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(54) **Wheelchair**

(57) The present invention relates to a wheelchair comprising a structure (1) defining a seat area (2) limited by a rear backrest (3) and two parallel side walls (4 and 5) and has larger side wheels (6 and 7) and smaller front wheels (8). One of the larger side wheels (6) is movable with respect to the structure (1) and is assembled on said structure through two arms, one fixed arm (9) and another mobile arm (10), the fixed arm of which is integral to one of the sides of the structure (1) in horizontal position and protrudes from the rear of said structure into a portion to the end of which the mobile arm is articulated according to a vertical shaft (11); and the mobile arm (10) of which has the mobile side wheel (6) assembled on its free end and it can pivot about the articulation shaft (11).

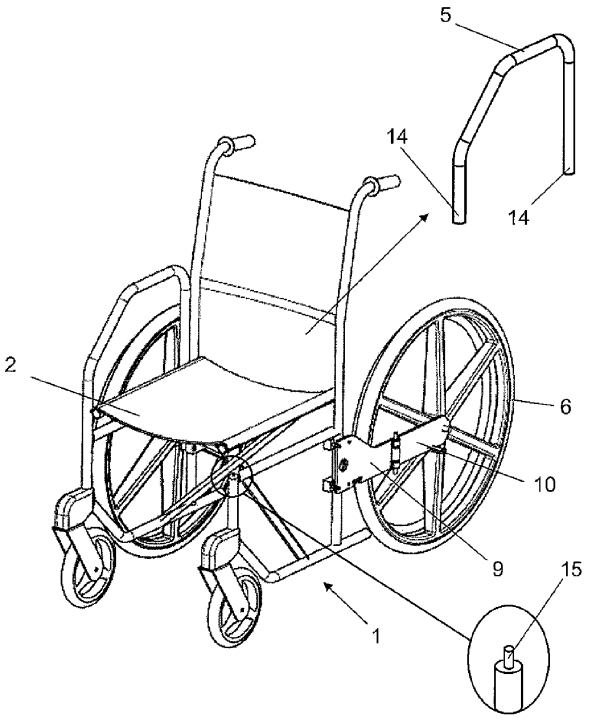

Fig. 2

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Description

Field of the Invention

[0001] The present invention relates to a wheelchair for people with conditions of reduced mobility constituted such that it allows transferring or moving the person on the chair easily from the seated position and maintaining the same position.

[0002] The chair of the invention is of the type comprising a structure defining a seat area which is limited by a rear backrest and two parallel side walls, said structure having two larger side wheels and two smaller front wheels.

Background of the Invention

[0003] Traditional wheelchairs of the type indicated are envisaged such that both getting on and off the chair must always be performed from the front part thereof which forces the person getting on or off the chair to at least partially sit up in many cases with the help of third persons.

Description of the Invention

[0004] The object of the present invention is to facilitate the operations of getting on and off a wheelchair, allowing the performance of these operations through one of the sides of the chair and without having to sit up the person who will occupy or get off the chair.

[0005] The chair of the invention is envisaged such that it allows transferring said person to or from the chair through one of its sides simply and comfortably.

[0006] The chair of the invention is of the type initially indicated and is **characterised in that** one of the larger side wheels is of fixed position, while the other larger side wheel is movable with respect to the structure between an operating position, in which it is in a position parallel to and coaxial with the opposite side wheel, and a non-operating position, in which it is located behind the structure, leaving the corresponding side of the chair free. According to another feature of the invention, the side wall adjacent to this movable wheel is removable such that the seat area can be accessible from this side once the wall is removed and the side wheel is moved to its non-operating position.

[0007] The movable wheel is assembled on the structure through two arms, one fixed arm and another mobile arm. The fixed arm is integral to one of the sides of the structure in a horizontal position, protruding from the rear thereof into a portion to the free end of which the mobile arm is articulated by means of a vertical shaft. The mobile arm has at its free end the movable side wheel and can pivot about the articulation shaft for articulating with the fixed arm, together with said side wheel, between a folded position in which the mobile arm it is attached on the outside on the fixed arm and the movable side wheel is in a position parallel to and coaxial with the opposite side wheel, and an unfolded position in which the mobile arm points backwards prolonging from the fixed arm, with the movable side wheel located behind the structure.

[0008] As has been indicated above, the side wall adjacent to this movable wheel is removable and can be made up by a tubular section forming an upper support arm and it finishes in two connections on the lower part forming as many other female elements couplable by fitting into as many other male elements made up of vertical protrusions protruding from the structure in facing positions.

