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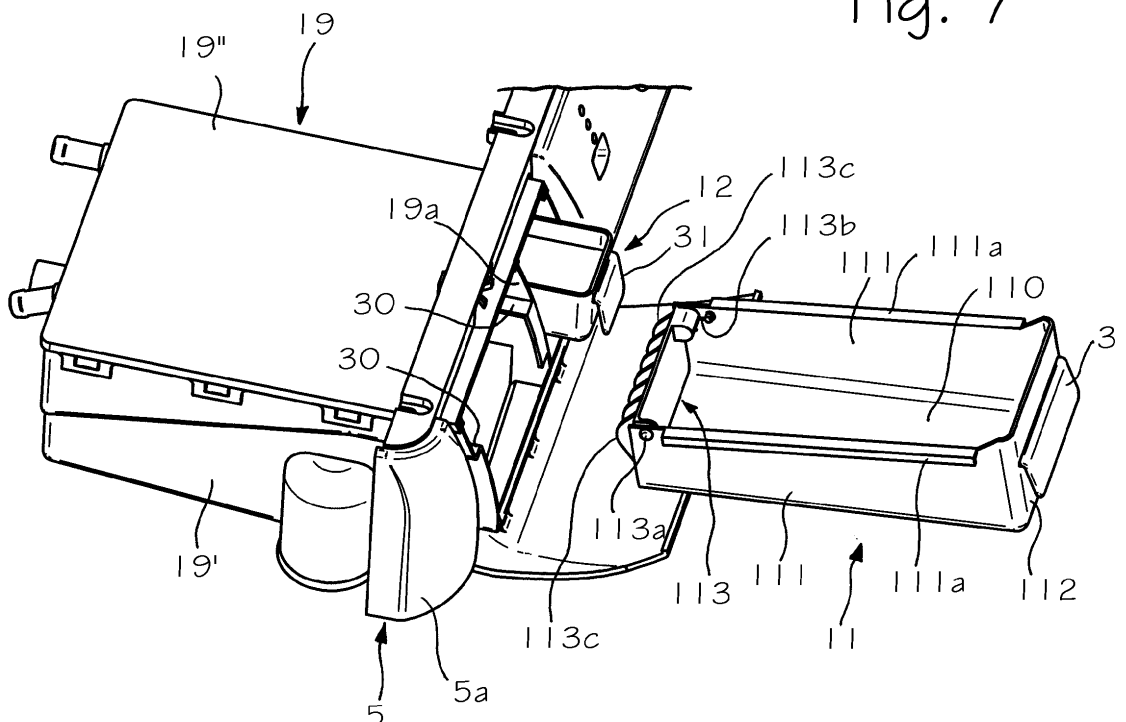
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(54) **Laundry washing machine with a device for dosing and/or distributing detergent and the like**

(57) A laundry washing machine comprises a device for dispensing washing agents that has at least one first compartment (11) and one second compartment (12), which are able to contain respective doses of washing agent, and a housing structure (19), in fluid communication with a washtub and designed to receive the aforesaid compartments (11, 12). The first and second compartment are defined by respective separate receptacles (11,

12), which can be removed from the machine independently of one another. In an area corresponding to an access opening of the housing structure (19) a wall portion (7) is provided, mounted movable between an open position, in which removal of the receptacles (11, 12) from the machine is enabled, and a closed position, in which the receptacles are inaccessible and kept by the hatch itself in a respective working position.

Fig. 7



Description

[0001] The present invention relates to a laundry washing machine having a device for dosing and/or distributing detergents and the like. The invention regards in particular a dispensing device particularly designed to be integrated in the front panel of front-loaded laundry washers.

[0002] Execution of a washing cycle by a laundry washing machine presupposes the use of detergent substances, either in powder form or in liquid form, and possibly additional substances, such as softening agents, perfuming agents, or other additives. Said substances are referred to herein as a whole as "washing agents".

[0003] The dosage and number of washing agents used can vary according to the characteristics and the amount of laundry, as well as to the washing cycle chosen. For this purpose, the recommended washing agents are introduced, prior to start of the cycle, into purposely provided receptacles of the dispenser. Said receptacles are typically compartments of a drawer-type container, which can be partially extracted from the upper front area of the laundry washing machine, in the case of front-loading machines. The drawer slides along purposely provided guides, generally side guides, within a housing defined by a hopper container, the bottom outlet of which communicates with the inside of the washtub of the machine. Associated to the container is a spraying system, comprising a number of solenoid valves or else a single movable nozzle, provided for directing, as required, a flow of water towards a respective compartment of the drawer. In this way, the amounts of washing agent are taken in selectively, for example, a washing detergent is taken from one compartment, and then the softening agent is taken from another compartment.

[0004] It has been found that in the above known dispensing devices, sliding the drawer open and closed is very liable to meet with problems of jamming over time. A first reason for said drawback is due to the structure of the drawer, which is generally made of materials that are not of high quality (polypropylene containing fillers) and, above all, is due to the fact that its lateral dimensions are very large. Sliding is then rendered difficult by the residue of detergent that accumulates and solidifies over time along the slide guides, where the encrustations thus formed, combined with the aforesaid constructional characteristics, often force the user to apply on the drawer a considerable force to open and close it, with the risk of damaging the drawer irreparably. The problem is accentuated by the fact that the coupling of the guide means that are operative between the drawer and the hopper container must be as precise and tight as possible, both to prevent any accidental sliding open of the drawer and to prevent any troublesome vibrations of the drawer during operation of the machine.

[0005] Thorough and systematic cleaning of the guides, on the other hand, frequently proves difficult, or at least very laborious on account of the tiny spaces in

which the residue accumulates. It is moreover to be considered that residue of detergent can accumulate and solidify also in the compartments of the drawer, especially if the washing machine remains inactive for relatively long periods. Also in this case, cleaning by the user is often problematical, given that the components of the dispenser are not always all removable from the machine, and the consolidated residue is hence progressively removed only by the water of successive washing operations.

