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(54) **A SUPPORT FOR ORTHOPEDIC SEATS**

(57) A support for orthopedic seats comprising a body (10) and a mounting element (30) for mounting the support to the orthopedic seat, wherein the mounting element (30) is mounted pivotally to the body (10), wherein it comprises a locking mechanism for blocking the rotation of the body (10) relative to the mounting element (30), wherein the locking mechanism comprises: at least one pin (41) mounted immovably to the body (10) and cooperating with an opening (31) located in the mounting element (30); an upper guide (42) and a lower guide (43) which are mounted pivotally to the mounting element (30) on one side; an upper slider (44) mounted slidably in the upper guide (42) and mounted immovably to the body (10), wherein a first compression spring (46) for moving the upper slider (44) toward the mounting element (30) is located in the upper guide (42), between the upper slider (44) and the wall of the upper guide (42) which is opposite the mounting element (30); a bottom slider (45) mounted slidably in the bottom guide (43) and mounted immovably to the body (10), wherein a second compression spring (47) for moving the bottom slider (45) toward the mounting element (30) is located in the bottom guide (43) between the bottom slider (45) and the wall of the bottom guide (43) which is opposite the mounting element (30).

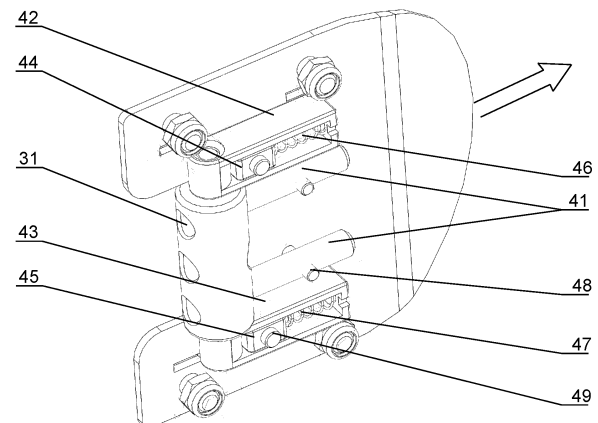


Fig. 3

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Description

TECHNICAL FIELD

[0001] The object of the invention is a support for orthopedic seats.

BACKGROUND

[0002] Orthopedic seats are stand-alone products or parts of larger devices used to provide seating for the user. The orthopedic seat includes at least a horizontal surface where the user sits and may further include a substantially vertical or inclined backrest above it for supporting the user's back and possibly one or two vertical supports below it for supporting lower limbs. Orthopedic seats are distinguished from standard seats by the fact that they comprise supports for supporting specific parts of the body.

[0003] Examples of devices with orthopedic seats are multifunctional devices, standing frames, special strollers etc. For example, multifunctional devices are used for proper verticalization and patient's stabilization in lying, sitting an standing position, also concerning all the transitional positions. Among other things, various types of supports are used for this purpose, for example, thoracic, trunk, hip and lower limb supports. The supports are mounted to the body of the device in such a way that their position can be adjusted to ensure precise control over the position of the person in the device.

[0004] For transporting the device or storing it, there is often a need to fold the supports into a flat position so that the device takes up as little space as possible. Readjusting the supports to the desired support position is labor-intensive and requires a lot of time and adjustments.

[0005] It is advantageous to provide a support design that allows the supports to be quickly folded to a transporting position and thereafter unfolded to their original position.

SUMMARY

[0006] The present disclosure relates a support for orthopedic seats comprising a body and a mounting element for mounting the support to the orthopedic seat, wherein the mounting element is mounted pivotally to the body; wherein it comprises a locking mechanism for blocking the rotation of the body relative to the mounting element, wherein the locking mechanism comprises: at least one pin mounted immovably to the body and cooperating with an opening located in the mounting element; an upper guide and a lower guide which are mounted pivotally to the mounting element on one side; an upper slider mounted slidably in the upper guide and mounted immovably to the body, wherein a first compression spring for moving the upper slider toward the mounting element is located in the upper guide, between the upper slider and the wall of the upper guide which is

opposite the mounting element; a bottom slider mounted slidably in the bottom guide and mounted immovably to the body, wherein a second compression spring for moving the bottom slider toward the mounting element is located in the bottom guide between the bottom slider and the wall of the bottom guide which is opposite the mounting element.

[0007] The present disclosure also relates to an orthopedic seat comprising supports as defined above.

BRIEF DESCRIPTION OF DRAWINGS

[0008] The object of the invention is presented in the example embodiments in the figure, in which:

Fig. 1 shows a support in the isometric rear view;

Fig. 2 shows the support in the isometric front view;

Fig. 3 shows details of the locking mechanism, set in the locked position;

Fig. 4 shows details of the locking mechanism, set in the unlocked position;

Fig. 5 shows the support in the unlocked state;

Fig. 6 shows the support in the unlocked state rotated relative to the working position;

Fig. 7 shows an example of device with an orthopedic seat with the supports according to the invention set in the locked position;

Fig. 8 shows a part of the device with hip supports set in a reclined position;

Fig. 9 shows a part of the device with the supports set in a folded position;

DETAILED DESCRIPTION

[0009] Figs. 1 and 2 shows a support with a locking mechanism. Fig. 3 shows details of the locking mechanism set in the locked position while fig. 4 shows details of the locking mechanism, set in the unlocked position.

