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(54) **Rotation device for working units in lift trucks or the like**

(57) The present device is provided with conceptually new means which allows an angular displacement of the fork-carrying or tool-carrying plate, which means are very advantageous in comparison with the known solutions as the conventional system of rotation on ball bearings is no longer necessary.

In general, such means comprises a rotation device (1) which is obtained by a fixed element or casing (2) on the rear side of which there are fixing clamps (2') which are to be coupled with corresponding front clamps (3) which are fixed to the self-moving lift truck.

The fixed element or casing (2) is provided with a hollow seat in which a crown (4) is inserted.

The crown (4) represents the rotating part on which an outer fork-carrying unit is mounted. A supporting plate (5) is included in the fork-carrying unit.

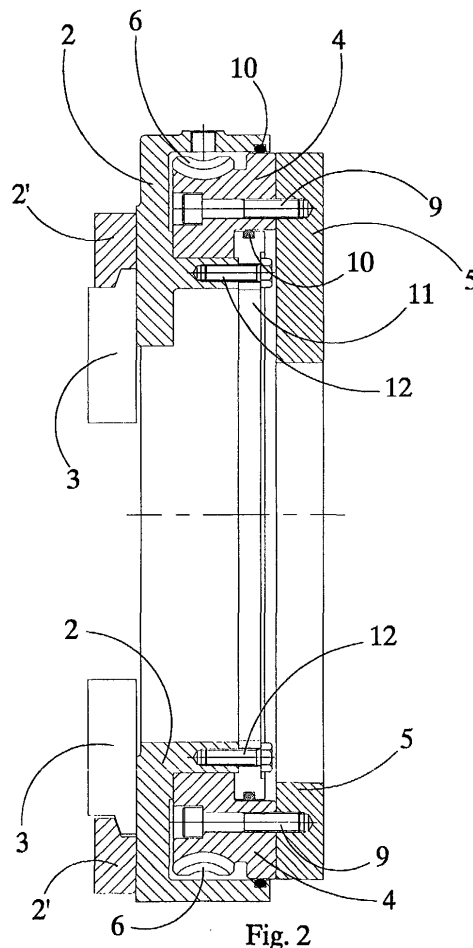


Fig. 2



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 01 10 6014

DOCUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)	
X	DE 12 63 607 B (VALMET OY FA) 14 March 1968 (1968-03-14)	1-3,5	B66F9/12	
A	* column 2, line 39 - column 3, line 18 * * figures *	4		
Y	JP 57 145800 A (NISSAN MOTOR) 8 September 1982 (1982-09-08)	1,4,6,7		
A	* figure 3 *	2,3,5		
Y	US 5 957 000 A (PECORARI PAUL A) 28 September 1999 (1999-09-28)	1,4,6,7		
A	* abstract; figures 1,3,4 * * column 2, line 19 - line 47 * * column 2, line 56 - column 3, line 10 *	5,9		
A	DE 418 679 C (PFAUTER FA HERMANN) 15 September 1925 (1925-09-15) * figure 1 *	1,8		
A	PATENT ABSTRACTS OF JAPAN vol. 006, no. 240 (M-174), 27 November 1982 (1982-11-27) -& JP 57 137745 A (NISSAN JIDOSHA KK), 25 August 1982 (1982-08-25) * figure 1 *	10		TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	US 3 851 539 A (DURAND F) 3 December 1974 (1974-12-03) * figures 2,6 *	1		B66F F16H B66C E02F
A	US 4 766 777 A (HARTZ JAMES F ET AL) 30 August 1988 (1988-08-30) * figure 1 *	8		
A	US 5 820 270 A (RICHARDSON EDWARD JAMES) 13 October 1998 (1998-10-13) * figure 3 *	6,8		
The present search report has been drawn up for all claims				
Place of search THE HAGUE		Date of completion of the search 24 April 2003	Examiner Guthmuller, J	
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 10 6014

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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24-04-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 1263607	B	14-03-1968	NONE	
JP 57145800	A	08-09-1982	NONE	
US 5957000	A	28-09-1999	NONE	
DE 418679	C	15-09-1925	NONE	
JP 57137745	A	25-08-1982	JP 1287439 C	31-10-1985
			JP 60010218 B	15-03-1985
			DE 3261657 D1	07-02-1985
			EP 0058967 A1	01-09-1982
			MX 153942 A	24-02-1987
			US 4466300 A	21-08-1984
US 3851539	A	03-12-1974	FR 2198590 A5	29-03-1974
			DE 2345004 A1	14-03-1974
			GB 1430773 A	07-04-1976
			JP 1071916 C	30-11-1981
			JP 49064766 A	22-06-1974
			JP 56016304 B	15-04-1981
US 4766777	A	30-08-1988	NONE	
US 5820270	A	13-10-1998	NONE	