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(54) **Mounting assembly**

(57) The invention relates to a mounting assembly for mounting an accessory to a frame element of a passenger conveyance device, especially of a wheelchair or of a scooter, adjacent to a seating area of the passenger conveyance device, wherein the assembly comprises at least one connection element connectable to at least one

first connection point of the frame element and to at least one second connection point of the accessory, wherein the connection element is pivotable relative to the frame element in the first connection point around a first, mainly vertical axis and relative to the accessory in the second connection point around a second axis being parallel to the first axis.

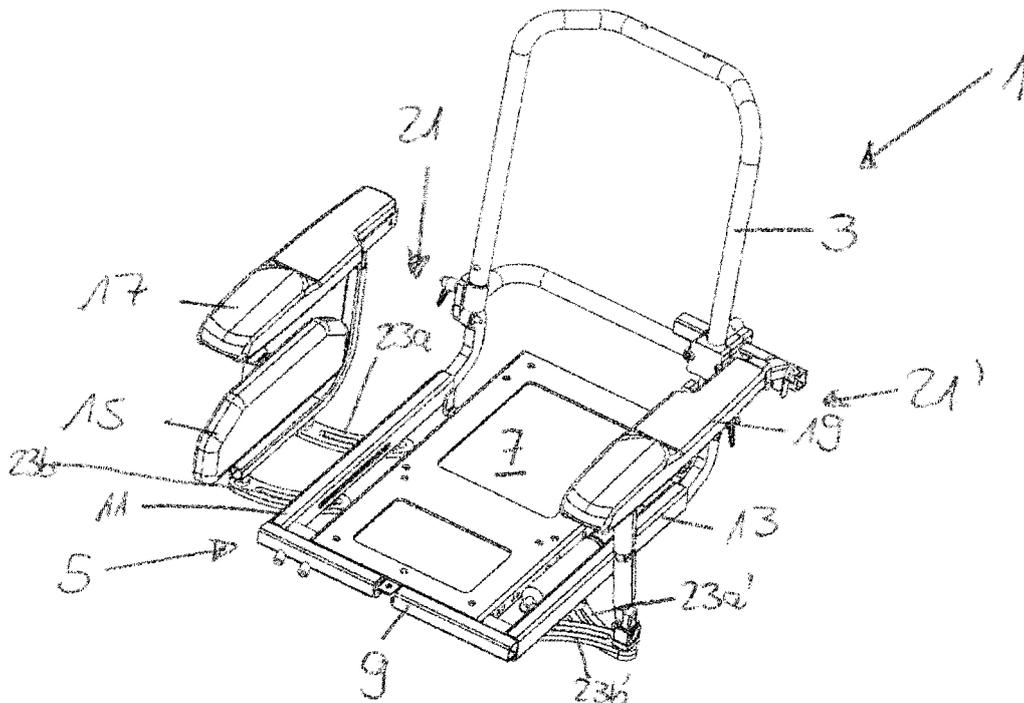


Fig. 1

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Description

5 [0001] The present invention relates to a mounting assembly for mounting an accessory to a frame element of a passenger conveyance device, especially of a wheelchair or of a scooter, adjacent to a seating area of the passenger conveyance device, wherein the assembly comprises at least one connection element connectable to at least one first connection point of the frame element and to at least one second connection point of the accessory.

[0002] Passenger conveyance devices are, for example known in form of wheelchairs or mobility scooters. These passenger conveyance devices have a frame structure on which a seat assembly is mounted or by which such a seat assembly is at least partly provided.

10 [0003] Such passenger conveyance devices are especially used by handicapped persons having a variety of constitutions. To ease such handicapped persons a handling of the passenger conveyance device and to provide a maximum comfort, adjacent to a seating area accessories like armrests, control elements or side plates are located. For a maximum comfort it is necessary to adapt the location of these accessories to the respective constitution of the person using the passenger conveyance device. Especially different persons need different seat widths and also, especially depending on the seat position, the accessories has to be positioned in different positions, especially with respect to a forward or rearward traveling direction of the passenger conveyance device.

15 [0004] Also it is helpful that the position of the accessory might be changed or adapted, especially when the seat position of the person is changed, for example an inclination angle of a backrest is changed. This is important as it is necessary to adapt the position of the accessories when frequently changing the seat position, what is especially important for handicapped persons to avoid unilateral stresses.

