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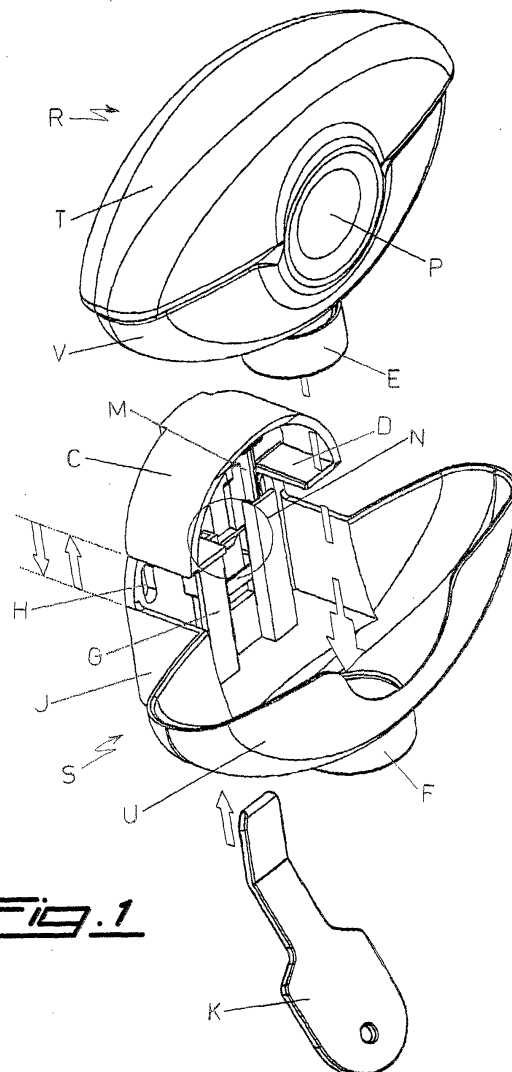
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(54) **Liquid detergent dispenser**

(57) A liquid detergent dispenser includes a replaceable cartridge (R) with squeezeable structure and dispensing device (E), a support (S) provided with holes (H) for wall mounting as well as with a seat (U) suitable to receive the cartridge (R), and means (C, D, N) for locking the cartridge (R) in the seat (U) which can be disengaged only through a specific tool (K). In this way it is possible to combine the practicality of disposable dispensers with the irremovability of conventional wall dispensers.



EP 1 362 540 A1

Description

[0001] The present invention relates to liquid detergent dispensers, and in particular to a dispenser with replaceable and/or rechargeable cartridge.

[0002] It is known that there are many types of liquid detergent dispensers for public premises, hotels and the like, in which the detergent is contained in a cartridge housed inside a wall-mounted dispensing apparatus.

[0003] In this type of dispensers the apparatus includes a dispensing device, typically operated through a lever or a pushbutton, while the cartridge only has the function of containing the detergent and when empty it is replaced with another cartridge. Therefore the dispensing device remains mounted on the apparatus and is always the same, which gives rise to some drawbacks.

[0004] A first drawback stems from the possibility that said device fails or gets clogged thus making impossible to dispense the detergent, while a second drawback is given by the difficulty in replacing a type of detergent with another having different chemical-physical properties (e.g. viscosity) which make the device inadequate for dispensing the new detergent.

[0005] On the other hand there are the well-known disposable dispensers simply consisting of a bottle with a dispensing pump mounted thereon, but these dispensers are not generally used in these situations since they can easily be carried off by the users.

[0006] Therefore the object of the present invention is to provide a dispenser which is free from said drawbacks. This object is achieved by means of a dispenser in which the wall support only acts as a fixing system for a replaceable and/or rechargeable cartridge which includes the dispensing device. Other advantageous features of the present dispenser are disclosed in the dependent claims.

[0007] The main advantage of the present dispenser is that of combining the practicality of disposable dispensers with the irremovability of conventional wall dispensers.

[0008] A further advantage stems from the fact that it has a very simple structure which is therefore cheap to manufacture and reliable in operation.

