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(54) **A LAUNDRY OR A DISH WASHING MACHINE**

WASCH- ODER GESCHIRRSPÜLMASCHINE

MACHINE À LAVER LA VAISSELLE OU LES VÊTEMENTS

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- **CEVIKKALP, Erman**
34950 Istanbul (TR)
- **OZGUREL, Gokhan**
34950 Istanbul (TR)

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(56) References cited:
EP-A- 1 260 234 WO-A-2007/020282
WO-A-2007/058478 DE-A1- 2 220 189
DE-A1- 3 123 899 DE-A1- 4 342 049
DE-A1- 10 122 514 JP-A- 4 364 825
JP-A- 2005 253 786 JP-A- 2005 319 068
JP-A- 2006 263 202

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(73) Proprietor: **Arçelik Anonim Sirketi**
34950 Istanbul (TR)

(72) Inventors:
• **BOZTAS, Onur**
34950 Istanbul (TR)

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Description

[0001] The present invention relates to a washing machine comprising a cleaning agent dispenser.

[0002] In washing machines, for example in laundry and dish washing machines, the cleaning agent required for the cleaning process is placed in a cleaning agent dispenser. The wash water received from the water inlet and heated if required is directed to the cleaning agent dispenser by means of a distributor disposed on the cleaning agent dispenser that facilitates receiving the cleaning agent into the washing tub. The dissolved-melted cleaning agent passes into the washing tub together with the water. The cleaning agent dispensers usually comprise cubicles wherein the powder and/or liquid cleaning agent are placed.

[0003] In washing machines, by time, the accumulation of mold and various microorganisms on the washing agent dispenser and the distributor is observed that result from the detergent and softener. These microorganisms can be carried to the tub with the water received into the machine and form stains on the laundry. In some cases, (as a result of combined factors such as small amount of or poor quality detergent, selection of low temperature) these microorganisms on the laundry can threaten human health. In order not to be confronted with this kind of adversaries, the users have to clean the cleaning agent dispenser at certain intervals. However, the cleaning of the cleaning agent dispenser cannot be made easily by the users. Particularly, the formation of microorganism groups on the distributor cannot be prevented.

[0004] In state of the art, high pressure water is received for the purpose of washing the cleaning agent dispenser so that this cleaning process is made independent of the user. Furthermore, one of the applications designed for washing the cleaning agent dispenser is explained below.

[0005] In the state of the art German Patent Application no. DE10122514, a cleaning agent dispenser is explained having self cleaning structured walls wherein the cleaning agent comes in contact with. The self cleaning property of the cleaning agent dispenser is attained by the surfaces in contact with the cleaning agent having a micro-structured configuration.

[0006] The object of the present invention is to design a washing machine whereby the microorganisms formed in the chamber containing the cleaning agent are removed there from.

[0007] The washing machine designed to fulfill the object of the present invention, explicated in the first claim and the respective claims thereof, comprises a light source that emits ultraviolet radiation, illuminating the chamber wherein the cleaning agent dispenser and the distributor are placed.

[0008] By using the ultraviolet light source, the microorganisms formed in the chamber resulting from detergent and softener are eliminated. The ultraviolet light source is disposed at such a position that the chamber

is partially or entirely illuminated.

[0009] In an embodiment of the present invention, the ultraviolet light source is disposed in the chamber. Consequently, the parts of the chambers wherein the microorganisms are abundant, particularly the cleaning agent dispenser and the distributor are directly interacted by the ultraviolet radiation.

[0010] In another embodiment of the present invention, the light source is disposed outside the chamber. In this embodiment, the light source is prevented from being effected by the water and moisture in the chamber.

[0011] In yet another embodiment of the present invention, the chamber, dispenser and the distributor on the dispenser are made of a transparent material providing the light source to illuminate all the surfaces in the chamber. Thus the light source can make an effective illumination in the chamber and the microorganisms can be removed from the chamber. With this embodiment, the light source positioned outside the chamber is enabled to illuminate the inside of the chamber.

[0012] In another embodiment of the present invention, light carriers are provided between the light source and the chamber that receive almost all of the radiation emitted by the light source and transmit to the chamber. By using light carriers, ultraviolet light is transmitted to a region in the chamber particularly where the ultraviolet light is desired to be focused effectively.