20 [0005] In the state of the art different proposals has been made to allow such an adaptation of the position of the accessory, especially to change a width of a seat. In some cases a width adjustment is achieved by using several seat frames, using several armrest assemblies. To avoid the exchange of complete components it is also for example known in the state of the art to provide a seat frame with a plurality of openings or recesses into which a horizontal extending element of an armrest can be introduced. By an adjustment of the armrest into/out of the frame or the recess a width adjustment is achieved. These respective receipts are located in different positions on the seat frame along a traveling direction of the wheelchair. In this way also the horizontal position of the armrest along the seating area can be adjusted. Anyhow the width adjustment is restricted, as usually in the area of the seat frame, especially underneath the seat frame, additional elements, especially functional elements of the wheelchair, for example wheelchair mounting or seat lifting and tilting devices are located. Thus the horizontal element of the armrest can only be introduced a restricted amount or depth into the respective recess, especially it cannot go into the area where the functional elements are located.

25 [0006] Thus the problem, that it is necessary to provide several seat frames of different sizes, especially widths, is not sufficiently overcome because the range of adjustment required is too large to be accommodated by such armrests. Furthermore to allow an adjustment of the armrest out to a wide dimension the respective metal parts, especially the horizontal elements, have to be large and therefore can be bend easily under a user load leading to instabilities and uncomfot for a user. Thus the bending of the element on the outer side of the frame restricts the dimentsions and too much overhang on the outer side leads to a collision of the element with further modules due to a vertical movement around the recess.

30 [0007] Furthermore to allow an adjustment of an armrest along a seating frame WO 93/15632 A1 proposes a generic mounting assembly in form of an adjustable armrest mounting assembly. The mounting assembly includes a body which is formed to receive an end of an armrest post-portion. The mounting assembly is coupled to a frame element of the wheelchair by releasable fasteners. To connect a main body of the mounting assembly to the fasteners the main body includes a mounting groove that is formed and dimensioned to slidably receive an enlarged head of the fasteners. For movement of the mounting block along the wheelchair member the fasteners are not tightened. This movement should permit an alignment between the armrest post-portion and the mounting body. By tightening the fasteners the mounting block is secured to the frame assembly. However this armrest mounting assembly has the drawback that an adaptation of the position of the armrest is only possible in one dimension, especially it is not possible to adjust a seat width.

35 [0008] Furthermore WO 2006/047341 A2 discloses a seat assembly for a wheelchair. Especially an armrest assembly is disclosed comprising an armrest base onto which an armrest pad is located. The base maybe secured to a backrest by a rear mount, wherein the rear mount is connected to a base rear mount rod. The mount rod is curved and by changing a position of the rod within the rear mount a seat width is adjustable and by changing a rotational position of the mount rod within the rear mount simultaneously a height and a horizontal position of the armrest is changed. However also this armrest assembly has the same drawbacks as already described above, especially only a limited adjustment of the seat width is possible due to the restricted dimensions of the mount rod. Thus also for this assembly a plurality of differently dimensioned frame components has to be provided to allow an adjustment over a full range. Furthermore it is not possible to adjust the horizontal position of the armrest without changing the height of the armrest.

40 [0009] It is thus an object of the invention to further develop the generic mounting assembly to overcome the disadvantages known in the state of the art, especially to provide a mounting assembly allowing an adjustment of the position

of the accessory over a wide range without the necessity to change a component of the assembly and to provide a mounting assembly allowing a two-dimensional adjustment of the position of the accessory, especially into a front/rear as well as left/right direction of the passenger conveyance device to allow a simple adjustment of the armrest and thus a seat in width and depth, without changing necessarily the position in a third dimension.

5 **[0010]** This object is achieved according to the invention in that the connection element is pivotable relative to the frame element in the first connection point around a first, mainly vertical axis and relative to the accessory in the second connection point around a second axis being parallel to the first axis.

10 **[0011]** Furthermore it is proposed that the accessory comprises an armrest, a control element, especially to drive and/or steer the passenger conveyance device, a side plate, a parasol, an input device, like a keyboard and/or an output device, like a monitor, a touch screen and/or a loudspeaker. With the invention it is furthermore proposed that the frame element is comprised by a seat frame, a side frame, a support frame and/or a backrest frame.

[0012] An assembly according to the invention may be furthermore characterized in that the connection element is connected to the first connection point in at least one first mounting point and/or is connected to the second connection point in at least one second mounting point.

15 **[0013]** Further advantageous embodiments of the invention can be characterized in that the connection element has along a connecting line between the first mounting point and the second mounting point and/or in a plane perpendicular to the first axis and the second axis at least partly a straight, a curved, an arcuated angled course and/or contour.

20 **[0014]** With the invention it is furthermore proposed that the connection element is movable relative to the first connection point and/or the second connection point in a direction perpendicular to the first vertical axis, the distance between the first mounting point and the second mounting point is alterable and/or the first mounting point and/or the second mounting point is/are movable along a course and/or contour of the connection element, especially a course and/or contour in a plane perpendicular to the first axis and the second axis.

