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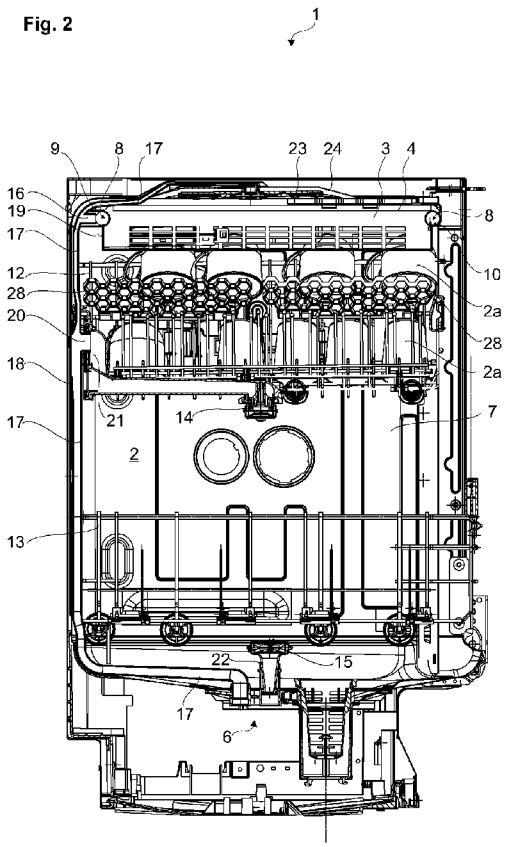
(54) Title: DISHWASHER HAVING A CUTLERY BASKET WITH IMPROVED CLEANING PERFORMANCE

Fig. 2



(57) Abstract: The present invention relates to a dishwasher (1) comprising: a tub (2) for receiving articles (2a) to be cleaned; and an extendable cutlery basket (3) which has a main body (4) that is adapted for the horizontal reception of the cutlery. The dishwasher (1) of the present invention comprises: a spray means (5) which is disposed onto the cutlery basket (3) and adapted to directly spray the washing/rinsing fluid onto the articles (2a) which are located on and/or off the cutlery basket (3) inside the tub (2); and a supply means (6) which is at least partly disposed into the tub (2) and adapted to supply the spray means (5) with washing/rinsing fluid. The spray means (5) is further adapted to dock with or undock from the supply means (6) when the cutlery basket (3) is pushed into or pulled out of the tub (2) respectively.

Description

DISHWASHER HAVING A CUTLERY BASKET WITH IMPROVED CLEANING PERFORMANCE

[0001] The present invention relates to a dishwasher, in particular to a domestic dishwasher. The present invention more particularly relates to a dishwasher which has an extendable cutlery basket.

[0002] In order to improve the convenience for the users, the domestic dishwashers are usually provided with extendable cutlery baskets respectively. Domestic dishwashers which are equipped with extendable cutlery baskets are commonly known in the art. The user can pull the extendable cutlery basket out of the tub in order to load/unload the cutleries. Unlike the commonly known cutlery basket, the extendable cutlery basket generally comprises a basket-like main body for the horizontal reception of the cutleries. Thus, the various cutleries can be horizontally sorted onto the basket-like main body. The horizontal reception of the cutleries saves space and increases the utilizable volume of the tub. The extendable cutlery basket is generally disposed above the extendable upper article rack and sprinkled with washing/rinsing fluid by means of an associated uppermost rotating spray arm which is disposed onto the ceiling of the tub immediately above the extendable cutlery basket.

[0003] In the above-mentioned prior art dishwasher the upper section of the tub is usually densely occupied by the cutleries on the cutlery basket and the other articles inside the upper rack. Particularly, the cups which are placed on the shelves of the upper rack occupy a considerable amount of space in the upper section of tub. Thus, a problem with the prior art dishwasher is that the articles inside the tub remain from time to time dirty after the completion of the washing process. The dirt causes an unpleasant odor and appearance. In such instances the consumer complaints usually increase. Moreover, the user needs to wash the unclean articles again. In general, repeating the washing course increases the energy consumption and also leads to the waste of the valuable resources.

[0004] An objective of the present invention is to provide a dishwasher which has

a cutlery basket that solves the aforementioned problems of the prior art in a cost effective way and which has an improved cleaning performance, an improved energy efficiency, and an improved usability.

[0005] This objective has been achieved by the dishwasher as defined in claim 1. Further achievements have been attained by the subject-matters respectively defined in the dependent claims.

[0006] The dishwasher of the present invention comprises a spray means which is disposed onto the cutlery basket and adapted to directly spray washing/rinsing fluid onto the articles which are located on the cutlery basket and/or off the cutlery basket inside the tub. In the dishwasher of the present invention, a supply means is partly disposed into the tub and adapted to individually supply said spray means with the washing/rinsing fluid. In the dishwasher of the present invention, the spray means is adapted to dock with or undock from the supply means when the cutlery basket is pushed into or pulled out of the tub respectively.

