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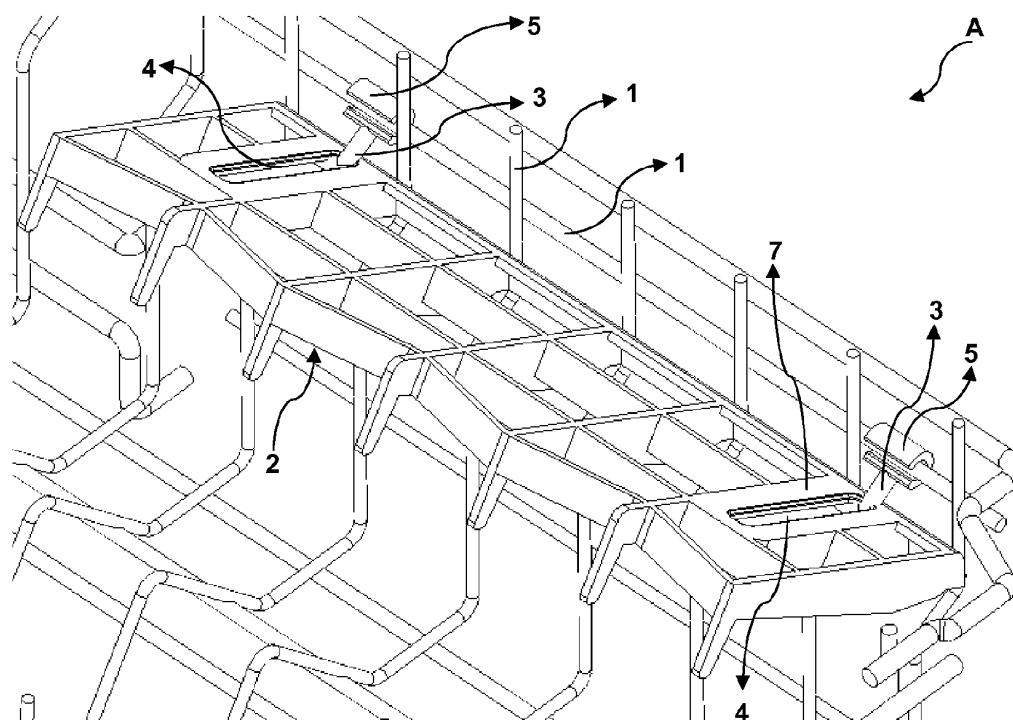
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(54) **A shelf for dishwasher racks**

(57) The dishwasher rack (A) of the invention comprises at least one shelf (2) hinged to the rack wires (1) and at least one connecting member (3) which establishes the connection of the shelf (2) to the wires (1). The shelf (2) is rotatably foldable and is also horizontally or vertically slidable. In addition, said shelf (2) is provided

with at least one track (4). The connecting member (3) is fitted into the track (4) from the top surface (7) as a freely moveable member, and comprises at least one protrusion (6) which is wider than the track (4) provided on the end of the connecting member (3) remaining under the shelf (2). The connecting member (3) is hinged to the wire (1) by the other end thereof.



**Figure – 2**

## Description

### Technical Field

[0001] Present invention relates to shelves which are used in dishwasher racks.

### Prior Art

[0002] Foldable shelves provided in dishwasher racks are widely used for increasing dish loading capacity of the rack. These shelves, on which small sized kitchenware such as glasses, cups etc. are placed, are preferred to be height- and position-adjustable (open position and closed position). Various mechanisms are employed for shelf adjustment in the available systems. Published patent application W02009007304 discloses a shelf hinged to the dishwasher rack wire by means of a couple of arms which are articulated both to the rack wire and to the shelf. Published patent application EP1475030 discloses a rotatably foldable shelf mechanism wherein the shelf is slidable up and down within a cavity. Published patent application GB2321394 discloses another shelf mechanism wherein the edges are provided with longitudinal slits into which the pins on the rack wires are fitted, thanks to which the position of the shelf on the rack is adjusted.

