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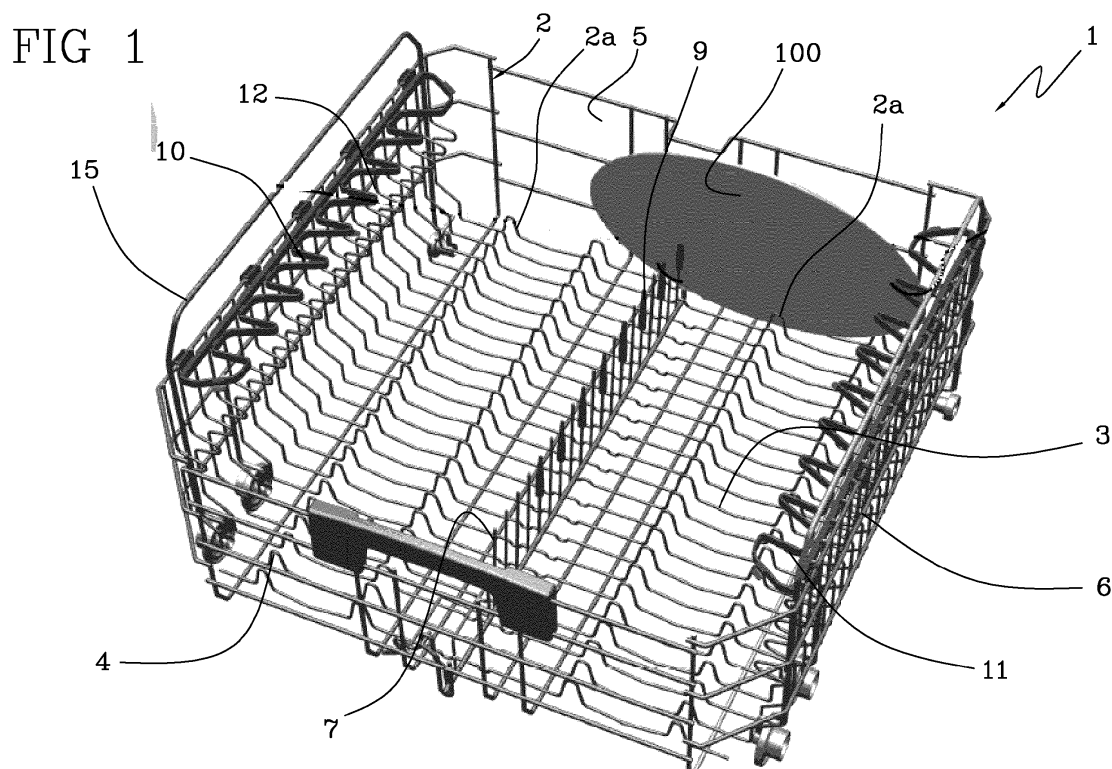
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(54) **Dishwasher basket**

(57) A dishwasher basket comprises a grid-like structure (2) having a bottom wall (3), a front wall (4), a back wall (5) and two side walls (6), the grid-like structure (2) comprising a plurality of rigid wires joined together, the wires of the bottom wall (4) extending in such an arrangement as to define shoulders (2a) for receiving plates (100), the basket comprising a plurality of vertically extending prongs (7), having an end (7a) secured or secur-

able to the bottom wall (4) and a free end (7b), which are designed to define supports for the received plates. At least some of the prongs (7) have respective resilient portions (9), each having a first end (9a) secured to the free end (7b) of its prong (7), and a second free, unsecured end (9b), said resilient portions being made of an elastically deformable polymeric material.



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Description

TECHNICAL FIELD

[0001] The present invention relates to a dishwasher basket of the type adapted to accommodate a plurality of dishware to be washed.

