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(71) Applicant: Hewlett-Packard Company Palo Alto, California 94304 (US)

- (72) Inventor: Eckard, Bruce Michael Cardiff, CA 92007 (US)
- (74) Representative: Colgan, Stephen James et al CARPMAELS & RANSFORD
 43 Bloomsbury Square London WC1A 2RA (GB)

(54) Dot substitution to compensate for failed ink jet nozzles

(57) An ink jet printer and a method of operating an ink jet printer wherein inoperative true black printing nozzles are detected, and substitute dots formed of non-black are printed at pixel locations that normally would be printed with the inoperative true black printing noz-

zles if such nozzles were operative. Each substitute dot comprises one or more constituent non-black dots, and in accordance with one implementation, each substituted dot comprises a composite or process black dot formed of two or three of cyan, magenta or yellow inks.

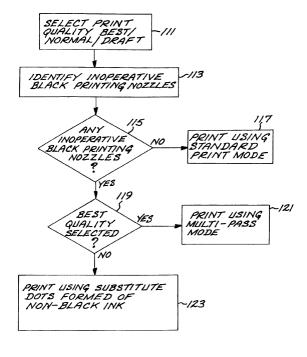


FIG.8



EUROPEAN SEARCH REPORT

Application Number EP 99 30 6367

Category	Citation of document with indication of relevant passages	on, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)	
Χ	US 5 581 284 A (HERMANS 3 December 1996 (1996-1		1-13	B41J2/165 B41J2/21	
Y	* column 2, line 52 - c figures *		14-18	04102/21	
Y	EP 0 694 396 A (CANON K 31 January 1996 (1996-0 * column 8, line 4 - co figures 1-13 *	1-31)	14-18		
А	US 5 124 720 A (SCHANTZ 23 June 1992 (1992-06-2 * column 3, line 10 - c	3)	* 1,14		
				TECHNICAL FIELDS SEARCHED (Int.CI.7)	
				B41J	
	The present search report has been d				
	Place of search THE HAGUE	Date of completion of the search 13 June 2000		Groot, R	
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		T : theory or pri E : earlier pater after the fill in D : document ci L : document ci	T theory or principle underlying the invention E earlier patent document, but published on, or after the filling date D document cited in the application L: document cited for other reasons		

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

EP 99 30 6367

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.

13-06-2000

EP 0694396 A 31-01-1996 JP 8025700 A 30-01-19 CA 2154208 A 22-01-19 CN 1121000 A 24-04-19 KR 161791 B 30-03-19 SG 35001 A 01-02-19	cite	ed in search repo	ort	date		Patent family member(s)		date
CA 2154208 A 22-01-19 CN 1121000 A 24-04-19 KR 161791 B 30-03-19 SG 35001 A 01-02-19 US 5124720 A 23-06-1992 JP 4226772 A 17-08-19	US	5581284	Α	03-12-1996	JP	8207321	Α	13-08-199
CA 2154208 A 22-01-19 CN 1121000 A 24-04-19 KR 161791 B 30-03-19 SG 35001 A 01-02-19 US 5124720 A 23-06-1992 JP 4226772 A 17-08-19	ΕP	0694396	Α	31-01-1996	JP	8025700	Α	30-01-199
CN 1121000 A 24-04-19 KR 161791 B 30-03-19 SG 35001 A 01-02-19 US 5124720 A 23-06-1992 JP 4226772 A 17-08-19								
KR 161791 B 30-03-19 SG 35001 A 01-02-19 US 5124720 A 23-06-1992 JP 4226772 A 17-08-19								
SG 35001 A 01-02-19 US 5124720 A 23-06-1992 JP 4226772 A 17-08-19								
						35001	Ā	01-02-199
	US	5124720	 А	23-06-1992	JP	4226772	Α	17-08-199