[0013] In another embodiment of the present invention, the chamber, dispenser and distributor is coated with a material having a photocatalyst property or produced of this type of material. The ultraviolet light source and the photocatalyst material interact and the free radicals such as ozone and OH ions are formed on the surface coated with the photocatalyst material. Consequently, the surface gains a hydrophilic characteristic as a result of the interaction of the surface coated with the photocatalyst material and the ultraviolet radiation. Water forms a thin film on this surface having a hydrophilic characteristic and as a result, the adhesion of foreign substances (dirt, dust, microorganisms etc.) on the surface is prevented. Besides, the free radicals formed as a result of the interaction of the photocatalyst material and the ultraviolet light source help in removing the microorganisms on the cleaning agent dispenser and also in disinfecting the main water supply.

[0014] In another embodiment of the present invention, the light source can be activated by the user. The user can activated the light source when required for as long as deemed necessary.

[0015] In another embodiment of the present invention, a switch is provided in the washing machine that turns off the light source when the cleaning agent dispenser is detached from the chamber to prevent the user from being harmed with the ultraviolet rays. This function can also be provided by a sensor that detects the position of the cleaning agent dispenser in the chamber instead of the switch. Consequently, the rays emitted from the light source are prevented from reaching the user and

harming the eyes by diffusing outside when the cleaning agent dispenser is detached from the chamber.

[0016] In another embodiment of the present invention, a control unit is used for controlling the light source independent of the user. In an embodiment of the present invention, this light source is turned on and off periodically while the washing program is carried on.

[0017] In another embodiment of the present invention, the light source is turned on by the control unit at the start or end of each washing program for a certain period of time.

[0018] In an alternative embodiment wherein the light source is controlled by the control unit, when the number of washing programs determined by the producer is reached, the light source is turned on to illuminate the chamber.

[0019] By means of the present invention, the chamber is decontaminated of the microorganisms and similar foreign substances also gaining a hygienic property without requiring the detachment of the cleaning agent dispenser by the user

[0020] The washing machine designed to fulfill the objective of the present invention is illustrated in the attached figures, where:

[0021] Figure 1 - is the schematic view of a washing machine.

[0022] Figure 2 - is the top perspective view of a chamber and the cleaning agent dispenser.

[0023] Figure 3 - is the view of a light source and the detail A of the switch.

[0024] The elements illustrated in the figures are numbered as follows:

1. Washing machine
2. Tub
3. Cleaning agent dispenser
4. Chamber
5. Distributor
6. Light source
7. Knob
8. Switch
9. Control unit

[0025] The washing machine (1) is used for cleaning items such as dishes or laundry by washing with water.

[0026] The washing machine (1) of the present invention comprises a tub (2) wherein the washing process is carried out and a chamber (4) wherein cleaning agents are placed.

[0027] The washing machine (1) furthermore comprises a light source (6) that emits ultraviolet radiation partially or entirely illuminating the inside of the chamber (4). When the light source (6) is turned on, the microorganisms resulting particularly from detergent and softener residues are eliminated (Figure 1).

[0028] The light source (6) is situated in the chamber (4). The light source (6) disposed in the chamber (4) illuminates the interior of the chamber (4). The rays emit-

ted at a certain wavelength from the light source (6) destroy the microorganisms accumulated on the chamber (4).

[0029] The washing machine (1) comprises a cleaning agent dispenser (3) having at least one cubicle wherein liquid and/or powder cleaning agents are placed, to be delivered to the tub (2) and a distributor (5) disposed on the cleaning agent dispenser (3) that directs the water received from the main supply to the cleaning agent dispenser (3). The cleaning agent dispenser (3) and the distributor (5) are situated inside the chamber (4).

[0030] In another embodiment of the present invention, the light source (6) is disposed outside the chamber (4). Thus the light source (6) is prevented from being effected by the water received into the chamber (4) and the inside of the chamber (4) can be illuminated more effectively.

[0031] In another embodiment of the present invention, the chamber (4) is produced of an optically transparent or semi-transparent material. Thus a greater amount of the radiation emitted from the light source (6) can reach almost all the places of the chamber (4). Besides, by making the chamber (4) transparent or semi-transparent, the light source (6) is enabled to be disposed outside of the chamber (4).