25 **[0015]** An assembly according the invention maybe further characterized by at least one first connection device located at the first connection point, at least one second connection device located at the second connection point, at least one first mounting device located at the first mounting point and/or at least one second mounting device located at the second mounting point, wherein preferably the first connection device is pivotable around the first axis and/or the second connection device is pivotable around the second axis and/or the first connection device and/or the second connection device comprise(s) at least one recess to at least partly receive the connection element, preferably the first mounting device and/or the second mounting device, especially to receive a rail, a flute, a pin, an extension, an embossment and/or an bushing comprised by the connection element and/or to encompass at least a part of the outer contour of the connection element, and/or the first mounting device and/or the second mounting device comprise(s) at least one recess to at least partly receive the first connection device and/or the second connection device, especially a rail, a flute, a pin, an extension, an embossment and/or an bushing comprised by the first connection device and/or the second connection device and/or the first mounting device and the second mounting device are formed integrally, especially in form of at least one rail, at least one groove, at least one slot, at least one extension, at least one cut out and/or at least one embossment, preferably having at least partly a curved, straight, angled and/or arcuated course in a plane perpendicular to the first axis and the second axis and/or in which preferably the first connection device and/or the second connection device is/are at least partly recessed and/or is/are slideable and/or movable, especially in a direction perpendicular to the first axis and the second axis.

35 **[0016]** Further advantageous embodiments of the invention can be characterized in that the frame element comprises at least two, especially a plurality of, first connection points and/or the accessory comprises at least two, especially a plurality of, second connection points, to which the connection element, the first connection device, the second connection device, the first mounting device and/or the second mounting device is/are, especially alternatively, connectable.

40 **[0017]** Also a mounting assembly according the invention may be characterized by at least two, preferably a plurality of, connection elements, wherein a first connection element is connected to a first first connection point and connected to a first second connection point and a second connection element is connected to a second first connection point and connected to a second second connection point.

45 **[0018]** In this embodiment it is especially preferred that the first axis of the first first connection point and the first axis of the second first connection point are identical or the second axis of the first second connection point and the second axis of the second second connection point are identical. In an alternative it is preferred that the first axis of the first first connection point and the first axis of the second first connection point are parallel to each other, especially spaced by a first distance from each other, and/or the second axis of the first second connection point and the second axis of the second second connection point are parallel to each other, especially spaced by a second distance from each other, wherein preferably the first distance is identical to the second distance, and/or the first connection element and the second connection element are parallel to each other, especially in a plane perpendicular to the first axis and the second axis.

50 **[0019]** A mounting assembly according to the invention may further comprise at least one first locking device, especially comprised, at least partly by the first connection device, the second connection device, the first mounting device and/or

the second mounting device, to reduce or exclude a movement of the connection element, especially around the first axis and/or in a direction perpendicular to the first axis, and/or at least on second locking device to reduce or exclude a movement of the connection element, especially around the second axis and/or in a direction perpendicular to the second axis, wherein preferably the first locking device and/or the second locking device comprise at least one spur gearing, at least one clamping device, at least one click-stop device, at least one brake device, at least one block device, at least one crimping device and/or at least one notch device.

[0020] With the invention it is proposed that the connection element and/or the accessory is/are rotatable, especially in the first connection point and/or the second connection point, around a third axis being perpendicular to the first axis and/or the second axis, the accessory is slideable movable relative to the connection element, especially the second connection point is movable along a contour of the accessory and/or the accessory is movable in a direction parallel to the second axis. Finally the invention proposes for the mounting assembly that vertical relative to a seat plane of the passenger conveyance device and/or a surface on which the passenger conveyance device is moving, especially the first axis and second axis are mainly parallel to a normal direction of the seat plane and/or mainly parallel to a normal direction of the surface.

[0021] Furthermore the invention provides a passenger conveyance device comprising at least one inventive mounting assembly.

[0022] Thus the invention is based on the surprising finding that by providing a connection element between a frame element of a passenger conveyance device, especially a wheelchair, and an accessory, like an armrest or a side plate, such that the connection element is pivotable relative to the frame element as well as the accessory around respective vertical axis, it is possible to move the accessory over a wide range in a two-dimensional way, for example into a front/rear and simultaneously in a left/right direction, without the necessity to disconnect the accessory from the frame element and without limitations due to elements located underneath a seating area of the passenger conveyance device.

[0023] By allowing a movement of the connection element, especially relative to the frame element, in a direction perpendicular to the rotational axis the forward/rear position of the accessory as well as the seat width is adjustable over a great variety of positions, especially infinitely variable in case the connection element has a curved or arcuated course/contour, the variety of positions, especially the maximum width of the seat assembly, can be extended in comparison to the seat assemblies known is the state of the art. Connection elements in form of a shaped part allow to be moved over a long distance without entering a center portion of the seat assembly and the problem that they might collide with parts underneath the seating area, like several modules for the seat adjustment as lift or tilt, is avoided. Thus especially the effective length of the connection element can be extended in comparison to connection elements known in the state of art and thus a broader variety of widths of the seat can be reached.