[0010] A support for orthopedic seats comprises a body 10 and a mounting element 30 for mounting the support to the seat. The mounting element 30 is mounted pivotally to the body 10. The support further comprises a locking mechanism for blocking the rotation of the body 10 relative to the mounting element 30. The locking mechanism comprises at least one pin 41 mounted immovably to the body 10 and cooperating with an opening 31 located in the mounting element 30, an upper guide 42 and a lower guide 43 which on one side are mounted pivotally to the mounting element 30. In addition, the locking mechanism comprises an upper slider 44

mounted slidably in the upper guide 42 and mounted immovably to the body 10. A first compression spring 46 for moving (pushing) the upper slider 44 toward the mounting element 30 is located in the upper guide 42, between the upper slider 44 and the wall of the upper guide 42 which is opposite the mounting element 30. In addition, the locking mechanism comprises a bottom slider 45 slidably mounted in the bottom guide 43 and mounted immovably to the body 10. A second compression spring 47 for moving (pushing) the bottom slider 45 toward the mounting element 30 is located in the bottom guide 43 between the bottom slider 45 and the wall of the bottom guide 43 which is opposite the mounting element 30.

[0011] By providing the movable sliders 44, 45 in the guides 42, 43, the body 10 is slidable relative to the mounting element 30.

[0012] The body 10 may be made of metal or plastic and may take the form of a plate-shaped element. The element in the form of a plate constituting the body 10 may be shaped, that is, bent or profiled in order to better fit to the body of the user using the seat with the supports.

[0013] Preferably, the locking mechanism is located under the shield 20, which is attached to the body 10 by means of screw elements or by means of snap-in elements.

[0014] The pin 41 may be attached to the body 10 by rivets 48 or screws. Preferably, the locking mechanism comprises two pins 41.

[0015] The sliders 44, 45 may be attached to the body 10 by means of form-fit connection, rivets 49 or screw elements which, however form a coupled connection loose enough to allow movement of the sliders 44, 45 in the guides 42, 43.

[0016] In order to unlock the locking mechanism, the body 10 of the support is pulled in the direction from the mounting element 30, as shown by the arrow in fig. 4 and 5. Thereupon, the sliders 44, 45 in the guides 42, 43 are moved and the compression springs 46, 47 are compressed, causing the body 10 to move relative to the mounting element 30. Thus, the pins 41 moving with the body 10 slide out of the openings 31 of the mounting element 30. As a result, relative rotational movement of the body 10 and the mounting element 30 is possible, allowing the support to be adjusted to a folded position, that is, for example, to a flat position in which the support is substantially parallel to one of the main support surfaces of the device with the orthopedic seat (fig. 9). Once the movement of the support is unlocked, it is also possible to adjust it to a reclined position - for example, as shown for hip or pelvic support 2 in fig. 8. The locking mechanism remains in the unlocked position due to the non-axial positioning of the pins 41 relative to the openings 31 caused by the rotation of the support relative to the mounting element 30.

[0017] In order to return the support to its working position, i.e. to a position supporting the corresponding area of the user's body, it is sufficient to rotate the support

until the pins 41 are positioned in the axis of the openings 31 and slide into the openings 31. Thus, when the pins 41 are aligned with the axis of the openings 31, the compression springs 46, 47 expand, causing the body 10 to move toward the mounting element 30 - the locking mechanism returns to the locked position.

[0018] The locking mechanism described above may be used for all types of supports, such as thoracic supports, trunk supports, hip/pelvic supports and lower limbs supports.

[0019] The pivotable support makes it easier to transport and store orthopedic devices that for example have a reclinable backrest. By providing the pivotable supports to the orthopedic seat, and by setting the supports to the folded position, the backrest may fit more closely to the surface of the seat and thus the device will have smaller dimensions when folded. The retractable support with a locking mechanism makes it easier for people with disabilities to use orthopedic seat devices, and allows them to use the device more easily after transporting it.

Claims

1. A support for orthopedic seats comprising a body (10) and a mounting element (30) for mounting the support to the orthopedic seat, wherein the mounting element (30) is mounted pivotally to the body (10); **characterized in that** it comprises a locking mechanism for blocking the rotation of the body (10) relative to the mounting element (30), wherein the locking mechanism comprises:

- at least one pin (41) mounted immovably to the body (10) and cooperating with an opening (31) located in the mounting element (30);
- an upper guide (42) and a lower guide (43) which are mounted pivotally to the mounting element (30) on one side;
- an upper slider (44) mounted slidably in the upper guide (42) and mounted immovably to the body (10), wherein a first compression spring (46) for moving the upper slider (44) toward the mounting element (30) is located in the upper guide (42), between the upper slider (44) and the wall of the upper guide (42) which is opposite the mounting element (30);
- a bottom slider (45) mounted slidably in the bottom guide (43) and mounted immovably to the body (10), wherein a second compression spring (47) for moving the bottom slider (45) toward the mounting element (30) is located in the bottom guide (43) between the bottom slider (45) and the wall of the bottom guide (43) which is opposite the mounting element (30).