[0007] A major advantageous effect of the present invention is that by virtue of the spray means of the cutlery basket, the articles inside the tub can be intensively sprinkled with the washing/rinsing fluid, and thus the cleaning performance of the dishwasher can be improved. Thereby, the deposits of dirt on the articles can be effectively washed out, and the risk of occurrence of unpleasant odors and appearances can be eliminated or reduced as much as possible. Another major advantageous effect of the present invention is that the dishwasher can be rendered particularly suitable for the treatment of small baby articles which must be generally hygienically cleaned. Thereby, the customer satisfaction can be increased.

[0008] According to the present invention, the spray means of the cutlery basket can be provided in various different configurations in which the fluid is jetted towards the different areas inside the tub. These areas may be chosen so that they lie on the cutlery basket and/or off the cutlery basket. In an embodiment, the spray means of the cutlery basket is used to sprinkle those areas with the washing/rinsing fluid that receives relatively less fluid from any of the other spray means such as the rotating spray arms which are associated with the upper/lower article racks and the

cutlery basket. These areas are generally remote from the rotating spray arms and/or are likely to be densely occupied by the articles. These remote areas are typically located in close proximity to the inner surface of the tub, including the corners of the tub. This embodiment is particularly advantageous as the articles can be thoroughly cleaned even when the user has piled them densely into the remote areas.

[0009] In alternative embodiments, the spray means of the cutlery basket is provided as a static sprinkler and/or a rotating sprinkler. This embodiment is particularly advantageous as the articles can be sprinkled with static and/or rotating fluid jets. In another embodiment, the spray means is integrally formed into the main body of the cutlery basket. This embodiment is particularly advantageous as the production and the assembly of the spray means can be simplified and the costs can be reduced. In another alternative embodiment, the spray means is provided as a separate device and releasably mounted onto the main body of the cutlery basket. This embodiment is particularly advantageous as the separate spray means can be used in combination with other parts of the dishwasher.

[0010] In other alternative embodiments, the main body of the cutlery basket is provided as a single element or as an assembly of mutually connected elements. In the latter case the elements can be connected through an interlocking connection. Other type of connections known to those skilled in the art can be alternatively used. In other alternative embodiments, one or more than one of these elements can be provided with hollow sections or inwardly bent sections so as to form the fluid conveying parts of the spray means. These embodiments are particularly advantageous as it obviates the need of using separate conduits, nozzles etc. In another embodiment, the main body of the cutlery basket is made from plastic material in a suitable moulding process. For instance, a gas injection moulding process can be used in order to form the spray means into the main body of the cutlery basket.

[0011] In other alternative embodiments, the cutlery basket is used in a domestic dishwasher that has one or more than one extendable article rack each

with an associated rotating spray arm. In these embodiments, rotating spray arms are supplied with washing/rinsing fluid partly by using the components of the same supply means. These embodiments are particularly advantageous as it reduces the number of parts and saves costs. In another embodiment, the extendable cutlery basket is disposed separately above the uppermost extendable article rack. In this embodiment, the spray means of the cutlery basket can be used to spray the washing/rinsing fluid towards the articles which are located above or below the shelves of the uppermost extendable article rack. In other alternative embodiments, the cutlery basket has a width which is equal to or narrower than the width of the uppermost extendable article rack.

[0012] In another embodiment, the cutlery basket has an associated ceiling-mounted spray means for spraying washing/rinsing fluid onto the cutleries. In another embodiment, the ceiling-mounted spray means is provided as a rotating spray arm. In another embodiment, the ceiling-mounted rotating spray arm is supplied with the washing/rinsing fluid through the same supply means so as to save costs.

[0013] In other alternative embodiments, the cutlery basket is disposed in extendable manner into the tub onto celling and/or the side walls of the tub. In another embodiment, the cutlery basket is disposed in extendable manner onto celling of the tub via sliding rails.

[0014] In other alternative embodiments, the supply means of the dishwasher has one or more than one docking outlet port and one or more than one conduit for supplying the washing/rinsing fluid to the spray means of the cutlery basket and the other spray means such as the rotating spray arms which are associated with the upper/lower article racks and the cutlery basket.

[0015] Additional advantageous effects of the dishwasher of the present invention will become more apparent with the detailed description of the embodiments with reference to the accompanying drawings in which:

[0016] Figure 1 – is a schematic partial front view of a dishwasher which has an extendable cutlery basket according to an embodiment of the present invention;

[0017] Figure 2 – is a schematic sectional view of the dishwasher of Fig.1, taken along the line A-A;

[0018] Figure 3 – is a schematic bottom view of the extendable cutlery basket which is used in the dishwasher according to an embodiment of the present invention, wherein the extendable cutlery basket is in the retracted state;

[0019] Figure 4 – is a schematic top view of the extendable cutlery basket which is used in the dishwasher according to an embodiment of the present invention, wherein the extendable cutlery basket is in the retracted state.