[0032] In another embodiment of the present invention, the cleaning agent dispenser (3) and/or the distributor (5) disposed in the chamber (4) is produced of an optically transparent or semi-transparent material. Consequently, the ultraviolet radiation can reach almost all the places of the cleaning agent dispenser (3) and/or the distributor (5) providing to remove the microorganisms resulting from residues of detergent and softener accumulated on the cleaning agent dispenser (3) and/or the distributor (5).

[0033] In an alternative embodiment of the present invention, the washing machine (1) comprises light carriers (not shown in the figures) that are disposed between the light source (6) and the chamber (4) that provide to transmit the radiation emitted by the light source (6) into to the chamber (4) with minimum loss. Thus the necessity of disposing the light source (6) inside or in the vicinity of the chamber (4) is eliminated and the places farther away from the light source (6) can also be illuminated. In this embodiment of the present invention, fiber optic cables can be used as light carriers. Besides, by means of this embodiment, only the desired places in the chamber (4) can be illuminated.

[0034] In another embodiment of the present invention, the surfaces of the chamber (4) are coated with a material having a photocatalyst property. Consequently, the free radicals such as ozone and OH ions that are formed by the interaction of the light emitted by the ultraviolet light source (6) in the chamber (4) and the surface coated with the photocatalyst material results in the surface gaining a hydrophilic characteristic and the formation of a thin film of water on this surface. Consequently, the microorganisms such as mold, bacteria are prevent-

ed from residing on the surfaces of the chamber (4). With this embodiment, the chamber (4) is provided with a hygienic property. In this embodiment of the present invention, the surfaces of the cleaning agent dispenser (3) and/or the distributor (5) disposed in the chamber (4) are also coated with a material having photocatalyst property.

[0035] In this embodiment of the present invention, when the light source (6) is turned on to be activated, water is received into the chamber (4). In this embodiment, a thin film of water is formed on the surfaces coated with the photocatalyst material that interact with ultraviolet radiation. The adhesion of foreign substances such as dirt, microorganisms etc. on the film are prevented and the foreign substances on the surface are cleaned. In this embodiment of the present invention, the water received from the main supply is also disinfected while passing through the chamber (4) before reaching the tub (2) by the free radicals formed as a result of the interaction of the photocatalyst surface and the ultraviolet radiation. Besides, the free radicals are delivered to the tub (2) together with the water received from the main supply and contribute in cleaning of the laundry in the tub (2).

[0036] In another embodiment of the present invention, the washing machine (1) comprises a control unit (9) that turns on or off the light source (6) at certain intervals or according to the washing program.

[0037] In another embodiment of the present invention, the control unit (9) turns on and off the light source (6) periodically while the washing program is in progress.

[0038] In yet another embodiment of the present invention, the light source (6) is turned on by the control unit (9) at the start or end of each washing program for a certain period of time illuminating and removing the accumulated microorganisms in the chamber (4).

[0039] In another embodiment of the present invention, the control unit (9) turns on the light source (6) when the number of washing programs determined by the producer is reached. For example, in every ten washing performed by the washing machine (1), the light source (6) is turned on to eliminate the accumulated microorganisms in the chamber (4).

[0040] In another embodiment of the present invention, the light source (6) is turned on at the start of the washing process and kept open until the washing process is completed. When the washing process is completed, the light source (6) is turned off. Thus the cleaning and disinfection of the chamber (4) can also be done during the washing process.

[0041] In another embodiment of the present invention, the washing machine (1) comprises a knob (7) that allows the light source (6) to be activated by the user. When the knob (7) is triggered by the user, the light source (6) can change to the open and/or the closed position. Thus the light source (6) can be kept open by the user for as long as desired.

[0042] In yet another embodiment of the present invention, the washing machine (1) comprises one or more

switches (8) that turn on the light source (6) when the cleaning agent dispenser (3) is in the chamber (4), turns off the light source (6) when the cleaning agent dispenser (3) is not in the chamber (4). This switch (8) is preferably situated between the cleaning agent dispenser (3) and the chamber (4) wherein the cleaning agent dispenser (3) is disposed, and fixed to the rear wall of the chamber (4) or the cleaning agent dispenser (3) (Figure 2 and Figure 3).

