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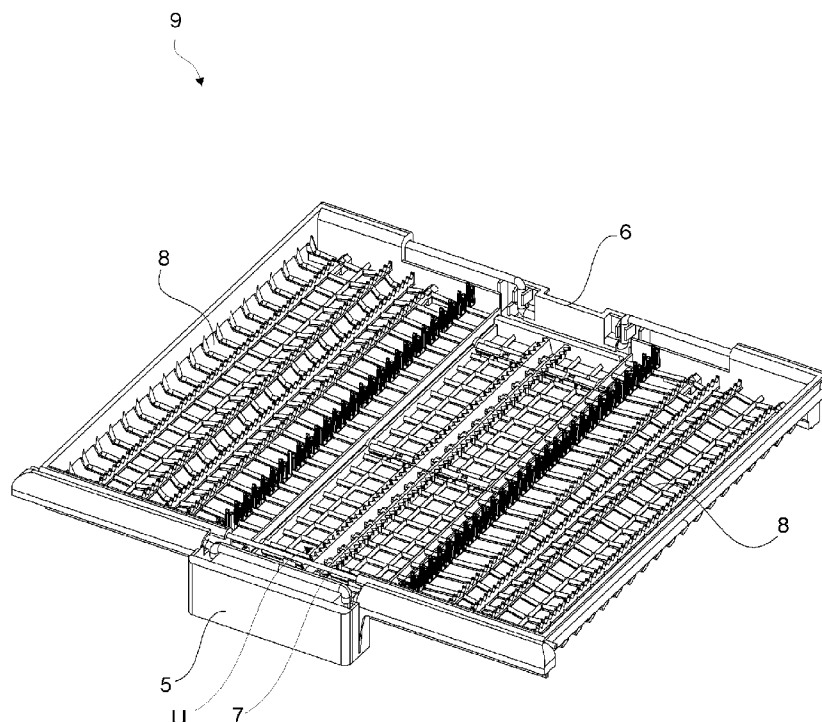
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[Continued on next page]

(54) Title: A DISHWASHER

Figure 2



(57) Abstract: The present invention relates to a dishwasher (1) comprising a body (2), a washing cabin (3) that is disposed inside the body (2) and wherein the washing process is performed and a drawer (9) that is disposed at a region close to the ceiling (T) of the washing cabin (3) and that has a frame (4) that forms the edges of the drawer (9), a front wall (5) and a rear wall (6) oppositely disposed on the frame (4), a movable middle surface (7) whereon small sized items to be washed are placed and more than one side surface (8).



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LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE,
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Description**A DISHWASHER**

- [0001] The present invention relates to a dishwasher comprising a drawer wherein the items to be washed are placed.
- [0002] In dishwashers, washing items that are small and that have cavities and recesses is quite difficult. Therefore, baskets are disposed in the washing cabin, that enable small items such as cutlery to be washed effectively and prevent them from being tumbled. Thus, the items are cleaned more effectively and the deformations that may occur on the items or on the machine due to the tumbling of the items are prevented. The said baskets can be disposed at a region on the lower rack, but recently, the baskets are preferred to be disposed at regions that are close to the ceiling of the washing cabin. Thus, the washing capacity of the lower rack is increased and larger items such as plates that occupy more space are enabled to be washed thereon. The washing liquid reaches directly to the basket that is located near the ceiling. Furthermore, the items are enabled to be placed in an orderly manner. Thereby, small items are enabled to be washed more effectively. However, the baskets that are disposed between the ceiling and the upper rack impose limitations for the items that are placed onto the upper rack. Tall items such as stemware that are placed on the upper rack get stuck to the cutlery basket on the upper rack. This may prevent taller items from being placed onto the upper rack and cause deformations on the items or on the cutlery basket.
- [0003] In the state of the art International Patent Application Document No. WO201402737, a dishwasher comprising a basket that can be used in various sizes is disclosed.
- [0004] The aim of the present invention is the realization of a dishwasher wherein the interior volume of the washing cabin can be effectively used.
- [0005] The dishwasher realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises a body; a washing cabin that is disposed on the body and wherein the items to be washed are placed, and a drawer that is disposed at a region close to the ceiling of the washing cabin. The drawer comprises a frame that

forms the edges of the drawer, a front wall and a rear wall that are oppositely disposed on the drawer, a movable middle surface whereon small items are placed and more than one side surface arranged around the middle surface.

[0006] The dishwasher of the present invention comprises the middle surface that has a lower position wherein the middle surface moves away from the ceiling of the washing cabin, allowing the side surfaces to join and an upper position wherein the middle surface joins with the side surfaces; and a movement mechanism that enables the middle surface to be moved between the lower position and the upper position.

[0007] In an embodiment of the present invention, the movement mechanism comprises more than one driving arm that extends from the rear wall towards the front wall and whereon the middle surface is disposed, an actuating member that is connected to the driving arm and that can move the driving arm, more than one locking member that is disposed on the middle surface and that extends between the lateral edges of the middle surface and a lower position lock and an upper position lock that are disposed on the driving arm, wherein the locking members are seated on the lower position lock at the lower position and on the upper position lock at the upper position.

