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(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 whereon the kitchen items are placed; and a cutlery basket (6) which is disposed on the rack (4) and wherein small kitchen items such as forks,

spoons, etc. are placed. A tray holder (7) is disposed on the rack (4) on the edge farthest from the cutlery basket (6) and opposite the cutlery basket (6), the tray holder (7) can be attached to and detached from the rack (4) and has at least one step (8) whereon one side of kitchen items such as tray can be placed in a stepped manner.

EP 4 578 369 A1

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 aim of the present invention is the realization of a dishwasher with improved washing effectiveness.

[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 tub which is disposed in the body; at least one rack which is disposed in the washing tub; and a cutlery basket which is provided on the rack. The kitchen items are placed onto the rack. Smaller kitchen items such as forks, spoons, etc. are placed in the cutlery baskets. Thus, safe washing is performed.

[0006] The dishwasher of the present invention comprises a tray holder which can be attached to and detached from the rack. The tray holder is attached on the lateral edge of the rack so as to be opposite the cutlery basket. The tray can be placed on the tray holder in more than one position. Thus, the placement of trays of different sizes is facilitated.

[0007] In an embodiment of the present invention, the dishwasher comprises the tray holder having a plurality of steps which are provided parallel to each other in the

vertical plane. By means of the steps, the tray can be placed in more than one position.

[0008] In an embodiment of the present invention, the dishwasher comprises the cutlery basket against which the lateral edges of the tray bear while the edge thereof bears against the step. The tray holder and the cutlery basket are used together so as to enable the tray to be placed on the rack.

[0009] In an embodiment of the present invention, the dishwasher comprises at least one abutment surface which is provided on the cutlery basket and against which the tray bears. One edge of the tray is placed on the tray holder. The lateral edges thereof are placed on the abutment surface on the cutlery basket. Thus, the tray is enabled to be fixed onto the rack.

[0010] In an embodiment of the present invention, the dishwasher comprises the tray holder having a first position, a second position and a third position. When in the first position, the angle between the tray and the base of the rack is larger. While shifting from the first position to the third position, the angle between the tray and the base of the rack narrows down and the upper edge of the tray approaches the base of the rack. Thus, the tray holder can be adapted to different tray sizes.

[0011] In an embodiment of the present invention, the dishwasher comprises at least one handle which is provided on the cutlery basket and which can be folded onto the tray. Thus, the handle is enabled to fix the tray from the lateral edges.

[0012] By means of the present invention, a dishwasher comprising a tray holder with a stepped structure is realized.

[0013] The dishwasher 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 tray holder on the rack.

Figure 3 - is the perspective view of the tray holder.
Figure 4 - is the sideways view of the rack, the spraying member and the cutlery basket.

[0014] The elements illustrated in the figures are numbered as follows:

1- Dishwasher

2- Body

3- Washing tub

4- Rack

5- Spraying member

6- Cutlery basket

7- Tray holder

8- Step

9- Abutment surface

10- Protrusion

11-Handle

[0015] The dishwasher (1) 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 whereon the kitchen items are placed; and a cutlery basket (6) which is disposed on the rack (4) and wherein small kitchen items such as forks, spoons, etc. are placed. The cutlery basket (6) is placed onto the rack (4). By placing the cutlery on the cutlery basket (6), more efficient washing is achieved and the cutlery is not scattered around during the washing process.

[0016] The dishwasher (1) of the present invention comprises a tray holder (7) which is disposed on the rack (4) on the edge farthest from the cutlery basket (6) and opposite the cutlery basket (6), which can be attached to and detached from the rack (4) and which has at least one step (8) whereon one side of kitchen items such as tray, etc. can be placed in a stepped manner. The tray holder (7) is formed so as to be attached to and detached from on one side of the rack (4). The tray holder (7) is positioned vertically on one side of the rack (4). The tray holder (7) is positioned opposite the cutlery basket (6) and has a plurality of positions in the vertical plane. Thus, it becomes possible to place trays of different sizes.

