

(19)



(11)

EP 2 764 153 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:

05.04.2017 Bulletin 2017/14

(51) Int Cl.:

D06F 58/24 ^(2006.01)

(86) International application number:

PCT/EP2012/068660

(21) Application number: **12766061.1**

(22) Date of filing: **21.09.2012**

(87) International publication number:

WO 2013/050263 (11.04.2013 Gazette 2013/15)

(54) **A LAUNDRY WASHING AND DRYING MACHINE COMPRISING A CONDENSER**

WASCHMASCHINE UND WÄSCHETROCKNER MIT EINEM KONDENSATOR

MACHINE À LAVER ET À SÉCHER LE LINGE COMPRENANT UN CONDENSEUR

(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**

(30) Priority: **07.10.2011 TR 201109970**

(43) Date of publication of application:

13.08.2014 Bulletin 2014/33

(73) Proprietor: **Arçelik Anonim Sirketi**

34950 Istanbul (TR)

(72) Inventors:

- **VATANSEVER Celal**
34950 Istanbul (TR)
- **CAGLAR Talip**
34950 Istanbul (TR)
- **DEMIRHAN Dogan**
34950 Istanbul (TR)
- **OZBEK Mehmet**
34950 Istanbul (TR)

(56) References cited:

EP-A1- 2 169 107 EP-A1- 2 372 012
US-A- 5 146 693

EP 2 764 153 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to a laundry washing and drying machine that comprises a condenser.

[0002] In laundry washing and drying machines, air-cooled condensers are widely used, which realize the condensation process by using the outer environment air in the drying process after washing. Humid air that comes from over the laundry and passes through the processing air duct is condensed in the condenser cooled by means of the outer environment air, thus the air that is dried by being dehumidified is sent again onto the laundry through the processing air duct. During the drying process, fibers and lints are formed as the result of laundry rubbing against each other or the drum and these leave the tub together with the drying air. The lints that form at the end of the drying cycle accumulate at various places of the condenser and the processing air pipe. The fibers and lints accumulate particularly at the tub outlet of the processing air pipe and the elbow portion of the condenser inlet and on the inner surfaces of the air channels inside the condenser. Water spraying devices are used for cleaning the fibers and lints however more than one water spraying device is required for cleaning the fibers and lints accumulating at more than one point thereby increasing costs and water consumption.

[0003] In the state of the art European Patent Application No. EP2169107, a spraying device is described, providing the condenser disposed in a dryer to be washed and thus cleaned of fiber and lint at the end of the drying process.

[0004] The aim of the present invention is the realization of a laundry washing and drying machine wherein the fibers and lints accumulating in the channels inside the condenser and the air ducts are provided to be cleaned.

[0005] The laundry washing and drying machine realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises an air duct wherein the processing air circulation in the drying process is performed, providing the laundry to be dried after the washing process, a condenser disposed on the air duct, having channels that extend in the flow direction of the processing air and a spraying device which is disposed at the condenser outlet wherefrom the processing air leaves the condenser so as to be opposite the channels and which provides the fibers and lints accumulating in the channels to be washed after the drying process. The condenser is disposed in an inclined manner at the upper side of the tub such that the level of the condenser inlet through which the processing air enters is above the level of the condenser outlet through which the processing air leaves.

[0006] The condenser channels extends in an inclined manner in the flow direction of the processing air from the condenser inlet towards the condenser outlet and the water condensed inside the channels during the drying process leaves the condenser by flowing downhill. The

water delivered into the channels from the spraying device after the drying process moves in the channels by flowing uphill, partially returning back due to inclination of the channels, flows downhill and leaves the condenser.

[0007] In an embodiment of the present invention, the condenser comprises a planar ceiling forming the upper surface of each channel and a planar base forming the lower surface of the channel and the spraying device comprises spraying nozzles called "flat nozzles" that deliver water between the ceiling and the base by forming a flat water beam. The spraying nozzles deliver water into the condenser with the same inclination as the channels or with a different inclination than the channels so that water impacts the ceiling of the channels.