[0043] In the embodiment wherein both the knob (7) and the switch (8) are used together, when the cleaning agent dispenser (3) is in the chamber (4), the cleaning agent dispenser (3) exerts a force on this switch (8) and the light source (6) is turned on by getting to the active position. When the cleaning agent dispenser (3) is drawn out of the chamber (4) by the user, the cleaning agent dispenser (3) no longer contacts the switch (8) and the light source (6) is turned off by getting to the passive position. In this embodiment, if the cleaning agent dispenser (3) is detached from the chamber (4) the light source (6) is not turned on even if the user triggers the knob (7). Consequently the ultraviolet rays having the wavelength that can harm the eyes of the user are prevented from being dispersed outside when the cleaning agent dispenser (3) is detached from the chamber (4) and the user is protected from harm due to the rays.

[0044] With this invention, the chamber (4) is cleaned and disinfected. Besides, by the present invention, the chamber (4) is provided with a hygienic property as well as a cleaning process.

Claims

1. A washing machine (1) comprising a tub (2) wherein the washing process is carried out and a chamber (4) for placing the cleaning agents and **characterized by** one or more light sources (6), partially or entirely illuminating the inside of the chamber (4) and eliminating the microorganisms in the chamber (4) by emitting ultraviolet radiation when turned on.
2. A washing machine (1) as in Claim 1, **characterized by** a cleaning agent dispenser (3) having at least one cubicle wherein liquid and/or powder cleaning agents are placed, to be delivered to the tub (2) and a distributor (5) disposed on the cleaning agent dispenser (3) that directs the water received from the main supply to the cleaning agent dispenser (3).
3. A washing machine (1) as in Claim 1 or 2, **characterized by** a light source (6) that is disposed inside the chamber (4).
4. A washing machine (1) as in Claim 1 or 2, **characterized by** a light source (6) that is disposed outside the chamber (4).

5. A washing machine (1) as in Claim 1, 3 or 4, **characterized by** a chamber (4) produced of an optically transparent or semi-transparent material.
6. A washing machine (1) as in Claim 2, **characterized by** a cleaning agent dispenser (3) and/or distributor (5) produced of an optically transparent or semi-transparent material.
7. A washing machine (1) as in any one of the above claims, **characterized by** a light carrier that is disposed between the light source (6) and the chamber (4) that provide to transmit the radiation emitted by the light source (6) into to the chamber (4) with minimum loss.
8. A washing machine (1) as in any one of the above claims, **characterized by** a chamber (4) that is coated with a photocatalyst material.
9. A washing machine (1) as in Claim 2, **characterized by** a cleaning agent dispenser and/or distributor (5) that is coated with a photocatalyst material.
10. A washing machine (1) as in any one of the above claims, **characterized by** a knob (7) that allows the light source (6) to be turned on by the user.
11. A washing machine (1) as in any one of the above claims, **characterized by** a control unit (9) that turns on or off the light source (6) at certain intervals or according to the washing program.
12. A washing machine (1) as in Claim 11, **characterized by** a control unit (9) that turns on or off the light source (6) periodically while the washing program is in progress.
13. A washing machine (1) as in Claim 11, **characterized by** a control unit (9) that turns on the light source (6) at the start or end of each washing program for a certain time period for illuminating the chamber (4).
14. A washing machine (1) as in Claim 11, **characterized by** a control unit (9) that turns on the light source (6) when the number of washing programs determined by the producer is performed.
15. A washing machine (1) as in Claim 11, **characterized by** a control unit (9) that turns on the light source (6) when the washing program starts and keeps it open until the washing program is completed.
16. A washing machine (1) as in Claims 11 to 15, **characterized by** a control unit (9) that receives water into the chamber (4) when the light source (6) is turned on.

