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Droplet ejectors.

Provision is made for varying the size of the pixels or spots printed by an acoustic printer of the type in which one or more droplet ejectors (12) are driven by rf voltage pulses to produce focused acoustic beams (22) for ejecting droplets (25) of ink on demand from a free surface (24) of an ink supply (23). It has been found that the size of the individual droplets (25) of ink that are ejected from the free surface (24) of the ink can be varied by modulating the frequency, duration or amplitude of the pulses applied to such a droplet ejector (12). Furthermore, it also has been found that the trajectory along which the ink droplets (25) are propelled from the free surface (24) of the ink supply to a nearby record medium (11) is sufficiently well defined and repeatable that multiple droplets (25) can be deposited on the record medium (11) in rapid sequence, one on top of the other, before the ink has time to dry, to

print variable diameter pixels or spots. The control techniques described in this application may be employed for variable resolution printing and for imparting a controlled pseudo-gray scale shading to the printed image. Each of the pixels of the printed image may be composed of a single cell for one spot per pixel printing or may be subdivided into a plurality of cells for multiple spot per pixel printing.

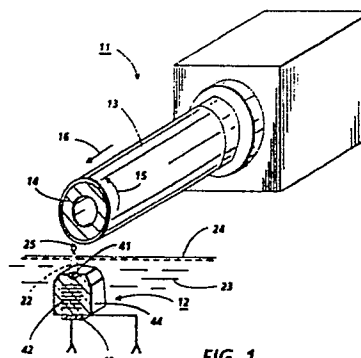


FIG. 1



EP 87 31 1224

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.4)
D,A	US-A-4 308 547 (K.T. LOVELADY et al.) * abstract; figures 1 - 5 *	1	B 41 J 3/04
A	DE-A-2 623 768 (TELETYPE CORP) * claim 1 *	8	
A	US-A-4 499 479 (F. CHEE-SHUEN LEE et al.) * abstract *	2, 3	
A	EP-A-0 147 575 (IBM CORP) * abstract *	4	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			B 41 J 3/04
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 16-01-1989	Examiner ZOPF K
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			