[0008] In an embodiment of the present invention, when the driving arm moves from the front wall towards the rear wall, the locking member is seated onto the lower position lock. The driving arm is moved by means of the actuating member that is triggered by the user. Thus, the middle surface shifts to the lower position.

[0009] In an embodiment of the present invention, the driving arm moves from the rear wall towards the front wall when the user actuates the actuating member while the middle surface is at the lower position. Thus, the locking member is released from the lower position lock and seated onto the upper position lock. Thus, the middle surface shifts to the upper position.

[0010] In an embodiment of the present invention, more than one protrusion is formed on the surface of the middle surface that contacts the front wall. The protrusions can move vertically inside more than one channel

arranged on the front wall.

- [0011] In an embodiment of the present invention, the lower position lock enables the surface of the middle surface to be below the bottom surface of the side surface when the middle surface is at the lower position.
- [0012] In an embodiment of the present invention, the side surfaces are joined by sliding over the front wall and the rear wall when the middle surface is at the lower position.
- [0013] In an embodiment of the present invention, when joined, the side surfaces can be at different positions on the drawer.
- [0014] In an embodiment of the present invention, when joined, the side surfaces allow the items placed inside the washing cabin to extend towards the ceiling.
- [0015] The dishwasher realized in order to attain the aim of the present invention is illustrated in the attached figures, where,
- [0016] Figure 1 – is the perspective view of the dishwasher.
- [0017] Figure 2 - is the perspective view of the drawer when the middle surface is at the upper position.
- [0018] Figure 3 - is the perspective view of the drawer when the middle surface is at the lower position.
- [0019] Figure 4 - is the perspective view of the middle surface on the drawer.
- [0020] Figure 5 - is the perspective view of the movement mechanism on the drawer.
- [0021] Figure 6 - the partial view of the front wall and the middle surface.
- [0022] Figure 7 - the top view of the channel and the protrusions.
- [0023] The elements illustrated in the figures are numbered as follows:
1. Dishwasher
 2. Body
 3. Washing cabin
 4. Frame
 5. Front wall
 6. Rear wall
 7. Middle surface
 8. Side surface

- 9. Drawer
- 10. Movement mechanism
- 11. Driving arm
- 12. Actuating member
- 13. Locking member
- 14. Lower position lock
- 15. Upper position lock
- 16. Protrusion
- 17. Channel

[0024] S- Rack

[0025] U- Upper position

[0026] A- Lower position

[0027] T- Ceiling

[0028] The dishwasher (1) comprises a body (2), a washing cabin (3) that is disposed inside the body (2) and wherein the washing process is performed and a drawer (9) that is disposed at a region close to the ceiling (T) of the washing cabin (3) and that has a frame (4) that forms the edges of the drawer (9), a front wall (5) and a rear wall (6) oppositely disposed on the frame (4), a movable middle surface (7) whereon small sized items to be washed are placed and more than one side surface (8). The frame (4) is preferably composed of wires so as to form the edges of the drawer (9). The front wall (5) and the rear wall (6) are arranged on the frame (4). The middle surface (7) that extends between the front wall (5) and the rear wall (6) is arranged at the middle section of the frame (4) and the side surfaces (8) are arranged on the sides of the middle surface (7). The middle surface (7) and the side surfaces (8) are movable and can be moved inside the drawer (9) by the user.

[0029] The dishwasher (1) of the present invention comprises the middle surface (7) that has a upper position (U) wherein the middle surface (7) enables the area inside the frame (4) to be fully used for placing the items by being adjacent to the side surfaces (8) and a lower position (A) wherein the middle surface (7) moves away from the ceiling (T) of the washing cabin (3) and enables the side surfaces (8) to join by sliding over the same,

leaving space on the sides of the frame (4), the dishwasher (1) further comprising a movement mechanism (10) that enables the middle surface (7) to shift between the lower position (A) and the upper position (U). The middle surface (7) moves away from the ceiling (T) of the washing cabin (3) when moved to the lower position (A) by means of the movement mechanism (10). The side surfaces (8) can join as the middle surface (7) moves to a lower position between the side surfaces (8). When the user desires to place tall items onto the rack (S) or does not need the middle surface (7), he/she moves the middle surface (7) to the lower position (A) and joins the side surfaces (8) together, thus decreasing the size of the drawer (9). When the user moves (7) the middle surface (7) to the upper position (U), the side surfaces (8) and the middle surface (7) are locked inside the frame (4). The drawer (9) allows the items to be washed inside the washing cabin (3) to extend towards the ceiling (T) of the washing cabin (3) when the side surfaces (8) are joined. When the side surfaces (8) are joined, an empty region is created inside the frame (4). Thus, the tall items that are placed onto the rack (S) under the drawer (9) are enabled to extend from the rack (S) towards the ceiling (T) of the washing cabin (3) and the washing capacity of the rack (S) is increased.