17. A washing machine (1) as in Claim 2, **characterized by** one or more switches (8) situated between the cleaning agent dispenser (3) and the chamber (4) wherein the cleaning agent dispenser (3) is disposed, that turn on the light source (6) when the cleaning agent dispenser (3) is in the chamber (4), and turns off the light source (6) by changing to the passive position when the cleaning agent dispenser (3) is detached from the chamber (4).
18. A washing machine (1) as in Claims 17, **characterized by** a switch (8) that is disposed between the rear wall of the chamber (4) and the cleaning agent dispenser (3), positioned on the rear wall of the cleaning agent dispenser (3).

Patentansprüche

1. Waschmaschine (1), **umfassend** einen Laugenbehälter (2), in dem der Waschvorgang ausgeführt wird, und eine Kammer (4), in die die Waschmittel gegeben werden, **gekennzeichnet durch** eine oder mehrere Lichtquellen (6), die das Innere der Kammer (4) teilweise oder ganz beleuchten, und die Mikroorganismen in der Kammer (4) beseitigen, indem sie beim Einschalten ultraviolettes Licht abgeben.
2. Waschmaschine (1) nach Anspruch 1, **gekennzeichnet durch** einen Waschmittelspender (3), der wenigstens ein Fach aufweist, in das flüssige und/oder pulverförmige Waschmittel gegeben werden, die an den Laugenbehälter (2) und an einen Verteiler (5) bereitgestellt werden, der am Waschmittelspender (3) angeordnet ist, und der das Wasser, das von der Hauptwasserversorgung zugeführt wird, zum Waschmittelspender (3) leitet.
3. Waschmaschine (1) nach Anspruch 1 oder 2, **gekennzeichnet durch** eine Lichtquelle (6), die im Inneren der Kammer (4) angeordnet ist.
4. Waschmaschine (1) nach Anspruch 1 oder 2, **gekennzeichnet durch** eine Lichtquelle (6), die außerhalb der Kammer (4) angeordnet ist.
5. Waschmaschine (1) nach Anspruch 1, 3 oder 4, **gekennzeichnet durch** eine Kammer (4), die aus einem optisch transparenten oder halbdurchsichtigen Material hergestellt ist.
6. Waschmaschine (1) nach Anspruch 2, **gekennzeichnet durch** einen Waschmittelspender (3) und/oder einen Verteiler (5), der aus einem optisch transparenten oder halbdurchsichtigen Material hergestellt ist.
7. Waschmaschine (1) nach einem der vorhergehenden

- den Ansprüche, **gekennzeichnet durch** einen Lichtträger, der zwischen der Lichtquelle (6) und der Kammer (4) angeordnet ist, und der vorsieht, die Strahlung, die von der Lichtquelle (6) abgegeben wird, mit minimalem Verlust in die Kammer (4) zu übertragen.
8. Waschmaschine (1) nach einem der vorhergehenden Ansprüche, **gekennzeichnet durch** eine Kammer (4), die mit einem Fotokatalyse-Material beschichtet ist.
9. Waschmaschine (1) nach Anspruch 2, **gekennzeichnet durch** einen Waschmittelspender (3) und/oder einen Verteiler (5), der mit einem Fotokatalyse-Material beschichtet ist.
10. Waschmaschine (1) nach einem der vorhergehenden Ansprüche, **gekennzeichnet durch** einen Knopf (7), mit dem sich die Lichtquelle (6) vom Benutzer einschalten lässt.
11. Waschmaschine (1) nach einem der vorhergehenden Ansprüche, **gekennzeichnet durch** eine Steuerungseinheit (9), die die Lichtquelle (6) in bestimmten Intervallen oder entsprechend dem Waschprogramm ein- oder ausschaltet.
12. Waschmaschine (1) nach Anspruch 11, **gekennzeichnet durch** eine Steuerungseinheit (9), die die Lichtquelle (6) regelmäßig während des Waschprogramms ein- oder ausschaltet.
13. Waschmaschine (1) nach Anspruch 11, **gekennzeichnet durch** eine Steuerungseinheit (9), die die Lichtquelle (6) am Anfang oder Ende eines Waschprogramms für eine bestimmte Zeitdauer einschaltet, um die Kammer (4) zu beleuchten.
14. Waschmaschine (1) nach Anspruch 11, **gekennzeichnet durch** eine Steuerungseinheit (9), die die Lichtquelle (6) einschaltet, wenn die vom Hersteller festgelegte Anzahl von Waschprogrammen ausgeführt wurde.
15. Waschmaschine (1) nach Anspruch 11, **gekennzeichnet durch** eine Steuerungseinheit (9), die die Lichtquelle (6) einschaltet, wenn das Waschprogramm startet, und eingeschaltet lässt, bis das Waschprogramm beendet ist.
16. Waschmaschine (1) nach den Ansprüchen 11 bis 15, **gekennzeichnet durch** eine Steuerungseinheit (9), die Wasser in die Kammer (4) laufen lässt, wenn die Lichtquelle (6) eingeschaltet wird.
17. Waschmaschine (1) nach Anspruch 2, **gekennzeichnet durch** einen oder mehrere Schalter (8), die zwischen dem Waschmittelspender (3) und der Kammer (4) angeordnet sind, in der der Waschmittelspender (3) angeordnet ist, und die die Lichtquelle (6) einschalten, wenn der Waschmittelspender (3) sich in der Kammer (4) befindet, und die Lichtquelle (6) ausschalten, wenn der Waschmittelspender (3) von der Kammer (4) gelöst wird, indem sie sich in eine passive Position bewegen.
18. Waschmaschine (1) nach Anspruch 17, **dadurch gekennzeichnet, dass** ein Schalter (18), der zwischen der Rückwand der Kammer (4) und dem Waschmittelspender (3) angeordnet ist, an der Rückwand des Waschmittelspenders (3) angeordnet ist.