[0020] The reference signs appearing on the drawings relate to the following technical features.

1. Dishwasher
2. Tub

[0021] 2a. Article (Cup)

3. Cutlery basket
4. Main body
5. Spray means
6. Supply means

[0022] 7. Surface

8. Channel
9. Port
10. Hole

[0023] 11a. Grid section

[0024] 11b. Frame section

12. Upper rack
13. Lower rack
14. Spray arm

[0025] 15. Spray arm

16. Port
17. Conduit
18. Wall
19. Rear part
20. Port

21. Port
22. Conduit
23. Spray arm
24. Ceiling
25. Support
26. Rail
27. Lateral part
28. Shelf

[0026] The dishwasher (1) comprises: a tub (2) for receiving articles (2a) to be cleaned; and an extendable cutlery basket (3) which has a main body (4) that is adapted for the horizontal reception of the cutlery (not shown).

[0027] The dishwasher (1) of the present invention comprises: a spray means (5) which is disposed onto the cutlery basket (3) and adapted to directly spray washing/rinsing fluid onto the articles (2a) which are located on and/or off the cutlery basket (3) inside the tub (2); and a supply means (6) which is at least partly disposed into the tub (2) and adapted to supply the spray means (5) with washing/rinsing fluid. The spray means (5) is further adapted to dock with or undock from the supply means (6) when the cutlery basket (3) is pushed into or pulled out of the tub (2) respectively (Fig. 1 to 4).

[0028] In an embodiment, the spray means (5) is adapted to directly spray the washing/rinsing fluid towards the articles (2a) which are located in the remote areas in close proximity to the inner surface (7) of tub (2) and off the cutlery basket (3).

[0029] In another embodiment, that the spray means (5) comprises: a fluid channel (8); an inlet port (9); and one or more than one discharge hole (10). The fluid channel (8) is adapted to convey the washing/rinsing fluid to the discharge holes (10). The inlet port (9) is adapted, in the docked state, for the intake of washing/rinsing fluid that is discharged from the supply means (6). The inlet port (9) opens into the fluid channel (8). The discharge holes (10) are adapted to spray washing/rinsing fluid into the tub (2). Each hole (10) opens into the fluid channel (8). In this embodiment, the fluid channel (8), the inlet port (9) and the discharge holes (10) are

formed into the main body (4) of the cutlery basket (3).

[0030] In another embodiment, the main body (4) of the cutlery basket (3) comprises: a grid section (11a); and a frame section (11b). The grid section (11a) is adapted for the horizontal reception of the cutlery. And the frame section (11b) supports the grid section (11a). In this embodiment, the spray means (5) is formed into the frame section (11b) of the main body (4).

[0031] In another embodiment, the main body (4) of the cutlery basket (3), including the grid section (11a) and the frame section (11b) are provided in form of a partly hollow integral element.

[0032] In an alternative embodiment, the main body (4) of the cutlery basket (3), including the grid section (11a) and the frame section (11b) are provided in form of two mutually connectable elements.

[0033] In another embodiment, the dishwasher (1) comprises: an extendable upper article rack (12) and an extendable lower article rack (13); and an upper rotating spray arm (14) and a lower rotating spray arm (15) for spraying washing/rinsing fluid towards the article racks (12,13) respectively. The extendable upper article rack (12) and the extendable lower article rack (13) are disposed one above the other into the tub (2). In this embodiment, the extendable cutlery basket (3) is disposed separately above the extendable upper article rack (12). In addition, the spray means (5) is further adapted to spray the washing/rinsing fluid towards the articles (2a) which are located in the remote areas in close proximity to the inner surface (7) of tub (2) and on the extendable upper article rack (12). For instance, such remote areas are particularly located above or below the shelves (28) of the extendable upper article rack (12), where articles (2a) such as cups (2a) or the like are mostly placed. In this embodiment, the supply means (6) is further adapted to supply the washing/rinsing fluid to the upper rotating spray arm (14) and the lower rotating spray arm (15). In addition, the upper rotating spray arm (14) is disposed onto the bottom of the extendable upper article rack (12) and adapted to dock with or undock from the supply means (6) when the extendable upper article rack (12) is pushed into or pulled out of the tub (2) respectively.