[0008] In another embodiment of the present invention, the portions of the air duct, wherein processing air is conveyed, extending to the condenser inlet and condenser outlet above the tub is inclined in the same direction as the condenser and hence the channels.

[0009] In another embodiment of the present invention, bends are situated on the air duct at the sides of the condenser inlet and the tub outlet, and the spraying device is provided to spray water with enough pressure to reach the bend sections after traversing the condenser channels.

[0010] In another embodiment of the present invention, the laundry washing and drying machine comprises a reservoir disposed on the air duct wherein the condensate water draining from the condenser and the water delivered to the condenser from the spraying device which partially returns due to inclination is collected and a discharge line providing the water in the reservoir to be discharged.

[0011] In the laundry washing and drying machine of the present invention, a gain in terms of space is obtained by disposing the condenser in an inclined manner at the upper side of the tub, furthermore the water condensed in the channels and the water delivered from the spraying device are provided to drain from the channels downhill since the condenser and hence the channels therein are inclined, the condensation efficiency of the condenser is increased, the fibers and lints accumulating in the condenser channels and especially in the bend portions are cleaned effectively by a single spraying device and by consuming a small amount of water.

[0012] The laundry washing and drying machine realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 - is the schematic view of a laundry washing and drying machine.

Figure 2 - is the schematic view of a condenser and a spraying device delivering water unto the condenser.

[0013] The elements illustrated in the figures are numbered as follows:

1. Laundry washing and drying machine
2. Drum
3. Tub
4. Air duct
5. Fan
6. Channel
7. Condenser
8. Tub outlet
9. Condenser inlet
10. Condenser outlet
11. Spraying device
12. Ceiling
13. Base
14. Spraying nozzle
15. , 115. Bend
16. Reservoir
17. Discharge line

[0014] The laundry washing and drying machine (1) comprises a body, a drum (2) wherein laundry is placed, rotating around the horizontal axis, a cylindrical tub (3) wherein the drum (2) moves, an air duct (4) wherein circulation of the processing air (PA) providing the drying of the laundry in the drying process after the washing process is performed, a fan (5) that provides the processing air (PA) to move in the air duct (4), a condenser (7) disposed above the air duct (4), having at least one channel (6) wherein the processing air (PA) passing there-through is condensed, a tub outlet (8) wherefrom the air duct (4) is connected to the tub (3), providing the processing air (PA) to be delivered from the tub (3) to the condenser (7), a condenser inlet (9) and a condenser outlet (10) wherefrom the air duct (4) is connected to the condenser (7) and a spraying device (11) connected to the water mains, disposed at the condenser outlet (10) opposite the channels (6) and which provides the fibers and lints accumulating in the channels (6) to be cleaned by delivering water into the channels (6) after the drying process.

[0015] The laundry washing and drying machine (1) of the present invention comprises the condenser (7) disposed in an inclined manner at the upper side of the tub (3) such that the condenser inlet (9) level is higher than the condenser outlet (10) level (Figure 1).

[0016] Since the tub (3) is configured to be cylindrical and with horizontal axis, there are spaces between the upper wall of the tub (3) and the ceiling of the laundry washing and drying machine (1) body and these spaces are utilized by disposing the condenser (7) at the upper side of the tub (3).

[0017] In an embodiment of the present invention, the condenser (7) has channels (6), extending in an inclined manner from the condenser inlet (9) towards the condenser outlet (10) in the flow direction of the processing air (PA), which provide the water condensed therein during the drying process to flow downhill and the water delivered therein by the spraying device (11) after the drying process to flow uphill countering gravity and to leave the

condenser (7) by partially flowing downhill.

