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(54) **Laundry washing machine dispenser for detergent products**

Waschmaschinenspenders für Reinigungsmittel

Distributeur de produits détergents pour un lave-linge

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Description

[0001] The present invention relates to a laundry washing machine dispenser for detergent products or similar.

[0002] The detergent dispenser of front-loading laundry washing machines normally comprises a drawer housed in the front wall of the machine and divided internally into compartments, at least one of which is filled manually with a given amount of a respective product before each wash.

[0003] To avoid filling the detergent compartments manually before each wash, and at the same time dispense the detergent more accurately, laundry washing machines have been designed in which the conventional drawer dispenser is replaced with compartments for one or more cartridges, each of which contains a number of measures of a respective detergent, and is connected to a hydraulic circuit of the machine to release a measured quantity of detergent at each wash according to the selected wash program.

[0004] Laundry washing machines of the type described,

[0005] WO-A-8806199 discloses a loading apparatus for holding and dispensing a washing additive such as a cleansing agent. The loading apparatus includes a receptacle in which there is a plurality of compartments each for receiving a discrete portion of washing additive in the form of blocks consisting of, or containing, a given amount of cleansing agent. The compartments are at least partially defined by partitions forming part of a body which is movable to bring each portion adjacent to an opening provided in the receptacle. The portions then pass through the opening to be dispensed, preferably under force of gravity. The blocks could be replaced by refillable cassettes which are adapted to remain in the loader, even when over the above mentioned opening, while allowing their contents to pour out through the opening in the base when required.

[0006] Document EP-A1-2152950, which is prior art according to Art. 54(3) EPC, discloses an automatically controlled washing machine with a drawer, which is accessible from the front, with at least one chamber for a hand-metered addition of a washing powder dose or washing liquid dose, said drawer further comprises at least one storage container, which is mounted in the upper machine space behind the chambers of the drawer, for storing liquid or gel-like washing agent and with a respective device for automatic metering of each stored washing agent, and with at least one device for receiving a transportable container, which comprises several doses, of liquid or gel-like washing agent.

[0007] Laundry washing machines of the type described, however, have met with little success on the home market, on account of various drawbacks, which make them awkward to use and not very versatile. Foremost of these are the impossibility of loading products manually in the usual way, and the difficulty encountered in changing or filling the cartridges, on account of the

cartridge compartments normally being located in poorly accessible parts of the machine, e.g. in the base or at the back of the machine, or, in some cases, in devices actually outside the machine itself.

[0008] It is an object of the present invention to provide a laundry washing machine dispenser for detergent products, softeners or fresheners, designed to permit both manual loading of detergents at each wash, and automatic loading using long-term-release cartridges, and which at the same time is easy to use and cheap to produce.

[0009] According to the present invention, there is provided a laundry washing machine dispenser for detergent products, softeners or fresheners as claimed in Claim 1 and, preferably, in any one of the Claims depending directly or indirectly on Claim 1.

[0010] A number of non-limiting embodiments of the present invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows a laundry washing machine featuring a preferred embodiment of the dispenser according to the present invention;

Figure 2 shows the Figure 1 dispenser in a different operating configuration;

Figure 3 shows a detail of Figure 1, with parts removed for clarity;

Figures 4 and 5 show respective variations of the Figure 1 dispenser;

Figure 6 shows a detail of containers, for detergent products, softeners or fresheners that can be used in the dispenser according to the present invention.

[0011] Number 1 in Figure 1 indicates as a whole a laundry washing machine comprising a parallelepiped-shaped outer body 2; a laundry loading opening 3 formed in a front wall 4 of body 2; and a control panel 5 located on front wall 4, above opening 3.

[0012] Machine 1 also comprises a dispenser 6 for detergent products or e.g. softeners, fresheners, etc., and which comprises a drawer 7 located in front wall 4, alongside control panel 5.

