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

(11) **EP 3 933 092 A1**

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
05.01.2022 Bulletin 2022/01

(21) Application number: **21182229.1**

(22) Date of filing: **29.06.2021**

(51) Int Cl.:
D06F 37/06 *(2006.01)* ***D06F 58/04*** *(2006.01)*
D06F 37/08 *(2006.01)* *D06F 95/00* *(2006.01)*

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **30.06.2020 TR 202010348**

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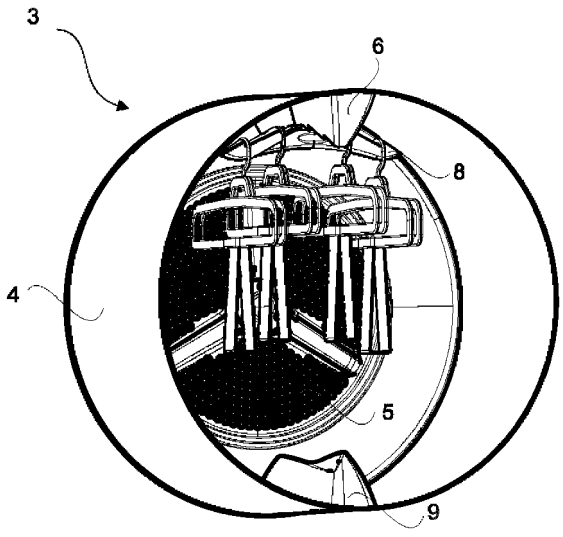
(54) A LAUNDRY DRYER COMPRISING A BAFFLE

(57) The present invention relates to a laundry dryer (1) comprising a body (2); and a drum (3) which is disposed in the body (2), which is suitable for loading laundry therein, and which has a cylindrical side wall (4) and a rear wall (5) covering the rear side of the side wall (4).

Figure 2



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Description

[0001] The present invention relates to a laundry dryer comprising a baffle.

[0002] The laundry processed in the laundry dryers may be damaged due to the mechanical effects it is exposed to while being processed in the laundry dryer. Especially when the laundry containing natural fibers such as cotton, wool, silk is processed in the dryer, sensitive drying conditions must be provided. In the laundry dryers which perform the drying by stopping, damage to the laundry due to mechanical effects is prevented, but the laundry cannot be dried homogeneously.

[0003] In the South Korean Patent No. KR100751785B1, a laundry dryer is disclosed, wherein the hangers can be hung from the baffle by means of the member which is detachably attached onto the drum baffle.

[0004] The aim of the present invention is the realization of a laundry dryer wherein the hanging of hangers onto the baffle is facilitated in drum-type laundry dryers.

[0005] The laundry dryer of the present invention comprises a body and a drum which is disposed in the drum and which is suitable for loading laundry therein. The drum has a cylindrical side wall and a rear wall completely covering the side wall. The drying air is sent into the drum through the rear wall.

[0006] The laundry dryer of the present invention further comprises a baffle having a retaining member which is disposed on the drum and a movable member which is rotatably connected to the retaining member by means of a connection member and which has a first position wherein the movable member extends almost perpendicularly to the rear wall and a second position wherein the movable member extends parallel to the rear wall after being rotated 90 or approximately 270 degrees from the first position. When the user selects a program wherein the drum is not rotated to carry out a sensitive drying process, he/she manually brings the baffle having the movable member and the retaining member to the uppermost point of the drum. In a version of the present invention, when a program wherein the drum is not rotated is selected, the baffle having the retaining member and the movable member is automatically shifted to the uppermost point of the drum. When in the first position, the movable member is joined with the retaining member. Afterwards, the movable member is rotated to be shifted to the second position suitable for the hanging of hangers thereon. When the movable member is in the second position, the hangers are hung in the drum along the movable member parallel to the rear wall. Thus, the delicate laundry is homogeneously dried without being affected by the rotation of the drum. When the user wants to carry out a drying process wherein the drum is rotated or does not want to use the movable member for hanging the hangers, he/she brings the movable member to the first position. Since the movable member is integrated with the retaining member when in the first position, the movable member is in the form of the baffle which tumbles the laundry. Thus, the user can use the baffle as a means for hanging the hangers when desired or in the form of the baffle which tumbles the laundry when desired. Consequently, the laundry is enabled to be dried by being hung in the drum-type laundry dryers without requiring an additional apparatus.

