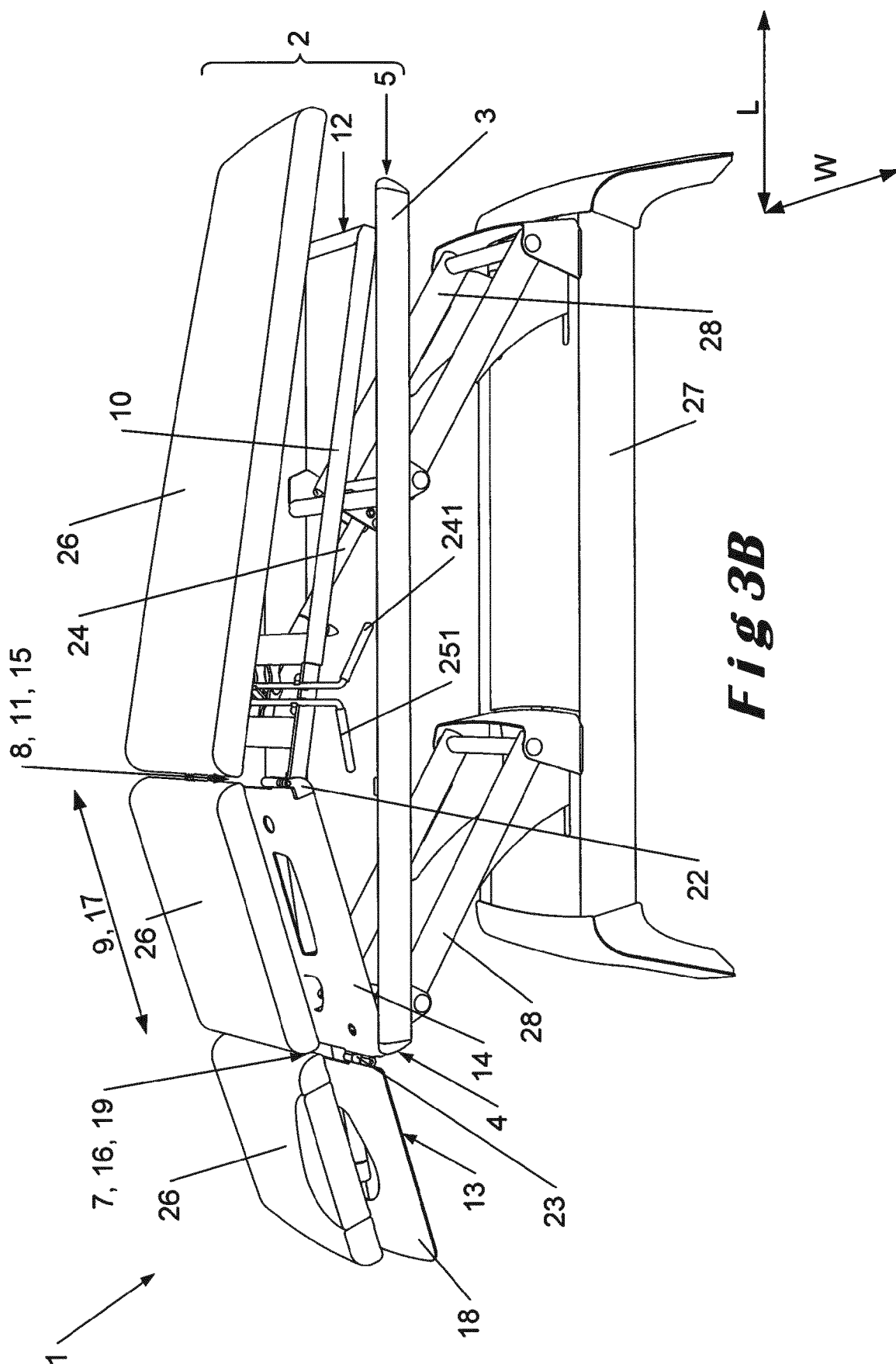


Fig 2B







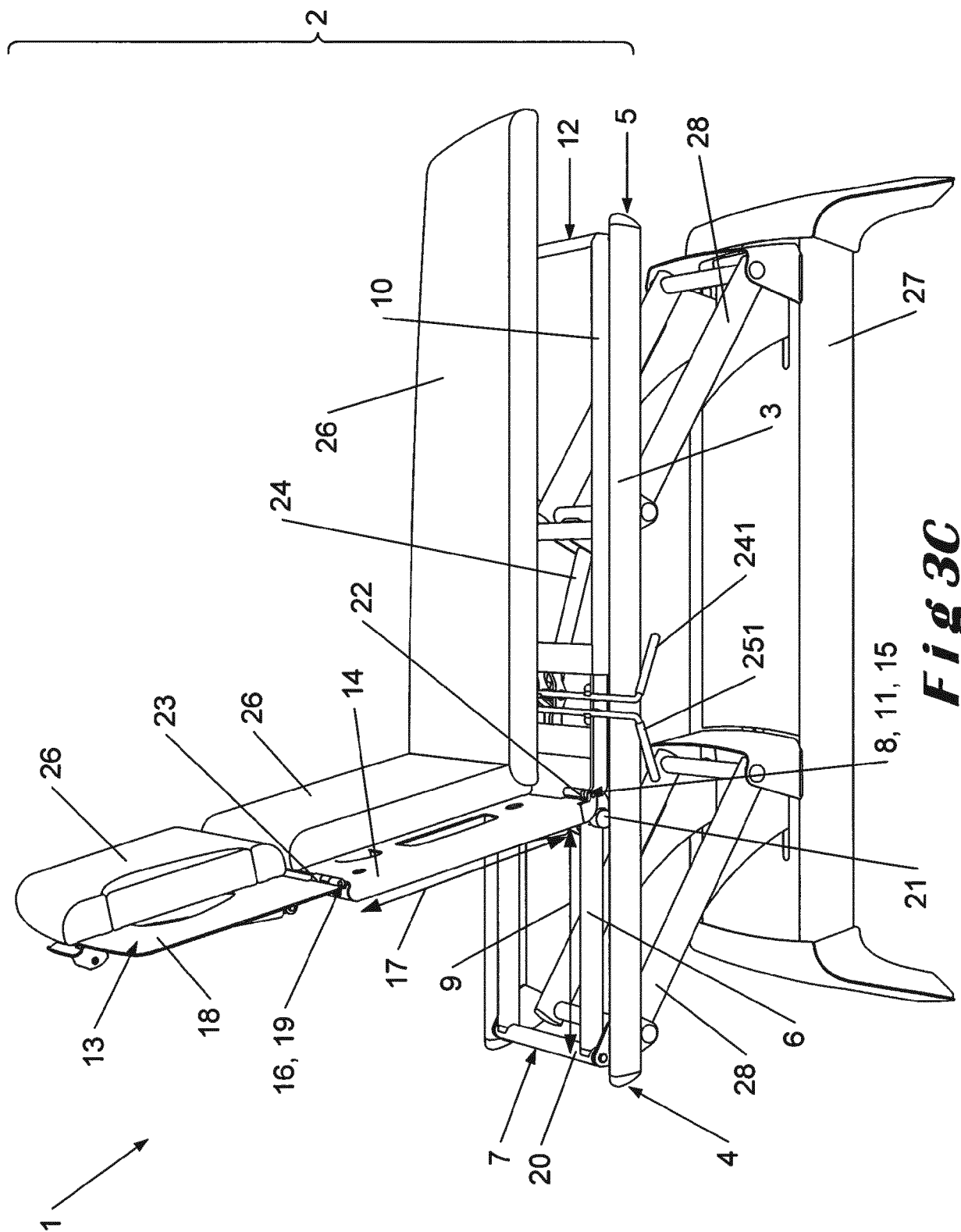


Fig 3C

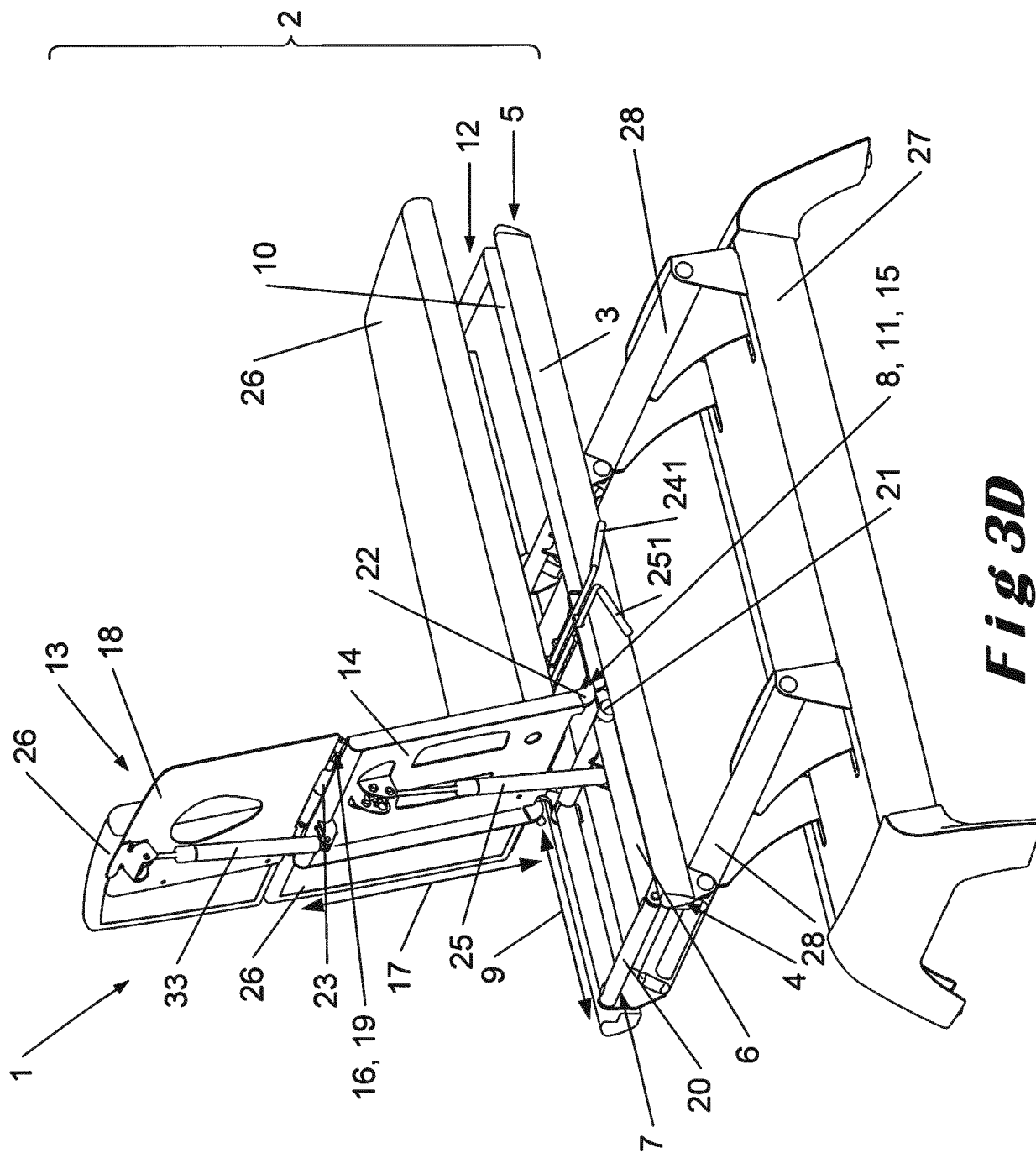


Fig 3D



EUROPEAN SEARCH REPORT

Application Number
EP 18 18 8990

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	EP 0 692 234 A2 (OLARU NICOLAIE [DE]) 17 January 1996 (1996-01-17) * column 7, line 6 - column 10, line 50 * * figure 3 * -----	1-5,7,8 6	INV. A61G13/00 A61G13/08
			TECHNICAL FIELDS SEARCHED (IPC)
			A61G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 January 2019	Examiner Ong, Hong Djien
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

 1
EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 18 18 8990

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-01-2019

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0692234 A2	17-01-1996	DE 4424562 C1	01-02-1996
		EP 0692234 A2	17-01-1996

15

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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

- EP 1920747 A1 [0002]
- DE 10324038 A1 [0002]