



- (51) **International Patent Classification:** Not classified
- (21) **International Application Number:**
PCT/EP20 11/071947
- (22) **International Filing Date:**
6 December 2011 (06.12.2011)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
a 2010/10959 27 December 2010 (27.12.2010) TR
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- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

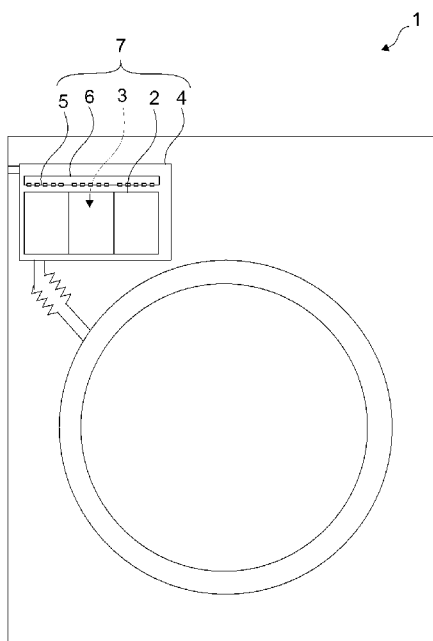
- (84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- without international search report and to be republished upon receipt of that report (Rule 48.2(g))

- (54) **Title:** A WASHING MACHINE COMPRISING A DRAWER

Figure 1



- (57) **Abstract:** The present invention relates to a washing machine (1) comprising a cleaning agent dispenser (7) having a drawer (2) comprising more than one compartment (3) wherein the cleaning agents are loaded, a housing (4) wherein the drawer (2) is disposed, at least one flushing device (5), disposed on the drawer (2), providing the water to be directed into the drawer (2) and a lid (6) disposed on the flushing device (5), providing the water received from the mains to pass to the flushing device (5).

Description**A WASHING MACHINE COMPRISING A DRAWER**

- [0001] The present invention relates to a washing machine comprising a cleaning agent dispenser wherein the drawer containing the cleaning agents is placed.
- [0002] In the washing machines, the cleaning agents like detergent, softener etc needed for the washing process are loaded into a cleaning agent dispenser. The washing water received from the mains is directed into the drawer. The cleaning agent dissolved by mixing with water is delivered into the washing tub together with the water. Cleaning agent dispensers mostly comprise a drawer having compartments wherein the powder and/or liquid washing agents are loaded and a flushing device covering the drawer that provides the water received from the mains to pass into the drawer.
- [0003] The said compartments and flushing device remaining wet after the washing causes dirt to accumulate on the compartment and the flushing device in the course of time. The accumulated dirt causes mold formation if not cleaned and this creates inconvenience in terms of hygiene. Moreover, these parts staying wet causes the washing agent used in the next washing to become damp and lumped thereby making it difficult to be delivered into the washing tub by mixing with the washing water.
- [0004] In state of the art cleaning agent dispensers, resistant heaters are disposed inside the cleaning agent dispenser providing to dry the cleaning agent dispenser by heating in order to eliminate the above cited problems.
- [0005] The aim of the present invention is the realization of a washing machine comprising a cleaning agent dispenser having more hygienic utilization conditions.
- [0006] The washing machine realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises a cleaning agent dispenser, an air pump, and a tube with one end connected to the air pump, the other end extending to the cleaning agent dispenser, that provides the water droplets remaining on the cleaning agent dispenser after the washing process to be removed by delivering the air blown from the air pump to the cleaning agent dispenser.

Thus, the cleaning agent dispenser is prevented from staying wet. More hygienic utilization conditions are maintained by providing the cleaning agent dispenser to be kept dry.

[0007] The cleaning agent dispenser comprises a drawer having compartments wherein the cleaning agents like detergent etc are loaded, a housing wherein the drawer is seated, a flushing device covering the drawer and providing water to be directed into the drawer and a lid disposed over the flushing device that provides the water received from the mains to pass to the flushing device.

[0008] In an embodiment of the present invention, the end of the tube connected to the cleaning agent dispenser opens between the lid and the flushing device. Thus, as air is blown from the air pump, the water droplets remaining on the flushing device are provided to be thrown into the drawer. The water droplets thrown into the drawer are delivered to the washing tub and the cleaning agent dispenser is provided to be cleansed of water droplets and thus to be dried.