[0013] More specifically, as shown in Figures 1-3, drawer 7 comprises an outer handle 8, which is flush with front wall 4 when drawer 7 is in the closed position (not shown); and a slide-in body 9 divided into two sections 10, 11. Section 10 is located at the front, in the opening direction of drawer 7 substantially perpendicular to front wall 4, and is in turn divided into two compartments 10a, 10b, normally for powdered or liquid detergent, and a compartment 10c located inside compartment 10b and normally used for liquid softener.

[0014] As shown in Figure 2, section 11 is located behind section 10 in the opening direction of drawer 7, and houses one or more containers 12, at least one of which contains a sufficient quantity of detergent for a given number of washes.

[0015] In the Figure 2 example, section 11 houses one

container 12, which may be a refillable container integral with section 11, or a standard cartridge that can be removed from section 11 and changed manually when used up.

[0016] In the Figure 4 example, section 11 houses two side by side containers 12.

[0017] In the Figure 5 variation, section 11 is divided into a number of compartments 13 of given sizes, each housing a respective container 12. In this case, too, all or at least some of containers 12 may be integral with respective compartments 13, or defined by known removable cartridges.

[0018] As shown in Figure 6, the rear end of each removable container 12 has a connector 14 for connecting container 12 to a known hydraulic circuit (not shown) for feeding the detergent to the laundry during the wash cycle.

[0019] Each container 12 also has a known electronic level identification device 15, which, in use, interfaces with an electronic device (not shown) on machine 1 to automatically meter the product during the wash cycle in known manner.

[0020] Drawer 7 is mounted inside a compartment 16 in body 2 to slide along two grooves (not shown) extending along respective lateral walls 18 of compartment 16 and engaged in sliding manner by respective longitudinal edges 19 of drawer 7.

[0021] As shown in Figure 3, dispenser 6 comprises a stop device 20, which, when drawer 7 is opened by the user, retains drawer 7 in a first extracted position (Figure 1), in which section 10 projects from front wall 4, while section 11 remains inside body 2.

[0022] Stop device 20 comprises two elastic levers 21 (only one shown in Figure 3), each of which is integral with a respective lateral wall 18 of compartment 16, extends parallel to the opening direction of drawer 7, and has a respective triangular tooth 22 projecting towards drawer 7 and movable elastically, in a direction crosswise to the opening direction of drawer 7, between an idle position (not shown), in which tooth 22 presses against relative edge 19, and a work position (Figure 3), in which tooth 22 engages a V-shaped recess 23 formed in a portion of relative edge 19 at the end of section 11 next to section 10.

[0023] In a variation, stop device 20 may comprise only one tooth 22 and, therefore, only one recess 23.

[0024] In actual use, when drawer 7 is in the closed position and the user pulls handle 8, drawer 7 slides out until it is stopped in the first extracted position by teeth 22 engaging respective recesses 23. This configuration allows free access by the user to all the compartments 10a, 10b, 10c in section 10 to load detergents or similar manually.

[0025] Conversely, to operate machine 1 in automatic dispensing mode, and to insert or change or refill one or more of containers 12, the user simply pulls further on handle 8 to exert sufficient force initially on drawer 7 to overcome the resistance of teeth 22 and flex levers 21,

so that teeth 22, sliding along respective sloping surfaces of respective recesses 23, slide out of recesses 23 into the idle position, and drawer 7 can be pulled open into a final second extracted position, in which section 11 projects completely from front wall 4 and is fully accessible to the user.

[0026] The advantages of dispenser 6 in terms of easy, versatile use of machine 1 will be clear from the foregoing description.

[0027] Machine 1, in fact, can be used in the same way as a conventional manually loaded dispenser machine, as well as in automatic dispensing mode; and section 11 in drawer 7 for housing container/s 12 enables container/s 12 to be changed or refilled as easily as in conventional manual loading mode.

[0028] Finally, it should be pointed out that the above, relative to dispenser 6, also applies in the event dispenser 6 is used in a drying machine, as opposed to laundry washing machine 1.

