(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 933 462 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
04.08.1999 Bulletin 1999/31

(51) Int Cl.[6]: **D06F 25/00**

(21) Application number: **99500017.1**

(22) Date of filing: **29.01.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **02.02.1998 ES 9800193**

(71) Applicant: **Balay S.A.**
50059 Zaragoza (ES)

(72) Inventor: **Pina Pobes, Jose Luis**
50059 Zaragoza (ES)

(54) System of additives supply to dryer washing machines

(57) System of additives supply to dryer washing machines, being of the kind of those machines that first act as washing machines, carrying the successive washing cycles out, acting as dryer machine once the centrifugal cycle has finished, for which they have the corresponding condensing device so that the system of additives supply has a bellows (6) of connection between the dispenser that contains the additives and the condenser body (3), carrying the supply of the same ones out during the washing function of the machine, being dragged by the water through itself, dragging the possible remains that are in the same one.

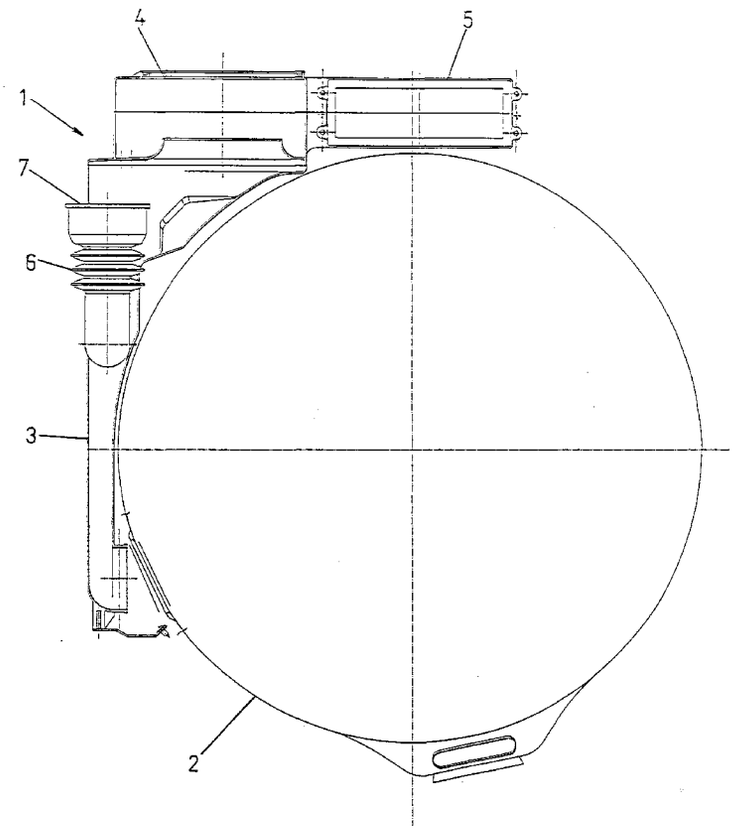

FIG. 1

EP 0 933 462 A1

Description

OBJECT OF THE INVENTION.

[0001] As is expressed in the title of the present descriptive report, the following invention consists on a system of additives supply to dryer washing machines, being useful for its incorporation to all kind of of dryer washing machines, that first do the function of washing the clothes, according to the different cycles and act as dryer machines once the centrifugal cycle has finished, in order to obtain an smaller degree of humidity of the clothes for favouring their total drying in the exterior, so that the system of additives supply to the tank happens through the condenser in which the interchange of temperature takes place during the dryer function, acting as a self-cleaning system of the condenser.

[0002] For it, the dispenser for depositing the additives used during the different washing cycles is connected with the condenser through a bellows, so that when the additives dragged by the water are introduced, the self-cleaning of the condenser takes place, since it is leading into the lower lateral part of the washing tank.

