(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 849 907 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
31.10.2007 Bulletin 2007/44

(51) Int Cl.:
D06F 39/02 *(2006.01)*

(21) Application number: **06008883.8**

(22) Date of filing: **28.04.2006**

(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 NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

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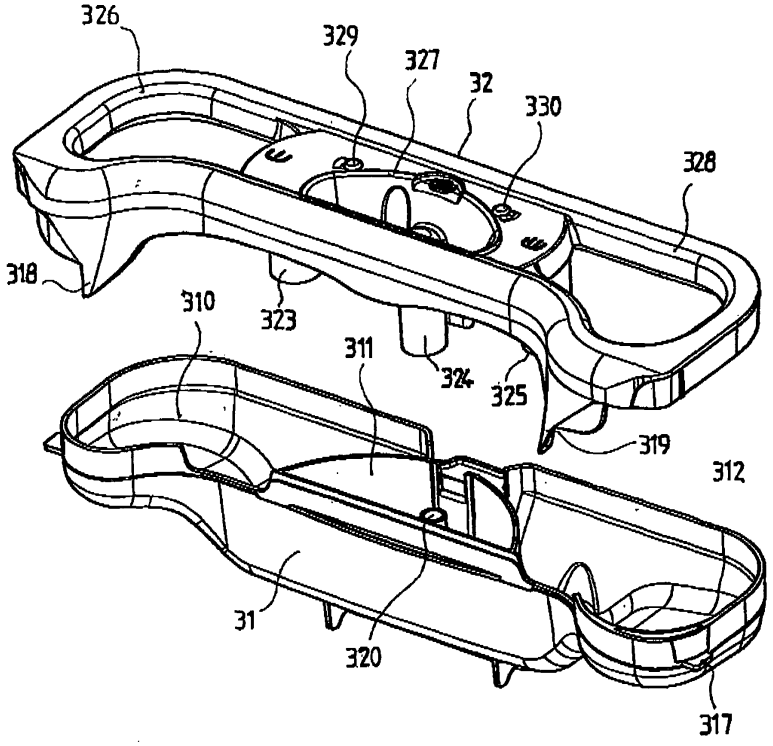
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(54) **Dismountable detergent dispenser for top-loading washing machines**

(57) This detergent products dispenser is characterized in that it is made in two parts (**31** and **32**) fitting together where one (**31**) includes the detergent products holding compartments (**310** to **312**) and liquid inlet and the detergent outlets and where the other (**32**) includes the water distribution baffles, the inlet edges (**326** to **328**) of the detergent compartments (**310** to **312**) and the siphons (**323** to **325**), The two parts (**31**) and (**32**) of the dispenser (**30**) constitutes a removable assembly recessed in a suitable seating arranged in the opening of the loading hopper (**10**).

FIG.3



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Description

[0001] The invention refers to a dismountable and cleanable detergent products dispenser for a top-loading rotating drum washing machine.

[0002] It is known that, on the most recent washing machines, a detergent products dispenser able to dispense, during some stages of the washing cycle, a solid and/or liquid detergent product previously introduced into the appropriate boxes grouped in the same space, laid out on one of the sides or at the back of the loading hopper of the machine or, on some machines, in a box or in a pocket fixed to the bottom of the hopper door and taking place in the space left free between the hopper door and the periphery of the drum.

[0003] The automatic delivery at the right time of each of the detergent products induces a relatively dispenser products detergent complexity to obtain their draining by the wash liquid as well as the unavoidable dead angles in the boxes that disturb the dispersion and complete distribution of the detergent products dose. This results in permanent deposits of matter that ends up by reducing the doses of the products brought, which induces a dispenser dysfunction, causing a user's dissatisfaction regarding the quality of the wash. In addition, the user is forced to clean the dispenser products boxes and channels, which are often difficult to access as constructed, especially when the dispenser is integrated in the loading hopper of the machine.

[0004] Aware of this problem, all manufacturers have sought to provide solutions. The main such solution consisted in making the dispenser boxes removable to facilitate cleaning or making the dispenser completely removable in order to allow it to be cleaned as completely as possible outside the machine. But nevertheless this involved a constraint that was rather poorly accepted by users, which resulted in neglected maintenance of these dispensers due to the difficulties of access to all of the parts concerned, often partially hidden by projecting edges or located in rather inaccessible nooks, since these dispensers were made from several parts welded together and which cannot be dismantled.