[0034] In another embodiment, the supply means (6) comprises: a first outlet port (16); and a first conduit (17). The first conduit (17) is adapted to convey the washing/rinsing fluid to the first outlet port (16). The first outlet port (16) is disposed on the rear wall (18) of the tub (2), and adapted to discharge the washing/rinsing fluid into the tub (2). In this embodiment, the inlet port (10) of the spray means (5) is disposed on the rear part (19) of the cutlery basket (3), and adapted, in the docked state, for the intake of washing/rinsing fluid that is discharged from the first outlet port (16) of the supply means (6).

[0035] In another embodiment, the supply means (6) comprises a second outlet port (20) for discharging washing/rinsing fluid into the tub (2). In this embodiment, the first conduit (17) is further adapted to convey the washing/rinsing fluid to the second outlet port (20).
The second outlet port (20) is disposed on the rear wall (18) of the tub (2). The upper rotating spray means (14) comprises a second inlet port (21) which is adapted, in the docked state, for the intake of washing/rinsing fluid that is discharged from the second outlet port (20) of the supply means (6).

[0036] In another embodiment, the lower rotating spray arm (15) is disposed onto the bottom of the tub (2). In this embodiment, the supply means (6) comprises a second conduit (22) for conveying the washing/rinsing fluid to the lower rotating spray arm (15).

[0037] In another embodiment, the dishwasher (1) comprises an uppermost rotating spray arm (23) for spraying washing/rinsing fluid onto the cutlery basket (3). The uppermost rotating spray arm (23) is disposed onto the ceiling (24) of the tub (2). In this embodiment, the supply means (6) is further adapted to supply the washing/rinsing fluid to the uppermost rotating spray arm (23).

[0038] In another embodiment, the supply means (6) is further adapted to supply the washing/rinsing fluid to the uppermost rotating spray arm (23) via said first conduit (17).

[0039] In another embodiment, the dishwasher (11) comprises: a support (25) for slidably holding two double-tracked rails (26). The support (25) is mounted

onto the ceiling (24) of the tub (2). The opposing lateral parts (27) of the main body (3) of the cutlery basket (3) are slidably engaged with the two double-tracked rails (26) respectively. The opposing lateral parts (27) of the main body (3) are provided in form of linear bearings which hold the double-tracked rails (26) respectively.

[0040] A major advantageous effect of the present invention is that the extendable cutlery basket (3) has its own spray means (5) which can be individually supplied with the washing/rinsing fluid via the docking supply means (6) that is partly disposed into the tub (2). Thereby, the articles (2a) inside tub (2), i.e., on and/or off the cutlery basket (3) can be intensively washed and rinsed, and the deposits of dirt on the articles (2a) can be effectively removed. Thus, the risk of occurrence of unpleasant odors and appearances can be eliminated or reduced as much as possible. The spray means (5) is particularly advantageous when the dishwasher (1) is densely loaded with articles (2a) such that at least some of them are out of reach of the fluid jets which emanate from the other sprays means (14, 15, 23) such as the rotating spray arms (14, 15) below the respective racks (12, 13) and the rotating spray arm (23) on the ceiling (24) of the tub (2). Of course, the spray means (5) is not limited for use in combination with such other spray means (14, 15, 23) and can be independently used as the major facility for jetting the washing/rinsing fluid. Other additional advantageous effects of the present invention can be taken from the aforementioned particular embodiments.

Claims

1. A dishwasher (1) comprising: a tub (2) for receiving articles (2a) to be cleaned; and an extendable cutlery basket (3) which has a main body (4) that is adapted for the horizontal reception of the cutlery, **characterized in that** a spray means (5) which is disposed onto the cutlery basket (3) and adapted to directly spray the washing/rinsing fluid onto the articles (2a) which are located on and/or off the cutlery basket (3) inside the tub (2); and a supply means (6) which is at least partly disposed into the tub (2) and adapted to supply the spray means (5) with the washing/rinsing fluid, wherein the spray means (5) is further adapted to dock with or undock from the supply means (6) when the cutlery basket (3) is pushed into or pulled out of the tub (2) respectively.
2. The dishwasher (1) according to claim 1, **characterized in that** the spray means (5) is further adapted to directly spray the washing/rinsing fluid towards the articles (2a) which are located in the remote areas in close proximity to the inner surface (7) of tub (2) and off the cutlery basket (3).
3. The dishwasher (1) according to claim 2, **characterized in that** the spray means (5) comprises a fluid channel (8) which is adapted to convey the washing/rinsing fluid;
   an inlet port (9) which is adapted, in the docked state, for the intake of washing/rinsing fluid that is discharged from the supply means (6), wherein the inlet port (9) opens into the fluid channel (8); and one or more than one discharge hole (10) each adapted to spray washing/rinsing fluid into the tub (2), wherein each hole (10) opens into the fluid channel (8), and wherein the fluid channel (8), the inlet port (9) and the discharge holes (10) are formed into the main body (4) of the cutlery basket (3).
4. The dishwasher (1) according to claim 3, **characterized in that** the main body (4) of the cutlery basket (3) comprises: a grid section (11a) for the horizontal reception of the cutlery; and a frame section (11b) which supports the grid section (11a), wherein the spray means (5) is formed into the frame section (11b) of the main body (4).
5. The dishwasher (1) according to claim 4, **characterized in that** the main body (4) is provided in form of a partly hollow integral element.
6. The dishwasher (1) according to claim 4, **characterized in that** the main body

(4) is provided in form of two mutually connectable elements.

