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(54) Laundry washing machine dispenser for detergent products or similar

(57) A dispenser (6) for dispensing detergent products or similar in a laundry washing machine (1), wherein the dispenser (6) has a drawer (7) housed in a front wall (4) of the machine (1) and divided into a front section (10) used for dispensing products manually and for housing single amounts of products, and a rear section (11) used for dispensing products automatically and for housing at least one container (12) containing a sufficient quantity of detergent product for a given number of washes.

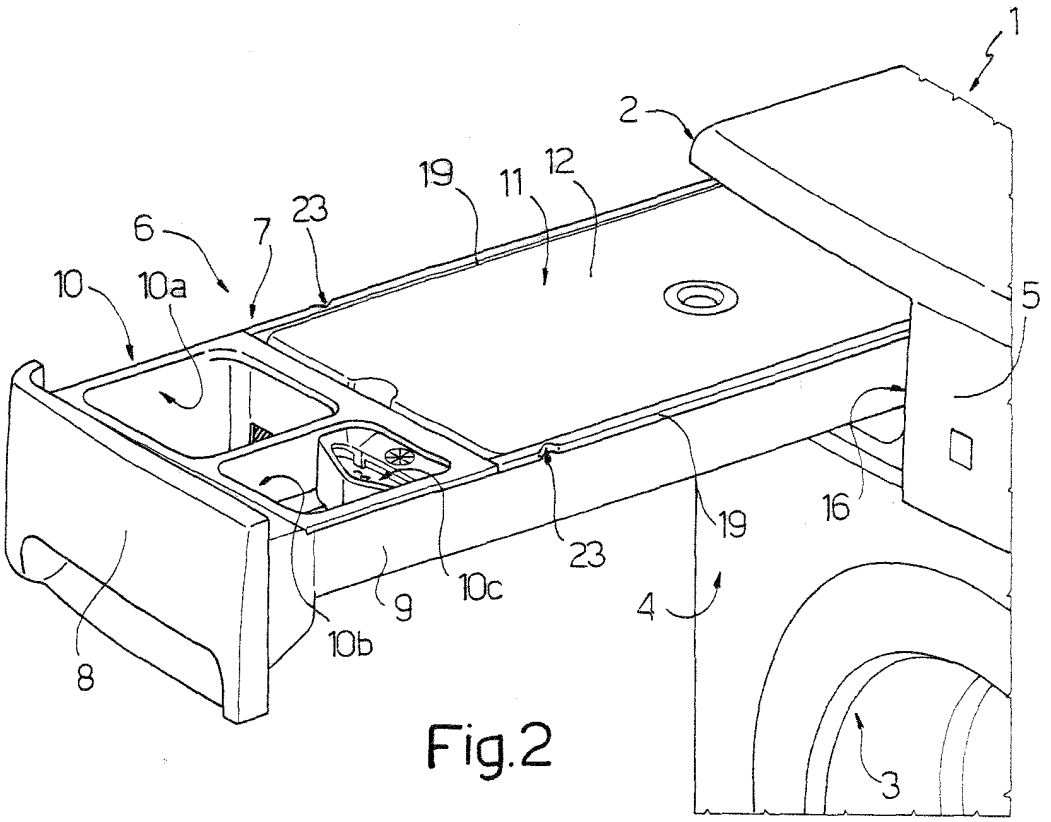

Fig.2

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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, 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.

[0005] It is an object of the present invention to provide a laundry washing machine dispenser for detergent products or similar, 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.

[0006] According to the present invention, there is provided a laundry washing machine dispenser for detergent products or similar, as claimed in Claim 1 and, preferably, in any one of the Claims depending directly or indirectly on Claim 1.

[0007] 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 or similar, that can be used in the dispenser according to the present invention.

[0008] 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.

[0009] Machine 1 also comprises a dispenser 6 for detergent products or similar, e.g. softener, freshener, etc., and which comprises a drawer 7 located in front wall 4, alongside control panel 5.

[0010] 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.

[0011] 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, each containing a sufficient quantity of detergent or similar for a given number of washes.

[0012] 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.

[0013] In the Figure 4 example, section 11 houses two side by side containers 12.

[0014] 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.

[0015] 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.

[0016] 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.

[0017] 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.

[0018] 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.

[0019] 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.

[0020] In a variation, stop device 20 may comprise only one tooth 22 and, therefore, only one recess 23.

[0021] 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.

[0022] 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.

[0023] The advantages of dispenser 6 in terms of easy, versatile use of machine 1 will be clear from the foregoing description.