[0009] The fixed and mobile arms will be provided with locking means for locking the mobile arm in the folded position thus assuring the operating position or position of use of the movable wheel.

[0010] The fixed and mobile arms can be made up of as many other elongated plates which are linked to one another by means of an intermediate articulation, the shaft of which is coplanar with the two plates.

[0011] With the mentioned constitution, freeing the locking means for locking the arms and unfolding the mobile arm to the rear position in which the movable wheel is located behind the structure and subsequently removing the side wall adjacent to this movable wheel, a completely free and accessible side of the chair is made available to allow transferring a person through this side, simply, quickly and comfortably.

Brief Description of the Drawings

[0012] The attached drawings show a wheelchair made according to the invention and given by way of non-limiting example. In the drawings:

Figure 1 shows a perspective view of the chair of the invention in operating position for a person's movement.

Figure 2 is a perspective view similar to Figure 1, showing the chair with one of the side walls removed and the corresponding side wheel in non-operating position.

Figure 3 shows a perspective view and the unfolded position of the articulated arms on which one of the larger side wheels is assembled.

Figure 4 is a view similar to Figure 3 with the arms in a folded position.

Detailed Description of an Embodiment

[0013] Figure 1 shows a perspective view of a wheelchair made according to the invention which comprises a structure, generally indicated with the reference 1, which determines a seat area 2 which is limited by a rear backrest 3 and by parallel side walls 4 and 5. This structure has two larger side wheels 6 and 7 and two smaller front wheels 8.

[0014] In the chair of the invention the larger side wheel

7 is of fixed position with respect to the structure 1, while the larger side wheel 6 is movable between an operating position, shown in Figure 1, in which it is in a position parallel to and coaxial with the fixed position wheel 7, and a non-operating position, shown in Figure 2, in which this wheel 6 is located behind the structure 1.

[0015] Furthermore, in the chair of the invention the side wall 5 adjacent to the movable position wheel 6 is removable such that the seat area 2 is perfectly accessible through one of the sides of the chair to facilitate transferring a person from and to the seat area 2.

[0016] The movable position wheel 6 is assembled on the structure 1 through two arms 9 and 10 which can be made up of as many other elongated plates which, as better seen in Figures 3 and 4, are articulated to one another by one of their ends by means of a vertical shaft 11.

[0017] The arm 9 is fixed to one of the sides of the structure 1, for example anchored to one of the vertical bars 12 of the structure 1 by means of jaws 13, said arm 9 protruding behind the structure 1 into a portion to the free end of which the arm 10 is articulated. In turn the arm 10 has the movable wheel 6 which is assembled by means of inserting rotating shaft through a hole 14 of the arm 10.

[0018] With the mentioned constitution the mobile arm 10 can pivot about the articulation shaft 11 together with the movable wheel 6 between a folded position, shown in Figures 1 and 4, in which said mobile arm 10 is attached to the fixed arm 9 and the wheel 6 is located in a position parallel to and coaxial with the wheel 7 and an unfolded position, in which the mobile arm 10 prolongs from the fixed arm 9, as shown in Figures 2 and 3, with the movable wheel 6 located behind the structure 1 of the chair.

[0019] The side wall 5 can be made up of a tubular section forming a support arm on the upper part and it finishes at its ends in connections 14 forming female elements couplable to as many other facing vertical protrusions 15 protruding from the structure 1 and making up male elements that receive the ends or female elements 14 of the arm 5 by fitting.

[0020] As shown in Figures 3 and 4, the arms 9 and 10 have locking means which can consist of a lug 16 protruding perpendicularly from the mobile arm 10 and traverses the fixed arm 9, in the folded position of Figure 4, through a notch 17 that said fixed arm 9 has at its upper edge. In turn this fixed arm 9 has a vertically movable clamper 18 immediately above the notch 17 which can be inserted in a hole facing the lug 16, thus preventing the unfolding or pivoting of the arm 10.

[0021] With the mentioned constitution, when the chair is in the position of Figure 1 with the clamper 18 locked in the lug 16, the chair is in an operating position to allow the movement of a person sitting on the seat area 2. When the person occupying the chair is to be transferred or moved to another seat or resting surface, it will be sufficient to raise the clamper 8 such that the mobile arm 10 is freed, allowing its unfolding from the position of Figure 4 to the position of Figures 2 and 3, in which the wheel 6 is located behind the structure 1. Then the section making up the side wall 5 is pushed upwards until separating it from the structure 1, the corresponding side thus being completely free, as shown in Figure 2.