[0024] In case a plurality of connection points at which the connection element maybe connected to the frame element is provided, it is additionally possible to cover a wide range of seat depth and width adjustments via the armrest without the necessity to use different seat frames or different connection elements or armrests.

[0025] Furthermore it is possible that the mounting assembly may comprise more than one connection element allowing a strengthening of the mounting assembly without reducing the adjustment variety. The connection elements work especially together to support the accessory but their relative position to each other maybe adjusted. Especially the connection elements maybe mounted to the frame and the accessory such that they are positioned with respect to each other to form a parallelogram or they might be located such that they form a triangle with the frame element, wherein preferably the frame element forms the base of the triangle and the connection elements form the legs of the triangle.

[0026] In both cases the maneuverability, especially rotatability, of the connection elements allow to change continuously the length of the legs as well as the interior angles of the triangle or the parallelogram, allowing to position each corner of the parallelogram or triangle in an arbitrary point in two dimensions. Especially in case the connection elements are curved in opposite directions (triangle) or the same direction (parallelogram), in this way a reliable connection of the accessory to the frame element can be reached and high loads acting on the accessory are acceptable for a broad variety of seat widths without causing any incomfort for a user. By the shape of the connection elements and a sliding/rotational adjustment infinite width and depth adjustment is possible simultaneously.

[0027] Further advantages and features of the invention are presented in the following description in which a preferred embodiment of the invention is shown by the help of the enclosed figures, in which

Figure 1 is a perspective view onto a seat assembly of a wheelchair being connected to two different embodiments of an inventive mounting assembly;

Figure 2 is a perspective view onto the downside of the seat assembly of figure 1;

Figure 3 is a view onto the downside of the seat assembly of figures 1 and 2.

[0028] Figure 1 shows a seat assembly 1 of a passenger conveyance device in form of a wheelchair. The seat assembly

1 comprises a backrest frame 3 and a seat frame 5. By the seat frame 5 a seating area 7 is provided. A length of the seating area 7 is limited by a seat frame front strut 9 and the backrest frame 3. The seat frame 5 comprises furthermore side struts 11, 13. However the width of the seating area is defined by respective accessories in form of a side plate 15 and armrest 17 respectively on the one side and an accessory in form of an armrest 19 on the other side.

5 **[0029]** The accessories in form of the side plate 15 and the armrests 17, 19 are located adjacent to the seating area 7 of the seat assembly 1. The accessories 15, 17 on the one side are connected to a frame element in form of the side strut 11 by an inventive mounting assembly 21 according to a first embodiment whereas the armrest 19 is connected to the frame element in form of the side strut 13 by an inventive mounting assembly 21' according to a second embodiment of the invention. Elements of the mounting assembly 21' corresponding to elements of the mounting assembly 21 have the same reference sign, however with an apostrophe.

10 **[0030]** As can be taken especially from figure 2 the mounting assemblies 21, 21' comprise two connection elements 23a, 23b and 23a', 23b' respectively.

15 **[0031]** The connection elements 23a, 23a' are connected to the frame elements 11, 13 at respective first connection points 25a, 25a' whereas the connection elements 23b, 23b' are connected to the frame elements 11, 13 at second connection points 25b, 25b'. The connection is reached via first connection devices 27a, 27b, 27a', 27b' in form of bushings. The bushings 27a, 27b, 27a', 27b' extend through respective first mounting devices of the connection elements 23a, 23b, 23a', 23b' in form of slots 29a, 29a', 29b, 29b'. The respective position of the bushings 27a, 27b, 27a', 27b' within the slots 29a, 29b, 29a', 29b' define first mounting points.

20 **[0032]** As can be taken especially from figures 2 and 3 the connection devices 27a, 27a', 27b, 27b' maybe located in different positions, especially first connection points 30 along the side struts 11, 13.

25 **[0033]** The connection elements 23a, 23b, 23a', 23b' furthermore comprise a second mounting device in form of bores 31a, 31b, 31a'. A comparison of the mounting assemblies 21 and 21', especially in figure 3 shows that the second mounting devices 31a, 31b are separated from each other whereas the second mounting devices of the connection elements 23a', 23b' are aligned with each other. By the second mounting devices 31a, 31b, 31a' the connection elements 23a, 23b, 23a', 23b' are connected at second connection points to the accessories in form of the side plate 15 and the armrests 17, 19. The accessories provide second connection devices in form of spring biased pins 33a, 33b, 33a'. By the spring biased pins 33a, 33b, 33a' the connection elements 23a, 23b, 23a', 23b' are pressed onto respective second connection devices in form of grooves or embossments having respective spur gearings.