[0007] In an embodiment of the present invention, the movable member comprises a housing suitable for hanging the hangers thereon. By placing the hanger into the housing, the hanger and the laundry on the hanger are prevented from falling off the movable member due to the drying air.

[0008] In an embodiment of the present invention, the laundry dryer comprises a wedge which is provided on the movable member and a movement channel which is provided on the retaining member. The wedge is moved inside the movement channel. The movement channel guides the movement of the wedge, thus preventing the movable member from moving freely due mechanical effects. In a version of the present invention, two wedges are provided on the movable member.

[0009] In an embodiment of the present invention, the retaining member comprises a first wedge housing. When the movable member is in the first position, the wedge enters the first wedge housing. Thus, the movable member is enabled to be locked in the first position. In a preferred embodiment of the present invention, the retaining member comprises first wedge housing as much as the number of the wedges. The wedges are positioned on the movable member so as to enter the first wedge housings when the movable member is in the first position.

[0010] In an embodiment of the present invention, the retaining member comprises a second wedge housing. When the movable member is in the second position, the wedge enters the second wedge housing. Thus, the movable member is enabled to be locked in the second position. The second wedge housing is in the form of a recess provided on the movement channel. The depth of the recess of the second wedge housing is less than the depth of the recess of the first wedge housing. Thus, when the wedge locks the movable member in the second position after entering the second wedge housing, a gap remains between the movable member and the retaining member. Thus, when the baffle is stopped at the uppermost point of the drum and the movable member is shifted to the second position, the number of hangers which can be hung on the movable member is increased.

[0011] In an embodiment of the present invention, the laundry dryer comprises a spring which is disposed between the retaining member and the movable member. The spring pulls the movable member towards the retaining member. Thus, the connection between the movable member and the retaining member is strengthened.

[0012] In an embodiment of the present invention, the laundry dryer comprises a sensor which is provided on the baffle and which determines the position of the mov-

able member. In a version of the present invention, an optical sensor is provided on the retaining member. By means of the optical sensor, the position of the movable member can be determined.

[0013] In an embodiment of the present invention, the movable member comprises a handle. By means of the present invention, the user is enabled to easily move the movable member.

[0014] By means of the present invention, a drum-type laundry dryer is realized, wherein the laundry can be dried by hanging hangers by means of the baffle comprising the retaining member and the movable member which is rotatably connected to the retaining member.

[0015] The advantages of the laundry dryer of the present invention will be disclosed with the detailed description of the embodiments with reference to the accompanying figure, where:

Figure 1 - is the schematic view of the laundry dryer in an embodiment of the present invention.
Figure 2 - is the perspective view of the drum in an embodiment of the present invention.
Figure 3 - is the perspective view of the baffle in an embodiment of the present invention.
Figure 4 - is the schematic view of the movable member and the connection member in an embodiment of the present invention.
Figure 5 - is the schematic view of the retaining member and the connection member in an embodiment of the present invention.
Figure 6 - is the enlarged view of detail A in Figure 5.
Figure 7 - is the cross-sectional view of the baffle in an embodiment of the present invention.
Figure 8 - is the schematic view of the baffle in an embodiment of the present invention.

[0016] The following numerals are referred to in the description of the present invention:

1. Laundry dryer
2. Body
3. Drum
4. Side wall
5. Rear wall
6. Retaining member
7. Connection member
8. Movable member
9. Baffle
10. Housing
11. Wedge
12. Movement channel
13. First wedge housing
14. Second wedge housing
15. Spring
16. Sensor
17. Handle

[0017] The laundry dryer (1) comprises a body (2); and a drum (3) which is disposed in the body (2), which is suitable for loading laundry therein, and which has a cylindrical side wall (4) and a rear wall (5) covering the rear side of the side wall (4).

