



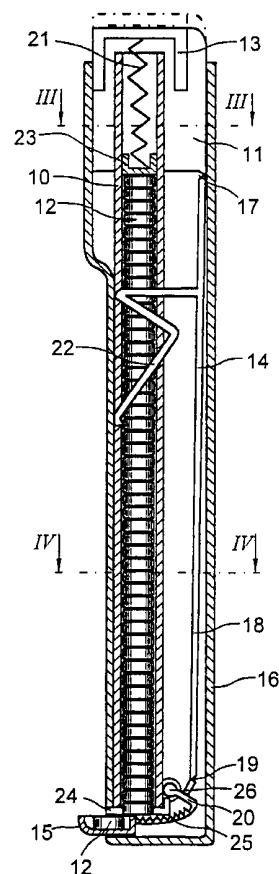
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>7</sup> : <b>B65D 83/04, A61J 1/03</b></p>	<p><b>A1</b></p>	<p>(11) International Publication Number: <b>WO 00/66458</b></p> <p>(43) International Publication Date: 9 November 2000 (09.11.00)</p>
<p>(21) International Application Number: PCT/SE99/00691</p> <p>(22) International Filing Date: 28 April 1999 (28.04.99)</p> <p>(71) Applicant (for all designated States except US): HALLIN, Cristian under the firm of TELUM PRODUCTI N [SE/SE]; Påarp Oskarshill, S-305 95 Halmstad (SE).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): HALLIN, Cristian [SE/SE]; Påarp, S-305 95 Halmstad (SE).</p> <p>(74) Agent: WALLENGREN, Yngvar; Patentbyrån Y Wallengren AB, P.O. Box 116, S-331 21 Värnamo (SE).</p>	<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DE (Utility model), DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> With international search report. In English translation (filed in Swedish).</p>	

(54) Title: A TABLET DISPENSER

(57) Abstract

The disclosure relates to a tablet dispenser comprising an elongate container (10) for tablets (12) and a dispensing device for discharging tablets out of the container (10). The dispensing device includes an operating unit (11) for manual action, a joint mechanism (14) connected to the operating unit (11), and a slide (15) projecting from the joint mechanism (14) for accommodating and dispensing a tablet (12). The operating unit (13), the joint mechanism (14) and the slide (15) are of one piece manufacture.



**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

## A TABLET DISPENSER

### TECHNICAL FIELD

5 The present invention relates to a tablet dispenser comprising an elongate container for tablets and a dispensing device for dispensing tablets out of the container. The term tablets is here taken to signify both tablets containing medicines and other types of tablets.

### BACKGROUND ART

10 A dispenser for tablets is put into use in, for example, the dosing of medicines. In such instance, the commonest version of dispenser is in the form of a box with one or more projecting slides. Such a slide normally consists of a plurality of compartments. A dispenser in the form of a box in accordance with the foregoing consists of several components which are  
15 manufactured separately and must then be assembled to form a finished unit. As a result, manufacturing costs will be high.

There is a need in the art for a dispenser which may be manufactured at low cost, which is small in size and easy to carry and which makes possible the advancement of one tablet at a time. Such a dispenser would  
20 also be usable in other contexts, for example for sweets (candies) in tablet form.

### OUTLINE OF THE INVENTION

25 One object of the present invention is to realise a dispenser which satisfies the above-outlined needs. This object is attained in that the present invention has been given the characterizing features as set forth in appended Claim 1.

Further advantages and characterizing features of the present invention are apparent from the appended specification, Drawings and  
30 subclaims.

### BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

35 The present invention will now be described in greater detail hereinbelow, with the aid of preferred embodiments and with reference to the accompanying Drawings, in which:

Fig. 1 is a side elevation, partly in section, from the line *I-I* in Fig. 4, of an embodiment of a dispenser according to the present invention;

5 Fig. 2 is a side elevation, partly in section, of the dispenser of Fig. 1, seen from another angle;

Fig. 3 is a cross sectional view from the line *III-III* in Fig. 1; and

Fig. 4 is a cross sectional view from the line *IV-IV* in Fig. 1.