Claims

1. Laundry washing machine comprising a dispenser (6) for dispensing detergent products, softeners or fresheners, wherein the dispenser (6) comprises a drawer (7) housed in a front wall (4) of the machine (1) and comprising a first section (10) adapted to be loaded with at least a first detergent product sufficient for one wash, so as to allow using said laundry washing machine as a conventional manually loaded dispenser machine, wherein said drawer (7) comprises an outer handle, as well as a distinct second section (11) adapted for housing at least a second detergent product sufficient for a given number of washes, so as to allow using said laundry washing machine also in an automatic dispensing mode.
2. Laundry washing machine as claimed in Claim 1, wherein the second detergent product is housed in a relative container, in turn housed in the second section.
3. Laundry washing machine as claimed in Claim 1 or 2, wherein the container (12) is removable.
4. Laundry washing machine as claimed in Claim 1 or 2, wherein the container (12) is refillable and formed integrally with the second section (11).
5. Laundry washing machine as claimed in any one of the foregoing Claims, wherein the first section (10) is divided into a number of compartments (10a, 10b, 10c), each for housing a respective first product.
6. Laundry washing machine as claimed in any one of the foregoing Claims, wherein the second section (11) is divided into a number of compartments (13),

each for housing a respective container (12) for a relative second product.

7. Laundry washing machine as claimed in any one of the foregoing Claims, wherein the second section (11) is located behind the first section (10) in an opening direction of the drawer (7) substantially perpendicular to the front wall (4).
8. Laundry washing machine as claimed in any one of the foregoing Claims, wherein the drawer (7) is movable between a closed position, a first extracted position, in which only the first section (10) projects from the front wall (4), and a second extracted position, in which both the first and second section (11) project from the front wall (4).
9. Laundry washing machine as claimed in Claim 8, comprising a stop device (20) for arresting the drawer (7) in the first extracted position when opening the drawer (7).
10. A laundry washing machine as claimed in Claim 9, wherein the stop device (20) comprises at least one tooth (22) located in a fixed position on a body (2) of the machine (1), and which clicks inside, and is released flexibly from, a respective recess (23) formed on the drawer (7).

Patentansprüche

1. Waschmaschine, umfassend einen Spender (6) zum Abgeben von Waschmittelprodukten, Weichspülern oder Wäscheauffrischern, wobei der Spender (6) ein in einer Vorderwand (4) der Maschine (1) aufgenommenes Schubfach (7) umfasst, das einen ersten Abschnitt (10) umfasst, der geeignet ist, mit mindestens einem ersten, für eine Wäsche ausreichenden Waschmittelprodukt gefüllt zu werden, so dass die Waschmaschine als eine herkömmliche Maschine mit manuell gefülltem Spender verwendet werden kann, wobei das Schubfach (7) einen äußeren Griff sowie einen getrennten zweiten Abschnitt (11) umfasst, der geeignet ist, mindestens ein zweites Waschmittelprodukt aufzunehmen, das für eine gegebene Zahl von Wäschen ausreicht, so dass die Waschmaschine auch in einem automatischen Abgabemodus verwendet werden kann.
2. Waschmaschine nach Anspruch 1, wobei das zweite Waschmittelprodukt in einem jeweiligen Behältnis aufgenommen ist, das seinerseits im zweiten Abschnitt aufgenommen ist.
3. Waschmaschine nach Anspruch 1 oder 2, wobei das Behältnis (12) entfernbar ist.

4. Waschmaschine nach Anspruch 1 oder 2, wobei das Behältnis (12) aufgefüllt werden kann und integral mit dem zweiten Abschnitt (11) ausgebildet ist.

5. Waschmaschine nach einem der vorhergehenden Ansprüche, wobei der erste Abschnitt (10) in mehrere Fächer (10a, 10b, 10c) jeweils zur Aufnahme eines jeweiligen ersten Produkts unterteilt ist.

6. Waschmaschine nach einem der vorhergehenden Ansprüche, wobei der zweite Abschnitt (11) in mehrere Fächer (13) jeweils zur Aufnahme eines jeweiligen Behältnisses (12) für ein jeweiliges zweites Produkt unterteilt ist.

7. Waschmaschine nach einem der vorhergehenden Ansprüche, wobei der zweite Abschnitt (11) in einer im Wesentlichen senkrecht zur Vorderwand (4) verlaufenden Öffnungsrichtung des Schubfachs (7) hinter dem ersten Abschnitt (10) angeordnet ist.

