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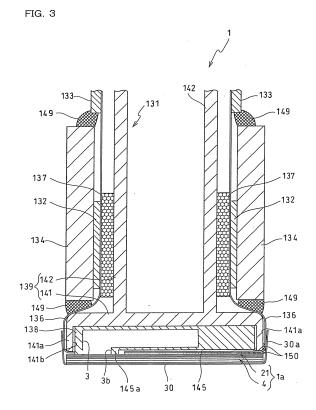
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(71) Applicant: Brother Kogyo Kabushiki Kaisha Nagoya, Aichi 467-8561 (JP) (72) Inventors:

- Sakaida, Atsuo Nagoya Aichi 467 (JP)
- Watanabe, Hidetoshi Nagoya Aichi 467 (JP)
- Hirota, Atsushi
 Nagoya Aichi 467 (JP)
- (74) Representative: Prüfer & Partner GbR European Patent Attorneys Sohnckestrasse 12 81479 München (DE)

(54) Ink-jet head and ink-jet printer having ink-jet head

(57)An ink-jet head includes a passage unit (4) comprising a plurality of pressure chambers (10) each connected with a nozzle (8) and arranged in a matrix in a plane to form a plurality of pressure chamber rows (11a, 11b) in a first direction (A) in the plane, and a plurality of common ink passages (5a) each extending along the first direction and communicating with the pressure chambers. The pressure chamber rows include first pressure chamber rows (11a) each constituted by pressure chambers (10a) each connected with a nozzle deviated on one side thereof with respect to a second direction crossing the first direction, and second pressure chamber rows (11b) each constituted by pressure chambers (10b) each connected with a nozzle deviated on the other side thereof with respect to the second direction, when viewing from a third direction perpendicular to the plane. Each of the common ink passages including at least a boundary region between one of the first pressure chamber rows and one of the second pressure chamber rows neighboring each other so that nozzles connected with the pressure chambers in the each pressure chamber rows face outward each other when viewing from the third direction, and each of the common ink passages not overlapping any of the nozzles.



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EUROPEAN SEARCH REPORT

Application Number EP 09 16 7614

Catogori	Citation of document with in	idication, where appropriate,	l R	elevant	CLASSIFICATION OF THE		
Category	of relevant passa			claim	APPLICATION (IPC)		
х	JP 7 246701 A (FUJI		10		INV.		
v	26 September 1995 (1995-09-26)	_		B41J2/14		
Υ	* figure 2 *		7	B41J2/145			
Υ	EP 1 138 493 A (NIF 4 October 2001 (200		CO) 10				
Α	* figures 2,3,10 *	1-10-04)	1,	13			
Υ	US 5 581 288 A (SHI AL) 3 December 1996 * figure 1 *	MIZU YUKIHARU [JP] E ⁻ (1996-12-03)	Г 10				
Υ	US 5 752 303 A (THI		7				
Α	19 May 1998 (1998-0 * figures 1A,1C *	5-19)	13				
A	JP 8 025628 A (FUJI 30 January 1996 (19 * figures 9,20 *		1				
A	US 5 592 203 A (THI 7 January 1997 (199 * figure 1C *	EL WOLFGANG ET AL) 7-01-07)	1		TECHNICAL FIELDS SEARCHED (IPC)		
A	JP 63 280649 A (SEI 17 November 1988 (1 * figures 3,4,6,8,1	988-11-17)	7,	11,13			
	The present search report has I	peen drawn up for all claims					
	Place of search	Date of completion of the search	h		Examiner		
	The Hague	19 July 2010		Bar	Bardet, Maude		
X : parti Y : parti	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone cularly relevant if combined with anotiment of the same category nological background	T : theory or pri E : earlier pate after the filin ner D : document c L : document ci	nt documen g date ited in the a	t, but publis pplication			

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

EP 09 16 7614

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.

19-07-2010

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 7246701	A	26-09-1995	NONE	<u>'</u>
EP 1138493	Α	04-10-2001	CN 1314247 A DE 60128506 T2 US 2002018095 A1	26-09-2003 31-01-2008 14-02-2002
US 5581288	А	03-12-1996	JP 3232626 B2 JP 5246044 A	26-11-200 24-09-1993
US 5752303	А	19-05-1998	US 6070972 A	06-06-2000
JP 8025628	Α	30-01-1996	NONE	
US 5592203	А	07-01-1997	CA 2101683 A1 DE 4225799 A1 EP 0581395 A2 JP 3199917 B2 JP 6155739 A JP 3466577 B2 JP 2001293866 A	01-02-1994 03-02-1994 02-02-1994 20-08-2003 03-06-1994 10-11-2003 23-10-2003
JP 63280649	Α	17-11-1988	NONE	

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