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(54) A DISHWASHER COMPRISING A RECEPTACLE

GESCHIRRSPÜLMASCHINE MIT EINEM BEHÄLTER

LAVE-VAISSELLE COMPRENANT UN RÉCEPTACLE

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(73) Proprietor: **Arçelik Anonim Sirketi**
34445 Istanbul (TR)

(72) Inventors:
- **KOC, Yusuf**
  34950 Istanbul (TR)
- **KIZILDEMIR, Ayse**
  34950 Istanbul (TR)
- **ATALAY, Ozan**
  34950 Istanbul (TR)
- **KAYA, Mehmet**
  34950 Istanbul (TR)
- **DAVASLIGIL, Sena**
  34950 Istanbul (TR)

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Description

[0001] The present invention relates to a dishwasher comprising a receptacle placed on the rack.

[0002] In dishwashers, the washing process is realized by spraying the water received from the main delivery line onto the dishes by means of the spray arms. The spraying elements provided on the spray arm enable the water to be sprayed onto the dishes at a certain pressure. The flow rate and pressure of the sprayed water are critical in terms of cleaning of the dishes. In the dishwashers, washing areas are formed to clean heavy stains. Additional spraying elements are used to clean the stains in the washing areas. However, the water continuously flows down the dishes, and the dried, heavy stains cannot be cleaned. Therefore, before being loaded into the dishwasher, the dishes are soaked in water by the user to soften the stains. The dishes with the heavy stains removed are loaded into the dishwasher. As water is consumed both before the dishes are loaded into the dishwasher and during the washing process in the dishwasher, water consumption increases. Moreover, the user spends additional time.

[0003] In the state of the art United States of America Patent Application No. US2014259381, a dishwasher is disclosed, comprising a rack which enables the dishes to be soaked in water. Further, EP2486843A2 and EP2486844A2 disclose each a dishwasher with a receptacle for cutlery.

[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, and at least one rack whereon the dishes are placed. A receptacle is detachably attached onto the rack. The dishes placed onto the receptacle can be soaked in water to soften the stains.

[0006] The dishwasher of the present invention comprises a delivery line for delivering water to the receptacle and a shutter for controlling the passage of water to the receptacle. The shutter has a closed position for filling water into the receptacle and an open position for discharging the water in the receptacle.

[0007] The dishwasher of the present invention further comprises a control unit which enables the shutter to shift between the open position and the closed position. By means of the control unit, the shutter can shift from the open position to the closed position and from the closed position to the open position.

[0008] In an embodiment which is not part of the claimed invention, the dishwasher comprises the control unit which keeps the receptacle filled with water for a period predetermined by the producer and which shifts the shutter to the open position when the period ends. Thus, the water is kept in the receptacle during the predetermined period. Consequently, the stains on the dishes are softened. After the period ends, the water is discharged.

[0009] The dishwasher of the present invention further comprises a conductivity sensor disposed on the receptacle. When the water in the receptacle reaches a conductivity value predetermined by the producer, the control unit discharges the water.

[0010] In an embodiment which is not part of the claimed invention, the dishwasher comprises a turbidity sensor disposed on the receptacle. When the water in the receptacle reaches a turbidity value predetermined by the producer, the control unit discharges the water.

[0011] In an embodiment of the present invention, the dishwasher comprises a temperature sensor disposed on the delivery line. Upon reaching a value predetermined by the producer, the water passing through the delivery line is taken into the receptacle by the control unit. Thus, the dishes in the receptacle are cleaned with hot water.

[0012] In an embodiment, the dishwasher comprises the control unit which decides whether the receptacle will be refilled with water depending on the data received from the turbidity and/or conductivity sensor.

[0013] In an embodiment of the present invention, the dishwasher comprises at least one water spraying element disposed on the receptacle. After the water filled into the receptacle is discharged, the control unit keeps the shutters in the open position to operate the water spraying elements.

[0014] In an embodiment of the present invention, the dishwasher comprises a control panel which enables the user to control the operational parameters. A control button with which the user controls the shutter is provided on the control panel.

[0015] In an embodiment of the present invention, the dishwasher comprises an on/off button disposed on the control panel. By means of the on/off button, the receptacle can be operated by the user independently of the dishwasher.