8. Waschmaschine nach einem der vorhergehenden Ansprüche, wobei das Schubfach (7) zwischen einer geschlossenen Position, einer ersten herausgezogenen Position, in der nur der erste Abschnitt (10) von der Vorderwand (4) vorragt, und einer zweiten herausgezogenen Position, in der sowohl der erste als auch der zweite Abschnitt (11) von der Vorderwand (4) vorragen, beweglich ist.

9. Waschmaschine nach Anspruch 8, umfassend eine Festhaltevorrichtung (20) zum Arretieren des Schubfachs (7) in der ersten herausgezogenen Position beim Öffnen des Schubfachs (7).

10. Waschmaschine nach Anspruch 9, wobei die Festhaltevorrichtung (20) mindestens einen Zahn (22) umfasst, der in einer fixierten Position an einem Körper (2) der Maschine (1) angeordnet ist und der in eine jeweilige am Schubfach (7) ausgebildete Ausparung (23) einschnappt und flexibel daraus freigegeben wird.

Revendications

1. Lave-linge comprenant un distributeur (6) pour distribuer des produits détergents, des assouplissants ou des désodorisants, le distributeur (6) comprenant un tiroir (7) disposé dans une paroi avant (4) de la machine (1) et comprenant une première section (10) prévue pour recevoir au moins un premier produit détergent suffisant pour un lavage de manière à permettre l'utilisation dudit lave-linge en tant que machine à distributeur conventionnel à chargement manuel, ledit tiroir (7) comprenant une poignée extérieure ainsi qu'une deuxième section distincte (11) prévue pour recevoir