### Brief Description of the Invention

[0003] The dishwasher rack of the invention comprises at least one shelf hinged to the rack wires and at least one connecting member which establishes connection of the shelf to the wires. The shelf is rotatably foldable and is also horizontally or vertically slidable. In addition, the shelf is provided with at least one track. The connecting member is fitted into the track from the top surface as free engagement, and at least one protrusion which is wider than the track is provided on the end, remaining under the shelf, of the connecting member. The connecting member is hinged to the wire by the other end thereof. The portion of the connecting member, which is hinged to the wire, is in the form of a hook which has such a shape to allow rotation and sliding on the wire.

### Objective of the Invention

[0004] The aim of the invention is to provide a foldable and height-adjustable shelf for dishwasher racks.

[0005] Another aim of the invention is to provide a reliable dishwasher rack shelf which is easy and simple to produce.

### Description of Drawings

[0006] An exemplary dishwasher rack and the shelf employed therein are illustrated in the annexed figures wherein

Figure 1 is a general perspective view of the dishwasher rack.

Figure 2 is a perspective view of the shelf employed in the rack in open state.

Figure 3 is a side view of said shelf in open state.

Figure 4 is a side view of the closing pattern of the shelf.

Figure 5 is a side view of the shelf in closed state.

Figure 6 is a bottom view of the shelf in open state.

Figure 7 is a perspective view of an alternative embodiment of the invention.

[0007] The parts on the figures are individually enumerated and the corresponding terms of these reference numbers are as follows:

Dishwasher rack	(A)
Rack wires	(1)
Shelf	(2)
Connecting member	(3)
Track	(4)
Hook	(5)
Protrusion	(6)
Top surface	(7)
Bottom surface	(8)
Back portion	(9)
Front portion	(10)

### Disclosure of the Invention

[0008] The dishwasher rack (A) the perspective views of which are shown by Figure 1 and 2 comprises at least one shelf (2) hinged to the rack wires (1) and at least one connecting member (3) which establishes connection of the shelf (2) to the wire (1). The shelf (2) is not only rotatably foldable, but is also horizontally or vertically slidable.

[0009] As illustrated by Figure 2 in more detail, at least one track (4) is provided on the shelf (2), and the connection of the shelf (2) to the wires (1) is established by means of connecting members (3) seated in each track (4). The portion, which is hinged to the wire (2), of the connecting member (3) is in the form of a hook (5). The hook (5) has such a structure to allow rotation and sliding on the wire (1). The hook (5) is hinged to the horizontal wire (1) in the structure shown in Figure 2 while the hook (5) is shown as hinged to the vertical wire (1) in the alternative structure of Figure 7. In this alternative structure, the height of the shelf (2) is adjustable thanks to the sliding of the hook (5) on the vertical wire (1).

[0010] Another feature of the connecting member (3) which establishes connection of the shelf (2) to the wire (1) is that the member freely fits into said track (4) from the top surface (7) of the shelf (2) (see Figure 2). On one end of the connecting member (3), which is fitted into the track (4), is provided at least one protrusion (6) which

prevents the member (3) from getting off the track (4) (the protrusion (6) has a wider size than the track (4)). In the open state of the shelf (2) this protrusion (6) abuts against the bottom surface (8) of the shelf (2) (shown in Figure 6). Figure 3 also illustrates the open state of the shelf (2), wherein the back portion (9) of the shelf abuts against the wires (1). 5

**[0011]** The shelf (2) rotates and slides on the member (3) as shown in Figure 4 since the connecting member (3) and the track (4) are engaged as free engagement. 10  
As a result of such movement, the shelf (2) assumes the closed state shown in Figure 5. The shelf (2) is rotatably closed by means of the track (4) and assumes a state where the front portion (10) thereof has a reduced height (in accordance with the movement shown by arrows in Figure 4). 15