[0018] The laundry dryer (1) of the present invention comprises a baffle (9) having a retaining member (6) which is disposed on the drum (3) and a movable member (8) which is rotatably connected to the retaining member (6) by means of a connection member (7), which can be moved between a first position wherein the movable member (8) extends almost perpendicularly to the rear wall (5) in the drum (3) and a second position wherein the movable member (8) extends parallel to the rear wall (5), and which is suitable for hanging hangers thereon when in the second position. The retaining member (6) is fixed onto the inner surface of the drum (3) so as to be almost perpendicular to the rear wall (5). When in the first position, the movable member (8) extends parallel to the retaining member (6) and perpendicular to the rear wall (5). When in the first position, the movable member (8) is joined with the retaining member (6). Thus, when the movable member (8) is in the first position, the movable member (8) and the retaining member (6) constitutes an integral baffle (9). The movable member (8) is shifted to the second position by being rotated 90 or 270 degrees. When in the second position, the movable member (8) extends in the drum (3) so as to be parallel to the rear wall (5). When in the second position, the movable member (8) is suitable for hanging hangers thereon. In a preferred version of the present invention, the hangers are hung such that the laundry thereon is perpendicular to the rear wall (5). Thus, by moving the drying process taken into the drum (3) through the rear wall (5) homogeneously by the front and rear surfaces of the laundry, an efficient and quick drying process is performed. Moreover, thus, since the laundry to be hung on the movable member (8) is arranged parallel to the rear wall (5) in the drum (3), a higher number of hangers can be hung on the movable member (8) at one time.

[0019] In another embodiment of the present invention, the laundry dryer (1) comprises at least one housing (10) which is provided on the movable member (8) and which is suitable for placing hangers thereon. The housing (10) forms a recess on the movable member (8) along the width of the movable member (8). The hooks of the hanger enter the housing (10) such that the hanger and the laundry on the hanger are enabled to be hung on the movable member (8). Thus, the hanging of the hangers on the movable member (8) is facilitated.

[0020] In another embodiment of the present invention, the laundry dryer (1) comprises a wedge (11) which is provided on the movable member (8), and a movement channel (12) which is provided on the retaining member (6), which allows the wedge (11) to be moved therein and which guides the rotational movement of the movable member (8) when connected to the retaining member (6). The wedge (11) is provided on the surface of the movable member (8) facing the retaining member (6).

The wedge (11) is positioned next to the connection member (7). The wedge (11) enters the movement channel (12) when the movable member (8) is connected to the retaining member (6) by means of the connection member (7). As the wedge (11) is moved in the movement channel (12), the movable member (8) is rotated with respect to the retaining member (6). Thus, the movement of the movable member (8) is limited. The movement channel (12) has a grooved and circular shape which forms the rotational axis of the movable member (8). By means of the grooved shape of the movement channel (12), the wedge (11) is prevented from easily dislodging from the movement channel (12).

[0021] In another embodiment of the present invention, the laundry dryer (1) comprises a first wedge housing (13) which is provided on the retaining member (6), and a wedge (11) which, when the movable member (8) is in the first position, enters the first wedge housing (13) so as to lock the movable member (8) in the first position. When the movable member (8) is connected to the retaining member (6) by means of the connection member (7), the wedge (11) extends from the movable member (8) towards the retaining member (6). The first wedge housing (13) is in the form of a recess provided on the movement channel (12). When the movable member (8) is shifted to the first position while the wedge (11) is moved in the movement channel (12), the wedge (11) enters the first wedge housing (13) on the retaining member (6). When the wedge (11) is in the first wedge housing (13), the rotation of the movable member (8) is prevented. In other words, the movement member (8) is locked in the first position. Thus, the movable member (8) is prevented from moving and damaging the laundry during the rotation of the drum (3). If desired to be shifted from the first position to the second position, first, the movable member (8) must be pulled as much as the recess formed by the first wedge housing (13) and taken out of the first wedge housing (13). After taken out of the first wedge housing (13), the wedge (11) is rotated approximately 90 or 270 degrees on the movement channel (12), and thus the movable member (8) is shifted to the second position.