[0016] By means of the present invention, a dishwasher is realized, wherein dishes with heavy stains can be more easily washed by being soaked in water.

[0017] A 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 top view of the receptacle and the rack when the shutter is in the closed position.
Figure 3 - is the top view of the receptacle and the rack when the shutter is in the open position.
Figure 4 - is the perspective view of the delivery line and the rack.

[0018] The elements illustrated in the figures are numbered as follows:

1. Dishwasher
2. Body
3. Washing tub
4. Rack
5. Receptacle
6. Delivery line
7. Shutter
8. Control unit
9. Conductivity sensor
10. Turbidity sensor
11. Temperature sensor
12. Water spraying element
13. Control panel
14. Control button
15. On/off button

a. Open position
b. Closed position

[0019] 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 dishes to be washed are placed; and a receptacle (5) which can be detachably attached onto the rack (4) and whereon the dishes with heavy stains are placed to be soaked in water. The receptacle (5) can be attached to/detached from the rack (4) as per the user preference. The stains on the dishes placed into the receptacle (5) soften after being soaked in water. Thus, cleaning is performed more easily.

[0020] The dishwasher (1) of the present invention comprises a delivery line (6) for delivering water to the receptacle (5), and a shutter (7) which is disposed on the receptacle (5) and which has an open position (A) for discharging the delivered water and a closed position (B) for keeping the water in the receptacle (5). When the shutter (7) is in the open position (A), the water in the receptacle (5) is discharged. When the shutter (7) is in the closed position (B), the water is accumulated in the receptacle (5), and as the water is kept in the receptacle (5), the dishes with heavy stains can be soaked in water. The dirty water, which is discharged from the receptacle (5) when the shutter (7) shifts to the open position (A), is removed from the washing tub (3) via the discharge line.

[0021] In an embodiment of the present invention, the dishwasher (1) comprises a control unit (8) which enables the shutter (7) to shift between the open position (A) and the closed position (B). The shifting of the shutter (7) between the open position (A) and the closed position (B) is controlled by the control unit (8).

[0022] In an embodiment which is not part of the claimed invention, the dishwasher (1) comprises the control unit (8) which enables the shutter (7) to remain in the closed position (B) for a period predetermined by the producer and which shifts the shutter (7) to the open position when the period ends so as to discharge the water in the receptacle (5). The period required for soaking the dishes for removing stains is predetermined and recorded in the control unit (8) by the producer. The control unit (8) keeps the shutter (7) closed during this period, thus enabling the dishes to be soaked in water.

[0023] In accordance with the present invention, the dishwasher (1) comprises a conductivity sensor (9) which is disposed on the receptacle (5), and the control unit (8) which shifts the shutter (7) to the open position (A) when the conductivity value received from the conductivity sensor (9) exceeds a certain value predetermined by the producer. As the stains dissolve in water, the conductivity value of the water in the receptacle (5) increases. When the conductivity value reaches a value predetermined by the producer, it is detected that the water in the receptacle (5) is dirty, and the shutter (7) is shifted to the open position (A) by the control unit (8). Thus, the water in the receptacle (5) is enabled to be discharged.

[0024] In an embodiment which is not part of the claimed invention, the dishwasher (1) comprises a turbidity sensor (10) which is disposed on the receptacle (5), and the control unit (8) which shifts the shutter (7) to the open position (A) when the turbidity value received from the turbidity sensor (10) exceeds a certain value predetermined by the producer. As the stains dissolve in water, the turbidity value of the water in the receptacle (5) increases. When the turbidity value reaches a value predetermined by the producer, it is detected that the water in the receptacle (5) is dirty, and the shutter (7) is shifted to the open position (A) by the control unit (8). Thus, the water in the receptacle (5) is enabled to be discharged.

[0025] In an embodiment of the present invention, the dishwasher (1) comprises a temperature sensor (11) which is disposed on the delivery line (6), and the control unit (8) which provides the intake of water into the receptacle (5) when the temperature value measured by the temperature sensor (11) exceeds a certain value predetermined by the producer. When the temperature of the water in the dishwasher (1) reaches a value predetermined by the producer, water is taken into the receptacle (5). Thus, water at high temperatures is filled into the receptacle (5), enabling the stains to dissolve more quickly.