## Claims

1. A dishwasher rack (A) **characterized in that** the rack comprises 20
  - at least one rotatably foldable shelf (2) on which at least one track (4) is provided; 25
  - at least one connecting member (3) fitted into the track (4) from the top surface (7) as free engagement, one end of which, remaining under shelf, is provided with at least one protrusion (6) having a wider size than the track (4), and by the other end of which the member (3) is hinged to the wire (1). 30
2. A dishwasher rack (A) according to claim 1 **characterized in that** the portion of the connecting member (3), which is hinged to the wire (1), is in the form of a hook (5). 35
3. A dishwasher rack (A) according to claim 2 **characterized in that** the hook (5) can make a rotational motion on the wire (1). 40
4. A dishwasher rack (A) according to claim 2 **characterized in that** the hook (5) can make a sliding motion on the wire (1). 45

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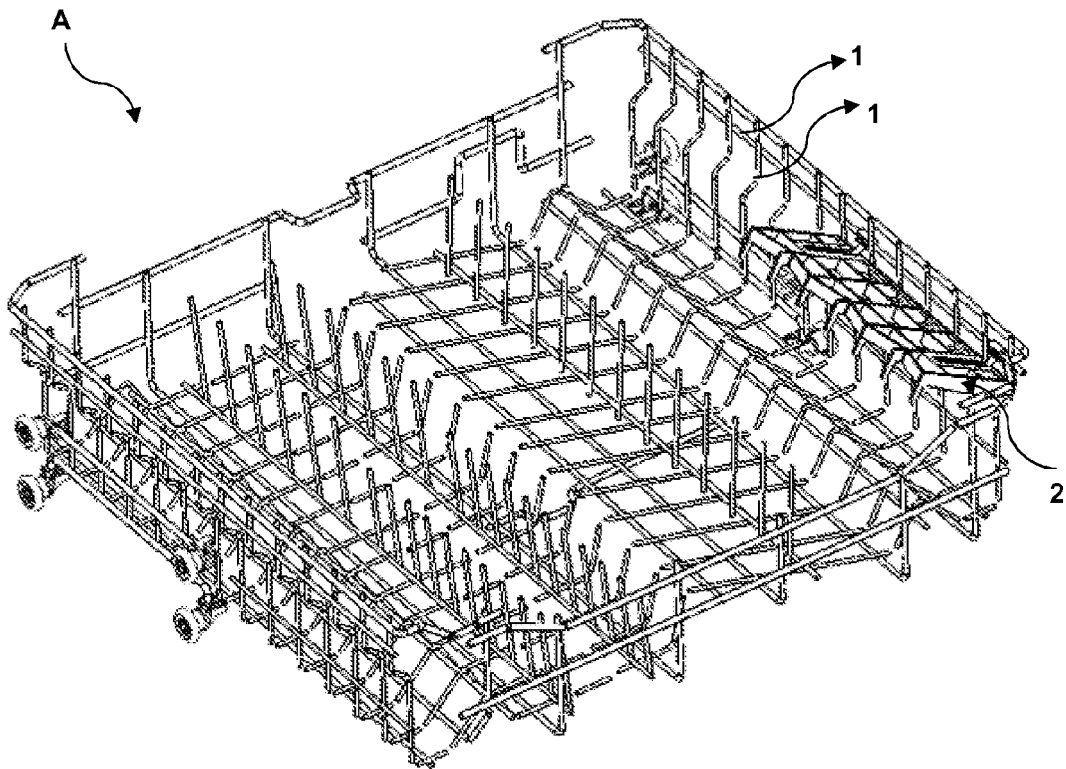