[0018] In the laundry washing and drying machine (1), during the drying process, the processing air (PA) passing over the laundry and becoming humid is delivered into the condenser (7) above the tub (3) by passing from the tub outlet (8) by means of the air duct (4) and is condensed by passing through the channels (6) in the condenser (7). The condensate water collected in the channels (6) moves downhill inside the channels (6) by the inclination of the channels (6) and the effect of the processing air (PA), flows from the condenser outlet (10) to the air duct (4) and is discharged afterwards. Since the water condensed in the channels (6) flows in the same direction as the processing air (PA), it does not form resistance against the processing air (PA) flow. During the drying process, the fibers and lints formed as the result of the laundry rubbing against the drum (2) and each other pass through the tub outlet (8), being conveyed by the processing air (PA), is carried upwards from the air duct (4) and accumulate in the channels (6) inside the condenser (7). The spraying device (11) is operated for cleaning the fibers and lints at the end of the drying process. The water delivered by the spraying device (11) from the condenser outlet (10) provides the channels (6) inside the condenser (7) to be cleaned of fibers and lints. The water delivered by the spraying device (11) moves uphill from the lower end of the channels (6) at the condenser outlet (10) towards the upper end thereof at the condenser inlet (9), traversing all along the channels (6), flowing from the condenser inlet (9) to the air duct (4) and from here to the tub (3) and is discharged afterwards.

[0019] In another embodiment of the present invention, the condenser (7) comprises a planar ceiling (12) forming the upper surface of each channel (6) and a planar base (13) forming the lower surface of each channel (6) and the spraying device (11) comprises at least one spraying nozzle (14) called the "flat nozzle" that delivers water between the ceiling (12) and the base (13) by forming a flat water beam.

[0020] In another embodiment of the present invention, the spraying device (11) comprises spraying nozzles (14) that deliver water with the same inclination as the channels (6) (Figure 1). In this embodiment, the water delivered from the spraying nozzles (14) moves uphill in the channels (6) and a large amount of the water flows into the air duct (4) by leaving from the condenser inlet (9).

[0021] In another embodiment of the present invention, the spraying device (11) comprises spraying nozzles (14) that are positioned in an upward inclination such that water is delivered to the ceiling (12) of the channels (6) (Figure 2). In this embodiment, the water beam leaving the spraying nozzles (14) cleans the channels (6) by first impacting the ceiling (12) of the channels (6). A larger portion of the water delivered from the spraying device (11) moves uphill in the channels (6) and flows into the air duct (4) from the condenser inlet (9). Some portion of the water impacting the ceiling (12) of the channels (6) falls on the base (13) with the gravity effect and moves

downhill in the direction opposite to the direction delivered by the spraying device (11) due to inclination of the channels (6) and flows into the air duct (4) from the condenser inlet (10) by flushing the base (13) (Figure 2).

[0022] In another embodiment of the present invention, the portions of the air duct (4) extending to the condenser inlet (9) and the condenser outlet (10) at the upper side of the tub (3) are inclined in the same direction as the condenser (7) and the channels (6) (Figure 1). Thus, the resistance formed structurally by the air duct (4) against the flow of the processing air (PA) at the upper side of the tub (3) is decreased.

[0023] In another embodiment of the present invention, the laundry washing and drying machine (1) comprises a first bend (15) disposed at the condenser inlet (9) side of the air duct (4), a second bend (115) disposed at the tub outlet (8) side of the air duct (4), at the lower side of the first bend (15), and the pressure of the water delivered by the spraying device (11) is adjusted such that the channels (6) and the bends (15, 115) are washed sequentially. Consequently, the channels (6) and the bends (15, 115) wherein the fibers and lints accumulate densely are washed by using a single spraying device (11).

[0024] In another embodiment of the present invention, the laundry washing and drying machine (1) comprises a reservoir (16) disposed on the air duct (4), at the condenser outlet (10) side of the air duct (4), wherein the condensate water drained from the condenser (7) and the fiber and lint cleaning water delivered from the spraying device (11) to the condenser (7), that partially returns back due to inclination of the condenser (7) are collected and a discharge line (17) that provides the water in the reservoir (16) to be discharged.