[0009] In another embodiment of the present invention, the end of the tube connected to the cleaning agent dispenser opens between the housing and the drawer. Thus, the water droplets remaining on the surface of the housing during delivery of water to the washing tub are provided to be removed with the air blown by the air pump.

[001 0] In another embodiment of the present invention, the end of the tube connected to the cleaning agent dispenser opens into the drawer. Consequently, the water droplets remaining on the walls of the drawer after flushing the cleaning agents with water are removed with the effect of air blown from the air pump and the interior of the drawer is provided to stay dry.

[001 1] In a version of this embodiment, the tube is produced from a flexible material. Thus, when the drawer is pulled out for loading cleaning agents therein, the length of the tube is elongated and the movement of the drawer is not prevented.

[0012] In another embodiment of the present invention, the washing machine comprises a heater wrapped around the tube. The heater heats the air

flowing through the tube and increases drying effectiveness.

- [0013] In another embodiment of the present invention, the tube is produced from a material that heats when energized. Thus, using an additional heater for heating the air flowing through the tube is not required.
- [0014] In another embodiment of the present invention, a control valve is provided inside the tube that prevents the water leaking into the tube from passing to the air pump. Thus, the air pump is provided to operate safely.
- [0015] In another embodiment of the present invention, the air pump is operated after each rinsing step.
- [0016] In another embodiment of the present invention, the air pump is operated at the end of each washing cycle. Thus, the cleaning agent dispenser is provided to stay dry until the next washing cycle.
- [0017] By means of the present invention, the cleaning agent dispenser is prevented from staying wet and problems originating from dampening are prevented. Thus, more healthy utilization conditions are provided for the user.
- [0018] The model embodiments that relate to the washing machine realized in order to attain the aim of the present invention are illustrated in the attached figures, where:
- [0019] Figure 1 - is the schematic view of a washing machine.
- [0020] Figure 2 - is the exploded view of the cleaning agent dispenser, the air pump and the tube in an embodiment of the present invention.
- [0021] Figure 3 - is the exploded view of the cleaning agent dispenser, the air pump and the tube in another embodiment of the present invention.
- [0022] Figure 4 - is the exploded view of the cleaning agent dispenser, the air pump and the tube in yet another embodiment of the present invention.
- [0023] The elements illustrated in the figures are numbered as follows:
1. Washing machine
 2. Drawer
 3. Compartment
 4. Housing
 5. Flushing Device
 6. Lid

7. Cleaning agent dispenser

8. Air pump

9. Tube

10. Heater

11. Control valve

[0024] The washing machine (1) comprises a cleaning agent dispenser (7) having

- a drawer (2) having at least one compartment (3) wherein the cleaning agents are loaded,
- a housing (4) wherein the drawer (2) is disposed,
- at least one flushing device (5) disposed on the drawer (2), providing water to be directed into the drawer (2) and
- a lid (6) located on the flushing device (5), providing water coming from the mains to pass to the flushing device (5).

[0025] The water received from the mains during washing of the laundry is delivered to the drawer (2) by means of the lid (6) and the flushing device (5) respectively. The cleaning agents loaded into the drawer (2) are mixed with water and delivered to the washing tub.

[0026] The washing machine (1) of the present invention furthermore comprises an air pump (8) and a tube (9) with one end connected to the cleaning agent dispenser (7), the other end to the air pump (8), that delivers the air blown from the air pump (8) to the cleaning agent dispenser (7). The tube (9) extends between the air pump (8) and the cleaning agent dispenser (7). As the air pump (8) operates, the air blown from the air pump (8) is blown towards into the cleaning agent dispenser (7). The air blown towards the cleaning agent dispenser (7) removes the water droplets remaining in the cleaning agent dispenser (7) from the washing steps with the mechanical effect it creates. The water droplets dragged by the effect of blown air from the air pump (8) are carried towards the washing tub and discharged from here together with the washing water. Thus, the cleaning agent dispenser (7) is provided to be devoid of water droplets and to be dried. Thus, more hygienic utilization conditions are provided for the user. Furthermore, the dampening created by the water droplets remaining in the cleaning agent dispenser (7) in the course of time is prevented and

problems such as lumping of the cleaning agents like detergent etc loaded in the drawer (2) are prevented. Consequently, the rinsing performance of the washing machine (1) is improved.