[0009] Further advantages and characteristics of the device according to the present invention will be clear to those skilled in the art from the following detailed description of an embodiment thereof, with reference to the annexed drawings wherein:

Fig.1 is a perspective exploded front view showing the members which make up the dispenser;

Fig.2 is a view similar to the preceding one which shows the locking system between the cartridge and the wall support; and

Fig.3 is a perspective bottom front view showing the assembled dispenser and the unlocking tool.

[0010] With reference to Figs.1 and 2 there is seen that the dispenser according to the present invention is made up of a wall support S in which there is introduced and locked a cartridge R, having a squeezeable structure, which can be removed only with the help of a suitable key K.

[0011] More specifically, support S includes a front seat U with a bottom opening F, as well as a rear extension J in which there are formed holes H for the wall mounting and vertical guides G engaging a semicircular cover C through corresponding columns M. This cover C is provided at its ends with internal horizontal wings D, and between its columns M there is provided a lock-tooth N suitable to engage a corresponding seat formed between guides G.

[0012] Cartridge R has a bottom portion V shaped and sized for introduction into seat U and a dispensing valve E also sized and positioned for introduction into the corresponding opening F. On the contrary, the top portion T is slightly larger to abut along the top edge of seat U, and in the central frontal area there is provided a comparatively more flexible area P which acts as pushbutton for dispensing the detergent in an amount proportional to the pressure exerted by the user.

[0013] The locking of cartridge R onto support S is achieved through projections formed on the back of cartridge R and suitable to be engaged by cover C. More specifically, a central tooth A is formed on the top portion of cartridge R and is engaged by the central portion of the arc of cover C, while a central horizontal ledge B formed on the bottom portion is engaged by wings D of cover C.

[0014] The simple operation of the present dispenser is readily understood from the description above: cartridge R is introduced into seat U, then cover C is lowered until tooth N snaps into engagement with the corresponding seat. To release the cartridge R to be replaced, key K is introduced from below into the bottom opening L of extension J, as shown in Fig.3, pushing upward until tooth N is disengaged so as to allow the lifting of cover C.

[0015] It is clear that the above-described and illustrated embodiment of the dispenser according to the invention is just an example susceptible of various modifications. In particular, the exact shape of seat U and of the corresponding cartridge R may be somewhat changed, same as the locking system for cartridge R and/or cover C, or the dispensing device that might replace valve E.

Claims

1. Liquid detergent dispenser **characterized in that** it includes a cartridge (R) with squeezeable structure and dispensing device (E), a support (S) provided with holes (H) for wall mounting as well as with a seat (U) suitable to receive said cartridge (R), and

means for locking the cartridge (R) in said seat (U) which can be disengaged only through a specific tool.