[0025] In the laundry washing and drying machine (1) of the present invention, space is gained by disposing the condenser (7) in an inclined manner at the upper side of the tub (3) and utilizing the spaces at the upper side of the tub (3). The condenser (7) channels (6) being inclined provides the water condensed in the channels (6) and the water delivered from the spraying device (11) for cleaning the fibers and lints to flow downhill, dripping off from the channels (6), the condensation efficiency of the condenser (7) is increased, the fibers and lints accumulating in the condenser (7) channels (6) and the bends (15, 115) in the air duct (4) can be cleaned effectively by consuming a small amount of water.

[0026] 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 laundry washing and drying machine (1) comprising a drum (2) wherein laundry is placed, a tub (3)

wherein the drum (2) moves, an air duct (4) wherein circulation of the processing air (PA) providing the drying of the laundry in the drying process after the washing process is performed, a condenser (7) disposed on the air duct (4), having at least one channel (6) wherein the processing air (PA) passing there-through is condensed, a tub outlet (8) wherefrom the air duct (4) is connected to the tub (3), providing the processing air (PA) to be delivered from the tub (3) to the condenser (7), a condenser inlet (9) and a condenser outlet (10) wherefrom the air duct (4) is connected to the condenser (7) and a spraying device (11) disposed at the condenser outlet (10) opposite the channels (6) which provides the fibers and lints by delivering water into the channels (6) to be cleaned, **characterized by** the condenser (7) disposed in an inclined manner at the upper side of the tub (3) such that the condenser inlet (9) level is higher than the condenser outlet (10) level.

2. A laundry washing and drying machine (1) as in Claim 1, **characterized by** the condenser (7) having channels (6) that extend in an inclined manner from the condenser inlet (9) towards the condenser outlet (10) in the flow direction of the processing air (PA), providing the water condensed therein during the drying process to flow downhill and the water delivered therein by the spraying device (11) after the drying process to flow uphill and to leave the condenser (7) by partially flowing downhill.
3. A laundry washing and drying machine (1) as in Claim 1 or 2, **characterized by** the condenser (7) comprising a planar ceiling (12) forming the upper surface of each channel (6) and a planar base (13) forming the lower surface of each channel (6) and by the spraying device (11) comprising at least one spraying nozzle (14) that delivers water between the ceiling (12) and the base (13).
4. A laundry washing and drying machine (1) as in Claim 3, **characterized by** the water spraying device (11) comprising spraying nozzles (14) that deliver water with the same inclination as the channels (6).
5. A laundry washing and drying machine (1) as in Claim 3, **characterized by** the water spraying device (11) comprising the spraying nozzles (14) that are positioned to be in an upward inclination such that water is delivered to the ceiling (12) of the channels (6).
6. A laundry washing and drying machine (1) as in any one of the above Claims, **characterized by** the air duct (4) of which the portions extending to the condenser inlet (9) and the condenser outlet (10) at the upper side of the tub (3) are inclined in the same direction as the condenser (7) and the channels (6).

7. A laundry washing and drying machine (1) as in any one of the above Claims, **characterized by** a first bend (15) disposed at the condenser inlet (9) side of the air duct (4), a second bend (115) disposed at the tub outlet (8) side of the air duct (4), at the lower side of the first bend (15) and the spraying device (11) whereby the pressure of the water delivered is adjusted such that the channels (6) and the bends (15, 115) are washed sequentially.
8. A laundry washing and drying machine (1) as in any one of the above Claims, **characterized by** a reservoir (16) disposed on the air duct (4), wherein the condensate water drained from the condenser (7) and the water delivered from the spraying device (11) to the condenser (7), that partially returns back are collected and a discharge line (17) that provides the water in the reservoir (16) to be discharged.