[0027] In an embodiment of the present invention, the end of the tube (9) connected to the cleaning agent dispenser (7) opens between the lid (6) and the flushing device (5) and delivers the air blown from the air pump (8) between the lid (6) and the flushing device (5). Thus, the water droplets remaining on the flushing device (5) are discharged towards into the drawer (2) through the holes on the flushing device (5) with the air blown from the air pump (8). The water droplets carried into the drawer (2) are delivered to the washing tub by mixing with the washing water. Thus, the water droplets remaining on the flushing device (5) that is in constant contact with water during the washing process are provided to be removed from the flushing device (5). Healthy utilization conditions are maintained by keeping the flushing device (5) dry which is a component that is hard to access and suitable for reproduction of microorganisms thereon due to water droplets remaining on.

[0028] In another embodiment of the present invention, the end of the tube (9) connected to the cleaning agent dispenser (7) opens between the housing (4) and the drawer (2) and delivers the air blown from the air pump (8) between the housing (4) and the drawer (2). Thus, with the pushing force created by the air blown from the air pump (8) while delivering the water received from the mains mixed with the cleaning agents in the drawer (2) for the washing process, the water remaining between the housing (4) and the drawer (2) is also provided to be delivered to the washing tub. Thus, the section remaining between the housing (4) and the drawer (2) is prevented from staying wet thereby the dampening and hence the molding that may form here is avoided.

[0029] In another embodiment of the present invention, the end of the tube (9) connected to the cleaning agent dispenser (7) opens into the drawer (2) and delivers the air blown from the air pump (8) into the drawer (2). The water droplets remaining in the drawer (2) are swept with the air blown from the air pump (8) and discharged into the washing tub. Thus, the

interior of the drawer (2) is provided to be kept dry. Thus, the problems of lumping, clinging of the detergent arising due to causes such as dampening etc in the drawer (2) are eliminated.

[0030] In a version of this embodiment, the tube (9) is in the form of a bellows produced from elastic material. Thus, the movement of the drawer (2) is facilitated during pulling of the drawer (2) out of the housing (4) for loading the cleaning agents therein.

[0031] In another embodiment of the present invention, the washing machine (1) comprises a heater (10) that is wrapped around the tube (9) and heats the air flowing through the tube (9). Thus, the air blown by the air pump (8) is heated while passing through the tube (9). The effectiveness of the drying process of the cleaning agent dispenser (7) is increased with the convection effect created by the hot air as the heated air is delivered to the cleaning agent dispenser (7). The hot air delivered to the cleaning agent dispenser (7) by means of the tube (9) also creates an effect that removes the dampening formed in any section of the cleaning agent dispenser (7).

[0032] In another embodiment of the present invention, the tube (9) is produced from material that heats up by itself when current is delivered thereon. Thus, the air flowing through the tube (9) is provided to be heated without requiring an additional heating element.

[0033] In another embodiment of the present invention, the washing machine (1) comprises a control valve (11) disposed inside the tube (9), that prevents the water received from the mains from passing to the air pump (8). By means of the control valve (11) that allows unidirectional flow, unwanted water passage into the air pump (8) is prevented and the air pump (8) is protected.

[0034] In an embodiment of the present invention, the air pump (8) is operated after each rinsing step. Thus, the water droplets remaining in the cleaning agent dispenser (7) are removed after each rinsing step and the cleaning agent dispenser (7) is provided to be kept dry always.

[0035] In another embodiment of the present invention, the air pump (8) is operated at the end of each washing cycle. Thus, the cleaning agent dispenser (7) is provided to be kept dry until the next washing cycle.

Accordingly, the dampening related problems occurring on the cleaning agent dispenser (7) are eliminated.

[0036] In another embodiment of the present invention, the air pump (8) is of the reciprocating type. Thus, the drying effectiveness of the cleaning agent dispenser (7) is increased.