30 **[0034]** As the connection elements 23a, 23b, 23a', 23b' have corresponding spur gearings a rotational movement between the accessory and the connection elements 23a, 23b, 23b' and between the two connection elements 23a', 23b' is restricted to a case in which the armrest or the accessory is moved relative to the frame elements in form of the side strut 11, 13.

35 **[0035]** In the following the functionality of the mounting assemblies 21, 21' is explained. Especially as the connection elements 23a, 23b, 23a', 23b' have a curved shape there is the possibility to move the accessories in form of the armrests 17, 19 in a two-dimensional way in a front/rear and left/right direction. Especially with the different mounting positions it is possible to cover a wide range of seat depth and width adjustments via the inventive mounting assemblies 21, 21'. Furthermore an angle adjustment of the armrests 17, 19 can be reached.

40 **[0036]** For example to change the width of the seat assembly 1 the armrest 17 and the side plate 15 are moved such that the connection elements 23a, 23b are moved along the bushing 27a, 27b. Simultaneously the connection elements 23a, 23b are pivoted around the first and second connection points around respective first axis 35a, 35b defined by the bushings 27a, 27b and around second axis 35a, 35b defined the bores 31a, 31b. By this simultaneous movement of the connection elements 23a, 23b the seat width is altered without changing the horizontal position of the armrest 17. Especially during this movement the connection elements 23a, 23b slide along the connection devices in form of the bushings 27a, 27b along the curve defined by the slots 29a, 29b and in a direction of arrows 39a, 39b. Due to the curved form of the connection elements 23a, 23b they do not extend into the middle area of the seating area 7 and thus can not collide with parts inside this area under the main seat plane where usually several modules for the seat adjustment as lift or tilt are located, when moving in this direction.

45 **[0037]** In the mounting assembly 21 the connection elements 23a, 23b move parallel with respect to each other, especially form partly a parallelogram. In contrast to this in the mounting assembly 21' the connection elements 23a', 23b' are rotating in opposite directions with regard to a first axis 35a', 35b' and a common second axis 37a' when a seat with adjustment and/or an adjustment of the horizontal position of the armrest 19 is made. During this movement of the connection elements 23a', 23b' the interior angles of a triangle, nearly formed by the connection elements 23a, 23b as well as the strut 13 between the connection points, is changed. Furthermore by a longitudinal movement of the connection elements 23a', 23b' in a direction perpendicular to the axis 35a', 35b' and 37a', especially along the arrows 39a', 39b', also the length of the legs of the triangle formed partly by the connection elements 23a', 23b' may be altered. In this way a free choosable location of the second connection point of the armrest 19 in two dimensions is achievable.

50 **[0038]** Thus the invention provides a mounting assembly allowing a connection of an accessory especially, a seat width defining accessory, like an armrest or a side plate, with one and the same mounting assembly for a variety of seat

widths. Especially the position of the accessory may be locked by locking devices or fasteners and by the mounting assembly no need for more than one seat frame and no additional accessory parts is existing.

[0039] The features disclosed in this specification, the claims and the figures may be important for the claimed invention, taken separately or in any combination, for the respective different embodiments.

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Reference sign list

[0040]

10	1	seat assembly
	3	backrest frame
	5	seat frame
15	7	seating area
	9	front strut
20	11	side strut
	13	side strut
	15	side plate
25	17	armrest
	19	armrest
30	21, 21'	mounting assembly
	23a, 23b, 23a', 23b'	connection element
	25a, 25a', 25b, 25b'	connection point
35	27a, 27a', 27b, 27b'	connection device
	29a, 29a', 29b, 29b'	slot
40	30	connection point
	31a, 31b, 31a'	bore
	33a, 33b, 33a'	pin
45	35a, 35b, 35a', 35b'	axis
	37a, 37b, 37a'	axis
50	39a, 39b, 39a', 39b'	arrow

Claims

- 55 **1.** Mounting assembly (21, 21') for mounting an accessory (15, 17, 19) to a frame element (11,13) of a passenger conveyance device, especially of a wheelchair or of a scooter, adjacent to a seating area (7) of the passenger conveyance device, wherein the assembly (21, 21') comprises at least one connection element (23a, 23b, 23a', 23b') connectable to at least one first connection point (25a, 25b, 25a', 25b') of the frame element (11, 13) and to

at least one second connection point of the accessory (13, 17, 19), **characterized in that** the connection element (23a, 23b, 23a', 23b') is pivotable relative to the frame element (11, 13) in the first connection point (25a, 25b, 25a', 25b') around a first, mainly vertical axis (35a, 35b, 35a', 35b') and relative to the accessory (15, 17, 19) in the second connection point around a second axis (37a, 37b, 37a', 37b') being parallel to the first axis (35a, 35b, 35a', 35b').

