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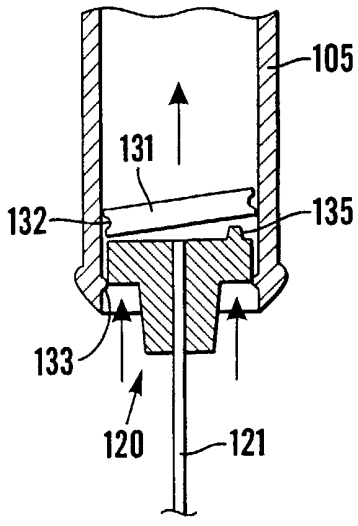
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(54) Title: SYRINGE WITH RETRACTABLE NEEDLE



(57) Abstract: Hollow-needle device (100) comprises a hollow plunger (105), a body part affording a cylindrical chamber (101) within which the plunger (105) is sealingly slidable, a needle-carrying hub (120) for automatic retraction into the plunger (105), and a closure (130) for the plunger (105). The closure (130) comprises a member (131) normally in sealing relation with end-adjacent internal provision (133) of the hollow plunger (105) but disengageable therefrom and bodily movable into the hollow plunger (105) by localised first engagement (135) of the member (131) at or near end of contents expression stroke of the plunger (105).

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 00/04457

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61M5/32 A61M5/50

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)
IPC 7 A61M

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 practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 92 18187 A (SAFE T LTD) 29 October 1992 (1992-10-29) cited in the application page 11, line 5 -page 13, line 17; figure 1	1,2,9
X	US 5 578 011 A (SHAW THOMAS J) 26 November 1996 (1996-11-26)	1,2,9
A	column 5, line 36 -column 8, line 56; figures 1-3	6,8
P,X	US 5 993 417 A (YERFINO DANIEL ALBERTO ET AL) 30 November 1999 (1999-11-30) column 3, line 28 -column 4, line 14; figures 1-5	1,2,6,9

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
22 May 2001	31/05/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Levert, C

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	AT 395 679 B (PICKHARD EWALD) 25 February 1993 (1993-02-25) page 4, line 15 - line 25; figure 2 -----	1-5,9-12

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB 00/04457

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9218187 A	29-10-1992	AU 671585 B	05-09-1996
		AU 1538492 A	17-11-1992
		CA 2107659 A	12-10-1992
		CN 1067385 A	30-12-1992
		EG 19500 A	29-06-1995
		EP 0648136 A	19-04-1995
		IE 921145 A	21-10-1992
		IL 101571 A	05-12-1996
		JP 6508768 T	06-10-1994
		KR 197578 B	15-06-1999
		MX 9201685 A	30-06-1994
		NZ 242304 A	27-04-1995
		US 5407436 A	18-04-1995
US 5578011 A	26-11-1996	AU 706359 B	17-06-1999
		AU 5714396 A	29-11-1996
		AU 701878 B	11-02-1999
		AU 5972498 A	28-05-1998
		BR 9608832 A	15-06-1999
		CA 2218478 A	14-11-1996
		CN 1183729 A	03-06-1998
		CZ 9703548 A	13-05-1998
		EP 0900096 A	10-03-1999
		JP 11505454 T	21-05-1999
		WO 9635463 A	14-11-1996
		US 5632733 A	27-05-1997
		US 6090077 A	18-07-2000
US 5993417 A	30-11-1999	NONE	
AT 395679 B	25-02-1993	AT 254988 A	15-07-1992
		WO 9003817 A	19-04-1990
		AT 93150 T	15-09-1993
		AU 4344589 A	01-05-1990
		BR 8907703 A	30-07-1991
		DE 58905336 D	23-09-1993
		DK 62491 A	09-04-1991
		EP 0438453 A	31-07-1991
		HU 63960 A	29-11-1993
		US 5226881 A	13-07-1993