7. The dishwasher (1) according to claim 5 to 6, **characterized in that** an extendable upper article rack (12) and an extendable lower article rack (13) which are disposed one above the other into the tub (2), wherein the extendable cutlery basket (3) is disposed separately above the extendable upper article rack (12), wherein the spray means (5) is further adapted to spray the washing/rinsing fluid towards the articles (2a) which are located in the remote areas in close proximity to the inner surface (7) of tub (2) and on the extendable upper article rack (12); and an upper rotating spray arm (14) and a lower rotating spray arm (15) for spraying washing/rinsing fluid towards the article racks (12,13) respectively, wherein the supply means (6) is further adapted to supply the washing/rinsing fluid to the upper rotating spray arm (14) and the lower rotating spray arm (15), and wherein the upper rotating spray arm (14) is disposed onto the bottom of the extendable upper article rack (12) and adapted to dock with or undock from the supply means (6) when the extendable upper article rack (12) is pushed into or pulled out of the tub (2) respectively.

8. The dishwasher (1) according to claim 7, **characterized in that** the supply means (6) comprises: a first outlet port (16) for discharging washing/rinsing fluid into the tub (2); and a first conduit (17) for conveying the washing/rinsing fluid to the first outlet port (16), wherein the first outlet port (16) is disposed on the rear wall (18) of the tub (2), and wherein the inlet port (10) of the spray means (5) is disposed on the rear part (19) of the cutlery basket (3), and adapted, in the docked state, for the intake of the washing/rinsing fluid that is discharged from the first outlet port (16) of the supply means (6).
9. The dishwasher (1) according to claim 8, **characterized in that** the supply means (6) comprises a second outlet port (20) for discharging the washing/rinsing fluid into the tub (2), wherein said first conduit (17) is further adapted to convey the washing/rinsing fluid to the second outlet port (20), wherein the second outlet port (20) is disposed on the rear wall (18) of the tub (2), and wherein the upper rotating spray means (14) comprises a second inlet port (21) which is adapted, in the docked state, for the intake of the

washing/rinsing fluid that is discharged from the second outlet port (20) of the supply means (6).

10. The dishwasher (1) according to claim 8 or 9, **characterized in that** the supply means (6) comprises a second conduit (22) for conveying the washing/rinsing fluid to the lower rotating spray arm (15), wherein the lower rotating spray arm (15) is disposed onto the bottom of the tub (2).

11. The dishwasher (1) according to claim 10, **characterized in that** an uppermost rotating spray arm (23) for spraying washing/rinsing fluid onto the cutlery basket (3), wherein the uppermost rotating spray arm (23) is disposed onto the ceiling (24) of the tub (2), and the supply means (6) is further adapted to supply the washing/rinsing fluid to the uppermost rotating spray arm (23).
12. The dishwasher (1) according to claim 11, **characterized in that** the supply means (6) is further adapted to supply the washing/rinsing fluid to the uppermost rotating spray arm (23) via said first conduit (17).
13. The dishwasher (11) according to claim 12, **characterized in that** a support (25) for slidably holding two rails (26), wherein the support (25) is mounted onto the ceiling (24) of the tub (2), wherein the opposing lateral parts (27) of the main body (3) of the cutlery basket (3) are slidably engaged with the two rails (26) respectively.