Patentansprüche

1. Wäschewasch- und -trockenmaschine (1), umfassend eine Trommel (2), in die Wäsche gegeben wird, einen Wasch- und Trockenbehälter (3), in dem sich die Trommel (2) bewegt, eine Luftleitung (4), in der die Zirkulation von Prozessluft (PA) durchgeführt wird, die das Trocknen der Wäsche im Trocknungsvorgang nach dem Waschvorgang ermöglicht, einen Kondensator (7), der in der Luftleitung (4) angeordnet ist und wenigstens einen Kanal (6) aufweist, in dem die durch ihn hindurch tretende Prozessluft (PA) kondensiert wird, einen Wasch- und Trockenbehälterauslass (8), von dem aus die Luftleitung (4) mit dem Wasch- und Trockenbehälter (3) verbunden ist und der dafür sorgt, dass die Prozessluft (PA) vom Wasch- und Trockenbehälter (3) an den Kondensator (7) geleitet wird, einen Kondensatoreinlass (9) und einen Kondensatorauslass (10), von dem aus die Luftleitung (4) mit dem Kondensator (7) verbunden ist, und eine Sprühvorrichtung (11), die an dem Kondensatorauslass (10) gegenüber den Kanälen (6) angeordnet ist und dafür sorgt, dass die Fasern und Flusen beseitigt werden, indem sie den reinigenden Kanäle (6) Wasser zuführt, **dadurch gekennzeichnet, dass** der Kondensator (7) geneigt an der Oberseite des Wasch- und Trockenbehälters (3) angeordnet ist, derart, dass die Höhe des Kondensatoreinlasses (9) über der Höhe des Kondensatorauslasses (10) ist.
2. Wäschewasch- und -trockenmaschine (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Kondensator (7) Kanäle (6) aufweist, die sich geneigt in Strömungsrichtung der Prozessluft (PA) von dem Kondensatoreinlass (9) zum Kondensatorauslass (10) erstrecken und dafür sorgen, dass Wasser, das während des Trocknungsvorgangs darin kondensiert wird, abwärts fließt, und Wasser, das ihnen nach dem Trocknungsvorgang durch die Sprühvorrichtung (11) zugeführt wird, nach oben fließt und den Kondensator (7) verlässt, indem es teilweise abwärts fließt.
3. Wäschewasch- und -trockenmaschine (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Kondensator (7) eine ebenflächige Decke (12), die die Oberseitenfläche jedes Kanals (6) bildet, und eine ebenflächige Basis (13) umfasst, die die Unterseitenfläche jedes Kanals (6) bildet, und **dass** die Sprühvorrichtung (11) wenigstens eine Sprühdüse (14) umfasst, die Wasser zwischen der Decke (12) und der Basis (13) zuführt.
4. Wäschewasch- und -trockenmaschine (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** die Wassersprühvorrichtung (11) Sprühdüsen (14) umfasst, die Wasser in derselben Neigung wie die Kanäle (6) zuführen.
5. Wäschewasch- und -trockenmaschine (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** die Wassersprühvorrichtung (11) Sprühdüsen (14) umfasst, die derart positioniert sind, dass sie in einer Aufwärtsneigung sind, derart, dass das Wasser der Decke (12) der Kanäle (6) zugeführt wird.
6. Wäschewasch- und -trockenmaschine (1) nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Abschnitte der Luftleitung (4), die sich zum Kondensatoreinlass (9) und zum Kondensatorauslass (10) an der Oberseite des Wasch- und Trockenbehälters (3) erstrecken, in dieselbe Richtung wie der Kondensator (7) und die Kanäle (6) geneigt sind.
7. Wäschewasch- und -trockenmaschine (1) nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** eine erste Biegung (15), die auf der Seite des Kondensatoreinlasses (9) der Luftleitung (4) angeordnet ist, eine zweite Biegung (115), die auf der Seite des Wasch- und Trockenbehälterauslasses (8) der Luftleitung (4) an der Unterseite der ersten Biegung (15) angeordnet ist, und **dadurch**, dass bei der Sprühvorrichtung (11) der Druck des zugeführten Wassers angepasst wird, derart, dass die Kanäle (6) und die Biegungen (15, 115) nacheinander gewaschen werden.
8. Wäschewasch- und -trockenmaschine (1) nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** einen Behälter (16), der an der Luftleitung (4) angeordnet ist und in dem das aus dem Kondensator (7) abgelassene Kondensatwasser und das von der Sprühvorrichtung (11) dem Kondensator (7) zugeführte Wasser, das teilweise zurückfließt, auf-