[0006] Also from the aesthetic standpoint, the known solutions present the drawback of a poor aesthetic quality, given that the drawer must be provided with an obtrusive handle or grip, which is sometimes formed by hollowed-out or projecting portions, which interrupt the substantial linearity of the front control panel of the machine.

[0007] The present invention proposes a solution to one or more of the drawbacks described above. In this context, a purpose of the present invention is to provide a laundry washing machine equipped with a dispensing device designed to guarantee over time convenient passage between its inoperative position, for loading the washing agents before start of an operating cycle, and its operative position, for delivery of the agents into the washtub during the operating cycle.

[0008] Another purpose of the invention is to provide a laundry washing machine equipped with a dispensing device the compartments of which for containing the washing agents can be conveniently cleaned.

[0009] A further purpose of the invention is to provide a laundry washing machine equipped with a device for dispensing washing agents designed to be integrated in a precise way in the front panel of the machine itself, without any obtrusive handles or grips for opening/closing that would be liable to adversely affect the aesthetic linearity of the front panel itself.

[0010] Yet a further purpose of the invention is to make available to users a laundry washing machine provided with a device for dispensing washing agents designed to guarantee a high level of sturdiness and reliability over time, whilst also possibly being easy and inexpensive to produce.

[0011] One or more of the above purposes are achieved, according to the present invention, by a laundry washing machine having the characteristics referred to in the annexed claims, which form an integral part of the descriptive content of the present patent application.

[0012] The constructional and functional characteristics of the laundry washing machine according to the present invention may be better understood from the ensuing detailed description, with reference to the attached plates of drawings, which illustrate preferred and non-limiting embodiments thereof and in which:

- Figure 1 is a schematic partial front view of a laundry washing machine according to the present invention;
- Figure 2 is a schematic front view of a device for dispensing washing agents of the machine of Figure

- 1, in a position of loading-in of the washing agents;
- Figure 3 is a schematic cross-sectional view of the dispensing device according to the line III-III of Figure 2;
- Figure 4 is a schematic cross-sectional view similar to that of Figure 3 of the dispensing device in the operative position;
- Figure 5 is a partial perspective view of a front panel of a laundry washing machine, with associated thereto a dispensing device in accordance with a second embodiment of the invention;
- Figure 6 is a perspective view of the front panel represented in Figure 5, with a hatch of the dispenser open and with corresponding receptacles for the washing agents partially extracted from a respective housing;
- Figure 7 is a view similar to that of Figure 6, with a receptacle completely removed from the respective housing; and
- Figure 8 is a cross-sectional view of the front panel represented in Figure 5, in an area corresponding to the dispensing device.

[0013] Figure 1 is a partial representation of a laundry washing machine according to the invention, designated as a whole by 1. The machine 1 illustrated is of the front-loading type and for this purpose has a cabinet or structure 2 with substantially vertical side walls. In the front part 3 of the cabinet 2 an opening for loading is provided, equipped with a traditional porthole door 4. As in the case of the known art, via said opening, access is enabled to a drum or tumbler for the laundry, mounted so that it can turn within a washtub housed inside the cabinet 2 (not visible).

[0014] The cabinet 2 comprises a front control panel 5, provided with means 6 for activation and/or programming and/or for issuing warnings. Preferably, the front panel 5 is positioned in the upper area of the front part 3 of the cabinet 2. The front panel 5 comprises a portion of movable wall, shaped like a hatch 7, designed to close the front opening of a housing structure internal to the cabinet 2, said hatch forming part of a device for dispensing washing agents.

[0015] The aforesaid dispensing device, forming the specific subject of the invention, is designated as a whole by 10 in Figure 2 and preferably comprises a number of compartments, typically having different capacities, for the washing agents, each of which is defined by a respective receptacle. In the embodiment illustrated in Figures 1-4, two receptacles 11 and 12 are provided, aligned with respect to one another on one and the same plane and connected in a removable way to the internal face or front 7a of the hatch 7, each receptacle being thus removable from the machine independently of the other. In the example illustrated, the receptacle 11, which is larger, is designed for receiving washing detergent in powder form, whilst the receptacle 12, which is smaller, is designed for receiving a liquid additive, for example, a

softening agent.

[0016] The hatch 7 is hinged with known means, such as pins 13 or the like (Figures 3 and 4), to the cabinet 2 or to the front panel 5, preferably along the respective lower part, so as to enable it to be turned over outwards, to form temporarily a projecting surface, developing from which and oriented upwards are the receptacles 11 and 12. Said situation is schematically illustrated in particular in Figure 3, where just the receptacle 11 is shown.

[0017] The receptacles 11, 12 can have any shape, even though preferably they are as a whole quadrangular in plan view, with one of the faces or walls preferably markedly convex. Said convex face, designated by 11a in Figures 3 and 4, substantially corresponds to the front opposite to that for connection with the hatch 7, designated by 11b, and is in view once the hatch has been tilted open. Formed within the convex wall or face 11a of the receptacle 11 is an opening 14, through which the required washing agent is introduced. The receptacle 11 further comprises an end face or wall 11c, preferably arranged to form an obtuse angle with respect to the wall 11b, with the opening 14 that extends as far as said bottom wall 11c. In this way, as may be noted particularly from Figure 4, when the hatch 7 is in the respective closing position, the wall 11c is inclined downwards so as to facilitate exit of the corresponding washing agent from the receptacle towards the inside of a cavity defined by a substantially hopper-shaped container, represented only partially and designated as a whole by 19.

[0018] As may be seen in Figure 2, the inside of the hopper container 19 is divided by a partition wall 19a into two seats or housings 20a, 20b separate from one another, each of which is designed to receive the respective receptacle 11, 12 when the dispensing device 10 is in the working condition represented in Figure 4.

[0019] The hopper container 19 preferably comprises, for each housing 20a, 20b, a bottom wall 19b (visible in Figures 3 and 4), inclined and extending underneath the respective receptacle when this is in the operative position. The inclination of said wall 19b prevents any reflux of water used for subsequent flushing of the washing agents from possibly reaching the front part of the front panel 5.