[0026] In an embodiment, the dishwasher (1) comprises the control unit (8) which enables the receptacle (5) to be refilled with water depending on the data received from the turbidity sensor (10) and/or the conductivity sensor (9). If the turbidity and/or conductivity value of the water discharged from the receptacle (5) is/are higher than a turbidity and/or conductivity value predetermined by the producer, it is decided that the dishes are dirty and the receptacle (5) is refilled with water. If the turbidity/conductivity value is low, it is decided that the dishes are cleansed of stains, and the receptacle (5) is not refilled with water.

[0027] In an embodiment of the present invention, the dishwasher (1) comprises at least one water spraying element (12) which is disposed on the receptacle (5), and the control unit (8) which enables the shutter (7) to shift

to the open position (A) to operate the water spraying elements (12). After the water is filled into the receptacle (5) and the dishes are soaked, the control unit (8) keeps the shutter (7) in the open position (A) to operate the water spraying elements (12). Thus, the dishes cleansed of stains are washed. The washing process is performed as per user preference.

[0028] In an embodiment of the present invention, the dishwasher (1) comprises a control panel (13) which enables the user to control the operational parameters, and a control button (14) which is disposed on the control panel (13) and with which the user controls the shifting of the shutter (7) between the open position (A) and the closed position (B). By means of the control button (14), the shutter (7) shifts between the open position (A) and the closed position (B) as per user preference.

[0029] In an embodiment of the present invention, the dishwasher (1) comprises an on/off button (15) which is disposed on the control panel (13) and which enables the dishes placed into the receptacle (5) to be soaked in water with the operation of only the receptacle (5). By means of the on/off button (15), the receptacle (5) can be operated independently of the dishwasher (1).

[0030] By means of the present invention, with a receptacle (5) which can be detachably attached to the rack (4), dishes with heavy stains are soaked in water. By means of the delivery line (6), hot water is taken into the receptacle (5). By means of a shutter (7) provided on the receptacle (5), the water is kept in the receptacle (5) or discharged from the receptacle (5). The hot water is kept in the receptacle (5) to cleanse the dishes with heavy stains of the stains. After the water in the receptacle (5) is discharged, the washing process is performed as per user preference.

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 dishes to be washed are placed; a receptacle (5) which can be detachably attached onto the rack and whereon the dishes with heavy stains are placed to be soaked in water; a delivery line (6) for delivering water to the receptacle (5); a shutter (7) which is disposed on the receptacle (5) and which has an open position (A) for discharging the delivered water and a closed position (B) for keeping the water in the receptacle (5); and a control unit (8) which enables the shutter (7) to shift from the open position (A) to the closed position (B) and from the open position (A) to the closed position (B),
   characterized by a conductivity sensor (9) which is disposed on the receptacle (5), and by the control unit (8) which shifts the shutter (7) to the open position (A) when the conductivity value received from the conductivity sensor (9) exceeds a certain value predetermined by the producer.

2. A dishwasher (1) as in Claim 1, **characterized by** a temperature sensor (11) which is disposed on the delivery line (6), and by the control unit (8) which provides the intake of water into the receptacle (5) when the temperature value measured by the temperature sensor (11) exceeds a certain value predetermined by the producer.

3. A dishwasher (1) as in any one of the above claims, **characterized by** at least one water spraying element (12) which is disposed on the receptacle (5), and by the control unit (8) which enables the shutter (7) to shift to the open position (A) to operate the water spraying elements (12).

4. A dishwasher (1) as in any one of the above claims, **characterized by** a control panel (13) which enables the user to control the operational parameters, and a control button (14) which is disposed on the control panel (13) and with which the user controls the shifting of the shutter (7) between the open position (A) and the closed position (B).

5. A dishwasher (1) as in Claim 4, **characterized by** an on/off button (15) which is disposed on the control panel (13) and which enables the dishes placed into the receptacle (5) to be soaked in water with the operation of only the receptacle (5).