Fig. 1

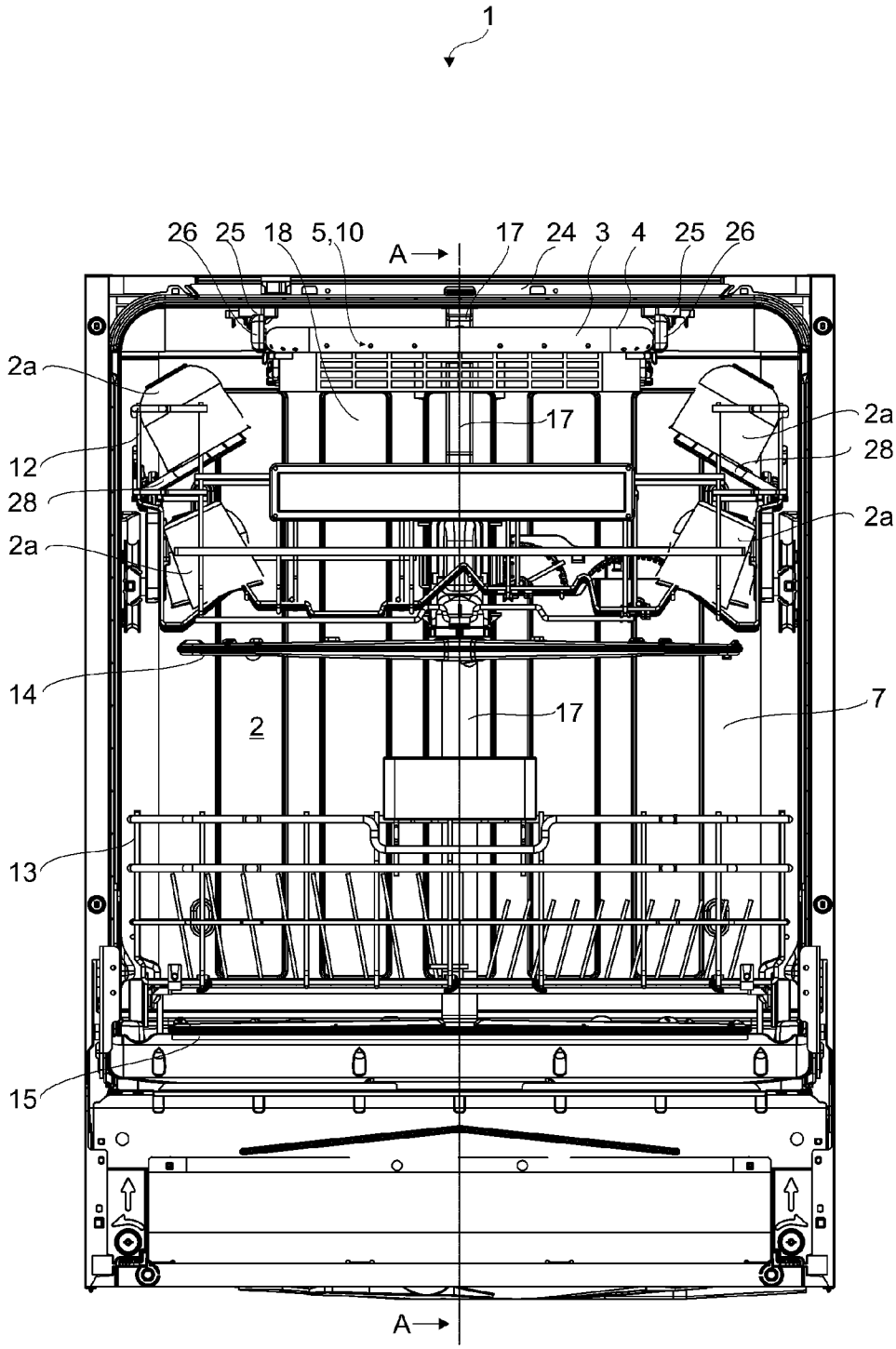


Fig. 2

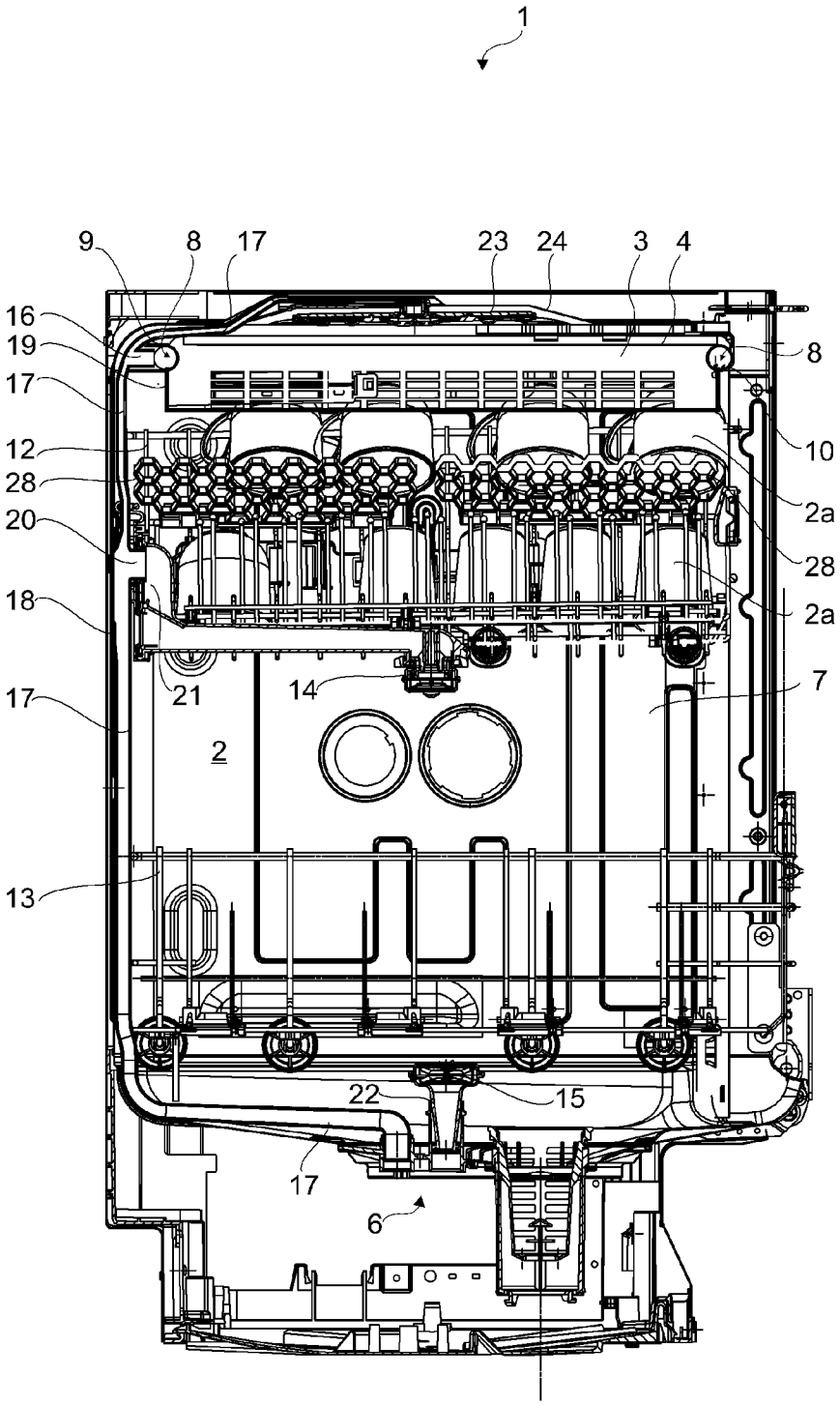

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Fig. 3

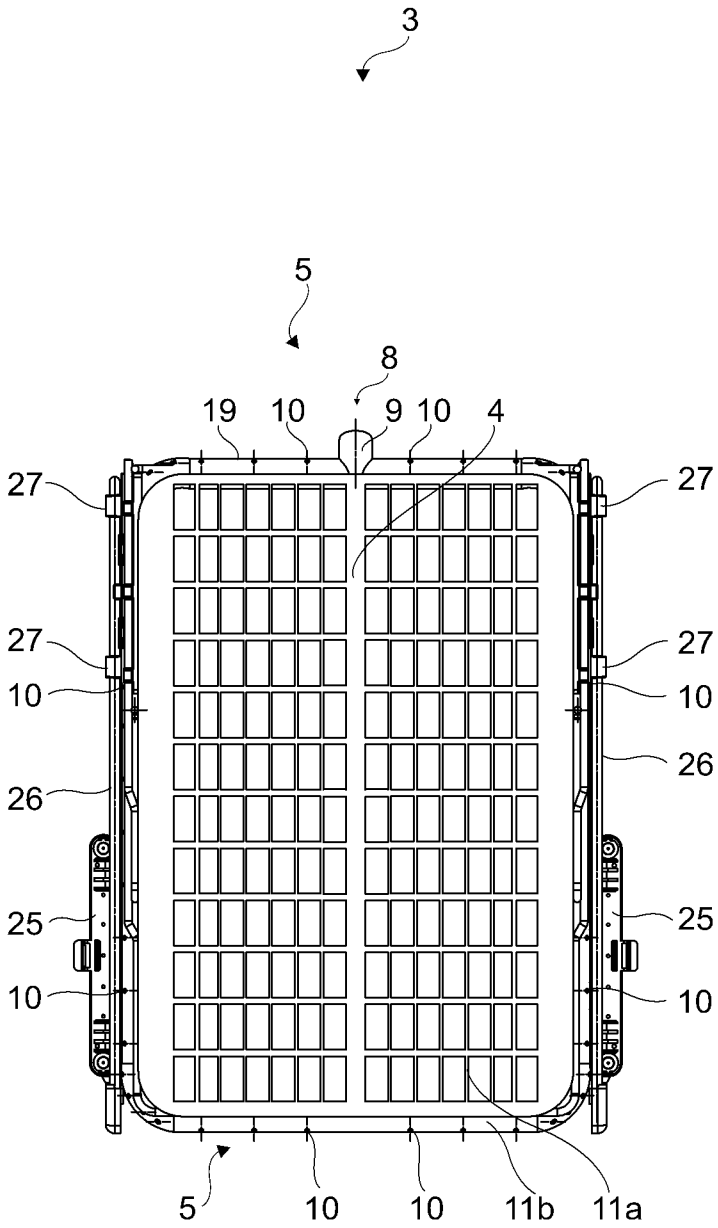
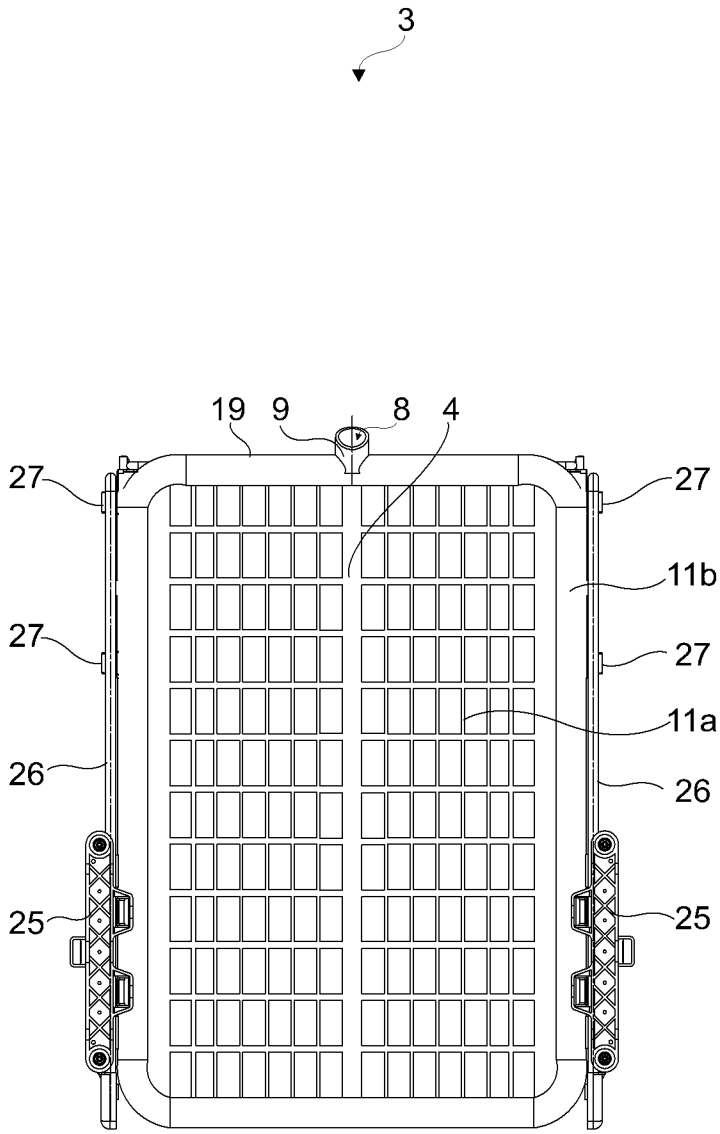


Fig. 4



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/057050

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47L15/16 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)
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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 74 17 444 U (LICENTIA PATENT-VERWALTUNGS-GMBH) 31 October 1974 (1974-10-31)	1-5