[0020] In the dispenser 10 illustrated, closing of the hatch 7 brings about tipping-over of both of the receptacles 11 and 12, and hence at least partial exit of both of the washing agents from the bottom ends of the corresponding housings 20a, 20b. It should hence be pointed out that the dispensing device 10 is provided in such a way that exit just by gravity of the washing agents from the receptacles 11, 12 is in itself sufficient to enable the agents themselves to reach the washtub of the machine. The removal of the washing agents is in fact obtained via a corresponding flow of water, for example coming from a sprinkler system or else a spraying system with nozzle associated to each housing 20a, 20b. In the case where the system is provided with a nozzle, this can possibly be directed towards the inside of the receptacle 11, 12

when the latter is in the respective position of Figure 4.

[0021] The means designed to prevent the washing agents from reaching the washtub by gravity can be devised in any way known to a person skilled in the branch. For example, the detergent that comes out of the receptacle 11 after the latter has been tipped over simply pours on the bottom of the corresponding housing 20a and is then drawn along as far as the corresponding discharge outlet, in fluid communication with the machine washtub, only via the flow of water coming from the sprinkling or spraying means, activated by the control system of the machine at the appropriate moment. On the other hand, the bottom of the housing 20b can be shaped like a small basin, which receives the liquid additive contained in the receptacle 12 when the latter is tipped over, said basin being provided with a siphon, which embodies the discharge outlet of the housing, in fluid communication with the washtub of the machine. When the control system enables inflow of water to the housing 20b, the water draws the additive along with it, passing beyond the siphon. Also in this case, then, a water-washing agent mixture can reach the washtub only following upon activation of the flow of water.

[0022] As has been mentioned above, the receptacles 11, 12 are removable from the internal face 7a of the hatch 7, which constitutes the support thereof. According to the embodiment represented in Figures 1-4, the internal face 7a of the hatch 7 is provided with at least one shaped appendage or projection, longitudinally extended, designated by 15, on which the receptacles can be slidably engaged. Said projection 15 preferably extends in a horizontal direction along the internal face 7a of the hatch 7, i.e., substantially parallel to the horizontal axis on which the hatch itself is tipped over, and is by way of example configured with a dovetailed cross section. Accordingly, the receptacles 11, 12 are provided on the bottom with a seat or recess 16 of a complementary shape, extended horizontally, for coupling with the projection 15, with respect to which it can slide as indicated by the arrow X of Figure 2. As may be appreciated, in this way the receptacles can be decoupled and coupled from/to the hatch 7 independently of one another, in a simple and precise way. To the projection 15 or to the internal face 7a there can advantageously be associated or integrated arrest elements (for example, constituted by projections) in order to enable a user to reposition the receptacles in the right position with respect to the hatch 7 in the course of the sliding coupling. Said arrest elements can possibly comprise elastic-engagement and/or snap-action means, operative between the projection 15 or the internal face 7a and each receptacle 11, 12, in order to guarantee also maintenance of the right position of the latter.

[0023] The embodiment described above is obviously merely an example, both as regards the configuration of the projection 15 and of the recess 16 and as regards the arrangement thereof. It is in fact possible to contemplate a solution that, conversely, envisages at least one recess 16 on the internal face 7a of the hatch 7 and at

least one projection 15 on the external face of the bottom of the receptacles. The means for coupling between the hatch and the receptacles could moreover comprise a plurality of projections 15 and recesses 16 parallel to one another.

[0024] The upper end or edge of the hatch 7 is provided on the internal face 7a with a shaped projection or tooth 17, designed to be engaged in a corresponding seat 18 of the front panel, for engaging and being aligned thereto in the closing step. Said condition is represented schematically in Figure 4, where the receptacles 11, 12 are tipped over through 90° with respect to the condition of Figure 3, in the corresponding housing. As has been said, the amounts of washing agent are taken sequentially, by activation of water-sprinkling means or spray-nozzle means, from each housing.

[0025] The hatch 7 can moreover be provided with a small gripping projection or recess (not illustrated), which does not, however, alter the linearity of the front panel 5. Opening of the hatch 7, thanks to the fact that the latter can simply be tipped over and to the absence of slide guides, is convenient and does not require the application of any particular force, whence the possibility of providing the hatch itself with one said projection or recess of small dimensions and substantially not noticeable. On the other hand, in the preferred embodiment, the means 17-18 for engagement/release between the hatch and the cabinet or front panel form part of a mechanism of the type generally known as "push-push", i.e., which can be switched simply by pushing, built in a way in itself known. In this case, no projection or recess for gripping is necessary on the hatch 7. The hatch 7 can be forced into the open condition by at least one elastic element, arranged at the pin means 23 and/or integrated directly in the part of the aforesaid mechanism fixed to the cabinet or to the front panel.

[0026] The dispensing device 10 that equips the machine 1 according to the invention enables optimal containment and distribution of detergents and the like, without the risk of problematical movements of opening and closing - which are typical, instead, of the traditional drawer with a number of compartments that slides on guides - thanks to the use of receptacles 11, 12 supported in cantilever fashion by the hatch 7 that can be tipped over, a configuration that rules out any need for the lateral guides. The receptacles 11, 12 do not touch parts of the machine other than the hatch 7 that supports them and are not subjected to any sliding friction. The risk of any troublesome vibrations is prevented, also taking into account the fact that the hatch is preferably subjected to the reaction of an elastic element when it is in the closed position. The absence of guides and the reduced dimensions of the receptacles 11, 12 as compared to the known drawer with a number of compartments enables convenient removal of the receptacles themselves for them to be cleaned. For the same reasons, the receptacles can be used directly for taking out dosed amounts of washing agents in powder or liquid form from the respective con-

ainers (boxes or bottles). For this purpose it is to be envisaged that they are preferably made of transparent plastic material, with graduated surface indications for the levels of product.

[0027] The same advantages set forth above can be practically achieved also via the embodiment of the invention illustrated in Figures 5-8, where the same reference numbers as the ones used in the previous figures are adopted to designate elements that are technically equivalent to the ones already described.

