(11) **EP 1 020 397 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: **12.05.2004 Bulletin 2004/20**

(51) Int CI.7: **B66C 9/12**, B66C 19/00

- (43) Date of publication A2: 19.07.2000 Bulletin 2000/29
- (21) Application number: 99660181.1
- (22) Date of filing: 26.11.1999
- (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: 11.01.1999 FI 990035
- (71) Applicant: LIFTEC PRODUCTS OY 33720 Tampere (FI)

- (72) Inventor: Karppelin, Seppo 35100 Orivesi (FI)
- (74) Representative: Kahilainen, Hannu Juhani et al Tampereen Patenttitoimisto Oy Hermiankatu 6 33720 Tampere (FI)

(54) Wheel mounting

(57)The wheel mounting according to the invention is intended to be used in working machines, for example carriages for lifting and moving and so-called straddle carriers, which move transport containers. The wheel mounting comprises at leat two pairs of wheels arranged to be movable vertically with respect to the frame (R) of the working machine, and wherein the load to be supported is arranged to rest on the frame. The wheels (1) in the wheel mounting are pivoted to the frame by means of a bearing means, such as a supporting bar (4), attached to each wheel, to move vertically with respect to the frame (R). In the wheels (1) of the wheel mounting, the bearing means, such as supporting bars (4), are connected pairs on the same side of the working machine with a rocking arm (8) pivoting in an articulated manner in the vertical plane. The middle part of the rocking arm (8) is connected in an articulated manner to a means (10) which is effective in the vertical direction and transmits the movements of the rocking arm.

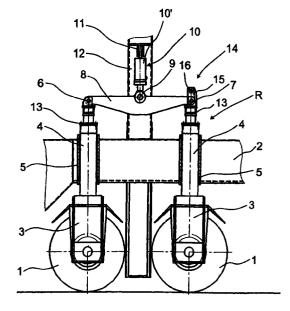


Fig. 1

EP 1 020 397 A3



EUROPEAN SEARCH REPORT

Application Number EP 99 66 0181

	DOCUMENTS CONSIDERE		Delevent	OLASOIFICA TON OF THE	
Category	Citation of document with indicati of relevant passages	on, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)	
X	WO 86 03186 A (JANSSON 5 June 1986 (1986-06-0 * page 4 - page 5, par * figures 1-3,5,6 *	1,2,4,5, 7-11	B66C9/12 B66C19/00		
X	DE 368 539 C (STOCKFLE 6 February 1923 (1923-	1,3,4,6, 7,9,10,	:		
Υ	* the whole document *	2,5,8,11			
Х	DE 635 694 C (MITTELDE AG) 22 September 1936 * the whole document *	1,3,4,6, 7,9,10			
Y	EP 0 605 976 A (ENERGY 13 July 1994 (1994-07- * abstract; figure 3 *	2,5			
Υ	US 3 081 883 A (MINTY 19 19 19 19 19 19 19 19 19 19 19 19 19	8,11	TECHNICAL FIELDS SEARCHED (Int.Cl.7)		
A	DE 42 30 854 A (PANTHE VERTR) 17 March 1994 (* abstract; figure 1 * * column 1, line 58 - * column 2, line 31 -	1994-03-17) column 2, line 15 * line 34 *		B66C B60P	
	The present search report has been of search	Irawn up for all claims Date of completion of the search	1,	Examiner	
MUNICH		22 March 2004	Fer	rien, Y	
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		E : earlier patent d after the filing d D : document cited L : document cited	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 		

2

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

EP 99 66 0181

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.

22-03-2004

Patent document cited in search report			Patent family member(s)	Publication date
A	05-06-1986	SE AU EP FI JP SE WO	449091 B 5201086 A 0203141 A1 862977 A 62500863 T 8405808 A 8603186 A1	06-04-1987 18-06-1986 03-12-1986 18-07-1986 09-04-1987 20-05-1986 05-06-1986
С	06-02-1923	NONE		
С	22-09-1936	NONE		
A	13-07-1994	AT AU CA DE DE EP ES JP	148518 T 5238893 A 2111664 A1 69307861 D1 69307861 T2 0605976 A1 2096873 T3 3296908 B2 6257113 A	15-02-1997 14-07-1994 05-07-1994 13-03-1997 14-08-1997 13-07-1994 16-03-1997 02-07-2002 13-09-1994
Α	19-03-1963	NONE		
Α	17-03-1994	DE	4230854 A1	17-03-1994
	A A	C 06-02-1923 C 22-09-1936 A 13-07-1994 A 19-03-1963	A 05-06-1986 SE AU EP FI JP SE WO C 06-02-1923 NONE C 22-09-1936 NONE A 13-07-1994 AT AU CA DE DE EP ES JP JP JP JP	A 05-06-1986 SE 449091 B AU 5201086 A EP 0203141 A1 F1 862977 A JP 62500863 T SE 8405808 A WO 8603186 A1 C 06-02-1923 NONE C 22-09-1936 NONE A 13-07-1994 AT 148518 T AU 5238893 A CA 2111664 A1 DE 69307861 D1 DE 69307861 D1 DE 69307861 T2 EP 0605976 A1 ES 2096873 T3 JP 3296908 B2 JP 6257113 A A 19-03-1963 NONE

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

FORM P0459