

(19)



(11)

EP 2 036 482 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

18.03.2009 Bulletin 2009/12

(51) Int Cl.:

A47L 15/50 (2006.01)

(21) Application number: **07116362.0**

(22) Date of filing: **13.09.2007**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE
SI SK TR**

Designated Extension States:

AL BA HR MK RS

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(54) **Support for glasses for dishwasher baskets**

(57) This invention is related to a glass holding unit designed to allow glasses of various forms such as goblet and long bodied glass to be washed in dishwasher baskets. This unit contains one support element (2) and two connection apparatuses (3). Support element (2) can stand at different positions; thus allowing glasses of var-

ious forms and sizes to be placed. In cases where it is not desired to be used, in order not to prevent the placement of goods such as dish etc. in the basket, support element (2) can be completely closed and passivated.

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Description

Technical Field

[0001] This invention is related to a goblet/glass holding unit designed to allow goblets or various glasses to be properly and safely washed in dishwashers.

Prior Art

[0002] Dishwashers extensively used nowadays contain two baskets, one in the bottom and one in the top, and glasses are placed on these baskets such that they rest against the sides. In dishwashers, long and short stemmed goblets and a great variety of glasses can be washed. However, various difficulties arise in placing the glasses, the forms of which differ from each other since there is not a special section organized for these glasses in the baskets. For example, long and heavy stemmed goblets cannot stand balanced on the rack and they can be toppled while the basket is pushed into the dishwasher.

[0003] As a solution to this problem, in the state of the art, the patent document US 6135296 disclosed a glass holding apparatus with which many conical glasses can be placed. This is an apparatus which is designed mountable to the dishwasher baskets and contains many adjoining spaces to allow great number of glasses to be put. This invention allows glasses to be properly washed without toppling; however its use is only limited to the glasses with conical form. The patent document US 4589556 disclosed an apparatus which can be used in dishwashers and is particularly designed with the purpose to carry long stemmed goblets. Goblets are placed to this apparatus which is fitted on the dishwasher basket such that bottoms thereof are attached to the latch on the apparatus and they stand upside down. This system is only convenient to place goblet and does not provide a solution to the problem of washing other glasses excluding goblet in dishwasher. Another glass holding system which is designed to place long stemmed goblets and long bodied glasses was disclosed in the patent document EP 1424035. This apparatus which is used in dishwasher baskets contains two, three or more recessions with various diameters to allow goblets and glasses with various diameters to be placed. After apparatus is fitted on the basket, the bodies of the glasses which are put on the basket are placed by resting against the appropriate recession on the apparatus. Since the apparatuses which are disclosed in the patent documents US 4589556 and EP 1424035 are both of large volume, they take up space inside the basket and can hold a few number of glasses. Another device which is designed to allow glasses to be washed without toppling is disclosed in the published patent document US 3752322. Said invention contains a support element which ensures glasses to be positioned by wedging. In the recommended device, glasses are placed into the space between the side of the

basket and the support element. Said invention aims to prevent the movement of the glasses by wedging them in this way. Since the elements constituting this system are not adaptable to the dishwasher baskets which are currently in use, the invention disclosed in the published patent document US 3752322 can only be adapted to the baskets which are of convenient structure for the installation of this system.

Brief Disclosure of the Invention

[0004] This invention is a glass holding unit developed to allow various glasses such as goblet and long bodied glass to be washed in dishwashers. This unit contains at least one support element and two connection apparatuses. Connection apparatuses contain on their rear surfaces at least one groove and one catch to be fitted on the dishwasher basket. A support element was mounted between two connection apparatuses which are reciprocally fitted on the sides of the basket. On the front surfaces of the connection apparatuses, there are provided catches into which the leg of the support element can engage. The support element thus can stand in multiple positions, thereby allowing glasses to be placed on a level which is appropriate for their structure. In cases where glass holding unit is not desired to be used, it is possible to close the support element such that it does not cause a volume shrinking on the basket.

Aims of the Invention

[0005] An aim of this invention is to provide a glass holding unit of which position can be adjusted to allow various goblets and glasses to be orderly and safely washed in dishwashers.

[0006] Another aim of the invention is to allow glasses of variable forms and sizes to be placed by forming a glass holding unit with adjustable level.

