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(54) **DISHWASHER HAVING AN OVERFLOW SIPHON**

GESCHIRRSPÜLMASCHINE MIT ÜBERLAUFSIPHON

LAVE-VAISSELLE COMPORTANT UN SIPHON DE DÉBORDEMENT

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Description

[0001] The present invention relates to a dishwasher having an overflow siphon. The present invention particularly relates to an overflow siphon for draining excess water from a washing tub into a reservoir which is arranged under the washing tub.

[0002] The washing tub of a dishwasher is generally filled with a requisite amount of fresh water for cleaning the dishes. Several methods of filling a washing tub with water are known. In a commonly used technique, the water level inside the washing tub is monitored by a level sensor which is arranged within the washing tub. In another commonly used technique, the water level inside the washing tub is monitored by a flow sensor arranged along a water intake line.

[0003] A problem with a water filling process is that the sensors and/or the water intake valves can fail to function properly. In such cases, the washing tub is filled with an excessive amount of water. The excess water usually runs off the washing tub and causes serious damages.

[0004] Several methods have been devised to drain the excess water away from the washing tub. In a commonly used technique, the water level in the washing tub is monitored by a presostat. If the water level exceeds a predetermined level, a discharge motor is activated to drain off the excess water. However, the use of a presostat renders the drainage system susceptible to disturbances. Therefore, a reliable drainage method must be used. In another commonly used technique, the washing tub is provided with an overflow siphon for conducting the excess water into a reservoir which is arranged under the washing tub. The overflow siphon is arranged to fluidly connect the washing tub with the reservoir. If the water level exceeds a predetermined level, the excess water is conducted via the overflow siphon into the reservoir. The reservoir is typically provided with a buoy which activates a discharge motor for draining off the excess water collected in the reservoir.

[0005] DE 39 30 578 A1 discloses a dishwasher which has a drain hose for draining the excess water from a washing tub into a bottom tray. The drain hose has an inlet and an outlet. The inlet is fitted to an overflow channel. The excess water runs off into the overflow channel through a cut-out in the washing tub. The outlet opens into the bottom tray. The overflow channel is clamped between an outer side wall of the dishwasher and a cross member which supports the washing tub.

[0006] In general, it is important that the drainage system is leak-tight to prevent water from flowing to an outside of the dishwasher. However, a leak-tight drainage system can only be attained if all of its components are adequately mounted to the dishwasher. The drainage components are usually vulnerable to misalignments and relative displacements during the clamping work.

[0007] An objective of the present invention is to provide a dishwasher comprising an overflow siphon which overcomes the aforementioned problems of the prior art

and which the overflow siphon can be easily and reliably installed for an initial operation of the dishwasher or uninstalled for servicing the dishwasher.

[0008] This objective has been achieved by the overflow siphon according to the present invention as defined in claim 1. Further achievements have been attained by the subject-matters respectively defined in the dependent claims.

[0009] The overflow siphon of the present invention is configured by a duct which has a first engagement means for aligning and detachably attaching the same directly to its designated attachment position on one of the front feet. The duct has an inlet that adjoins a lower edge of an opening of the washing tub to define an overflow path that fluidly connects the washing tub with the duct. The duct has an outlet that opens into a reservoir for collecting the excess water. Thereby, the overflow siphon can be easily and reliably installed into the dishwasher.

[0010] The first engagement means is provided on a lateral wall portion of the duct. The overflow siphon can be aligned and attached to the front foot by way of a lateral engagement. Thereby, a sufficient amount of working space is secured for installing or uninstalling the overflow siphon.

[0011] In an embodiment, the first engagement means rotatably engages the duct with the front foot. The duct is resiliently arrested to the front foot when it is rotatably aligned to its designated attachment position. Thereby, an installation of the overflow siphon is further improved. Thus, the overflow siphon is prevented from being misaligned or displaced.

[0012] In an alternative embodiment, the first engagement means has one or more than one snap-fit element which resiliently and detachably engages the duct with the front foot. In this embodiment, the overflow siphon can be aligned and attached to the front foot as before by way of a lateral engagement. However, in this embodiment, the overflow siphon need not be rotated for an alignment and can be immediately attached to the front foot at its designated attachment position.

[0013] In another embodiment, the overflow siphon has a second engagement means for positioning and preliminarily arresting a frontal reinforcement bracket which is utilized for supporting the washing tub. The second engagement means facilitates proper positioning of the frontal reinforcement bracket when mounting the same to the front feet. However, the installation of the overflow siphon is performed separately and prior to an installation of the frontal reinforcement bracket. Thereby, the overflow siphon can be easily serviced.

[0014] The dishwasher according to the present invention may have one or more than one overflow siphon. Thereby, the excess water can be rapidly drained off before it runs off the washing tub.

[0015] In another embodiment, the washing tub has one or more than one downwardly bending cove-shaped lip which adjoins the inlet to define a smooth overflow path that fluidly connects the washing tub with a respec-

tive duct of the overflow siphon. Thereby, a flow path between the washing tub and the duct is further improved.

[0016] In another embodiment, a door of the washing tub is configured to open/close without interfering with the frontal reinforcement bracket. Thereby, the overflow siphons can be uninstalled for servicing without demounting the door.

[0017] The overflow siphon of the present invention can be easily and reliably installed into the dishwasher. Especially, an alignment and an attachment of the overflow siphon to the dishwasher has been facilitated. Thereby, the overflow siphon is prevented from being misaligned and displaced during an installation as well as after an installation, for example when the dishwasher is transported or the like. Hence, a leak-tight installation and a proper operation of the drainage system is safeguarded. In addition, the overflow siphon can be easily uninstalled for servicing. Most importantly, a frontal reinforcement bracket can be separately and independently uninstalled without jeopardizing the leaktightness of the overflow siphon. Moreover, a sufficient amount of working space for installing/uninstalling the overflow siphon has been secured. Thus, the overflow siphons can be uninstalled for servicing the dishwasher even without demounting the door. The overflow siphon of the present invention enables a compact drainage system which is highly fail-safe and cost effective.

[0018] Additional advantages of the overflow siphon and the dishwasher according to the present invention will become apparent with the detailed description of the embodiments with reference to the accompanying drawings in which:

Figure 1 - is a schematic perspective partial view of a dishwasher having two overflow siphons according to an embodiment of the present invention.

Figure 2 - is an enlarged schematic perspective partial view of the dishwasher shown in Fig. 1.

Figure 3 - is another schematic partial perspective view of the dishwasher having two overflow siphons according to an embodiment of the present invention.

Figure 4 - is an enlarged schematic perspective partial view of the dishwasher shown in Fig. 3.

Figure 5 - is an enlarged schematic perspective partial view of the dishwasher shown in Fig. 2, prior to aligning and attaching the overflow siphon to a front foot.

Figure 6 - is an enlarged schematic perspective partial view of the dishwasher shown in Fig. 5, prior to rotating the overflow siphon.

Figure 7 - is an enlarged schematic perspective partial view of the dishwasher shown in Fig. 6, while rotating the overflow siphon to its designated attachment position.

Figure 8 - is an enlarged schematic perspective partial view of the dishwasher shown in Fig. 7, when the overflow siphon is aligned and attached to the front

foot at its designated attachment position.

Figure 9 - is an enlarged schematic perspective partial view of a dishwasher having an overflow siphon according to another embodiment of the present invention.

[0019] The reference signs appearing on the drawings relate to the following technical features.

- | | | |
|----|------|---------------------------|
| 10 | 1. | Siphon |
| | 2. | Dishwasher |
| | 3. | Tub |
| | 4. | Hinge |
| | 5. | Foot |
| 15 | 6. | Duct |
| | 7. | Inlet |
| | 8. | Outlet |
| | 9. | Edge |
| | 10a. | Lateral wall portion |
| 20 | 10b. | Upper wall portion |
| | 10c. | Lower wall portion |
| | 11. | First projecting portion |
| | 12. | Flange |
| | 13. | First aperture |
| 25 | 14. | Second projecting portion |
| | 15. | Second aperture |
| | 16. | Snap-fit element |
| | 17. | Bracket |
| | 18. | Lip |
| 30 | 19. | Base |
| | 20. | Plate |

[0020] The overflow siphon (1) is suitable for use in a dishwasher (2) for draining excess water (Figs. 1 to 4).

