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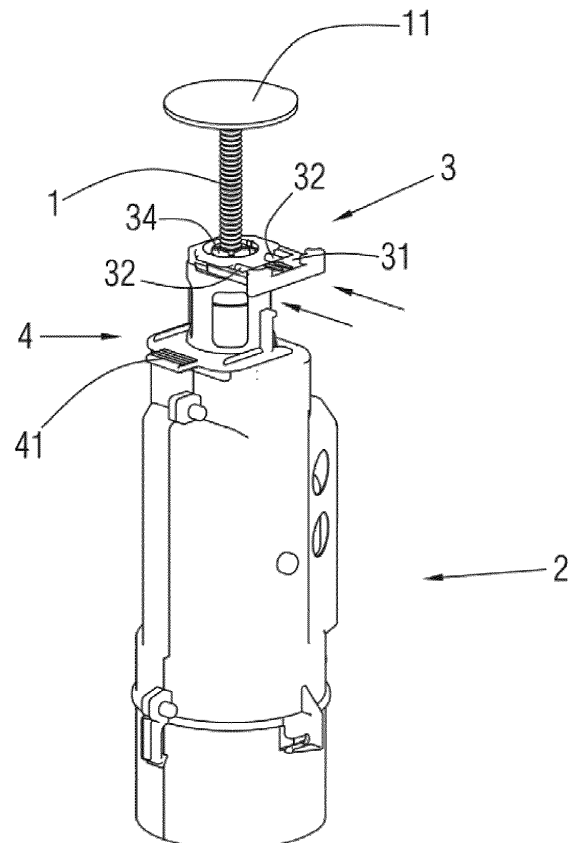
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(54) **AN ASSEMBLY OF A CISTERN FLUSHING MECHANISM HAVING A MECHANISM FOR STOPPING AND FOR ADJUSTING**

(57) An improved device for assembling a cistern flushing mechanism, which is enabled to act on an elongated element ending in a disk-shaped part, which in turn is enabled to connect an outer push button to the cistern flushing mechanism that is inside the cistern itself, which comprises a first mechanism for adjusting the elongated element on the height thereof, and a second vertical mechanism for stopping the movement of the flushing mechanism.

FIG. 1



Description

OBJECT OF THE INVENTION

[0001] The object of the present patent application is to register an improved device for assembling a cistern flushing mechanism which incorporates notable innovations and advantages over the techniques used hitherto.

[0002] More specifically, the invention proposes the development of an improved device for assembling a cistern flushing mechanism, which given its arrangement allows for the adjustment of the height of the element, which connects the outer push button for evacuating water from the cistern to the flushing mechanism, and it has the purpose of providing elements for the assembly and adjustment thereof that are as intuitive and effective as possible.

BACKGROUND OF THE INVENTION

[0003] Several devices that partially resolve the problem for which reason the proposed invention is designed are known in the current state of the art. This invention relates to the correct assembly and positioning of the cistern flushing mechanism, and more specifically, the arrangement and adjustment of the height of the element responsible for connecting the outer push button that activates the flushing mechanism to the same.

[0004] The solutions known in the state of the art do not prevent additional problems in the assembly operations of the cistern flushing mechanisms, because, since they are movable mechanisms, when the operator intends to adjust the height of said elongated part so that it correctly connects the push button to the flushing mechanism, the latter can move vertically downwards due to the action of the weight of the lid of the cistern that incorporates said push button element, such that the adjustment operations are quite inconvenient and complicated since they have to continuously handle the cistern lid and periodically adjust the height of said elongated part since it does not temporary stop the movement of the flushing mechanism which enables the aforementioned mechanism to be adjusted in an entirely simple and intuitive manner.

[0005] The present invention helps to solve the present problem, since it enables the height of the elongated part, which connects the push button element, attached to the lid of the cistern, to the unloading mechanism itself, to be adjusted.