BACKGROUND OF THE INVENTION

[0002] Dishwasher baskets usually consist of a grid-like structure made of metal, preferably steel wires, which are electrically welded and coated with a plastic material. The grid-like structure has the purpose of allowing the washing liquid to reach the dishware and flow from the latter toward the bottom of the washing chamber of the dishwasher. Most dishwashers have two baskets one above the other. The lower basket usually has a greater load capacity than the upper basket and is designed to accommodate larger dishware, such as pots, pans and plates. A revolving device is very often provided between the lower basket and the upper basket, for delivering the washing fluid and hence evenly sprinkle therewith the dishware to be washed.

[0003] The grid-like structure of the basket has a plurality of prongs extending from the bottom of the basket upwards. These prongs are fixedly mounted relative to the bottom of the basket or, more often, can be rotated relative to the bottom of the basket between a substantially vertical raised position (perpendicular to the bottom of the basket) and a lowered position (parallel to the bottom of the basket). When the prongs are in the raised position, they are used to support the dishware in the vertical position, such that the basket may accommodate, for instance, a plurality of plates arranged in substantially vertical and parallel positions. This will optimize the load volume of the basket. The maximum size of the plates that may be loaded in the basket is given by the distance between the bottom of the basket and the revolving device for delivering the washing fluid or, in the case of the upper basket, by the distance between the bottom of the basket and the top wall of the washing chamber.

[0004] A limitation of the above described baskets is that large plates, such as serving plates, underplates and pizza plates, cannot be loaded in the basket because their diameter is greater than the distance between the bottom of the basket and the revolving device. In an attempt to obviate this drawback, baskets have been developed, which have receiving seats (or guides) for plates inclined to the vertical, i.e. designed to receive plates in a non-vertical, inclined orientation. This, the vertical space required for accommodating plates decreases (in proportion to the inclination of the guides to the vertical) thereby allowing the basket to receive large plates. Nevertheless, in this case the number of "conventional", i.e. normal-sized plates, that can be loaded in the basket decreases, due to the inclination at which plates are received in the basket.

[0005] In the light of the above, the technical purpose of the present invention is to provide a dishwasher basket that obviates the above drawbacks.

[0006] Particularly, the object of the present invention is to provide a dishwasher basket that can receive both large- and normal-sized plates, while maximizing in both cases the number of loadable plates.

SUMMARY OF THE INVENTION

[0007] According to the present invention, the technical purpose and the intended objects are fulfilled by a dishwasher basket as defined by the features of one or more of the annexed claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The features and advantages of the invention will appear from the following detailed description of an embodiment of a dishwasher basket of the present invention, which is illustrated without limitation in the annexed drawings, in which:

- Figure 1 is a schematic perspective view of a dishwasher basket of the present invention,
- Figures 2 and 3 show enlarged views of details of the basket of Figure 1; and
- Figure 4 shows a side view of the basket of Figure 1.

DETAILED DESCRIPTION OF THE INVENTION

[0009] A dishwasher basket was generally designated by numeral 1 in Figure 1.

[0010] The basket 1 comprises a grid-like structure 2 having a bottom wall 3, a front wall 4, a back wall 5 and two side walls 6 extending between the front wall and the back wall. These walls define a load volume for the basket 1. The grid-like structure 2 is made of rigid metal, preferably steel wires, coated with plastic and joined together, for instance, by electric welding. The extension of these wires creates lead-in arrangements for receiving dishware in the load volume of the basket. For example, the extension of the wires of the bottom wall 3 forms shoulders and/or abutments 2a for insertion of plates 100. These shoulders and/or abutments 2a have the purpose of engaging the edges of the plates 100 inserted in the load volume, such that the loaded plates may take a predetermined position in the bottom wall 3 and be prevented from freely moving therealong (as shown in Figure 1).