35 The dishwasher (2) includes a washing tub (3) for receiving dishes to be cleaned. The washing tub (3) has an opening for loading or unloading the dishes. The dishwasher (2) further includes a plurality of feet (5) for supporting the washing tub (3). A reservoir (not shown) is arranged under the washing tub (3) for collecting the excess water filled into the washing tub (3). The overflow siphon (1) is formed by a duct (6) which has an inlet (7) and an outlet (8) (Figs. 5 to 9). The outlet (8) is fluidly connected to the inlet (7). The inlet (7) draws the excess water from the washing tub (3). The outlet (8) drains the excess water into the reservoir.

45 **[0021]** The overflow siphon (1) according to the present invention has a first engagement means which is configured to align and detachably attach the duct (6) directly to one of a front foot (5) at its designated attachment position (Figs. 8 and 9). When the overflow siphon (1) is at its designated attachment position, the inlet (7) adjoins a lower edge (9) of the opening of the washing tub (3) to define an overflow path that fluidly connects the washing tub (3) with the duct (6), and the outlet (8) opens into the reservoir. Thereby, the overflow siphon (1) can be easily and reliably installed into the dishwasher (2).

[0022] In an embodiment, the duct (6) is formed by two lateral wall portions (10a), an upper wall portion (10b), and a lower wall portion (10c) (Figs. 5 to 9). The lateral wall portions (10a) respectively oppose the inner sides of the front feet (5). The upper wall portion (10b) opposes a lower side of the washing tub (3). In this embodiment, the first engagement means is formed on a lateral wall portion (10a) of the duct (6) (Figs. 5 to 9). The overflow siphon (1) can be aligned and attached to the front foot (5) by way of a lateral engagement. Thereby, a sufficient amount of working space for installing the overflow siphon (1) is secured.

[0023] In another embodiment, the first engagement means has a first section and second section. The first section is configured to rotatably engage the duct (6) with one of the front feet (5) (Figs. 5 to 8). The second section is configured to arrest the duct (6) to the same front foot (5) when the duct (6) is rotatably aligned to its designated attachment position. Thereby, both the alignment step and the attachment step are further facilitated. Consequently, the overflow siphon (1) is prevented from being misaligned or displaced.

[0024] In another embodiment, the first section has a first projecting portion (11) (Fig. 5). The first projecting portion (11) has a flange (12) which is insertable through a first aperture (13) formed on the front foot (5) (Figs. 5 to 8). In this embodiment, the second section has a second projecting portion (14) which resiliently snaps into a second aperture (15) formed on the front foot (5) (Figs. 5 to 8).

[0025] In another embodiment, both the flange (12) and the first aperture (13) have non-circular shapes (Figs. 5 to 8). The flange (12) partially overlaps, in an axial direction a surrounding portion of the first aperture (13) when the duct (6) is rotated to its designated attachment position (Figs. 7 and 8). Thereby, a rotating flange lock is attained which allows releasing or arresting the overflow siphon (1).

[0026] In an alternative embodiment, the first engagement means has one or more than one snap-fit element (16) which resiliently and detachably engages the duct (6) with the front foot (5) (Fig. 9). The overflow siphon (1) can be aligned and attached to the front foot (5) as before by way of a lateral engagement. However, in this embodiment, the overflow siphon (1) need not be rotated when aligning and attaching to the front foot (5) at its designated attachment position. As before, a sufficient amount of working space is secured for installing/uninstalling the overflow siphon (1).

[0027] In another embodiment, the overflow siphon (1) has, in addition to the first engagement means, a second engagement means. The second engagement means is utilized for positioning and preliminarily arresting a frontal reinforcement bracket (17) (Figs. 1 to 4). The frontal reinforcement bracket (17) is utilized for supporting the washing tub (3). The frontal reinforcement bracket (17) is to be arranged across the two front feet (5) and underneath the washing tub (3). When assembling the dish-

washer (2), the overflow siphon is initially aligned and attached to a front foot (5). As next, the frontal reinforcement bracket (17) is mounted the two front feet (5) and underneath the washing tub (3). Thereby, the installation of the over flow siphon (1) is performed separately from the frontal reinforcement bracket (17). However, the second engagement means facilitates proper positioning of the frontal reinforcement bracket (17) when mounting the latter to the front feet (5).

[0028] In another embodiment, the second engagement means is provided on the lower wall portion (10c) of the duct (6) so as to oppose an upper surface of the frontal reinforcement bracket (17) (Figs. 1 to 4).

[0029] In another embodiment, the duct (6) has a rectangular cross section. The cross section of the duct (6) gradually increases towards an opening of the inlet (7) (Figs. 1 to 9). Thereby a wide overflow path is attained.

[0030] The dishwasher (2) according to the present invention may have one or more than one overflow siphon (1). Thereby, the excess water can be rapidly drained off.

[0031] In an embodiment of the dishwasher (2), two overflow siphons (1) are respectively attached to each one of the two front feet (5) (Figs. 1 to 4). The overflow siphons (1) respectively adjoin the left and right lower edges (9) of the opening (4) of the washing tub (3) which are close to the side walls of the dishwasher. Thereby, the excess water is quickly and reliably drained off even when the dishwasher is not horizontally installed.

[0032] In another embodiment, a lower edge (9) of the opening of the washing tub (3) has one or more than one downwardly bending cove-shaped lip (18) (Figs. 5 to 7). Each of the lips (18) defines an overflow path that fluidly connects the washing tub (3) with a respective duct (6). In this embodiment, the inlet (7) is arranged to adjoin a respective lip (18) (Figs. 1 to 9). The lip (18) bends into the inlet (17).

[0033] In another embodiment, each of the front feet (5) is configured by a height adjustable base (19) and a lateral reinforcement plate (20) (Figs. 1 to 9). In this embodiment, the lateral reinforcement plates (20) are respectively arranged on the lateral side of the washing tub (3). Each of the lateral reinforcement plate (20) firmly connects the washing tub (3) to the base (19). The height adjustable base (19) is provided in form of a frame which supports the whole dishwasher (2). In this embodiment, the first engagement means of the overflow siphon (1) aligns and detachably attaches the duct (6) directly to a respective lateral reinforcement plate (20) of the front foot (5) (Figs. 1 to 9).

[0034] In another embodiment, the dishwasher has a door (not shown) for opening/closing the washing tub (3). The door is pivotably mountable to the lateral reinforcement plates (20) by means of hinges (4) (Figs. 5 to 9). The dishwasher (2) further includes a frontal reinforcement bracket (17) which is mounted across the two front feet (5) (Figs. 1 to 4). The frontal reinforcement bracket (17) extends horizontally underneath both the overflow siphons (1) and the washing tub (3). In this embodiment,

the frontal reinforcement bracket (17) supports the washing tub (3) without interfering with the pivotable door. Thereby, the overflow siphons (1) can be disassembled for servicing the dishwasher (2) without demounting the door. When servicing the overflow siphons, at first the frontal reinforcement bracket (17) is demounted. As next, the overflow siphons are detached from the front feet (5).

[0035] In another embodiment, the dishwasher (2) has a discharging unit (not shown) for discharging the excess water collected in the reservoir to an outside. The discharging unit includes a discharge motor and a buoy. The buoy is arranged within the reservoir. The buoy activates operation of the discharge motor when the reservoir has collected a predetermined amount of water.

[0036] The overflow siphon of the present invention is easy to mount. Especially, an alignment and an attachment of the overflow siphon has been improved. Thus, any misalignments and displacements during an installation as well as after the installation have practically prevented. The overflow siphon of the present invention enables a leak-tight installation. The overflow siphon of the present invention is compact. Thus, a sufficient amount of working space for installing/uninstalling the overflow siphon has been secured. Consequently, the overflow siphon is easy to service. In addition, an interference of the overflow siphon with other components has been reduced. For instance, a frontal reinforcement bracket can be separately and independently uninstalled. Moreover, when servicing the dishwasher, the overflow siphons can be uninstalled without demounting the pivotable door.

Claims

1. A dishwasher (2) comprising at least one overflow siphon (1) for draining excess water, and a washing tub (3) for receiving dishes to be cleaned, wherein the washing tub (3) has an opening for loading or unloading the dishes, a plurality of feet (5) for supporting the washing tub (3) and a reservoir which is arranged under the washing tub (3) for collecting the excess water filled into the washing tub (3), the overflow siphon (1) comprising a duct (6) which includes an inlet (7) for drawing the excess water from the washing tub (3) and an outlet (8) for draining the excess water into the reservoir, wherein the outlet (8) is fluidly connected to the inlet (7) and wherein the inlet (7) adjoins a lower edge (9) of the opening of the washing tub (3) to define an overflow path that fluidly connects the washing tub (3) with the duct (6) and wherein the outlet (8) opens into the reservoir; the overflow siphon (1) **characterized by** further comprising a first engagement means provided on a lateral wall portion (10a) of the duct (6) for aligning and detachably attaching the duct (6) directly to one of a front feet (5) at a designated attachment position.
2. The dishwasher (2) according to claim 1, **character-**

ized in that the duct (6) including the lateral wall portion (10a) which opposes an inner side of the front foot (5) and an upper wall portion (10b) which opposes a lower side of the washing tub (3).