Revendications

1. Une machine à laver (1) comprenant une cuve (2) dans laquelle le processus de lavage est effectué et une chambre (4) pour placer des agents de nettoyage, et **caractérisée par** une ou plusieurs sources de lumière (6) éclairant partiellement ou entièrement l'intérieur de la chambre (4) et éliminant ainsi les micro-organismes dans la chambre (4) en émettant un rayonnement ultraviolet lorsqu'elle(s) est (sont) allumée(s).
2. Une machine à laver (1) selon la Revendication 1, **caractérisée par** un distributeur d'agent de nettoyage (3) ayant au moins une cabine où des agents de nettoyage liquides et/ou en poudre sont placés pour être livrés à la cuve (2), et un distributeur (5) disposé sur le distributeur d'agent de nettoyage (3), que dirige l'eau reçue de l'alimentation principale du distributeur d'agent de nettoyage (3).
3. Une machine à laver (1) selon la Revendication 1 ou 2, **caractérisée par** une source de lumière (6) disposée à l'intérieur de la chambre (4).
4. Une machine à laver (1) selon la Revendication 1 ou 2, **caractérisée par** une source de lumière (6) disposée à l'extérieur de la chambre (4).
5. Une machine à laver (1) selon la Revendication 1, 3 ou 4, **caractérisée par** une chambre (4) faite d'un matériau optiquement transparent ou semi-transparent.
6. Une machine à laver (1) selon la Revendication 2, **caractérisée par** un distributeur d'agent de nettoyage (3) et/ou un distributeur (5) fait d'un matériau optiquement transparent ou semi-transparent.
7. Une machine à laver (1) selon l'une quelconque des revendications précédentes, **caractérisée par** un

porteur de lumière qui est disposé entre la source de lumière (6) et la chambre (4) pour transmettre le rayonnement émis par la source de lumière (6) dans la chambre (4) avec une perte minimale.

