

(19)



(11)

EP 4 578 367 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
02.07.2025 Bulletin 2025/27

(51) International Patent Classification (IPC):
A47L 15/50^(2006.01)

(21) Application number: **24208661.9**

(52) Cooperative Patent Classification (CPC):
A47L 15/505; A47L 15/503

(22) Date of filing: **24.10.2024**

(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 ME MK MT NL
NO PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA
Designated Validation States:
GE KH MA MD TN

(71) Applicant: **Arçelik Anonim Sirketi**
34445 Istanbul (TR)

(72) Inventors:
• **BASESME, Tugrul**
34445 Istanbul (TR)
• **BASTUJI, Ismail Cem**
34445 Istanbul (TR)

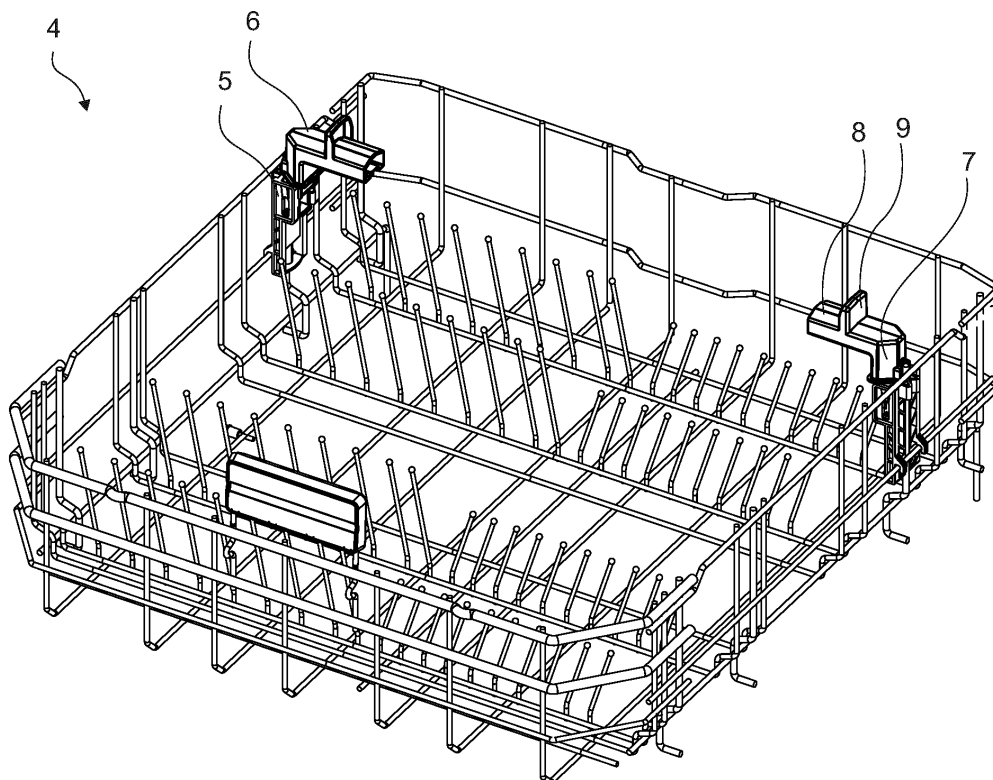
(30) Priority: **27.12.2023 TR 202318796**

(54) A DISHWASHER COMPRISING A TRAY HOLDER

(57) The present invention relates to a dishwasher (1) comprising a body (2); a washing tub (3) which is disposed in the body (2) and wherein the washing process is performed; at least one rack (4) which is disposed in the washing tub (3) and wherein the kitchen items are

placed; and a tray holder (5) which is attached to the rack (4), which has an open position wherein a tray can rest thereon and a closed position which does not serve as a holder and which is folded to shift between the open and closed positions.

Figure 3



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Description

[0001] The present invention relates to a dishwasher comprising a tray holder.

