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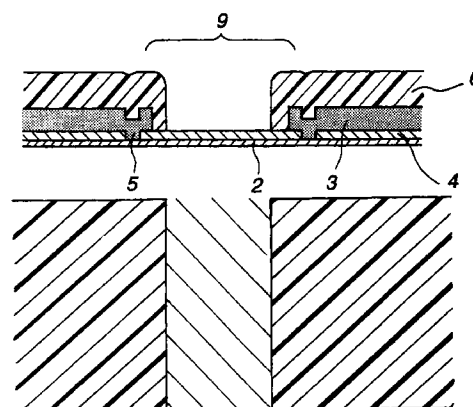
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(54) An ink-jet head, a substrate for an ink-jet head, and an ink-jet apparatus

(57) A substrate for an ink-jet head provides a protective layer which can assuredly cover electrothermal transducers even if the thickness of the layer is small. A thin intermediate layer (4) is provided between a heating resistive layer (2) and electrodes (3). The thin intermediate layer is an insulator on heating portions of the heating resistive layer. According to such a configuration, the life of the heating resistive layer becomes long, and occurrence of burnt deposits is suppressed. Since steps at portions where the thin intermediate layer is provided are small, an excellent film quality can be obtained even if the thickness of the protective layer is relatively small, and an excellent protective property is obtained.

FIG.1



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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 0 396 315 A (XEROX CORP) 7 November 1990	1-5, 10-14	B41J2/05
Y	* abstract *	6-9, 15-19	B41J2/14
	* column 6, line 21 - line 57 *		B41J2/16
	* figures 1-3 *		

X	US 4 951 063 A (HAWKINS WILLIAM G ET AL) 21 August 1990	1-5, 10-14	
	* abstract *		
	* column 4, line 43 - column 5, line 2 *		
	* column 5, line 61 - column 7, line 13 *		
	* claims; figures 2,3 *		

X	EP 0 596 705 A (XEROX CORP) 11 May 1994	1-5, 10-14,19	
Y	* column 7, line 10 - line 42 *	19	
	* column 9, line 19 - column 10, line 28 *		
	* figures 3-6 *		

Y	PATENT ABSTRACTS OF JAPAN vol. 004, no. 125 (M-030), 3 September 1980	6-9, 15-18	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
	& JP 55 082678 A (TOSHIBA CORP), 21 June 1980,		B41J
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	* abstract *		

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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		12 March 1997	Didenot, B
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A	PATENT ABSTRACTS OF JAPAN vol. 012, no. 055 (M-669), 19 February 1988 & JP 62 202754 A (TDK CORP), 7 September 1987, * abstract * -----	6-8, 15-17	
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THE HAGUE		12 March 1997	Didenot, B
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