[0028] Figure 5 is a partial illustration of just the front panel 5 of the machine in accordance with the second embodiment of the invention, said front panel 5 having a main body 5a, for example made of moulded thermoplastic material, designed to be fixed to the supporting structure of the machine to form part of its cabinet. Also visible in the figure is a possible embodiment of the hopper container 19, which in this case comprises a lower main body, designated by 19', and an upper lid 19".

[0029] As may be seen in Figures 6 and 7, also in this embodiment the cavity defined within the hopper container 19 is divided, via a partition wall 19a, into two housings 20a, 20b, each of which is designed to receive a respective compartment for containing the corresponding washing agent, in the operative position of the dispenser. The presence of the partition wall, albeit preferred, is not strictly necessary for the purposes of implementation of the invention.

[0030] Also in the embodiment of Figures 5-8, the aforesaid compartments for the washing agents are each defined by a respective receptacle. For this purpose, as may be seen in Figures 6 and 7, two receptacles 11, 12 are provided, of different dimensions from one another, shaped substantially like a drawer and thus able to slide in and out of the corresponding housings 20a, 20b.

[0031] In the case exemplified, the drawer 11, designed to contain the washing detergent, has larger dimensions, with a main body having a bottom wall 110, two side walls 111, a front wall 112, and a rear wall 113, the walls 110-112 being made of a single piece.

[0032] The side walls 111 define, in the respective external part, respective guides, in the form of longitudinally extended cantilever projections 111a, designed to rest on simple lateral rests 30 defined along the side walls of the housing 20a. The receptacle 12, with smaller cross section and designed to contain an additive, such as a softening agent, can even be without side guides, as in the example represented in Figures 6, 7. The front wall of each receptacle 11, 12 is preferably provided with gripping means, designated by 31, designed to facilitate the movement for opening and closing of the receptacle itself, when the hatch 7 is open.

[0033] As may be seen in Figures 7 and 8, at least the drawer 11 is provided with a rear wall 113, which is at least in part shaped like a movable hatch. Said hatch-type wall is provided, preferably in its upper part, with pins 113a or similar means for hinging to the rest of the main body of the receptacle 11, and in particular to its

two side walls 111. Mounted in a position corresponding to one of the hinging means 113a is an elastic element 113b, such as a torsion spring, which is operative for forcing the wall or hatch 113 into the respective closed position, as represented in Figures 7 and 8. At least the bottom wall 110 of the receptacle 11 is preferably provided with one or more projections, one of which is designated by 110d in Figure 8, which function as elements of contrast or end-of-travel during closing of the hatch 113. From Figures 7 and 8 it is moreover possible to note how the hatch 113 presents, in its face facing the outside of the receptacle 11, at least one arched or cam-shaped surface, designated by 113c. Said cam-shaped surface 113c is designed to co-operate with a fixed contrast element, provided within the housing 20a and functioning as cam-follower, in order to bring about opening of the hatch 113 when the receptacle 11 is brought into the respective operative position. The contrast element or cam-follower, designated by 19c in Figure 8, can be conveniently made of a single piece in the body 19' of the hopper container, for example, configured as a substantially vertical appendage or projection.

[0034] For the purposes of use, the receptacle 11 is pushed by the user into the housing 20a until the cam-shaped surface 113c comes into contact with the contrast element 19c. In said condition, the front part of the receptacle 11 projects at the front from the housing 20a. At this point, the user closes the hatch 7, and, in this way, its internal face further pushes the receptacle 11 towards the inside of the housing 20a, up to the position visible in Figure 8, in which the hatch 7 is blocked in the closed position. The movement of closing of the hatch 7 causes a further displacement of the receptacle 11 towards the inside of the housing 20a, in the course of which the hatch formed by the rear wall 113 moves angularly towards the inside of the receptacle, following upon co-operation between the cam-shaped surface 113c and the contrast element 19c functioning as cam-follower. The aforesaid hatch thus assumes the position of discharge visible in Figure 8, in which the detergent can come out through the port designated by 32.

[0035] It should be noted that, also in this embodiment, delivery into the washtub of the detergent does not occur only by gravity, but with the aid of a flow of water, activation of which is controlled in a known way by the control system of the washing machine. In the case exemplified, the spraying or sprinkling system designed to generate the aforesaid flow is of the type commonly referred to as "shower", i.e., comprising at least one channel formed in the upper part 19" of the container 19, provided with holes that give out into the inside of the receptacle itself. Said system is in itself well known and consequently does not call for a detailed description. When the control system of the machine enables the flow of water towards the shower system of the container 19, the water flows within the receptacle 11 so as to draw along with it the detergent, through the port 32. From the bottom of the container 19, the water-detergent mixture can then reach the washtub,

with modalities similar to the ones already described above. It may be noted that, as may be seen in Figure 8, in the operative position the receptacles can be inclined in order to favour outlet of the corresponding washing agent. Said positioning can be obtained by appropriately shaping the guide means for sliding of the drawer. Possibly, on the internal face of the hatch 7, a projection can be provided, designated by 7a in Figure 8, designed to co-operate with the gripping means 31 of the receptacles so as to cause a certain frontal raising when the hatch is closed.

[0036] Also in the embodiment of Figures 5-8, the hatch 7 is provided with a blocking/release system of a push-push type as mentioned previously. It may be appreciated that, in the operative condition of the dispensing device, the receptacle 11 is maintained elastically in the respective working position, between the contrast element 19c and the hatch 7, thanks to the elastic reaction of the spring 113b and of the spring of the push-push system itself. The fact that the receptacle 11 is kept elastically in position enables reduction of the risk of troublesome vibrations of the receptacle itself during operation of the machine. For the same reasons, also for the receptacle 12 a fixed end-of-travel contrast element can be provided, in such a way that also this is kept in position by the hatch 7.

[0037] The receptacle 12 preferably integrates a siphon discharge conduit, substantially of the same type as the one provided in the compartment designed for the softening agent of drawers having a number of compartments of a known type. Otherwise, the receptacle 12 can be made in a way conceptually similar to the receptacle 11. In the case where the receptacle 11 (and possibly 12) is provided for being able to contain a liquid washing agent, between the periphery of the hatch wall 113 and the side walls 111 and bottom wall 110 sealing means will conveniently be provided, for example, with a substantially U-shaped gasket mounted on abutment projections formed in the aforesaid walls 110, 111.

