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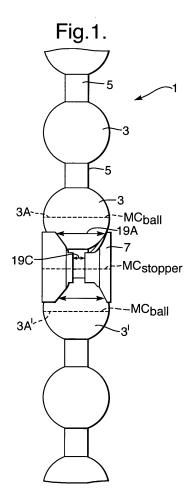
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(54) Chain stopper

(57) A chain stopper (7,107,207,307,407) for attachment to a ball chain (1, 101, 201, 301, 401), having a plurality of balls (3, 103, 203, 303, 403) which are spaced apart along the length of the chain and are interconnected by a plurality of intermediate chain members (5,105,205,305,405) that extend along the length of the chain between adjacent balls; the stopper being adapted to be attached to the chain between two adjacent balls, about an intermediate chain member between the two adjacent balls, and being characterized by a maximum cross-sectional size ($MC_{stopper}$) that is equal to or less than the size of the maximum cross-section of the balls (MC_{ball}) of the chain.



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EUROPEAN SEARCH REPORT

Application Number EP 05 25 7181

Category	Citation of document with ind of relevant passag		Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)	
Х	EP 0 565 379 A1 (YOS 13 October 1993 (199 * column 2, line 44 figures 1-5 *	3-10-13)	LO-13) 10,11 E		
Х	27 July 1993 (1993-0	- column 5, line 19;			
Х	WO 03/033853 A1 (KIM 24 April 2003 (2003- * page 4, lines 4-27	04-24)	1-3,6,10	16	
Х	US 1 522 297 A (GODS 6 January 1925 (1925 * page 1, line 63 - figures 1-3 *	-01-06)	1-6,10		
A	US 2 637 084 A (LORE 5 May 1953 (1953-05- * claim 1; figures 1	05)	1-11	TECHNICAL FIELDS SEARCHED (IPC)	
A	DE 297 11 893 U1 (LI 11 September 1997 (1 * page 3, paragraph	997-09-11)	1-11	E06B	
А	KG) 5 March 1987 (19	EMA RENKHOFF GMBH & CO 87-03-05) page 4, line 3; figure	1-11		
A	US 2 577 046 A (BENN 4 December 1951 (195 * column 3, line 56 figures 2-4 *	1-12-04)	1-11		
	The present search report has be	•			
	Place of search Munich	Date of completion of the search 29 March 2011	Kof	examiner oed, Peter	
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 inological background -written disclosure	T : theory or principle E : earlier patent doo after the filling date D : document cited in L : document cited for	underlying the in iment, but publis the application other reasons	vention hed on, or	

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

EP 05 25 7181

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.

29-03-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0565379 A1	13-10-1993	CA 2092257 A1 JP 5295642 A US 5411445 A	10-10-1993 09-11-1993 02-05-1995
US 5230665 A	27-07-1993	JP 3064486 B2 JP 4358609 A	12-07-2000 11-12-1992
WO 03033853 A1	24-04-2003	CN 1568393 A EP 1442195 A1 US 2004244921 A1	19-01-2005 04-08-2004 09-12-2004
US 1522297 A	06-01-1925	NONE	
US 2637084 A	05-05-1953	NONE	
DE 29711893 U1	11-09-1997	CA 2209745 A1 FR 2767152 A3	07-01-1999 12-02-1999
DE 8700548 U1	05-03-1987	NONE	
US 2577046 A	04-12-1951	NONE	

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