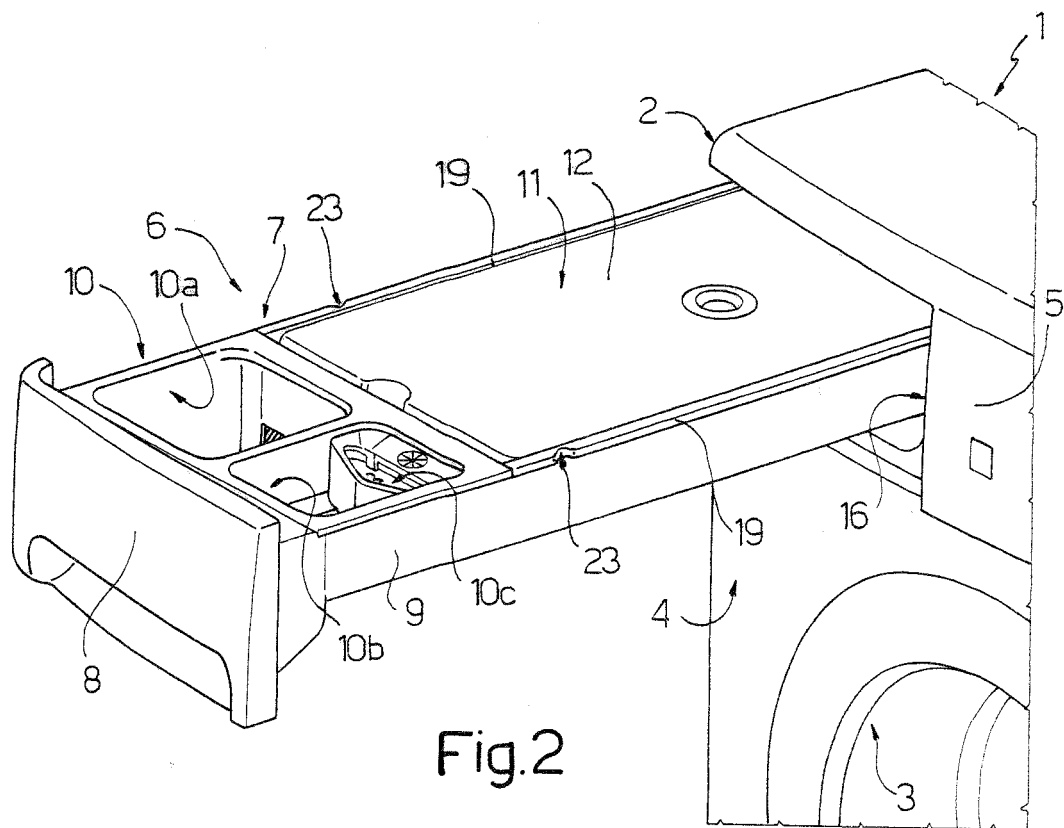
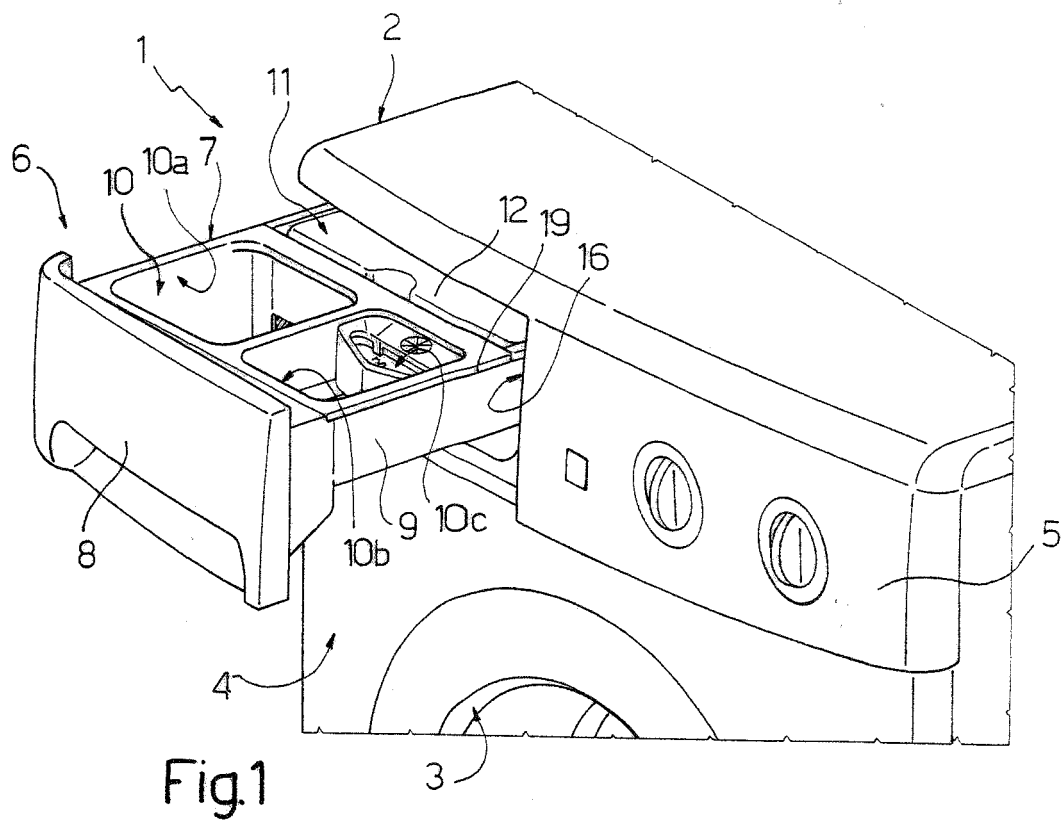
au moins un deuxième produit détergent suffisant pour un certain nombre de lavages, de manière à permettre l'utilisation dudit lave-linge également en mode de distribution automatique.

