

Title (en)

Fluid pump dispenser for pharmaceutical applications.

Title (de)

Fluidabgabevorrichtung mit Pumpe zur pharmazeutischen Anwendung.

Title (fr)

Distributeur de fluide à pompe pour applications pharmaceutiques.

Publication

EP 0614702 A2 19940914 (EN)

Application

EP 94103111 A 19940302

Priority

- US 2766093 A 19930308
- US 5425993 A 19930430

Abstract (en)

The dispenser comprises a first cylinder (11), a first hollow piston (2) disposed slidably in the first cylinder (11), a second cylinder (12) coaxial with the first cylinder (11) and forming a prolongation thereof of smaller diameter, the inner wall of the second cylinder (12) having an enlarged horizontal annular recess (13) at the junction of the first and second cylinders, a second piston (3) disposed slidably in the second cylinder (12), a vertical stem (4) disposed slidably within the first piston (2) and engaging the second piston (3) and a spring (6) extending within the second cylinder (12) between its lower end and the lower end of the second piston (3). The first piston (2) is provided with an enlargement (14) intermediate its ends defining an upper portion (27A) and a lower portion (27B). The upper portion (27A) extends slidably above and within the first cylinder (11) and the lower portion (27B) extends slidably within the first cylinder (11) and the second cylinder (12). The enlargement (14) peripherally engages and defines a first unbroken seal (S1) with the inner surface of the first cylinder (11). The second piston (3) peripherally engages and defines a second seal (S2) with the inner surface of the second cylinder (12), the second seal (S2) being unbroken except when the second piston (3) is aligned with and spaced from the annular recess (13). The lower portion (27B) of the first piston (2) is provided with a plurality of vertical grooves (30) or helical grooves (31). <IMAGE>

IPC 1-7

B05B 11/00

IPC 8 full level

B05B 11/00 (2006.01)

CPC (source: EP)

B05B 11/0078 (2013.01); **B05B 11/1018** (2023.01); **B05B 11/104** (2023.01); **B05B 11/1074** (2023.01); **B05B 11/1081** (2023.01)

Cited by

FR2838783A1; US6626379B1; US6698623B2; WO03086650A1

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EP 0614702 A2 19940914; **EP 0614702 A3 19950426**; **EP 0614702 B1 19980610**; DE 69410854 D1 19980716; DE 69410854 T2 19981008; ES 2118273 T3 19980916

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