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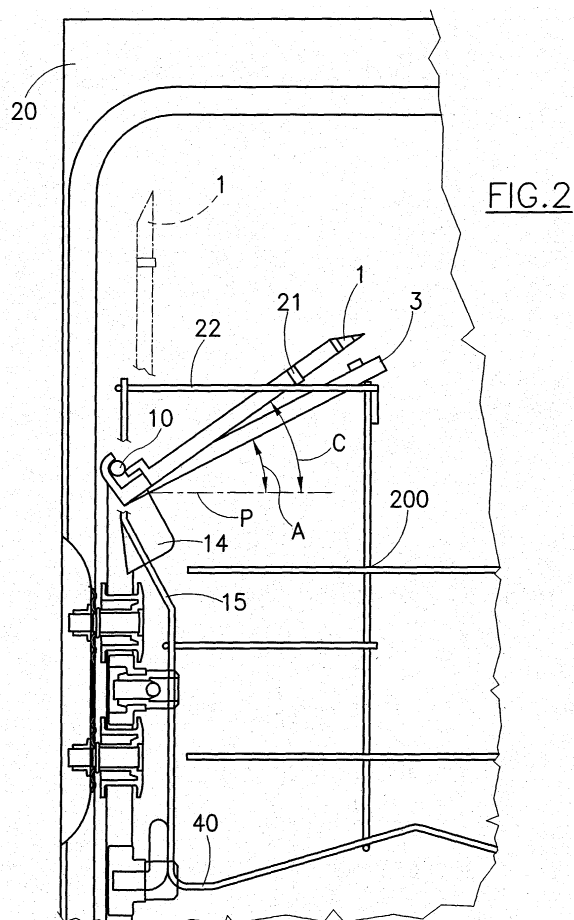
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(54) **Dishwasher rack provided with cutlery holder support**

(57) A rack (12) of a dishwasher (20) is described comprising at least one side wall (11) and at least one shelf (3) connected with said at least one side wall (11) and arranged in at least one working position in such a way as to form with the bottom plane (40) of said rack (12) at least one first angle (A, B) smaller than a right angle. The rack (12) comprises at least a cutlery holder support (1) comprising holes (2) for the housing of cutlery and wide areas (30) for the flow of the washing water and/or the flow of drying air. The cutlery holder support (1) is located in proximity of said shelf (3) and it is revolvingly connected with at least one side wall (11) of the rack (12). The cutlery holder in working position forms with the bottom plane (40) of the rack (12) a second angle (C) different from the at least one first angle (A, B) and smaller than a right angle.



Description

[0001] The present invention refers to a dishwasher rack provided with cutlery holder support, in particular to a dishwasher top rack.

[0002] Dishwashers racks are made up of rigid structures made of steel rods that are welded to each other in interlacement and subsequently plasticised. The dishes are inserted into the appropriate spaces created by the interlacement of the rods, in such a way that they maintain, during the washing, a correct position with an inclination of the surfaces, as regards the washing sprays coming from the sprayers, such as not to create difficultly reachable zones, directly or by deviation of the same spray.

[0003] Dishwashers racks are build in such a way as to rationalise the arrangement of the load of dishes inside the racks, since the surface useful for the loading has a limited size. In addition a very important prerogative consists in the safety of the load to be washed even when the weight of the latter is considerable.

[0004] Currently dishwashers racks comprise small plastic containers for the cutlery that are arranged in separate position as regards the rack for the containment of the dishes. In this way the efficiency of the washing and possible drying of the cutlery is subordinated to the search and definition of the optimal position of the dishes. Therefore both the washing and the drying operation of the cutlery are penalised. In addition the capacity of the current cutlery containers is unavoidably rather reduced.

[0005] A rack for household dishwashers comprising a cutlery holder support suitable to solve the problems above exposed is described in the patent application EP 1099404. The rack has a plastic cup shelf that is connected with one side wall of the same in such a way as to create, when in operating conditions, with the bottom plane of the rack an angle smaller than a right angle. The cup shelf is integral with one or two cutlery holder supports; each cutlery holder support comprises holes for the housing of cutlery and wide areas for the flow of the washing water and/or the flow of drying air.

[0006] In view of the state of the art herein described, scope of the present invention is to provide a dishwasher rack provided with a support for cutlery that has an easy location in the dishes rack.

[0007] According to the present invention, such scope is attained by means of a dishwasher rack comprising at least one side wall and at least a shelf connected with at least said one side wall and located in at least a working position in such a way as to create with the bottom plane of said rack at least a first angle smaller than a right angle, and at least a cutlery holder support comprising holes for the housing of cutlery and wide areas for the flow of the washing water and/or the flow of the drying air, characterised in that said cutlery holder support is located in proximity of said shelf, said support being connected with said at least one side wall of said

rack and, in working position, creating with the bottom plane of said rack a second angle different from said at least a first angle and smaller than a right angle.

[0008] Owing to the present invention it is possible to provide a rack for dishwasher with a cutlery holder support that is easy to arrange and to remove for cleaning.

[0009] The characteristics and the advantages of the present invention will become evident from the following detailed description of an embodiment thereof, illustrated as a non limiting example in the enclosed drawings, in which:

Figure 1 is a top view of a part of a dish rack provided with a cutlery holder support according to the present invention;

Figure 2 is a schematic side view of a part of the rack in Figure 1.