2. An orthopedic seat comprising supports according to claim 1.

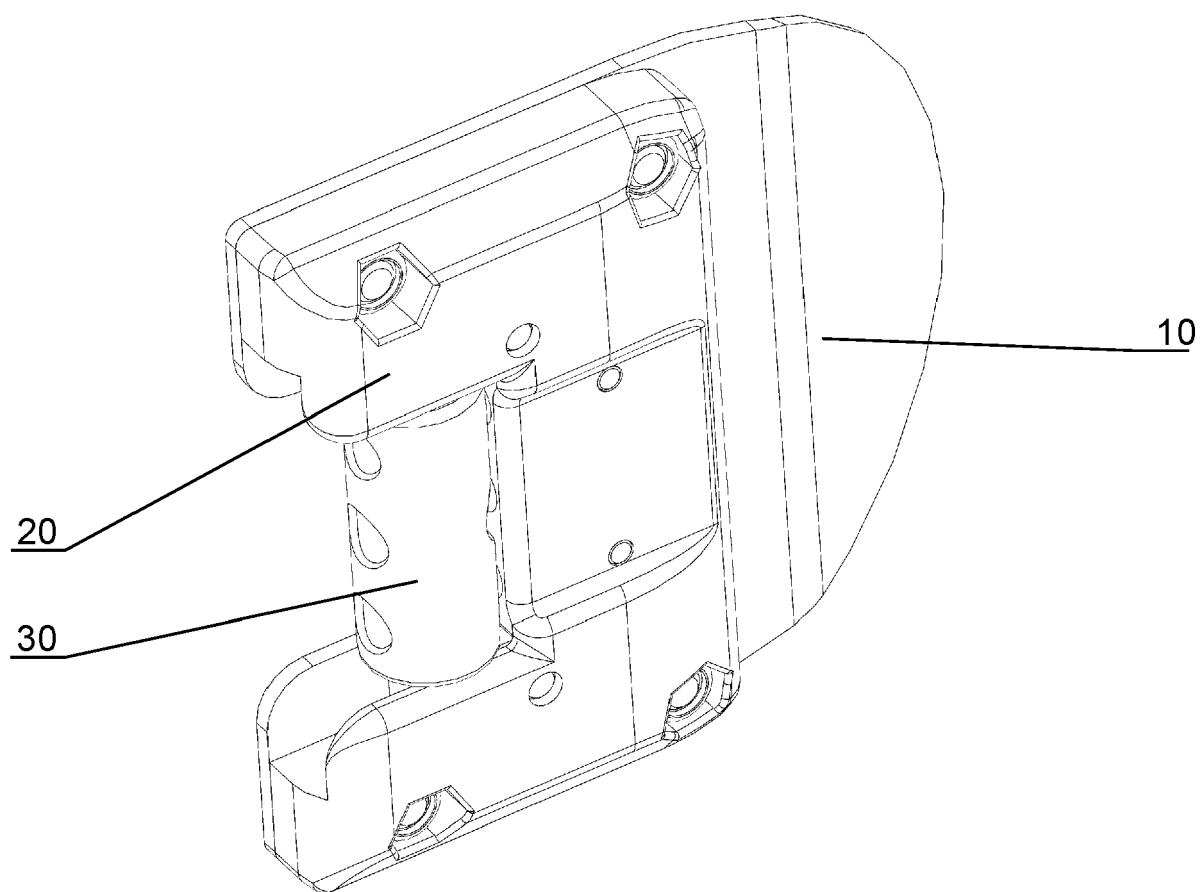


Fig. 1

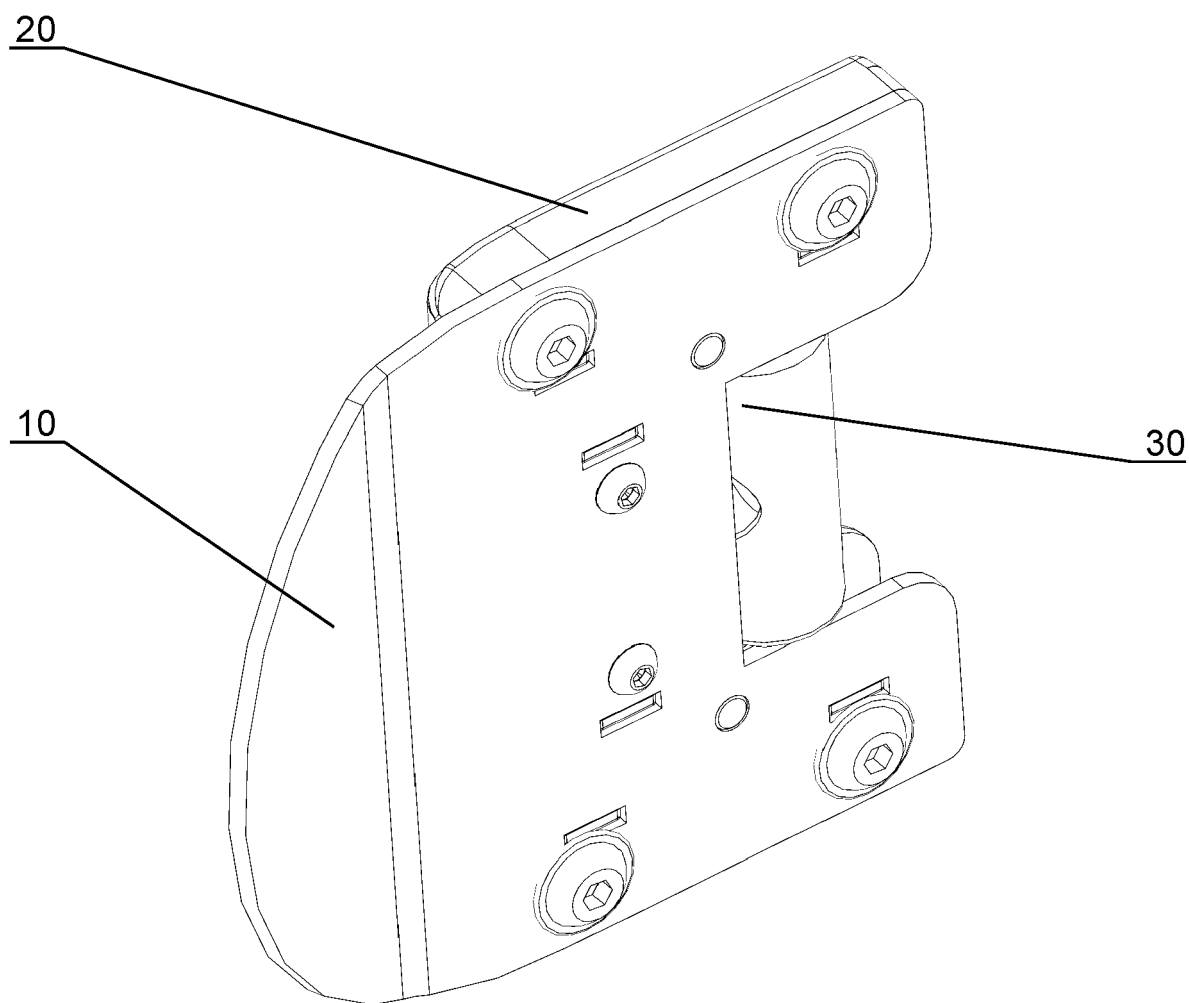


Fig. 2