[0002] Dishwashers comprise lower and upper racks placed into the washing tub and wherein the items to be washed are placed. The racks are pulled out of the washing tub and taken out of the washing tub to place the items. The user wants to place the items in the dishwasher to be washed and dried in the most effective manner. However, since the items are placed on the rack parallel to the horizontal plane, the problem of water accumulation occurs. Therefore, various customizations are made on the rack wires. With various apparatuses attached to the rack or arranged by means of the forms of the rack wires, the kitchen items are enabled to be placed more efficiently. Thus, the washing and drying performance is increased and it becomes possible to place more kitchen items at the same time. Especially when kitchen items with a large surface area such as trays are placed in the lower rack, there are problems of the item getting stuck on the upper spray arm or the upper rack. Nevertheless, by means of the tray support apparatuses developed, the tray is enabled to be fixed in the desired area at the desired inclination. However, since the tray sizes can vary, the tray holder apparatuses cannot always be used efficiently. Especially due to different standards in different countries, the sizes of trays delivered with ovens also vary. Therefore, every tray holder attached to the rack cannot be adapted to trays of various sizes and since it becomes impossible to use, difficulties in washing are experienced.

[0003] In the state of the art European Patent No. EP2658431, a dishwasher is disclosed, comprising a tray holder which is attached to the rack wall and which can be folded to enable trays to be placed thereon.

[0004] 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 tub which is disposed in the body; at least one rack which is disposed in the washing tub; and a tray holder which is attached onto the rack and which has an open position and a closed position. The kitchen items are placed onto the rack. Thus, the washing and drying processes can be performed efficiently. When the tray holder disposed on the rack is in the open position, a tray can rest thereon. In the closed position, the tray holder is parallel to the rack wall and does not take up space. The tray holder shifts between the open position and the closed position by being folded.

[0005] The dishwasher of the present invention comprises an extension apparatus which can be detachably attached to the tray holder and enables trays of various sizes to be placed. The extension apparatus is attached to the tray holder. Thus, the tray holder can also hold trays of smaller sizes.

[0006] In an embodiment of the present invention, the dishwasher comprises the extension apparatus which

has a gripping part and a resting part. The extension apparatus comprises the gripping part and the resting part which are almost perpendicular to each other. The gripping part almost completely surrounds the tray holder and is placed thereon. The tray is placed on the resting part.

[0007] In an embodiment of the present invention, the dishwasher comprises a fixing member which is disposed on the resting part and prevents the tray from sliding off the sides. The fixing member extends perpendicularly to the resting part. Thus, the fixing member prevents the tray from sliding and separating from the resting part from the sides.

[0008] In an embodiment of the present invention, the dishwasher comprises the resting part which extends parallel to the rack base when the tray holder is in the closed position so as to enable trays to be placed thereon. The tray holder extends perpendicularly to the rack base when in the closed position. When in the open position, the tray holder becomes parallel to the rack base. However, the tray holder is in the closed position when the extension apparatus is attached thereon. Thus, the resting part is enabled to extend parallel to the rack base.

[0009] In an embodiment of the present invention, the dishwasher comprises the resting part which extends perpendicular to the rack base when the tray holder is in the open position, thus allowing kitchen items to rest on the fixing member. When the tray holder is folded to shift between the open and closed positions, the extension apparatus also changes place. When the tray holder is in the closed position, the extension apparatus becomes suitable for placing trays thereon, and when the tray holder is in the open position, the extension apparatus becomes suitable to place kitchen items such as pots etc. thereon.

[0010] In an embodiment of the present invention, the dishwasher comprises the extension apparatus which is fixed on the tray holder by means of a claw provided on the gripping part and a housing arranged on the tray holder. The claw engages with the housing when the extension apparatus is attached onto the tray holder. Thus, fixation is provided.

[0011] In an embodiment of the present invention, the dishwasher comprises the extension apparatus which has the fixing member detachably attached on resting part. The fixing member can be attached to and detached from the extension apparatus. Thus, the fixing member can be used according to the need.

[0012] In an embodiment of the present invention, the dishwasher comprises a channel which is provided on the resting part and the fixing member having an extension fitted into the channel. The extension can be placed in the channel and slide along the channel. Thus, the location of the extension can be changed depending on the tray size.

[0013] In an embodiment of the present invention, the dishwasher comprises an adjustment member which is

disposed on the fixing member and which extends towards the resting part. The position of the fixing member on the resting part can be adjusted by means of the adjustment member.