[0024] 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.

[0025] 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. A dispenser (6) for dispensing detergent products or similar in a laundry machine (1), wherein the dispenser (6) comprises a drawer (7) housed in a front wall (4) of the machine (1) and comprising a first section (10) for containing at least a first product sufficient for one wash; the dispenser (6) being **characterized by** comprising a second section (11) for housing at least a second product sufficient for a given number of washes.

2. A dispenser as claimed in Claim 1, wherein the second product is housed in a relative container, in turn housed in the second section.

3. A dispenser as claimed in Claim 1 or 2, wherein the container (12) is removable.

4. A dispenser as claimed in Claim 1 or 2, wherein the container (12) is refillable and formed integrally with the second section (11).

5. A dispenser 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. A dispenser 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. A dispenser 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. A dispenser 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. A laundry washing machine comprising a dispenser (6) as claimed in any one of Claims 1 to 8.

10. A laundry washing machine as claimed in Claim 9 as appended to Claim 8, and comprising a stop device (20) for arresting the drawer (7) in the first extracted position when opening the drawer (7).

11. A laundry washing machine as claimed in Claim 10, 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).

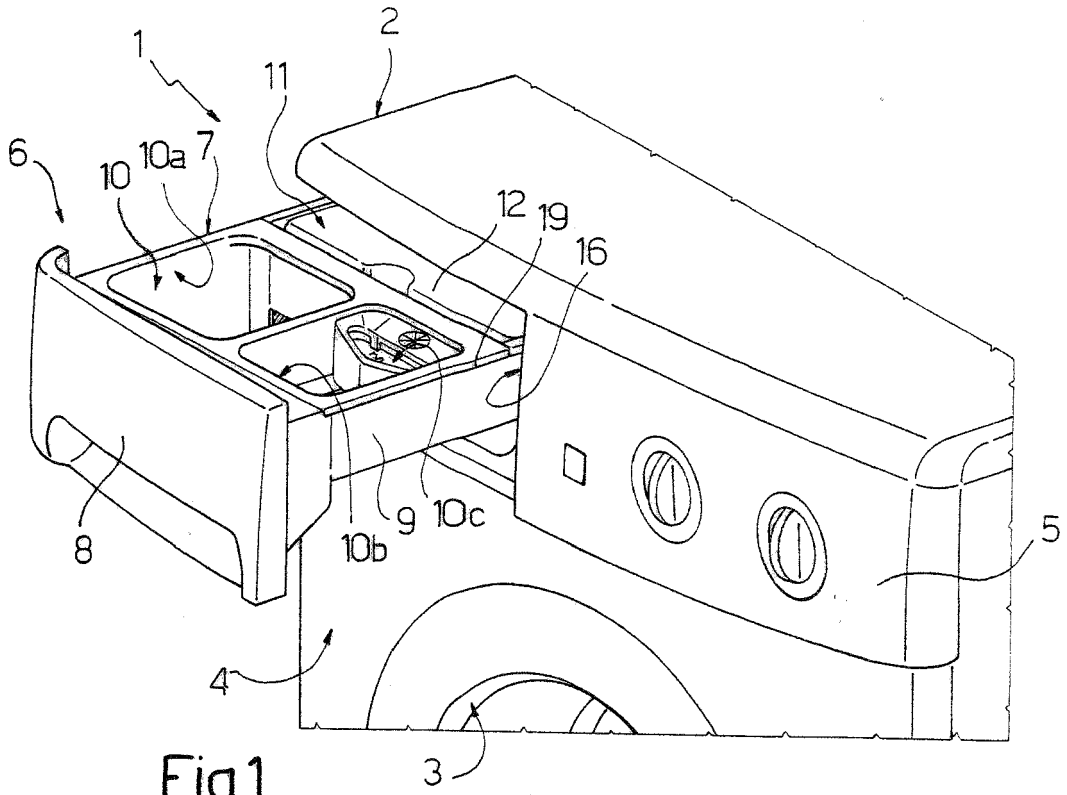
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Fig.1