[0030] In an embodiment of the present invention, the dishwasher (1) comprises the movement mechanism (10) that has more than one driving arm (11) that extends from the rear wall (6) towards the front wall (5) along the edges of the middle surface (7) and that enables the movement mechanism (10) to be disposed onto the middle surface (7), an actuating member (12) that is positioned on the front wall (5) with one of end fixed to the driving arm (11), more than one locking member (13) that is positioned under the middle surface (7) and that is parallel to the front wall (5) and the rear wall (6), a lower level lock (14) that is positioned on the driving arm (11) and that enables the middle surface (7) to be moved to the lower position (A) as the locking member (13) is seated thereon and an upper position lock (15) that enables the middle surface (7) to be locked at the upper position (U). The actuating member (12) is disposed on the front wall (5) at a region that can be reached by the user. The actuating

member (12) is connected to the driving arm (11) or is an extension of the driving arm (11). The lower position lock (14) and the upper position lock (15) are disposed on the driving arm (11). The middle surface (7) is at the lower position (A) when the locking member (13) on the middle surface (7) is on the lower position lock (14). +When the actuating member (12) is actuated by the user, the middle surface (7) shifts from the lower position (A) to the upper position (U).

- [0031] In an embodiment of the present invention, when the actuating member (12) is actuated by the user, the movement mechanism (10) enables the locking member (13) to be seated onto the lower position lock (14) and the middle surface (7) to be moved to the lower position (A) as the driving arm (11) moves from the front wall (5) towards the rear wall (6). When the actuating member (12) is pushed towards the washing cabin (3), the driving arm (11) moves from the front wall (5) towards the rear wall (6). Thus, the lower position lock (14) and the upper position lock (15) that are disposed on the driving arm (11) are moved. The middle surface (7) on the driving arm (11) moves vertically upon the movement of the driving arm (11). The locking member (13) under the middle surface (7) is seated onto the lower position lock (14) and the middle surface (7) shifts to the lower position (A) (Figure 3).
- [0032] In an embodiment of the present invention, when the actuating member (12) is actuated by the user, the movement mechanism (10) enables the locking member (13) to be seated onto the upper position lock (15) and the middle surface (7) to be moved to the upper position (U) as the driving arm (11) moves from the rear wall (6) towards the front wall (5). When the actuating member (12) is pulled out of the washing cabin (3), the driving arm (11) moves from the rear wall (6) towards the front wall (5). Thus, the locking member (13) under the middle surface (7) is seated onto the upper position lock (15) and the middle surface (7) shifts to the upper position (U) (Figure 2).
- [0033] In an embodiment of the present invention, the drawer (9) comprises more than one protrusion (16) disposed on the surface of the middle surface (7) in contact with the front wall (5) and more than one channel (17) that is

arranged on the front wall (5), that matches the form of the protrusions (16), enabling the protrusions (16) to be moved vertically therein. The middle surface (7) is fixed onto the front wall (5) by means of the protrusions (16). The protrusions (16) are fitted into the channel (17) so as to move vertically inside the channel (17). Thus, the middle surface (7) is enabled to move vertically between the lower position (A) and the upper position (U) without being dislodged from the drawer (9).

[0034] In an embodiment of the present invention, the lower position lock (14) enables the surface of the middle surface (7) to be below the bottom surface of the side surfaces (8) when the middle surface (7) is at the lower position (A). When the locking member (13) is on the lower position lock (14), the middle surface (7) moves away from the ceiling (T) of the washing cabin (3) and shifts to a position below the bottom of the side surfaces (8). Thus, the side surfaces (8) can be joined such that the middle surface (7) is therebelow. Thereby, when not used, the middle surface (7) is prevented from occupying space on the drawer (9).

[0035] In an embodiment of the present invention, the dishwasher (1) comprises the side surfaces (8) that are joined by sliding over the front wall (5) and the rear wall (6) when the middle surface (7) is at the lower position (A). The side surfaces (8) can move over the front wall (5) and the rear wall (6) by being released from the edges (K) of the frame (4).

[0036] In an embodiment of the present invention, the dishwasher (1) comprises the drawer (9) wherein the side surfaces (8) can be joined so as to be used at different positions. When joined, the side surfaces (8) can move on the drawer (9) as per the preferences of the user.

[0037] By means of the present invention, a dishwasher (1) is realized, that comprises a drawer (9) that enables the washing capacity to be increased by being able to be used at different sizes. By means of the movement mechanism (10) that is disposed on the drawer (9), the user can use the necessary regions of the drawer (9), and when not necessary, he/she can decrease the size of the drawer (9) in order to increase the washing space below the drawer (9). By means of the movement mechanism (10), the drawer (9) can be used in a more practical way.

