



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 0 914 848 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
19.01.2000 Bulletin 2000/03

(51) Int. Cl.⁷: **A63C 17/00**, A63C 17/06

(43) Date of publication A2:
12.05.1999 Bulletin 1999/19

(21) Application number: **98119053.1**

(22) Date of filing: **08.10.1998**

(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

(72) Inventor: **Antignani, Bruno**
40026 Imola (IT)

(74) Representative:
Franzolin, Luigi et al
STUDIO TORTA S.r.l.,
Via Viotti, 9
10121 Torino (IT)

(30) Priority: **09.10.1997 IT BO970606**

(71) Applicant:
Proclimatic Di Bruno Antignani
40026 Imola (IT)

(54) **Steering device for at least two-wheel vehicles**

(57) A steering device (1) interposed between the front wheel (4) and the frame (3) of a vehicle (2) having at least two wheels (4, 5) resting on the ground; the device having a supporting element (7) hinged to the frame (3) so as to oscillate about an axis (A) parallel to the rotation axis (B) of the rear wheel (5); an elastic damping element (8) interposed between the frame (3) and the supporting element (7) to maintain the supporting element (7) in a given position with respect to the

frame (3); and a fork (9) fitted to the supporting element (7) so as to rotate about a given rotation axis (C); the front wheel (4) being fitted to the fork (9) so as to rotate about a rotation axis (D) not intersecting the rotation axis (C) of the fork (9); and the device having an elastic reaction element (10) for maintaining the fork (9) in a rest position in which the front wheel (4) is aligned with the rear wheel (5).

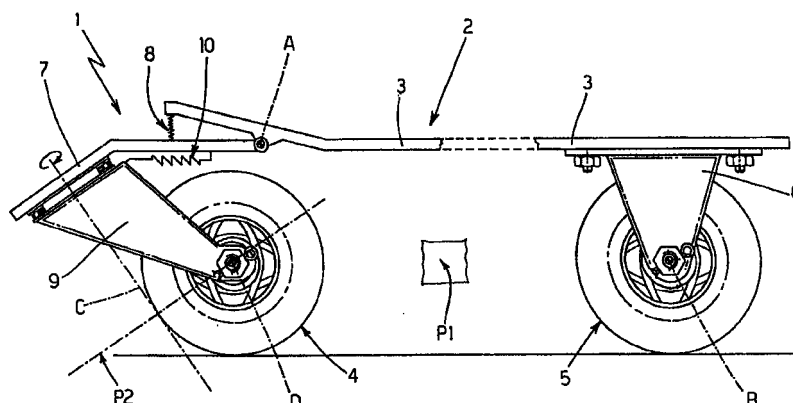


Fig.1

EP 0 914 848 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 11 9053

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.6)
A	EP 0 500 991 A (HWANG SUN IK) 2 September 1992 (1992-09-02) * figures 2-4 *	1-3, 5, 6, 9, 11	A63C17/00 A63C17/06
A	GB 741 159 A (TERRAGLIDE LTD) 30 November 1955 (1955-11-30) * the whole document *	1, 3, 9-11	
A	FR 814 376 A (MERLIN ET GÉRIN) 21 June 1937 (1937-06-21) * the whole document *	1	
A	US 4 132 425 A (LEHNER ALADAR ET AL) 2 January 1979 (1979-01-02) * the whole document *	1, 3	
A	US 5 160 155 A (BARACHET JACQUES) 3 November 1992 (1992-11-03) * the whole document *	1, 6	
A	US 3 876 217 A (COPIER HENRI) 8 April 1975 (1975-04-08) * the whole document *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.6) A63C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 29 November 1999	Examiner Verelst, P
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 03.92 (P/04001)

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

EP 98 11 9053

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.

29-11-1999

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0500991	A	02-09-1992	AT 113855 T	15-11-1994
			DE 69105113 D	15-12-1994
			DE 69105113 T	24-05-1995
			US 5125687 A	30-06-1992
GB 741159	A		DE 1035548 B	
FR 814376	A	21-06-1937	NONE	
US 4132425	A	02-01-1979	AR 219056 A	31-07-1980
			AU 507436 B	14-02-1980
			AU 1516976 A	05-01-1978
			BE 843469 A	27-12-1976
			BG 31368 A	15-12-1981
			BR 7604167 A	26-07-1977
			CA 1067531 A	04-12-1979
			CH 603198 A	15-08-1978
			CS 199277 B	31-07-1980
			DD 124953 A	23-03-1977
			DE 2621473 A	13-01-1977
			DK 254576 A	28-12-1976
			EG 12939 A	31-10-1980
			FI 761653 A	28-12-1976
			FR 2315292 A	21-01-1977
			GB 1550386 A	15-08-1979
			IN 144473 A	06-05-1978
			JP 52006242 A	18-01-1977
			NL 7606775 A	29-12-1976
			NO 761975 A, B	28-12-1976
			OA 5364 A	28-02-1981
			PT 65233 A, B	01-07-1976
			RO 78338 A	12-04-1982
			SE 7605612 A	28-12-1976
			YU 150076 A	31-10-1982
			ZA 7603468 A	29-06-1977
			ES 449285 A	16-07-1977
			IL 49732 A	31-10-1979
US 5160155	A	03-11-1992	FR 2625688 A	13-07-1989
US 3876217	A	08-04-1975	FR 2201108 A	26-04-1974
			DE 2413675 A	02-10-1975
			JP 49070732 A	09-07-1974

EPO FORM P0459

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