gefangen wird, und eine Ablassleitung (17), die dafür sorgt, dass das Wasser im Behälter (16) abgelassen wird.

Revendications

1. Une lavante-séchante (1) comprenant un tambour (2) où le linge est placé, une cuve (3) dans laquelle le tambour (2) se déplace, un conduit d'air (4) dans lequel où la circulation de l'air de processus (PA) permettant le séchage du linge est effectuée au processus de séchage après le processus de lavage, un condenseur (7) qui est disposé sur le conduit d'air (4) et qui présente au moins un canal (6) où l'air de processus (PA) passant à travers celui-ci est condensé, une sortie de cuve (8) par laquelle le conduit d'air (4) est relié à la cuve (3) et qui permet à l'air de processus (PA) d'être délivré à partir de la cuve (3) au condenseur (7), une entrée de condenseur (9) et une sortie de condenseur (10) par lesquelles le conduit d'air (4) est relié au condenseur (7) et un dispositif de pulvérisation (11) qui est disposé à la sortie de condenseur (10) à l'opposé des canaux (6) et qui permet le nettoyage des fibres et des peluches en pulvérisant de l'eau dans les canaux (6), **caractérisée par** le condenseur (7) qui est disposé de manière inclinée au côté supérieur de la cuve (3) de telle sorte que le niveau de l'entrée de condenseur (9) est plus haut que le niveau de la sortie de condenseur (10). 10
2. Une lavante-séchante (1) selon la Revendication 1, **caractérisée par** le condenseur (7) qui présente des canaux (6) qui s'étendent de manière inclinée à partir de l'entrée de condenseur (9) vers la sortie de condenseur (10) dans la direction d'écoulement de l'air de processus (PA), donc permettant à l'eau y condensée pendant le processus de séchage d'écouler vers le bas et à l'eau y délivrée par le dispositif de pulvérisation (11) après le processus de séchage d'écouler en montée et de sortir du condensateur (7) en écoulant partiellement vers le bas. 15
3. Une lavante-séchante (1) selon la Revendication 1 ou 2, **caractérisée par** le condenseur (7) comprenant un plafond plan (12) qui forme la surface supérieure de chaque canal (6) et une base plane (13) qui forme la surface inférieure de chaque canal (6) et **par** le dispositif de pulvérisation (11) comprenant au moins une buse de pulvérisation (14) qui délivre de l'eau entre le plafond (12) et la base (13). 20
4. Une lavante-séchante (1) selon la Revendication 3, **caractérisée par** le dispositif de pulvérisation d'eau (11) comprend des buses de pulvérisation (14) qui délivrent de l'eau avec la même inclinaison que les canaux (6). 25

