

Title (en)

Imaging apparatus and method adapted to control ink droplet volume and void formation

Title (de)

Bilderzeugungsgerät und angepasstes Verfahren zur Regelung des Volumens von Tintentröpfchen und der Bläschenerzeugung

Title (fr)

Appareil d'imagerie et methode adaptée pour contrÔler le volume des gouttes d'encre et la formation de bulles

Publication

EP 0867284 A2 19980930 (EN)

Application

EP 98200819 A 19980316

Priority

US 82635797 A 19970326

Abstract (en)

Imaging apparatus and method adapted to control ink droplet volume and void formation. The apparatus (10) includes an ink jet print head (45) having a nozzle (110) for ejecting an ink droplet (150) therefrom. A heater element (130) is in heat transfer communication with the ink droplet for variably supplying heat energy to the ink droplet, so that the volume of the ink droplet is controlled as the heat energy is variably supplied to the ink droplet. A controller (40) is connected to the heater element for variably controlling the heat energy supplied to the ink droplet. The controller variably controls the heat energy by variably controlling a plurality of voltage pulses sequentially supplied to the heater element. Moreover, in order to reduce the potential for void formation in the ink droplet, the pulses are spaced-apart by a predetermined delay interval. Suitable control of ink droplet volume and delay interval between pulses results in uniform print density and "gray-scaling" of each dot or pixel in the output image and also precludes void formation. <IMAGE>

IPC 1-7

B41J 2/05; **B41J 2/14**; **B41J 2/205**

IPC 8 full level

B41J 2/01 (2006.01); **B41J 2/04** (2006.01); **B41J 2/05** (2006.01); **B41J 2/14** (2006.01); **B41J 2/205** (2006.01); **B41J 2/21** (2006.01)

CPC (source: EP)

B41J 2/0458 (2013.01); **B41J 2/04588** (2013.01); **B41J 2/0459** (2013.01); **B41J 2/04591** (2013.01); **B41J 2/04593** (2013.01); **B41J 2/04598** (2013.01); **B41J 2/14137** (2013.01); **B41J 2/14451** (2013.01); **B41J 2/2128** (2013.01)

Citation (applicant)

US 4563689 A 19860107 - MURAKAMI KIYOTAKA [JP], et al

Cited by

US10654290B2; CN109421373A; EP1307347A4; GB2448119A; GB2448119B; US8398196B2; US7556358B2; WO2019037431A1

Designated contracting state (EPC)

DE GB IT

DOCDB simple family (publication)

EP 0867284 A2 19980930; **EP 0867284 A3 19990825**; JP H10264370 A 19981006

DOCDB simple family (application)

EP 98200819 A 19980316; JP 7686798 A 19980325