3. The dishwasher (2) according to claim 1 or 2, **characterized in that** the first engagement means including a first section for rotatably engaging the duct (6) with the front foot (5) and a second section for arresting the duct (6) to the front foot (5) when the duct (6) is rotatably aligned to its designated attachment position.
4. The dishwasher (2) according to claim 3, **characterized in that** the first section including a first projecting portion (11) which has a flange (12) for inserting through a first aperture (13) on the front foot (5) and the second section including a second projecting portion (14) for resiliently snapping into a second aperture (15) on the front foot (5).
5. The dishwasher (2) according to claim 4, **characterized in that** both the flange (12) and the first aperture (13) have non-circular shapes, wherein the flange (12) partially overlaps, in an axial direction a surrounding portion of the first aperture (13) when the duct (6) is rotated to its designated attachment position.
6. The dishwasher (2) according to claim 1 or 2, **characterized in that** the first engagement means including one or more than one snap-fit element (16) for engaging the duct (6) with the front foot (5).
7. The dishwasher (2) according to any one of claims 1 to 6, **characterized by** further comprising a second engagement means for positioning and arresting a frontal reinforcement bracket (17) which is arranged across the two front feet (5) and underneath the washing tub (3).
8. The dishwasher (2) according to claim 7, **characterized in that** the duct (6) further including a lower wall portion (10c) which is averted from a lower surface of the washing tub (3), wherein the second engagement means is provided on the lower wall portion (10c) of the duct (6) so as to oppose an upper surface of the frontal reinforcement bracket (17).
9. The dishwasher (2) according to any one of claims 1 to 8, **characterized in that** the duct (6) has a rectangular cross section which widens towards an opening of the inlet (7).
10. The dishwasher (2) according to any preceding claims, **characterized in that** two overflow siphons (1) are respectively attached to each of the two front feet (5).

11. The dishwasher (2) according to claim 10, **characterized in that** a lower edge (9) of the opening of the washing tub (3) has one or more than one downwardly bending cove-shaped lip (18) which defines an overflow path that fluidly connects the washing tub (3) with the inlet (7) of the duct (6), wherein the inlet (7) of the duct (6) adjoins a respective lip (18).
12. The dishwasher (2) according to any one of claims 10 to 11, **characterized in that** each of the front feet (5) is configured by a height adjustable base (19) and a lateral reinforcement plate (20), wherein the lateral reinforcement plate (20) is arranged on a respective lateral side of the washing tub (3) and connects the height adjustable base (19) with the washing tub (3), and wherein the first engagement means of the overflow siphon (1) aligns and detachably attaches the duct (6) directly to a respective lateral reinforcement plate (20) of the front foot (5).
13. The dishwasher (2) according to any one of claims 10 to 12, **characterized by** further comprising a frontal reinforcement bracket (17) which is mounted to the front feet (5), wherein the frontal reinforcement bracket (17) extends horizontally underneath both the overflow siphon (1) and the washing tub (3) without interfering with the door.
14. The dishwasher (2) according to any one of claims 10 to 13, **characterized by** further comprising a discharging unit for discharging the excess water collected in the reservoir to an outside, wherein the discharging unit includes a discharge motor and a buoy which is arranged within the reservoir for activating/deactivating operation of the discharge motor.

Patentansprüche

1. Eine Geschirrspülmaschine (2) mit mindestens einem Überlaufsiphon (1) zum Entleeren von überschüssigem Wasser, und einer Waschwanne (3) zur Aufnahme von zu reinigendem Geschirr, wobei die Waschwanne (3) eine Öffnung zum Beladen oder Entladen der Geschirre aufweist, eine Vielzahl von Füßen (5) zum Tragen der Waschwanne (3) und einen Behälter aufweist, der unter der Waschwanne (3) zum Sammeln des in die Waschtrommel (3) eingefüllten überschüssigen Wassers angeordnet ist, der Überlaufsiphon (1) einen Kanal (6) umfasst, der enthält einen Einlass (7) zum Ansaugen des überschüssigen Wassers aus der Waschwanne (3) und einen Auslass (8) zum Entleeren des überschüssigen Wassers in den Behälter, wobei der Auslass (8) fluidisch mit dem Einlass (7) verbunden ist und wobei der Einlass (7) an eine Unterkante (9) der Öffnung der Waschwanne (3) anschließt, um einen Überlaufweg zu definieren, der die Waschwanne (3) mit dem

Kanal (6) fluidisch verbindet und wobei der Auslass (8) in den Behälter mündet; der Überlaufsiphon (1), **dadurch gekennzeichnet, dass** weiterhin umfassend ein erstes Einschlagmittel, das an einem Seitenwandabschnitt (10a) des Kanals (6) zum Ausrichten und lösbaren Befestigen des Kanals (6) direkt an einem der vorderen Füße (5) an einer bestimmten Befestigungsposition vorgesehen ist.

2. Geschirrspülmaschine (2) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Kanal (6) den Seitenwandabschnitt (10a), der einer Innenseite des vorderen Fußes (5) gegenüberliegt, und einen oberen Wandabschnitt (10b), der einer Unterseite der Waschwanne (3) gegenüberliegt, enthält.
3. Geschirrspülmaschine (2) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das erste Einschlagmittel einen ersten Abschnitt zum drehbaren Eingriff in den Kanal (6) mit dem vorderen Fuß (5) und einen zweiten Abschnitt zum Arretieren des Kanals (6) am vorderen Fuß (5) enthält, wenn der Kanal (6) drehbar auf seine bestimmte Befestigungsposition ausgerichtet ist.
4. Geschirrspülmaschine (2) nach Anspruch 3, **dadurch gekennzeichnet, dass** wobei der erste Abschnitt einen ersten vorstehenden Abschnitt (11) enthält, der einen Flansch (12) zum Einsetzen durch eine erste Blende (13) am vorderen Fuß (5) aufweist, und der zweite Abschnitt einen zweiten vorstehenden Abschnitt (14) zum elastischen Einrasten in eine zweite Blende (15) am vorderen Fuß (5) enthält.
5. Geschirrspülmaschine (2) nach Anspruch 4, **dadurch gekennzeichnet, dass** sowohl der Flansch (12) als auch die erste Blende (13) unrunde Formen aufweisen, wobei der Flansch (12) in axialer Richtung einen umgebenden Abschnitt der ersten Blende (13) teilweise überlappt, wenn der Kanal (6) in seine vorgesehene Befestigungsposition gedreht wird.
6. Geschirrspülmaschine (2) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das erste Einschlagmittel ein oder mehr als ein Schnappelement (16) zum Eingreifen in den Kanal (6) mit dem vorderen Fuß (5) enthält.
7. Geschirrspülmaschine (2) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** sie weiterhin ein zweites Einschlagmittel zum Positionieren und Arretieren einer vorderen Verstärkungshalterung (17) umfasst, die über die beiden vorderen Füße (5) und unter der Waschwanne (3) angeordnet ist.
8. Geschirrspülmaschine (2) nach Anspruch 7, **dadurch gekennzeichnet, dass** der Kanal (6) weiterhin einen unteren Wandabschnitt (10c) enthält, der

von einer Unterseite der Waschwanne (3) abgewandt ist, wobei das zweite Einschlagsmittel an dem unteren Wandabschnitt (10c) des Kanals (6) vorgesehen ist, um einer Oberseite der vorderen Verstärkungshalterung (17) gegenüberzustellen.