### DESCRIPTION OF PREFERRED EMBODIMENTS

10 In the embodiment illustrated in Fig. 1 of a dispenser according to the present invention, all included components are disposed in an elongate housing 16. The housing 16 is of substantially rectangular cross section (see Fig. 4) and wholly encloses a container 10 in the form of a tube of circular cross section or a cross section formed to accommodate the tablets 12 which  
15 are to be located in the container. In the container 10, there are shown in Fig. 1 a plurality of objects in the form of tablets 12. The container 10 and the dispenser may also be employed for other types of objects which are stackable in this manner. In Fig. 1, the dispenser is shown in the normal position of use with the container 10 extended in the substantially vertical  
20 position.

In Fig. 1, a dispensing device projects up out of the housing 16 with an upper member in the form of an operating unit 11. The operating unit 11 is designed as a button which, on depression, dispenses a tablet 12 out of an aperture at the bottom of the housing 16 (see Fig. 2). The operating unit 11  
25 includes a lid or a closure member 13 which, in the removed state, exposes an aperture for replenishment of tablets 12 or the like. The operating unit, or the button 11, is pivotally connected to a joint mechanism 14 for transferring the movement on depression of the button to a reciprocating slide 15. The joint mechanism 14 includes a first arm 18 connected to the operating unit 11  
30 and a second arm 20 connected to the slide 15. The first arm 18 is connected to the operating unit 11 by the intermediary of a first pivot 17 and to the second arm 20 by the intermediary of a second pivot 19.

In the illustrated embodiment, the first arm 18 is an elongate rod of rectangular, T-shaped or other suitably formed cross section and extends  
35 through the housing 16 together with the container 10. In its position of rest, the slide 15 is placed directly beneath the lower aperture of the container 10

so that the lowermost of the tablets 12 accommodated in the container 10 may fall down into the slide 15. Suitably, the slide 15 is therefore designed as a scoop or the like with cup-shaped inner walls. Alternatively, the slide may have a through-going aperture so that the lowermost tablet 12 rests on the inside of the bottom of the housing 16. The height of the slide in this version  
5 corresponds to the thickness of one tablet.

The button 11 is designed with outer dimensions which correspond to the inner dimensions of the housing 16 for guiding the movement of the button 11. In that portion of the housing where the button 11 moves, the  
10 housing 16 is flared somewhat so as to permit free movement of the button 11 outside the container 10, see also Fig. 3. Beneath the button 11, and particularly beneath the lid 13, there is disposed a first spring 21. The spring 21 extends partly inside the container 10 and rests against a lid 23 located in the container 10 and in its turn resting on the uppermost tablet 12. The  
15 spring 21 serves for advancement of the tablets and return on depression of the button 11. The container 10 rests at the bottom against an abutment 24 beneath which the slide 15 is movable in a reciprocating movement transversely of the longitudinal direction of the container.

The first spring 21 exercises a certain bias on the button 11. Further  
20 spring bias is exercised by a second spring 22 which departs from the first arm 18 and, in one preferred embodiment, constitutes and integrated part thereof. As will be apparent from Fig. 1, the second spring 22 is of S-configuration and abuts with its free end against the inside of the housing 16, possibly against a heel mounted thereon.

The second arm 20 merges in a first end in a portion 25 which is  
25 flexible and foldingly connected to the slide 15 and which constitutes a flexible power transmission means which converts a pivotal movement (see below) of the arm 20 into a linear movement in the slide 15. In a second end, the second arm 20 has a transverse stub shaft 26 about whose centre axis the  
30 arm is pivotal. On pivoting of the second arm 20 about the stub shaft 26, the pivot 19 is bent and the folded portion 25 is straightened out and imparts to the slide 15 a linear movement. In its opposing ends, the stub shaft 26 is journalled in bushings secured on or of one piece manufacture with the  
insides of the housing 16 (see Figs. 1 and 3).

35 In Fig. 1, the button 11 has been depressed from a position shown by ghosted lines, whereby the slide 15 has been partly shifted out of the housing

16. On further depression of the button 11, the slide 15 will be displaced further, so that the tablet 12 will be accessible. In the alternative with a through-going aperture in the slide, the tablet 12 falls down through the slide as soon as the tablet is free from the bottom of the housing 16. Fig. 2  
5 shows the elongate housing 16 with a hole 27 made at the bottom, through which the slide 15 may be displaced. It will further be apparent that the second spring 22 projects out at a right angle from the first arm 18 and extends beside the container 10.

