



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**08.01.2025 Bulletin 2025/02**

(51) International Patent Classification (IPC):  
**A61G 5/04** <sup>(2013.01)</sup>

(43) Date of publication A2:  
**02.10.2024 Bulletin 2024/40**

(52) Cooperative Patent Classification (CPC):  
**A61G 5/047**

(21) Application number: **24164463.2**

(22) Date of filing: **19.03.2024**

(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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR**  
Designated Extension States:  
**BA**  
Designated Validation States:  
**GE KH MA MD TN**

(72) Inventors:  
• **Schuppe, Stefan**  
**69254 Malsch/Heidelberg (DE)**  
• **Kramer, Markus**  
**69254 Malsch/Heidelberg (DE)**

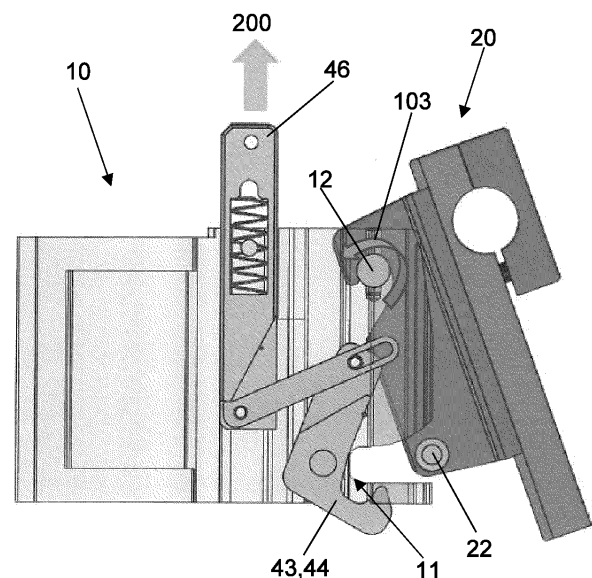
(74) Representative: **Weber-Bruls, Dorothee**  
**Jones Day**  
**Nextower**  
**Thurn-und-Taxis-Platz 6**  
**60313 Frankfurt am Main (DE)**

(30) Priority: **27.03.2023 DE 102023107713**

(71) Applicant: **Sunrise Medical GmbH**  
**69254 Malsch/Heidelberg (DE)**

(54) **CONNECTION ASSEMBLY, AUXILIARY ELEMENT, WHEELCHAIR, METHOD FOR CONNECTING AND RELEASABLY LOCKING, AND METHOD OF UNLOCKING AND RELEASING**

(57) The disclosure relates to a connection assembly (1) for connecting an auxiliary element (30) to a personal mobility vehicle, in particular in form of a wheelchair (50), comprising at least one first body (10) adapted to be attached to the auxiliary element (30); at least one second body (20) adapted to be attached to the personal mobility vehicle; and at least one locking assembly (40) adapted to lock the connection of the at least one first body (10) and the at least one second body (20); characterized in that the at least one locking assembly (40) comprises at least one locking spring (42) coupled to at least one locking member (43) and biasing the at least one locking member (43) into a locking position, and at least one return spring (41) coupled to at least one unlocking actuator and biasing the at least one unlocking actuator into a locked position, wherein actuating the at least one unlocking actuator causes the at least one locking assembly (40) to unlock, and the at least one locking member (43) of the at least one locking assembly (40) is allowed to be in a locking position, when the unlocking actuator is pushed or moved into the locked position.



**Fig. 4c**



## EUROPEAN SEARCH REPORT

Application Number

EP 24 16 4463

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	US 2022/054332 A1 (PALTSEV DMITRY [CA] ET AL) 24 February 2022 (2022-02-24)	1,3-7,9, 10,17	INV. A61G5/04
A	* paragraphs [0024] - [0075]; figures 1-14 *	2,15,16, 18,19	
X	WO 2021/094100 A1 (FOND DENTREPRISE SAFRAN POUR L'INSERTION [FR]; OMNI [FR]) 20 May 2021 (2021-05-20)	1-7,9, 10,17	
A	* page 21, line 15 - page 42, line 4; figures 1a-9f *	8,15,16, 18,19	
X	WO 2022/090973 A1 (MASCULL ROGER THOMAS [NZ]; MASCULL ELIZABETH JOCELYN [NZ]) 5 May 2022 (2022-05-05)	1-6,8-10	TECHNICAL FIELDS SEARCHED (IPC) A61G
A	* page 10, line 24 - page 40, line 3; figures 1-24 *	7	
A	WO 2017/175103 A1 (KLAXON MOBILITY GMBH [AT]) 12 October 2017 (2017-10-12)	1-10	
	* page 4, line 11 - page 15, line 18; figures 1-16 *		
-The present search report has been drawn up for all claims			
Place of search <b>The Hague</b>		Date of completion of the search <b>29 November 2024</b>	Examiner <b>Petzold, Jan</b>
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	

EPO FORM 1503 03:82 (P04C01)



Application Number

EP 24 16 4463

5

10

15

20

25

30

35

40

45

50

55

**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:

1 - 10, 15 - 19

☐ 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 24 16 4463

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: 1-10****A connection assembly**

---

**2. claims: 11, 12****An auxiliary element**

---

**3. claims: 13, 14****A wheelchair**

---

**4. claims: 15-19****Method of connecting and releasably locking and method of  
unlocking and releasing**

---

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

EP 24 16 4463

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.

29 - 11 - 2024

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2022054332 A1	24-02-2022	CA 3090535 A1	18-02-2022
		US 2022054332 A1	24-02-2022
WO 2021094100 A1	20-05-2021	EP 4057972 A1	21-09-2022
		FR 3102927 A1	14-05-2021
		WO 2021094100 A1	20-05-2021
WO 2022090973 A1	05-05-2022	AU 2021368607 A1	08-06-2023
		CA 3196960 A1	05-05-2022
		EP 4221660 A1	09-08-2023
		US 2024325222 A1	03-10-2024
		WO 2022090973 A1	05-05-2022
WO 2017175103 A1	12-10-2017	AU 2017247763 A1	12-07-2018
		CA 3009467 A1	12-10-2017
		CN 109069335 A	21-12-2018
		DK 3439604 T3	20-04-2020
		EP 3439604 A1	13-02-2019
		ES 2784967 T3	02-10-2020
		PL 3439604 T3	07-09-2020
		US 2019015272 A1	17-01-2019
		WO 2017175103 A1	12-10-2017