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2. Lave-linge selon la revendication 1, dans lequel le deuxième produit détergent est reçu dans un récipient associé qui est à son tour disposé dans la deuxième section. 10
3. Lave-linge selon la revendication 1 ou 2, dans lequel le récipient (12) est amovible.
4. Lave-linge selon la revendication 1 ou 2, dans lequel le récipient (12) peut être rempli à nouveau et est formé intégralement avec la deuxième section (11). 15
5. Lave-linge selon l'une quelconque des revendications précédentes, dans lequel la première section (10) est divisée en un certain nombre de compartiments (10a, 10b, 10c), chacun étant destiné à recevoir un premier produit respectif. 20
6. Lave-linge selon l'une quelconque des revendications précédentes, dans lequel la deuxième section (11) est divisée en un certain nombre de compartiments (13), chacun étant destiné à recevoir un récipient respectif (12) pour un deuxième produit associé. 25
7. Lave-linge selon l'une quelconque des revendications précédentes, dans lequel la deuxième section (11) est située derrière la première section (10) dans une direction d'ouverture du tiroir (7) substantiellement perpendiculaire à la paroi avant (4). 30
8. Lave-linge selon l'une quelconque des revendications précédentes, dans lequel le tiroir (7) peut être déplacé entre une position fermée, une première position sortie dans laquelle seule la première section (10) dépasse de la paroi avant (4), et une deuxième position sortie dans laquelle à la fois la première et la deuxième sections (11) dépassent de la paroi avant (4). 35
9. Lave-linge selon la revendication 8, comprenant un dispositif d'arrêt (20) pour arrêter le tiroir (7) dans la première position sortie lors de l'ouverture du tiroir (7). 40
10. Lave-linge selon la revendication 9, dans lequel le dispositif d'arrêt (20) comprend au moins une dent (22) située dans une position fixe sur un corps (2) de la machine (1) et qui s'encliquette à l'intérieur et est libérée élastiquement d'un retrait respectif (23) formé sur le tiroir (7). 45

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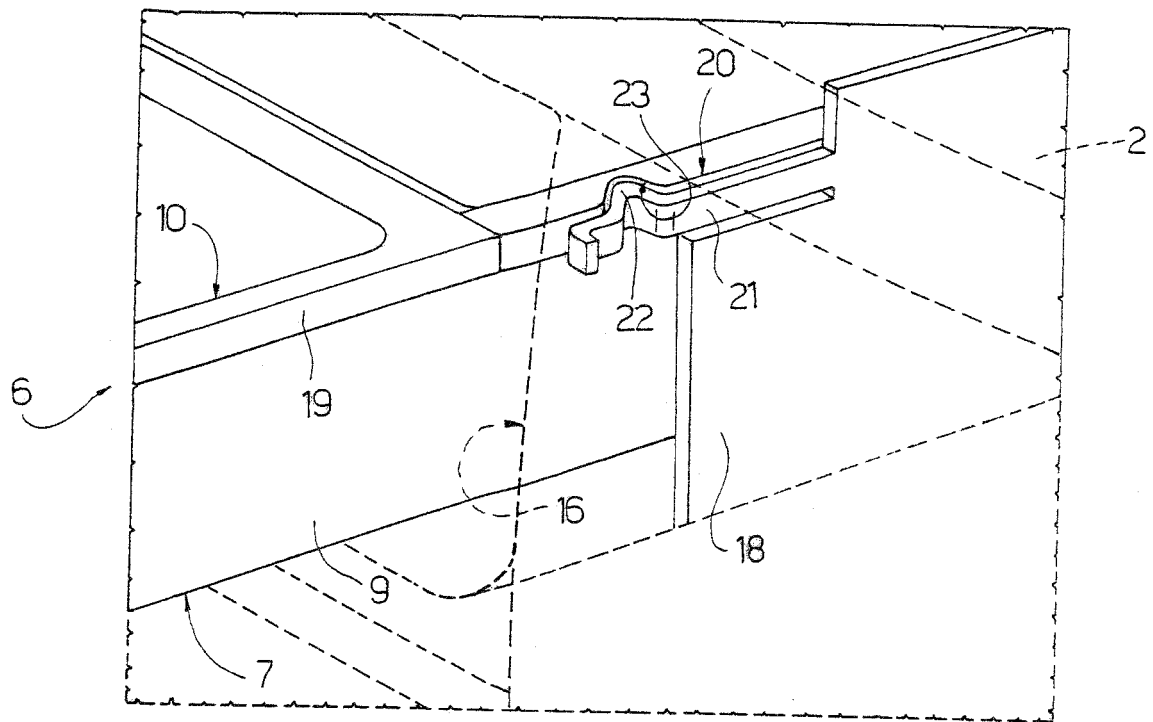


