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(54)Impact measuring target/ergometer for contact sports

An impact measuring target/ergometer includes a mannequin 20 which has an upper portion 22 representative of a person's head, a narrower portion 24 representative of a person's neck and a lower portion 26 representative of a person's torso. The mannequin 20 is provided with twelve impact zones numbered 1 to 12, which are each oriented at specific angles intended to replicate the angles of received punches or other hits from a user from different directions. The mannequin 20 is intended to be fixed to a wall 28 or similar immovable structure and for this purpose is provided with suitable securing means. Within the mannequin 20 there is provided one or more accelerometers 38 intended to obtain a measure of an impacting force on the mannequin 20. The signal from the accelerometer(s) can then be processed to obtain an indication of the force of an impact and of the direction of impact. The mannequin may represent any one of more parts of a target intended to be

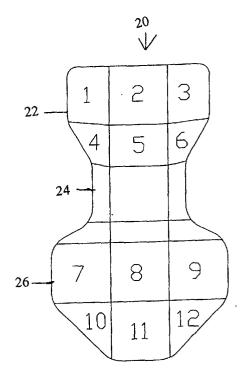


FIGURE 2

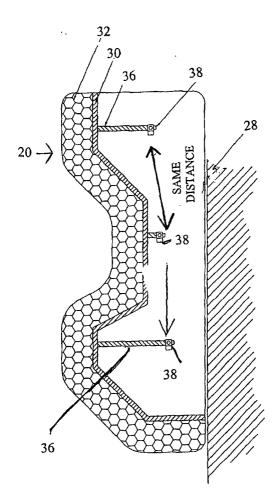


FIGURE 4



EUROPEAN SEARCH REPORT

Application Number EP 02 25 0148

Category	Citation of document with indical of relevant passages		Relevant to claim		CLASSIFICATION OF THE APPLICATION (Int.CI.7)	
X	FR 2 788 990 A (VERSER 4 August 2000 (2000-08 * the whole document *	RSERON) 0-08-04)			A63B69/34 A63B69/32	
X	WO 97 29813 A (CHI) 21 August 1997 (1997-0 * page 6, line 2 - pag figures 1-5 *		1-7			
X	US 5 921 896 A (BOLAND 13 July 1999 (1999-07- * claims 18-22; figure	(1999-07-13)				
X	GB 2 270 004 A (NELSON 2 March 1994 (1994-03- * page 3, line 3 - pag figures 1-4 *	02)	1-3	,6,7		
х	DATABASE WPI Section PQ, Week 19854 Derwent Publications L Class P36, AN 1985-274 XP002239943 -& SU 1 151 252 A (LEN 23 April 1985 (1985-04 * abstract *	td., London, GB; 420 GD KALININ POLY),	1,2,4-7		TECHNICAL FIELDS SEARCHED (Int.CI.7)	
X		3 2 220 749 A (MEDMARK INTERNATIONAL) 7 January 1990 (1990-01-17) the whole document *		,6,7		
X	US 4 974 833 A (HARTMA 4 December 1990 (1990- * column 3, line 4 - c figures 1,2 *	12-04)	line 20;			
	The present search report has been	drawn up for all claims				
	Place of search	Date of completion of the search	٦	1127	Examiner M	
	THE HAGUE	2 May 2003			liams, M	
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		E : earlier pater after the filin D : document c L : document ci	T: theory or principle underlying the invention E: earlier patient document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons			
O: nor	-written disclosure rmediate document				y, corresponding	



EUROPEAN SEARCH REPORT

Application Number EP 02 25 0148

Category	Citation of document with indication, w of relevant passages	here appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)		
Х	US 4 824 107 A (FRENCH) 25 April 1989 (1989-04-25)		1-4,6,7	ge.		
A	* column 10, line 12 - lin		5			
X	US 5 271 627 A (RUSSELL ET 21 December 1993 (1993-12-		1-5			
A	DATABASE WPI Section PQ, Week 197724 Derwent Publications Ltd., Class P36, AN 1977-E9996Y XP002239944 -& SU 535 090 A (SPORT TUR 29 November 1976 (1976-11- * abstract *	IST PROD),	2-5			
				TECHNICAL FIELDS SEARCHED (Int.CI.7)		
	The present search report has been drawn	<u> </u>				
		Date of completion of the search 2 May 2003	Examiner Williams, M			
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 (after the filing (D : document cite L : document cite	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			

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

EP 02 25 0148

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.

02-05-2003

Patent docume cited in search re	ent port	Publication date		Patent family member(s)	y	Publication date
FR 2788990	Α	04-08-2000	FR	2788990 A	۱1	04-08-2000
WO 9729813	A	21-08-1997	WO	9729813 A	\1	21-08-1997
US 5921896	Α	13-07-1999	NONE			
GB 2270004	Α	02-03-1994	NONE			
SU 1151252	Α	23-04-1985	SU	1151252 A	11	23-04-198!
GB 2220749	A	17-01-1990	NONE			
US 4974833	Α	04-12-1990	NONE			
US 4824107	A	25-04-1989	US AU EP JP US	4761005 A 6345286 A 0222640 A 62176471 A 4883271 A	1 12 1	02-08-1988 16-04-1988 20-05-1988 03-08-1988 28-11-1988
US 5271627	Α	21-12-1993	NONE			
SU 535090	Α	15-11-1976	SU	535090 A	\1	15-11-197
				i.		
		e Official Journal of the l				