(11) **EP 1 053 734 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 10.04.2002 Bulletin 2002/15

(51) Int Cl.⁷: **A61G 7/015**

(43) Date of publication A2: **22.11.2000 Bulletin 2000/47**

(21) Application number: 00104141.7

(22) Date of filing: 29.02.2000

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU

MC NL PT SE

Designated Extension States:

AL LT LV MK RO SI

(30) Priority: 20.05.1999 JP 13955799

- (71) Applicant: MURATA KIKAI KABUSHIKI KAISHA Kisshoin, Minami-ku Kyoto-shi 601 (JP)
- (72) Inventor: Uchida, Hiroshi
 Oumihachiman-shi, Shiga (JP)
- (74) Representative: Liedl, Christine, Dipl.-Chem. et al Albert-Rosshaupter-Strasse 65 81369 München (DE)

(54) Back-lifting device for rising and lying bed

(57) The present invention relates to a back-lifting device having a slide mechanism constructed therein for sliding a back support section 5 in a direction in which slippage between the back support section 5 and a users back is avoided during both rising and lying of the back support section. The slide mechanism is constructed by attaching a surface 21a of an endless belt 21 to a rear surface of the back support section of a mat laid

on a rising and lying bed, the endless belt capable of being rotatively moved integrally with the back support section of the rising and lying bed around a rising and lying fulcrum 7 thereof, and by connecting a tip portion of a rising and lying lever 16 to a rear surface 21b of the endless belt, the rising and lying lever being rotatively moved wound a rotative-moving fulcrum shaft 16a located below the rising and lying fulcrum.

FIG. 2

2c

2b

23

21a

21

24

7

16

21b

21b

21c

21b

21c

EP 1 053 734 A3



EUROPEAN SEARCH REPORT

Application Number EP 00 10 4141

		RED TO BE RELEVANT		
Category	Citation of document with ind of relevant passa;		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
X	US 3 886 610 A (SHEL 3 June 1975 (1975-06 * column 3, line 6 - figures 1-9 *	-03)	1-5	A61G7/015
Х	US 5 297 021 A (TAUS 22 March 1994 (1994-		1,2,4	
A	* column 4, line 43 figures 4-8 *		6	
χ	US 5 634 688 A (ELLI 3 June 1997 (1997-06		1-3	
Α		- column 3, line 51 *	4,6	
A	US 5 555 582 A (JERI 17 September 1996 (1 * abstract; figures	996-09-17)	6	
A	US 4 183 109 A (HOWE 15 January 1980 (198 * abstract; figures	0-01-15)	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	WO 97 05803 A (HILL 20 February 1997 (19 * abstract; figures	 ROM CO INC) 97-02-20)	1	
A	DE 532 704 C (MÜHLE 2 September 1931 (19 * the whole document	31-09-02)	1	
	The present search report has be	en drawn un for all claims	_	
	Place of search	Date of completion of the search		Examiner
	THE HAGUE	19 February 200	2 Bae	rt, F
X : part Y : part docu A : tech	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with anothe ument of the same category innological background i-written disclosure	T: theory or princ E: earlier patent after the filing D: document cite L: document cite	ciple underlying the document, but publi	invention ished on, or

EPO FORM 1503 03.82 (P04C01)

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

EP 00 10 4141

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.

19-02-2002

	Patent docume cited in search re		Publication date		Patent family member(s)	Publication date
US	3886610	A	03-06-1975	NONE	de a 1919 - Marian de la comunidad de la comun	**************************************
us	5297021	Α	22-03-1994	NONE		
US	5634688	Α	03-06-1997	NONE) alle 100 Tip, app. with 200 100 100 100 100, app. with 100 107 107 107	
US	5555582	A	17-09-1996	NONE	, quia delle river juice unive quel mill d'un leve l'UP, unive dans dans dans uner rene	
US	4183109	Α	15-01-1980	NONE		
WO	9705803	Α	20-02-1997	US AU AU BR EP WO	5790997 A 704795 B2 6647096 A 9609885 A 0957712 A1 9705803 A1	11-08-1998 06-05-1999 05-03-1997 25-05-1999 24-11-1999 20-02-1997
DE	532704	С		NONE	- 200 - 100 - 100 - 200 -	**************************************

FORM P0459

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