A	the whole document	6-13

X	GB 2 501 888 A (SHORT ROXANNA [GB]) 13 November 2013 (2013-11-13)	1-5
A	page 7 - page 9	6-13

X	US 2014/190525 A1 (PORCARO II RALPH A [US] ET AL) 10 July 2014 (2014-07-10)	1-5
A	the whole document	6-13

X	EP 2 653 089 A1 (ELECTROLUX HOME PROD CORP [BE]) 23 October 2013 (2013-10-23)	1,2
A	the whole document	3-13

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
2 June 2015	11/06/2015

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/057050

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2009/041899 A1 (ASKO CYLINDA AB [SE]; SVENSSON BERNT [SE]; PERSSON THOMAS [SE]; KARLSS) 2 April 2009 (2009-04-02) the whole document	1-13
A	EP 1 123 684 A2 (BONFERRARO SPA [IT]) 16 August 2001 (2001-08-16) the whole document	1-13

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2015/057050

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 7417444 U	31-10-1974	NONE	
GB 2501888 A	13-11-2013	NONE	
US 2014190525 A1	10-07-2014	NONE	
EP 2653089 A1	23-10-2013	NONE	
WO 2009041899 A1	02-04-2009	EP 2207468 A1	21-07-2010
		WO 2009041899 A1	02-04-2009
EP 1123684 A2	16-08-2001	EP 1123684 A2	16-08-2001
		IT MI20000201 A1	08-08-2001