Claims

1. A dishwasher (1) **comprising** a body (2), a washing cabin (3) that is disposed inside the body (2) and wherein the washing process is performed and a drawer (9) that is disposed at a region close to the ceiling (T) of the washing cabin (3) and that has a frame (4) that forms the edges of the drawer (9), a front wall (5) and a rear wall (6) oppositely disposed on the frame (4), a movable middle surface (7) whereon small sized items to be washed are placed and more than one side surface (8), **characterized by** the middle surface (7) that has a upper position (U) wherein the middle surface (7) enables the area inside the frame (4) to be fully used for placing the items by being adjacent to the side surfaces (8) and a lower position (A) wherein the middle surface (7) moves away from the ceiling (T) of the washing cabin (3) and enables the side surfaces (8) to join by sliding over the same, leaving space on the sides of the frame (4) and **by** a movement mechanism (10) that enables the middle surface (7) to shift between the lower position (A) and the upper position (U).
2. A dishwasher (1) as in Claim 1, **characterized by** the movement mechanism (10) that has more than one driving arm (11) that extends from the rear wall (6) towards the front wall (5) along the edges of the middle surface (7) and that enables the movement mechanism (10) to be disposed onto the middle surface (7), an actuating member (12) that is positioned on the front wall (5) with one of end fixed to the driving arm (11), more than one locking member (13) that is positioned under the middle surface (7) and that is parallel to the front wall (5) and the rear wall (6), a lower level lock (14) that is positioned on the driving arm (11) and that enables the middle surface (7) to be moved to the lower position (A) as the locking member (13) is seated thereon and an upper position lock (15) that enables the middle surface (7) to be locked at the upper position (U).
3. A dishwasher (1) as in Claim 1 or 2, **characterized by** the movement mechanism (10) that enables, when the actuating member (12) is actuated by the user, the locking member (13) to be seated onto the lower position lock (14) and the middle surface (7) to be moved to the lower position (A) as the driving arm (11) moves from the front wall (5) towards the rear wall (6).

4. A dishwasher (1) as in any one of the above claims, **characterized by** the movement mechanism (10) that enables, when the actuating member (12) is actuated by the user, the locking member (13) to be seated onto the upper position lock (15) and the middle surface (7) to be moved to the upper position (U) as the driving arm (11) moves from the rear wall (6) towards the front wall (5).
5. A dishwasher (1) as in any of the above claims, **characterized by** the drawer (9) comprising more than one protrusion (16) disposed on the surface of the middle surface (7) in contact with the front wall (5) and more than one channel (17) that is arranged on the front wall (5), that matches the form of the protrusions (16), enabling the protrusions (16) to be moved vertically therein.
6. A dishwasher (1) as in any one of claims 2 to 5, **characterized by** the lower position lock (14) that enables the surface of the middle surface (7) to be below the bottom surface of the side surfaces (8) when the middle surface (7) is at the lower position (A).
7. A dishwasher (1) as in any one of the above claims, **characterized by** the drawer (9) wherein the side surfaces (8) can be joined so as to be used at different positions.

