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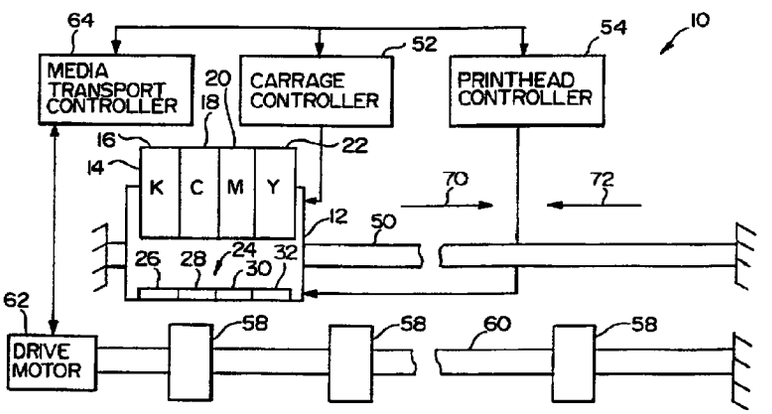
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(54) Bi-directional printing with controlled hue shifts

(57) Bi-directional color printing mode is achieved with colors applied in the same order regardless of which direction an inkjet pen is moving relative to a media sheet. For one approach a first pass of color printing onto virgin paper is performed only while the inkjet pen (14) moves in a prescribed direction (72) across the media (56). Printing a second pass then occurs while the inkjet pen moves in the opposite direction (70) across the media. The printhead prints in the same order regardless of which direction the inkjet pen moves across the media sheet.

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 98 11 5186

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.6)
X	EP 0 646 460 A (CANON KK) 5 April 1995 (1995-04-05) * page 16, line 25 - line 50; figures 5,9 * ---	1	B41J19/14 B41J2/21
A		2,7,8	
X	US 4 528 576 A (KOUMURA NOBORU ET AL) 9 July 1985 (1985-07-09) * the whole document * ---	1	
A		7	
A	US 4 207 579 A (MARINOFF GEORGE ET AL) 10 June 1980 (1980-06-10) * column 2, line 7 - line 9 * * column 2, line 50 - column 3, line 3 * * column 4, line 10 - line 31 * ---	2,8	
A	EP 0 661 870 A (XEROX CORP) 5 July 1995 (1995-07-05) * page 4, column 5, line 11 - column 6, line 46; figure 2 * ---	1,2,7,8	
A	EP 0 610 096 A (CANON KK) 10 August 1994 (1994-08-10) * column 8, line 9 - column 10, line 49; figures 5-7 * ---	1,2,7,8	TECHNICAL FIELDS SEARCHED (Int.Cl.6) B41J
A	PATENT ABSTRACTS OF JAPAN vol. 1995, no. - , 26 December 1995 (1995-12-26) & JP 07 195715 A (KATSURAGAWA ELECTRIC CO LTD), 1 August 1995 (1995-08-01) * abstract * ---	1,7	
	-/--		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	29 September 1999	De Groot, R

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Application Number
EP 98 11 5186

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.6)
A	PATENT ABSTRACTS OF JAPAN vol. 199, no. 703, 31 March 1997 (1997-03-31) & JP 08 295034 A (CANON INC.), 12 November 1996 (1996-11-12) * abstract *	1,7	
A	PATENT ABSTRACTS OF JAPAN vol. 015, no. 186 (M-1112), 14 May 1991 (1991-05-14) & JP 03 045351 A (MATSUSHITA ELECTRIC IND CO LTD), 26 February 1991 (1991-02-26) * abstract *	1,7	
A	PATENT ABSTRACTS OF JAPAN vol. 014, no. 209 (M-0968), 27 April 1990 (1990-04-27) & JP 02 047075 A (MINOLTA CAMERA CO LTD), 16 February 1990 (1990-02-16) * abstract *	1,7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	29 September 1999	De Groot, R

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& : member of the same patent family, corresponding document

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29-09-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0646460 A	05-04-1995	JP 7101052 A	18-04-1995
		JP 8039793 A	13-02-1996
US 4528576 A	09-07-1985	JP 1706581 C	27-10-1992
		JP 3076223 B	04-12-1991
		JP 58179652 A	20-10-1983
		JP 1707659 C	27-10-1992
		JP 3077066 B	09-12-1991
		JP 58179653 A	20-10-1983
		JP 1706582 C	27-10-1992
		JP 3076224 B	04-12-1991
		JP 58179655 A	20-10-1983
		JP 1706583 C	27-10-1992
		JP 3076225 B	04-12-1991
		JP 58179656 A	20-10-1983
US 4207579 A	10-06-1980	CA 1129478 A	10-08-1982
		DE 3000466 A	24-07-1980
		FR 2445766 A	01-08-1980
		GB 2040818 A,B	03-09-1980
		IT 1129051 B	04-06-1986
		JP 55111264 A	27-08-1980
		NL 7908927 A	10-07-1980
EP 0661870 A	05-07-1995	JP 7214797 A	15-08-1995
EP 0610096 A	10-08-1994	JP 6226998 A	16-08-1994
		JP 6312517 A	08-11-1994
JP 07195715 A	01-08-1995	NONE	
JP 08295034 A	12-11-1996	NONE	
JP 03045351 A	26-02-1991	NONE	
JP 02047075 A	16-02-1990	NONE	

EPO FORM P0459

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