DESCRIPTION OF THE INVENTION

[0006] The present invention has been developed in order to provide an improved device for assembling a cistern flushing mechanism, which is enabled to act on an elongated element ending in a disk-shaped part, which in turn is enabled to connect an outer push button to the cistern flushing mechanism that is inside the cistern

itself, which is essentially characterized in that it comprises a first mechanism for adjusting the elongated element on the height thereof, and a second vertical mechanism for stopping the movement of the flushing mechanism.

[0007] Preferably, in the improved device for assembling a cistern flushing mechanism, the first adjustment mechanism has a guillotine-like arrangement and horizontal movement.

[0008] Alternatively, in the improved device for assembling a cistern flushing mechanism, the second vertical stopping mechanism has a clip-like arrangement and is arranged on the base of the mouth of the flushing mechanism.

[0009] Furthermore, in the improved device for assembling a cistern flushing mechanism, the first adjustment mechanism comprises a horizontal plate that can slide horizontally and has two rods that are also horizontal, parallel and protruding, and in turn have a notch on the lateral surface thereof.

[0010] Furthermore, in the improved device for assembling a cistern flushing mechanism, the first adjustment mechanism further comprises four vertical pillar-like parts between which the elongated element is inserted axially, and said four parts are arranged between the two horizontal rods and are in contact with the respective notches thereof:

Preferably, in the improved device for assembling a cistern flushing mechanism, the second vertical stopping mechanism incorporates an overhanging section that can be grasped.

[0011] With the present invention, the height of the elongated part, which connects the push button element, attached to the lid of the cistern, to the unloading mechanism itself, is successfully adjusted.

[0012] Other characteristics and advantages of the improved device for assembling a cistern flushing mechanism will be evident from the description of a preferred, but not exclusive embodiment which is illustrated by way of non-limiting example in the drawings which are included, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

Figure 1 shows a schematic perspective view of a type of preferred embodiment of the improved device for assembling a cistern flushing mechanism of the present invention.

Figure 2 shows a schematic and enlarged view of a type of preferred embodiment of the improved device for assembling a cistern flushing mechanism of the present invention.

Figure 3 shows a schematic perspective view of some of the elements that have been separated of a type of preferred embodiment of the improved device for assembling a cistern flushing mechanism of

the present invention.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0014] As shown schematically in Figures 1 and 2, the improved device for assembling a cistern flushing mechanism of the present invention is enabled to act on an elongated element 1 ending in a disk-shaped part 11, which in turn is enabled to connect an outer push button to the cistern flushing mechanism 2 that is inside the cistern itself, as is common and known in the state of the art.

[0015] According to the invention itself, the improved device for assembling a cistern flushing mechanism comprises a first adjustment mechanism 3 of the elongated element 1 on the height thereof, and a second vertical mechanism for stopping 4 the movement of the flushing mechanism 2.

[0016] The first adjustment mechanism 3 has a guillotine-like arrangement and can move horizontally, and it comprises a horizontal plate 31 that can slide horizontally and has two rods 32 that are also horizontal and parallel and protrude from said plate 31.

[0017] The rods 32 in turn have a notch 33 on the lateral surface thereof, similar to an inner step, and which modifies its own lateral surface.

[0018] Figure 3 shows some of the aforementioned elements separately to thereby facilitate the understanding thereof.

[0019] Furthermore, the first adjustment mechanism further comprises four vertical pillar-like parts 34, between which the elongated element 1 is inserted axially.

[0020] Said four parts 34 are arranged between the two horizontal rods 32 and are in contact with the respective notches 33 thereof, as especially shown in Figure 2.

[0021] In the use of the improved device for assembling a cistern flushing mechanism of the present invention, and when the user or installer already considers that the elongated element 1 has the desired height for adequate connection of the outer push button to the flushing mechanism 2 that is inside the cistern, the plate 31 is slid towards the elongated element 1 itself, as shown by the arrows in Figures 1 and 2.

