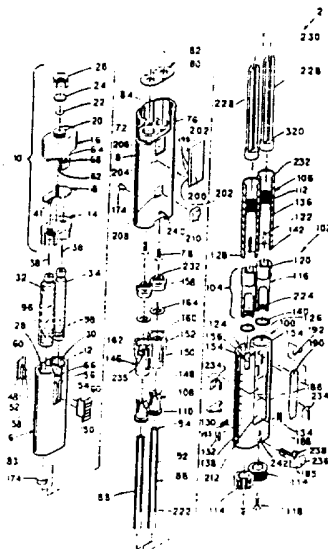




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁵ : A61M 5/178, 5/00, B67D 5/22 B67D 5/52, 5/60</p>	A3	<p>(11) International Publication Number: WO 94/03222</p> <p>(43) International Publication Date: 17 February 1994 (17.02.94)</p>
<p>(21) International Application Number: PCT/US93/05598</p> <p>(22) International Filing Date: 10 June 1993 (10.06.93)</p> <p>(30) Priority data: 07/924,620 31 July 1992 (31.07.92) US 07/931,777 18 August 1992 (18.08.92) US</p> <p>(60) Parent Applications or Grants (63) Related by Continuation US 07/924,620 (CON) Filed on 31 July 1992 (31.07.92) US 07/931,777 (CON) Filed on 18 August 1992 (18.08.92)</p> <p>(71) Applicant (for all designated States except US): HABLEY MEDICAL TECHNOLOGY CORPORATION [US/US]; 22982 Alcalde, Suite 100, Laguna Hills, CA 92653, (US).</p>		<p>(72) Inventors; and (75) Inventors/Applicants (for US only) : HABER, Terry, M. [US/US]; 25011 Castlewood, Lake Forest, CA 92630 (US). FOSTER, Clark, B. [US/US]; 23631 Wakefield Court, Laguna Niguel, CA 92677 (US). SMEDLEY, William, H. [US/US]; 33285 Blanche Drive, Lake Elsinore, CA 92330 (US).</p> <p>(74) Agents: HANN, James, F. et al.; Townsend and Townsend Hourie and Crew, Steuart Street Tower, 20th Floor, One Market Plaza, San Francisco, CA 94105 (US).</p> <p>(81) Designated States: CA, JP, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 28 April 1994 (28.04.94)</p>

(54) Title: REUSABLE PHARMACEUTICAL DISPENSER WITH FULL STROKE INDICATOR



(57) Abstract

A pharmaceutical dispenser includes a housing (4), containing two pharmaceutical cartridges (32, 34), slidably mounted to a sliding body (100). A replaceable needle manifold assembly (10) is mounted to the housing and fluidly couples the cartridges with a hypodermic needle at a common exit. The sliding body is part of a reciprocating drive assembly used to drive a pair of drive stems (88) against the pistons (96, 98) of the cartridges, thus forcing predetermined amounts of the pharmaceuticals out the needle. The movement of the sliding body between retracted and post-injection positions remains constant. However, the amounts and proportions of the pharmaceuticals injected during the delivery stroke is chosen by the user using stroke adjusters (182) carried by the sliding body. A bistable status flag (186) is mounted to the sliding body to indicate when the sliding body is in the post-injection and retracted positions. If a dose selected is more than is available, the status flag is not tripped.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/05598

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(5) : Please See Extra Sheet.
 US CL : Please See Extra Sheet.
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 604/82, 191, 186; 222/14, 23, 25, 26, 28, 39, 41, 43, 46-49, 52, 135, 137, 145, 309, 386, 390, 391

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A, 4,563,175 (LaFond) 07 January 1986, see entire document.	1, 5-7, 11, 13
X	US,A, 4,838,857 (Strowe et al) 13 June 1989, see entire document.	1, 5, 9-11, 13
X	US,A, 4,529,401 (Leslie et al) 16 July 1985, see entire document.	1, 5, 9-11, 13
X	US,A, 3,799,406 (St. John et al) 26 March 1974, see entire document.	1, 5, 9-12
X	US,A, 4,086,062 (Hach) 25 April 1978, see entire document.	1, 5, 10, 11, 13
X	US,A, 3,827,305 (Gilson et al) 06 August 1974, see entire document	1, 5, 9-11

Further documents are listed in the continuation of Box C. See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 27 SEPTEMBER 1993	Date of mailing of the international search report 24 MAR 1994
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/05598

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A, 4,395,921 (Oppenlander) 02 August 1983, see entire document.	1, 5, 9-11
A	US,A, 3,835,835 (Thompson et al) 17 September 1974, see figures 1-3.	1, 9, 10
A	US,A, 5,024,661 (Wender et al) 18 June 1991, See figure 1.	5, 9, 10, 12
A	US,A, 5,092,842 (Bechtold et al) 03 March 1992, see entire document.	1, 5, 9-12

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/05598

A. CLASSIFICATION OF SUBJECT MATTER:

IPC (5):

IPC(5): A61M 5/178, 5/00; B67D 5/22, 5/52, 5/60

US CL: 604/186, 191; 222/43, 47, 137, 145, 309

A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

604/82, 191, 186; 222/14, 23, 25, 26, 28, 39, 41, 43, 46-49, 52, 135, 137, 145, 309, 386, 390, 391