[0038] Finally, it is pointed out that, in the case of the embodiment of Figures 5-8, the appendages or projections 111a and the corresponding rests 30 have a simplified shape and do not presuppose a coupling with precise and tight fitting, as occurs instead in the case of guides of traditional drawer dispensers with a number of compartments, given that the risks of vibrations of the receptacles 11, 12 are drastically reduced through the hatch 7, which maintains the receptacles themselves in the respective working position. For this reason, moreover, sliding and removal of the receptacles 11, 12 in and out of the corresponding housings is extremely simplified.

[0039] The receptacles 11, 12 each have dimensions decidedly smaller than the traditional drawer with a number of compartments, and in said perspective they can be removed independently of one another from the machine in a simple and convenient way so as to be used directly as "measures" for taking out dosed amounts of washing agents, in powder or liquid form, from the re-

spective containers (boxes or bottles).

Claims

1. A laundry washing machine comprising a cabinet (2, 3, 5), a washtub within the cabinet and a device for dispensing washing agents (10), the dispensing device having:

- at least one first compartment (11) and one second compartment (12) that are able to contain respective doses of washing agent;
- a housing structure (19) internal to the cabinet (2, 3, 5) and in fluid communication with the washtub, designed to receive said compartments (11, 12) in an operative condition of the dispensing device (10), the housing structure (19) having a front access opening in a position corresponding to a face (3) of the cabinet (2, 3, 5),

characterized in that the first and second compartments are defined by respective separate receptacles (11, 12), each receptacle being removable from the machine (1) independently of the other receptacle, and **in that**, in a position corresponding to the access opening of the housing structure (19), said vertical face (3) comprises a wall portion (7) which is mounted movable between an open position, in which removal of the receptacles (11, 12) from the machine (1) is enabled, and a closed position, in which the receptacles (11, 12) are inaccessible.

2. The machine according to Claim 1, wherein the movable wall portion is constituted by a hatch (7) hinged to the cabinet (2, 3, 5) for performing angular movements about a substantially horizontal axis (13).

3. The machine according to Claim 2, wherein the receptacles (11, 12) are decoupled with respect to the hatch (7) and can be extracted individually from the housing structure (19) when the hatch (7) is in the corresponding open position.

4. The machine according to Claim 3, wherein at least one first receptacle (12) is substantially shaped like a drawer having a respective body that comprises a rear wall (113) and a front wall (112), the rear wall (113) being at least in part configured as a movable small hatch and being able to co-operate, when the first receptacle is brought into an operative position, with a contrast element (19c) provided in the housing structure (19) in order to assume a respective discharge position, in which outlet of the washing agent from the receptacle (12) is enabled.

5. The machine according to Claim 2, wherein the re-

ceptacles (11, 12) are coupled in a removable way to the hatch (7), in particular to an internal face thereof, in such a way that a movement of opening of the hatch (7) causes the receptacles (11, 12) to exit from the housing structure (19) and, conversely, a movement of closing of the hatch (7) causes introduction of the receptacles (11, 12) into the housing structure (19).

6. The machine according to Claim 5, wherein the internal face (7a) and a first wall (11b) of at least one receptacle (11) are provided with coupling means (15, 16) mutually engageable and releasable, particularly through insertion and sliding in a direction substantially parallel to an axis of tilting over of the hatch (23). 5
7. The machine according to Claim 6, wherein said means (15, 16) comprise at least one projection (15) and a recess (16), being longitudinally extended, having shapes that are substantially complementary with respect to one another and being arranged substantially horizontally, one of said internal face (7a) and first wall (11b) having said projection (15) and the other of said internal face (7a) and said first wall (11b) having said recess (16), where in particular the projection (15) and the recess (16) have substantially a dovetail cross sections. 10
8. The machine according to Claim 5, wherein at least one first receptacle (11) is substantially quadrangular in plan view, (11) with a second wall (11a) that is markedly convex and has a passage (14) for introduction of the detergent or the like. 15
9. The machine according to Claim 8, wherein the first receptacle (11) comprises a bottom wall (11c) contiguous to said second wall (11b) and forming therewith an obtuse angle, in the operative position of the dispensing device (10) said bottom wall (11c) being inclined to favour exit of the detergent or the like from the first receptacle (11) through said passage (14). 20
10. The machine according to Claim 4, wherein said small hatch (113) is subjected to the reaction of an elastic element (113b) tending to keep the small hatch itself in a respective closed position. 25
11. The machine according to Claim 10, wherein said small hatch (113) is hinged, particularly in an upper region thereof, to side walls (111) of the first receptacle (11) so as to be able to perform angular movements about a substantially horizontal axis. 30
12. The machine according to Claim 10 or 11, wherein said small hatch (113) has a respective surface, external to the first receptacle (11), which is cam shaped so as to co-operate with the contrast element 35

(19c), functioning as cam-follower, for the purposes of passage, in the course of introduction of the first receptacle (11) into the housing structure (19), from a respective closed position to a respective open position. 40

13. The machine according to Claim 3 or 5, wherein said receptacles (11, 12) are kept in the respective operative position by the hatch (7), in particular against the action of at least one elastic means (113b). 45
14. The machine according to at least one of the preceding claims, wherein said face is a front face (3) of the cabinet (2) that comprises, in its upper area, a front panel (5), the hatch (7) being hinged to a body (5a) of the front panel. 50
15. The machine according to Claim 3 or 5, wherein
 - engagement/release means (17, 18) are provided between said hatch (7) and said cabinet (2, 5), said means comprising a mechanism of a push-push type, i.e., one that can be switched by pushing, and/or
 - the housing structure (19) is divided into at least two compartments (20a, 20b), each of which is designed to receive a respective one of said receptacles (11, 12) in the operative condition of the dispensing device. 55
16. The machine according to at least one of the preceding claims, wherein operatively associated to the housing structure (19) are means for intake of a liquid necessary for drawing along the washing agents into said washtub and/or the housing structure (19) comprises a substantially hopper-type container (19). 60
17. The machine according to at least one of the preceding claims, wherein the receptacles (11, 12) are shaped for being used directly as measures for a corresponding washing agent. 65