[0022] As a result of said sliding, the rods 32 grip the parts 34 arranged therebetween by means of the contact notches 33. This implies that the parts 34 in turn grip and exert pressure on the elongated element 1 inserted axially therebetween, which thereby immobilizes it at a height previously adjusted and positioned by the user.

[0023] Furthermore, the improved device for assembling a cistern flushing mechanism of the present invention comprises a second vertical mechanism 4 for stopping the movement of the flushing mechanism 2 of the cistern.

[0024] The vertical stopping mechanism 4 is arranged to prevent the flushing mechanism 2 from moving vertically and causing an inconvenience in the assembly thereof, since the height of the elongated element 1 could no longer be correctly adjusted, since the flushing mechanism 2 can move vertically due to the weight of the lid of the cistern, and therefore, hinder the assembly operation thereof.

anism 2 can move vertically due to the weight of the lid of the cistern, and therefore, hinder the assembly operation thereof.

[0025] Said vertical stopping mechanism 4 has a clip-like arrangement and operation, and it is arranged between the base of the mouth of the flushing mechanism 4 of the cistern.

[0026] In this preferred embodiment, the second vertical stopping mechanism 4 incorporates an overhanging section 41 that can be manually grasped by the user. Once the elongated element 1 is mounted and the position thereof at the predetermined height is ensured by gripping of the section 41, the removal thereof can be carried out, which leaves the actuation of the flushing mechanism 4 thereof to be free.

[0027] Therefore, with the removal of the clip-like section 41, the cistern flushing mechanism 2, which has been assembled by means of the improved device for assembling a cistern flushing mechanism of the present invention, is arranged for the use and service thereof.

[0028] The improved device for assembling a cistern flushing mechanism of the present invention enables the height of the elongated element 1 that connects the push button 11, attached to the lid of the cistern, to the flushing mechanism 2 itself, to be effectively adjusted.

[0029] Furthermore, it has also been provided that due to the vertical stopping mechanism 4, the flushing mechanism 2 is temporarily stopped to prevent undesired movements thereof during said adjustment operations, which substantially hinder the effectiveness thereof, and provide very little accuracy and successive assembly operations, disassembly of the lid, readjustment of the height of the parts, etc.

[0030] The details, shapes, dimensions and other accessory elements, as well as the materials used to manufacture an improved device for assembling a cistern flushing mechanism of the invention, may be suitably substituted for others which are technically equivalent, and do not diverge from the essential nature of the invention, nor the scope defined by the claims included below.

Claims

1. An improved device for assembling a cistern flushing mechanism, which is enabled to act on an elongated element (1) ending in a disk-shaped part (11), which in turn is enabled to connect an outer push button to the cistern flushing mechanism (2) that is inside the cistern itself, **characterized in that** it comprises a first mechanism for adjusting (3) the elongated element (1) on the height thereof, and a second vertical mechanism for stopping (4) the movement of the flushing mechanism (2).
2. The improved device for assembling a cistern flushing mechanism according to claim 1, **characterized**

in that the first adjustment mechanism (3) has a guillotine-like arrangement and horizontal movement.

3. The improved device for assembling a cistern flushing mechanism according to claim 1, **characterized in that** the second vertical stopping mechanism (4) has a clip-like arrangement and is arranged on the base of the mouth of the flushing mechanism (2). 5
4. The improved device for assembling a cistern flushing mechanism according to claim 2, **characterized in that** the adjustment mechanism (3) comprises a horizontal plate (31) that can slide horizontally and has two rods (32) that are also horizontal, parallel and protruding which in turn have a notch (33) on the lateral surface thereof. 10 15
5. The improved device for assembling a cistern flushing mechanism according to claim 4, **characterized in that** the first adjustment mechanism (3) further comprises four vertical pillar-like parts (34) between which the elongated element (1) is inserted axially, and said four parts (34) are arranged between the two horizontal rods (32) and in contact with the respective notches (33) thereof. 20 25
6. The improved device for assembling a cistern flushing mechanism according to claim 3, **characterized in that** the second vertical stopping mechanism (4) incorporates an overhanging section (41) that can be grasped. 30