[0005] To facilitate direct access to the inside of the dispenser compartments, it was conceived to install the dispenser at the back of the loading hopper, in front of the hopper door's articulation so the said door can be used to close the dispenser compartments, which by this means are completely released when the said door is opened to directly fill the hopper without facilitating the maintenance of the compartments.

[0006] The purpose of the present invention is to provide a solution for these disadvantages. This invention, as characterized in the claims, resolves the problem consisting to create a detergent products dispenser whose compartments are easily accessible to clean them and their feeding and dispensing channel.

[0007] The advantages obtained through this invention consist primarily in that the loading hopper door directly seals the compartments without disturbing the door functioning, while avoiding overflows of detergent products that cause deposits, which are difficult to eliminate after their drying, and in that all of the nooks, deflectors and siphons inside the dispenser are directly accessible for their maintenance, which allows such maintenance to be done regularly.

[0008] Other characteristics and advantages will appear in the following description of a method of making the detergent products dispenser for a top-loading washing machine dismountable according to the invention in association with the loading hopper door, given as a non-limiting example with regard to the appended drawings where:

- figure 1 shows a top perspective view of the open door on the loading hopper equipped with the dispenser,
- figure 2 shows an overall perspective view of the detergent products dispenser, and
- figure 3 shows an exploded perspective view of the dispenser.

[0009] The figures show in this example the loading hopper **10** of a top-loading washing machine, equipped on the back with a detergent products dispenser **30** made in two parts fitting together where one **31** includes the detergent holding compartments **310** to **312,** the liquid inlet and the detergent outlets, and where the other **32** includes the water distribution baffles, the siphons **323** to **325,** the inlet edges **326** to **328** of the compartments **310** to **312,** two self-cleaning jets **329** and **330** and engagement stops **317.** The detergent compartments **310** to **312** are closed by the loading hopper lid 20 that includes closing seals **21** to **23** for this purpose. The two parts **31** and **32** of the dispenser **30** constitute a removable assembly recessed in a seating **12** arranged in the back part **11** of the loading hopper **10.** In this case, the said dispenser **30** is constantly held against the back wall of the recessed seating **12** by flexible slats **318** and **319** forming one body with its upper part **32.**

[0010] In examining figure 1 in more detail, one notices that when the hopper lid **20** is open, it includes on its back part, near its articulation **24,** raised parts in a flexible material forming seals **21** to **23,** each of which takes on the shape of the inlet edges **326** to **328** of the detergent compartments **310** to **312** that are made with a certain strip, which facilitates the seals **21** to **23** alignment and the contact with the said inlet edges **326** to **328** when the lid **20** closes. This alignment is facilitated by the constant holding of the dispenser **30** and more particularly its upper part **32** against the back wall of the recessed seating **12,** made in the back part **11** of the hopper **10,** under the action of the flexible slats **318** and **319,** each located at the front and ends of the dispenser **30** and bearing against the front wall of the dispenser recessed seating **12.** One notes that, in this way, the good conformability of the seals **21** to **23** is obtained and therefore they are

in regular contact, which results in obtaining good watertightness that is favourable to the complete distribution of the detergent products. One also notes that, given the free recessed fitting of the dispenser **30** in its seating **12,** the dispenser **30** can be easily removed from the machine to be cleaned and even refilled without bother.

[0011] By referring now to figures 2 and 3, taken as a whole, one notes first of all on figure 2, showing an overall view of the dispenser **30**, that the dispenser only includes two parts **31** and **32** fitting together, with the engagement limited by stops **317** spread around the lower part **31,** then on figure 3 that the upper part **32** of the dispenser **30** includes, on the bottom, water distribution baffles, as well as the body of the siphons **323** to **325** penetrating in each of the compartments **310** to **312** located in the lower part **31.** The body of the siphon **324** covers a vertical pipe **320** that opens under the main compartment **311** intended to receive a liquid detergent. The other two compartments **310** and **312,** intended to receive powder detergent, each include a wide opening on the bottom that facilitates the passage of the powder by overflowing the detergent, when it is flushed at certain steps of the wash cycle, by flowing pressurised water in the distributors also located on the bottom of the upper part **32** of the dispenser **30.** During these operations the jets **329** and **330** directly clean the surfaces located between the compartments **310** and **312** and the liquid compartment **311.** As one notes, the dispenser **30** is very easily removed from its seating, then opened in half for cleaning, which could be done moreover mechanically by using the home's dish washer.

