



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
25.03.2009 Bulletin 2009/13

(51) Int Cl.:
B65D 83/04 (2006.01)

(21) Application number: **07116885.0**

(22) Date of filing: **20.09.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

(72) Inventor: **Vanbrabant, Eric**
3000 Leuven (BE)

(74) Representative: **Quintelier, Claude et al**
Gevers & Vander Haeghen
Holidaystraat 5
1831 Diegem (BE)

(71) Applicant: **FRISK INTERNATIONAL, N.V.**
3001 Leuven (BE)

(54) **A tablet dispenser**

(57) A tablet dispenser, in particular for distributing sweets in the form of tablets, said dispenser comprising a reservoir for storing said tablets and having an output connected to a funnel shaped channel in which a distribution cylinder is mounted, said cylinder being rotationally drivable in such a manner as to output a predetermined amount of tablets upon supplying a rotational impulse on said cylinder, said cylinder being connected to a substantially conical shaped member mounted upstream of said cylinder in an output direction of said tablets.

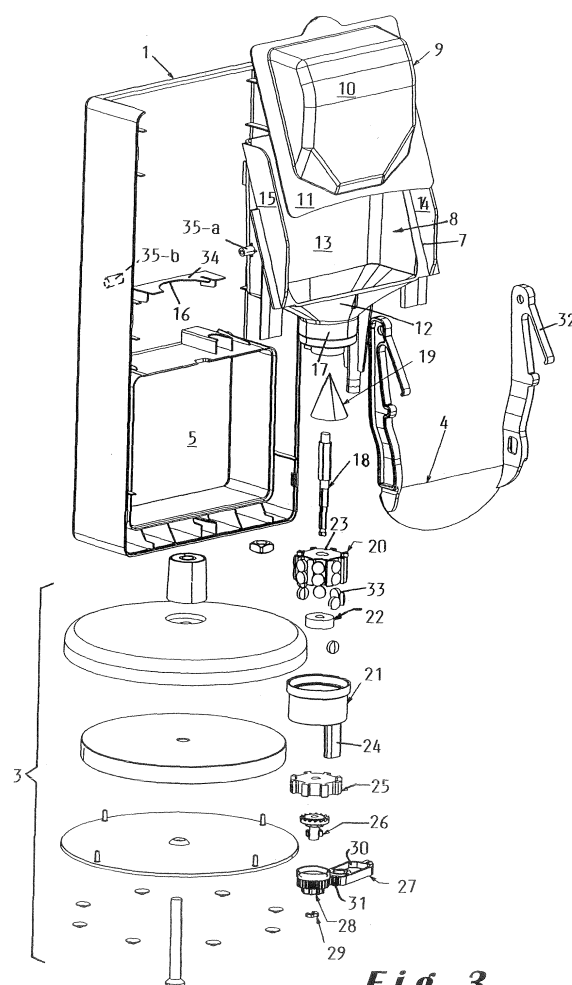


Fig. 3

Description

[0001] The present invention relates to a tablet dispenser, in particular for distributing sweets in the form of tablets, said dispenser comprising a reservoir for storing said tablets and having an output connected to a funnel shaped channel in which a distribution cylinder is mounted, said cylinder being rotationally drivable in such a manner as to output a predetermined amount of tablets upon supplying a rotational impuls on said cylinder.

[0002] Such a tablet dispenser is well known and used for example for dispensing sweets such as chewing gums or the like. The sweets are stored in the reservoir and each time the user wants a sweet he or she gives a rotational impuls on a handle in order to drive the cylinder. As the cylinder is mounted in the funnel shaped channel, forming the output of the reservoir, the driving of the cylinder causes the tablets to move towards the output.

[0003] A drawback of the known dispenser, in particular when used for distributing sweets, is that due to the presence of sugar and humidity the tablets tend to stick to each other. When some tablets stick to each other they will block the output of the dispenser as the latter is provided for distributing a predetermined amount and preferably a single tablet.

[0004] The object of the invention is to realise a tablet dispenser whereby, even if the tablets tend to stick to each other, means are provided to cause them to detach from each other so that they substantially less block the output of the dispenser.