Patentansprüche

1. Eine Geschirrspülmaschine (1) umfasst ein Gehäuse (2); eine Waschwanne (3), die in dem Gehäuse (2) angeordnet ist und in der der Waschvorgang durchgeführt wird; mindestens ein Gestell (4), das in der Waschwanne (3) angeordnet ist und auf dem zu waschendes Geschirr platziert wird; einen Behälter (5), der abnehmbar an dem Gestell befestigt werden kann und auf dem Geschirr mit starken Verschmutzungen platziert wird, um in Wasser eingeweicht zu werden; eine Zufuhrleitung (6) zum Zuführen von Wasser zu dem Behälter (5); und einen Verschluss (7), der an dem Behälter (5) angeordnet ist und der eine offene Position (A) zum Ablassen des zugeführten Wassers und eine geschlossene Position (B) zum Halten des Wassers in dem Behälter aufweist, eine Steuereinheit (8), die es ermöglicht, den Verschluss (7) von der offenen Position (A) in die geschlossene Position (B) zu verschieben, **gekennzeichnet ist es dadurch,** dass von der offenen Position (A) in die geschlossene Position (B), einen Leitfähigkeitssensor (9), der auf dem Behälter (5) angeordnet ist, und durch die Steuereinheit (8), die den Verschluss (7) in die offene Position (A) ver-

schiebt, wenn der vom Leitfähigkeitssensor (9) empfangene Leitfähigkeitswert einen bestimmten, vom Hersteller vorgegebenen Wert überschreitet.

2. Eine Geschirrspülmaschine (1), wie in Anspruch 1 aufgeführt, **ist dadurch gekennzeichnet, dass** ein Temperatursensor (11), auf der Zufuhrleitung (6) angeordnet ist, und durch die Steuereinheit (8), die den Einlass von Wasser in das Behälter (5) vorsieht, wenn der vom Temperatursensor (11) gemessene Temperaturwert einen bestimmten, vom Hersteller vorgegebenen Wert überschreitet.

3. Eine Geschirrspülmaschine (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** mindestens ein Wassersprühelement (12), das auf dem Behälter (5) angeordnet ist, und durch die Steuereinheit (8), die es ermöglicht, den Verschluss (7) in die offene Position (A) zu bringen, um die Wassersprühelemente (12) zu betätigen.

4. Eine Geschirrspülmaschine (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** ein Bedienfeld (13), das es dem Benutzer ermöglicht, die Betriebsparameter zu steuern, und eine Steuertaste (14), die auf dem Bedienfeld (13) angeordnet ist und mit der der Benutzer das Verschieben des Verschlusses (7) zwischen der offenen Position (A) und der geschlossenen Position (B) steuert.

5. Eine Geschirrspülmaschine (1), wie in Anspruch 4 aufgeführt, **ist dadurch gekennzeichnet, dass** eine Ein-/Ausschalttaste (15) auf dem Bedienfeld (13) angeordnet ist und die es ermöglicht, dass in den Behälter (5) gestellte Geschirr mit Wasser zu durchweichen, wobei nur der Behälter (5) bedient wird.

Revendications

1. Un lave-vaisselle (1) **comprenant** un corps (2) ; une cuve de lavage (3) qui est disposée dans le corps (2) et où le processus de lavage est effectué ; au moins un support (4) qui est disposé dans la cuve de lavage (3) et sur lequel sont placées les vaisselles à laver ; un réceptacle (5) qui peut être fixé de manière détachable sur le support et sur lequel les vaisselles avec des taches tenaces sont placées pour être trempées dans l'eau ; une conduite de distribution (6) pour distribuer de l'eau au réceptacle (5) ; et un obturateur (7) qui est disposé sur le réceptacle (5) et qui a une position ouverte (A) pour évacuer l'eau distribuée et une position fermée (B) pour maintenir l'eau dans le réceptacle ; une unité de commande (8) qui permet à l'obturateur (7) de passer de la position ouverte (A) à la position fermée (B), **caractérisée par** une unité de commande (8) qui déplace l'obturateur (7) vers la position ouverte (A) lorsque la valeur de conductivité reçue du capteur de conductivité (9) dépasse une certaine valeur prédéterminée par le fabricant.