The cross sectional view in Fig. 3 shows that lid 23 and the first spring  
10 21 abutting thereon. The second spring 22 extends beneath the button 11 at the side of the container 10.

Fig. 4 shows the container 10 with tablets 12 placed therein and the partly projecting slide 15. The slide 15 also holds a tablet 12. It will further be clearly apparent how the opposing ends of the stub shaft 26 are  
15 accommodated in bushings, whereby the arm 20 and the stub shaft are pivotally journalled in the housing 16.

The container 10 may be designed in different manners and with a different cross sectional configuration to that shown. However, it is appropriate that its configuration be adapted to the configuration of the  
20 tablets which are to be placed therein.

Preferably, both the housing 16 and the container 10 are manufactured from plastic material. This also applies to the operating unit 11, the joint mechanism 14, the slide 15 and the second spring 22. In addition, these units are suitably injection moulded in one piece.

25 The present invention should not be considered as restricted to that described above and shown on the Drawings, many modifications being conceivable without departing from the scope of the appended Claims.

**WHAT IS CLAIMED IS:**

1. A tablet dispenser comprising an elongate container (10) for tablets (12), a dispensing device with a slide (15) disposed at one end of the dispenser for discharging a tablet (12), and an operating unit (11) at the other, opposing end of the dispenser, said operating unit (11) being movable in the longitudinal direction of the dispenser, and a joint mechanism (14) for transferring movements from the operating unit (11) to the slide (15), characterized in that the joint mechanism (14) has a first arm (18) connected to the operating unit (11), the arm being connected to a linkage system (20, 25, 26) for converting the longitudinal movement of the operating unit (11) into a transverse movement in the slide (15).

2. The tablet dispenser as claimed in Claim 1, wherein the dispensing device is disposed with the operating unit (11) partly projecting out of an elongate housing (16) and the elongate container (10) for the tablets is disposed enclosed in the housing (16).

3. The tablet dispenser as claimed in Claim 1 or 2, wherein the joint mechanism (14) includes a second arm (20) connected to the slide (15), and wherein the first arm (18) and the second arm (20) are pivotally connected to one another by the intermediary of a second pivot (19) and the first arm is pivotally connected to the operating unit (11) by the intermediary of a first pivot (17).

4. The tablet dispenser as claimed in any of Claims 1 to 3, wherein the dispensing device is spring-biased to a first position in which the slide (15) is disposed in a position within the housing (16) for accommodating a tablet (12) and displaceable against spring action to a second position in which the slide (15) projects out of the housing (16).

5. The tablet dispenser as claimed in any of Claims 1 to 3, wherein the dispensing device is spring-biased by a first spring (21) tensioned against the operating unit (11).

6. The tablet dispenser as claimed in any of Claims 3 to 5, wherein the joint mechanism (14) is spring-biased by a second spring (22) departing from the joint mechanism (14) and tensioned against the housing (16).

5           7. The tablet dispenser as claimed in Claim 6, wherein the joint mechanism (14) and the second spring (22) are of one piece manufacture.

10           8. The tablet dispenser as claimed in any of Claims 1 to 7, wherein the container (10) for the tablets is designed as a tube discharging above the slide (15).

15           9. The tablet dispenser as claimed in any of Claims 1 to 8, wherein the operating unit (11), the joint mechanism (14) and the slide (15) are of one piece manufacture from injection moulded plastic.

20           10. The tablet dispenser as claimed in any of Claims 7 to 9, wherein the operating unit (13), the joint mechanism (14), the slide (15) and the second spring (22) are of one piece manufacture from injection moulded plastic.

            11. The tablet dispenser as claimed in any of Claims 1 to 10, wherein the operating unit (11), the joint mechanism (14) and the slide (15) are of one piece manufacture by injection moulding.



