

Title (en)

Hydrophobic venting of free liquid ink reservoir pen.

Title (de)

Hydrophobe Lüftungsvorrichtung für einen Behälter eines Schreibers für flüssige Tinte.

Title (fr)

Dispositif d'aération hydrophobe d'un réservoir de stylo à encre liquide.

Publication

EP 0405768 A1 19910102 (EN)

Application

EP 90306121 A 19900605

Priority

US 37373589 A 19890629

Abstract (en)

A pen containing free liquid ink in which the ink reservoir (2) is vented to atmosphere by use of hydrophobic material (14) whereby the pen is prevented from leaking ink through capillary vents or the like while having the pressure in the reservoir equalized with ambient air pressure by the hydrophobic venting material.

IPC 1-7

B43K 5/02; B43K 8/02; B43K 8/14

IPC 8 full level

B43K 5/02 (2006.01); B43K 8/02 (2006.01); B43K 8/03 (2006.01); B43K 8/14 (2006.01); B43L 13/00 (2006.01)

CPC (source: EP)

B43K 5/02 (2013.01); B43K 8/03 (2013.01); B43K 8/146 (2013.01)

Citation (search report)

- [Y] EP 0210469 A2 19870204 - MONTBLANC SIMPLIO GMBH [DE]
- [Y] EP 0243922 A1 19871104 - GORE W L & CO GMBH [DE]
- [AD] US 4588319 A 19860513 - NIEMEYER ROBERT H [US]
- [A] CH 329410 A 19580430 - CARAN D ACHE CRAYONS [CH]
- [A] FR 2528361 A1 19831216 - PARKER PEN CO [US]
- [A] FR 60745 E 19550125
- [A] DE 232439 C

Cited by

DE4416880A1; EP0631875A3; US6416242B1; US6322268B1; US6457892B1; US6637965B1; WO0076782A1; US6413001B1; US6497527B2

Designated contracting state (EPC)

DE ES FR GB IT

DOCDB simple family (publication)

EP 0405768 A1 19910102; CA 2011485 A1 19901229; JP H0338397 A 19910219

DOCDB simple family (application)

EP 90306121 A 19900605; CA 2011485 A 19900305; JP 17257390 A 19900629