



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
22.04.2015 Bulletin 2015/17

(51) Int Cl.:
A61G 5/04 (2013.01) **A61G 5/10** (2006.01)

(43) Date of publication A2:
09.04.2014 Bulletin 2014/15

(21) Application number: **13187328.3**

(22) Date of filing: **04.10.2013**

(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

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(30) Priority: **04.10.2012 NL 2009570**
27.05.2013 NL 2010866

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(54) **Suspension system for a mid-wheel drive wheelchair**

(57) The invention relates to a mid wheel drive wheelchair, comprising a frame and a suspension unit connected thereto for at least one drivable wheel element. The suspension unit comprises a first bearing arm connected to the frame for the drivable wheel element. A first end of the first bearing arm is pivotably connected to the frame, wherein the drivable wheel element is rotatably mountable near a part of the first bearing arm which is spaced apart from the first end. The suspension unit is provided with a spring and/or damper element connected to the frame for damping a pivoting motion of the first bearing arm. The suspension unit comprises a second

bearing arm for a rear supporting wheel element, wherein a first end of the second bearing arm is pivotably connected to the first bearing arm. The spring and/or damper element is thereby also configured for damping a pivoting motion of the second bearing arm. According to an aspect of the invention the suspension unit comprises a front bearing arm for a front supporting wheel element. A first end of this front bearing arm is pivotably connected to the first bearing arm. Additionally, the front spring and/or damper element is configured for damping a pivoting motion of the front bearing arm.

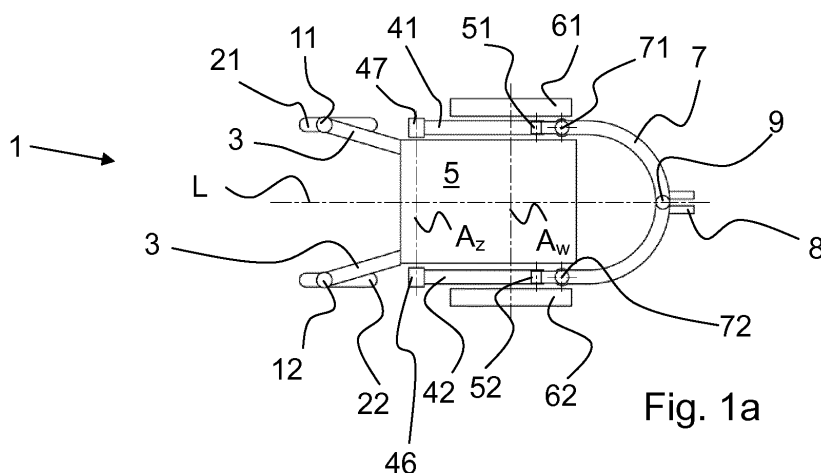


Fig. 1a



EUROPEAN SEARCH REPORT

Application Number
EP 13 18 7328

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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Y	* paragraph [0022] - paragraph [0028] * * figure 2 *	6,13,15	A61G5/10
Y	----- WO 2008/124953 A1 (DEGONDA REHAB SA [CH]; HUNZIKER KURT [CH]) 23 October 2008 (2008-10-23) * page 4, line 12 - page 5, line 16 * * figures 1-5 *	13,15	
Y	----- EP 1 142 548 A2 (SCHAFFNER WALTER E [US]; WATKINS WALTER A [US]; WHITE GERALD J JR [US]) 10 October 2001 (2001-10-10)	6	
A	* paragraph [0037]; figures 3, 6 *	13	
A	----- JP 2004 135811 A (ATEX CO LTD) 13 May 2004 (2004-05-13) * paragraph [0008] - paragraph [0010] * * figures 1,2 *	1-6, 12-15	
A	----- US 2008/083573 A1 (TSENG CHIH-HUNG [TW]) 10 April 2008 (2008-04-10) * paragraph [0015] - paragraph [0017] * * paragraph [0021] * * figure 4 *	1-6, 12-15	TECHNICAL FIELDS SEARCHED (IPC) A61G
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A	* paragraph [0032] - paragraph [0037] * * figures 1-2B *	9	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 March 2015	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			

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EPO FORM 1503 03.82 (P04C01)

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Application Number

EP 13 18 7328

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



LACK OF UNITY OF INVENTION **SHEET B**

Application Number

EP 13 18 7328

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-6, 13(completely); 12, 14, 15(partially)

Mid wheel drive wheelchair comprising a frame and a suspension unit comprising a first bearing arm, a spring and/or damper element and a second bearing arm wherein the first end of the second bearing arm is located between the spring and/or damper element and the first bearing arm.

2. claims: 7-11(completely); 12, 14, 15(partially)

Mid wheel drive wheelchair comprising a frame and a suspension unit comprising a first bearing arm, a spring and/or damper element and a second bearing arm wherein the suspension unit further comprises a front bearing arm provided with a front spring and/or damper element.

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

EP 13 18 7328

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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17-03-2015

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EPO FORM P0459

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