Figure - 1

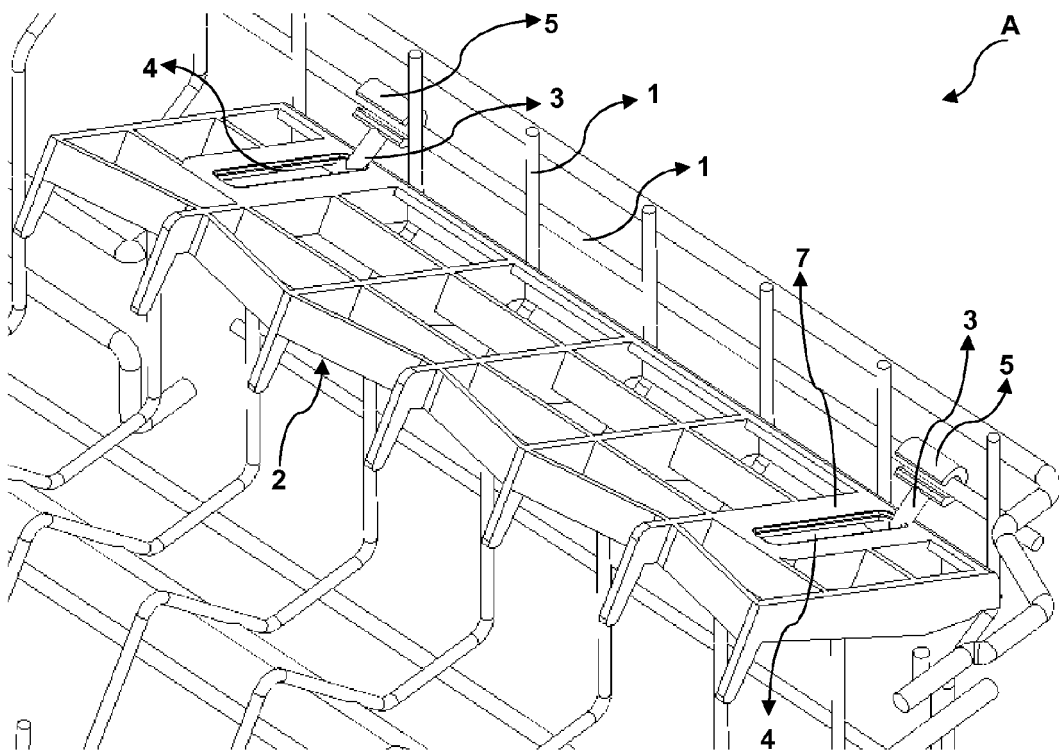


Figure - 2

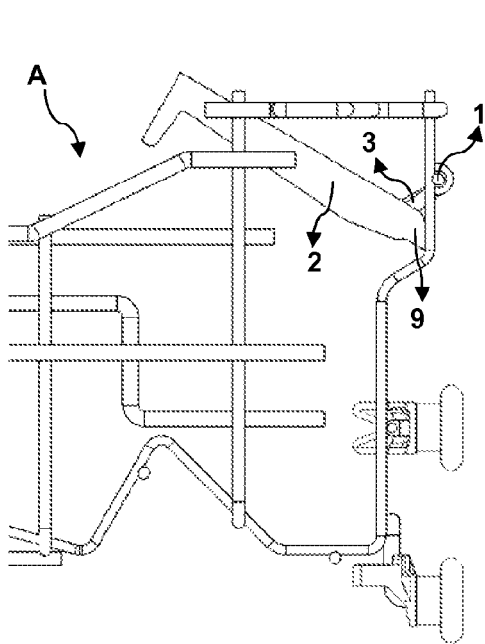


Figure - 3

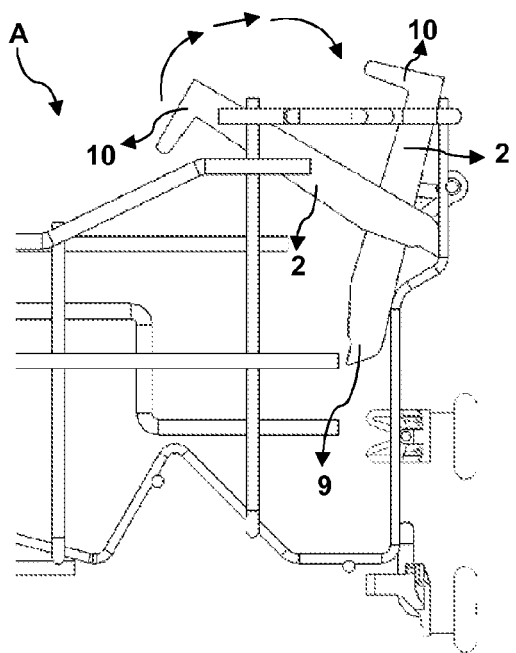


Figure - 4

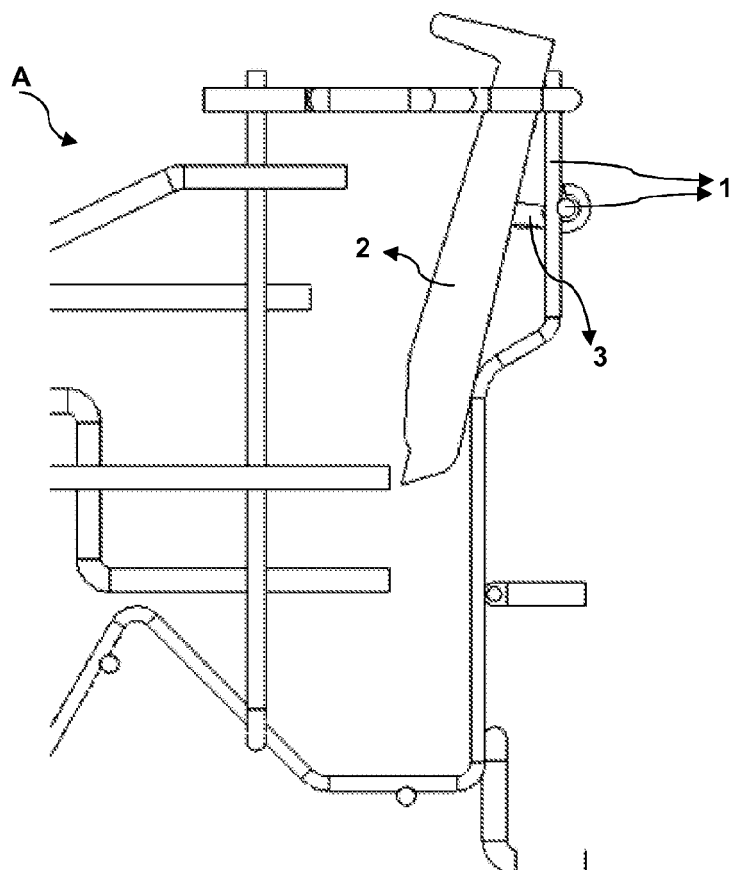


Figure - 5

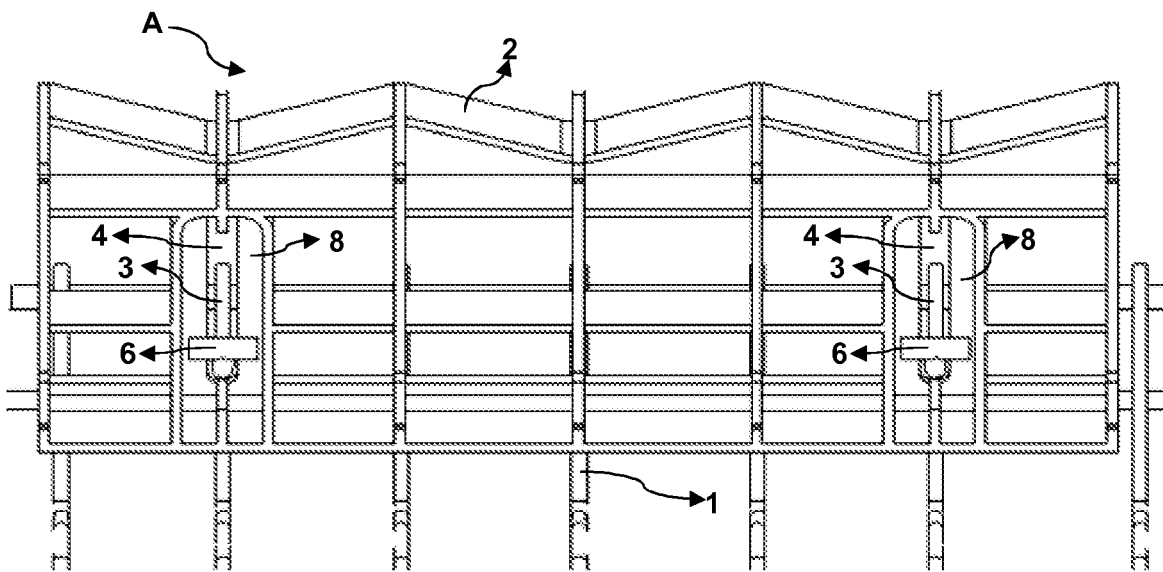


Figure - 6

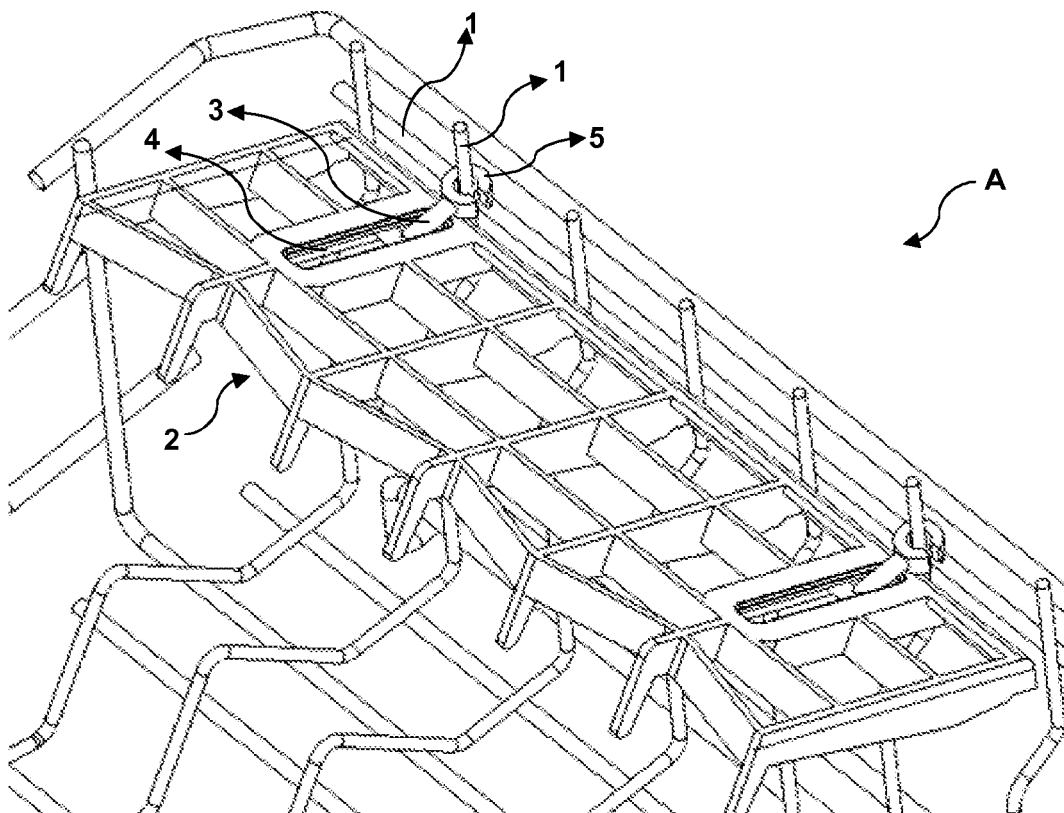


Figure - 7



## EUROPEAN SEARCH REPORT

Application Number  
EP 11 16 7726

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
			A47L
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 27 October 2011	Examiner Clivio, Eugenio
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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EPO FORM 1503 03.92 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 16 7726

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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27-10-2011

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**REFERENCES CITED IN THE DESCRIPTION**

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