[0014] In an embodiment of the present invention, the dishwasher comprises the extension apparatus having a plurality of protrusions provided on the adjustment member and a plurality of recesses provided on the resting part so as to align with the protrusions. As the fixing member slides on the channel, the protrusions on the adjustment member engage with the recesses on the resting part. Thus, the fixing member is enabled to be fixed in the desired position.

[0015] By means of the present invention, a dishwasher is realized, comprising an extension apparatus which moves together with the tray holder so as to facilitate the placement of trays of various sizes.

[0016] The dishwasher with improved security realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 - is the perspective view of the dishwasher.

Figure 2 - is the perspective view of the rack and the tray holder.

Figure 3 - is the perspective view of the rack, the tray holder and the extension apparatus.

Figure 4 - is the sideways view of the tray holder and the extension apparatus.

Figure 5 - is the exploded view of the tray holder and the fixing member.

Figure 6 - is the cross-sectional view of the fixing member and the resting part.

[0017] The elements illustrated in the figures are numbered as follows:

- 1- Dishwasher
- 2- Body
- 3- Washing tub
- 4- Rack
- 5- Tray holder
- 6- Extension apparatus
- 7- Gripping part
- 8- Resting part
- 9- Fixing member

10- Claw

11- Housing

12- Channel

13- Extension

14- Adjustment member

15- Protrusion

16- Recess

[0018] The dishwasher (1) of the present invention comprises a body (2); a washing tub (3) which is disposed in the body (2) and wherein the washing process is performed; at least one rack (4) which is disposed in the washing tub (3) and wherein the kitchen items are placed; and a tray holder (5) which is attached to the rack (4), which has an open position wherein a tray can rest thereon and a closed position which does not serve as a holder and which is folded to shift between the open and closed positions. The washing process is performed in the washing tub (3). The kitchen items are placed on the racks (4) and cleaned as a result of the washing process. The tray holder (5) disposed on the rack (4) facilitates the washing of the trays. The tray holder (5) enables the tray to be placed thereon when in the open position. When the tray holder (5) is in the closed position, the tray holder (5) is folded so as not to occupy space on the rack (4).

[0019] The dishwasher (1) of the present invention comprises an extension apparatus (6) which is detachably attached on the tray holder (5) and enables the placement of trays of various sizes. The extension apparatus (6) is detachably attached on the tray holder (5). Thus, it becomes easier to place trays of various sizes on the rack (4).

[0020] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) which has a gripping part (7) almost completely wrapping the tray holder (5) to ensure engagement and a resting part (8) whereon the tray is placed. The gripping part (7) is mounted so as to grip the tray holder (5). When the gripping part (7) and the resting part (8) are joined, an L shape is formed. Thus, when the gripping part (7) is placed on the tray holder (5), the resting part (8) extends parallel to the base of the rack (4). Thus, a resting surface is formed for the placement of the tray.

[0021] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) which has a fixing member (9) provided on the resting part (8) and preventing the tray from sliding off the sides when resting thereon. The fixing member (9) is provided on the resting part (8). The fixing member (9) and the resting part (8) are perpendicular to each other. The fixing member (9) prevents the tray from sliding sideways. Thus, the tray is enabled to be fixed during the washing

process.

[0022] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) having the resting part (8) which extends parallel to the rack (4) base when the tray holder (5) is in the closed position so as to enable trays to be placed thereon. When the tray holder (5) is in the closed position, the gripping part (7) is located on the tray holder (5). Thus, the resting part (8) is enabled to extend parallel to the rack (4) base. Thus, the resting part (8) becomes suitable for placing trays thereon.

[0023] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) which extends perpendicularly to the base of the rack (4) when the tray holder (5) is in the open position so as to enable the fixing member (9) thereon to be used for resting kitchen items such as pots etc. thereon. When the tray holder (5) shifts position between the open and closed positions, the extension apparatus (6) is folded and changes position together with the tray holder (5). When the tray holder (5) is in the open position, the gripping part (7) becomes parallel to the base of the rack (4), and the resting part (8) becomes perpendicular to the base of the rack (4). Thus, since the fixing member (9) has a step parallel to the base of the rack (4), the kitchen items such as pots etc. can be placed thereon. Thus, the washing and drying performance is increased.