[0003] In this way, during the dryer process, the fan absorbs the air from the inner part of the tank (hot air saturated of humidity), as well as the cold air from the exterior through the gives that there are in relationship to the dispenser, so that it passes though the bellows of connection with the condenser until the same one. Its pass through the condenser causes the condensing of the humidity contained in the hot air, being conducted to the pipe where the resistances are lodged from which it is introduced again through its front upper part in the tank, so that it is avoided the minimum condensing of the water in the dispenser where the additives are deposited.

FIELD OF APPLICATION.

[0004] The system of additives supply is applicable to all kind of dryer washing machines that have a condensing system joined to the washing machine tank, which is made up of a a fan that absorbs the hot air saturated of humidity from the inner part of the tank and conducts it to a pipe, after its pass through the fan , in which there are some resistances for inserting again hot air without humidity to the inner part of the tank.

BACKGROUND OF THE INVENTION.

[0005] Conventionally, the dryer washing machines incorporate a condensing system made up of a structure which has a fan that through a pipe, which acts as a condenser, absorbs the hot air saturated of humidity since the cited pipe is connected with the lower lateral part of the washing machine tank, driving it without humidity to a pipe where some resistances have been placed for being introduced to the inner part of the tank again.

[0006] In the other hand, the machine have the corresponding partitioned dispenser that contains the additives that will be introduced in the several washing cycles, so that the cited dispenser remains connected through a bellows with the upper lateral part of the tank for which the corresponding hole has been made in the same one for introducing the additives that have been dragged by the water.

[0007] In this way, during the washing function of the machine, the water is introduced in the washing machine tank through the pipe that connects the partitioned dispenser where the additives are deposited with the tank of the same one, while during the dryer function of the machine, the condensing of the air takes place in the condenser body that is a part of the condensing system that is incorporated into the machine.

[0008] With this structure, the condensing of the humidity of the hot air saturated of humidity that is absorbed from the machine tank takes place during the dryer function, in the own dispenser where the additives are deposited, which means a serious difficulty since some remains of the additives stay in the respective compartments of the dispenser because of the condensing, and likewise there are also a condensing out of the dispenser that is annoying for the user.

DESCRIPTION OF THE INVENTION.

[0009] In the present report, a system of additives supply to dryer washing machines is described, being of the kind of machines that first act as washing machines, carrying the successive washing cycles out, and once the centrifugal cycle has finished they act as dryer machines, for which they have the corresponding condensing device, so that the system of additives supply is made up of a connection bellows between the dispenser that contains the additives and the condenser body, taking place the supply of the same ones during the washing function of the machine, being they dragged by the water though itself, and likewise dragging the possible remains that there are in the same one, so that it accomplishes a function of self-cleaning.

[0010] During the dryer function of the machine, the condensing of the humidity from the hot air saturated of humidity and absorbed from the tank takes place into the condenser body, avoiding any condensing in the dispenser where the additives are deposited, both in its inner surface relative to the different compartments of the same one, and in the external surface used as a handle by the user.

[0011] In this way, connecting the bellows or pipe of additives supply from the dispenser to the condenser instead of connecting it directly to the washing machine tank, the fulfilment of the connection hole of the same one during the industrialization stage of the cited tank is avoided.

[0012] In order to complement the description which

is done hereinafter and with the purpose of providing a better understanding of its characteristics, the present descriptive report is accompanied by a set of drawings, in whose figures the most significant details of the invention are defined in an illustrative and not limitative way.

BRIEF DESCRIPTION OF THE DESIGNS.

[0013] Figure 1.- It shows an schematic frontal view of the system of additives suppy where it is observed the disposition of the connection bellows between the conventional dispenser with the condenser, as well as the connection of this one with the lower lateral part of the dryer washing machine tank.

[0014] Figure 2.- It shows a lateral view of the condenser body relative to the condensing system joined to the tank, where it is observed the connection of the communication bellows with the conventional dispenser for depositing the additives, and the opening for the connection with the machine tank.