9. Geschirrspülmaschine (2) nach einem der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** der Kanal (6) einen rechteckigen Querschnitt aufweist, der sich zu einer Öffnung des Einlasses (7) hin erweitert. 10
10. Geschirrspülmaschine (2) nach vorhergehenden Ansprüchen, **dadurch gekennzeichnet, dass** jeweils zwei Überlaufsiphon (1) an jedem der beiden vorderen Füße (5) befestigt sind. 15
11. Geschirrspülmaschine (2) nach Anspruch 10, **dadurch gekennzeichnet, dass** eine Unterkante (9) der Öffnung der Waschwanne (3) eine oder mehrere nach unten gebogene, keilförmige Lippen (18) aufweist, die einen Überlaufweg definieren, der die Waschwanne (3) mit dem Einlass (7) des Kanals (6) fluidisch verbindet, wobei der Einlass (7) des Kanals (6) an eine entsprechende Lippe (18) anschließt. 20 25
12. Geschirrspülmaschine (2) nach einem der Ansprüche 10 bis 11, **dadurch gekennzeichnet, dass** jeder der vorderen Füße (5) durch eine höhenverstellbare Basis (19) und eine seitliche Verstärkungsplatte (20) konfiguriert ist, wobei die seitliche Verstärkungsplatte (20) auf einer jeweiligen seitlichen Seite der Waschwanne (3) angeordnet ist und die höhenverstellbare Basis (19) mit der Waschwanne (3) verbindet, und wobei das erste Einschlagsmittel des Überlaufsiphons (1) den Kanal (6) direkt an einer jeweiligen seitlichen Verstärkungsplatte (20) des vorderen Fußes (5) ausrichtet und lösbar befestigt. 30 35
13. Geschirrspülmaschine (2) nach einem der Ansprüche 10 bis 12, **dadurch gekennzeichnet, dass** sie weiterhin eine vordere Verstärkungshalterung (17) umfasst, die an den vorderen Füßen (5) montiert ist, wobei sich die vordere Verstärkungshalterung (17) horizontal sowohl unter dem Überlaufsiphon (1) als auch unter der Waschwanne (3) erstreckt, ohne die Tür zu stören. 40 45
14. Geschirrspülmaschine (2) nach einem der Ansprüche 10 bis 13, **dadurch gekennzeichnet, dass** sie weiterhin eine Entleerungseinheit zum Ableiten des im Behälter gesammelten überschüssigen Wassers nach außen umfasst, wobei die Entleerungseinheit einen Entlademotor und eine Boje umfasst, die innerhalb des Behälters zum Aktivieren/Deaktivieren des Betriebs des Entlademotors angeordnet ist. 50 55

Revendications

1. Lave-vaisselle (2) comprenant au moins un siphon de trop-plein (1) pour évacuer l'eau en excès, et une cuve de lavage (3) pour recevoir la vaisselle à nettoyer, dans laquelle la cuve de lavage (3) présente une ouverture pour charger ou décharger la vaisselle, une pluralité de pieds (5) pour supporter la cuve de lavage (3) et un réservoir qui est disposé sous la cuve de lavage (3) pour recueillir l'excès d'eau rempli dans la cuve de lavage (3), le siphon de trop-plein (1) comprenant un conduit (6) qui comprend une entrée (7) pour tirer l'eau excédentaire de la cuve de lavage (3) et une sortie (8) pour évacuer l'excès d'eau dans le réservoir, dans laquelle la sortie (8) est reliée fluidiquement à l'entrée (7) et dans laquelle l'entrée (7) est adjacente à un bord inférieur (9) de l'ouverture de la cuve de lavage (3) pour définir un chemin de débordement qui relie fluidiquement la cuve de lavage (3) au conduit (6) et dans laquelle la sortie (8) ouvre sur le réservoir; le siphon de trop-plein (1) **caractérisé en ce qu'il** comprend en outre un premier moyen d'engagement prévu sur une partie de paroi latérale (10a) du conduit (6) pour aligner et fixer de manière amovible le conduit (6) directement à un des pieds avant (5) dans une position de fixation désignée.
2. Lave-vaisselle (2) selon la revendication 1, **caractérisé en ce que** le conduit (6) comprend la partie de paroi latérale (10a) qui fait face à un côté intérieur du pied avant (5) et une partie de paroi supérieure (10b) qui fait face à un côté inférieur de la cuve de lavage (3).
3. Lave-vaisselle (2) selon la revendication 1 ou 2, **caractérisé en ce que** le premier moyen d'engagement comprenant une première section pour engager de manière rotative le conduit (6) avec le pied avant (5) et une seconde section pour arrêter le conduit (6) vers le pied avant (5) lorsque le conduit (6) est aligné de manière rotative à sa position de fixation désignée.
4. Lave-vaisselle (2) selon la revendication 3, **caractérisé en ce que** la première section comprend une première partie saillante (11) qui présente une bride (12) destinée à être insérée à travers une première ouverture (13) sur le pied avant (5) et la seconde section comprend une seconde partie saillante (14) destinée à s'encliqueter de manière élastique dans une seconde ouverture (15) du pied avant (5).
5. Lave-vaisselle (2) selon la revendication 4, **caractérisé en ce que** la bride (12) et la première ouverture (13) ont toutes deux des formes non circulaires, dans laquelle la bride (12) recouvrant partiellement, dans une direction axiale, une partie périphérique

de la première ouverture (13) lorsque le conduit (6) est tourné à sa position de fixation désignée.

6. Lave-vaisselle (2) selon la revendication 1 ou 2, **caractérisé en ce que** le premier moyen d'engagement comprend un ou plusieurs éléments d'encliquetage (16) pour engager le conduit (6) avec le pied avant (5). 5
7. Lave-vaisselle (2) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce qu'il** comprend en outre un second moyen d'engagement pour positionner et arrêter un support de renforcement frontal (17) qui est agencé à travers les deux pieds avant (5) et sous la cuve de lavage (3). 10 15
8. Lave-vaisselle (2) selon la revendication 7, **caractérisé en ce que** le conduit (6) comprend en outre une partie de paroi inférieure (10c) qui est évitée d'une surface inférieure de la cuve de lavage (3), dans lequel le second moyen d'engagement est prévu sur la partie de paroi inférieure (10c) du conduit (6) de manière à s'opposer à une surface supérieure du support de renforcement frontal (17). 20 25
9. Lave-vaisselle (2) selon l'une quelconque des revendications 1 à 8, **caractérisé en ce que** le conduit (6) présente une section rectangulaire qui s'élargit vers une ouverture de l'entrée (7). 30
10. Lave-vaisselle (2) selon l'une quelconque des revendications, **caractérisé en ce que** deux siphons de trop-plein (1) sont respectivement fixés sur chacun des deux pieds avant (5). 35
11. Lave-vaisselle (2) selon la revendication 10, **caractérisé en ce qu'un** bord inférieur (9) de l'ouverture de la cuve de lavage (3) présente une ou plusieurs lèvres (18) courbées vers le bas en forme de gorge qui définissent un chemin de débordement qui relie fluidiquement la cuve de lavage (3) avec l'entrée (7) du conduit (6), dans laquelle l'entrée (7) du conduit (6) est adjacente à une lèvre respective (18). 40
12. Lave-vaisselle (2) selon l'une quelconque des revendications 10 à 11, **caractérisé en ce que** chacun des pieds avant (5) est configuré par une base réglable en hauteur (19) et une plaque de renforcement latérale (20), dans laquelle la plaque de renforcement latérale (20) est disposée sur un côté latéral respectif de la cuve de lavage (3) et relie la base réglable en hauteur (19) avec la cuve de lavage (3), et dans lequel le premier moyen d'engagement du siphon de trop-plein (1) s'aligne et fixe de manière amovible le conduit (6) directement à une plaque de renforcement latérale respective (20) du pied avant (5). 45 50 55

13. Lave-vaisselle (2) selon l'une quelconque des revendications 10 à 12, **caractérisé en ce qu'il** comprend en outre un support de renforcement frontal (17) qui est monté sur les pieds avant (5), dans lequel le support de renforcement frontal (17) s'étend horizontalement sous le siphon de trop-plein (1) et la cuve de lavage (3) sans interférer avec la porte.

14. Lave-vaisselle (2) selon l'une quelconque des revendications 10 à 13, **caractérisé en ce qu'il** comprend en outre une unité de décharge pour décharger l'eau excédentaire recueillie dans le réservoir vers l'extérieur, dans laquelle l'unité de décharge comprend un moteur de décharge et une bouée qui est disposée dans le réservoir pour activer/désactiver le fonctionnement du moteur de décharge.