2. Un lave-vaisselle (1) tel que revendiqué dans la revendication 1, **caractérisé par** un capteur de température (11) qui est disposé sur la conduite de distribution (6), et par l'unité de commande (8) qui permet l'admission d'eau dans le réceptacle (5) lorsque la valeur de température mesurée par le capteur de température (11) dépasse une certaine valeur prédéterminée par le fabricant.

3. Un lave-vaisselle (1) tel que décrit dans l'une quelconque des revendications ci-dessus, **caractérisé par** au moins un élément de pulvérisation d'eau (12) qui est disposé sur le réceptacle (5), et par l'unité de commande (8) qui permet à l'obturateur (7) de passer en position ouverte (A) pour actionner les éléments de pulvérisation d'eau (12).

4. Un lave-vaisselle (1) tel que décrit dans l'une quelconque des revendications ci-dessus, **caractérisé par** un panneau de commande (13) qui permet à l'utilisateur de contrôler les paramètres opérationnels, et un bouton de commande (14) qui est disposé sur le panneau de commande (13) et avec lequel l'utilisateur contrôle le déplacement de l'obturateur (7) entre la position ouverte (A) et la position fermée (B).

5. Un lave-vaisselle (1) tel que revendiqué dans la revendication 4, **caractérisé par** un bouton marche/arrêt (15) disposé sur le panneau de commande (13) et qui permet aux plats placés dans le réceptacle (5) de tremper dans l'eau en ne faisant fonctionner que le réceptacle (5).