[0005] For this purpose a tablet dispenser according to the present invention is characterised in that said cylinder is connected to a substantially conical shaped member, mounted upstream of said cylinder in an output direction of said tablets. The use of a substantially conical shaped member forces the tablets to be swirled. Indeed, as this member is mounted upstream of the cylinder, the tablets have to pass along this member before reaching the cylinder. As moreover the member is connected with the cylinder, the rotation of the cylinder causes the member to rotate too, thereby shaking the tablets. The latter then causes the tablets, which would have stick together to be detached. The conical shape thereby contributes to this shaking movement.

[0006] A first preferred embodiment of a tablet dispenser according to the invention is characterised in that said cylinder is mounted on an axis on which said substantially conical shaped member is also mounted. As the cylinder and the member are mounted on a same axis, this causes them both to rotate simultaneously.

[0007] A second preferred embodiment of a tablet dispenser according to the present invention is characterised in that said cylinder is housed in a barrel, said distribution cylinder comprises a set of guiding channels applied on an outer peripheral wall thereof. The guiding channels contribute to a suitable dispensing of the tablets.

[0008] A third preferred embodiment of a tablet dispenser according to the present invention is characterised in that between said outer peripheral wall of said cylinder and an inner peripheral wall of said barrel, there extends a gap having a width of less than 2 mm, preferably 1 mm. In such a manner the cylinder fits well in the barrel and the tablets are kept protected while they are at the height of the cylinder.

[0009] Preferably said reservoir comprises an inclined support extending upstream of said funnel shaped channel in the output direction of said tablets. This facilitates the downward movement of the tablets.

[0010] A fourth preferred embodiment of a tablet dispenser according to the present invention is characterised in that on both sides of said inclined support lateral wings are applied, said lateral wings being offset with respect to said funnel shaped channel, said inclined support and said lateral wings being provided for positioning a cartridge provided for storing said tablets. In such a manner the cartridge is well guided by the wings upon inserting into the dispenser and kept in place once inserted. Moreover, the use of a cartridge offers a suitable solution for refilling the dispenser.

[0011] Preferably said cartridge is removably mounted in said reservoir and comprises a closure lid which is opened upon inserting said cartridge into said reservoir. In such a manner the cartridge is opened upon inserting and there is no need to open it on beforehand, thereby avoiding the risk that the tablets would fall out of the cartridge upon opening.

[0012] The invention will now be described in more details with respect to the drawings showing a preferred embodiment of a tablet dispenser according to the invention.

[0013] In the drawings :

figure 1 shows an overall view of a tablet dispenser according to the invention;
figure 2 shows a cross section through the tablet dispenser along the line A-A shown in figure 1; and
figure 3 shows an exploded view of the tablet dispenser shown in figure 1.

[0014] In the drawings a same reference sign has been allocated to a same or analogous element.

[0015] The tablet dispenser 1 shown in figure 1 has a rectangular shaped body 2 mounted on a pedestal 3. It should be noted that the present invention is not limited to a tablet dispenser having this geometry and mounted on a pedestal and that other shapes such as cylindrical or the like, whether or not on a pedestal can be envisaged. The advantage of using a pedestal is however that this offers an attractive solution when the dispenser is placed on a table or a desk.

[0016] The body 2 is generally closed and comprises on its front side a cavity 5 giving access to a handle 4. The cavity is dimensioned in such a manner that the user can introduce part of his hand into it and grip the handle 4. By applying a pull on the handle, the user will receive

a predetermined amount of tablets. On the upper side of the body 2 there is applied a pivotable flap 6 enabling an opening of the body and giving access to a reservoir for storing the tablets. Of course the flap 6 can be applied on other places of the body such as for example on the back side.