Fig. 1

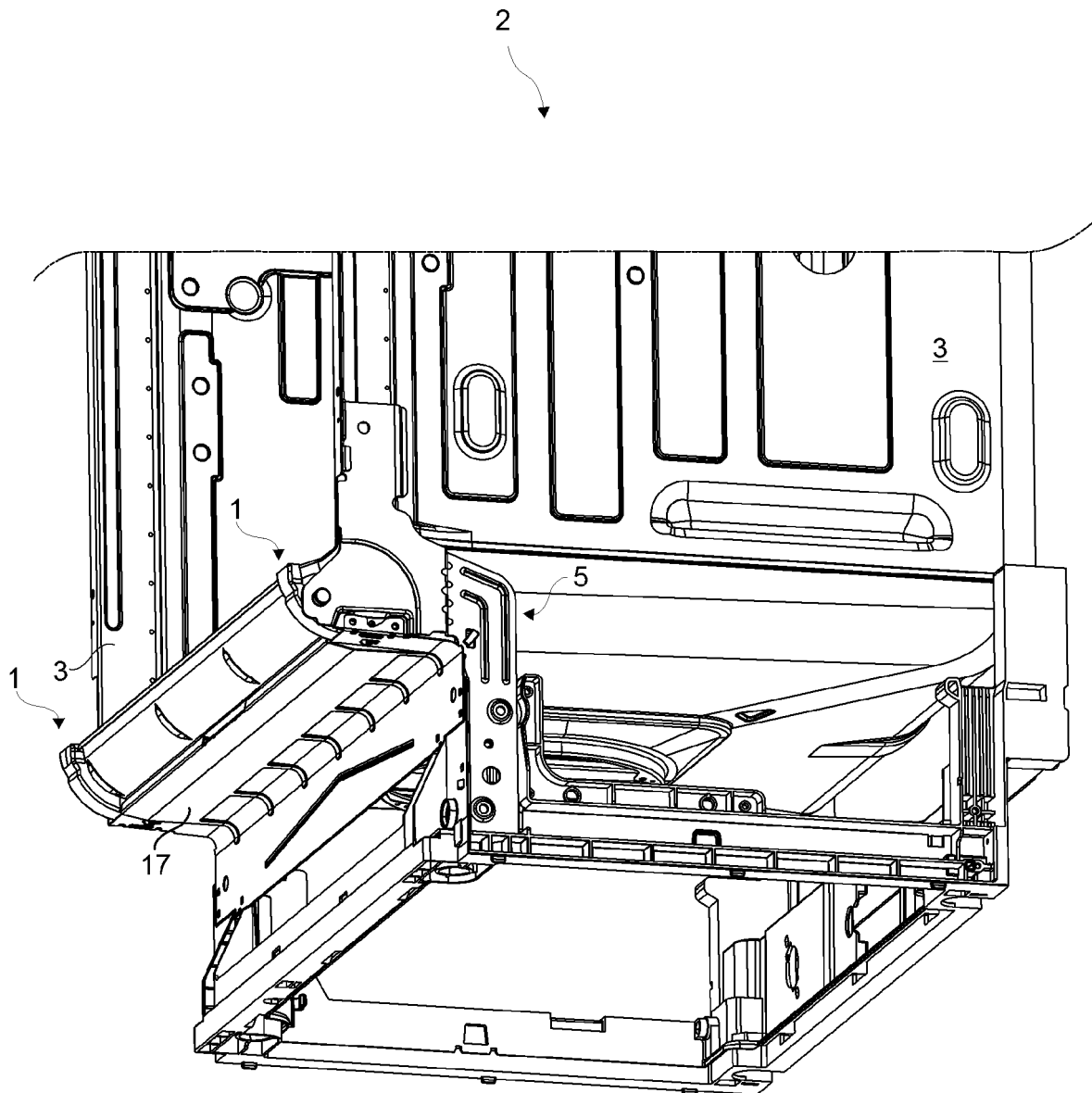


Fig. 2

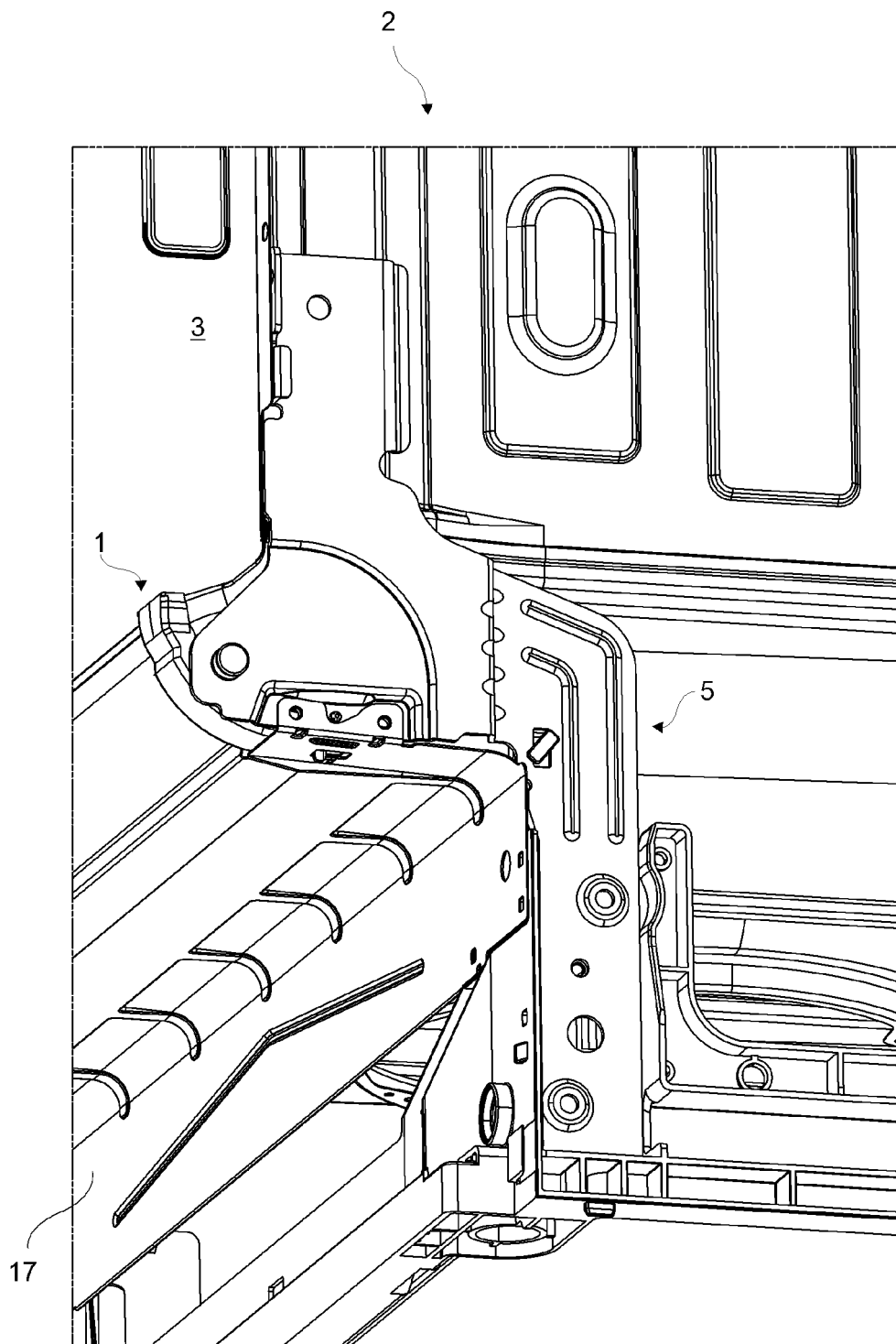


Fig. 3

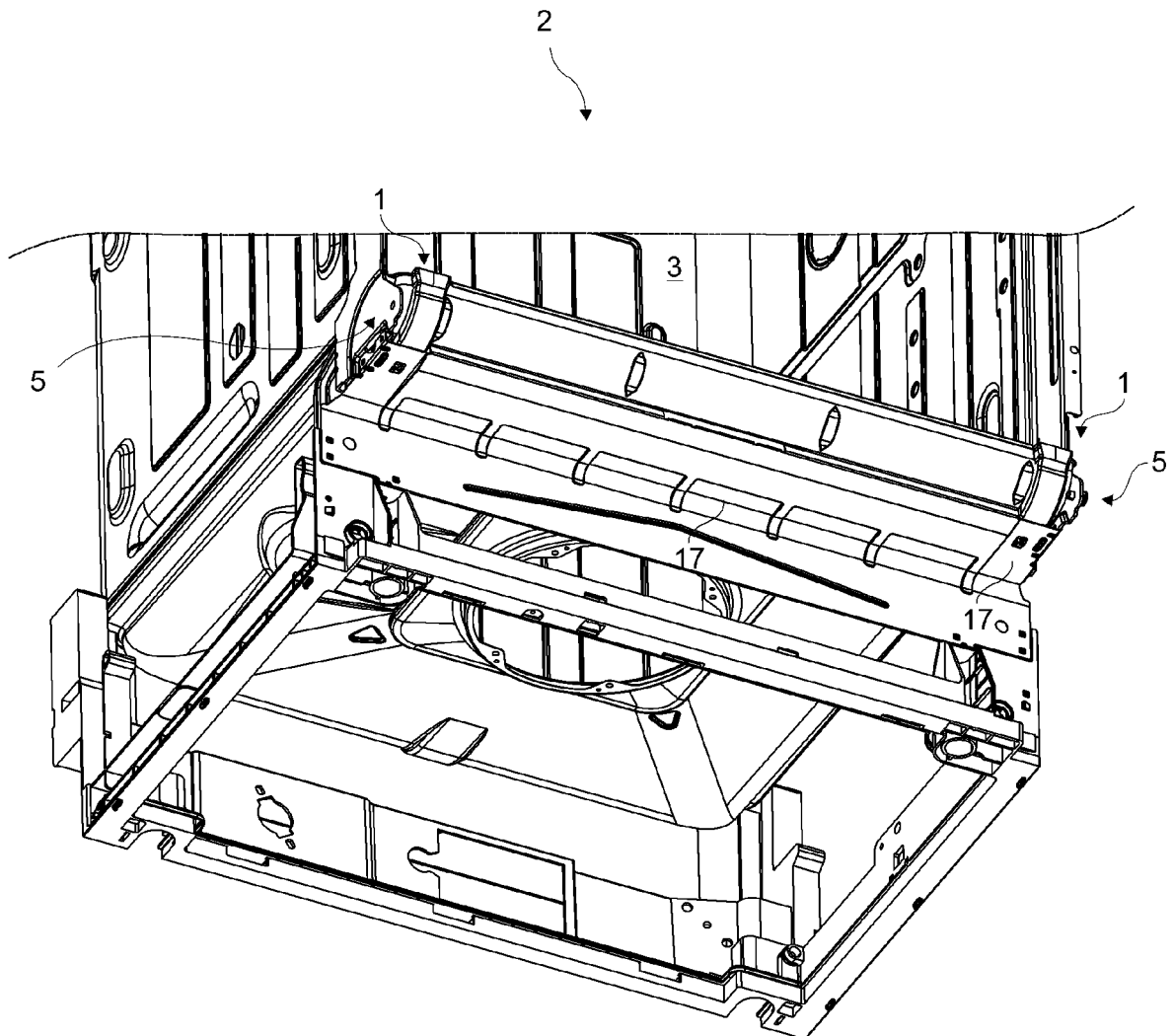