2. Dispenser according to claim 1, **characterized in that** the means for locking the cartridge (R) in the seat (U) consist of projections formed on the back of the cartridge (R) and suitable to be engaged by a cover (C) slidable on the support (S) between a locking position given by a proper lock-tooth (N) and an open position which allows the removal of the cartridge (R). 5
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3. Dispenser according to claim 2, **characterized in that** the locking means consist of a central tooth (A) formed on the top portion of the cartridge (R) which is engaged by the central portion of the semicircularly shaped cover (C), and a central horizontal ledge (B) formed on the bottom portion of the cartridge (R) which is engaged by horizontal wings (D) internally arranged at the ends of the cover (C). 15
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4. Dispenser according to claim 2 or 3, **characterized in that** the cover (C) is provided with columns (M) engaged in vertical guides (G) formed on a rear extension (J) of the seat (U) of the support (S), the lock-tooth (N) being formed between said columns (M) and its corresponding engagement seat being formed between said guides (G). 25
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5. Dispenser according to claim 4, **characterized in that** the tool for disengaging the locking means consists of a key (K) which can be introduced from below in a bottom opening (L) of the extension (J) until it reaches and disengages the tooth (N). 35
6. Dispenser according to one or more of the preceding claims, **characterized in that** the cartridge (R) has a top portion (T) slightly larger than the bottom portion (V) which fits into the seat (U), so as to abut along the top edge of said seat (U). 40
7. Dispenser according to one or more of the preceding claims, **characterized in that** the cartridge (R) has a comparatively more flexible central frontal area (P) which acts as a pushbutton for dispensing the detergent in an amount proportional to the pressure exerted by the user. 45
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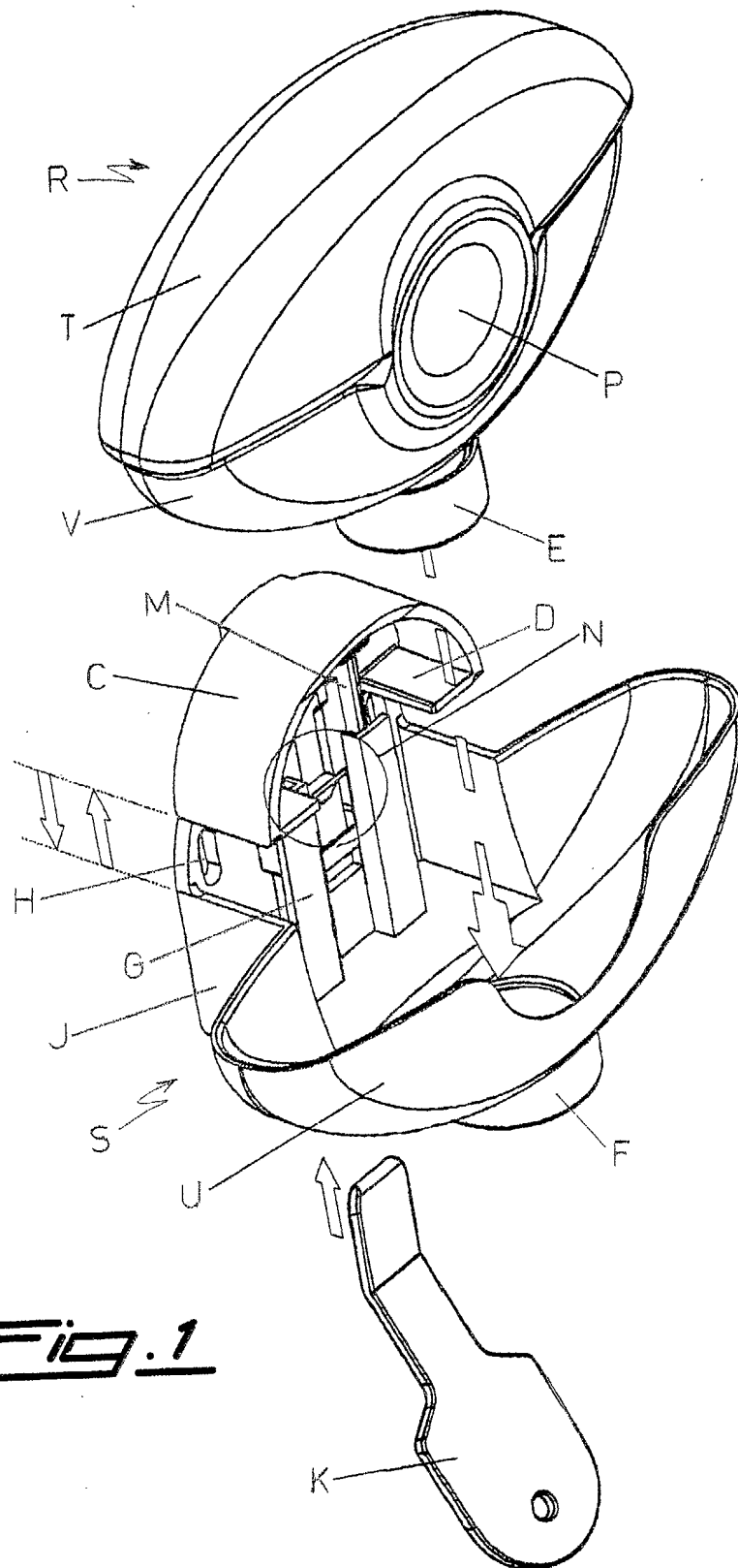
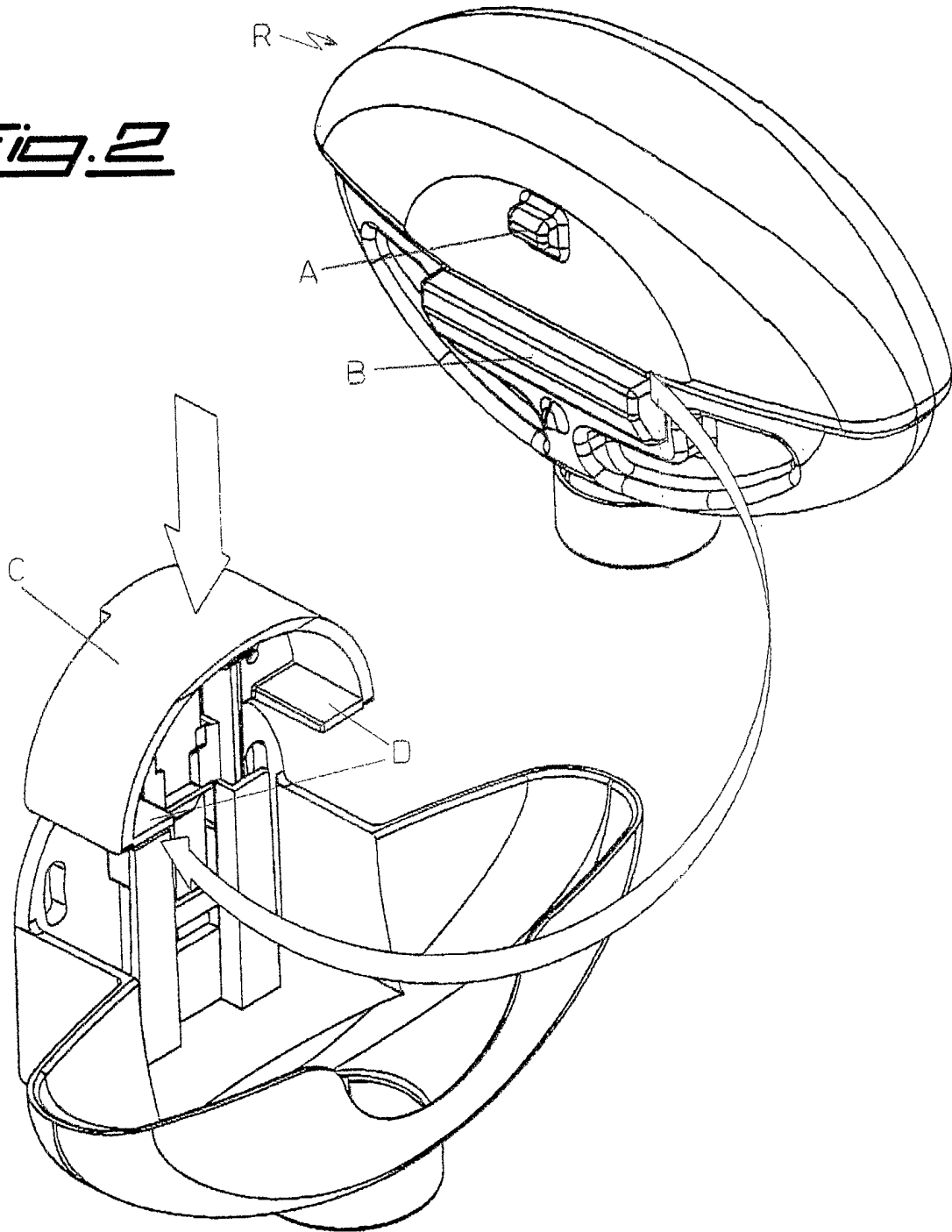


