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09.10.1997 JP 29366897 07.08.1997 JP 747697 U (71) Applicant: Naeshiro, Jiro
Ashina-gun, Hiroshima Prefecture (JP)

(72) Inventor: Naeshiro, Jiro
Ashina-gun, Hiroshima Prefecture (JP)

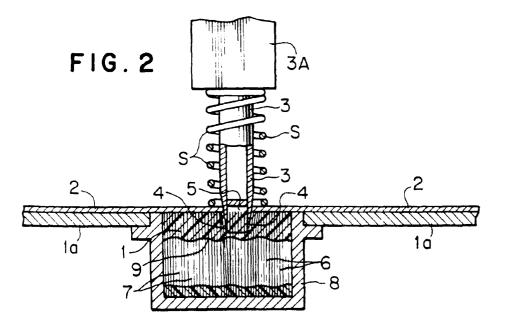
(74) Representative: Sanderson, Michael John et al Mewburn Ellis, York House,23 Kingsway

London WC2B 6HP (GB)

(54) Apparatus and method for piercing cloth

(57) A circular hole (5) can be pierced by bringing a circular edge (4) of a cylindrical rotary piercing punch (3) into rotation-contact with a ground fabric (2) placed on the ground fabric base (1), the ground fabric base (1) comprising a filament bundle (7) densely housed in a container (8) or in a recess provided on a plate (1a), thus providing a rough upper surface to the base (1). A clear-

ly-defined hole (5) with a sharp periphery can thus be pierced in the ground fabric (2) by means of the edge (4) while pressing the ground fabric (2) onto the rough surface of the base (1) by means of the edge (4) which also serves to keep the fabric (2) stationary. The ground fabric base (1) may be hardened by causing an adhesive (9) to penetrate into the upper portion of the filament bundle (7).





EUROPEAN SEARCH REPORT

Application Number EP 98 30 5351

Category	Citation of document with indic of relevant passage		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CL6)	
X Y	US 4 749 314 A (LEBLOND CLAUDE W) 7 June 1988 (1988-06-07) * abstract * * column 3, line 50 - line 60 *		1 3,5,6,9	B26F1/16 B26D7/20	
Y	EP 0 781 633 A (PROCTER & GAMBLE) 2 July 1997 (1997-07-02) * claim 2 *		3		
Y	US 3 677 123 A (GERBE 18 July 1972 (1972-07 * the whole document	-18)	5,6,9		
X	US 2 108 131 A (LEWIS 15 February 1938 (193	8-02-15)	7,8		
A	* page 2, line 20 - 1	ine 25 *	1		
X	US 3 066 554 A (HANSO 4 December 1962 (1962 * column 4, line 23 -	-12-04)	7,8		
X	US 3 781 124 A (KENYO 25 December 1973 (197 * column 2, line 60 - figures 2,4 *	 N BODYCOMB A) 3-12-25)	7,8	TECHNICAL FIELDS SEARCHED (Int.CL6) B26D B26F	
A	DE 953 430 C (SCHILLER ET AL.) * page 2, line 54 - line 60 * GB 2 175 237 A (GERBER SCIENT INC) 26 November 1986 (1986-11-26) * figure 11 *		1		
A			5		
A	US 4 205 835 A (GERBE 3 June 1980 (1980-06- * column 4, line 35 -	03) 	5		
		-/			
	The present search report has bee	on drawn up for all claims	1		
	Place of search	Date of completion of the search	' T	Examiner	
	THE HAGUE	3 November 1999	Vaç	glienti, G	
X:par Y:par doo	ATEGORY OF CITED DOCUMENTS toularly relevant if taken alone toularly relevant if combined with another unent of the same category anological background	L : document atted	ocument, but pub ite in the application for other reasons	lish ed on, or n	



EUROPEAN SEARCH REPORT

Application Number EP 98 30 5351

Category	Citation of document with indica of relevant passages		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CL6)
A	US 4 774 121 A (VOLLEN 27 September 1988 (198	WEIDER II EDWARD E) 8-09-27)	4,6,9	
A	US 3 650 864 A (GOLDSW 21 March 1972 (1972-03 * abstract * * column 8, line 40 *		2,10	
				TECHNICAL FIELDS SEARCHED (Int.Cl.6)
	The present search report has been	drawn up for all claims Date of completion of the search		Examiner
	THE HAGUE	3 November 1999	Vag	lienti, G
X:part Y:part doc	ATEGORY OF CITED DOCUMENTS cularly relevant if taken alone cularly relevant if combined with another unent of the same category anological background	T : theory or principle E : earlier patent doc after the filing dat D : document cited in L : document cited fo	e underlying the l sument, but public e n the application or other reasons	invention ahed on, or

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

EP 98 30 5351

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.

03-11-1999

Citio	atent document d in search repo		Publication date	Patent family member(s)	Publication date
US	4749314	A	07-06-1988	DE 3814660 A	01-12-19
	.,	••	0, 00 2000	FR 2614573 A	04-11-19
				GB 2204257 A,B	09-11-19
				JP 1903525 C	08-02-19
				JP 6030880 B	27-04-19
				JP 63283894 A	21-11-19
—- ГР	0781633	A	02-07-1997	WO 9724207 A	10-07-19
US	3677123	Α	18-07-1972	DE 2144855 A	22-06-19
				FR 2117519 A	21-07-19
				GB 1339079 A	28-11-19
us Us	2108131	Α	15-02-1938	NONE	نه کے کینیہ کی ہے۔ بیٹر کے کے بیٹر
—- US	3066554	Α	04-12-1962	NONE	
us Us	3781124	Α	25-12-1973	NONE	
DE	953430	С	يد مسالة التي ديث حالا التي يوم داد بالكويت سنة التالة التي بويد داد التالة	NONE	
GB	2175237	Α	26-11-1986	AT 393845 B	27-12-19
	21/323/	^	20 11 1900	AT 134586 A	15-06-19
				DE 3616483 A	27-11-19
				FI 862142 A,B,	23-11-19
				FR 2582247 A	28-11-19
				HK 2562247 A	16-03-19
				IT 1189677 B	04-02-19
				JP 1792280 C	14-10-19
				JP 4079800 B	16-12-19
				JP 61270100 A	29-11-19
				US 4685363 A	11-08-19
US	4205835	Α	03-06-1980	NONE	
US	4774121	A	27-09-1988	NONE	
	3650864	Α	21-03-1972	NONE	

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