[0022] In the chair of the invention the larger side wheel 7 could include the same assembly system as the larger side wheel 6, both larger side wheels thus being movable. Positioning the chair to facilitate access to a bed or stretcher would thus be unnecessary. The chair would be of symmetrical constitution and operation.

[0023] The device made up of the two arms 9 and 10 which allow moving one or both the larger wheels can be incorporated to factory built chair or chair envisaged as an independent device for assembling in existing wheel chairs.

Claims

1. A wheelchair comprising a structure (1) defining a seat area (2) limited by a rear backrest (3) and two parallel side walls (4 and 5) and has two larger side wheels (6 and 7) and two smaller front wheels (8), **characterised in that** one of the larger side wheels (6) is movable with respect to the structure (1) and is assembled on said structure through two arms, one fixed arm (9) and another mobile arm (10), the fixed arm of which is integral to one of the sides of the structure (1) in horizontal position and protrudes from the rear of said structure into a portion to the end of which the mobile arm is articulated according to a vertical shaft (11); and the mobile arm (10) of which has the mobile side wheel (6) assembled on its free end and it can pivot about the articulation shaft (11) together with said side wheel (6) between a folded position in which the mobile arm (10) is attached to the outside on the fixed arm (9) and the side wheel (6) is in a position parallel to and coaxial with the opposite side wheel (7) and an unfolded position in which the mobile arm (10) points backwards prolonging from the fixed arm (9) and the side wheel (6) is located behind the structure (1); and **in that** at least the side wall (5) adjacent to the side wheel (6) is removable from the structure.

2. The chair according to claim 1, **characterised in that** the two arms have locking means (16-18) for locking the mobile arm in its folded position.

3. The chair according to claim 1, **characterised in that** the two arms (9 and 10) are made up of as many other elongated plates linked to one another by means of an intermediate articulation the shaft (11) of which is coplanar with said plates.

4. The chair according to claim 1, **characterised in that** the removable wall is made up of a tubular sec-

tion which finishes in two lower vertical connections (14) on the lower part couplable by fitting into as many other facing male vertical protrusions protruding from the structure (1).