[0017] The reservoir 8, as shown in figure 2, comprises an inclined support 7 formed by two beams and on which the back side of a cartridge 9 can rest. Although the use of a cartridge is not obligatory, it is nevertheless preferred as this enables a suitable refilling of the reservoir. As is shown in figure 2 and 3, the cartridge 9 is removably mounted in the reservoir and can slide along the inclined support 7. The cartridge is blister shaped and formed by a protrusion 10 applied on a sheet 11. The cartridge is preferably made from plastic material such as polyethylene and closed by a closure lid formed by a film, such as for example an aluminium or thin polyethylene film, applied on the sheet 11. The closure lid is opened upon inserting the cartridge into the reservoir. The cartridge is formed in such a manner that the sheet 11 forms a border which extends around the protrusion 10. In such a manner the sheet 11 forms the contact face with the inclined support when inserting the cartridge into the reservoir. Upon inserting the cartridge into the reservoir, the film will be torn off in such a manner as to release the tablets stored in the cartridge.

[0018] The reservoir 8 has an output connected to a funnel shaped channel 12. As can be seen in figure 3, the inclined support 7 has its under end corresponding with a front side of said funnel shaped channel. The inclined support extends upstream of the funnel shaped channel in gravity direction, which corresponds of course with the output direction of the tablets. The inclined support forms the lateral walls of the reservoir 8, which further comprises a back wall 13. On both sides of the inclined support, lateral wings 14 and 15 are applied. The lateral wings are offset with respect to the funnel shaped channel and are provided together with the inclined support for positioning the cartridge upon inserting it into the reservoir. The latter is preferably demountable mounted inside the body 2 and rests on a support plate 34 and notches 35 a + b applied on lateral walls of the body. Support plate 34 is preferably provided with a semicircular cut-out 16 in which the lower end of the funnel shaped channel fits.

[0019] The lower end of the funnel shaped channel is connected to a tube 17 through which an axis 18 extends. On the axis 18 there is mounted a distribution cylinder 20 and a substantial conically shaped member 19. The latter is mounted upstream of the cylinder 20 in the output direction of the tablets. The substantial conically shaped member 19 extends inside the funnel shaped channel as illustrated in figure 2. The distribution cylinder is housed in a barrel 21 and is retained on the axis 18 by a clamping ring 22. The distribution cylinder comprises a set of guiding channels 23 applied on an outer peripheral wall thereof. The guiding channels have a depth and a width so as

to fit with a dimension of the tablets 33. In such a manner the tablets are guided by those guiding channels when moving towards the output of the dispenser. The guiding of the tablets causes them to be oriented in a same direction, thereby avoiding that they would mix among each other and block the output. Between the outer peripheral wall of the cylinder 20 and an inner peripheral wall of the barrel 21, there extends a gap having a width of less than 2 mm, preferably 1 mm. In such a manner, there is not much space left between the tablets and the inner peripheral wall of the barrel and the tablets are prevented from tumbling and remain well arranged into the guiding channels 23 of the cylinder, which substantially contributes to a smooth and reliable output of the tablets.