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FIG. 1

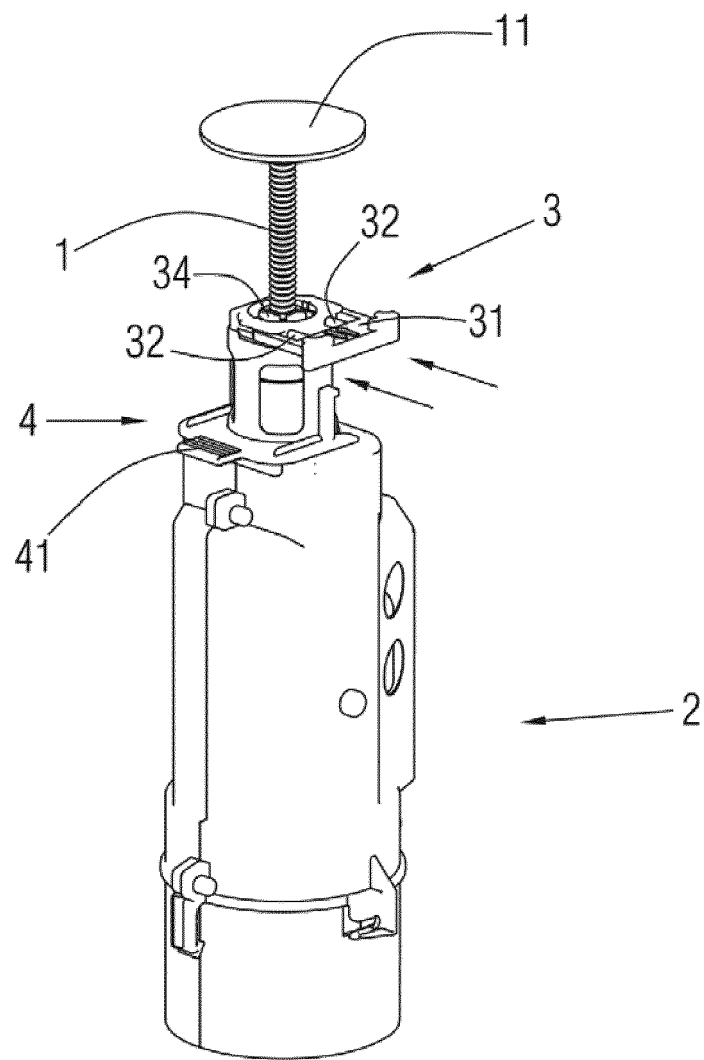


