

Title (en)

Method and apparatus for controlling inkjet nozzle loading

Title (de)

Verfahren und Apparat zum Steuern des Tintennachfüllens eines Tintenstrahldruckkopfes

Title (fr)

Procédé et appareil pour commander le chargement d'une tête à impression à jet d'encre

Publication

EP 0760286 A1 19970305 (EN)

Application

EP 95309124 A 19951214

Priority

US 51927695 A 19950825

Abstract (en)

An inkjet nozzle (60,80) having a channel (14) and chamber (16), also includes a damping structure (62, 82) about the nozzle channel for actively restricting ink flow through the channel. According to alternative embodiments the damping structure is a capacitive structure (62) and/or an inductive structure (82). A capacitive structure sets up a voltage potential across the channel width (e.g., diameter). Charge centers in the ink respond to the field. When a nozzle is fired, the capacitive structure discharges to ground and ink flows through the channel under passive flow conditions. Thereafter, the capacitive structure is recharged slowing the ink flow. The field potential is set up causing ink flow to taper off as a desired volume approaches and restrict back-flow once the desired volume is achieved. The inductive structure operates similarly, but creates a magnetic field. Ferromagnetic ink responds to the field so as to slow ink flow and restrict back-flow. As a result, the conventional flow and ebb cycle during nozzle loading is shortened and steady state chamber conditions are reached in less time. <IMAGE>

IPC 1-7

B41J 2/055

IPC 8 full level

B41J 2/175 (2006.01); **B41J 2/055** (2006.01)

CPC (source: EP)

B41J 2/055 (2013.01)

Citation (search report)

- [A] EP 0436047 A1 19910710 - SIEMENS AG [DE]
- [XY] PATENT ABSTRACTS OF JAPAN vol. 005, no. 127 (M - 083) 15 August 1981 (1981-08-15)
- [X] PATENT ABSTRACTS OF JAPAN vol. 010, no. 368 (M - 543) 9 December 1986 (1986-12-09)
- [X] PATENT ABSTRACTS OF JAPAN vol. 006, no. 093 (M - 133) 29 May 1982 (1982-05-29)
- [XY] PATENT ABSTRACTS OF JAPAN vol. 006, no. 193 (M - 160) 2 October 1982 (1982-10-02)
- [X] ANONYMOUS: "Ink Jet Printer Head", IBM TECHNICAL DISCLOSURE BULLETIN, vol. 27, no. 3, NEW YORK, US, pages 1731 - 1732
- [Y] PATENT ABSTRACTS OF JAPAN vol. 014, no. 331 (M - 0999) 17 July 1990 (1990-07-17)

Cited by

US7182432B2; WO0117781A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0760286 A1 19970305; JP H09118020 A 19970506

DOCDB simple family (application)

EP 95309124 A 19951214; JP 21444296 A 19960814