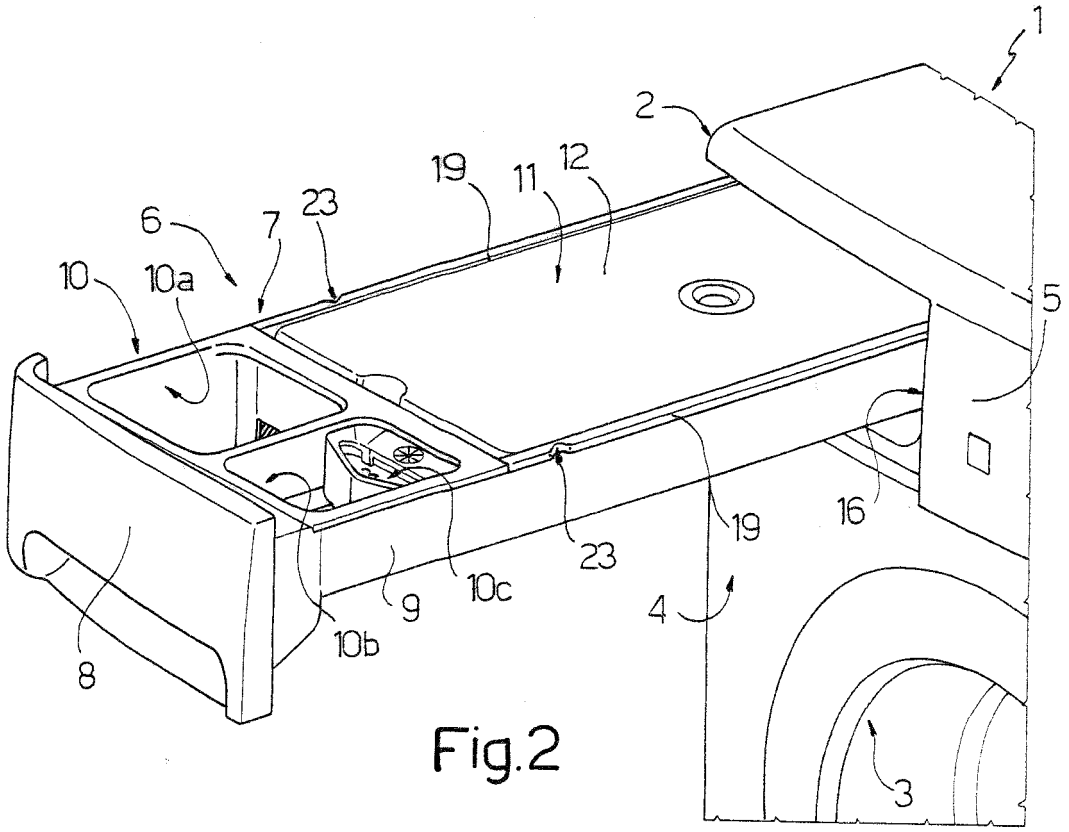
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Fig.2

