

Title (en)

Composite nozzle, liquid drop emitter, and fabricating method thereof

Title (de)

Düse aus Verbundstoffen, Tröpfchengeber und Herstellungsverfahren

Title (fr)

Buse en matière composite, émetteur de goutte, et méthode de fabrication

Publication

EP 1291084 A3 20040428 (EN)

Application

EP 02256167 A 20020905

Priority

JP 2001268867 A 20010905

Abstract (en)

[origin: EP1291084A2] A composite nozzle is provided which includes a first nozzle and a second nozzle. The first nozzle is formed in an adhesive layer made having a Young's modulus E_a and defines an upstream portion of an outlet path of the composite nozzle. The second nozzle is formed in a nozzle base layer having a Young's modulus E_s and defines a downstream portion of the outlet path of the composite nozzle. The nozzle base layer is attached through the adhesive layer to a flow path member leading to an inlet. A Young's modulus ratio of E_s to E_a is selected within a range of 1.4 to 500, thereby facilitating absorption of vibrations of the nozzle base layer through the adhesive layer. <IMAGE>

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B01L 3/02; **B41J 2/16**

IPC 8 full level

B41J 2/045 (2006.01); **B01L 3/02** (2006.01); **B41J 2/055** (2006.01); **B41J 2/135** (2006.01); **B41J 2/14** (2006.01); **B41J 2/16** (2006.01); **G01N 35/10** (2006.01); **G01N 37/00** (2006.01)

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B01L 3/0268 (2013.01); **B41J 2/161** (2013.01); **B41J 2/1623** (2013.01); **B41J 2/1632** (2013.01); **B41J 2/1634** (2013.01); **B41J 2002/14411** (2013.01)

Citation (search report)

- [A] US 5933170 A 19990803 - TAKEUCHI YUKIHISA [JP], et al
- [A] EP 0612623 A2 19940831 - BROTHER IND LTD [JP]
- [A] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 02 30 January 1998 (1998-01-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 09 30 July 1999 (1999-07-30)

Cited by

EP2371547A1; CN102407667A; US7237877B2; US8628175B2; US8029110B2; US8029111B2

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