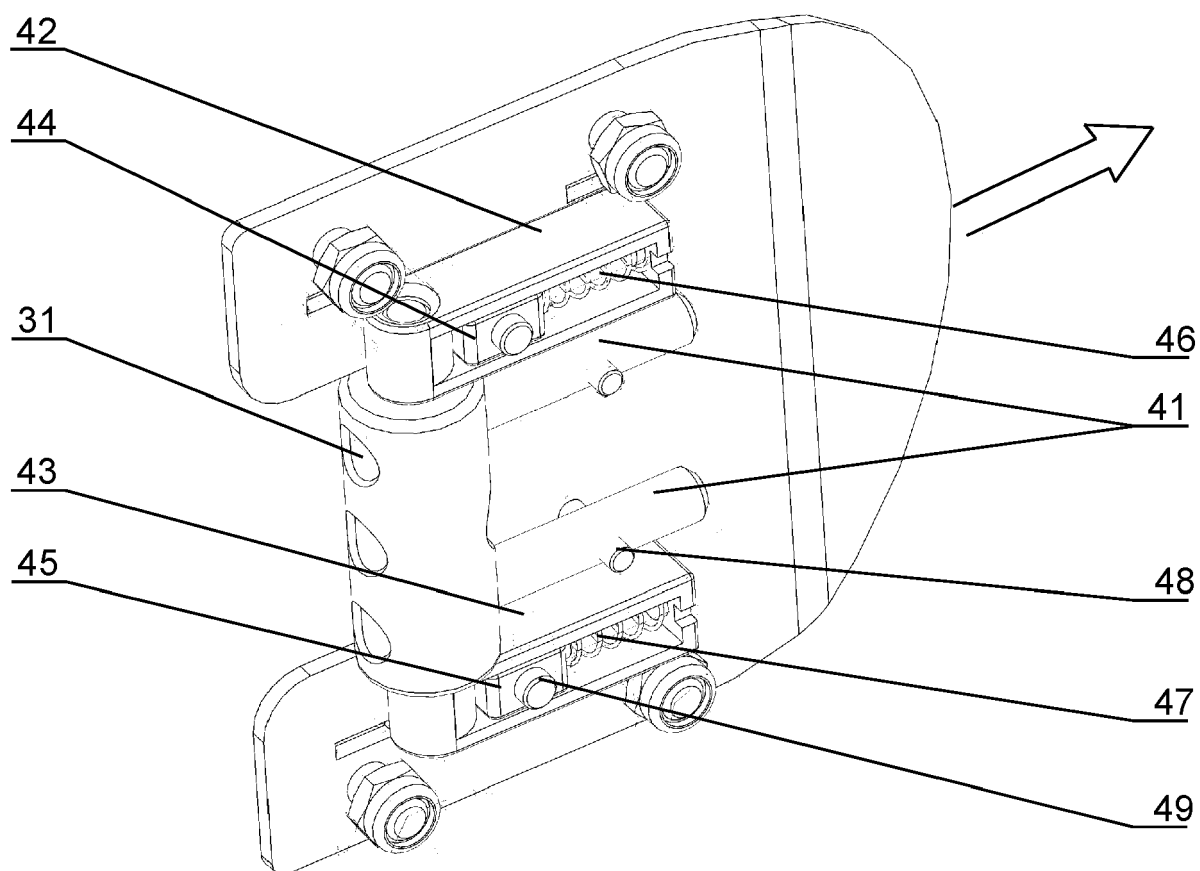


Fig. 3

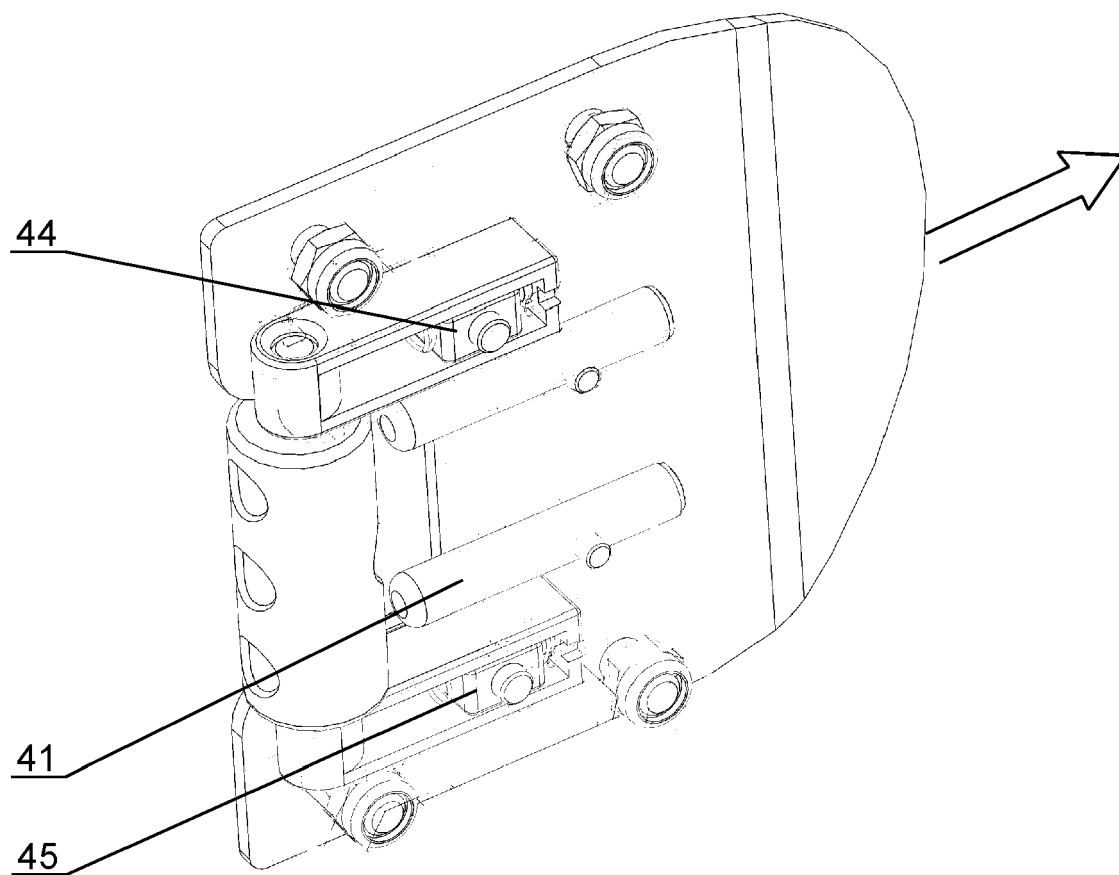


Fig. 4

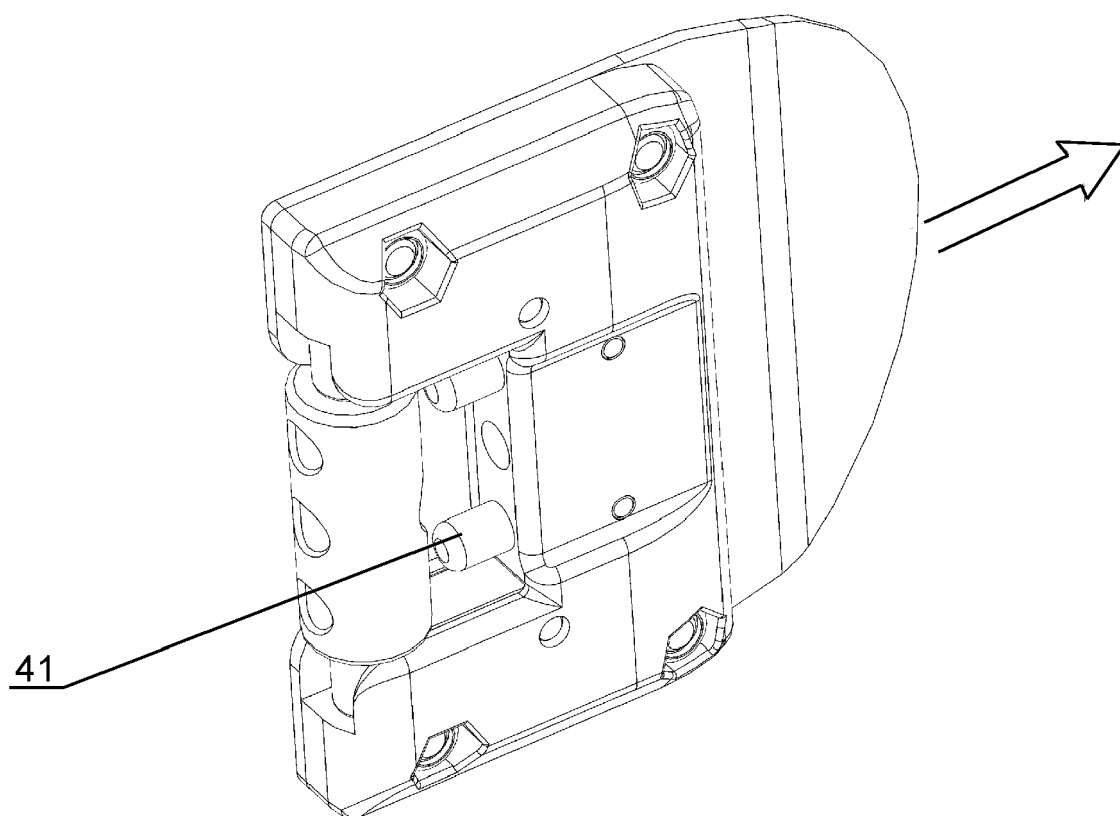


Fig. 5

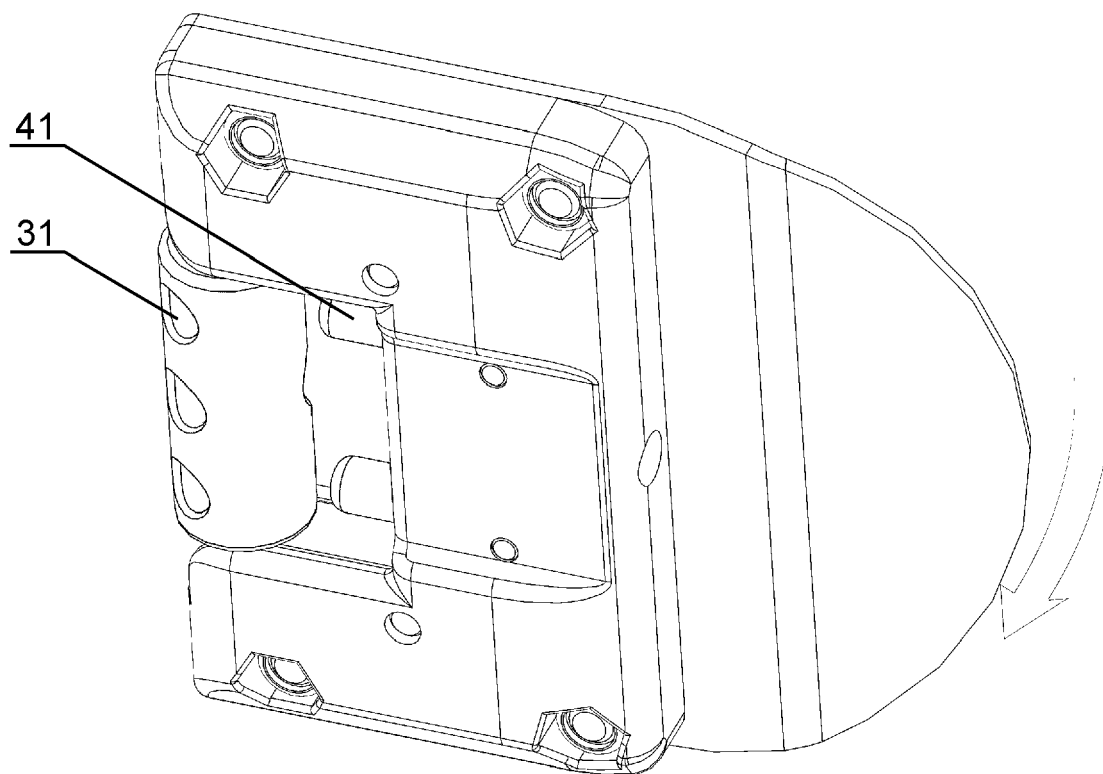