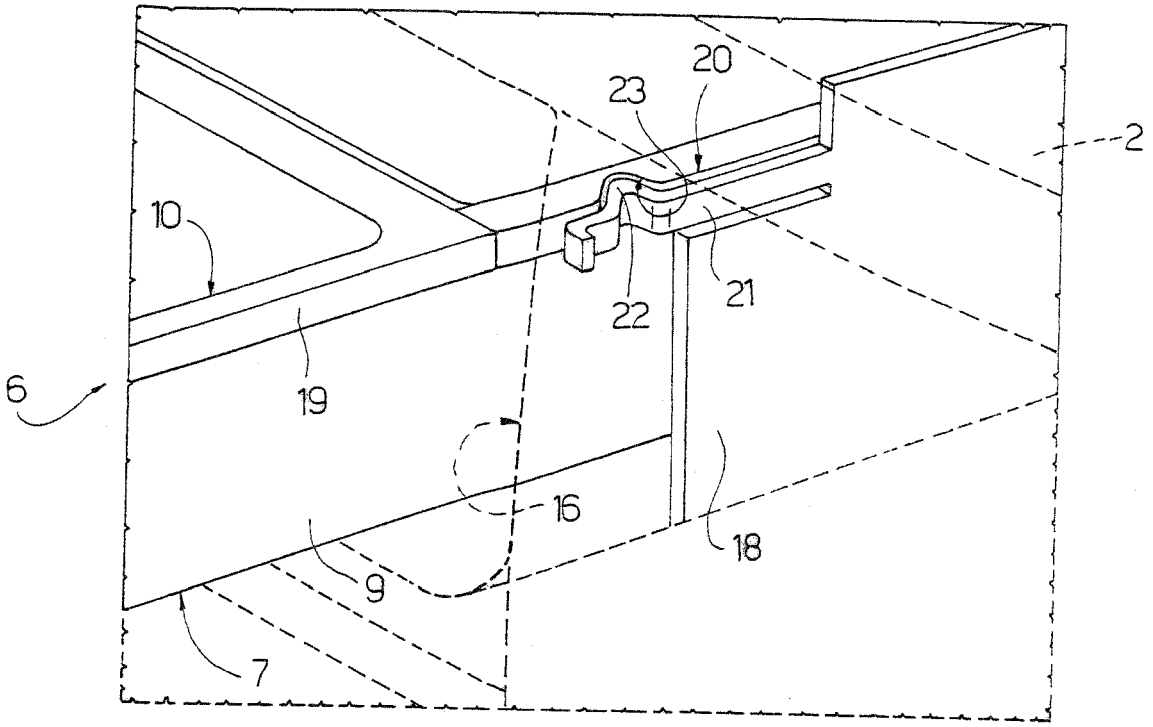

Fig.3

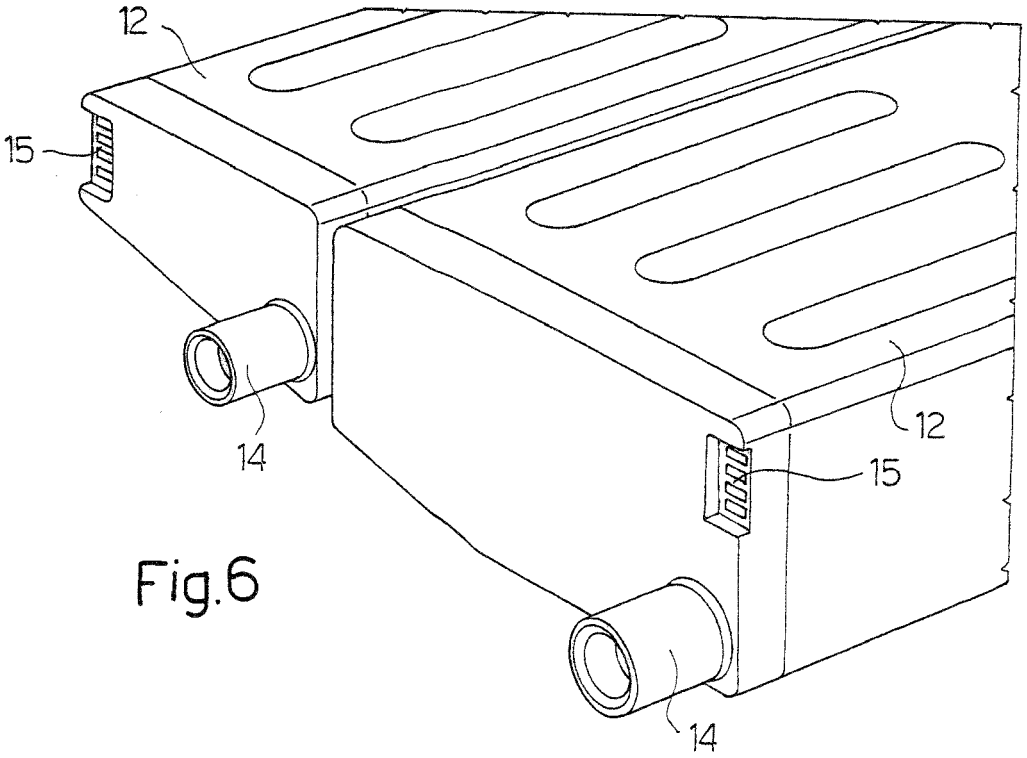

Fig.6

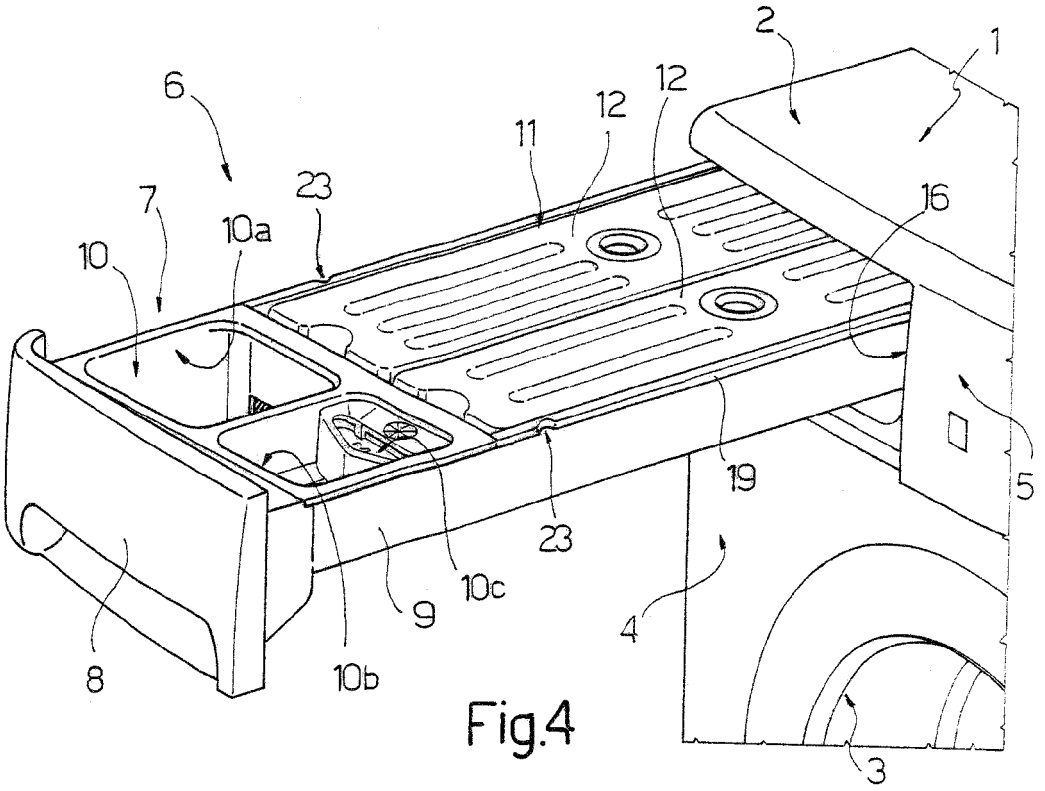
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Fig.4

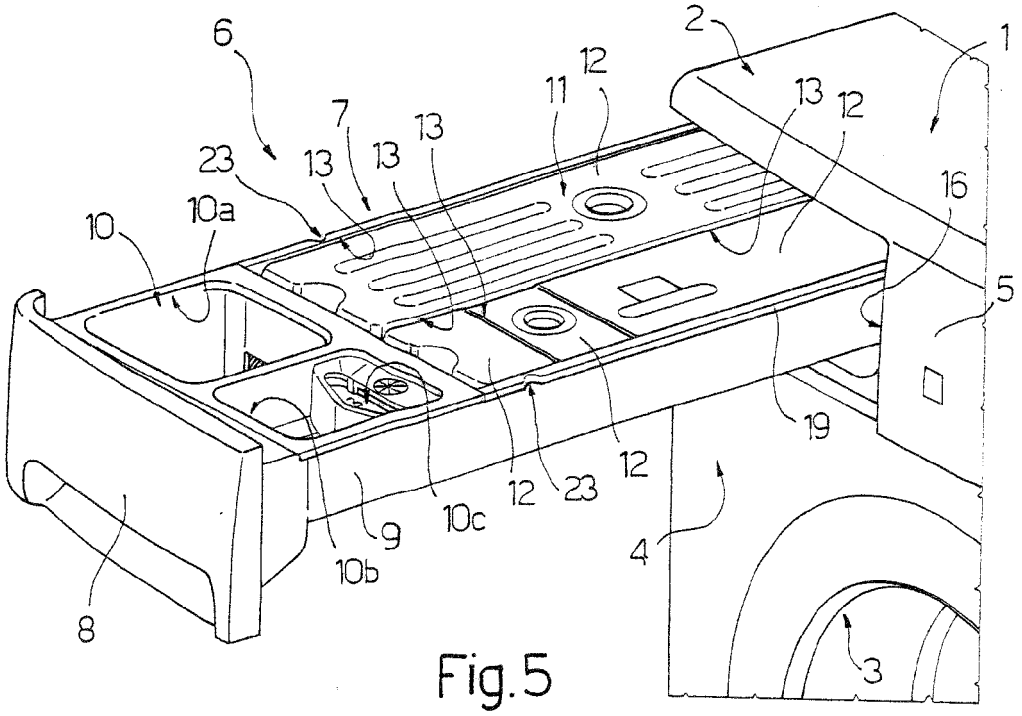
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Fig.5

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EUROPEAN SEARCH REPORT

Application Number
EP 11 17 1038

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	14 September 2011	Clivio, Eugenio

CATEGORY OF CITED DOCUMENTS

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