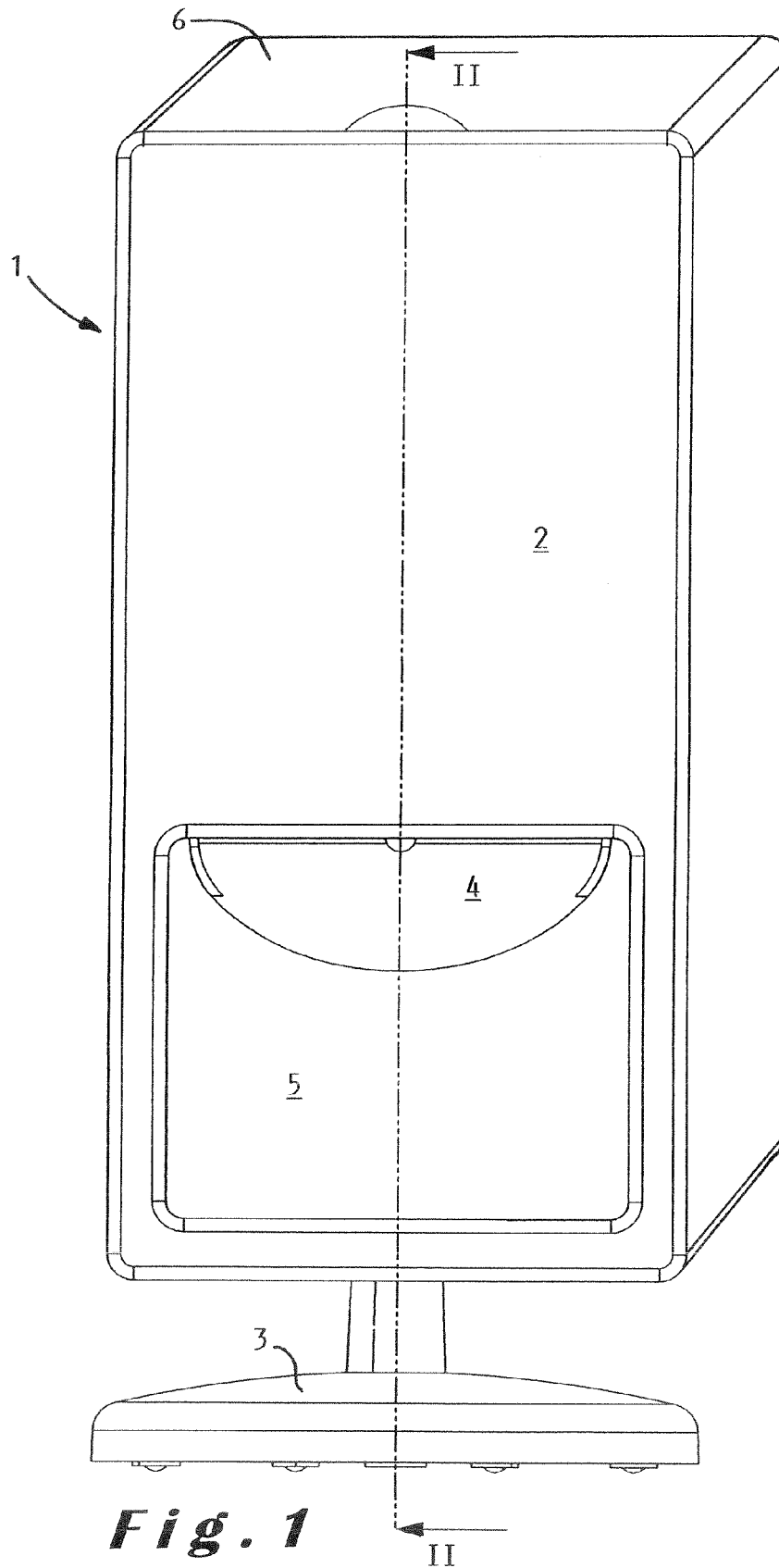
[0020] The barrel 21 comprises a downward extending leg 24 which engages into a notch of a notched wheel 25. The latter is engaged with a transmission member 26 fitting into a further notched wheel 28. The further notched wheel, the transmission member 26 and the notched wheel are kept together by means of a clamp 29. A further transmission member 27 provided with an opening 30 and a toothed wheel part 31 are connected to the further toothed wheel in such a manner that their teeth engage with one another. The handle 4 crosses the opening 30 of the further transmission member 27.

[0021] A pulling movement applied on the handle 4 will cause the further transmission member to pivot, thereby causing the further toothed wheel 28 to rotate due to the mutual engagement of the teeth. The handle 4 comprises an elastic lid 32 formed by an inclined leg. The elastic lid 32 causes the handle to return to its rest position after having received the pulling movement. The opening 30 is dimensioned in such a manner that the handle can freely move therein upon returning to its rest position and no longer drive the further transmission member 27 during this reset movement.

[0022] As the further transmission member 27 is connected with the toothed wheel 25, which on its turn is connected with the barrel, the rotation of the further transmission member will cause the barrel to rotate. As the barrel is connected to the distribution cylinder 20 via the axis 18 and the substantial conically shaped member, the distribution cylinder and the substantial conically shaped member are also driven in rotation. The latter rotation will cause not only that a predetermined amount of tablets 33 will be output of the barrel, but also the substantial conically shaped member to rotate. The latter rotation will cause the tablets present in the funnel shaped channel 12 to be shaken thereby causing that, if some of them would have stick together, they are released from each other. The upper point of the conically shaped member, due to its rotation, drills as if to say through the amount of tablets and causes a swirling movement for separating them. In such a manner, each time the dispenser is used, the tablets are shaken and there is much less tendency for them to stick together.