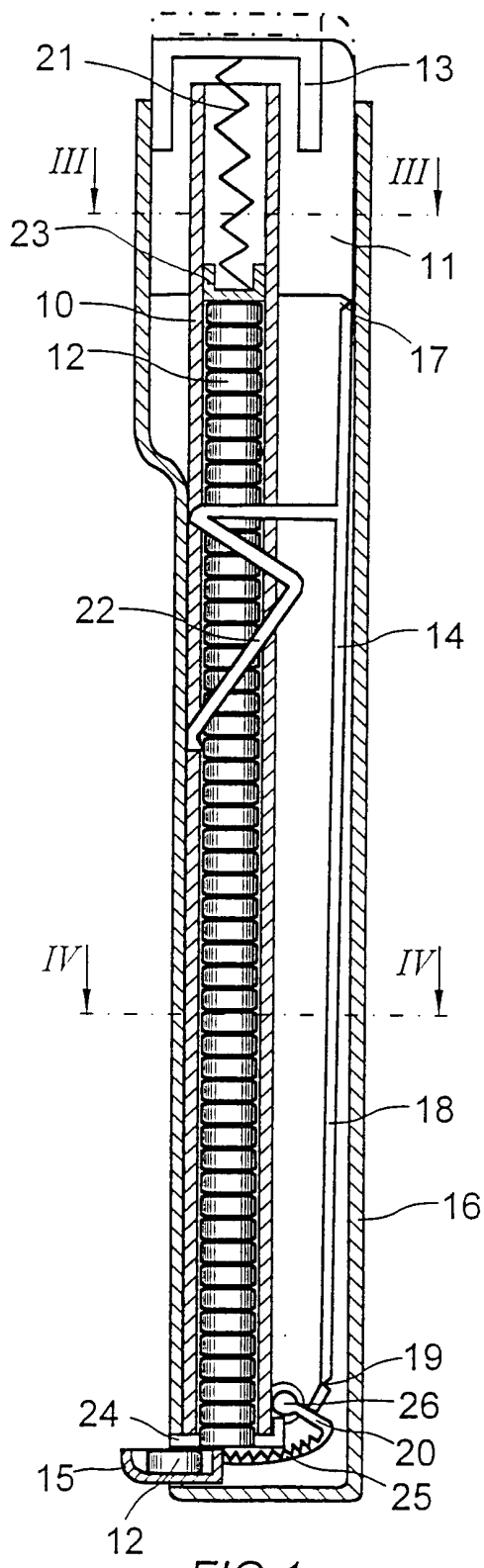


FIG 1

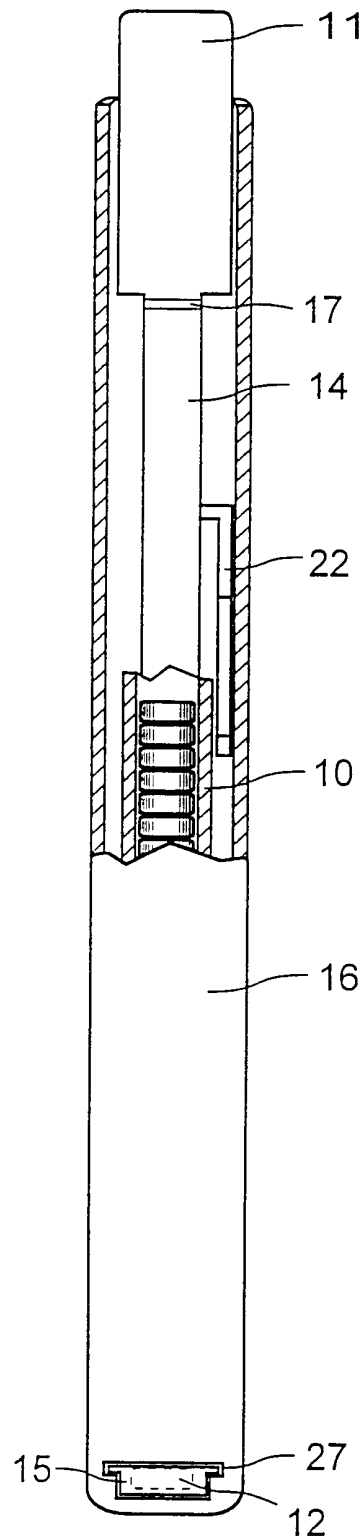


FIG 2

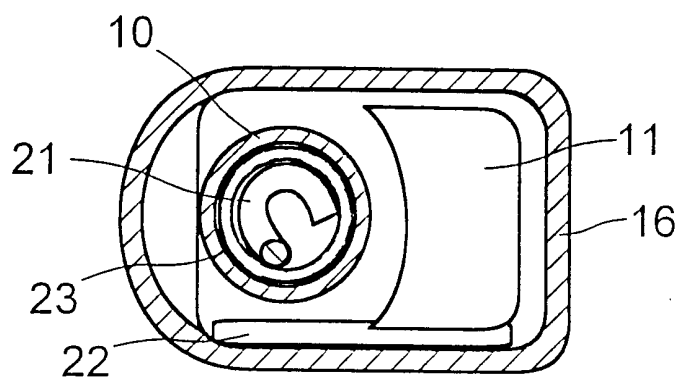


FIG 3

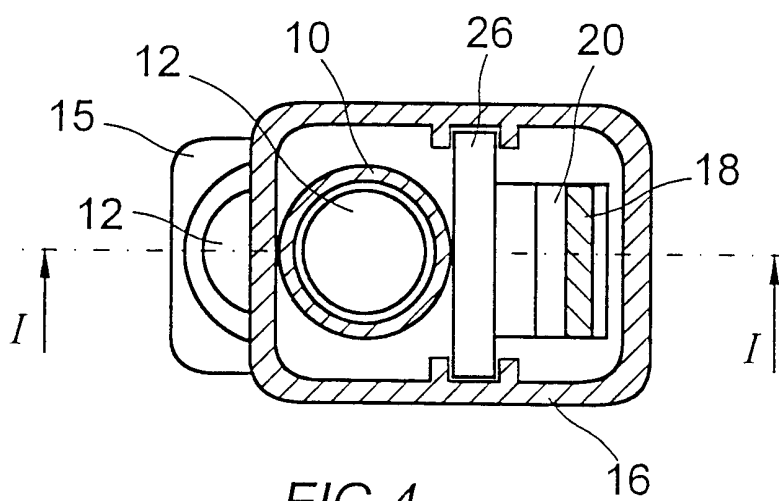


FIG 4

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/00691

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B65D 83/04, A61J 1/03

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)

IPC7: B65D, A01J

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

SE,DK,FI,NO classes as above

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

EPODOC, WPI

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5405047 A (I. HANSEN), 11 April 1995 (11.04.95), figures 3,5, abstract --	1-11
A	US 3370746 A (E. HAAS), 27 February 1968 (27.02.68), column 2, line 15 - column 3, line 31, figure 1 --	1-11
A	US 3565284 A (I. HINTERREITER), 23 February 1971 (23.02.71), figure 1, abstract --	1-11
A	US 5366112 A (I. HINTERREITER), 22 November 1994 (22.11.94), figure 1, abstract --	1-11

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

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"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