Claims

1. Detergent products dispenser of a top-loading rotating drum washing machine, **characterized in that** it is made in two parts (**31** and **32**) fitting together, where one (**31**) includes the detergent products holding compartments (**310** to **312**) and liquid inlet and the detergent outlets and where the other part (**32**) includes the water distribution baffles, the inlet edges (**326** to **328**) of the detergent compartments (**310** to **312**) and the siphons (**323** to **325**).

2. Detergent products dispenser according to claim 1, **characterized in that** these two parts (**31** and **32**) of the dispenser (**30**) interlock by simple engagement of the upper part (**32**) on the lower part (**31**), limited by engagement stops (**317**) distributed around the perimeter of the lower part (**31**).

3. Detergent products dispenser according to claim 1, **characterized in that** the inlet edges (**326** to **328**) of the compartments (**310** to **312**), located in the upper part (**32**) of the dispenser (**30**), are made with a certain strip.

4. Detergent products dispenser according to claim 1, **characterized in that** the central part of the upper part (**32**) includes, on its top, self-cleaning jets (**329** and **330**).

5. Detergent products dispenser according to any one of claims 1 to 4, **characterized in that** its lower part (**31**) is an integral part of the loading hopper (**10**) of the washing machine.

6. Detergent products dispenser according to any one of claims 1 to 4, **characterized in that** the two parts (**31** and **32**) of the dispenser (**30**) constitute a removable assembly recessed in a suitable seating (**12**), arranged in the loading hopper (**10**) opening.

7. Detergent products dispenser according to claim 6, **characterized in that** it is constantly held against the back wall of the recessed seating (**12**) by flexible slats (**318** and **319**) that are supported by its upper part (**32**) and directed towards the bottom of the said seating (**12**) and bearing against the front wall of it