Fig. 6

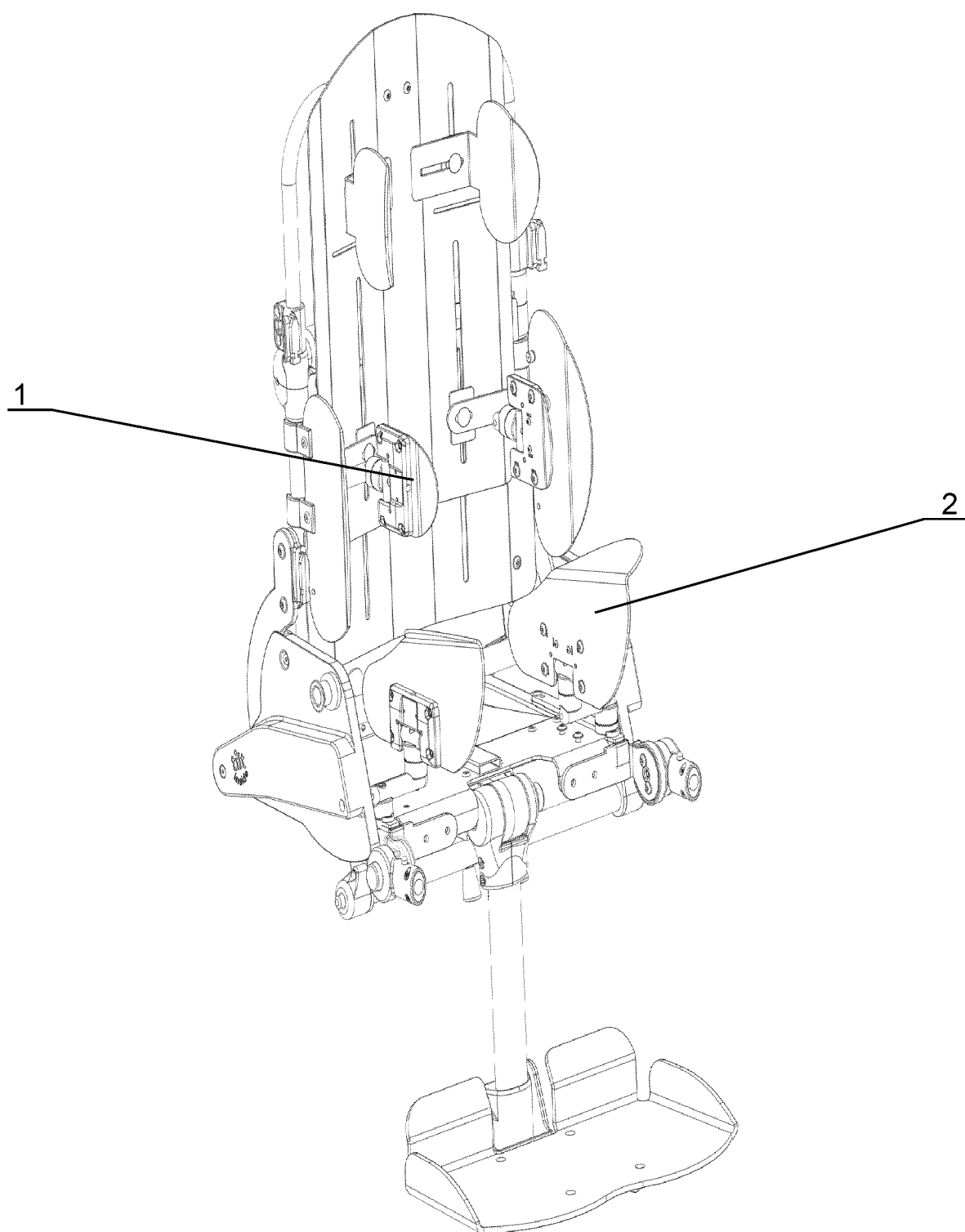


Fig. 7

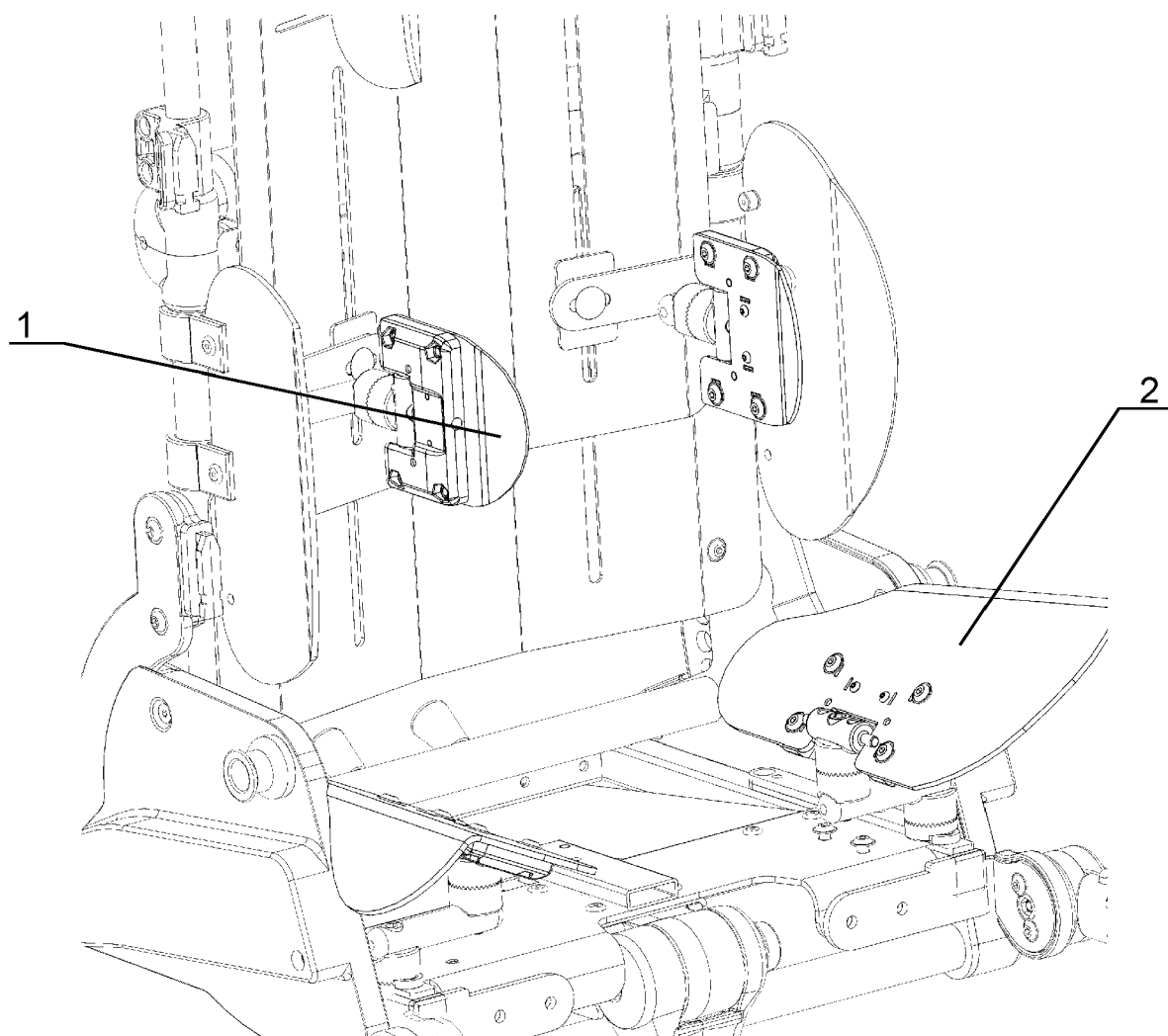


Fig. 8

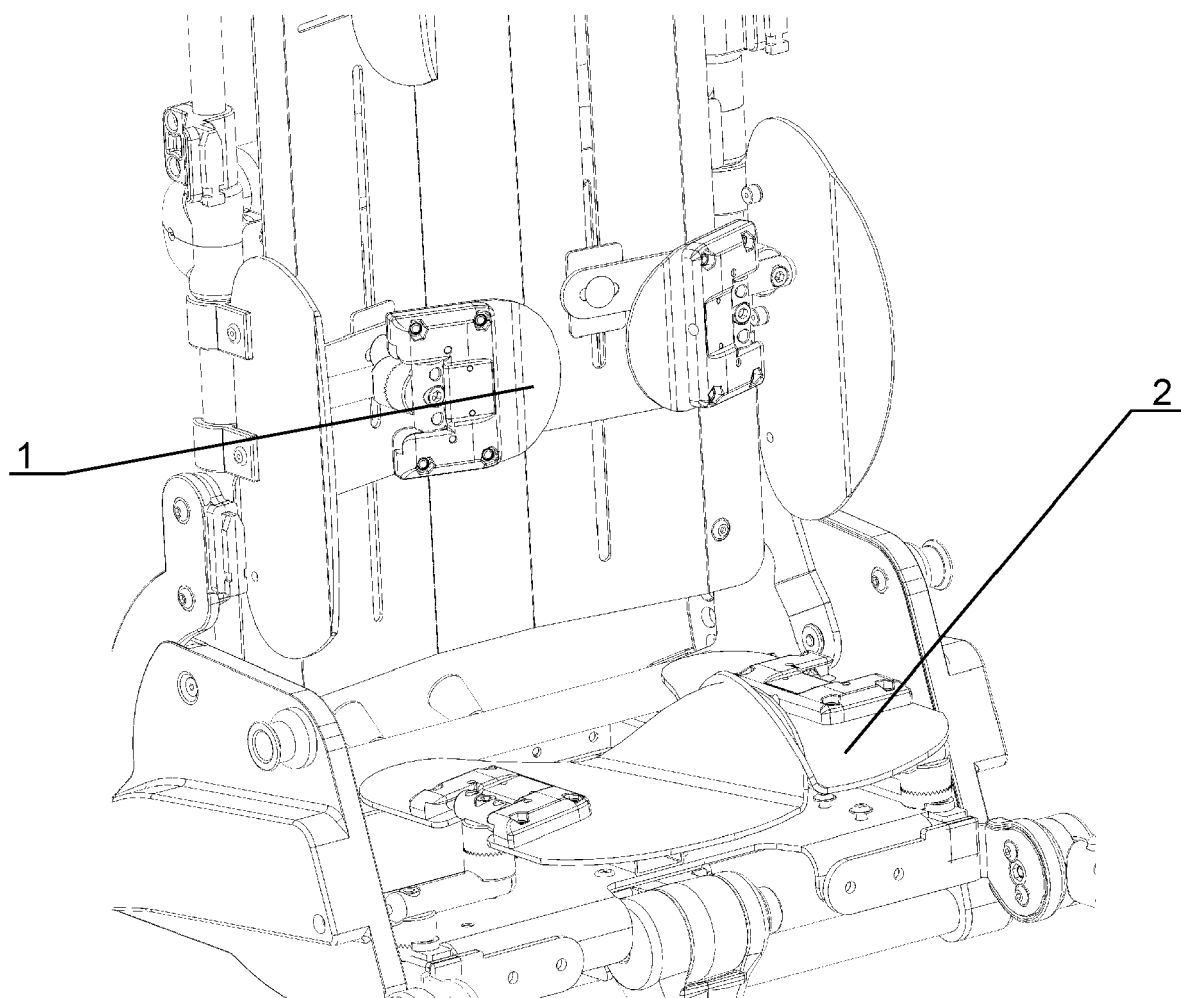


Fig. 9



EUROPEAN SEARCH REPORT

Application Number

EP 23 46 1693

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 8 888 118 B2 (STRYKER CORP [US]) 18 November 2014 (2014-11-18) * column 10, line 1 - column 14, line 19 * * figures 11-18 * -----	1,2	INV. A61G5/12
			TECHNICAL FIELDS SEARCHED (IPC)
			A61G
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		2 May 2024	Schiffmann, Rudolf
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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
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