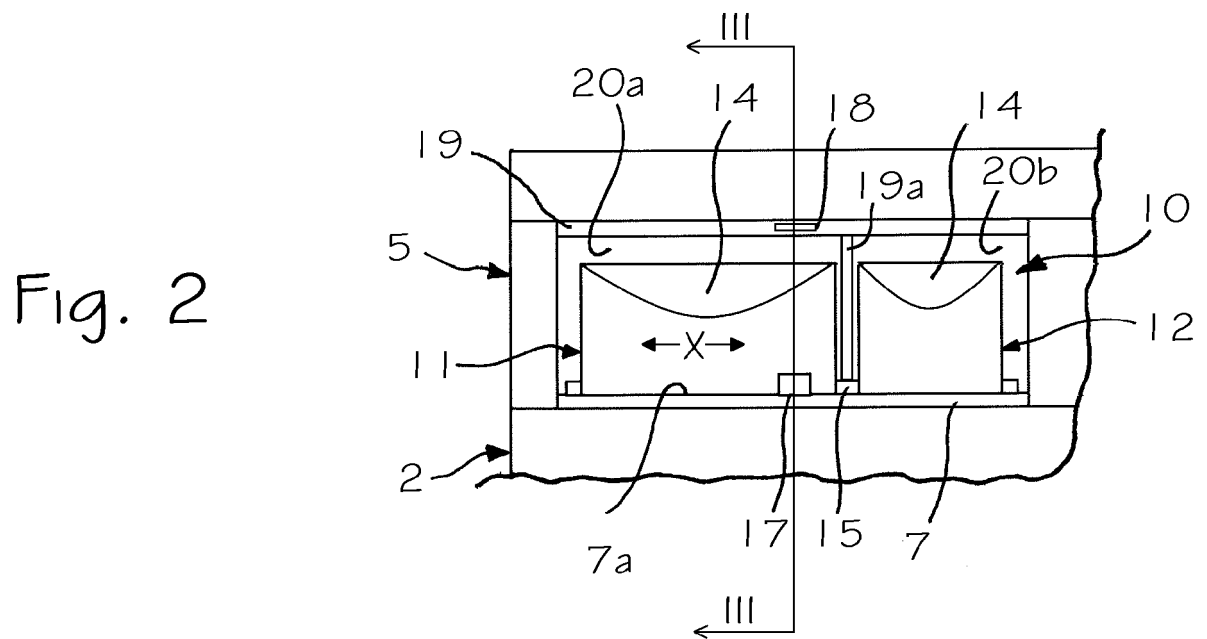
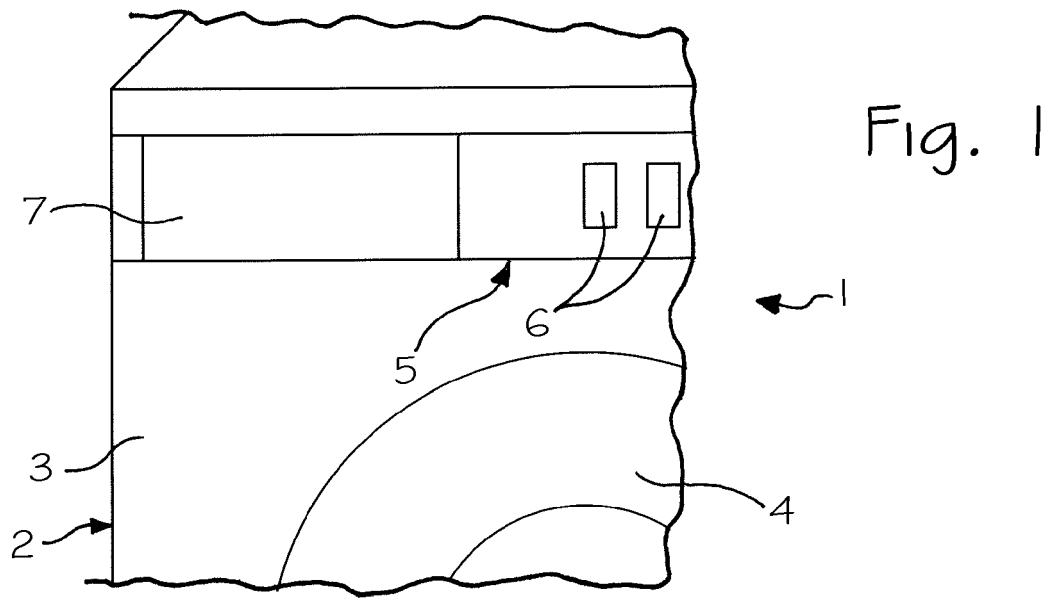


