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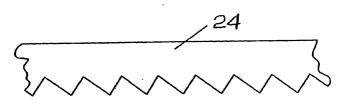
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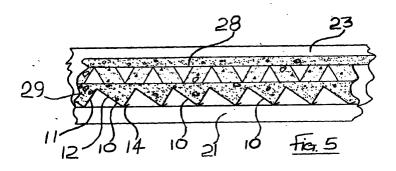
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#### (54) Stairway manufacture

(57) A set of L-shaped modular step forming elements (10) are arranged within a mould (20) on support rails (21) to define a stairway of steps having a desired riser and tread. Each element (10) comprises a steel sheet bent intermediate its ends into an L-shape having a riser panel (11) and a tread panel (12). Spaced-apart stringer panels (23,24) which engage the elements (10) define a required stairway width and end panels extending between the stringer panels (23,24) close off each

end of the mould (20) to define the length of the stairway. Steel reinforcement such as bars or a cage (28) is mounted on the step forming elements (10) and then concrete (29) is poured into the mould (20) covering the cage (28). A poker vibrator is inserted into the concrete (29) and vibrated to settle the concrete (29) and exclude air from the mould (20). A heating element (26) may be operated to accelerate the setting of the concrete (29) in the mould (20). After the concrete is set the stairway thus formed is removed from the mould.







# **EUROPEAN SEARCH REPORT**

Application Number

EP 99 65 0021

	DOCUMENTS CONSID	ERED TO BE RELEVANT				
Category	Citation of document with ir of relevant pass	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)			
Χ	US 5 511 347 A (SCH 30 April 1996 (1996 * column 5, line 54 * figures 10-17 *	1-4,6, 10-15	B28B7/22			
Y A	* Figures 10 17 .		16,17 7-9			
X	PATENT ABSTRACTS OF vol. 015, no. 013 ( 11 January 1991 (19 & JP 02 265705 A (T 30 October 1990 (19 * abstract *	M-1069), 91-01-11) OKYU CONSTR CO LTD),	1,3-6,13			
Υ	* abstract *		10-12, 14-16			
X	FR 2 546 440 A (RIC 30 November 1984 (1 * the whole documen	984-11-30) t *	1,3,4,6, 13			
	* page 3, line 17 - * figures 1-5 *	page 4, line 8 *		TECHNICAL FIELDS SEARCHED (int.Cl.6)		
Υ			10-12, 14-17	B28B		
Α			7-9	E04G E04F		
Y,D	GB 2 217 359 A (BISON LIMITED) 25 October 1989 (1989-10-25) * the whole document *		11,14,15			
Α	The Mile of accument		1,2,13			
Y	DE 195 46 050 C (BE HOCHBAU S) 5 Decemb * the whole documen * column 3, line 27	10,11				
А	* figure 3 *		1,2,12,			
		-/				
	The present search report has	been drawn up for all claims	-			
	Place of search	Date of completion of the search	1	Examiner		
	THE HAGUE	24 October 2000	Gou	urier, P		
(	CATEGORY OF CITED DOCUMENTS	T: theory or princip	le underlying the	invention		
X:par Y:par doo	E : earli X : particularly relevant if taken alone Y : particularly relevant if combined with another D : docudocument of the same category L : docu		er patent document, but published on, or the filing date ument cited in the application ument cited for other reasons			
0 : noi	A : technological background O : non-written disclosure P : intermediate document		& : member of the same patent family, corresponding document			



## **EUROPEAN SEARCH REPORT**

Application Number EP 99 65 0021

	DOCUMENTS CONSIDE	RED TO BE RELEVAN	T	
Category	Citation of document with inc of relevant passa		Relevan to claim	t CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Υ	US 2 161 822 A (F. k 13 June 1939 (1939-0 * the whole document	06-13)	16,17	
Α	* the whole document	, <b>T</b>	1-4,6,7	7,
Y	EP 0 490 534 A (COST 17 June 1992 (1992-0 * the whole document	06-17)	16,17	
				TECHNICAL FIELDS SEARCHED (Int.Cl.6)
	The procent search report has be	ngan drawn un for all claims		
	The present search report has be	Date of completion of the sear	rch I	Examiner
	THE HAGUE	·	24 October 2000 G	
X:pa Y:pa do A:teo O:no	CATEGORY OF CITED DOCUMENTS rticularly relevant if taken alone rticularly relevant if combined with anot pument of the same category chnological background n-written disclosure emediate document	E : earlier pat after the fil ner D : document L : document	cited in the applica cited for other reas	oublished on, or tion

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

EP 99 65 0021

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.

24-10-2000

Patent document cited in search report		rt	Publication date		Patent family member(s)	Publication date
US	5511347	A	30-04-1996	AU CA WO	4160696 A 2155394 A 9614483 A	31-05-19 08-05-19 17-05-19
JP	02265705	Α	30-10-1990	JP	2686555 B	08-12-19
FR	2546440	Α	30-11-1984	NONE		
GB	2217359	Α	25-10-1989	NONE		<b></b>
DE	19546050	С	05-12-1996	NONE		
US	2161822	A	13-06-1939	NONE	· · · · · · · · · · · · · · · · · · ·	
EP	0490534	Α	17-06-1992	AU CA CN CS JP	8832391 A 2057186 A 1063071 A 9103712 A 4301408 A	11-06-19 08-06-19 29-07-19 16-12-19 26-10-19

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