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2. Mounting assembly according to claim 1, **characterized in that** the accessory comprises an armrest (17, 19), a control element, especially to drive and/or steer the passenger conveyance device, a side plate (15), a parasol, an input device, like a keyboard and/or an output device, like a monitor, a touch screen and/or a loudspeaker.

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3. Mounting assembly according to claim 1 or 2, **characterized in that** the frame element (11, 13) is comprised by a seat frame (5), a side frame, a support frame and/or a backrest frame (3).

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4. Mounting assembly according to one of the preceding claims, **characterized in that** the connection element (23a, 23b, 23a', 23b') is connected to the first connection point in at least one first mounting point and/or is connected to the second connection point in at least one second mounting point.

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5. Mounting assembly according to one of the preceding claims, **characterized in that** the connection element (23a, 23b, 23a', 23b') has along a connecting line between the first mounting point and the second mounting point and/or in a plane perpendicular to the first axis (35a, 35b, 35a', 35b') and the second axis (37a, 37b, 37a') at least partly a straight, a curved, an arcuated, angled course and/or contour.

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6. Mounting assembly according to one of the preceding claims, **characterized in that** the connection element (23a, 23b, 23a', 23b') is movable relative to the first connection point (25a, 25b, 25a', 25b') and/or the second connection point in a direction perpendicular to the first axis (35a, 35b, 35a', 35b'), the distance between the first mounting point and the second mounting point is alterable and/or the first mounting point and/or the second mounting point is/are movable along a course and/or contour of the connection element (23a, 23b, 23a', 23b'), especially a course and/or contour in a plane perpendicular to the first axis and the second axis (37a, 37b, 37a').

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7. Mounting assembly according to one of the preceding claims, **characterized by** at least one first connection device (27a, 27b, 27a', 27b') located at the first connection point (25a, 25b, 25a', 25b'), at least one second connection device located at the second connection point, at least one first mounting device (29a, 29b, 29a', 29b') located at the first mounting point and/or at least one second mounting device (31a, 31b, 31a') located at the second mounting point, wherein preferably the first connection device (27a, 27b, 27a', 27b') is pivotable around the first axis and/or the second connection device is pivotable around the second axis and/or the first connection device and/or the second connection device comprise(s) at least one recess to at least partly receive the connection element, preferably the first mounting device and/or the second mounting device, especially to receive a rail, a flute, a pin, an extension, an embossment and/or an bushing comprised by the connection element and/or to encompass at least a part of the outer contour of the connection element, and/or the first mounting device and/or the second mounting device comprise (s) at least one recess to at least partly receive the first connection device and/or the second connection device, especially a rail, a flute, a pin, an extension, an embossment and/or an bushing comprised by the first connection device and/or the second connection device and/or the first mounting device and the second mounting device are formed integrally, especially in form of at least one rail, at least one groove, at least one slot (29a, 29b, 29a', 29b'), at least one extension, at least one cut out and/or at least one embossment, preferably having at least partly a curved, straight, angled and/or arcuated course in a plane perpendicular to the first axis and the second axis and/or in which preferably the first connection device and/or the second connection device is/are at least partly recessed and/or is/are slideable and/or movable, especially in a direction perpendicular to the first axis and the second axis.

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8. Mounting assembly according to one of the preceding claims, **characterized in that** the frame element (11, 13) comprises at least two, especially a plurality of, first connection points (30) and/or the accessory comprises at least two, especially a plurality of, second connection points, to which the connection element, the first connection device, the second connection device, the first mounting device and/or the second mounting device is/are, especially alternatively, connectable.

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9. Mounting assembly according to one of the preceding claims, **characterized by** at least two, preferably a plurality of, connection elements (23a, 23b, 23a', 23b'), wherein a first connection element (23a, 23a') is connected to a first first connection point and connected to a first second connection point and a second connection element (23b, 23b') is connected to a second first connection point and connected to a second second connection point.

10. Mounting assembly according to claim 9, **characterized in that** the first axis of the first first connection point and the first axis of the second first connection point are identical or the second axis (37a') of the first second connection point and the second axis of the second second connection point are identical.

5 11. Mounting assembly according to claim 9, **characterized in that** the first axis (35a, 35a') of the first first connection point and the first axis (35b, 35b') of the second first connection point are parallel to each other, especially spaced by a first distance from each other, and/or the second axis (37a) of the first second connection point and the second axis (37b) of the second second connection point are parallel to each other, especially spaced by a second distance from each other, wherein preferably the first distance is identical to the second distance, and/or the first connection element (33a) and the second connection element are parallel to each other, especially in a plane perpendicular to the first axis (35a, 35b) and the second axis (37a, 37b).