DESCRIPTION OF A PREFERRED EMBODIMENT.

[0015] In view of the above cited figures and in accordance with the adopted numbering, we can observe as the condensing device (1) of the machine is joined to the tank (2), so that it incorporates the condensing device (1) to the pipe (3) that acts as a condenser properly said, the location (4) for the fan, and the pipe (5) which has the resistances for the heating of the air without humidity for its introduction to the tank (2) by the frontal upper part.

[0016] In the other hand, the bellows (6) is connected to the body (3) that acts as a condenser, being at the same time the upper opening (7) of the cited bellows connected to the conventional dispenser where the additives introduced in the several washing cycles are deposited, so that the body (3) is connected to the tank (2) through its lower lateral part.

[0017] In this way, during the washing function of the machine, in the several washing cycles, the additives that are lodged in the conventional dispenser will be pulled along by the water and introduced into the tank (2) because of their pass through the bellows (6) and the condenser body (3), so that if there are fluffs or other remains in the same one, they are pulled along to the tank (2), causing the self-cleaning of the condenser body (3) in this way.

[0018] Besides, given that the connection of the conventional dispenser that contains the additives takes place with the condenser (3) instead of being connected directly with the tank (2) through the corresponding pipe, the connection hole with the tank (2) will not be necessary like it conventionally happens, so that the cited operation can be eliminated of the industrialization process during the manufacture of the tank.

[0019] During the dryer function of the machine, if the fan placed in the lodging (4) is started, the hot air saturated of humidity will be absorbed from the tank (2) through the condenser body (3), where the condensing of the humidity will take place, so that the air without humidity will be directed to the pipe (5) in which there are the resistances for introducing the hot air without humidity into the tank (2) with the object of obtaining the drying of the clothes.

[0020] Likewise, the action of the fan that is located into the lodging (4) also causes the absorption of the cold air from the outside through the gives that there are in the compartment of the dispenser where the additives are deposited, causing a diminution of the temperature that favours the condensing of the humidity of the hot air absorbed from the tank.

[0021] Through the described structure, the conventional dispenser where the additives are deposited do not bear any condensing, so that as the inner surface of the same one is totally dry, there is not any compression of the additives into the respective compartments and likewise there is not any condensing out of the dispenser, since if this fact takes place, as conventionally happens, it means a trouble for the user.

Claims

1. SYSTEM OF ADDITIVES SUPPLY TO DRYER WASHING MACHINES, being of the kind of those machines that first act as washing machines, carrying the successive washing cycles out and once the centrifugal cycle has finished, they act as dryer machines, making use of the corresponding condensing device that is characterized because the system of additives supply has a connection bellows (6) between the dispenser where the additives are deposited and the condenser body (3), carrying the supply of the same ones out during the washing function of the machine, being it dragged by the water through itself, dragging the possible remains that are in the same one.

2. SYSTEM OF ADDITIVES SUPPLY TO DRYER WASHING MACHINES according to the first claim and characterized because during the dryer function of the machine, the condensing of the humidity of the hot air saturated of humidity absorbed from the tank (2) takes place into the condenser body (3) is connected with the dispenser, so that any condensing is avoided in the cited partitioned dispenser that places the additives.