[0024] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) which can be fixed on the tray holder (5) by means of a claw (10) provided on the gripping part (7) and a housing (11) provided on the tray holder (5). When the gripping part (7) is placed on the tray holder (5), the claw (10) engages with the housing (11). Thus, the extension apparatus (6) is enabled to be fixed on the tray holder (5).

[0025] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) which has the fixing member (9) detachably attached on the resting part (8). The fixing member (9) can be attached to and detached from the extension apparatus (6). Thus, the fixing member can be used according to the need.

[0026] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) having a channel (12) which is provided longitudinally on the resting part (8) and an extension (13) which is provided on the fixing member (9) and which enters the channel (12) so as to enable the fixing member (9) to be placed on the resting part (8) and which moves on the channel (12) so as to enable the fixing member (9) to move on the resting part (8). The extension (13) is placed in the channel (12) so as to move by sliding. Thus, the location of the extension (13) can be changed depending on the tray size.

[0027] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) having an adjustment member (14) which extends from the fixing member (9) to be placed on the resting part (8).

The adjustment member (14) extends from the fixing member (9) onto the resting part (8). While the extension (13) moves in the channel (12), the adjustment member (14) also moves on the surface of the resting part (8).

[0028] In an embodiment of the present invention, the dishwasher (1) comprises the extension apparatus (6) having a plurality of protrusions (15) provided on the adjustment member (14) and a plurality of recesses (16) provided on the resting part (8) so as to align with the protrusions (15). While the fixing member (9) moves on the resting part (8), the protrusions (15) on the adjustment member (14) engage with the recesses (16) on the resting part (8). Thus, the moving fixing member (9) is enabled to be fixed.

[0029] By means of the present invention, a dishwasher (1) is realized, comprising an extension apparatus (6) which can be attached on the tray holder (5) so as to enable trays of various sizes to be placed. The extension apparatus (6) can be detachably attached on the tray holder (5) and can be used as needed.

Claims

1. A dishwasher (1) **comprising** a body (2); a washing tub (3) which is disposed in the body (2) and wherein the washing process is performed; at least one rack (4) which is disposed in the washing tub (3) and wherein the kitchen items are placed; and a tray holder (5) which is attached to the rack (4), which has an open position wherein a tray can rest thereon and a closed position which does not serve as a holder and which is folded to shift between the open and closed positions, **characterized by** an extension apparatus (6) which is detachably attached on the tray holder (5) and enables the placement of trays of various sizes.
2. A dishwasher (1) as in Claim 1, **characterized by** the extension apparatus (6) which has a gripping part (7) almost completely wrapping the tray holder (5) to ensure engagement and a resting part (8) whereon the tray is placed.
3. A dishwasher (1) as in Claim 2, **characterized by** the extension apparatus (6) which has a fixing member (9) provided on the resting part (8) and preventing the tray from sliding off the sides when resting thereon.
4. A dishwasher (1) as in Claim 2 or Claim 3, **characterized by** the extension apparatus (6) having the resting part (8) which extends parallel to the rack (4) base when the tray holder (5) is in the closed position so as to enable trays to be placed thereon.
5. A dishwasher (1) as in Claim 3 or Claim 4, **characterized by** the extension apparatus (6) which extends perpendicularly to the base of the rack (4)

when the tray holder (5) is in the open position so as to enable the fixing member (9) thereon to be used for resting kitchen items such as pots etc. thereon.

6. A dishwasher (1) as in any one of Claims 2 to 5, **characterized by** the extension apparatus (6) which can be fixed on the tray holder (5) by means of a claw (10) provided on the gripping part (7) and a housing (11) provided on the tray holder (5). 5 10
7. A dishwasher (1) as in any one of Claims 3 to 6, **characterized by** the extension apparatus (6) which has the fixing member (9) detachably attached on the resting part (8). 15
8. A dishwasher (1) as in Claim 7, **characterized by** the extension apparatus (6) having a channel (12) which is provided longitudinally on the resting part (8) and an extension (13) which is provided on the fixing member (9) and which enters the channel (12) so as to enable the fixing member (9) to be placed on the resting part (8) and which moves on the channel (12) so as to enable the fixing member (9) to move on the resting part (8). 20 25
9. A dishwasher (1) as in Claim 7 or Claim 8, **characterized by** the extension apparatus (6) having an adjustment member (14) which extends from the fixing member (9) to be placed on the resting part (8). 30
10. A dishwasher (1) as in Claim 9, **characterized by** the extension apparatus (6) having a plurality of protrusions (15) provided on the adjustment member (14) and a plurality of recesses (16) provided on the resting part (8) so as to align with the protrusions (15). 35