Fig. 4

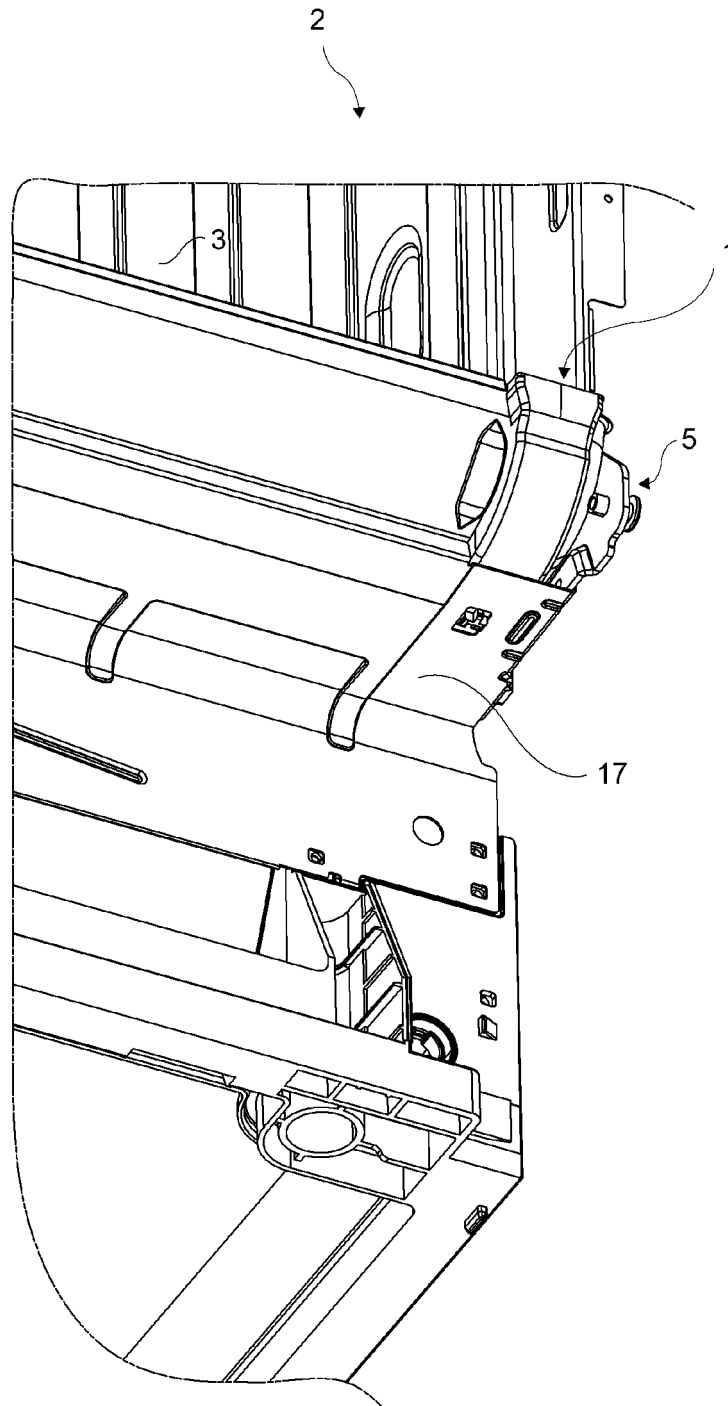


Fig. 5

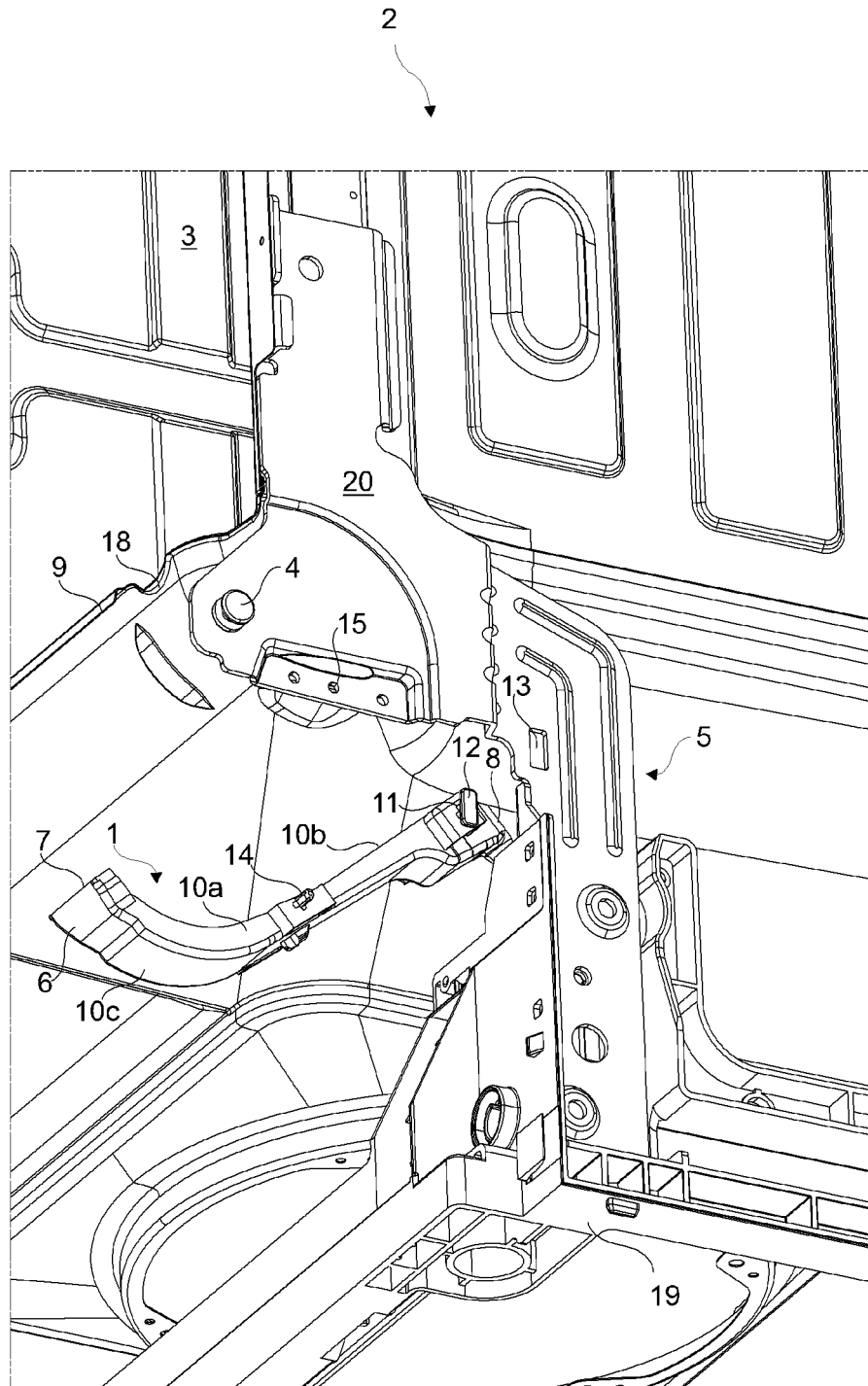


Fig. 6

