

Title (en)  
DROPLET EJECTORS

Publication  
**EP 0273664 B1 19930714 (EN)**

Application  
**EP 87311224 A 19871218**

Priority  
US 94428686 A 19861219

Abstract (en)  
[origin: EP0273664A2] 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.

IPC 1-7  
**B41J 2/065; B41J 2/205**

IPC 8 full level  
**B41J 2/205** (2006.01); **B41J 2/015** (2006.01); **B41J 2/14** (2006.01); **B41J 2/21** (2006.01)

CPC (source: EP)  
**B41J 2/14008** (2013.01); **B41J 2/2128** (2013.01); **B41J 2002/14322** (2013.01)

Cited by  
EP0550192A3; US5412413A; EP0881082A3; EP0728584A3; US5912679A; US5997132A; EP0845364A3; US5629724A; DE4415771A1; US5612723A; DE4415771C2; EP0375433A3; US7637585B2; US6443547B1; EP1294578B2

Designated contracting state (EPC)  
DE FR GB IT

DOCDB simple family (publication)  
**EP 0273664 A2 19880706; EP 0273664 A3 19890524; EP 0273664 B1 19930714**; DE 3786542 D1 19930819; DE 3786542 T2 19931028; JP S63166545 A 19880709

DOCDB simple family (application)  
**EP 87311224 A 19871218**; DE 3786542 T 19871218; JP 31080387 A 19871208