FIG.2

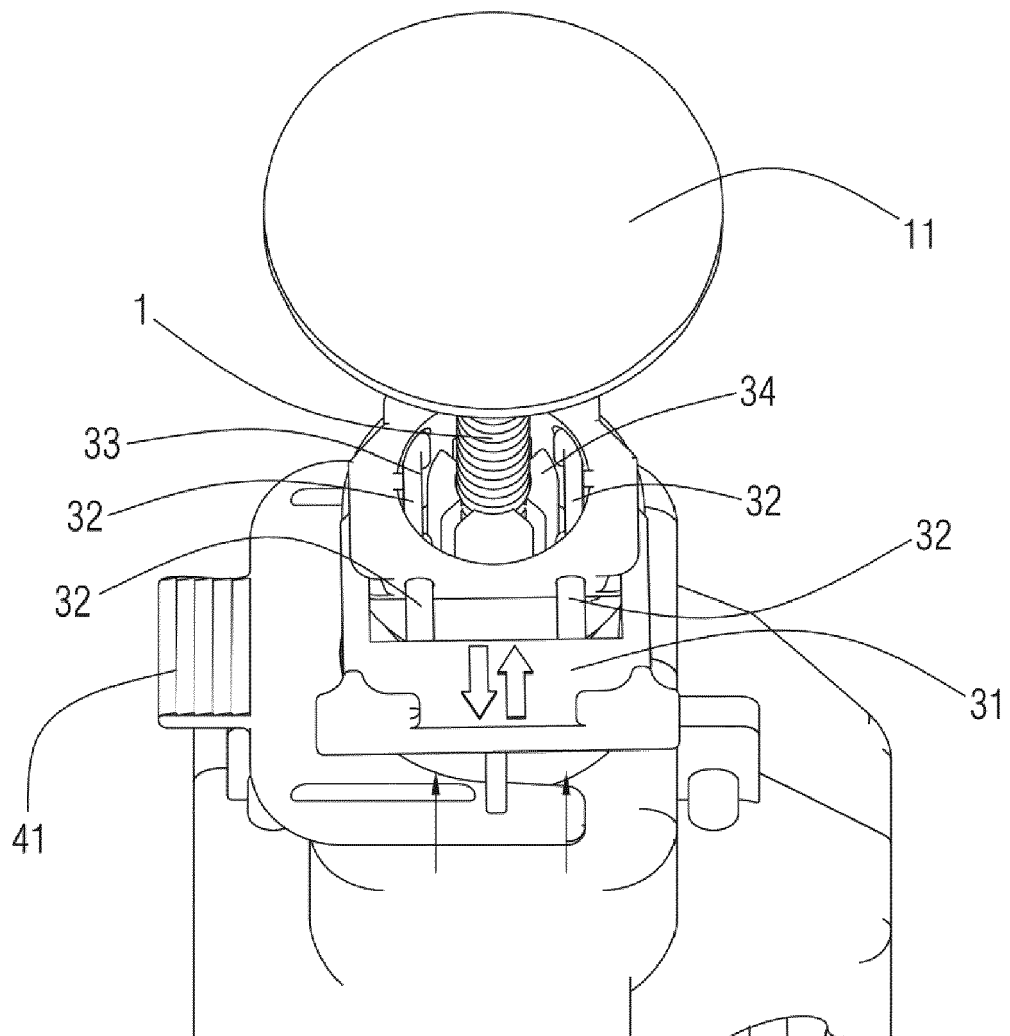
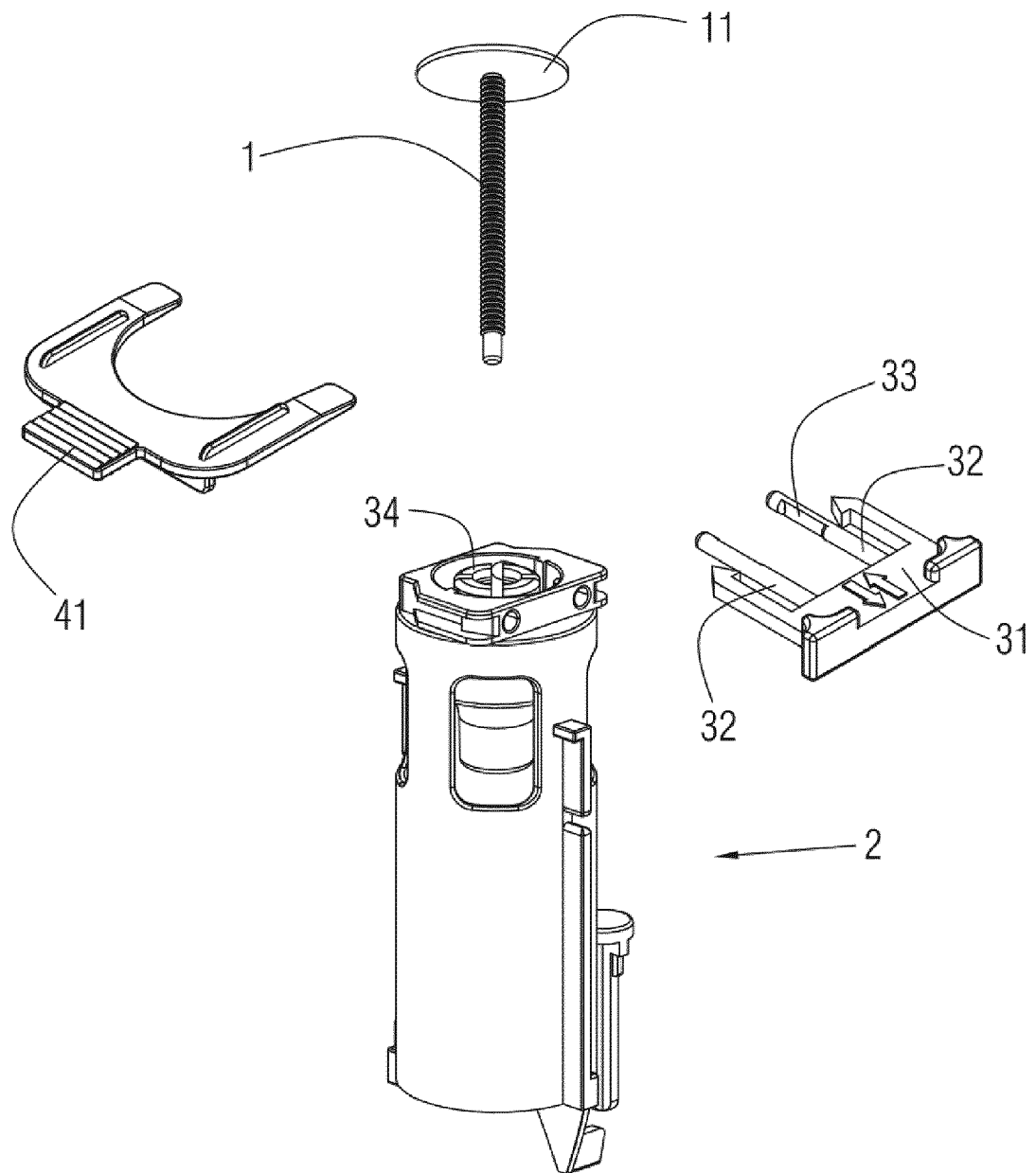