Fig. 1

Fig. 2



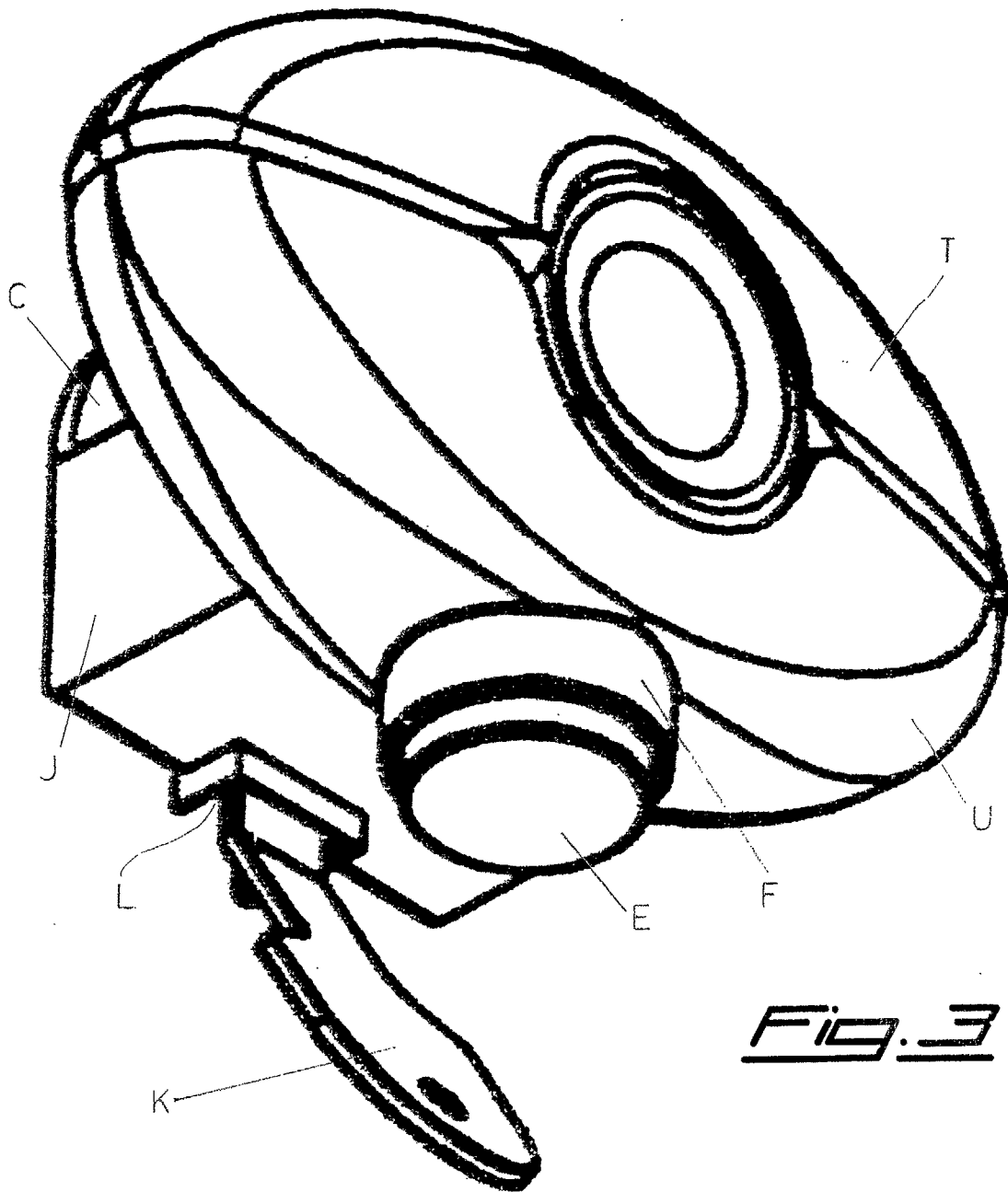


Fig. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 02 07 6923

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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Place of search	Date of completion of the search	Examiner	
THE HAGUE	2 October 2002	Fordham, A	
CATEGORY OF CITED DOCUMENTS		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	
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			

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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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