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Figure 1

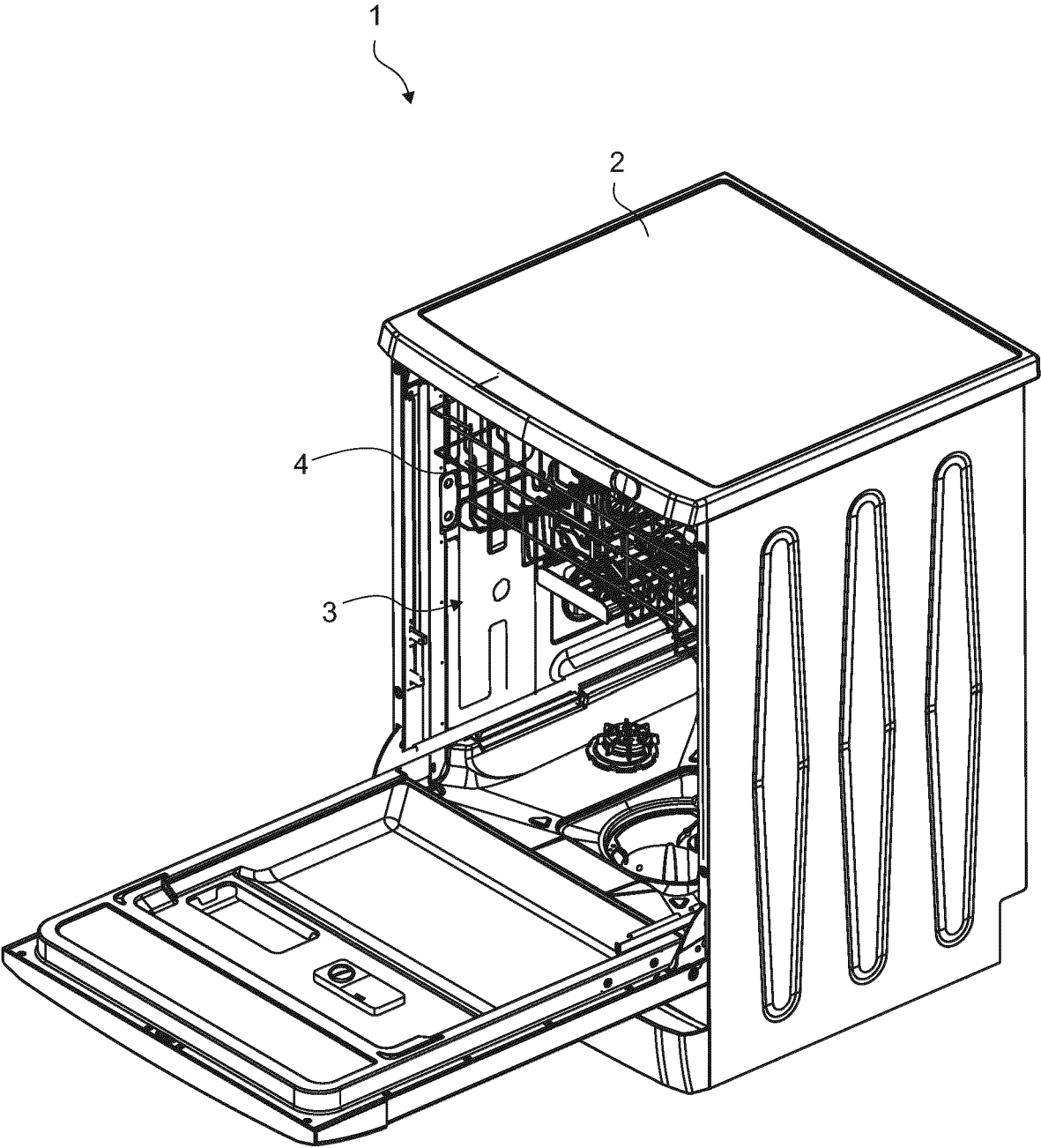


Figure 2

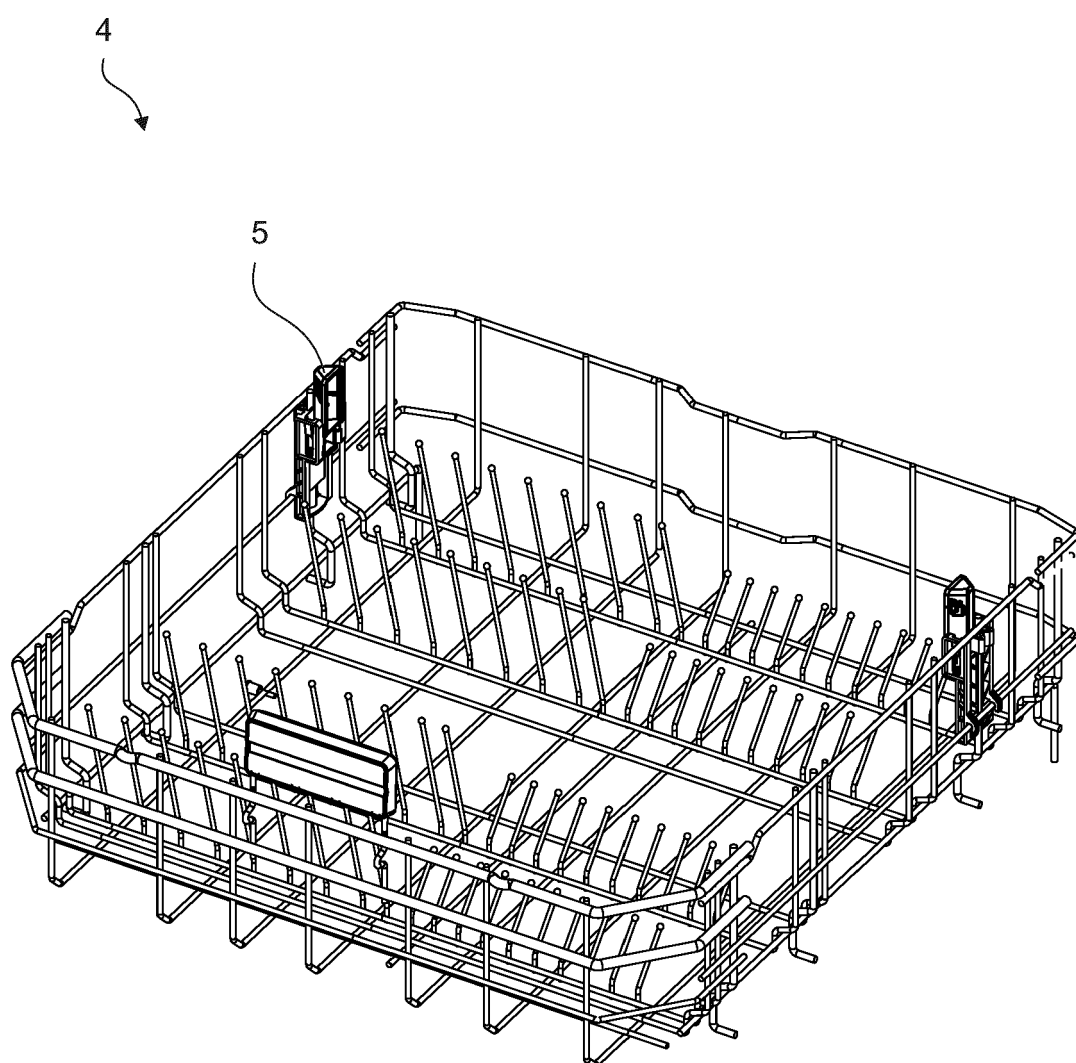


Figure 3