[0017] In an embodiment of the present invention, the dishwasher (1) comprises the tray holder (7) which enables the kitchen items to be placed in more than one position by means of a plurality of steps (8) provided parallel to each other in the vertical plane. The steps (8) are arranged one below the other in the vertical plane. Depending on the size of the tray, one edge thereof is placed on one of the steps (8). Thus, the water is homogeneously delivered to the tray and washing efficiency is increased.

[0018] In an embodiment of the present invention, the dishwasher (1) comprises the cutlery basket (6) against which the lateral edges perpendicular to the edges bearing against the tray holder (7) bear. The lateral edges of the tray, one edge of which bears against one of the steps (8), bear against the cutlery basket (6). Thus, the tray is enabled to be placed in an inclined manner in the rack (4) and becomes easy to wash.

[0019] In an embodiment of the present invention, the dishwasher (1) comprises at least one abutment surface (9) which is provided on the cutlery basket (6) and against which the lateral edges of the tray bear. The abutment surface (9) is provided on the cutlery basket (6) at the point against which the edges of the tray bear. The

abutment surface (9) is manufactured from a material with a high coefficient of friction. Thus, the tray is enabled to be held from the lateral edges.

[0020] In an embodiment of the present invention, the dishwasher (1) comprises the tray holder (7) which has a first position where the angle of the tray with the base of the rack (4) is the largest, a second position where the angle of the tray with the base of the rack (4) is reduced, and a third position where the angle of the tray with the base of the rack (4) is the smallest. Three steps (8) are provided on the tray holder (7). The first step (8) ensures that the edge of the tray is kept at the highest position. It is suitable to use the said step (8) for trays which are relatively small in size. The area under the tray can be used for kitchen items such as plates, pots, etc. In the second position, the edge of the tray is in a lower position. Thus, the upper edge of the tray is prevented from hitting the spraying member (5) or the upper rack (4). In the third position, the angle between the tray and the base of the rack (4) decreases. Placing the largest tray in this position improves washing.

[0021] In an embodiment of the present invention, the dishwasher (1) comprises a plurality of protrusions (10) which are provided on the abutment surface (9) and which can work in harmony with the first position, the second position and the third position. When the tray is placed in the first position, the second position and the third position, the protrusions (10) on the abutment surface (9) enable the same to be fixed. Thus, the tray is kept fixed during the washing process.

[0022] In an embodiment of the present invention, the dishwasher (1) comprises the cutlery basket (6) having at least one handle (11) which folds and bears against the tray to ensure the fixing from the sides when the tray bears against the cutlery basket (6). The tray is fixed from the sides by means of the handles (11) of the cutlery basket (6) which can be folded onto the tray. The folding process can be done in any manner. The state of the art hinge systems can be used on the handle (11) for the folding process.

[0023] By means of the invention, a dishwasher (1) is realized, which facilitates the placement of trays of different sizes on the rack (4) by means of the tray holder (7) with more than one position. By means of the tray holder (7), trays of various sizes can be fixed on the rack (4). Thus, the washing performance is increased and ease of use is provided.

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 whereon the kitchen items are placed; a spraying member (5) which delivers the water onto the rack (4); and a cutlery basket (6) which is disposed on the

rack (4) and wherein small kitchen items such as forks, spoons, etc. are placed, **characterized by** a tray holder (7) which is disposed on the rack (4) on the edge farthest from the cutlery basket (6) and opposite the cutlery basket (6), which can be attached to and detached from the rack (4) and which has at least one step (8) whereon one side of kitchen items such as tray, etc. can be placed in a stepped manner.

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2. A dishwasher (1) as in Claim 1, **characterized by** the tray holder (7) which enables the kitchen items to be placed in more than one position by means of a plurality of steps (8) provided parallel to each other in the vertical plane.

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3. A dishwasher (1) as in Claim 1 or Claim 2, **characterized by** the cutlery basket (6) against which the lateral edges perpendicular to the edges bearing against the tray holder (7) bear.

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4. A dishwasher (1) as in Claim 3, **characterized by** at least one abutment surface (9) which is provided on the cutlery basket (6) and against which the lateral edges of the tray bear.

