

Title (en)
SYSTEM AND METHOD FOR LIQUID EJECTION

Title (de)
SYSTEM UND VERFAHREN ZUM FLÜSSIGKEITS AUSSTOSS

Title (fr)
SYSTEME ET PROCÉDÉ D'ÉJECTION DE LIQUIDE

Publication
EP 2714405 B1 20181024 (EN)

Application
EP 12727462 A 20120523

Priority
• US 201113115434 A 20110525
• US 201113115421 A 20110525
• US 2012039071 W 20120523

Abstract (en)
[origin: WO2012162354A1] A continuous liquid ejection system includes a liquid chamber in fluidic communication with a nozzle. The liquid chamber contains liquid under pressure sufficient to eject a liquid jet through the nozzle. A drop formation device is associated with the liquid jet. The drop forming device is actuatable to produce a modulation in the liquid jet to selectively cause portions of the liquid jet to break off into one or more pairs of drops traveling along a path. Each drop pair is separated on average by a drop pair period. Each drop pair includes a first drop and a second drop. The drop formation device is also actuatable to produce a modulation in the liquid jet to selectively cause portions of the liquid jet to break off into one or more third drops traveling along the path separated on average by the same drop pair period. The third drop is larger than the first drop and the second drop. A charging device includes a charge electrode associated with the liquid jet and a source of varying electrical potential between the charge electrode and the liquid jet. The source of varying electrical potential provides a waveform that includes a period that is equal to the period of formation of the drop pairs or the third drops, the drop pair period. The waveform also includes a first distinct voltage state and a second distinct voltage state. The charging device and the drop formation device are synchronized to produce a first charge to mass ratio on the first drop of the drop pair, a second charge to mass ratio on the second drop of the drop pair, and a third charge to mass ratio on the third drop. The third charge to mass ratio is substantially the same as the first charge to mass ratio. A deflection device causes the first drop of the drop pair having the first charge to mass ratio to travel along a first path, and causes the second drop of the drop pair having the second charge to mass ratio to travel along a second path, and causes the third drop having a third charge to mass ratio to travel along a third path. The third path is substantially the same as the first path.

IPC 8 full level
B41J 2/08 (2006.01); **B41J 2/115** (2006.01)

CPC (source: EP)
B41J 2/08 (2013.01); **B41J 2/115** (2013.01)

Cited by
EP4168252A4; WO2020225259A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
WO 2012162354 A1 20121129; BR 112013030250 A2 20171128; CN 103547455 A 20140129; CN 103547455 B 20150826; EP 2714405 A1 20140409; EP 2714405 B1 20181024; JP 2014515326 A 20140630

DOCDB simple family (application)
US 2012039071 W 20120523; BR 112013030250 A 20120523; CN 201280024586 A 20120523; EP 12727462 A 20120523; JP 2014512956 A 20120523