[0011] A plurality of substantially vertically-extending prongs 7 extend from the bottom wall 3 of the basket 1. These prongs 7 have a substantially rod-like shape and are made of wires that are very similar or identical to the wires that form the grid-like structure 2. The prongs 7 have a first end 7a that is or can be secured to the bottom wall 3 and a second free end 7b opposite to the first end 7a. The prongs 7 may be directly secured to the bottom

wall 3 or may be joined together by a rod 8 which is in turn engaged with the bottom wall 3 (as shown in Figure 2). The rod 8 is adapted to be pivoted about its axis of extension relative to the bottom wall 3, such that the prongs 7 may pivot between an operating position in which they arise from the bottom wall 3 substantially perpendicular thereto (as shown in Figure 2) and a rest position in which they lie on the bottom wall 3 substantially parallel thereto. When the prongs 7 are in the operating position, they have the purpose of supporting the plates 100 in the basket in a substantially vertical position. As shown in Figure 1, the prongs 7 are arranged in at least one ordered row extending between the front wall 4 and the rear wall 5, to form a plurality of supports for the plates 100, for accommodation thereof in the basket in an ordered and parallel row.

[0012] At least some of the prongs 7 have respective resilient portions 9, each having a first end 9a secured to the free end 7b of its prong 7, and a second free, unsecured end 9b (see Figures 1 and 2). The resilient portions 9 are made of an elastically deformable polymeric material. As used herein, the term "elastically deformable" is intended to designate the ability to deform under a load (i.e. a force) and be restored to an underformed configuration when the load is removed. The amount of elastic deformation of the resilient portions 9 is sufficient to be visually perceived, i.e. is much greater than the inherent degree of elastic deformation of the prongs 7 without the resilient portion 9. In the preferred embodiment of the invention the resilient portion 9 is made of silicone rubber. It should be noted that the resilient portions 9 have a substantially rod-like shape. Preferably, the prongs 7 with the resilient portion 9 reach a level, i.e. the overall height of the rigid portion of the prong 7 and the resilient portion 9, that is substantially equal to the level reached by the prongs without the resilient portion 9. In other words, the height reached by the prongs 7 with the resilient portion 9, measured at the second end 9b of the resilient portion 9, is substantially equal to the heights reached by the prongs without the resilient portion 9. Preferably, the resilient portion 9 has half the height of a prong 7 without the resilient portion 9. The length of the rigid wires that form the prongs 7 is smaller in the prongs engaged by the resilient portion, than in the prongs without the resilient portion, such that the resilient portions are free to bend.

[0013] The prongs with the resilient portion 9 and the prongs without the resilient portion 9 alternate along the ordered row of prongs. Preferably, a prong 7 with a resilient portion 9 is followed and/or preceded by a prong 7 without a resilient portion (as shown in Figures 1 and 2).

[0014] The basket 1 further comprises active auxiliary support members 10 at least at one side wall 6 of the basket, which are designed to cooperate with the prongs 7 having resilient portions 9 for supporting the plates 100. The auxiliary support members 10 are designed to operate at a higher level than the prongs 7. As used herein, the term level is intended to designate the distance along

the vertical arising from the bottom wall 3 of the basket, relative to the bottom wall 3. Thus, the auxiliary support members 10 act upon a different portion of the plate 100 which is at a higher level than the portion of the plate acted upon by the resilient portions 9 of the prongs 7.

[0015] In the preferred embodiment of the invention, the auxiliary support members 10 comprise at least one rack 11 on a side wall 6 of the basket 1. Preferably, two racks 11 are provided, each placed on a respective side wall 6. The rack 11 comprises a plurality 12 of recesses, each designed to engagingly receive a portion of a plate 100. The recesses 12 are formed by loops 12 defined along the extension of the rack 11. Each loop 13 is separated from the previous and the next ones by a projection 14 of the rack 11, as shown in Figure 3. The number of recesses 12 of each rack 11 is preferably equal to the number of resilient portions 9 of the prongs 7, such that each resilient portion 9 cooperates with a respective recess 12 in supporting a plate 100. Furthermore, the distance of each recess 12 from the back wall 5 of the basket is longer than the distance of the respective resilient portion 9 from the back wall 5 of the basket.