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5. A dishwasher (1) as in any one of the above claims, **characterized by** the tray holder (7) which has a first position where the angle of the tray with the base of the rack (4) is the largest, a second position where the angle of the tray with the base of the rack (4) is reduced, and a third position where the angle of the tray with the base of the rack (4) is the smallest.

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6. A dishwasher (1) as in Claim 5, **characterized by** a plurality of protrusions (10) which are provided on the abutment surface (9) and which can work in harmony with the first position, the second position and the third position.

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7. A dishwasher (1) as in any one of the above claims, **characterized by** the cutlery basket (6) having at least one handle (11) which folds and bears against the tray to ensure the fixing from the sides when the tray bears against the cutlery basket (6).

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Figure 1

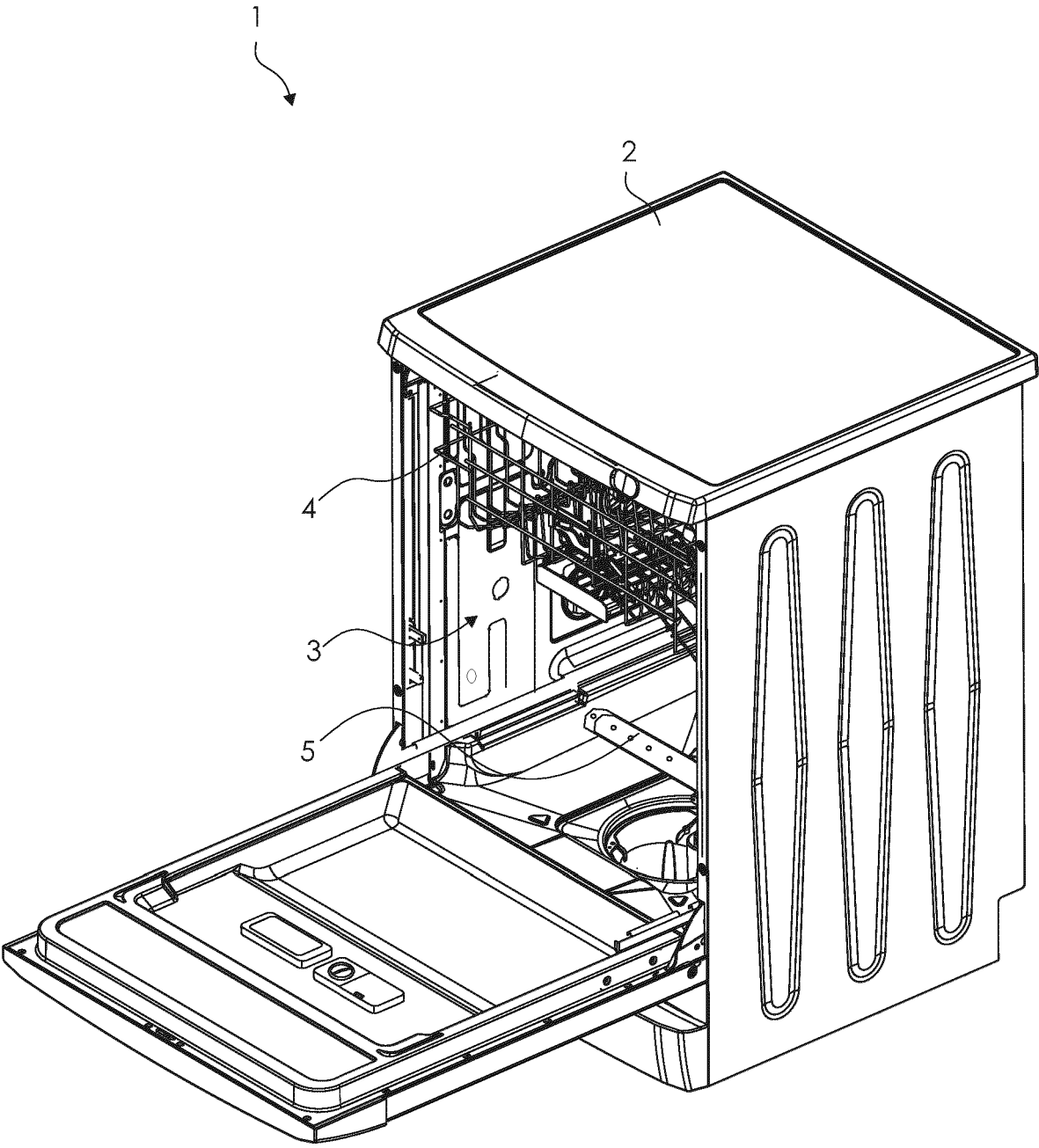


Figure 2

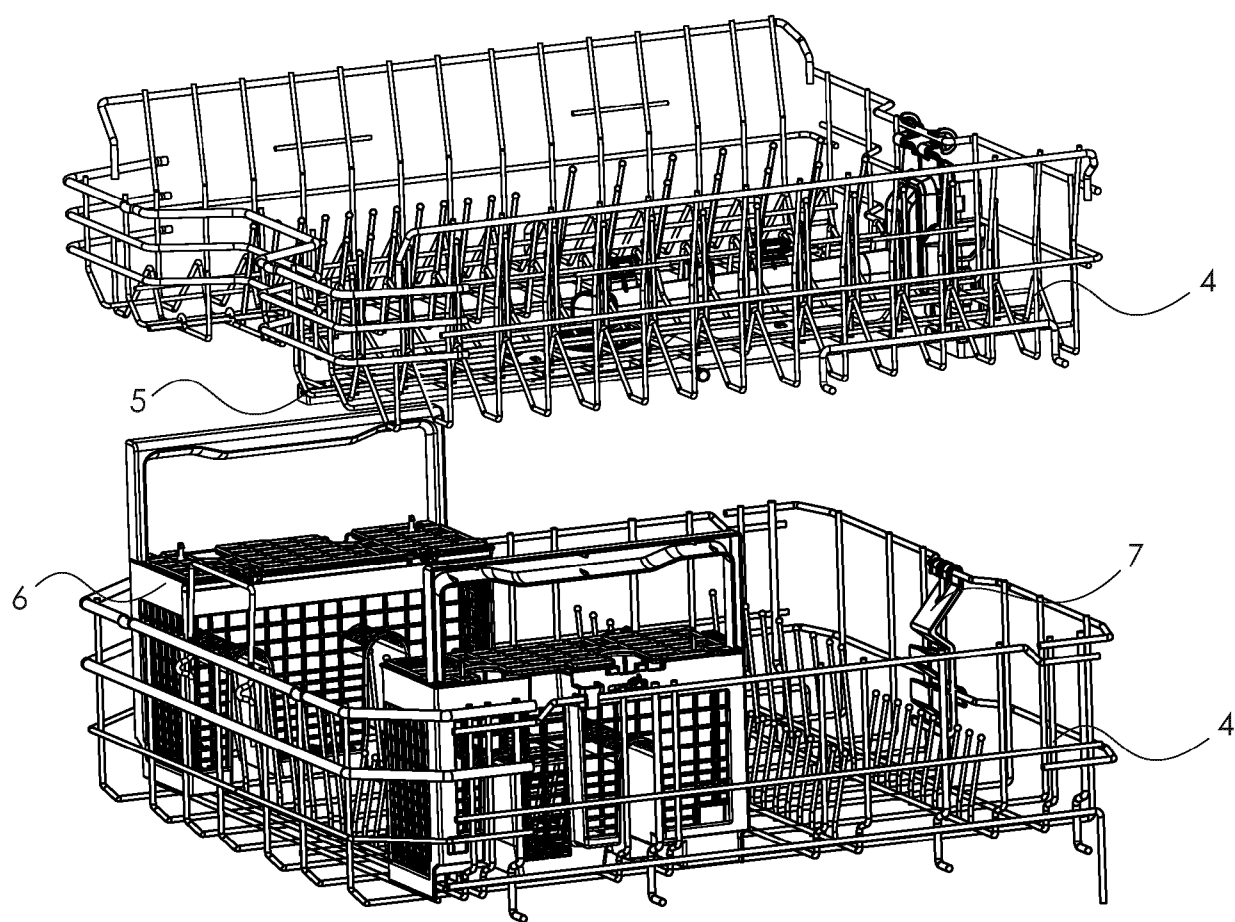


Figure 3

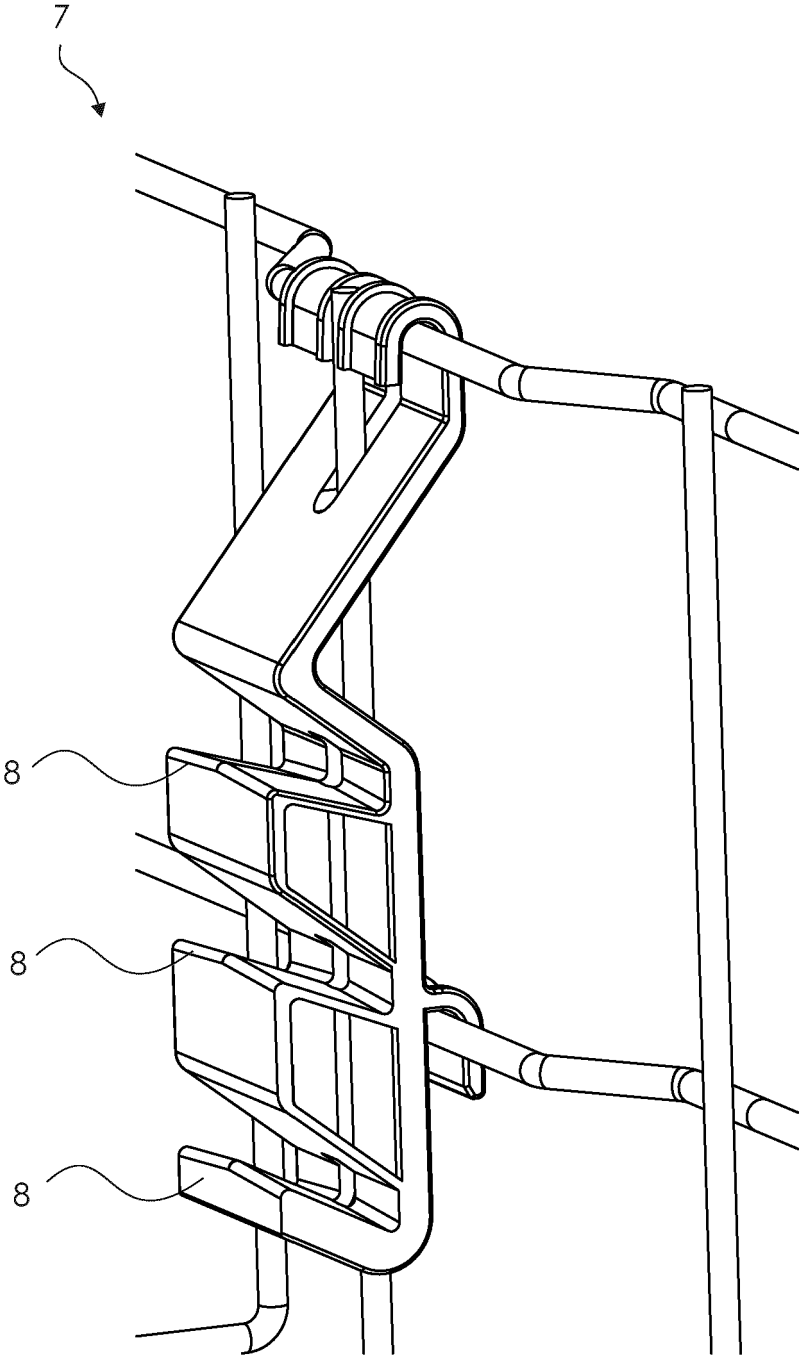
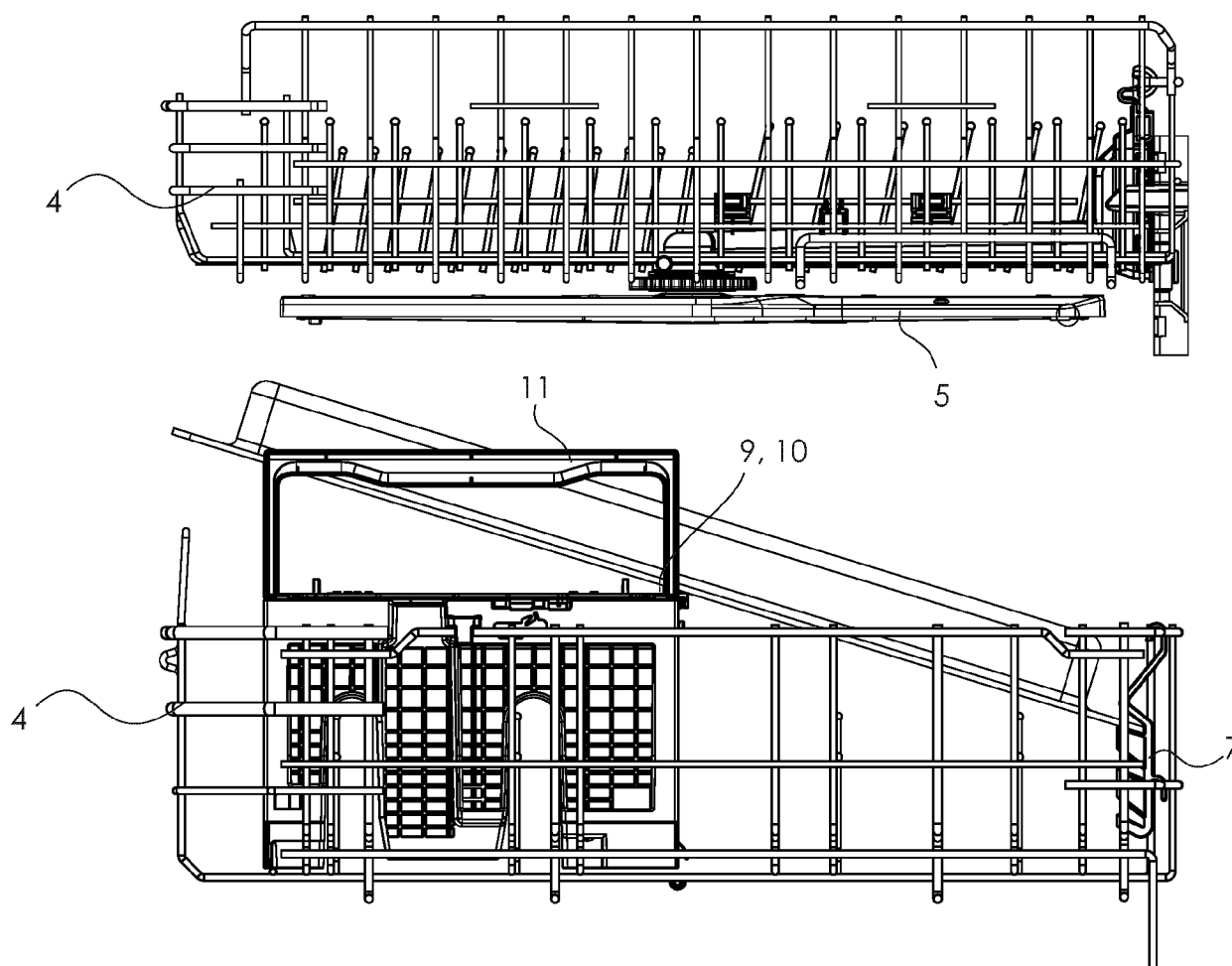


Figure 4





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Application Number

EP 24 21 5170

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EPO FORM 1503 03.82 (P04C01)

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 11 April 2025	Examiner Prosig, Christina
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document 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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