8. Une machine à laver (1) selon l'une quelconque des revendications précédentes, **caractérisée par** une chambre (4) recouverte d'un matériau photocatalyseur. 5
9. Une machine à laver (1) selon la Revendication 2, **caractérisée par** un distributeur d'agent de nettoyage et/ou distributeur (5) recouvert d'un matériau photocatalyseur. 10
10. Une machine à laver (1) selon l'une quelconque des revendications précédentes, **caractérisée par** un bouton (7) allumant la source de lumière (6) en étant activé par l'utilisateur. 15
11. Une machine à laver (1) selon l'une quelconque des revendications précédentes, **caractérisée par** une unité de contrôle (9) qui active ou désactive la source de lumière (6) à certaines intervalles ou selon le programme de lavage. 20
12. Une machine à laver (1) selon la Revendication 11, **caractérisée par** une unité de contrôle (9) qui active ou désactive la source de lumière (6) périodiquement quand le programme de lavage est en cours. 25
13. Une machine à laver (1) selon la Revendication 11, **caractérisée par** une unité de contrôle (9) qui active la source de lumière (6) au début ou à la fin de chaque programme de lavage pour une certaine période de temps pour éclairer la chambre (4). 30
14. Une machine à laver (1) selon la Revendication 11, **caractérisée par** une unité de contrôle (9) qui active la source de lumière (6) quand le nombre de programmes de lavage déterminé par le producteur est effectué. 35
15. Une machine à laver (1) selon la Revendication 11, **caractérisée par** une unité de contrôle (9) qui active la source de lumière (6) lorsque le programme de lavage commence, et la source reste allumée jusqu'à ce que le programme se termine. 40
16. Une machine à laver (1) selon les Revendications de 11 à 15, **caractérisée par** une unité de contrôle (9) qui reçoit l'eau dans la chambre (4) lorsque la source de lumière (6) est activée. 45
17. Une machine à laver (1) selon la Revendication 2, **caractérisée par** un ou plusieurs interrupteurs (8) situés entre le distributeur d'agent de nettoyage (3) et la chambre (4) dans laquelle le distributeur d'agent

de nettoyage (3) est placé, ce dernier activant la source de lumière (6) lorsque le distributeur d'agent de nettoyage (3) est dans la chambre (4), et désactivant la source de lumière (6) en passant à la position passive lorsque le distributeur d'agent de nettoyage (3) est détaché de la chambre (4).

18. Une machine à laver (1) selon la Revendication 17, **caractérisée par** un interrupteur (8) disposé entre la paroi arrière de la chambre (4) et le distributeur d'agent de nettoyage (3), et positionné sur la paroi arrière du distributeur d'agent de nettoyage (3).

