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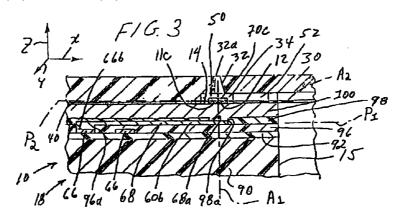
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(54)Printhead having heating element conductors positioned in spaced apart planes

A printhead is provided comprising a plate having a plurality of orifices through which ink droplets are ejected and a heater chip (10) coupled to the plate. The heater chip (10) includes at least one heating element (12) provided on a main body portion (18) of the heater chip (10). The main body portion (18) includes at least one first conductor (60) and at least one second conductor (70). The first (60) and second (70) conductors

contact the heating element (12) and provide energy to the heating element (12). At least one section of the first conductor (60) is positioned in a first plane (P1) and at least one section of the second conductor (70) is positioned in a second plane (P2) which is vertically spaced from the first plane (P_1) .





EUROPEAN SEARCH REPORT

Application Number EP 98 11 2209

Category	Citation of document with indicate of relevant passage		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.6)
Α	US 5 081 474 A (SHIBA 14 January 1992 * abstract * * column 6, line 63 - figure 7 *	TA MAKOTO ET AL)	1,14	B41J2/14 B41J2/16
Α	EP 0 769 379 A (LEXMA) 23 April 1997 * column 5, line 49 - figure 1 *	·	1,14	
А	EP 0 778 139 A (HEWLE 11 June 1997 * column 10, line 4-4		1,14	
А	US 5 317 346 A (GARCIA * column 3, line 17-6		4 1,14	
A	US 5 351 026 A (KANBA 27 September 1994 * abstract; figure 2		1,14	TECHNICAL FIELDS SEARCHED (Int.CI.6) B41J
	The present search report has bee	n drawn up for all claims Date of completion of the search		-
		22 April 1999		Examiner
X : parl Y : parl doc A : tech	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with another ument of the same category inological backgroundwritten disclosure	E : earlier paten after the filin D : document ci L : document cit	ted in the application ed for other reasons	ished on, or

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

EP 98 11 2209

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.

22-04-1999

Patent document cited in search repo		Publication date		Patent family member(s)	Publication date
US 5081474	Α	14-01-1992	JP	212 574 1 A	14-05-1990
EP 0769379	Α	23-04-1997	US DE JP	5774148 A 69601487 D 9174851 A	30-06-1998 18-03-1999 08-07-1997
EP 0778139	Α	11-06-1997	JP	9174844 A	08-07-1997
US 5317346	Α	31-05-1994	JP	6115075 A	26-04-1994
US 5351026	Α	27-09-1994	JP DE	5234706 A 4305216 A	10-09-1993 26-08-1993

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