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

27 December 1999

Date of mailing of the international search report

07 -01- 2000

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Kerstin Brinkman / MR

Telephone No. +46 8 782 25 00

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/00691

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5178298 A (C.J. ALLINA), 12 January 1993 (12.01.93), figures 1,4, abstract  -- -----	1-11

## INTERNATIONAL SEARCH REPORT

Information on patent family members

02/12/99

International application No.

PCT/SE 99/00691

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5405047 A	11/04/95	AT 151043 T AU 664582 B AU 3081492 A DE 69218789 D,T EP 0614437 A,B JP 7501508 T PL 169316 B RU 2086488 C WO 9311056 A	15/04/97 23/11/95 28/06/93 13/11/97 14/09/94 16/02/95 31/07/96 10/08/97 10/06/93
US 3370746 A	27/02/68	NONE	
US 3565284 A	23/02/71	DE 1810837 A AT 296870 A,B	28/08/69 15/01/72
US 5366112 A	22/11/94	AT 85689 A AT 391300 B AU 5434190 A CA 2030805 A EP 0466782 A IL 94054 D JP 4504399 T PT 93740 A WO 9011947 A	15/03/90 10/09/90 05/11/90 13/10/90 22/01/92 00/00/00 06/08/92 20/11/90 18/10/90
US 5178298 A	12/01/93	NONE	