Fig. 3

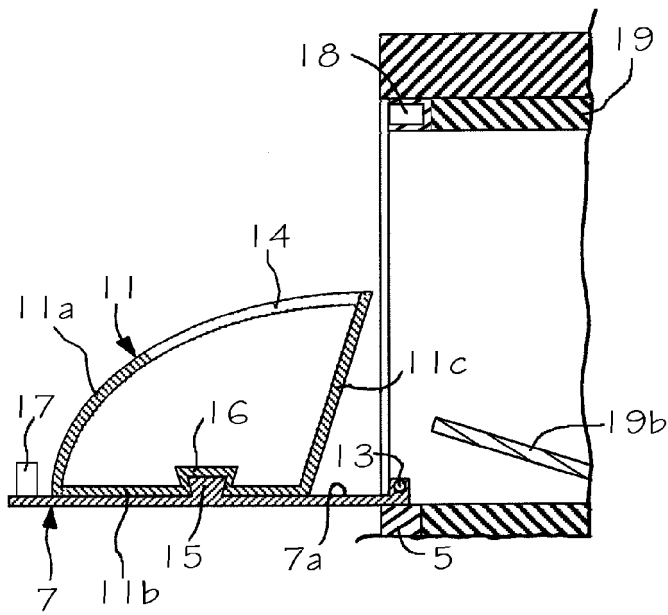


Fig. 4

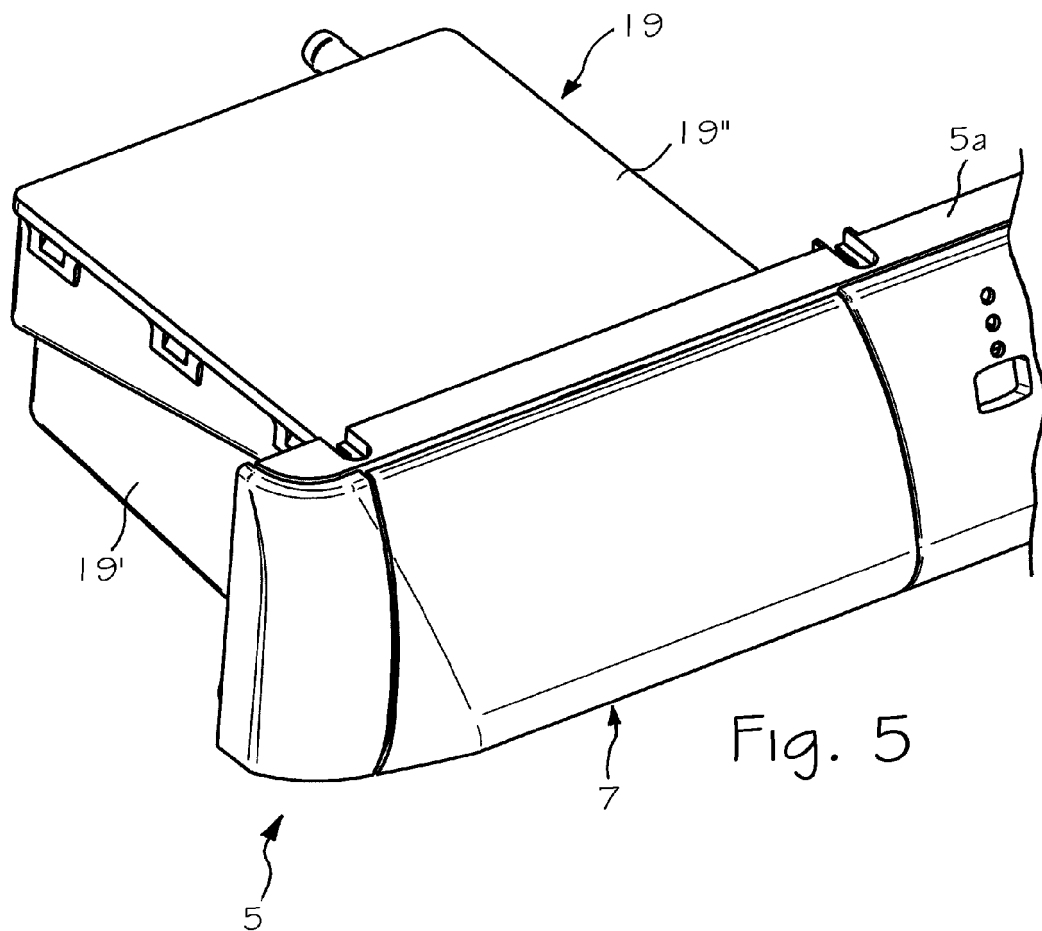
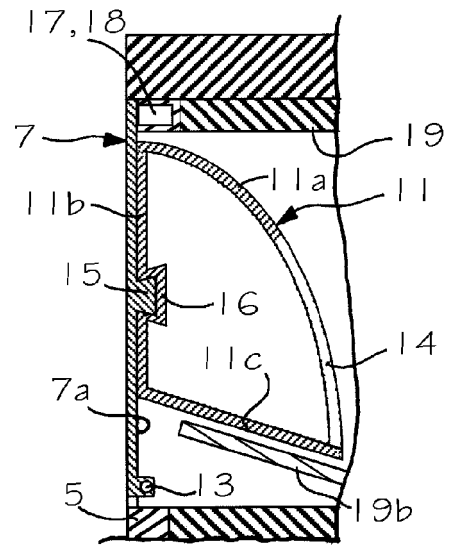