10 12. Mounting assembly according to one of the preceding claims, **characterized by** at least one first locking device, especially comprised, at least partly by the first connection device, the second connection device, the first mounting device and/or the second mounting device, to reduce or exclude a movement of the connection element, especially around the first axis and/or in a direction perpendicular to the first axis, and/or at least one second locking device to reduce or exclude a movement of the connection element, especially around the second axis and/or in a direction perpendicular to the second axis, wherein preferably the first locking device and/or the second locking device comprise at least one spur gearing, at least one clamping device, at least one click-stop device, at least one brake device, at least one block device, at least one crimping device and/or at least one notch device.

15 13. Mounting assembly according to one of the preceding claims, **characterized in that** the connection element and/or the accessory is/are rotatable, especially in the first connection point and/or the second connection point, around a third axis being perpendicular to the first axis and/or the second axis, the accessory is slideable movable relative to the connection element, especially the second connection point is movable along a contour of the accessory and/or the accessory is movable in a direction parallel to the second axis.

20 14. Mounting assembly according to one of the preceding claims, wherein the first axis (35a, 35a', 35b, 35b') is vertical relative to a seat plane of the passenger conveyance device and/or a surface on which the passenger conveyance device is moving, especially the first axis (35, a, 35b, 35a', 35b') and second axis (37a, 37b, 37a')

25 15. Passenger conveyance device comprising at least one mounting assembly (21, 21') according to one of the preceding claims.

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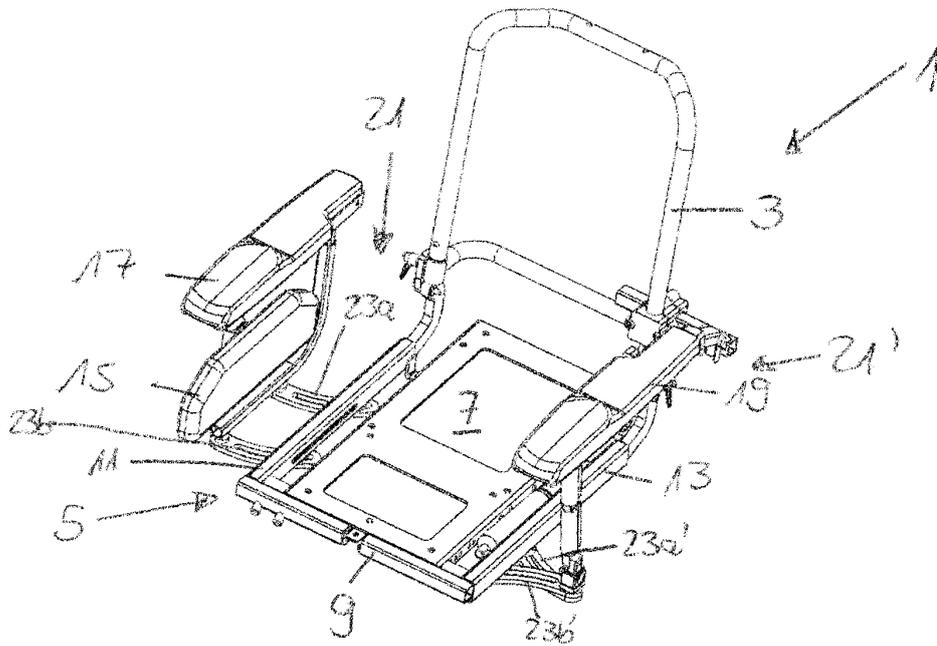