Claims

1. A tablet dispenser, in particular for distributing sweets in the form of tablets, said dispenser comprising a reservoir for storing said tablets and having an output connected to a funnel shaped channel in which a distribution cylinder is mounted, said cylinder being rotationally drivable in such a manner as to output a predetermined amount of tablets upon supplying a rotational impuls on said cylinder, **characterised in that** said cylinder is connected to a substantially conical shaped member mounted upstream of said cylinder in an output direction of said tablets. 5 10 15
2. The tablet dispenser as claimed in claim 1, **characterised in that** said cylinder is mounted on an axis on which said substantially conical shaped member is also mounted. 20
3. The tablet dispenser as claimed in claim 1 or 2, **characterised in that** said cylinder is housed in a barrel, said distribution cylinder comprises a set of guiding channels applied on an outer peripheral wall thereof. 25
4. The tablet dispenser as claimed in claim 3, **characterised in that** between said outer peripheral wall of said cylinder and an inner peripheral wall of said barrel, there extends a gap having a width of less than 2 mm, preferably 1 mm. 30
5. The tablet dispenser as claimed in claim 3 or 4, **characterised in that** said guiding channels have a depth and a width so as to match the dimension of said tablets. 35
6. The tablet dispenser as claimed in any one of the claims 1 to 5, **characterised in that** said reservoir comprises an inclined support extending upstream of said funnel shaped channel in the output direction of said tablets. 40
7. The tablet dispenser as claimed in claim 6, **characterised in that** on both sides of said inclined support lateral wings are applied, said lateral wings being offset with respect to said funnel shaped channel, said inclined support and said lateral wings being provided for positioning a cartridge provided for storing said tablets. 45 50
8. The tablet dispenser as claimed in claim 7, **characterised in that** said cartridge is removably mounted in said reservoir and comprises a closure lid which is opened upon inserting said cartridge into said reservoir. 55
9. The tablet dispenser as claimed in claim 8, **characterised in that** said cartridge is blister shaped.
10. The tablet dispenser as claimed in claim 9, **characterised in that** said blister shaped cartridge is formed by a protrusion applied on a sheet, in such a manner that a border extends around said protrusion, said sheet being formed by a film.