[0022] In an embodiment of the present invention, the laundry dryer (1) comprises a second wedge housing (14) which is provided on the retaining member (6), which receives the wedge (11) when the movable member (8) is in the second position, and which enables the movable member (8) to be locked in the second position. The second wedge housing (14) is in the form of a recess provided on the movement channel (12). When the movable member (8) is shifted to the second position, the wedge (11) which is moved over the movement channel (12) enters the second wedge housing (14). Thus, the movable member (8) is prevented from rotating due to the effect of the drying air or any other mechanical force when the hangers are hung thereon in the second position. In order to release the movable member (8) from the locked second position, the same must be pulled as much as the second wedge housing (14) and rotated. Thus, the laundry placed onto the movable member (8) is enabled to be homogeneously dried.

[0023] In another embodiment of the present invention, the laundry dryer (1) comprises a spring (15) which is provided between the retaining member (6) and the movable member (8) and which applies a force onto the movable member (8) towards the retaining member (6). The spring (15) pulls the movable member (8) towards the retaining member (6). Thus, the movement of the wedge (11) in the movement channel (12) is facilitated. When the wedge (11) aligns with the first wedge housing (13) or the second wedge housing (14) while the movable member (8) is being rotated, the wedge (11) enters the housings (13, 14) with the effect of the spring (15).

[0024] In another embodiment of the present invention, the laundry dryer (1) comprises a sensor (16) which is provided on the baffle (9) and which determines the position of the movable member (8). The sensor (16) can be positioned on the movable member (8) or the retaining member (6). In a preferred version of the present invention, a mechanical switch provided on the retaining member (6) can determine whether the movable member (8) is in the first position or not. When shifted to the first position, the movable member (8) applies pressure onto the switch, and thus it can be decided that the movable member (8) is in the first position. In another preferred embodiment of the present invention, the laundry dryer (1) comprises a control unit which prevents a drying program wherein the drum (3) is rotated from being started if it is determined that the movable member (8) is not in the first position.

[0025] In another embodiment of the present invention, the laundry dryer (1) comprises a handle (17) which is provided on the movable member (8) and which enables the user to manually move the movable member (8). The handle (17) is in the form of a concave ellipse formed on the lateral surface of the movable member (8).

[0026] In another embodiment of the present invention, the laundry dryer (1) comprises a motor which is provided on the retaining member (6) and a motor shaft which is connected to the movable member (8) with one end and which transmits the rotational force of the motor to the movable member (8). The user can enable the movable member (8) to be automatically rotated by operating the motor.

[0027] By means of the present invention, a laundry dryer (1) is realized, comprising the baffle (9) which allows the user to bring the movable member (8) to the second position when desired and to carry out drying by hanging hangers on the movable member (8) by means of the retaining member (6) provided on the drum (3) and the movable member (8) rotatably connected to the retaining member (6) by means of a connection member (7).

Claims

1. A laundry dryer (1) comprising a body (2); and a drum (3) which is disposed in the body (2), which is suitable for loading laundry therein, and which has a cylindrical side wall (4) and a rear wall (5) covering the rear side of the side wall (4), **characterized by** a baffle (9) having
a retaining member (6) which is disposed on the drum (3) and
a movable member (8) which is rotatably connected to the retaining member (6) by means of a connection member (7), which can be moved between a first position wherein the movable member (8) extends almost perpendicularly to the rear wall (5) in the drum (3) and a second position wherein the movable member (8) extends parallel to the rear wall (5), and which is suitable for hanging hangers thereon when in the second position.

2. A laundry dryer (1) as in Claim 1, **characterized by** at least one housing (10) which is provided on the movable member (8) and which is suitable for placing hangers thereon.

3. A laundry dryer (1) as in any one of the above claims, **characterized by** a wedge (11) which is provided on the movable member (8), and a movement channel (12) which is provided on the retaining member (6), which allows the wedge (11) to be moved therein and which guides the rotational movement of the movable member (8) when connected to the retaining member (6).