Fig. 1

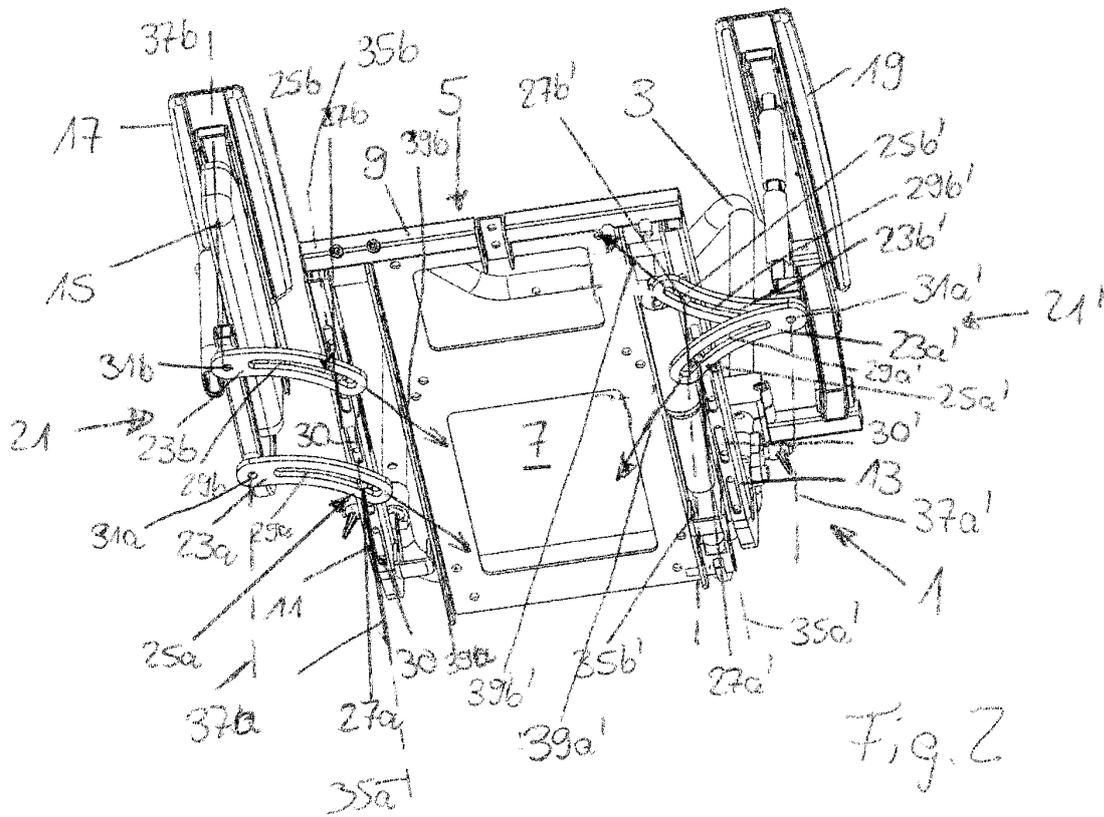


Fig. 2

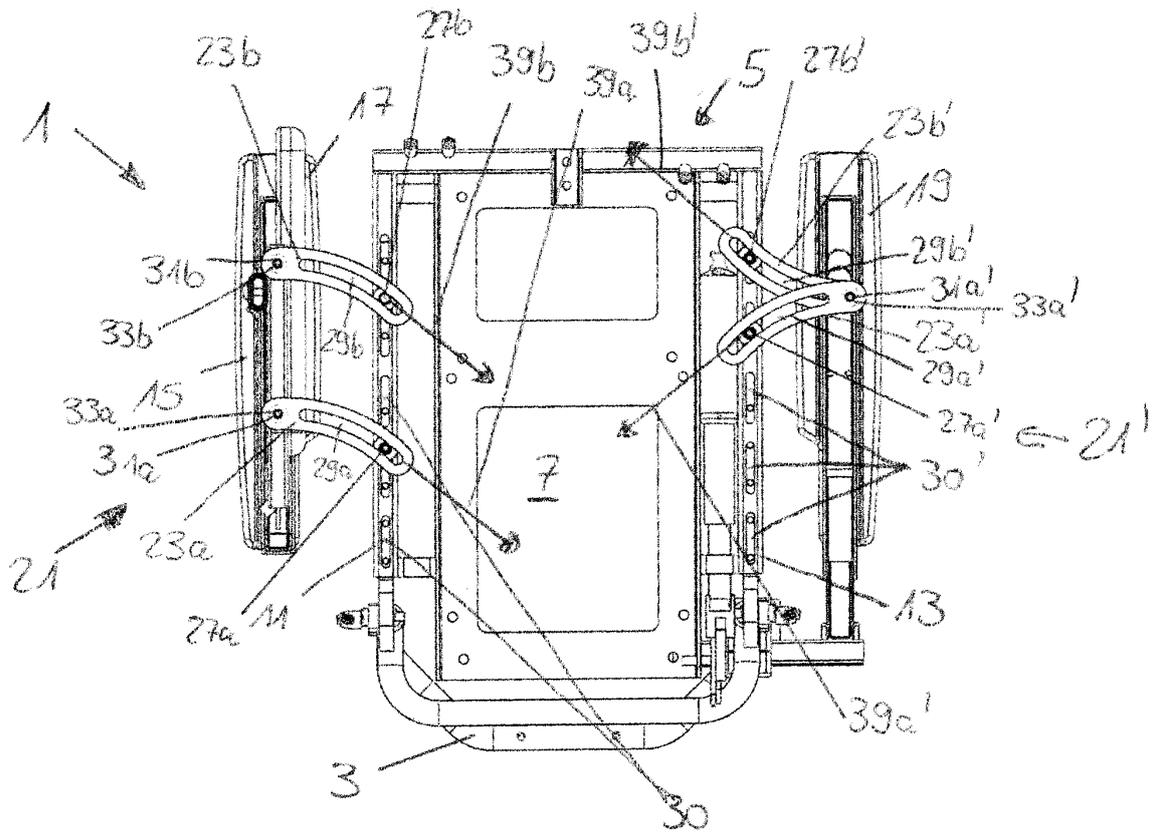


Fig. 3



EUROPEAN SEARCH REPORT

Application Number
EP 11 16 2448

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