(11) **EP 1 070 589 A3** 

(12)

## **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3: 18.07.2001 Bulletin 2001/29

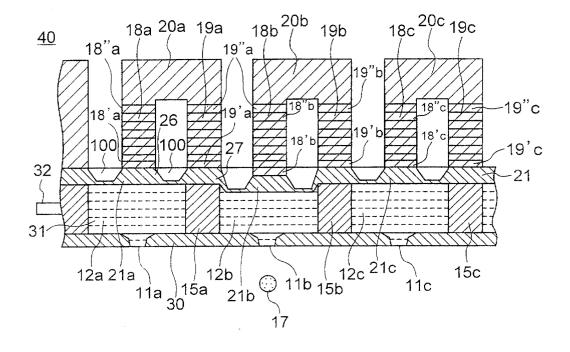
(51) Int CI.7: **B41J 2/14**, B41J 2/16

- (43) Date of publication A2: **24.01.2001 Bulletin 2001/04**
- (21) Application number: 00114942.6
- (22) Date of filing: 18.07.2000
- (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: **19.07.1999 JP 20521499 22.09.1999 JP 26909499**

- (71) Applicant: **NEC CORPORATION** Tokyo (JP)
- (72) Inventor: Ota, Takashi Minato-ku, Tokyo (JP)
- (74) Representative: VOSSIUS & PARTNER Siebertstrasse 4 81675 München (DE)
- (54) Ink-jet recording head, method for fabricating same and method for ejecting ink droplets
- (57) An ink-jet recording head including a plurality of pressure chambers (12a, 12b, 12c) connected to one another, a plurality of first piezoelectric elements (18a, 18b, 18c) and a plurality of second piezoelectric elements (19a, 19b, 19c). Each pair of the first piezoelectric element and the second piezoelectric element is inde-

pendent of the other pairs. Accordingly, since the transmission of the stress generated during the printing in the piezoelectric pair to the nearby pair is completely or almost completely prevented because the adjacent pairs are completely separated or connected with an elastic material absorbing the stress.

## FIG. 4





## **EUROPEAN SEARCH REPORT**

Application Number EP 00 11 4942

	DOCUMENTS CONSIDE		Relevant	CLASSIFICATION OF THE
Category	Citation of document with in of relevant passa	dication, where appropriate, ages	to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
χ	EP 0 819 524 A (OCE	TECH BV)	1-3,	B41J2/14
^	21 January 1998 (199	98-01-21)		B41J2/16
			19,28,29	
	* the whole documen	t *	00.00	
Α			32,36,	
			37,39,40	
А	EP 0 757 939 A (CIT 12 February 1997 (19 * the whole documen	997-02-12)	1,13, 19-40	
				TECHNICAL FIELDS SEARCHED (Int.Cl.7)
				B41J
	The present search report has	been drawn up for all claims		
<u></u>	Place of search	Date of completion of the search		Examiner
	THE HAGUE	30 May 2001	Meu	ılemans, J-P
X : par Y : par doo A : ted	CATEGORY OF CITED DOCUMENTS ticularly relevant if taken alone ticularly relevant if combined with anot ument of the same category thoological background n-written disclosure	T: theory or princ E: earlier patent after the filling her D: document cite L: document cite	iple underlying the document, but publicate d in the application d for other reasons as same patent famili	lished on, or

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

EP 00 11 4942

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.

30-05-2001

Patent document cited in search rep		Publication date		Patent family member(s)	Publication date
EP 0819524	Α	21-01-1998	DE DE	69701929 D 69701929 T	15-06-2000 02-11-2000
			EP	0819526 A	21-01-199
			JP	2930563 B	03-08-199
			JP	10086368 A	07-04-199
			US	6161925 A	19-12-200
EP 0757939	 А	12-02-1997	DE	69504493 D	08-10-199
			DE	69504493 T	18-02-199
			WO	9526271 A	05-10-199
			JP	2858956 B	17-02-199
			US	5761783 A	09-06-199
			US	6039440 A	21-03-200

FORM P0459

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