

US008201556B2

# (12) United States Patent Jones et al.

(10) Patent No.: US 8,201,556 B2 (45) Date of Patent: Jun. 19, 2012

### (54) MEDICAMENT DISPENSER

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(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 1273 days.

(21) Appl. No.: 11/573,656
(22) PCT Filed: Aug. 12, 2005

(86) PCT No.: **PCT/EP2005/008842** 

§ 371 (c)(1),

(2), (4) Date: Feb. 13, 2007

(87) PCT Pub. No.: WO2006/018261

PCT Pub. Date: Feb. 23, 2006

(65) **Prior Publication Data** 

US 2008/0041368 A1 Feb. 21, 2008

(30) Foreign Application Priority Data

Aug. 16, 2004 (GB) ...... 0418278.8

(51) Int. Cl.

**A61M 15/00** (2006.01) **A61M 16/00** (2006.01)

(52) **U.S. Cl.** .......... **128/203.21**; 128/203.12; 128/203.15

See application file for complete search history.

### (56) References Cited

## U.S. PATENT DOCUMENTS

#### FOREIGN PATENT DOCUMENTS

DE 1461280 A1 2/1969 (Continued)

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# (57) ABSTRACT

There is provided a sheet driver for use in a medicament dispenser including a medicament carrier having a plurality of pockets for containing medicament wherein said pockets are spaced along the length of and defined between first and second sheets secured to each other and separable by drivable pulling action, the sheet driver comprising a base; ascending from the base, a shaft defining a rotational axis; on the base, a drive surface for receipt of drive to rotate the base about the rotational axis; about the shaft, a torsion spring defining first and second spring legs; mounting about the shaft and the torsion spring for rotation about the rotational axis, a hub defining a hub surface for receipt of a sheet of the medicament carrier. A first leg receiver of the base receives the first spring leg of the torsion spring and a second leg receiver of the hub receives the second spring leg of the torsion spring such that relative rotation of the base and the hub results in tensioning of the torsion spring.

#### 35 Claims, 21 Drawing Sheets