Figure 1

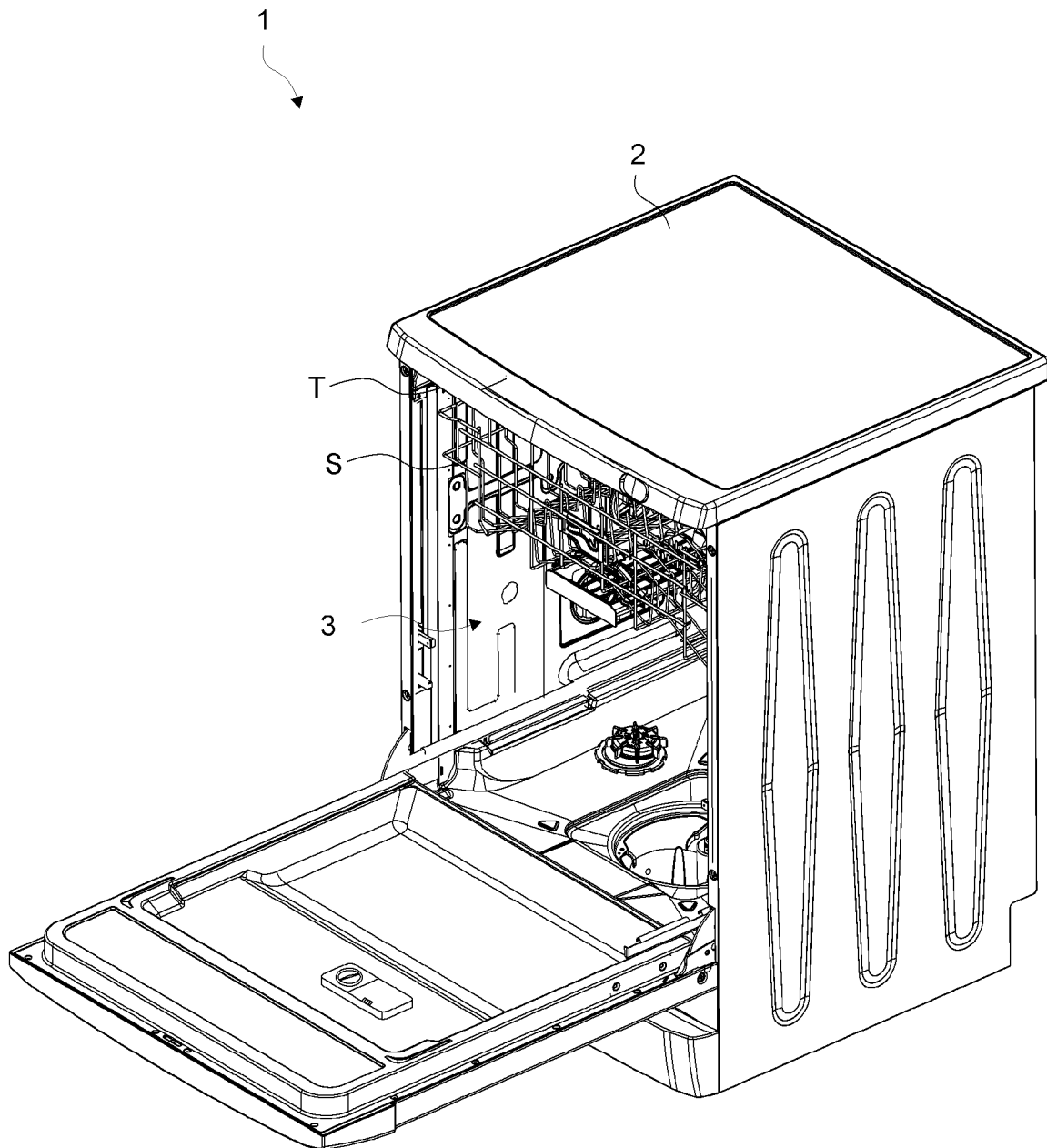


Figure 2

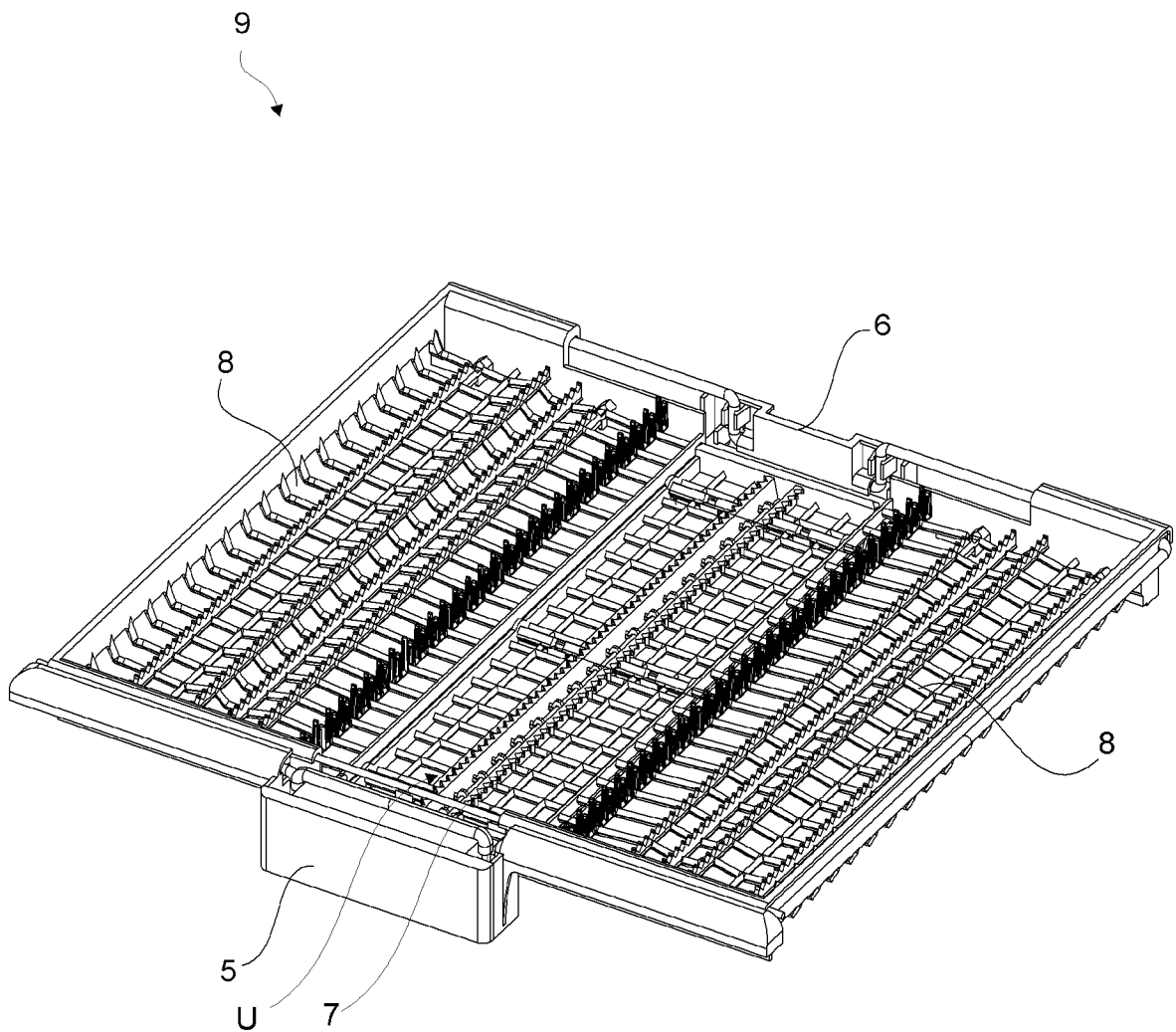


Figure 3

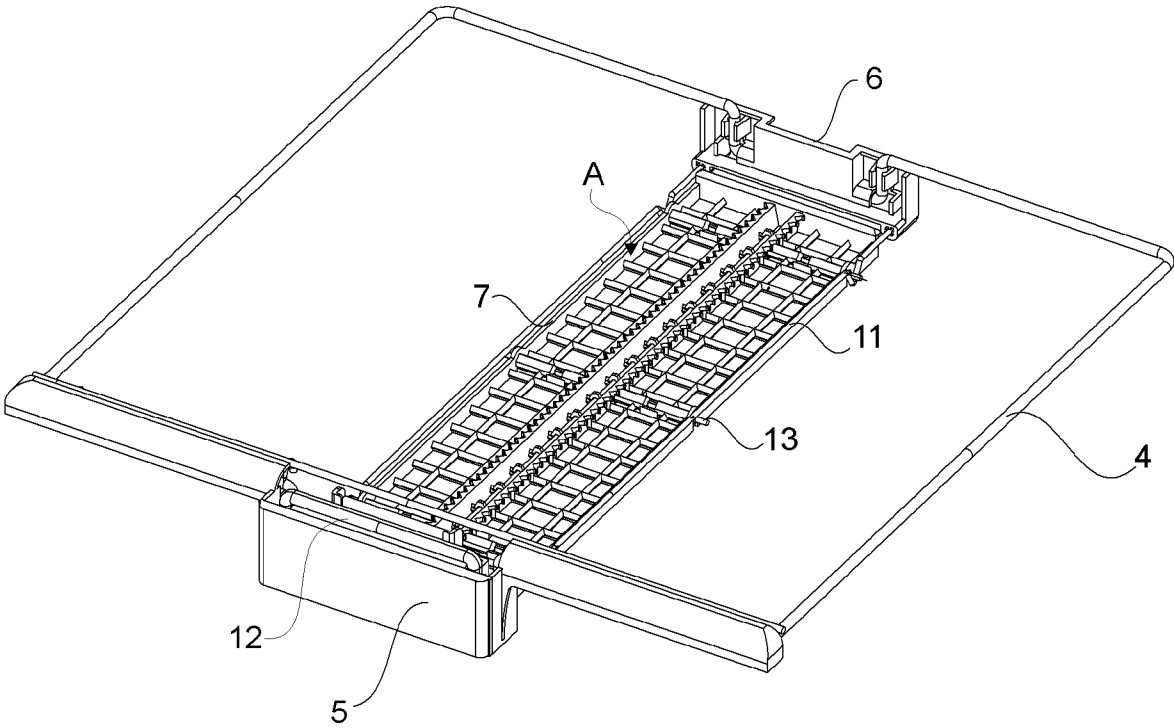


Figure 4

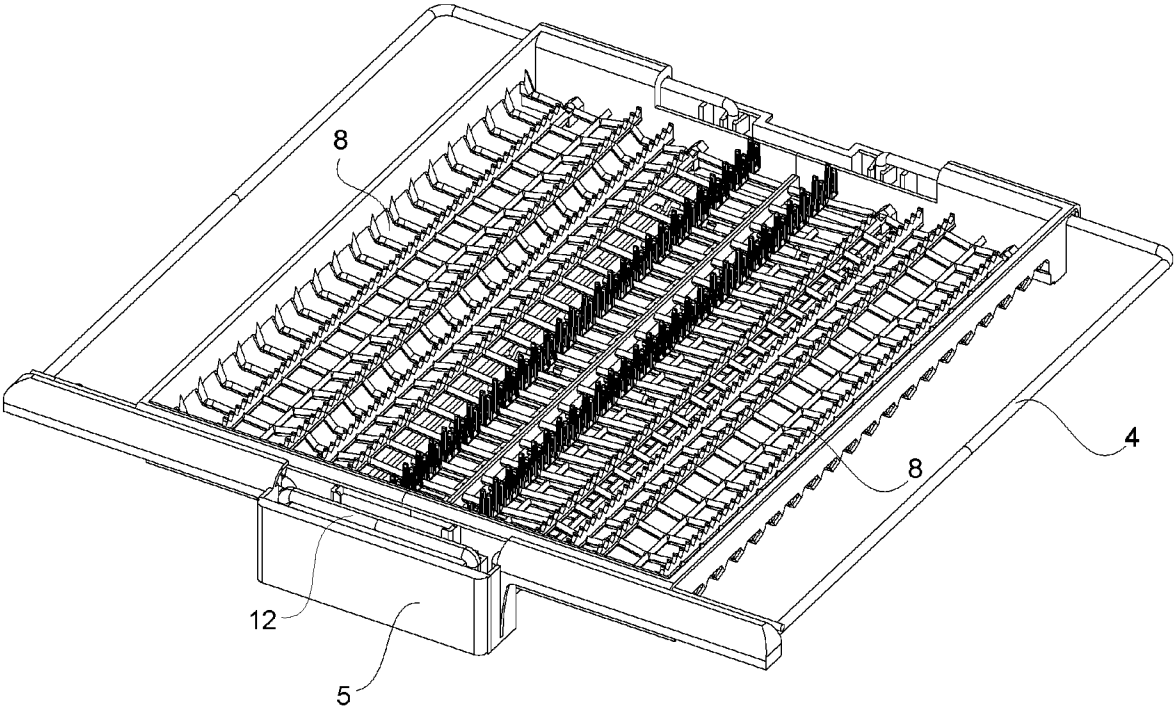


Figure 5

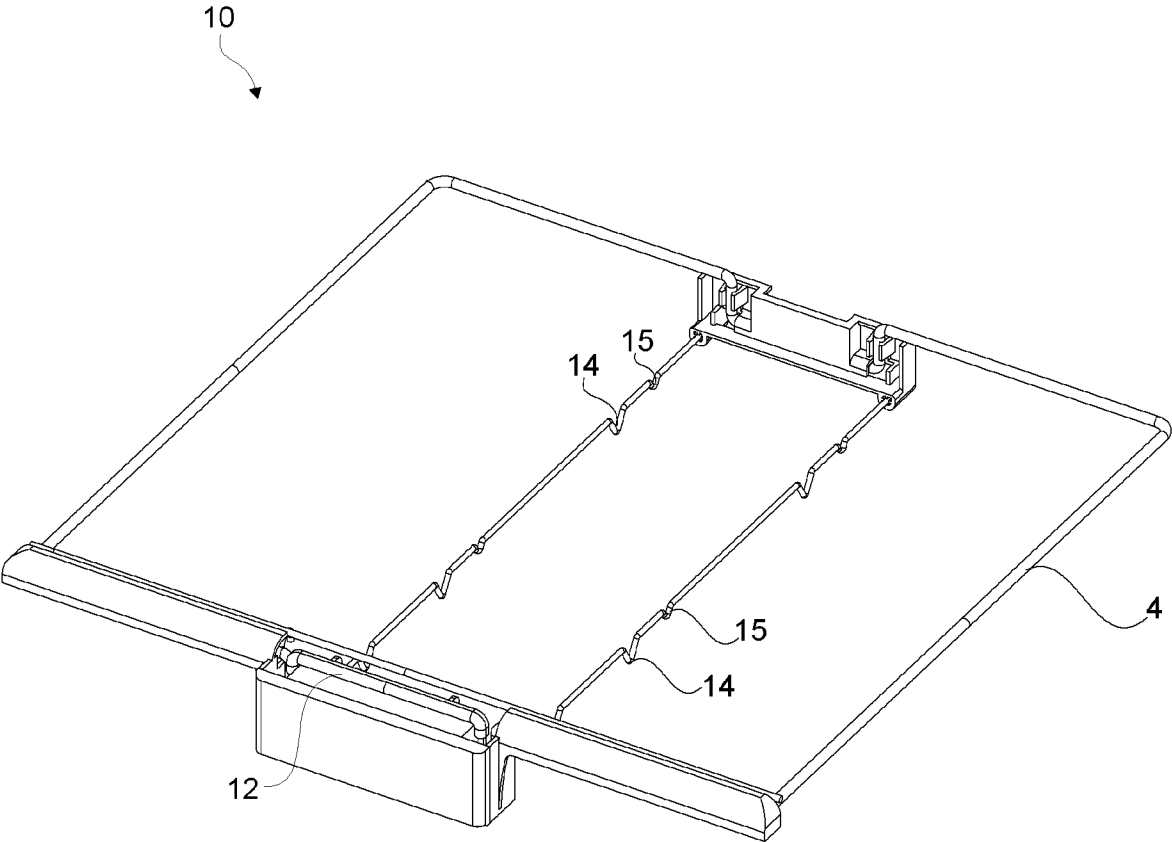


Figure 6

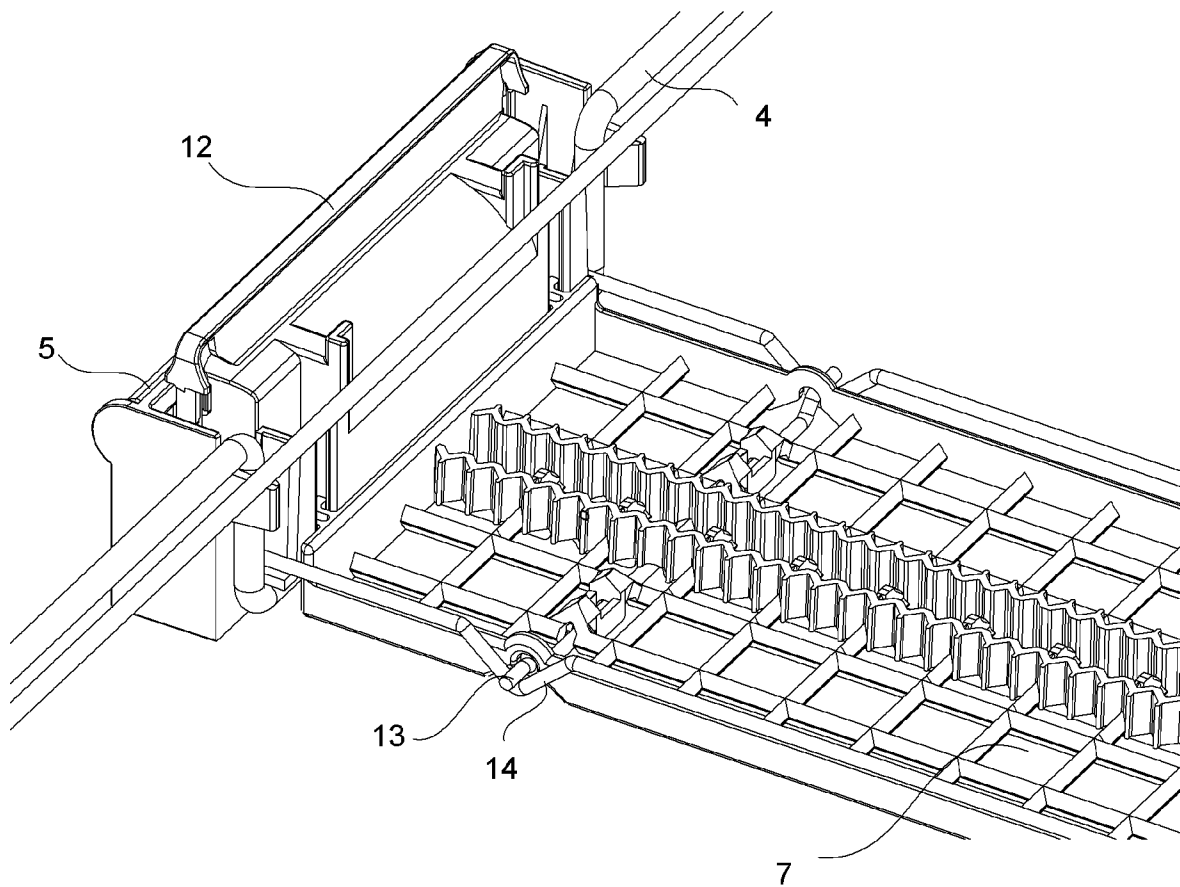
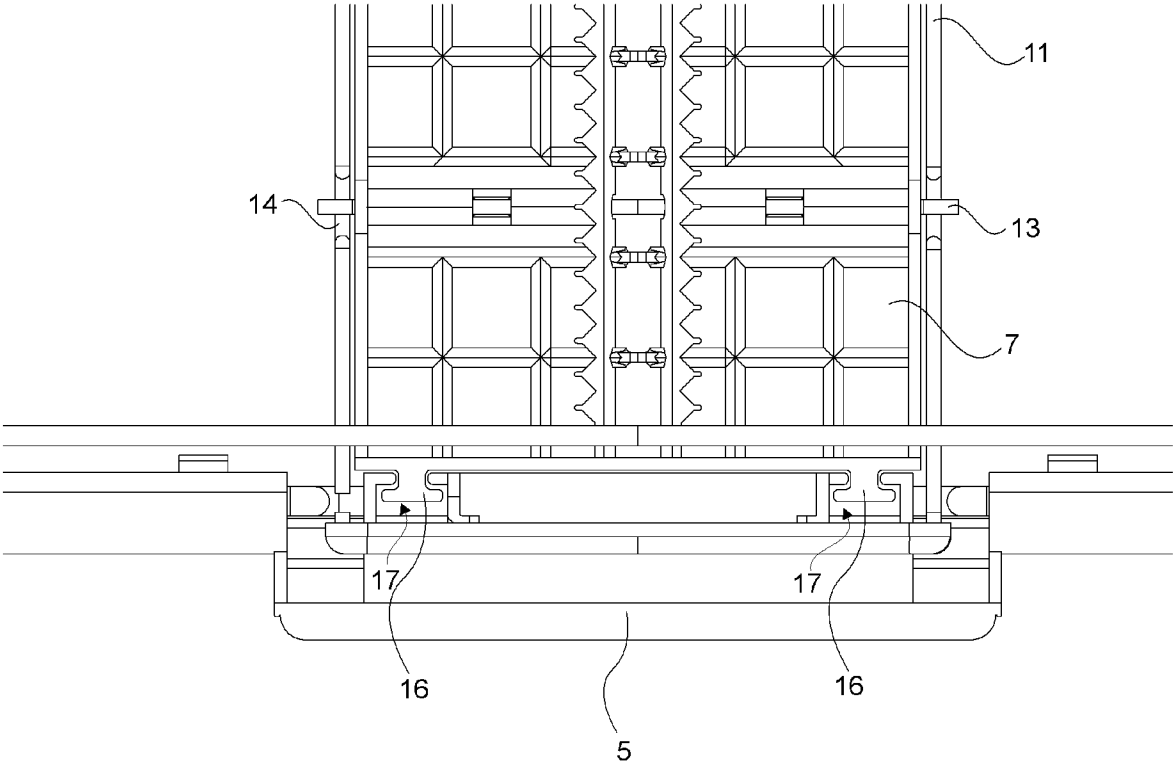


Figure 7



INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2017/057958

A. CLASSIFICATION OF SUBJECT MATTER

INV. A47L15/50

ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A47L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 10 2008 062761 B3 (MIELE & CIE [DE]) 25 March 2010 (2010-03-25) page 3, paragraph 22 - page 4, paragraph 26; figures 1-5,11-13 -----	1,5,7
A	EP 2 865 316 A1 (MIELE & CIE [DE]) 29 April 2015 (2015-04-29) the whole document -----	1-7
A	WO 2014/102737 A1 (INDESIT CO SPA [IT]) 3 July 2014 (2014-07-03) the whole document -----	1-7
A	CN 204 909 352 U (FOSHAN SHUNDE MIDEA WASHING APPLIANCES MFG CO LTD; MIDEA GROUP CO LTD) 30 December 2015 (2015-12-30) the whole document -----	1-7



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

12 June 2017

Date of mailing of the international search report

23/06/2017

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2017/057958

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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