[0010] In Figure 1 a part of a dish rack 12 provided with a cutlery holder support 1 according to the present invention is shown. The cutlery holder support 1, preferably of plastic, has a rectangular shape and it is provided with a plurality of internal holes 2 for the positioning of various pieces of cutlery and with wide areas 30 for the flow of the washing water and/or the flow of the drying air.

[0011] One or two of such supports 1 are located at the sides and in proximity of a plastic shelf 3 but separate from it. The shelf 3 is provided with teeth 4 making up a top rack 5 and with teeth 6 making up a bottom rack 7; The teeth 4 of said top rack 5 are preferably provided with appendices 8, as visible in Figure 1 where a single support 1 is shown.

[0012] The shelf 3 can be connected in fixed or mobile way with one side wall 11 of the rack 12 of a dishwasher 20 but in such a way so as to create with an axis P parallel to the bottom plane 40 of the rack 12 angles A and B smaller than a right angle. In the case of the mobile connection of the shelf 3 with the side wall 11 of the rack 12, the shelf 3 is revolvingly coupled to the horizontal rod 10 of the side wall 11 by means of snap insertion of said rod 10 into half-cylindrical fixed end housings 13 of the shelf 3, as known from the Italian utility model No. 00229638. The rack 12 is made by means of steel rods that are welded in interlacement and plasticised so as to define a bottom plane 40 and at least one pair of side walls 11 with parallel spaces for the containment and positioning of dishes arranged vertically.

[0013] The shelf 3 is provided with hooks 14 for its locking in the first inclined position (angle A in Figure 2). Such locking is allowed by the contrast between the ends of said hooks 14 and vertical rods 15 of the wall 11. The second inclined position of the shelf 3 (angle B not shown in figure), is made possible by the simple resting of the bottom end of the hooks 14 on the rods 15.

[0014] In the first inclined position A the shelf 3 allows to load the rack 12 with dishes with standard size; in addition the same shelf makes available a plane for the

support of small and medium size cups, ladles and different tools with handle.

[0015] In the second inclined position B on the shelf 3 relatively light containers, for instance coffee cups, can be located. The rack 12 can be loaded with dishes with small, medium or exceptional diameter. 5

[0016] The cutlery holder support 1 is revolvingly coupled to the horizontal rod 10 of the side wall 11 by means of snap insertion of said rod 10 into half-cylindrical fixed end housings 13 belonging to the support 1. The working position of the support 1 is defined by the inclination of the same support 1 as regards the bottom 40 of the rack 12 so as to form an angle C different from the angles A and B. In said working position a projection 21 of the support 1 is engaged with a rod 22 belonging to the front wall 200 and/or back wall of the rack 12. 10 15

[0017] The positioning of the cutlery inside the dishwasher allows a more accurate washing of the same by limiting the zone of contact of the tools and by favouring a greater flow of the washing water. In fact the geometry of the cutlery holder support 1 has solids and voids in order to limit at most the points of contact between the tools and to favour the drainage of the water. 20

[0018] In addition such positioning of the cutlery allows to use wide areas for the flow of a constant heat flow for a more homogenous drying of the same cutlery. 25

[0019] The position of the cutlery holder support 1 allows to lighten the rack 12 from the load of cutlery and it eliminates the angles negative to the inlet of the washing water, thus allowing an overall result of higher efficiency in washing and drying with reference to standards. 30

[0020] The cutlery holder support 1 is revolvingly coupled to the side wall 11 so as to be easily removable. 35

Claims

1. Rack (12) of dishwasher (20) comprising at least one side wall (11) and at least one shelf (3) connected with said at least one side wall (11) and arranged in at least one working position in such a way as to create with the bottom plane (40) of said rack (12) at least a first angle (A, B) smaller than a right angle, and at least one cutlery holder support (1) comprising holes (2) for the housing of cutlery and wide areas (30) for the flow of the washing water and/or the flow of the drying air, **characterised in that** said cutlery holder support (1) is located in proximity of said shelf (3), said support (1) being connected with at least one side wall (11) of said rack (12) and, in working position, forming with the bottom plane (40) of said rack (12) a second angle (C) different from said at least one first angle (A, B) and smaller than a right angle. 40 45 50 55
2. Rack according to claim 1, **characterised in that** said shelf (3) is revolvingly coupled to said at least

one side wall (11) so as to be able to be rotated by two first angles (A, B) around a rod (10) of the side wall (11) in order to define two different working positions, said two first angles (A, B) being created between the shelf (3) and said bottom (40) of the rack (12) and being smaller than a straight angle.

3. Rack according to claim 1, **characterised in that** said support (1) is revolvingly coupled to said at least one side wall (11) of the rack (12).
4. Rack according to claim 3, **characterised in that** the revolving coupling of said support (1) to said at least one side wall (11) of the rack (12) is made by means of half-cylindrical fixed end housings (13) that are suitable for the insertion of a horizontal rod (10) that is part of the same wall.
5. Rack according to claim 4, **characterised in that** said support (3) can be locked in said working position by means of projections (21) in engagement with the horizontal rods (22) that are part of a front wall (200) or back wall of the rack (12).
6. Rack according to claim 3, **characterised in that** said cutlery holder support (1) is revolvingly coupled to said rack (12) so as to be manually removable.