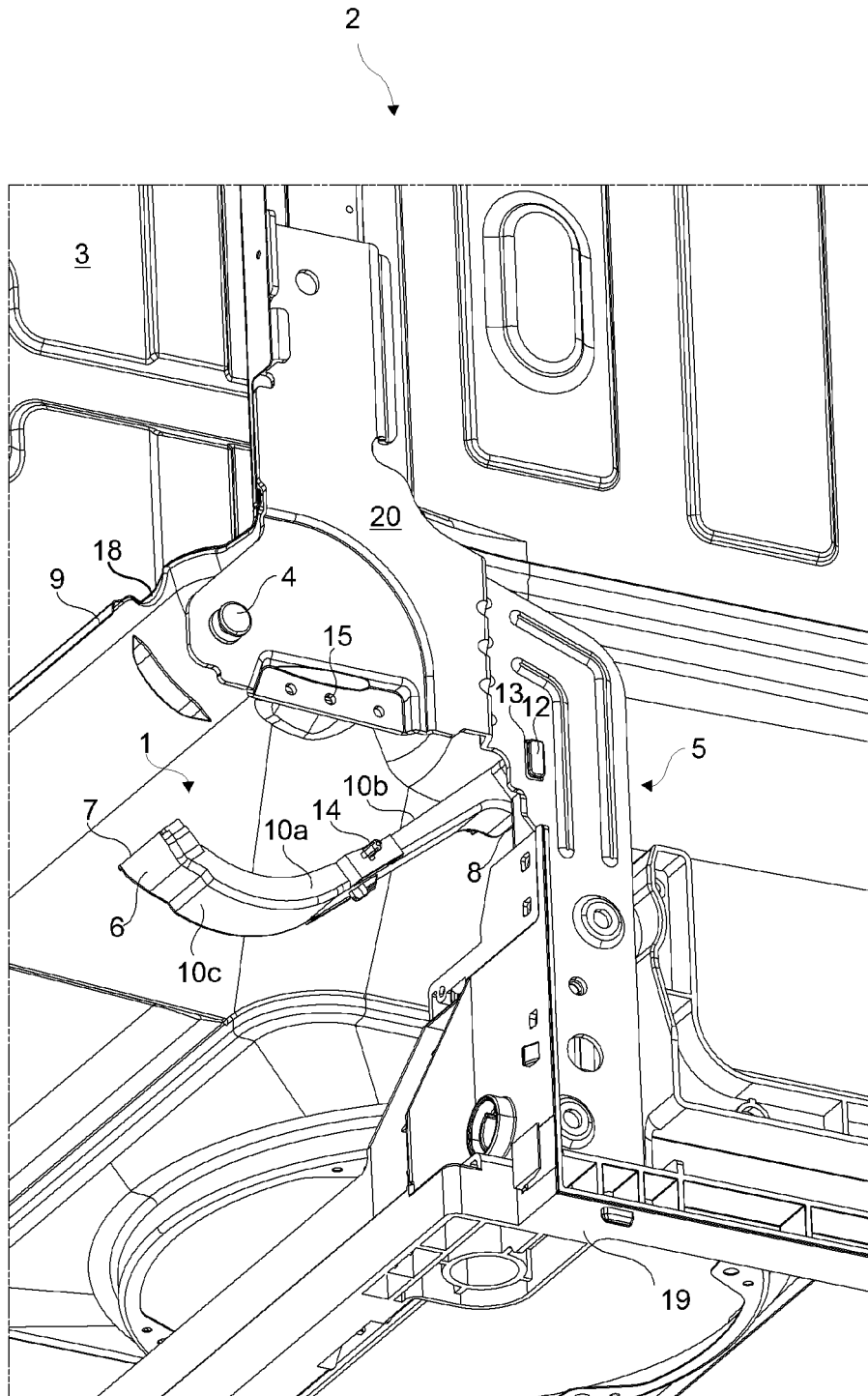


Fig. 7

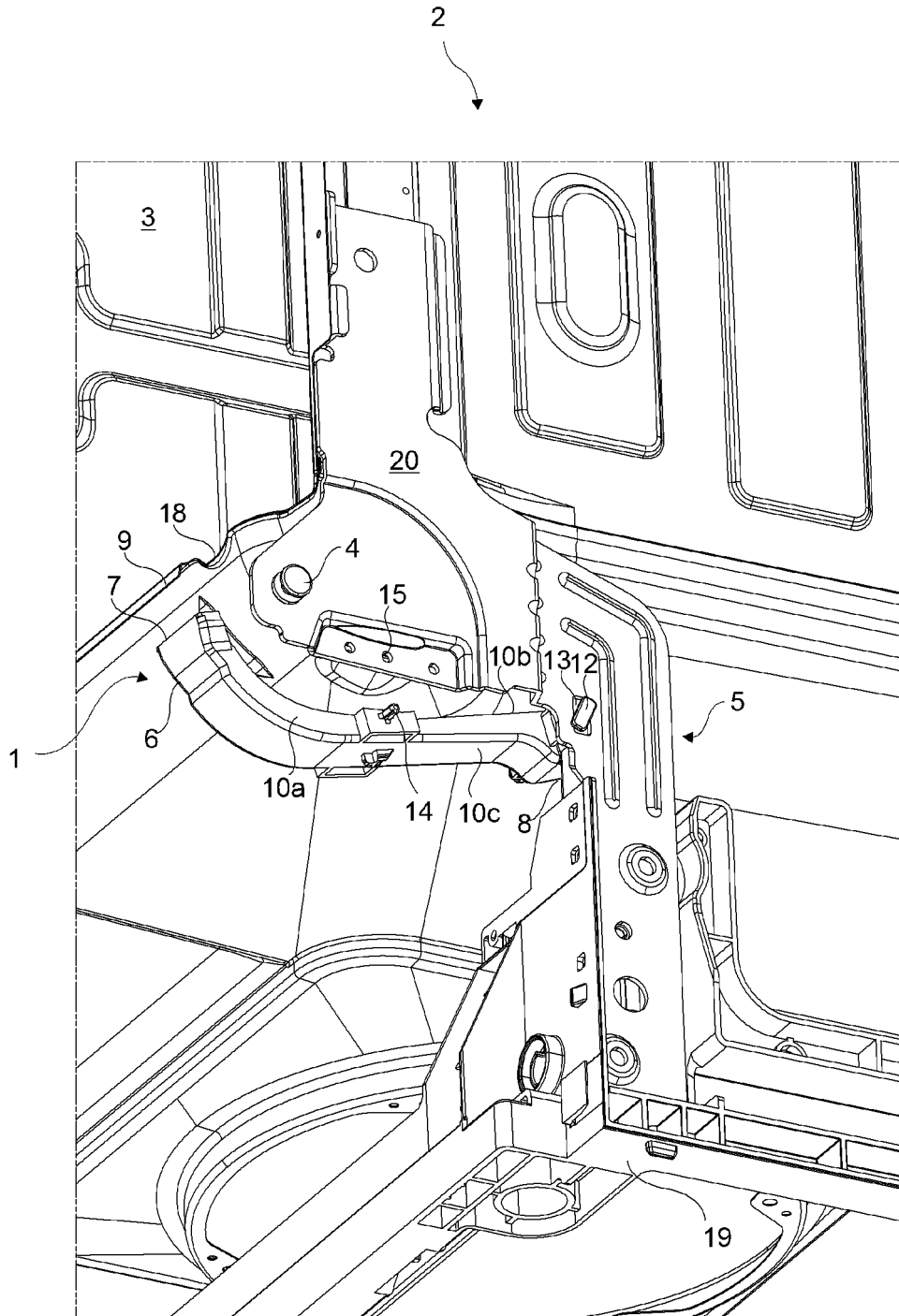


Fig. 8

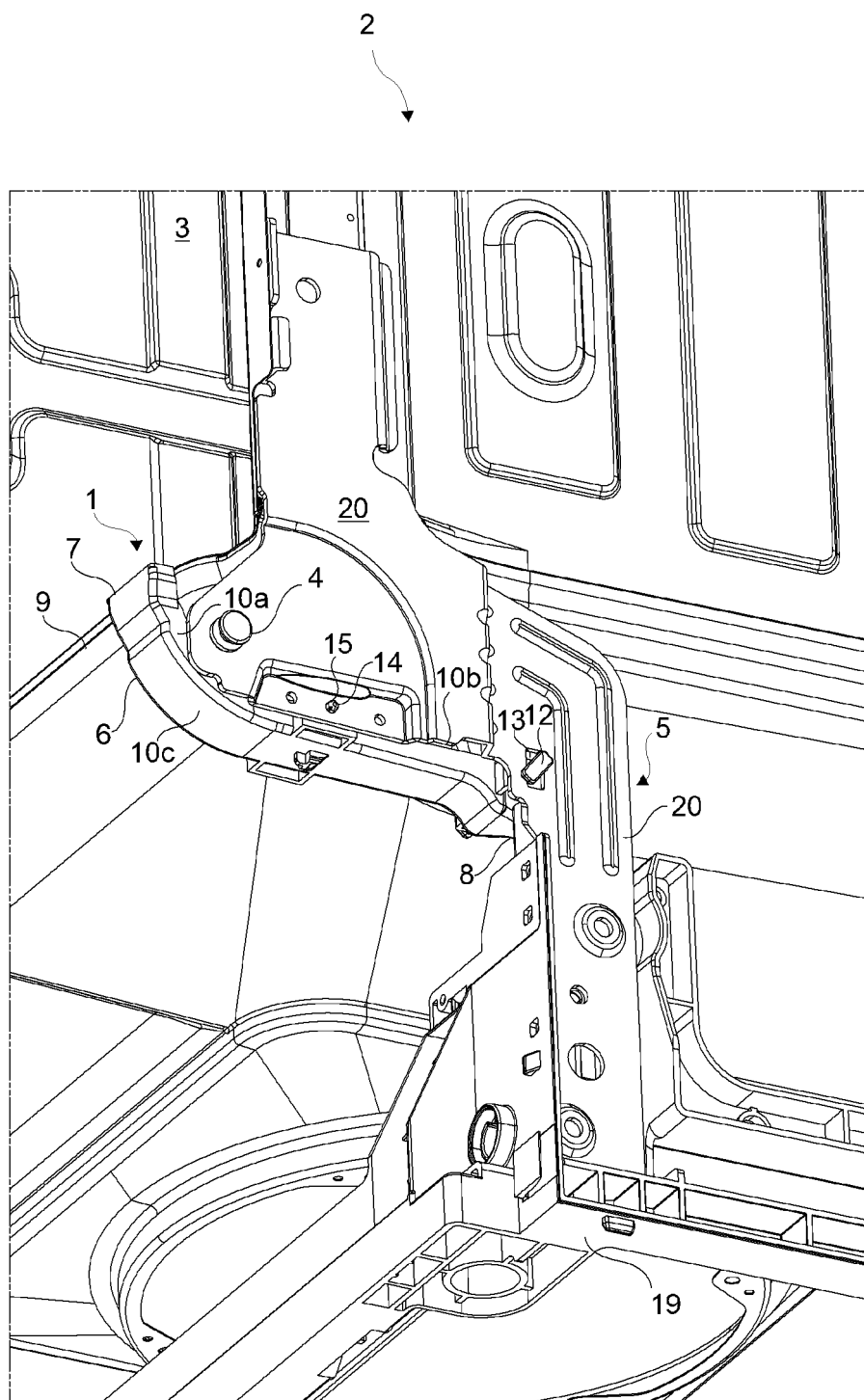