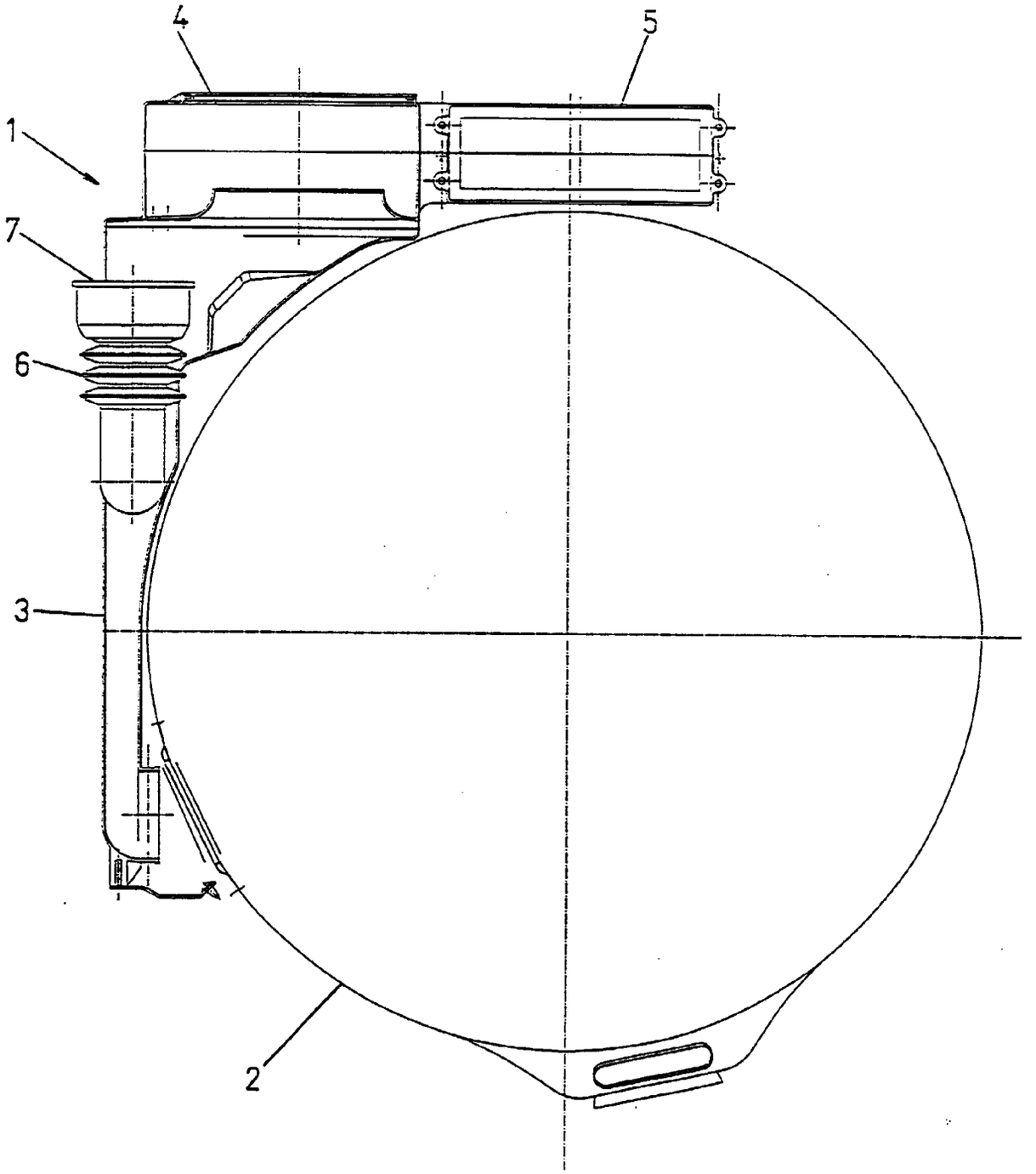

FIG. 1

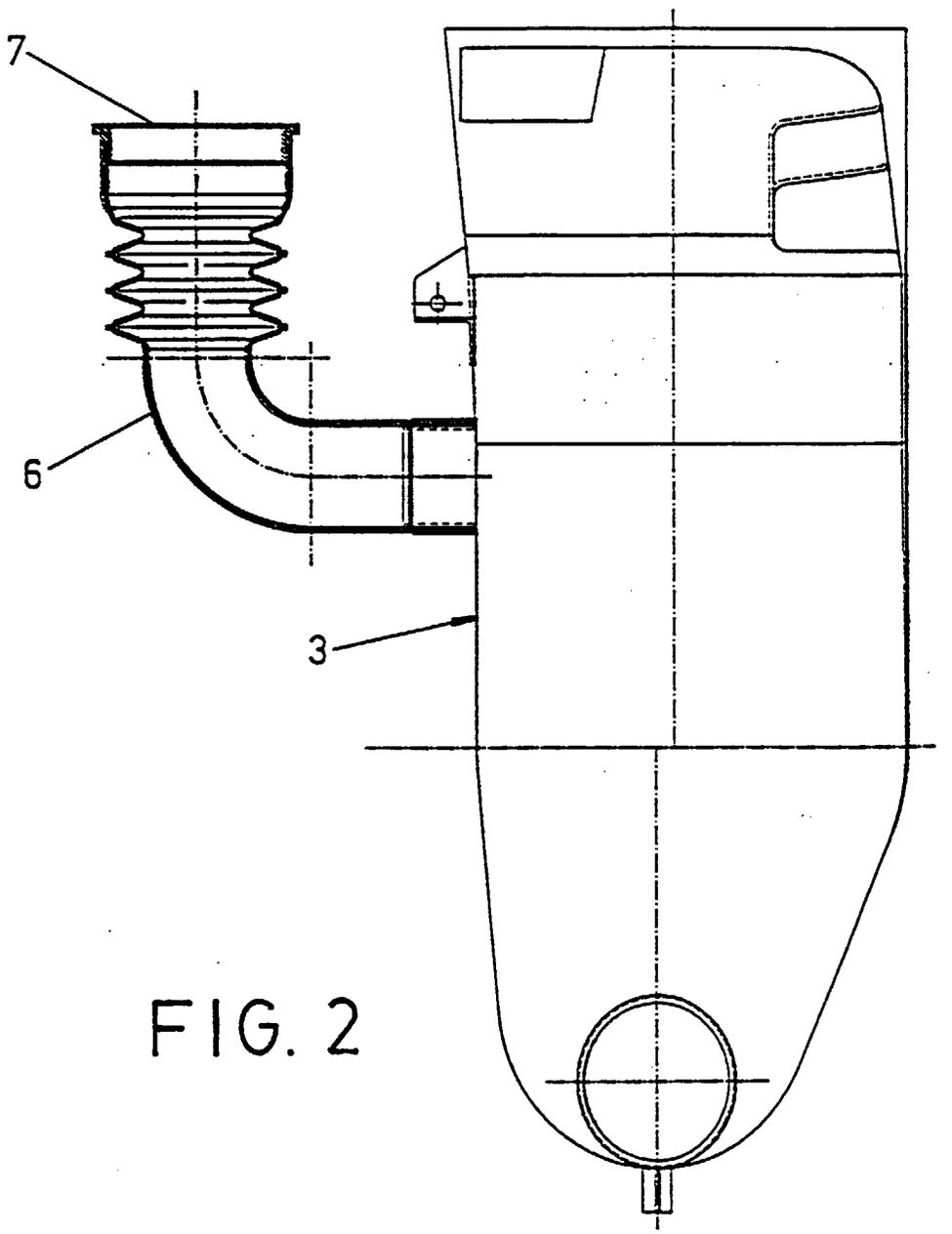

FIG. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 50 0017

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	GB 2 291 891 A (BOSCH-SIEMENS HAUSGERÄTE GMBH) 7 February 1996 * the whole document * -----	1,2	D06F25/00

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	4 May 1999	Courrier, G

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 50 0017

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-05-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2291891 A	07-02-1996	DE 4436673 A	18-04-1996
		CN 1133369 A	16-10-1996
		CZ 9502660 A	17-04-1996
		FR 2725735 A	19-04-1996
		HK 177096 A	27-09-1996
		PL 310876 A	15-04-1996
		US 5588313 A	31-12-1996

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82