5. Une lavante-séchante (1) selon la Revendication 3, **caractérisée par** le dispositif de pulvérisation d'eau (11) comprend les buses de pulvérisation (14) qui sont positionnées de manière à être inclinée vers le haut de telle sorte que l'eau est délivrée au plafond (12) des canaux (6). 30
6. Une lavante-séchante (1) selon l'une quelconque des revendications précédentes, **caractérisée par** le conduit d'air (4) dont les parties s'étendant vers l'entrée de condenseur (9) et la sortie de condenseur (10) au côté supérieur de la cuve (3) sont inclinées dans la même direction que le condenseur (7) et les canaux (6). 35
7. Une lavante-séchante (1) selon l'une quelconque des revendications précédentes, **caractérisée par** un premier coude (15) qui est disposé au côté du conduit d'air (4) où l'entrée de condenseur (9) est située, un deuxième coude (115) qui est disposé au côté du conduit d'air (4) où la sortie de la cuve (8) est située, au-dessous du premier coude (15), et le dispositif de pulvérisation (11) par lequel la pression de l'eau distribuée est réglée de telle sorte que les canaux (6) et les coudes (15, 115) sont lavés séquentiellement. 40
8. Une lavante-séchante (1) selon l'une quelconque des revendications précédentes, **caractérisée par** un réservoir (16) qui est disposé sur le conduit d'air (4), où l'eau de condensation évacuée du condenseur (7) et l'eau délivrée du dispositif de pulvérisation (11) au condenseur (7) qui retourne partiellement sont accumulées et une ligne de décharge (17) qui permet le déchargement de l'eau dans le réservoir (16). 45