Figure 1

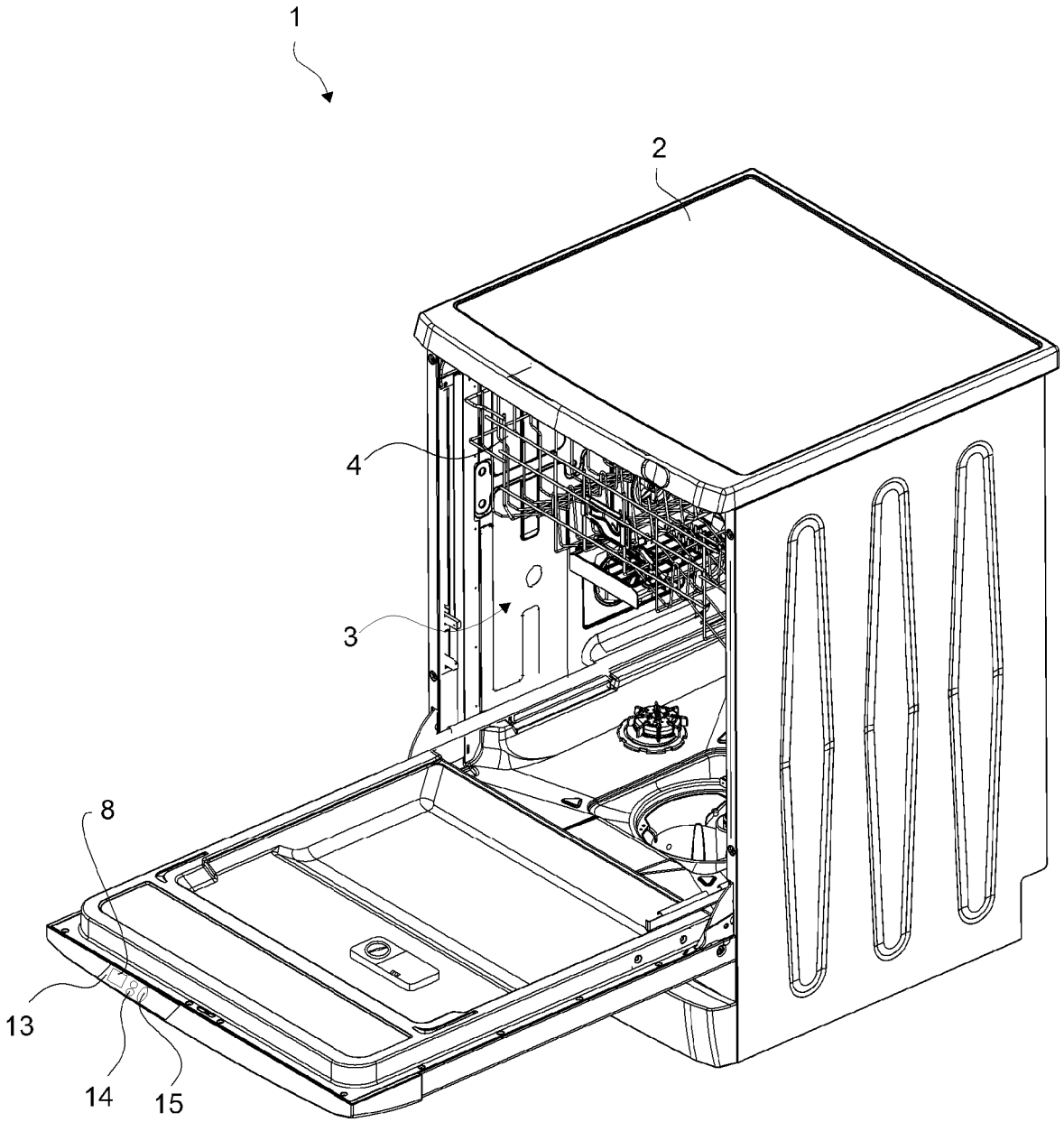


Figure 2

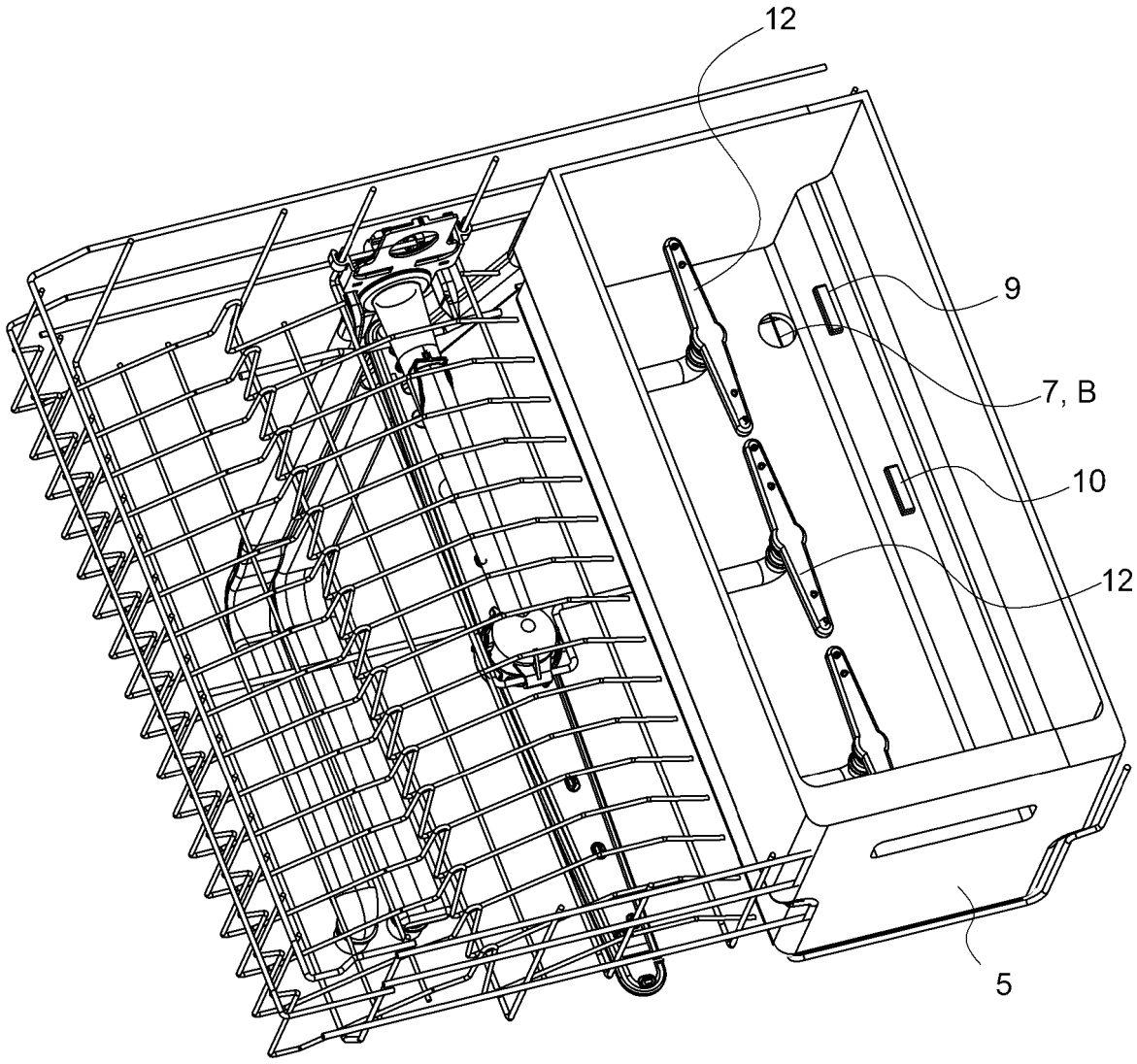