4. A laundry dryer (1) as in Claim 3, **characterized by** a first wedge housing (13) which is provided on the retaining member (6), and a wedge (11) which, when the movable member (8) is in the first position, enters the first wedge housing (13) so as to lock the movable member (8) in the first position.

5. A laundry dryer (1) as in Claim 3 or 4, **characterized by** a second wedge housing (14) which is provided on the retaining member (6), which receives the wedge (11) when the movable member (8) is in the second position, and which enables the movable member (8) to be locked in the second position.

6. A laundry dryer (1) as in any one of Claim 3 to Claim 5, **characterized by** a spring (15) which is provided between the retaining member (6) and the movable member (8) and which applies a force onto the movable member (8) towards the retaining member (6).

7. A laundry dryer (1) as in any one of the above claims, **characterized by** a sensor (16) which is provided on the baffle (9) and which determines the position of the movable member (8).

8. A laundry dryer (1) as in any one of the above claims, **characterized by** a handle (17) which is provided on the movable member (8) and which enables the user to manually move the movable member (8).

9. A laundry dryer (1) as in any one of the above claims, **characterized by** a motor which is provided on the retaining member (6) and a motor shaft which is connected to the movable member (8) with one end and which transmits the rotational force of the motor to the movable member (8).

Figure 1

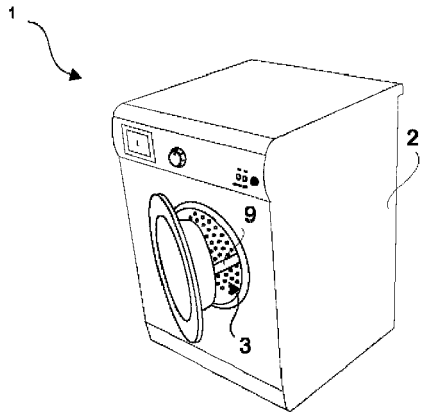


Figure 2

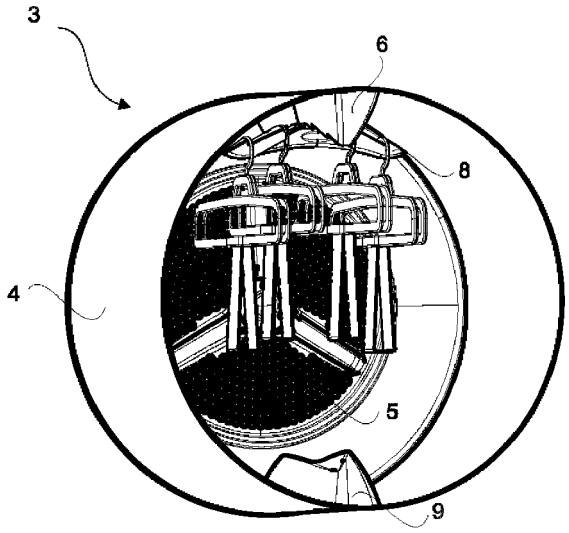


Figure 3

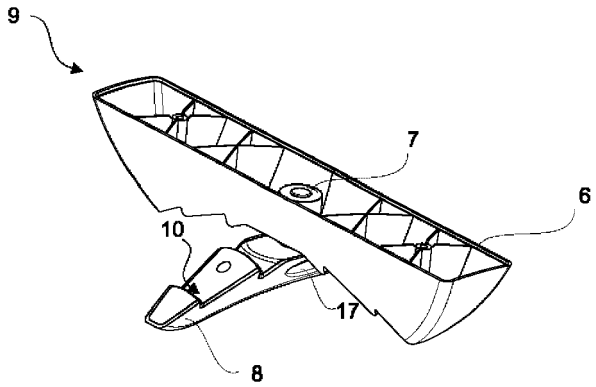


Figure 4

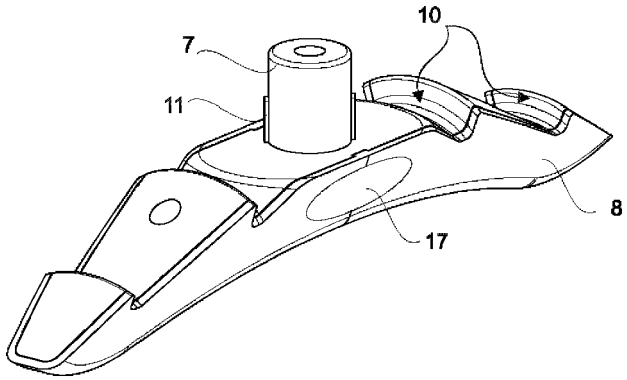


Figure 5

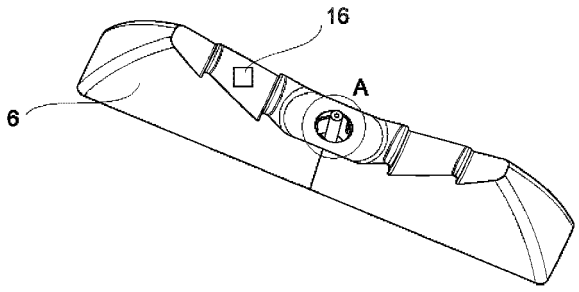


Figure 6

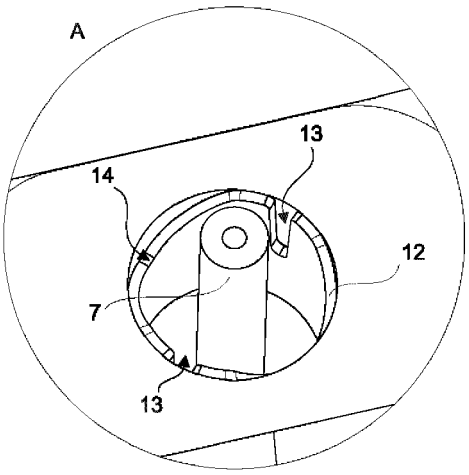


Figure 7

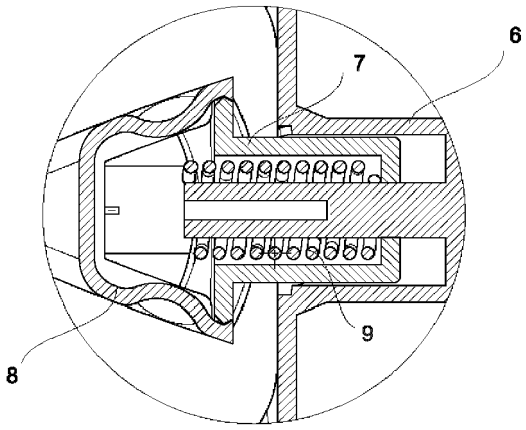
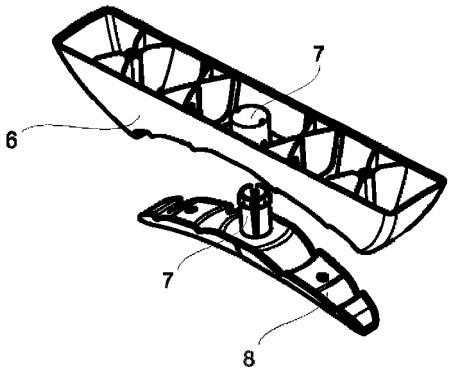


Figure 8



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EUROPEAN SEARCH REPORT

Application Number
EP 21 18 2229

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	KR 2010 0094726 A (LG ELECTRONICS INC [KR]) 27 August 2010 (2010-08-27) * paragraph [0041] - paragraph [0058]; figure 8 *	1-9	INV. D06F37/06 D06F58/04 ADD. D06F37/08 D06F95/00
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TECHNICAL FIELDS SEARCHED (IPC)
D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	10 November 2021	Diaz y Diaz-Caneja

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10-11-2021

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