FIG.1

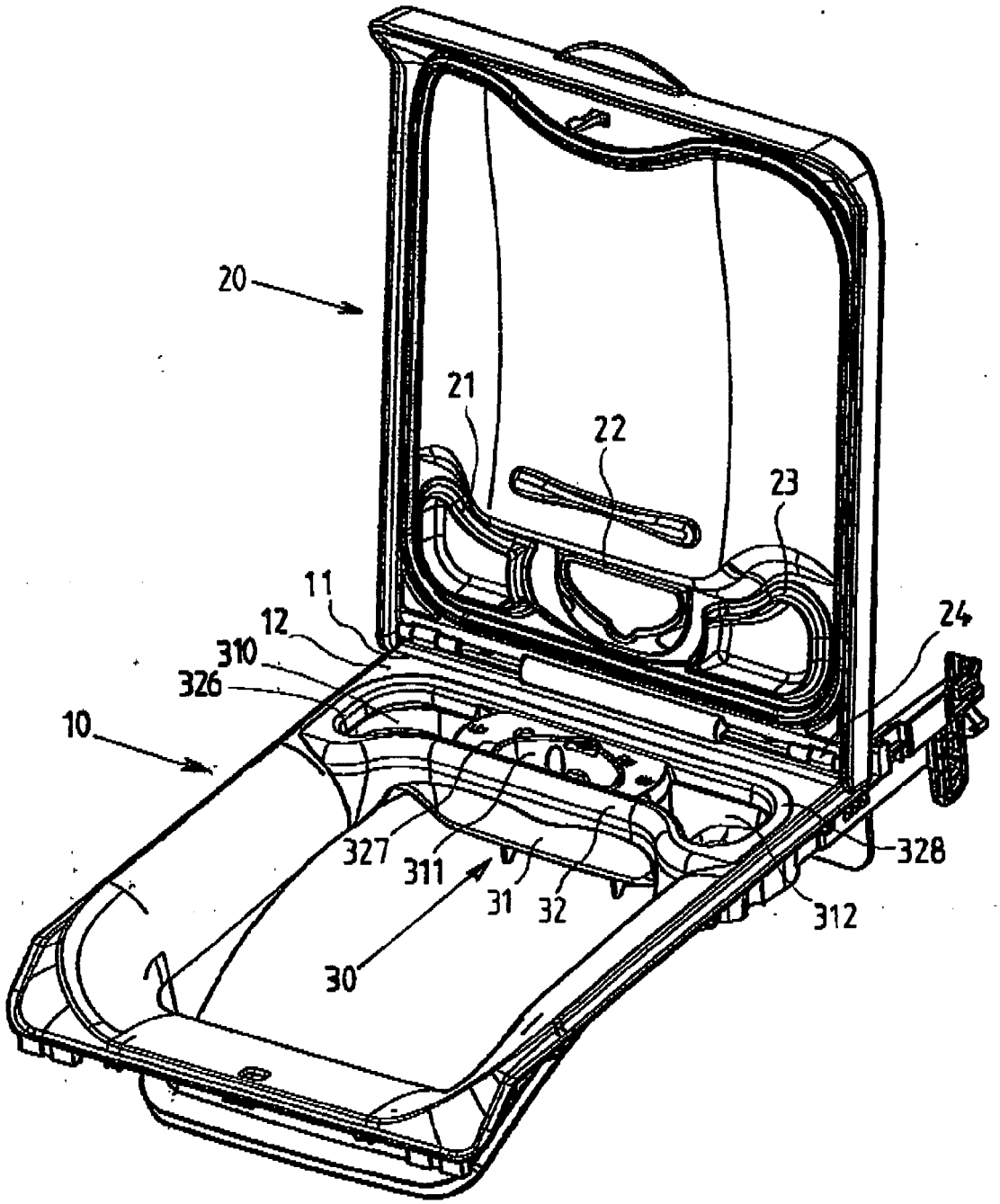


FIG.2

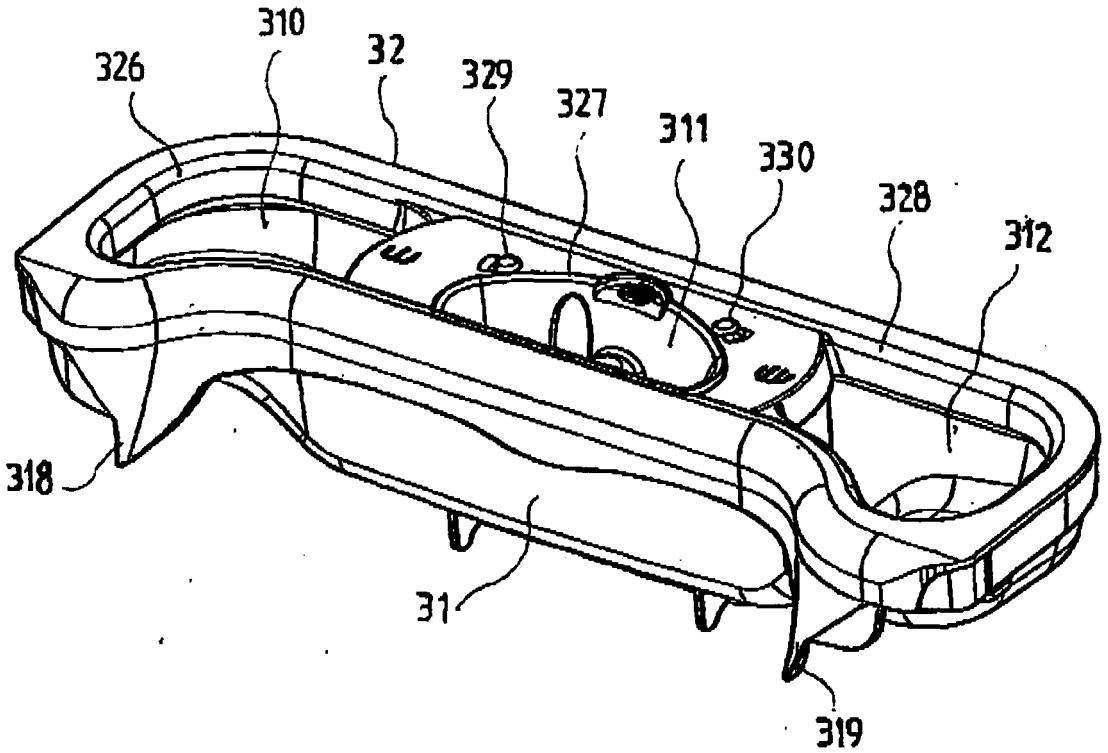
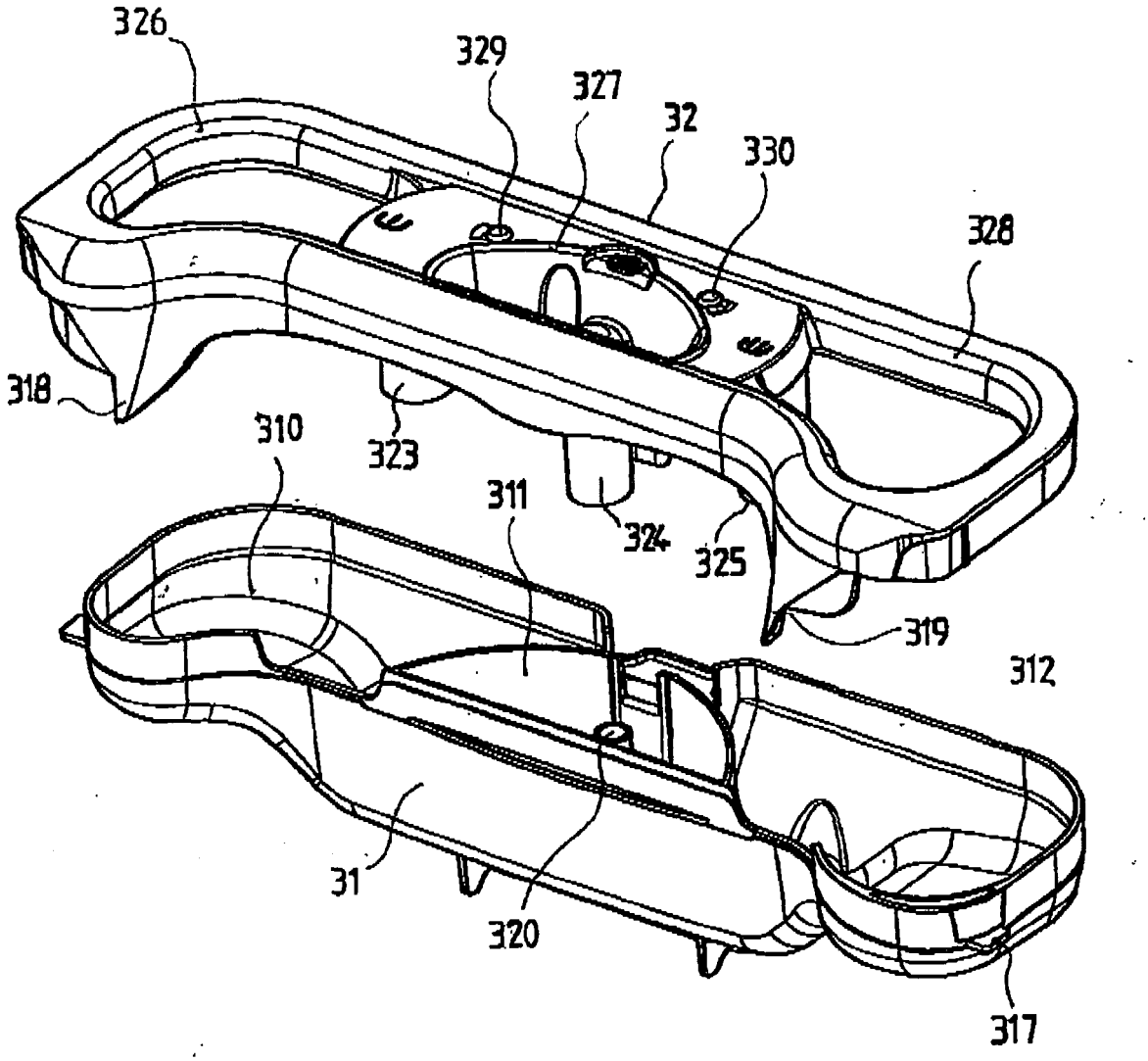


FIG.3



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EUROPEAN SEARCH REPORT

Application Number
EP 06 00 8883

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TECHNICAL FIELDS SEARCHED (IPC)

D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	28 July 2006	DIAZ, M

CATEGORY OF CITED DOCUMENTS

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