Figure 3

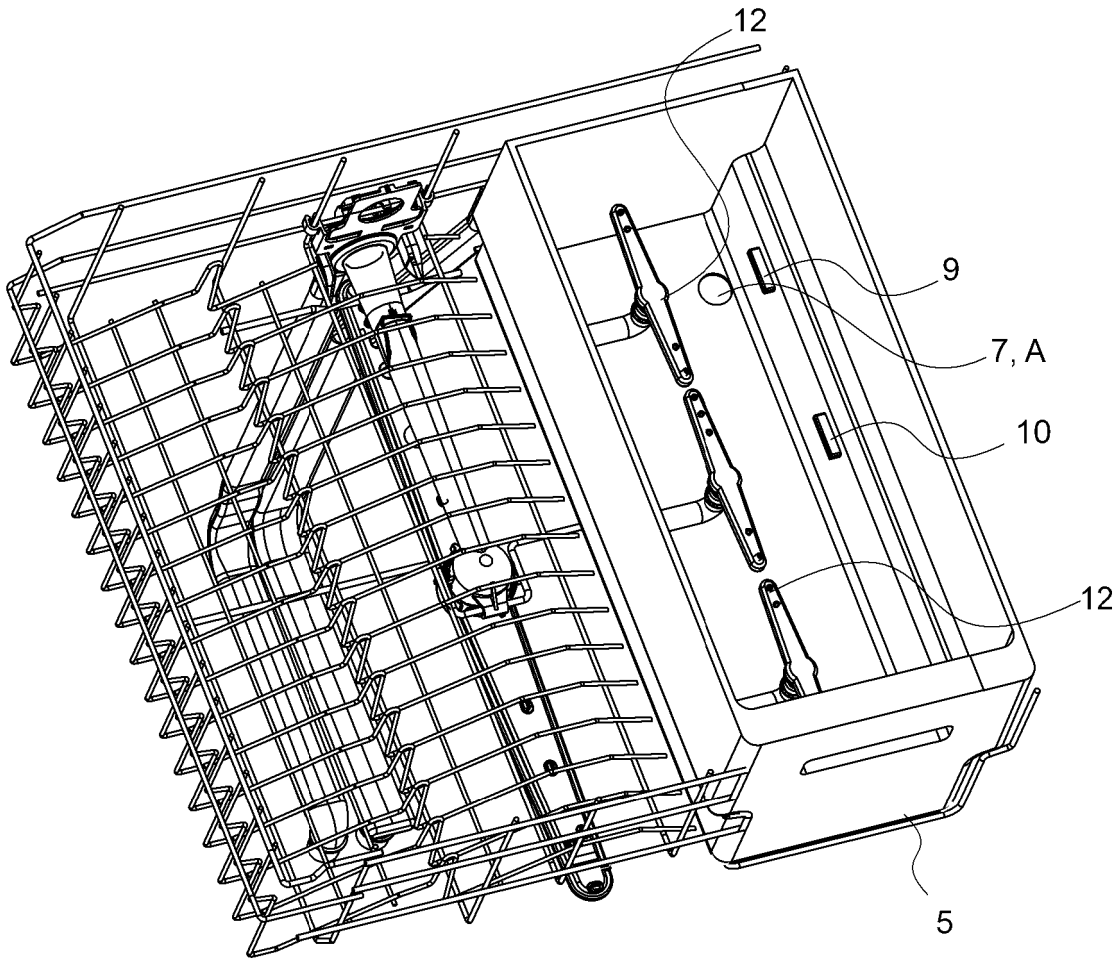
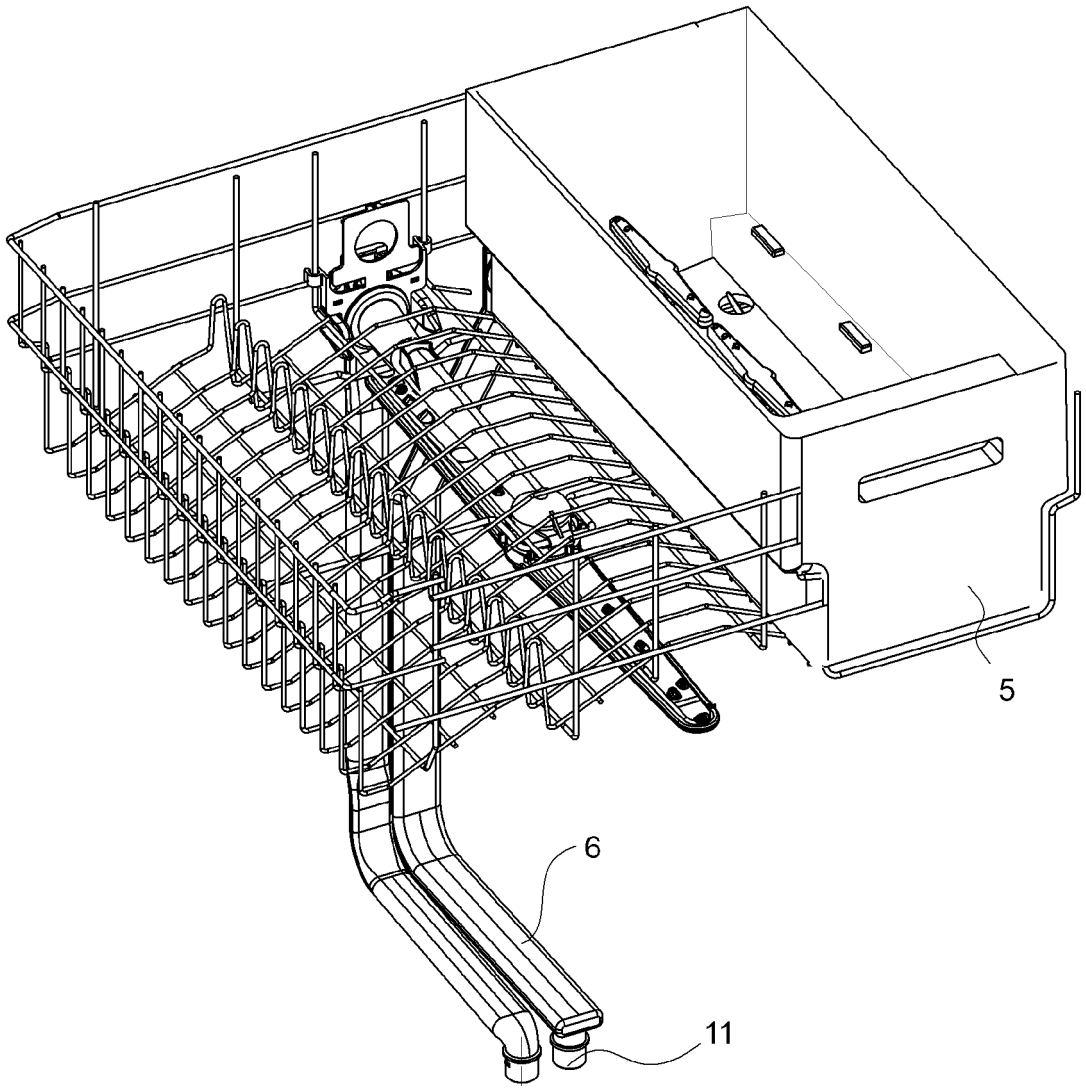


Figure 4



REFERENCES CITED IN THE DESCRIPTION

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