[0037] In another embodiment of the present invention, the air pump (8) is of the propeller type. Thus, the cleaning agent dispenser (7) is provided to be dried in a low-cost way.

[0038] By means of the present invention, the cleaning agent dispenser (7) is prevented from staying wet and more hygienic utilization conditions are provided.

[0039] It is to be understood that the present invention is not limited by the embodiments disclosed above and a person skilled in the art can easily introduce different embodiments. These should be considered within the scope of the protection postulated by the claims of the present invention.

Claims

1. A washing machine (1) comprising a cleaning agent dispenser (7) having
 - a drawer (2) comprising at least one compartment (3) wherein the cleaning agents are loaded,
 - a housing (4) wherein the drawer (2) is disposed,
 - at least one flushing device (5) disposed on the drawer (2), providing water to be directed into the drawer (2) and
 - a lid (6) located on the flushing device (5), providing water coming from the mains to pass to the flushing device (5),**characterized by**
 - an air pump (8),
 - a tube (9), with one end connected to the cleaning agent dispenser (7), the other end to the air pump (8), delivering the air blown from the air pump (8) to the cleaning agent dispenser (7).
2. A washing machine (1) as in Claim 1, **characterized by** the tube (9), the end of which connected to the cleaning agent dispenser (7) opens between the lid (6) and the flushing device (5), delivering the air blown from the air pump (8) between the lid (6) and the flushing device (5).
3. A washing machine (1) as in Claim 1, **characterized by** the tube (9), the end of which connected to the cleaning agent dispenser (7) opens between the housing (4) and the drawer (2), delivering the air blown from the air pump (8) between the housing (4) and the drawer (2).
4. A washing machine (1) as in Claim 1, **characterized by** the tube (9), the end of which connected to the cleaning agent dispenser (7) opens into the drawer (2), delivering the air blown from the air pump (8) into the drawer (2).
5. A washing machine (4) as in Claim 4, **characterized by** the tube (9) which is in the form of a bellows produced from elastic material.
6. A washing machine (1) as in any one of the above Claims, **characterized by** a heater (10) wrapped around the tube (9) and heating the air flowing through the tube (9).
7. A washing machine (1) as in any one of the Claims 1 to 6, **characterized by** the tube (9) produced from material that heats up by itself when current is delivered thereon.

8. A washing machine (1) as in any one of the above Claims, **characterized by** a control valve (11) disposed inside the tube (9) that prevents the water received from the mains from passing to the air pump (8).
9. A washing machine (1) as in any one of the above claims, **characterized by** the air pump (8) that is operated after each rinsing step.
10. A washing machine (1) as in any one of the Claims 1 to 8, **characterized by** the air pump (8) that is operated at the end of each washing cycle.
11. A washing machine (1) as in any one of the above Claims, **characterized by** the reciprocating type air pump (8).
12. A washing machine (1) as in any one of the Claims 1 to 10, **characterized by** the propeller type air pump (8).