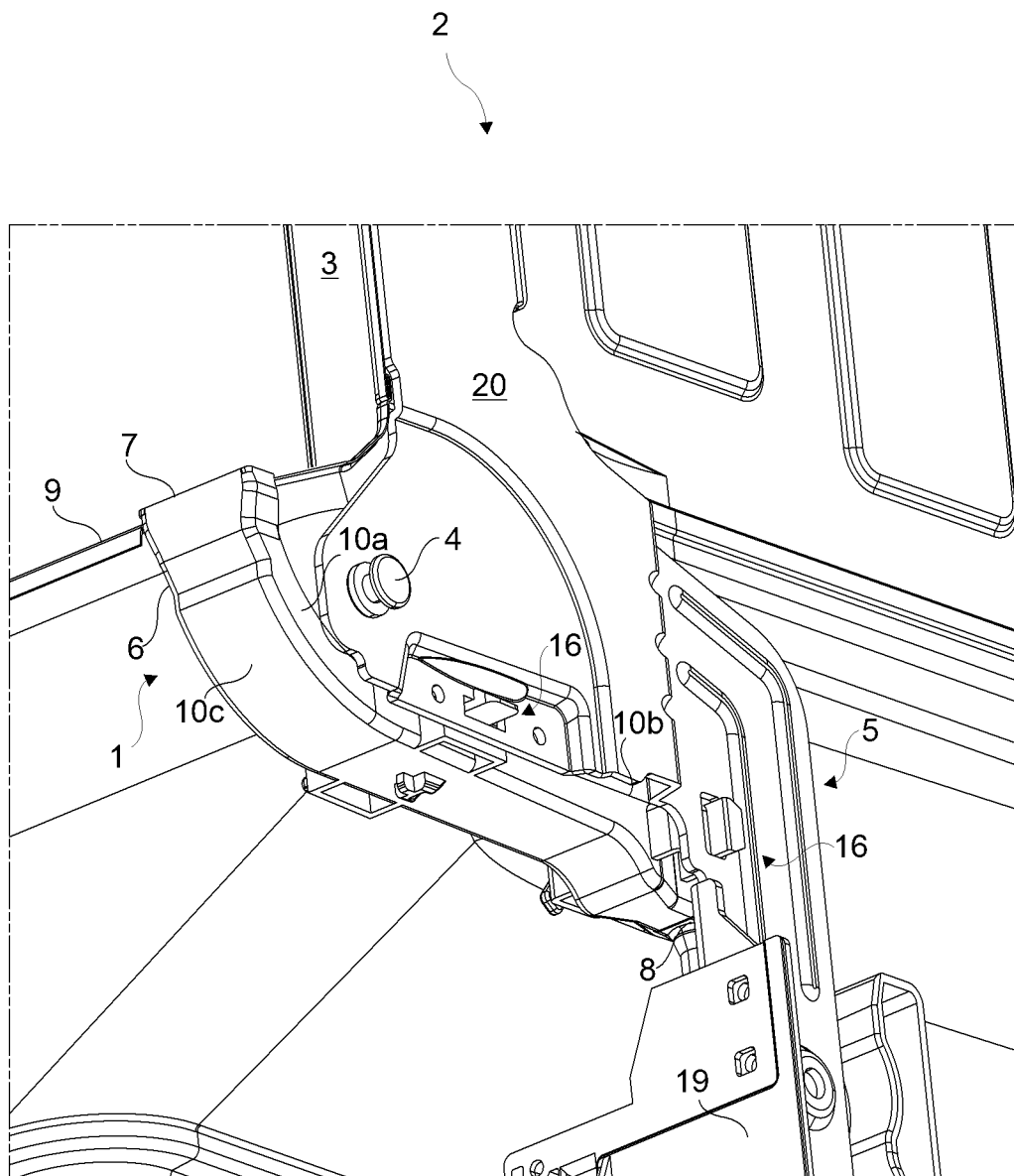


Fig. 9



REFERENCES CITED IN THE DESCRIPTION

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