Fig. 5

Fig. 6

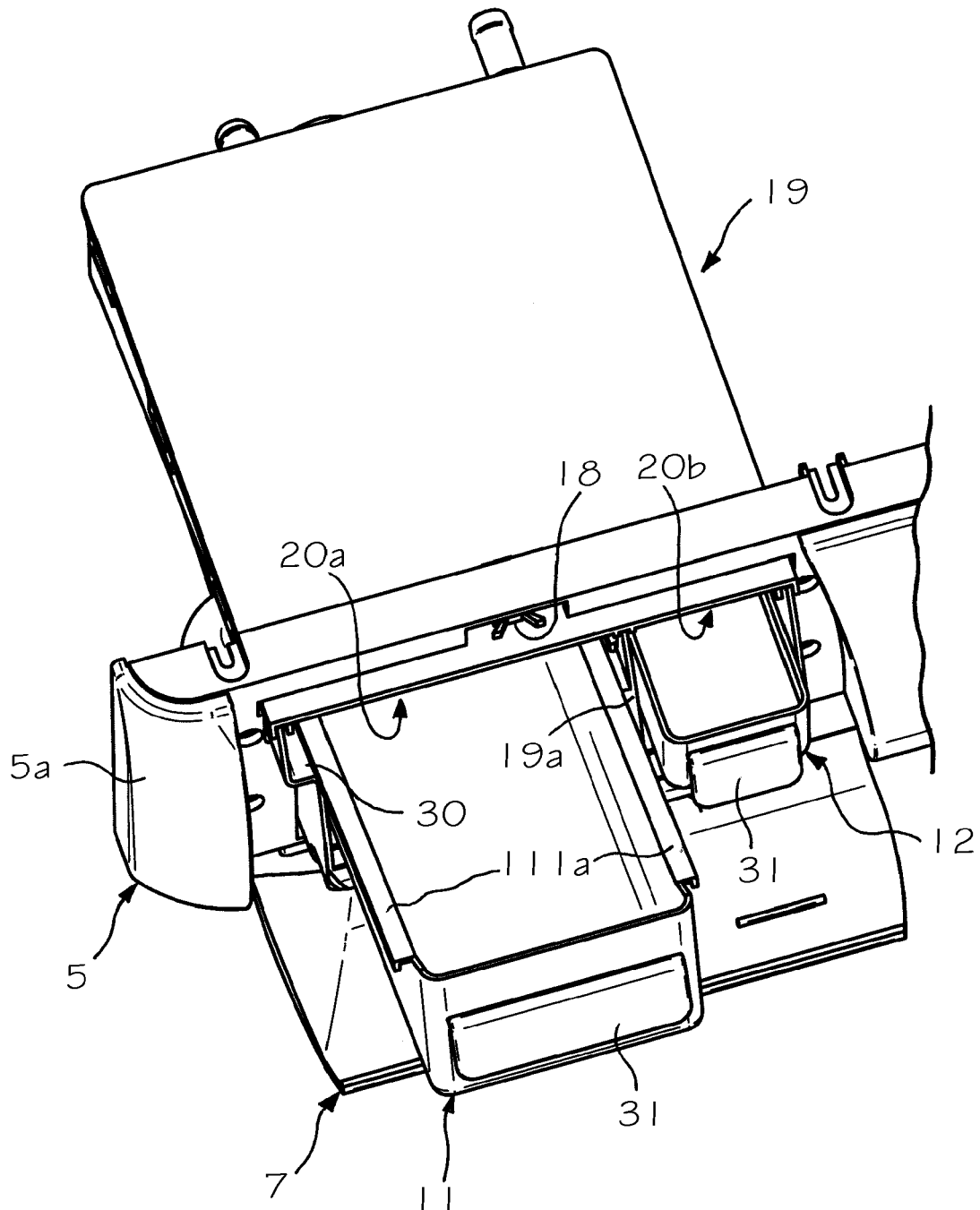


Fig. 7

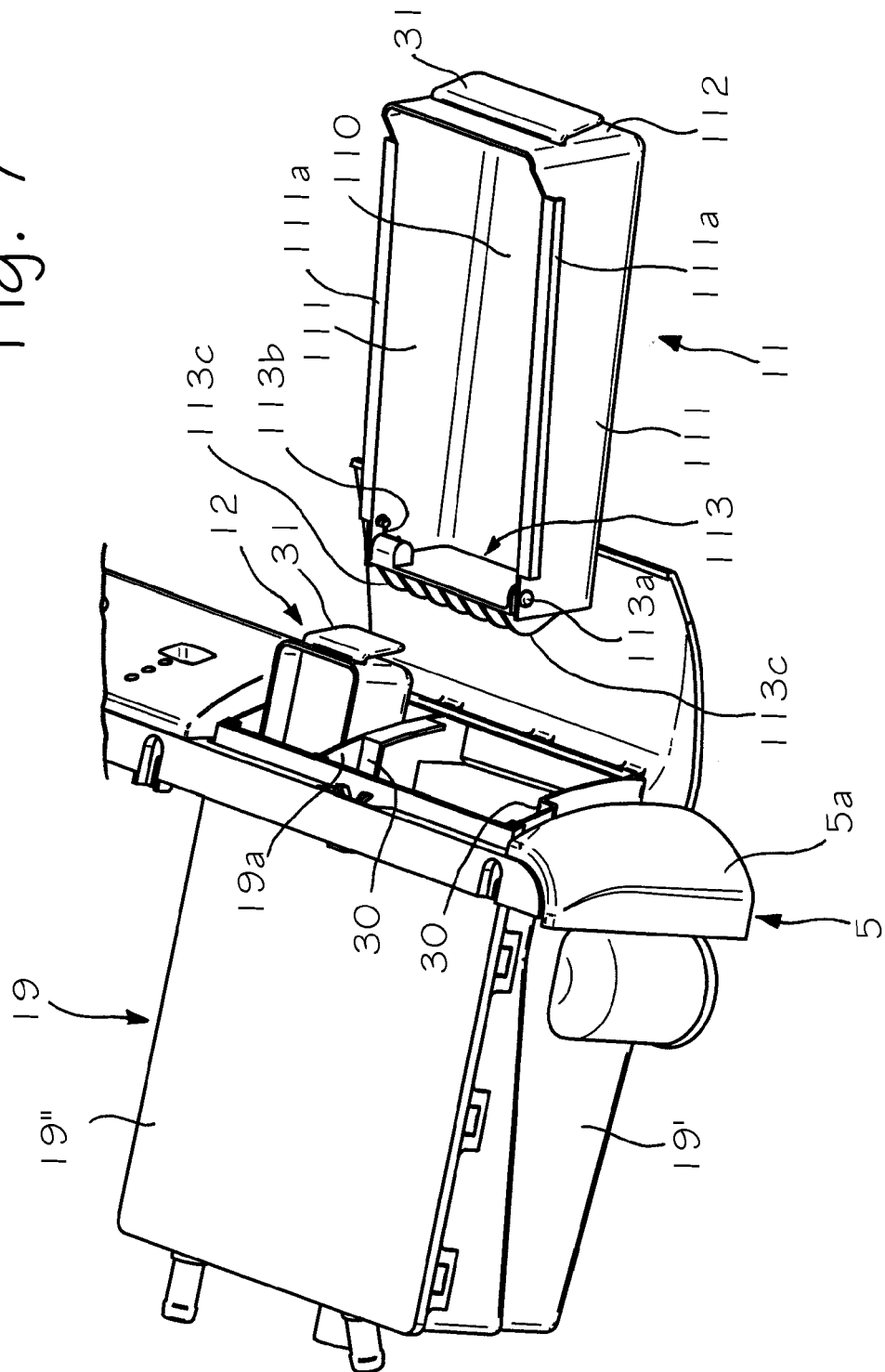


Fig. 8