Fig.3

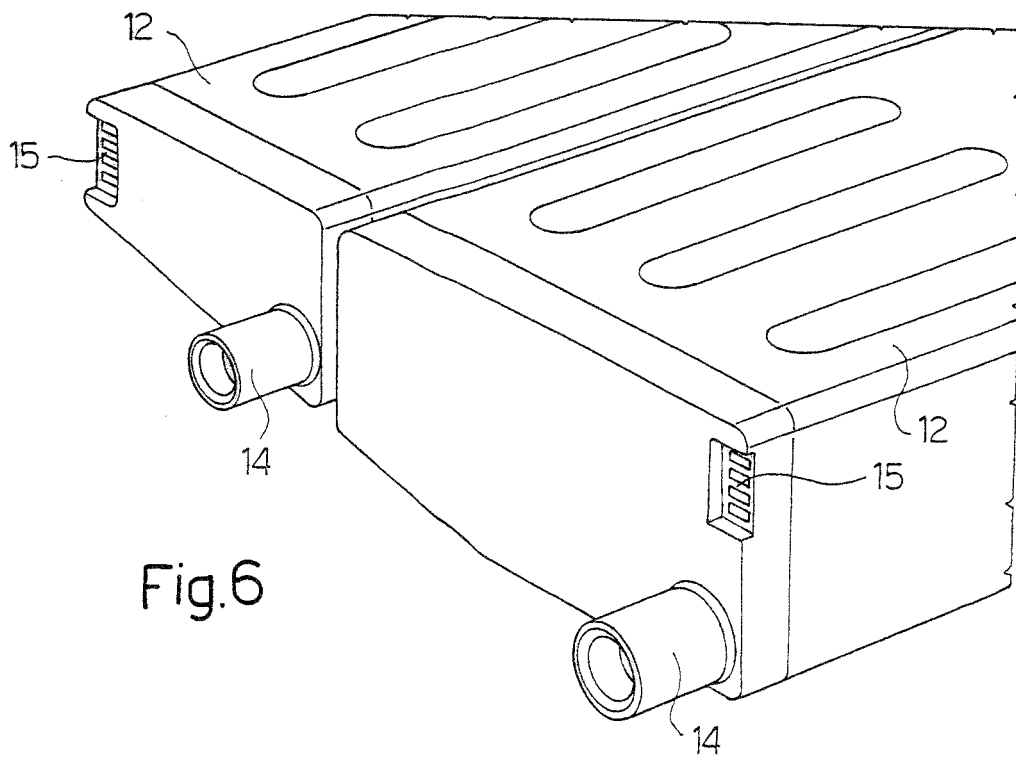


Fig.6

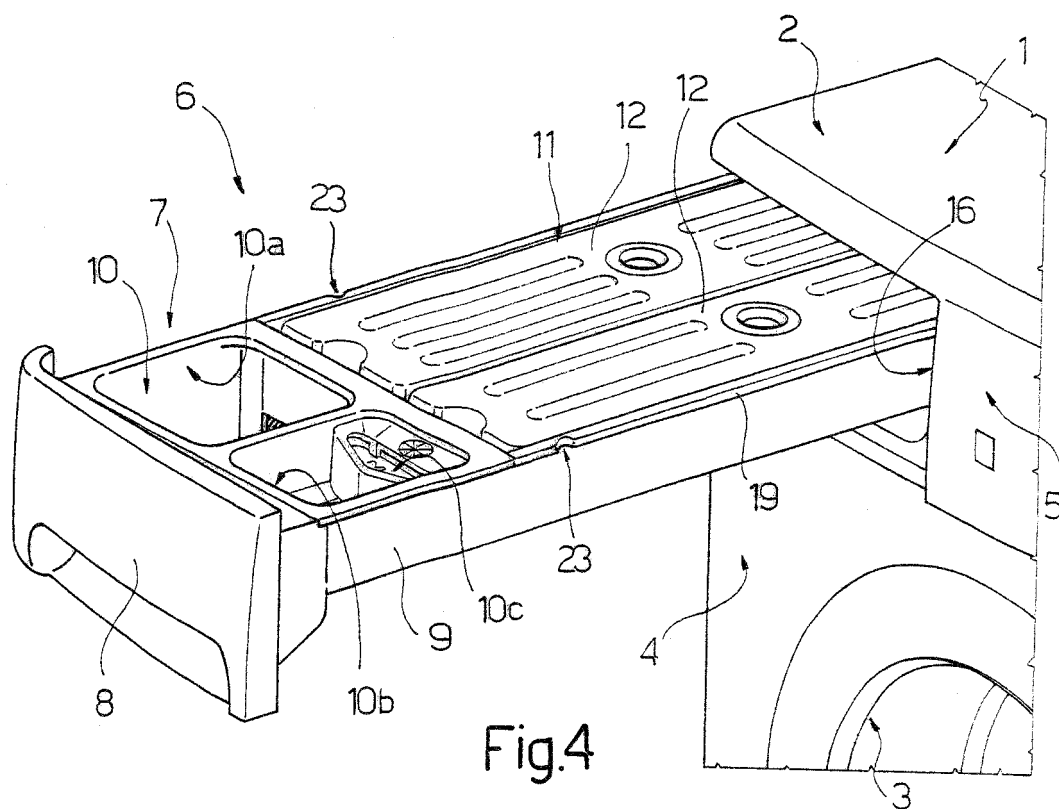


Fig. 4