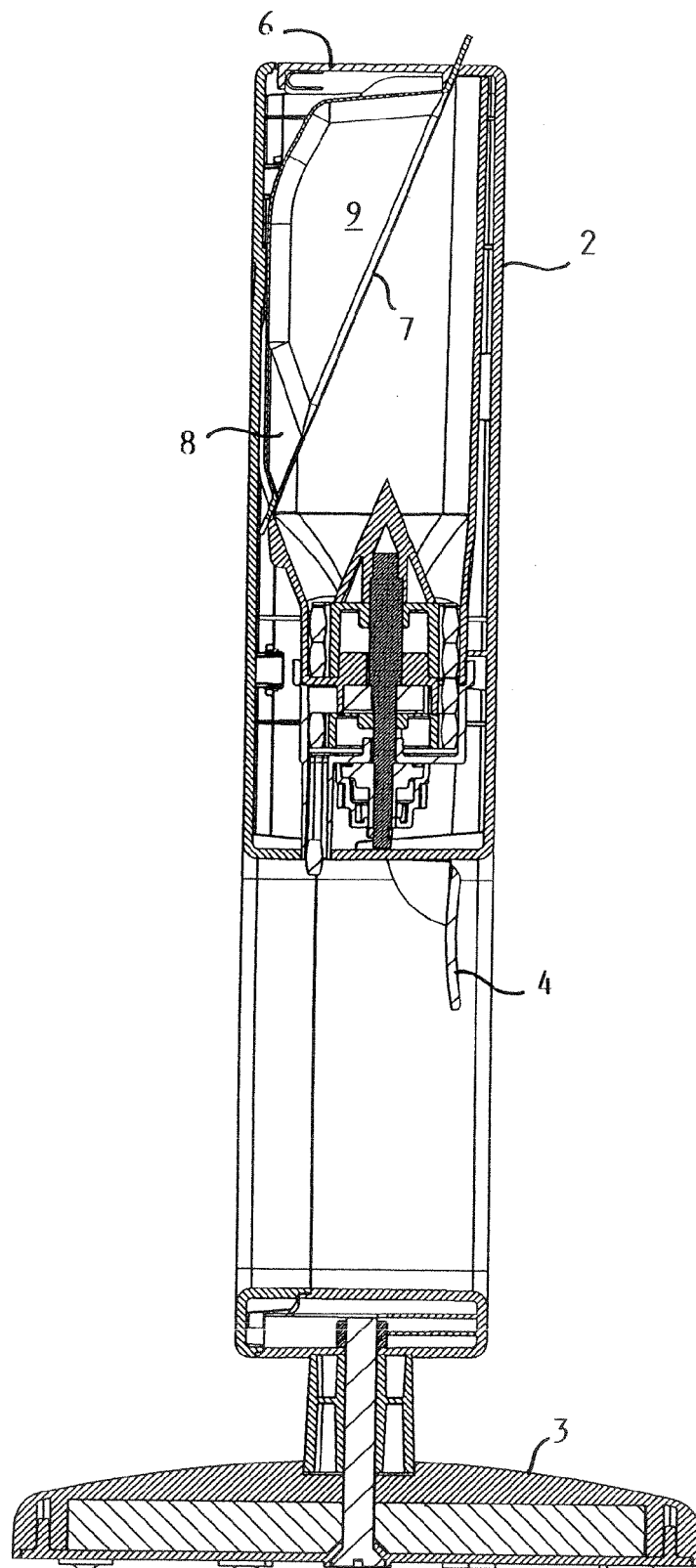


Fig. 2

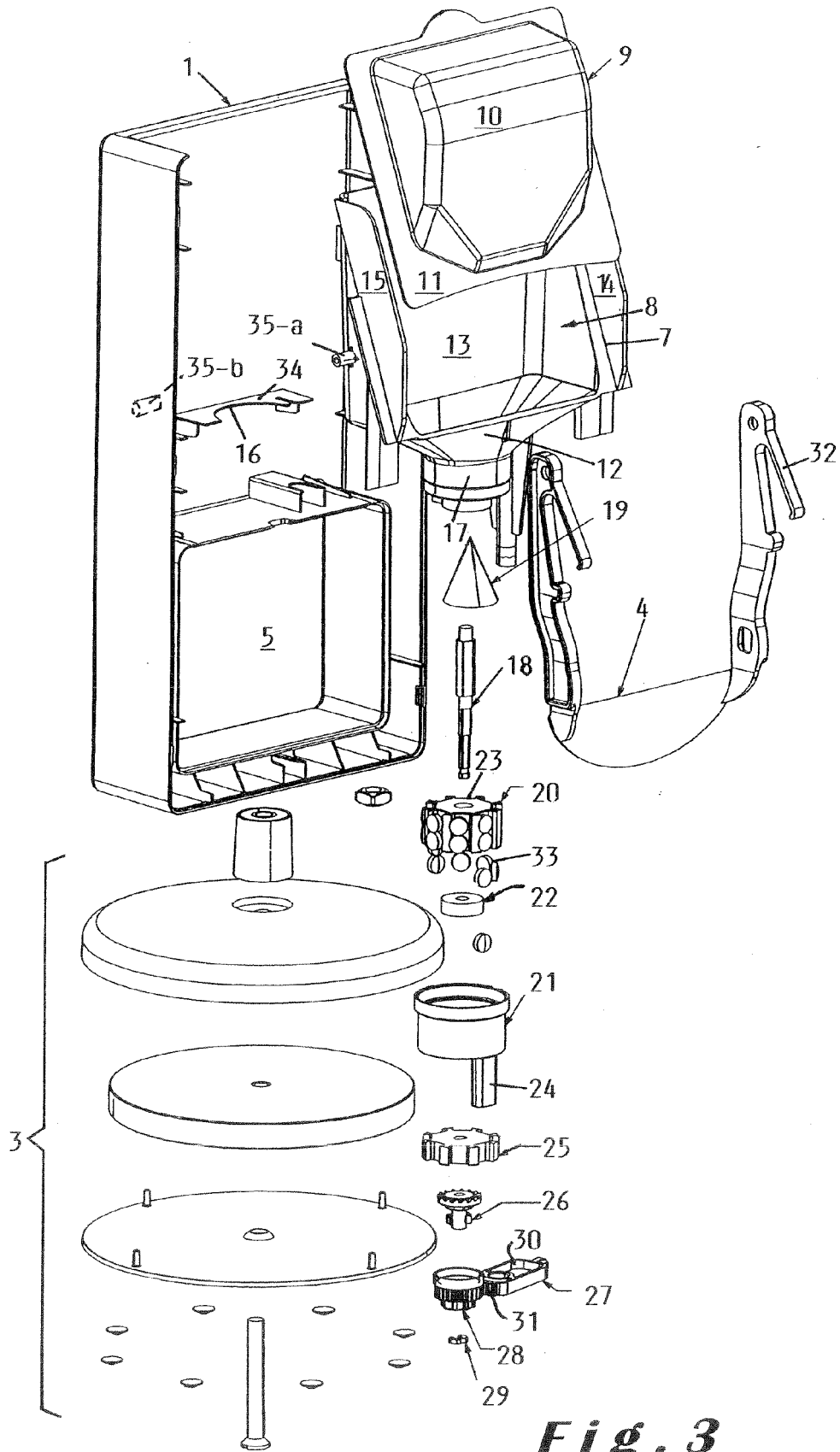


Fig. 3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 11 6885

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 37 21 499 A1 (NORDMARK ARZNEIMITTEL GMBH [DE]) 14 January 1988 (1988-01-14)	1-5	INV. B65D83/04
Y	* column 2, line 31 - line 49; figure 1 *	6-10	
X	EP 0 284 557 A (ALFATECHNIC AG [CH]) 28 September 1988 (1988-09-28)	1-5	
	* column 3, line 9 - line 36; figures 2,5 *		
A	US 3 921 851 A (NILSON BILLY N) 25 November 1975 (1975-11-25)	1-5	
	* column 1, line 53 - column 2, line 1; figure 1 *		
A	US 4 273 254 A (CUPPLEDITCH BRIAN ET AL) 16 June 1981 (1981-06-16)	1-5	TECHNICAL FIELDS SEARCHED (IPC) B65D
	* column 4, line 14 - line 39; figures 2,3 *		
Y	DE 91 06 623 U1 (CZEWO PLAST KUNSTSTOFFTECHNIK GMBH, 8402 NEUTRAUBLING, DE) 1 August 1991 (1991-08-01)	6-10	
	* page 6, paragraph 2 - paragraph 3; figure 1 *		
A	DE 91 06 254 U1 (GALLINA, RAMONA, 7805 BOETZINGEN, DE) 18 July 1991 (1991-07-18)	6-10	
	* the whole document *		
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 12 February 2008	Examiner Appelt, Lothar
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			

2
EPO FORM 1503 03.82 (P04C01)

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

EP 07 11 6885

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-02-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 3721499	A1	14-01-1988	NONE
EP 0284557	A	28-09-1988	AU 617099 B2 21-11-1991
		AU 1327088 A	22-09-1988
		CA 1314523 C	16-03-1993
		CH 672772 A5	29-12-1989
		DE 3867878 D1	05-03-1992
		DK 113488 A	21-09-1988
		JP 1022730 A	25-01-1989
		JP 2648330 B2	27-08-1997
		US 4854478 A	08-08-1989
		ZA 8801834 A	30-11-1988
US 3921851	A	25-11-1975	NONE
US 4273254	A	16-06-1981	NONE
DE 9106623	U1	01-08-1991	NONE
DE 9106254	U1	18-07-1991	NONE