[0016] As described above, large plates may be loaded in the basket 1. These plates lie on the resilient portion 9 of the prongs, thereby causing elastic deformation thereof. The plate is no longer oriented vertically, i.e. substantially perpendicular to the bottom wall 3, but tilts to follow the elastic deformation of the resilient portion. Due to this inclination, the plate reaches a lower level, and may thus be introduced into the washing chamber. Therefore, as many large plates may be introduced into the basket as there are resilient portions 9, such that all the large plates in the basket lie in inclined and parallel positions, as shown in Figure 4. It shall be noted that the degree of deformation of the resilient portion is a direct function of the force applied thereon. This force is in turn directly proportional to the level of the center of gravity of the plate. Therefore, the larger the plate, the more the resilient portion deforms and the greater the inclination of the plate in the basket. When normal-sized plates are introduced into the basket, the resilient portions are deformed to a much smaller extent than in the case of large plates. As a result, normal-sized plates stand in a substantially vertical direction in the basket, and their number may be maximized.

[0017] It shall be noted that the auxiliary support members 10 assist the resilient portions in maintaining the position of large plates. The recesses 12 receive a portion of the plate 100, thereby acting as a shoulder and preventing the plate from further tilting. Thus, the basket may receive even heavy and large plates, while preventing the heavy weight of the plates from excessively deforming the resilient portions (and hence preventing the plates from being overturned). The difference between the distance of each recess 12 from the back wall 5 of the basket and the distance of the respective resilient portion 9 from the back wall 5 of the basket will define the maximum tilt of the plates 100, irrespective of their weight.

[0018] Also, in order to prevent the auxiliary support members 10 from interfering with the vertical position of normal-sized plates, the auxiliary support members 10 are designed to be moved between a supporting state, in which they project into the load volume of the basket (as shown in Figures 1 and 3) and a rest position, in which they do not interfere with the load volume of the basket. For this purpose, each rack 11 is hinged to an upper edge of its respective side wall. The axis of rotation of the rack is parallel to the side wall 6 of the basket, such that, as the rack pivots, the recesses move away from the side wall 6 of the basket 1 substantially in line therewith. It shall be noted that the rack 11 also comprises an arc 15 (see Figure 1) extending substantially perpendicular to the recesses 12. This arc 15 acts as a stop for the rotation of the rack, as it pivots to its rest position, because when the recesses come to alignment with the side wall 6, the arc 15 abuts the side wall 6 and prevents any further rotation of the rack. It shall be further noted that the arc 15 acts as a handle for lifting and/or carrying the basket 1, when the auxiliary support means are in the support state, as shown in Figures 1 and 4. Thus, in this state, the arc 15 is above the edge of the side wall of the basket, thereby allowing a user to easily grasp the arc 15.

[0019] The invention fulfills the intended objects, because the basket 1 can accommodate both large- and ordinary-sized plates, while maximizing their number.

[0020] Those skilled in the art will obviously appreciate that a number of changes and variants may be made to the arrangements as described hereinbefore to meet incidental and specific needs. For instance, the resilient portions may be provided on all the prongs. All of these variants and changes fall within scope of the invention, as defined in the following claims.

Claims

1. A dishwasher basket, comprising:

a substantially grid-like structure (2) having a bottom wall (3), a front wall (4), a back wall (5) and two side walls (6), defining a load volume of the basket;

said grid-like structure (2) comprising a plurality of rigid wires joined together, at least the wires of the bottom wall (4) extending in such an arrangement as to define shoulders and/or abutments (2a) for receiving plates (100);

said basket further comprising a plurality of prongs (7) extending in a substantially vertical direction, having one end (7a) that is secured or securable to the bottom wall (4) and a free end (7b) opposite to the secured or securable end (7a), which are designed to define supports for the received plates;

characterized in that at least some of said prongs (7) have respective resilient portions (9),

each having a first end (9a) secured to the free end (7b) of its prong (7), and a second free, unsecured end (9b), said resilient portions being made of an elastically deformable polymeric material.