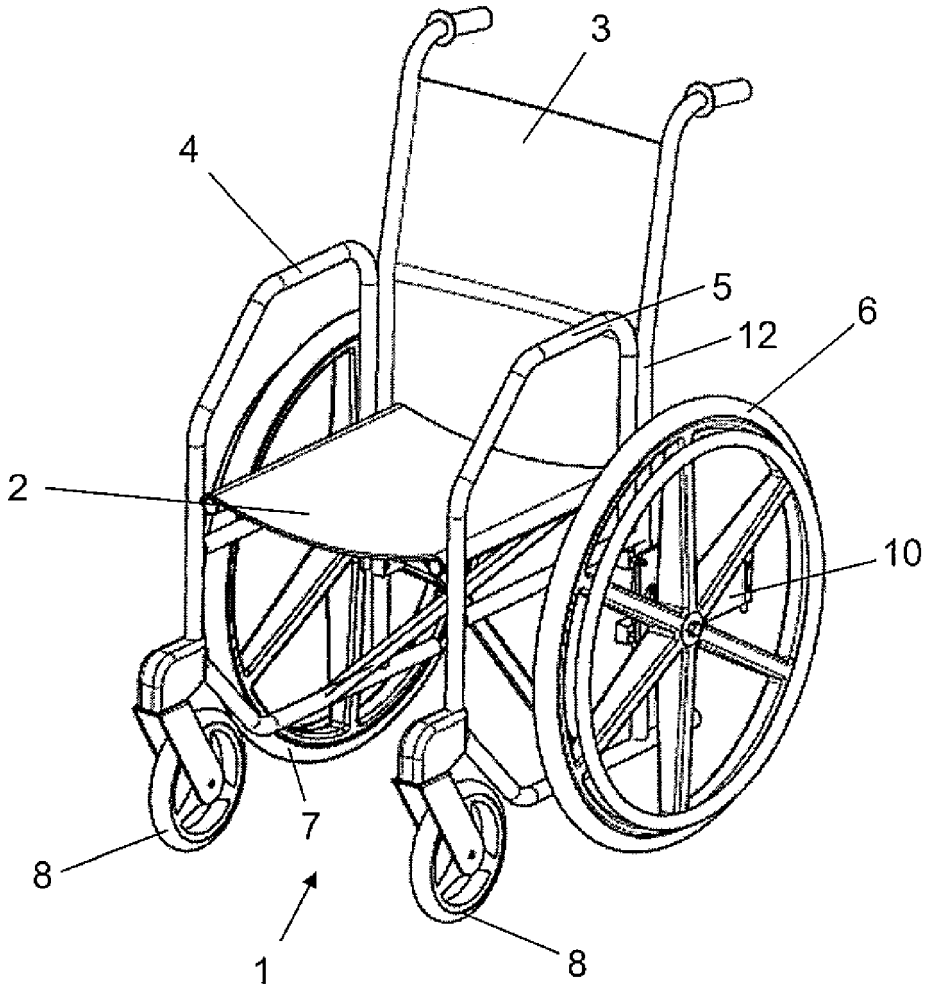

Fig. 1

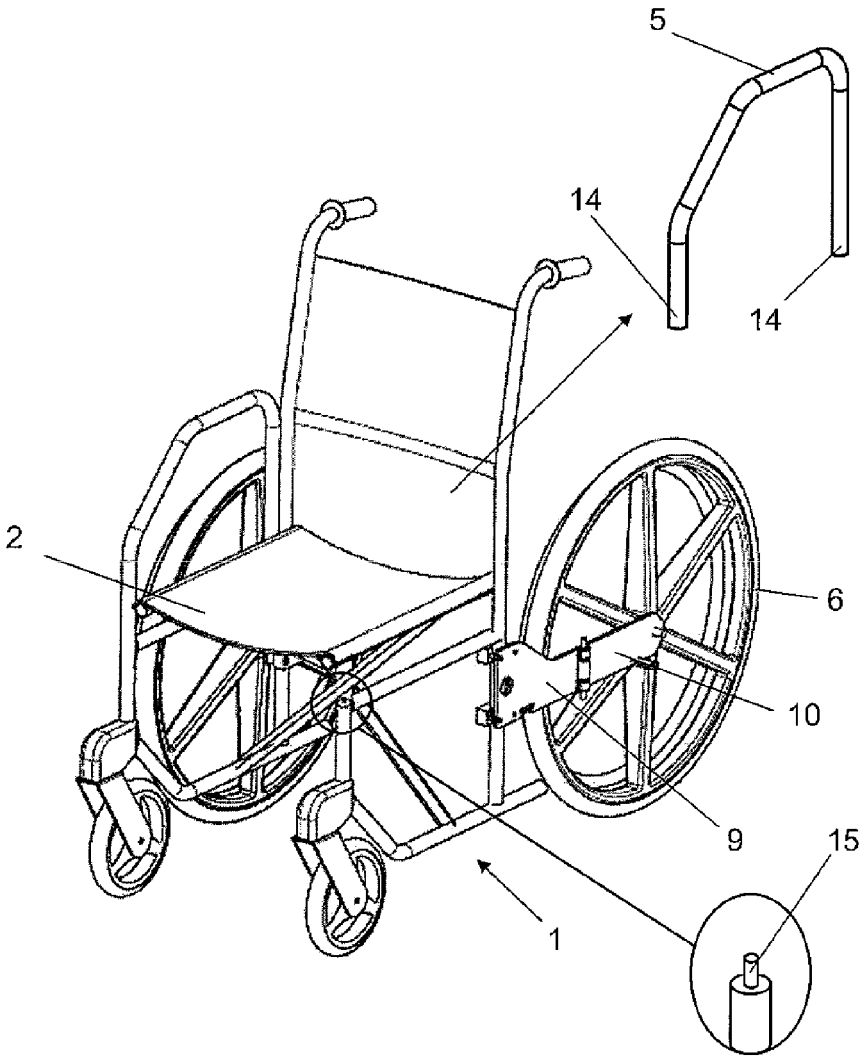

Fig. 2

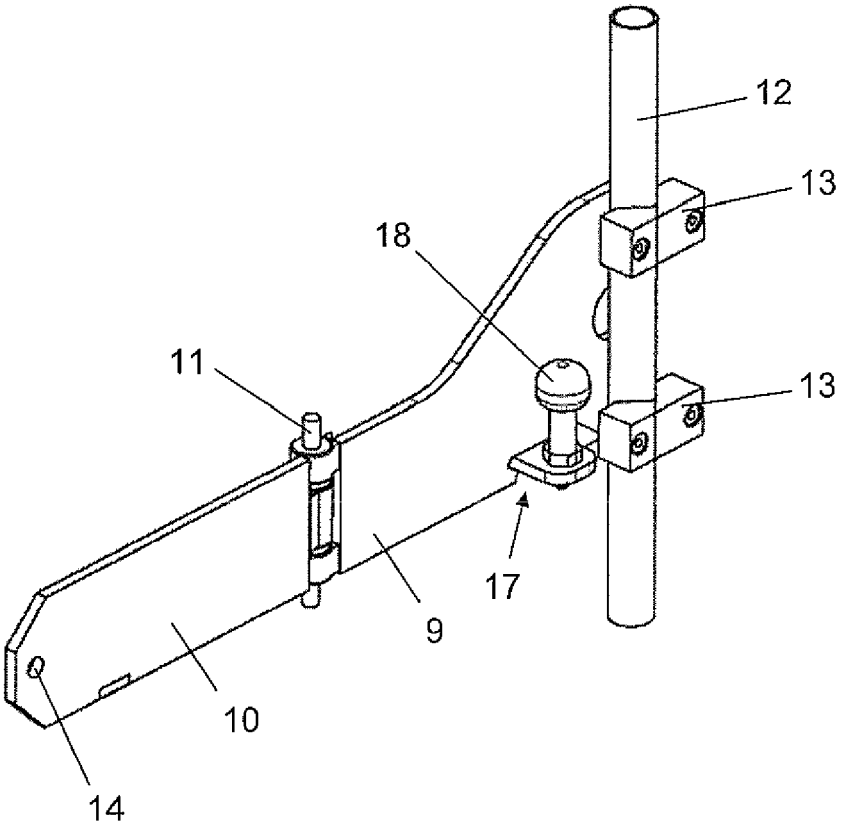

Fig. 3

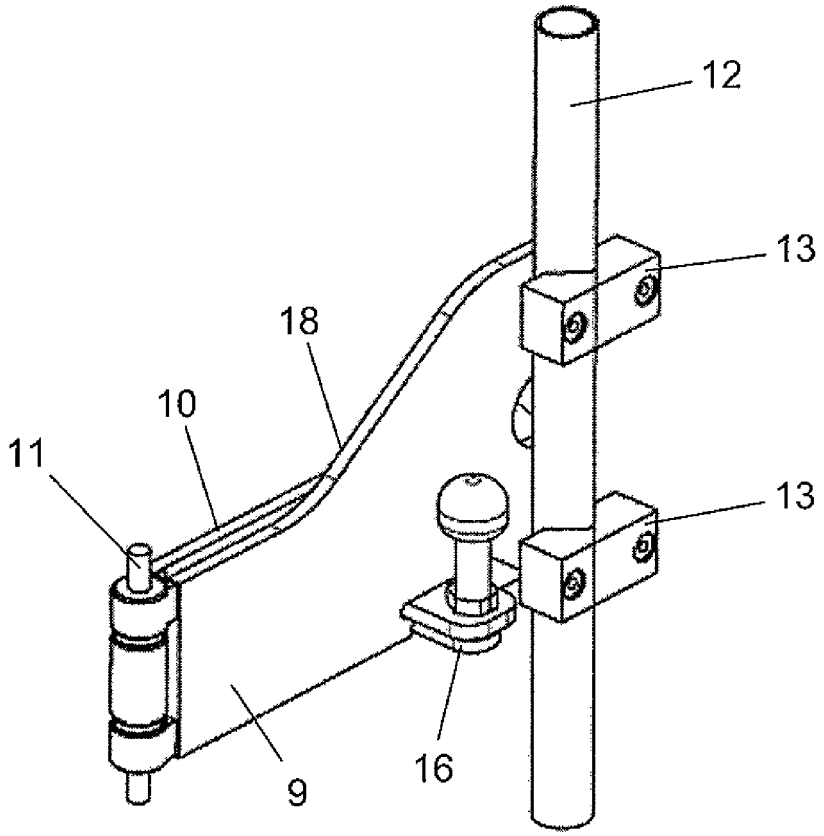

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 12 38 2227

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	BE 891 194 A2 (ZWAANSWIJK M L; TURNER DAVID; TAPLIN SIMON) 21 May 1982 (1982-05-21) * page 4, line 11 - line 15; figure 4 * * page 4, line 26 - page 5, line 16; figures 5,6,13 * * page 6, line 20 - line 27; figures 10-12 * -----	1-4	INV. A61G5/10 A61G7/053 A61G7/10
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A	US 6 651 946 B1 (THORNTON JANET L [US]) 25 November 2003 (2003-11-25) * column 2, line 66 - column 3, line 4; figures 1,2 * -----	3	
A	JP 62 155837 U (MASAKI TAMURA (JP)) 3 October 1987 (1987-10-03) * the whole document * -----	1	TECHNICAL FIELDS SEARCHED (IPC)
A	DE 890 856 C (SCHLADEBACH GERT) 13 May 1954 (1954-05-13) * the whole document * -----	1	A61G
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	11 September 2012	Sommer, Jean

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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11-09-2012

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