Europäisches Patentamt European Patent Office Office européen des brevets

(11) **EP 0 884 185 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 31.03.1999 Bulletin 1999/13

(51) Int. Cl.⁶: **B41J 2/165**

(43) Date of publication A2: **16.12.1998 Bulletin 1998/51**

(21) Application number: 98110682.6

(22) Date of filing: 10.06.1998

(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: 11.06.1997 JP 153456/97

(71) Applicant: Canon Aptex Inc.
Mitsukaido-shi Ibaraki-ken (JP)

(72) Inventor: Sonobe, Youichi Mitsukaido-shi, Ibaraki (JP)

(74) Representative:

Pellmann, Hans-Bernd, Dipl.-Ing. Patentanwaltsbüro Tiedtke-Bühling-Kinne & Partner Bavariaring 4 80336 München (DE)

(54) Image forming method and apparatus therefor

(57) An image forming apparatus prevents foreign matter, such as dust or the like from being sucked into an ink passage from an ejection opening when a liquid ejection head ejecting a liquid is elevated from an image forming position to a recovery process position located above the image forming position. The image forming apparatus includes a liquid supply passage (39) connected to the liquid ejection head (21) which is provided with ejection opening (44) for ejecting liquid, liquid supply device (41) for supplying liquid to the liquid ejection head (21) via the liquid supply passage (39), recovery process device for recovering ejecting condition of liquid

from the liquid ejection head (21), head moving device for moving the liquid ejection head between the recovery process position for performing recovery process of the liquid ejection head (21) by the recovery process device and an image forming position for forming an image on the printing medium by the liquid ejection head (21), and closing device (41) for closing the liquid supply passage (39) during movement of the liquid ejection head (21) into the recovery process position by the head moving device.

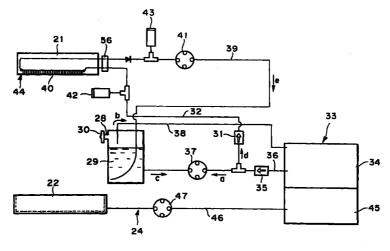


FIG.1

European Patent Office

EUROPEAN SEARCH REPORT

Application Number EP 98 11 0682

Category	Citation of document with income of relevant passa		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)	
A		RSON DAVID G ET AL)	1,5	B41J2/165	
A	figure 16 * * column 7, line 23 figures 2A,2B * * column 9, line 34 figures 4-6 *	ON KK) 4 July 1990 - column 6, line 20; - column 8, line 38; - column 11, line 53; 1 - column 15, line 29			
A		ON KK) 5 December 1990 - column 5, line 48;	1,5	TROUNION SITE OF	
Α	29 October 1996	 AMBELAS RANDY C ET AL - column 9, line 15;	.) 1,5	TECHNICAL FIELDS SEARCHED (Int.CI.6)	
Α .	US 5 561 448 A (KANE 1 October 1996 * abstract * * column 5, line 63 figures 6-10 *		1,5		
A	PATENT ABSTRACTS OF vol. 018, no. 452 (N & JP 06 143554 A (N 24 May 1994 * abstract *	M-1661), 23 August 199	1,5		
	The present search report has b				
Place of search BERLIN		Date of completion of the search 4 February 1999) Nie	Examiner elsen, M	
X : parl Y : parl doc	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with anoth ument of the same category inological background	T: theory or prin E: earlier patent after the filing er D: document cit L: document cite	I ciple underlying the document, but pub	invention lished on, or	

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

EP 98 11 0682

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.

04-02-1999

	Patent documen ed in search rep		Publication date		Patent family member(s)	Publication date
US	5534897	Α	09-07-1996	JP	7032602 A	03-02-199
EP	0376309	A	04-07-1990	JP JP JP JP JP JP DE DE EP ES US	2179752 A 2179755 A 2179755 A 2728913 B 2179759 A 2728914 B 2179747 A 2733275 B 2179754 A 2733276 B 2179756 A 2733277 B 68923861 D 68923861 T 68928318 D 68928318 T 0583016 A 2076197 T 5055861 A	12-07-199 12-07-199 18-03-199 12-07-199 18-03-199 12-07-199 30-03-199 12-07-199 30-03-199 21-09-199 21-09-199 22-02-199 16-10-199 16-02-199 01-11-199 08-10-199
EP	0401026	Α	05-12-1990	JP JP DE DE US	2719634 B 3006170 A 69018515 D 69018515 T 5229792 A	25-02-199 11-01-199 18-05-199 14-09-199 20-07-199
US	5570117	Α	29-10-1996	NONE		
US	5561448	A	01-10-1996	AT DE DE EP JP US EP	139941 T 69120569 D 69120569 T 0448967 A 4211962 A 5231424 A 0673771 A	15-07-199 08-08-199 09-01-199 02-10-199 03-08-199 27-07-199

FORM P0459

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