2. A basket as claimed in claim 1, wherein said resilient portion (9) is made of a silicone rubber and has a substantially rod-like shape.

3. A basket as claimed in claim 1 or 2, wherein said prongs are arranged in at least one row of prongs extending between the front wall (4) and the back wall (5); said resilient portions (9) being provided at alternate prongs (7) of the same row.

4. A basket as claimed in claim 3, wherein said row has a pattern of prongs (7), where a prong with a resilient portion (9) is followed and/or preceded by a prong with no resilient portion.

5. A basket as claimed in any one of the preceding claims, wherein said resilient portion (9) is as high as substantially half of a prong (7) having no resilient portion.

6. A basket as claimed in claim 1 further comprising active auxiliary support members (10) at least at one side wall (6) of the basket, which are designed to cooperate with said prongs (7) having resilient portions (9) for supporting plates.

7. A basket as claimed in claim 6 wherein said auxiliary support members (10) include at least one rack (11) on a side wall (6) of the basket; said rack (11) comprising a plurality of recesses (12), each designed to engagingly receive a portion of a plate (100).

8. A basket as claimed in claim 7, wherein each recess (12) of said rack (11) has a corresponding prong (7) equipped with a resilient portion, associated therewith.

9. A basket as claimed in claim 8, wherein the distance of each recess (12) from the back wall (5) of the basket is longer than the distance of the corresponding prong (7) equipped with a resilient portion (9), from the back wall (5) of the basket.

10. A basket as claimed in claim 6, wherein said auxiliary support members (10) are designed to be moved between a supporting state, in which they project into the load volume of the basket and a rest position, in which they do not interfere with the load volume of the basket.