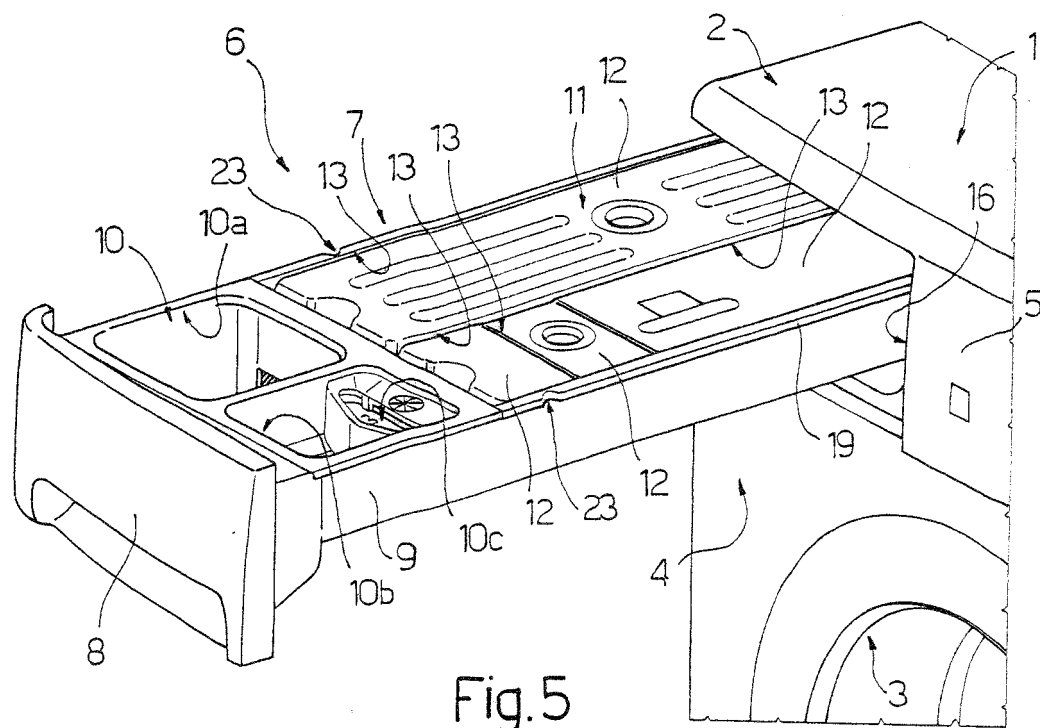


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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