

Title (en)
Dosing and delivering system

Title (de)
Dosierungs- und Verteilungssystem

Title (fr)
Système de dosage et de distribution

Publication
EP 1020233 A1 20000719 (EN)

Application
EP 99870004 A 19990113

Priority
EP 99870004 A 19990113

Abstract (en)

The present invention relates to a dispensing device (1) for a fluid (10), the dispensing device (1) comprising a reservoir (11), a shaft (12), a back seal (13), a damper (14), a piston (151) and a one-way valve (16), the back seal (13) sealing a first end of the reservoir (11) and being displaceable along the shaft (12), the valve (16) being on the second end of the reservoir (11), the piston (151) being fixed to one end of the shaft (12), the piston (151) being located between the valve (16) and the damper (14), the damper (14) being also fixed to the shaft (12), the damper (14) being located between the piston (151) and the back seal (13), whereby the piston (151) has an opened position (fig.1) and a closed position (fig.2), the open position allowing fluid communication between the valve (16) and the part of the reservoir (11) between the piston (151) and the back seal (13), the displacement of the piston (151) between the opened and the closed position being induced by a displacement of the shaft (12) along its own axis, the pressure in the area comprised between the valve (16) and the piston (151) reducing when the piston (151) is moved from its closed position towards its opened position, the damper (14) collapsing when the piston is moved from its closed position towards its opened position, the only fluid flow from the part of the reservoir (11) situated between the damper (14) and the back seal (13) and the part of the reservoir (11) situated on the other side of the damper (14) being a connecting passage (140) situated in the damper (14) when the piston (151) is moved from its opened position towards its closed position. <IMAGE>

IPC 1-7
B05B 11/00; B05B 11/02; B05B 5/025; A61M 11/00; A61M 15/00

IPC 8 full level
A61M 11/00 (2006.01); **A61M 15/00** (2006.01); **B05B 5/025** (2006.01); **B05B 5/16** (2006.01); **B05B 11/00** (2006.01); **B67D 1/02** (2006.01);
B05B 11/02 (2006.01); **B67D 1/07** (2006.01); **F04B 13/00** (2006.01)

CPC (source: EP KR)

B05B 5/025 (2013.01 - EP); **B05B 5/1691** (2013.01 - EP); **B05B 11/00** (2013.01 - KR); **B05B 11/028** (2023.01 - EP);
B05B 11/1015 (2023.01 - EP); **B05B 11/1052** (2023.01 - EP); **B05B 11/1094** (2023.01 - EP)

Citation (applicant)

- EP 0597601 A1 19940518 - NAT SEMICONDUCTOR CORP [US]
- EP 0395380 A2 19901031 - LIQUID MOLDING SYSTEMS INC [US]
- EP 0160336 A2 19851106 - PROCTER & GAMBLE [US]
- WO 9211049 A1 19920709 - NOVO NORDISK AS [DK]
- WO 9746243 A1 19971211 - PROCTER & GAMBLE [US]
- EP 0780127 A1 19970625 - PROCTER & GAMBLE [US]

Citation (search report)

- [A] FR 920943 A 19470422
- [A] US 5511538 A 19960430 - HABER TERRY M [US], et al
- [A] WO 9812511 A2 19980326 - BOOTS CO PLC [GB], et al
- [A] US 4694977 A 19870922 - GRAF LOTHAR [DE], et al

Cited by
FR2893090A1; AU2010303985B2; CN102639176A; US8833365B2; WO2011043712A1; WO2007057543A1; US8020732B2; US9750900B2

Designated contracting state (EPC)
AT BE CH DE DK ES FI FR GB GR IE IT LI LU NL PT SE

DOCDB simple family (publication)

EP 1020233 A1 20000719; AT E248030 T1 20030915; AU 2504600 A 20000801; AU 748289 B2 20020530; BR 0007526 A 20011127;
CA 2360411 A1 20000720; CN 1347346 A 20020501; CO 5231171 A1 20021227; CZ 20012506 A3 20020313; DE 60004780 D1 20031002;
DE 60004780 T2 20040617; EG 22672 A 20030630; EP 1140368 A1 20011010; EP 1140368 B1 20030827; HU P0105057 A2 20020429;
HU P0105057 A3 20020628; IL 144092 A0 20020523; JP 2002534331 A 20021015; JP 4295437 B2 20090715; KR 20020004944 A 20020116;
MA 25341 A1 20011231; NO 20013508 D0 20010713; NO 20013508 L 20010713; NZ 512600 A 20021220; PE 20001192 A1 20001204;
PL 349767 A1 20020909; RU 2001122593 A 20040220; RU 2198740 C1 20030220; SK 10062001 A3 20020305; WO 0041816 A1 20000720;
ZA 200105289 B 20020306

DOCDB simple family (application)

EP 99870004 A 19990113; AT 00903272 T 20000112; AU 2504600 A 20000112; BR 0007526 A 20000112; CA 2360411 A 20000112;
CN 00802613 A 20000112; CO 00001231 A 20000112; CZ 20012506 A 20000112; DE 60004780 T 20000112; EG 20000030 A 20000112;
EP 00903272 A 20000112; HU P0105057 A 20000112; IL 14409200 A 20000112; JP 2000593418 A 20000112; KR 20017008745 A 20010711;
MA 26264 A 20010711; NO 20013508 A 20010713; NZ 51260000 A 20000112; PE 0000222000 A 20000112; PL 34976700 A 20000112;
RU 2001122593 A 20000112; SK 10062001 A 20000112; US 0000834 W 20000112; ZA 200105289 A 20010627