Figure 1

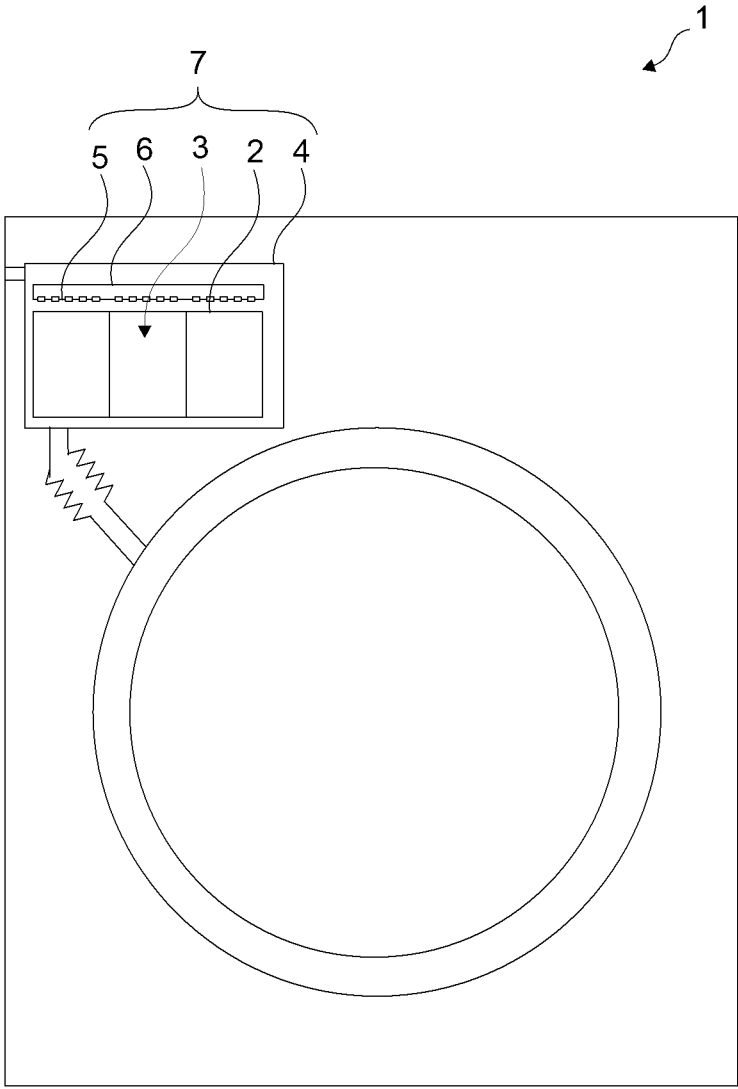


Figure 2

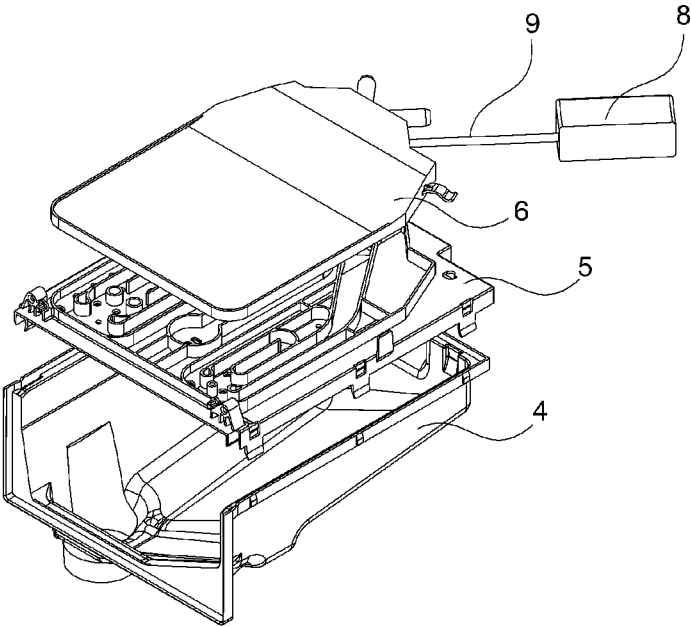


Figure 3

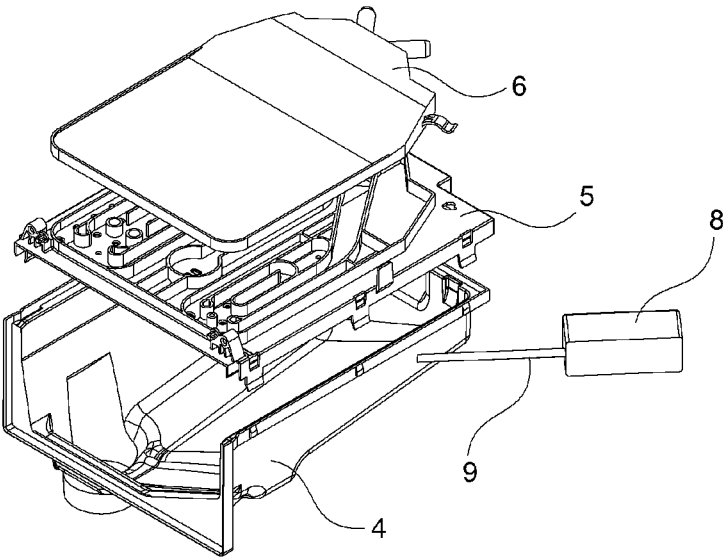


Figure 4