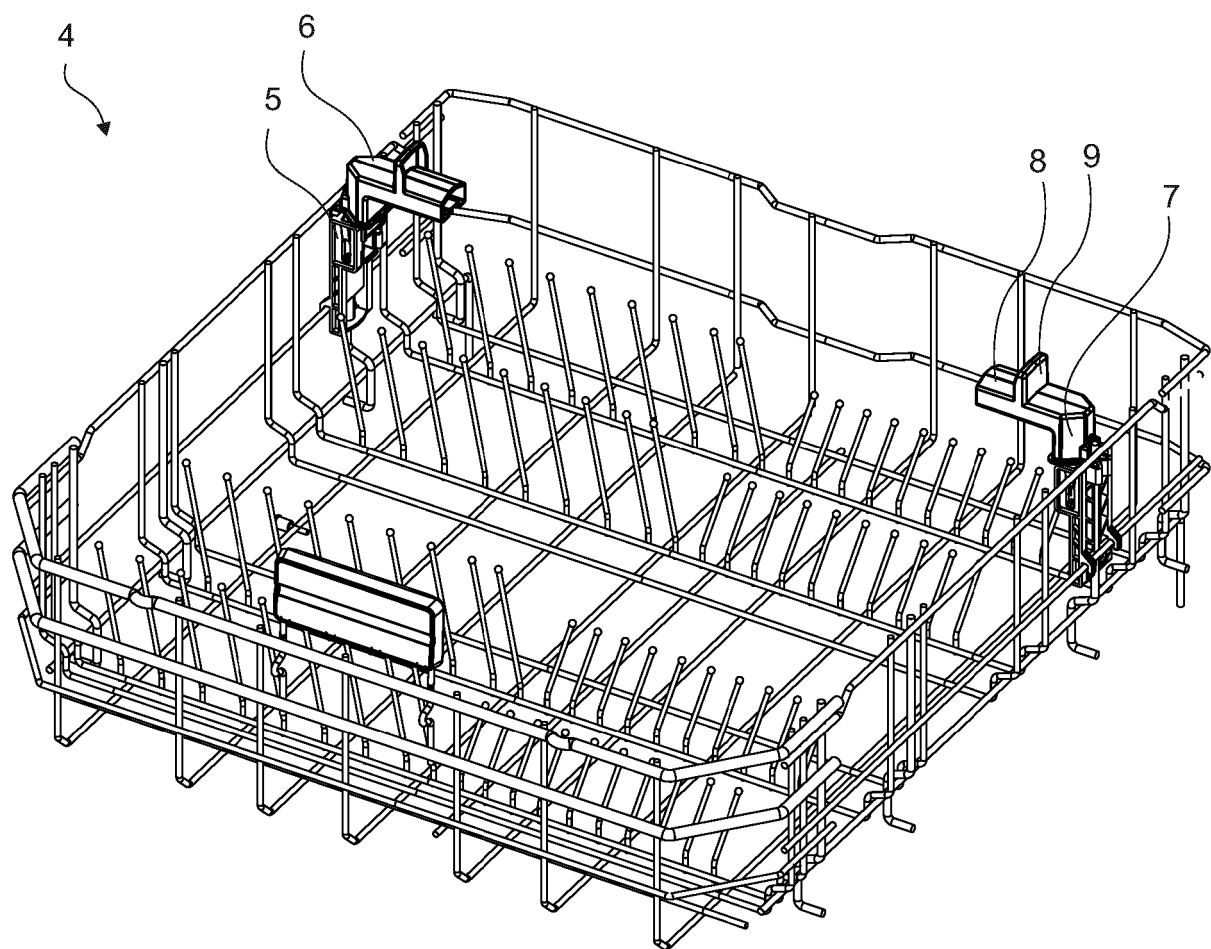


Figure 4

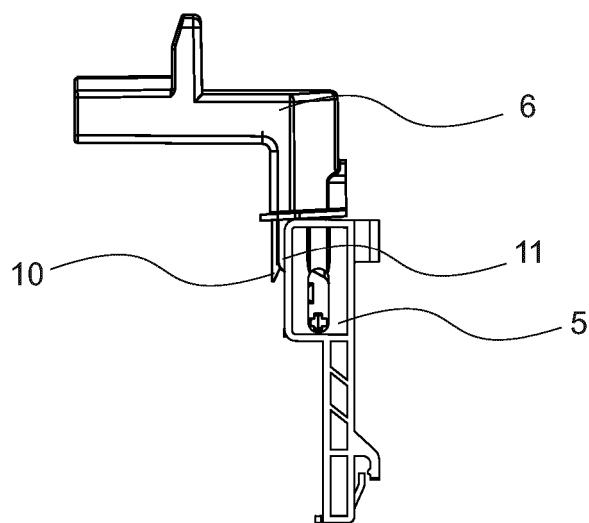


Figure 5

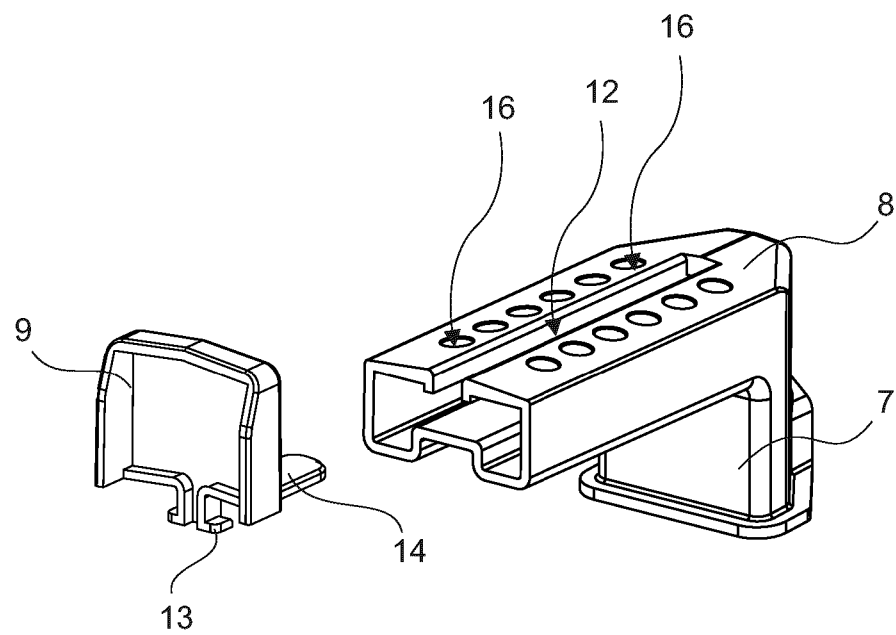
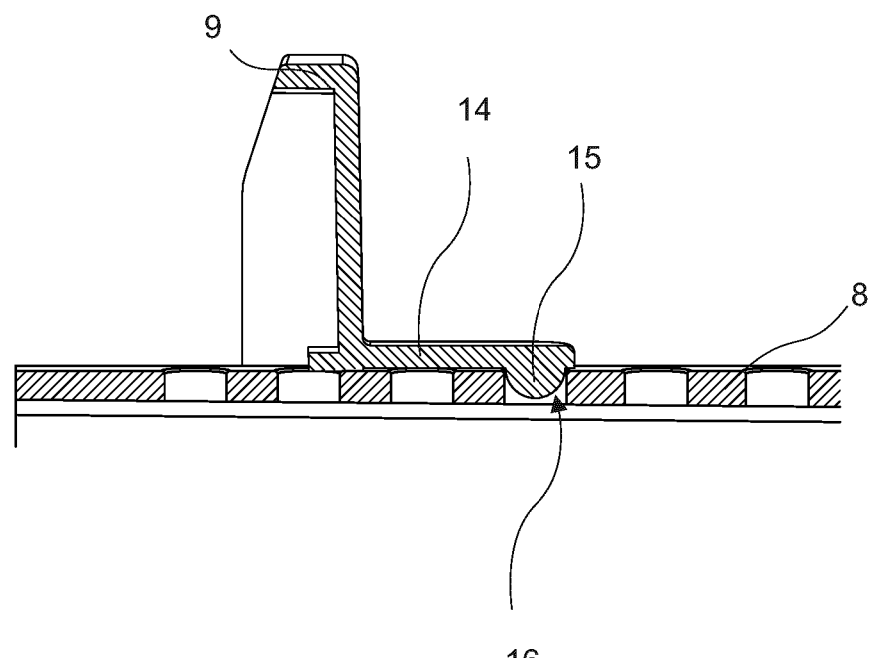


Figure 6





EUROPEAN SEARCH REPORT

Application Number

EP 24 20 8661

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A	* figures 1, 5 *	2-10	
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		15 March 2025	Lodato, Alessandra
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

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