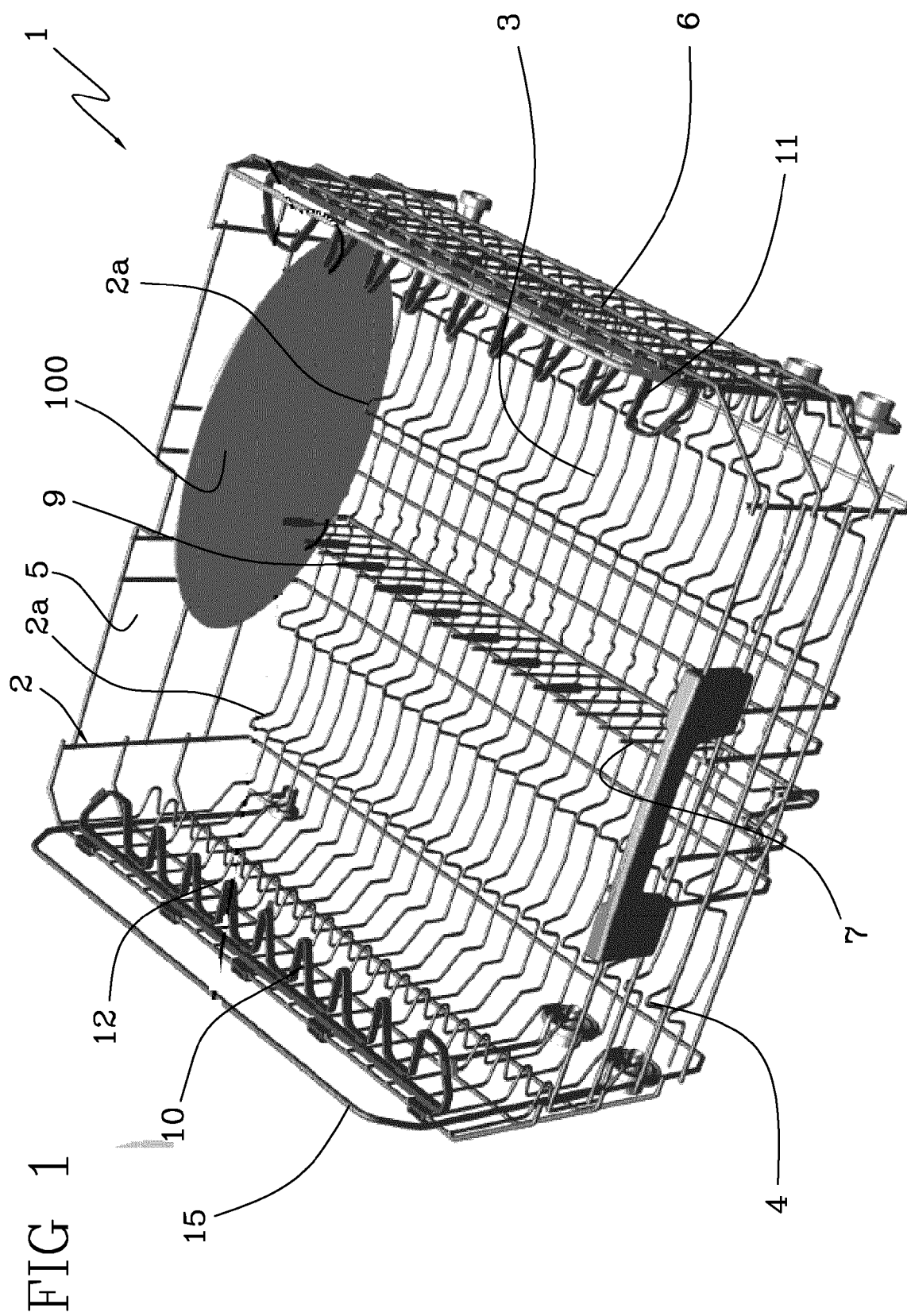


FIG 2

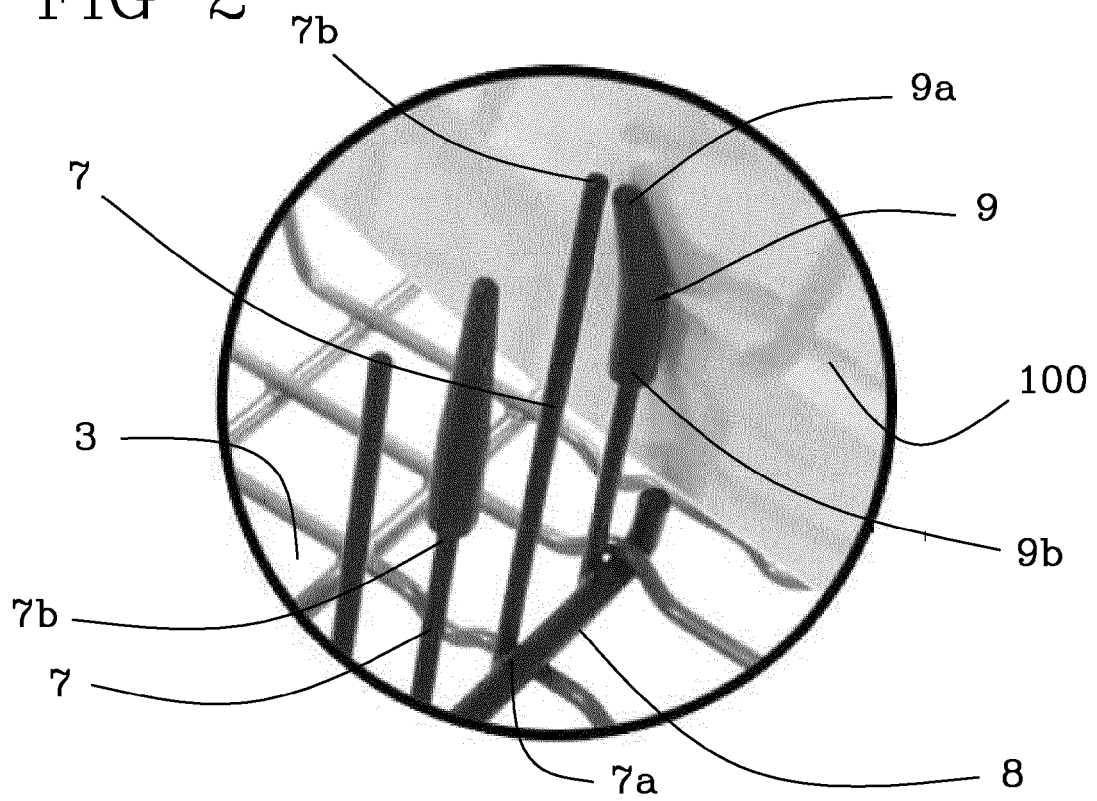


FIG 3

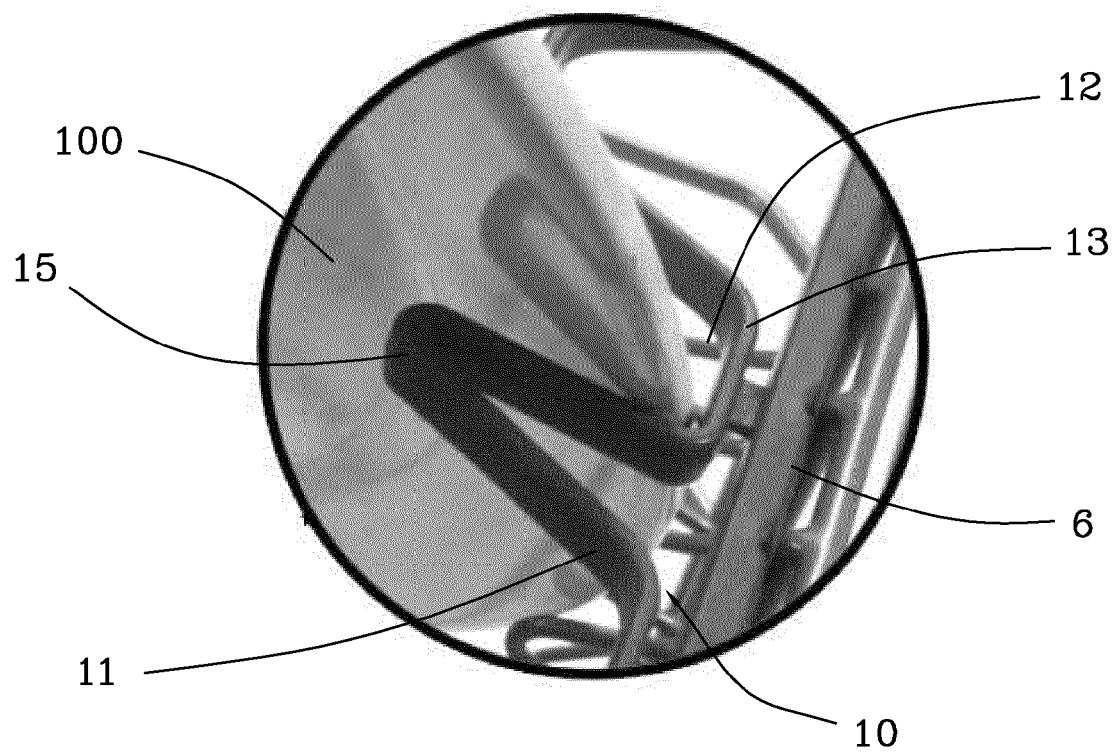
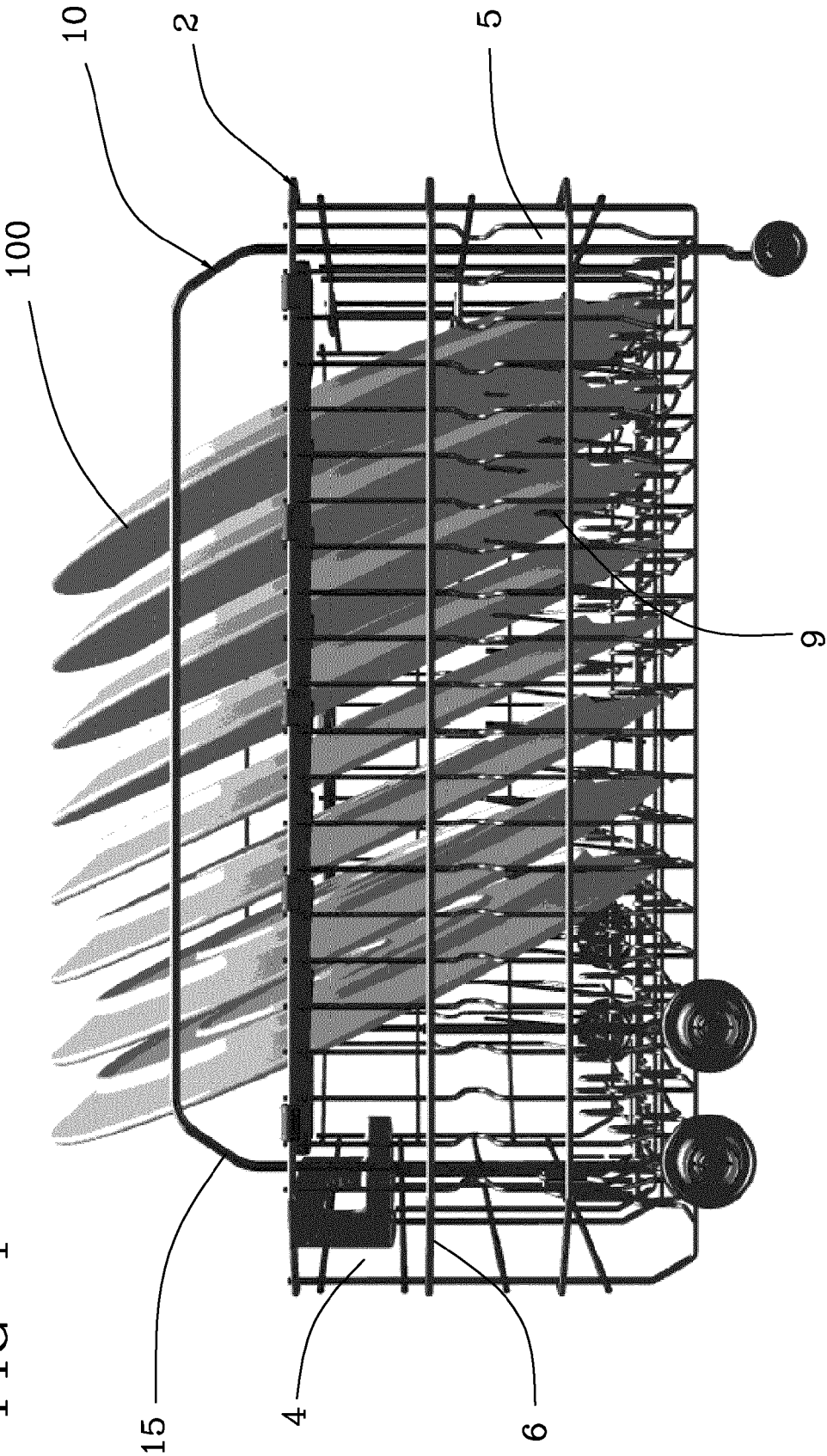


FIG 4





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Application Number
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Place of search Munich		Date of completion of the search 6 June 2014	Examiner Lopez Vega, Javier
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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