Figure 1

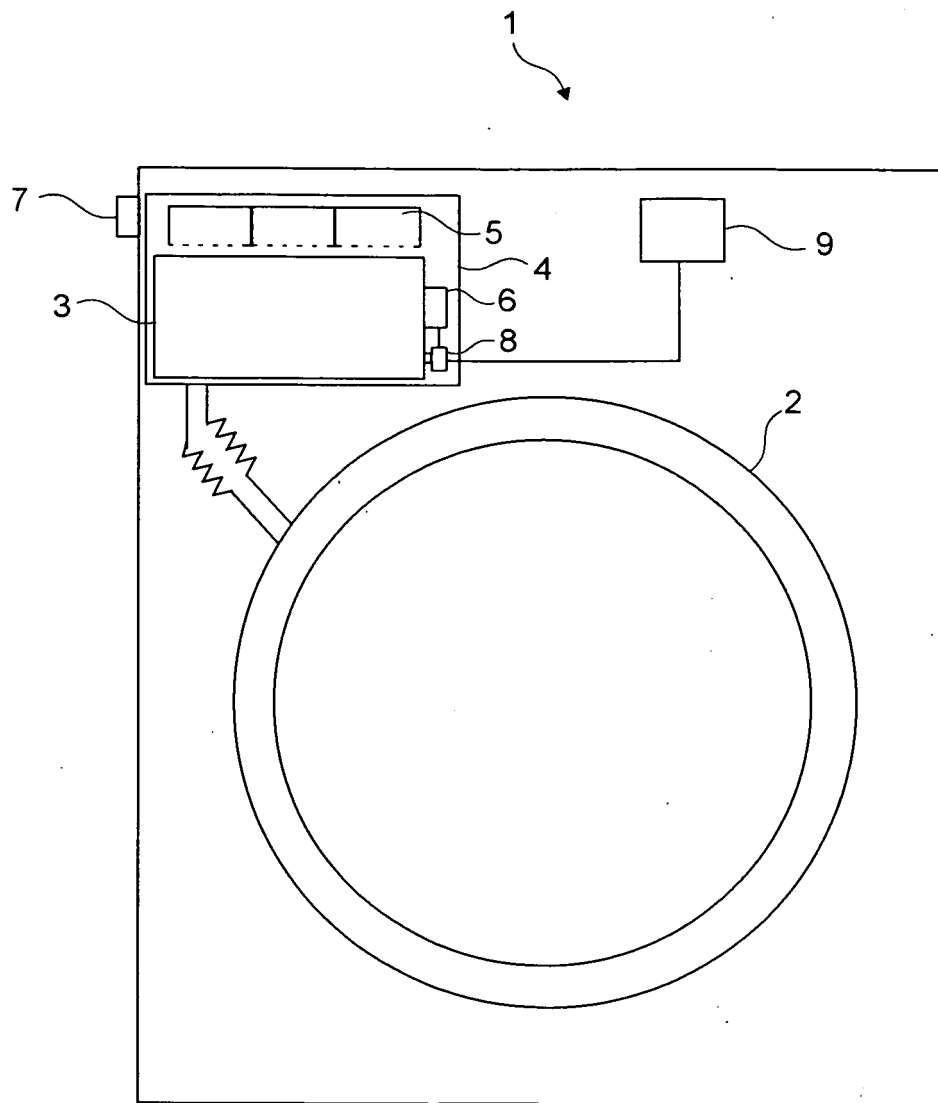


Figure 2

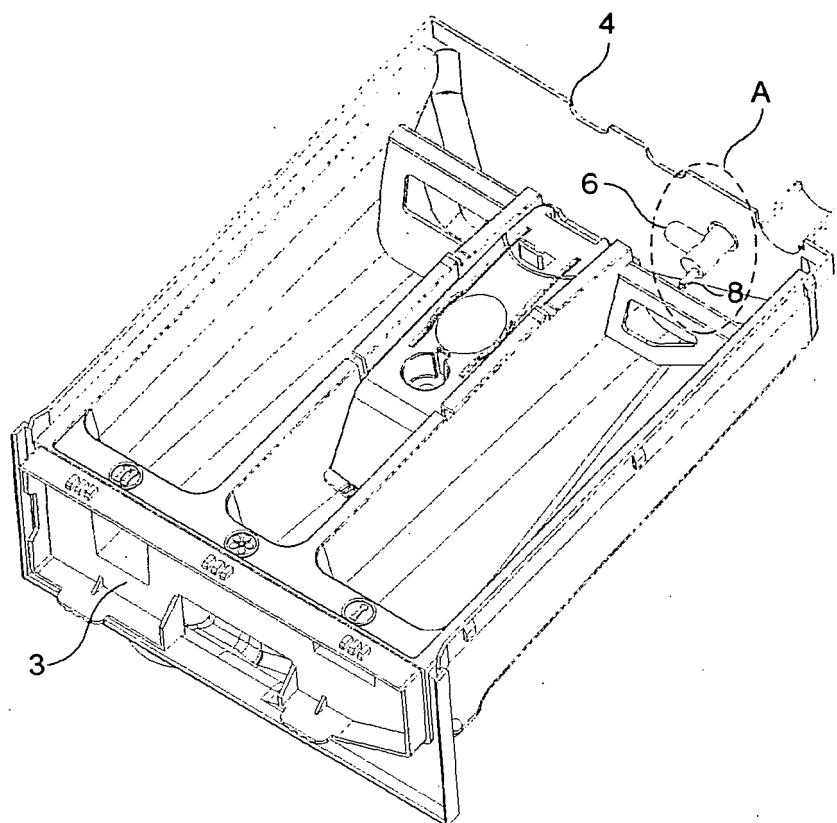
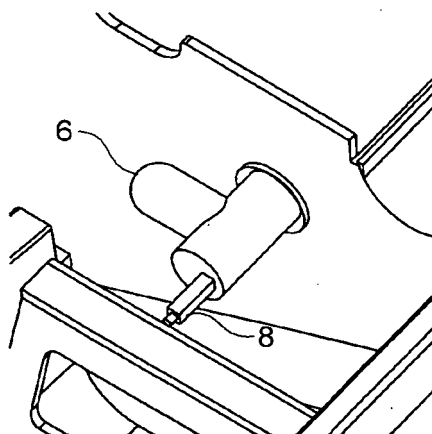


Figure 3



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- DE 10122514 [0005]