

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 080 926 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
20.06.2001 Bulletin 2001/25

(51) Int Cl. 7: B41J 2/355, B41C 1/14,
B41J 2/35, B41J 2/345,
B41J 2/335

(43) Date of publication A2:
07.03.2001 Bulletin 2001/10

(21) Application number: 00118788.9

(22) Date of filing: 30.08.2000

(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

(30) Priority: 31.08.1999 JP 24583999
31.08.1999 JP 24584099
31.08.1999 JP 24623099

(71) Applicant: RISO KAGAKU CORPORATION
Tokyo (JP)

(72) Inventor: Ryoichi, Imai, c/o Riso Kagaku Corp.
R&D Center
Inashiki-gun, Ibaraki-ken (JP)

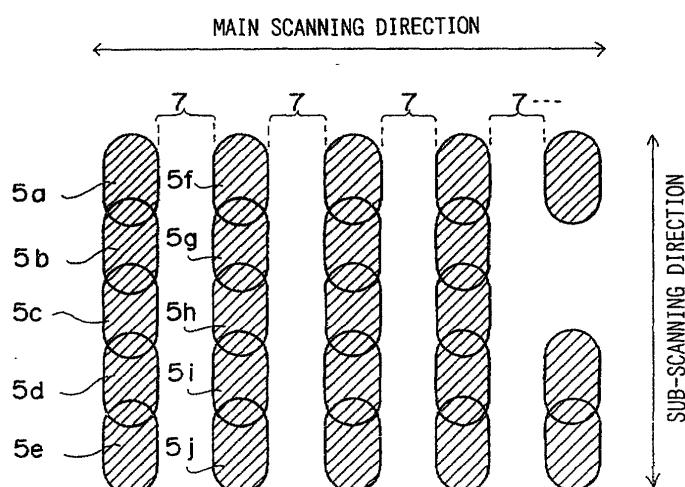
(74) Representative: Klunker . Schmitt-Nilson . Hirsch
Winzererstrasse 106
80797 München (DE)

(54) Method of and apparatus for making stencil

(57) A stencil is made by the use of a thermal head which has an array of resistance heater element arranged in a main scanning direction. The resistance heater elements are selectively driven while the stencil material is conveyed in a sub-scanning direction intersecting the main scanning direction so that perforations are formed in the stencil material in a predetermined

size at a first pitch in the main scanning direction and a second pitch in the sub-scanning direction. The stencil material is perforated so that unperforated portions which continuously extend in one of the main scanning direction and the sub-scanning direction to separate perforations in the other of the main scanning direction and the sub-scanning direction are left in the stencil material.

F I G . 5





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 11 8788

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
E	EP 1 063 092 A (RISO KAGAKU CORP) 27 December 2000 (2000-12-27) * the whole document *	1,2,16, 17	B41J2/355 B41C1/14 B41J2/35 B41J2/345 B41J2/335
X	US 5 809 879 A (KATOH SATOSHI ET AL) 22 September 1998 (1998-09-22)	1,3,16, 19	
Y	* abstract * * column 16, line 17 - line 28 * * figures 19A,19B *	2,17	
Y	PATENT ABSTRACTS OF JAPAN vol. 010, no. 234 (M-507), 14 August 1986 (1986-08-14) & JP 61 068264 A (FUJI XEROX CO LTD), 8 April 1986 (1986-04-08) * abstract *	2,17	
X	PATENT ABSTRACTS OF JAPAN vol. 016, no. 282 (M-1269), 23 June 1992 (1992-06-23) & JP 04 071847 A (RICOH CO LTD), 6 March 1992 (1992-03-06) * abstract *	1,3,16, 19	
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 03, 31 March 1997 (1997-03-31) & JP 08 300601 A (DEYUPURO SEIKO KK), 19 November 1996 (1996-11-19) * abstract *	1,4-16, 20-31	B41J B41C
A	US 5 216 951 A (SATO MITSUO ET AL) 8 June 1993 (1993-06-08) * abstract * * column 7, line 11 - line 58 * * figures 11,12 *	1-3, 16-19	
		-/--	
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search		Examiner
THE HAGUE	26 April 2001		Didenot, B
CATEGORY OF CITED DOCUMENTS		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	
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			



**European Patent
Office**

EUROPEAN SEARCH REPORT

Application Number

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.7)
A	US 5 592 209 A (HASEGAWA TAKANORI ET AL) 7 January 1997 (1997-01-07) * the whole document *	1-3, 16-19	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)			
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	26 April 2001	Didenot, B	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone	T : theory or principle underlying the invention		
Y : particularly relevant if combined with another document of the same category	E : earlier patent document, but published on, or after the filing date		
A : technological background	D : document cited in the application		
O : non-written disclosure	L : document cited for other reasons		
P : intermediate document	& : member of the same patent family, corresponding document		

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

EP 00 11 8788

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.

26-04-2001

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 1063092	A	27-12-2000		JP 2001001562 A		09-01-2001
US 5809879	A	22-09-1998		JP 2915776 B		05-07-1999
				JP 7241974 A		19-09-1995
				GB 2287224 A, B		13-09-1995
				US 5685222 A		11-11-1997
				JP 2960863 B		12-10-1999
				JP 8067061 A		12-03-1996
JP 61068264	A	08-04-1986		NONE		
JP 04071847	A	06-03-1992		NONE		
JP 08300601	A	19-11-1996		NONE		
US 5216951	A	08-06-1993		JP 4045936 A		14-02-1992
US 5592209	A	07-01-1997		JP 3043443 B		22-05-2000
				JP 4265759 A		21-09-1992
				EP 0500334 A		26-08-1992