Figure 1

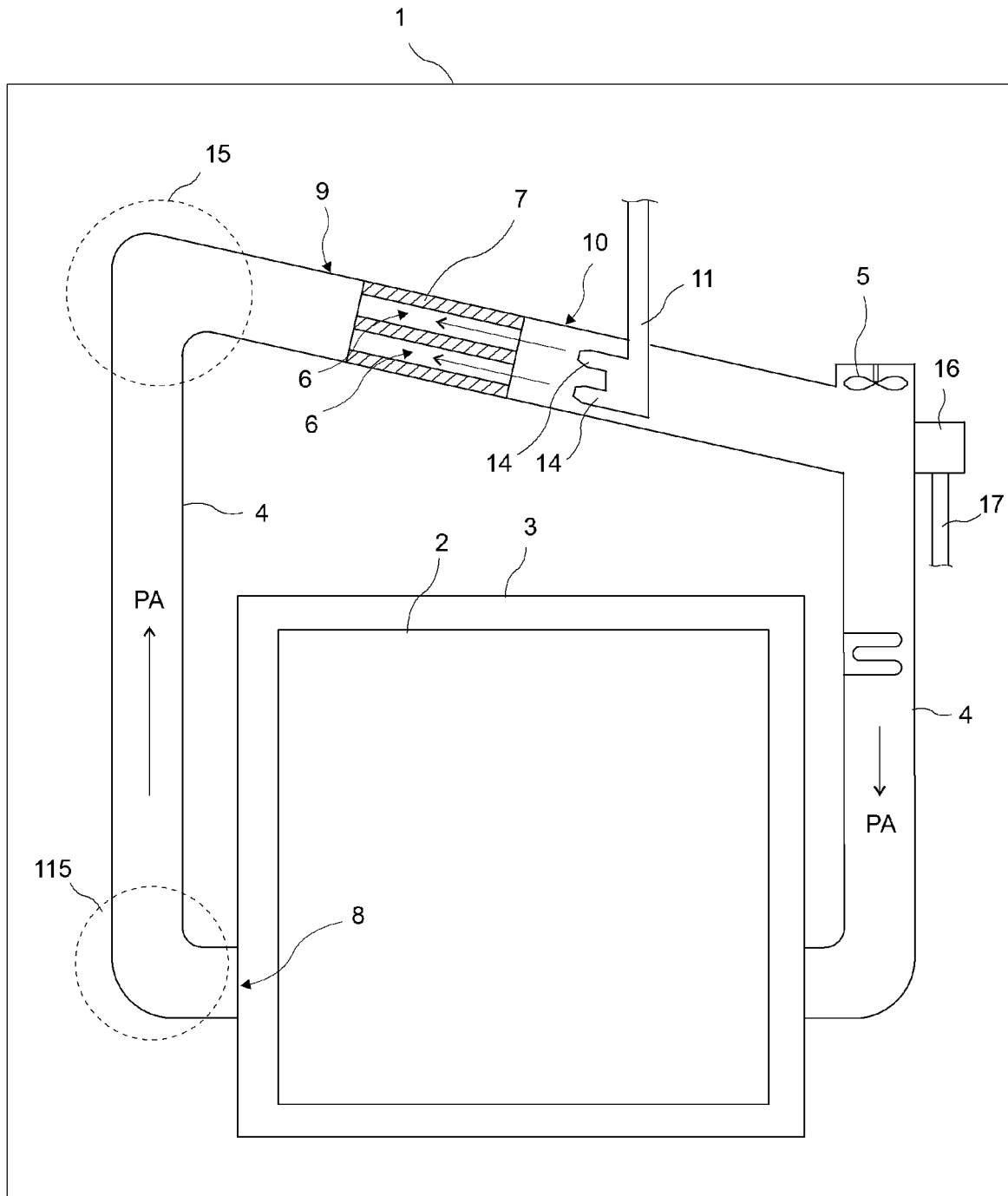
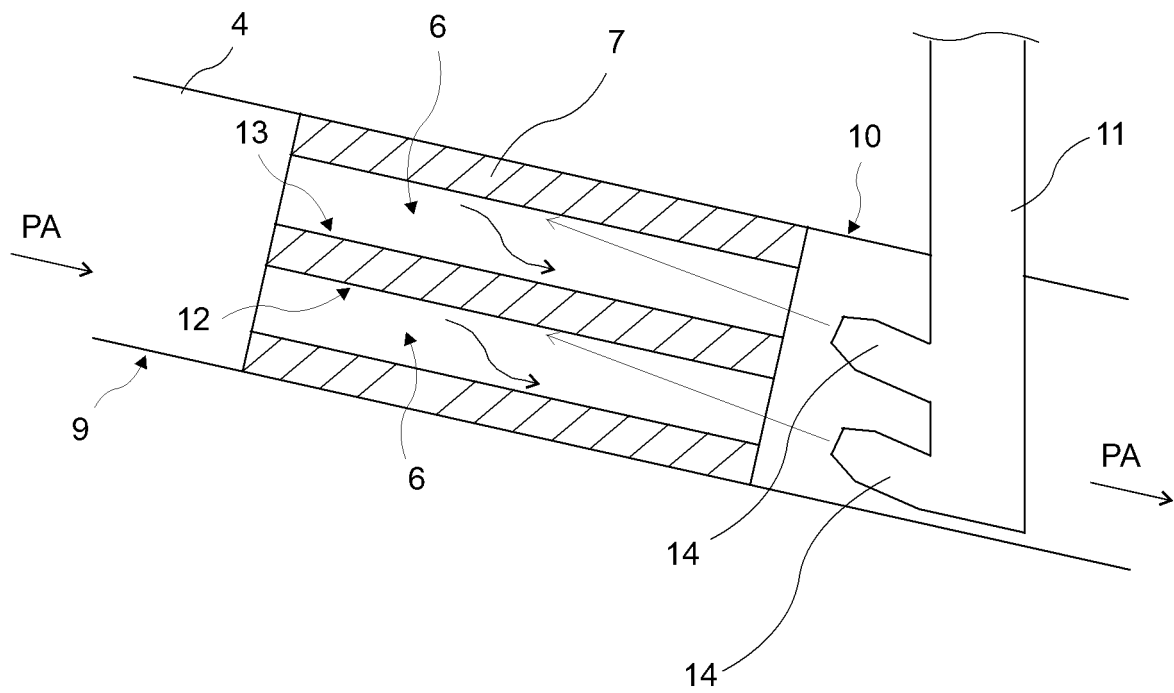


Figure 2



REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 2169107 A [0003]