FIG.3





EUROPEAN SEARCH REPORT

Application Number
EP 18 38 2215

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 38 54 071 T2 (LAZER SARL [FR]) 18 April 1996 (1996-04-18)	1-4	INV. E03D5/02 E03D5/09
A	* column 1, lines 4-5; figures 1,2 * * column 3, line 36 * * column 5, lines 1-14 *	5,6	

X	FR 2 660 338 A1 (WIRQUIN PLASTIQUES SA [FR]) 4 October 1991 (1991-10-04)	1-4,6	
A	* the whole document *	5	

X	ES 1 053 738 U (FOMINAYA SA [ES]) 1 May 2003 (2003-05-01)	1-4,6	
A	* the whole document *	5	

X	EP 1 995 386 A1 (GEBERIT TECHNIK AG [CH]) 26 November 2008 (2008-11-26)	1-4,6	
A	* the whole document *	5	

			TECHNICAL FIELDS SEARCHED (IPC)
			E03D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 1 August 2018	Examiner Valenta, Ivar
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 18 38 2215

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 3854071 T2	18-04-1996	DE 3854071 D1	03-08-1995
		DE 3854071 T2	18-04-1996
		EP 0311542 A1	12-04-1989
		ES 2074444 T3	16-09-1995
		FR 2621630 A1	14-04-1989

FR 2660338 A1	04-10-1991	NONE	

ES 1053738 U	01-05-2003	NONE	

EP 1995386 A1	26-11-2008	AT 483073 T	15-10-2010
		AU 2008201546 A1	11-12-2008
		CA 2629109 A1	25-11-2008
		CN 101311433 A	26-11-2008
		EP 1995386 A1	26-11-2008
		ES 2350863 T3	27-01-2011
		KR 20080103902 A	28-11-2008
		NZ 568251 A	25-09-2009
		SG 148103 A1	31-12-2008
		US 2008289091 A1	27-11-2008