[0007] The other aim of the invention is to provide a structure that would not prevent dishes to be placed by closing and bringing the system to passive position in cases where it is not used.

[0008] Yet the other aim of the invention is to form a glass holding unit which is mountable to the dishwasher baskets currently in use and also contains a few and simple elements.

Description of the Drawings

[0009] The inventive exemplary glass holding unit is shown in the attached drawings, wherein:

Fig. 1 is a perspective view of the inventive glass holding unit.

Fig. 2 is another perspective view of the inventive glass holding unit.

Figs. 3A, 3B, 3C, 3D are the views of the positions of the glass holding unit at the different working lev-

els.

Fig. 4 is a view exemplifying the positioning of the goblets.

Fig. 5 is a view exemplifying the positioning of the long bodied glasses.

Fig. 6 is a rear perspective view of the connection apparatus.

Fig. 7 is a front perspective view of the connection apparatus.

Fig. 8 is a perspective view of the support element.

[0010] The parts used in the figures are numbered one by one and the corresponding terms of these numbers are given below.

Glass holding unit (A)
Dishwasher basket (1)
Support element (2)
Connection apparatus (3)
Rear surface (4)
Catch (5)
Groove (6)
Front surface (7)
Rotation bearing (8)
Middle portion (9)
Leg (10)
End portion (11)
Catches (12)
Channel (13)
Space (14)
Projection (15, 15')

Disclosure of the Invention

[0011] Fig. 1 provides a perspective view of a dishwasher basket and an exemplary glass holding unit (A) which is used in this basket. The inventive unit (A) contains at least one support element (2) in the form of curled wire which is used to allow glasses to rest against and two connection apparatuses (3) which keep the legs on two ends of this support element (2) and are fitted on the reciprocal wires of the basket (1).

[0012] Fig. 2 provides detailed perspective views of the support element (2) and the connection apparatus (3) pertaining to the glass holding unit. The connection apparatus (3) which is also shown in fig. 6 contains on its rear surface (4) at least one groove (6) and one catch (5) to be engaged into the basket (1) wires. The connection apparatus (3) is fitted on the inner side of the basket (1) such that its rear surface (4) rests against the basket wires. While said grooves (6) fit the wires and position the apparatus (3), catches (5) grasp the wires as tight engagement and prevent apparatus (3) to disengage. Grooves (6) can be formed horizontally, vertically or angled such that they intersect each other. When desired, overlapping the intersection points of the grooves (6) and the intersection points of the basket wires prevent apparatus (3) to move sides or up and down. Owing to these

said grooves (6) and catches (5), apparatus (3) can be adapted to the every kind of dishwasher basket and its desired horizontal and vertical positions can be adjusted.

[0013] The support element (2) which is shown in fig. 8 has a structure in the form of wire and contains a middle portion (9) which includes multiple curls such that glasses can be placed between them, the legs (10) which extend laterally with a curl on the both ends of this portion and the end portions (11) which are formed again with one curl each on the ends of the legs (10).

[0014] Two connection apparatuses (3) are reciprocally fitted on the sides of the basket to hold the support element (2). On the front surface (7) of the connection apparatus (3) which is shown in figs. 2, 6 and 7, there is provided a rotation bearing (8) to which the leg of the support element (2) is connected. Said bearing (8) is in the form of U and extends outwards from the front surface (7) of the connection element (3). There is one channel (13) in a form surrounding the side surfaces of the bearing (8) so as to allow the rotation of the leg (10) of the support element (2). This channel (13) is jointed to the inner space (14) of the U form. In this inner space, the end portion (11) of the support element (2) is borne. Thus, while said end portion (11) can rotate in the inner space (14) around its centre, leg (10) can also rotate throughout said channel (13) so as to sweep an arc. There are provided two projections (15, 15') in the inner space (14) pertaining to the U form. These projections (5) extend somewhat outwards in a form completing the circular surface on the bottom side of the U form. The distance between the projections (15, 15') is sufficient to allow said end portion (11) to wedge and enter. After end portion (11) passes through this aperture, it fits on the circular surface on the bottom of the U form and is borne here such that it can make a rotary movement.

[0015] Connection apparatus (3) also contains multiple catches (12) juxtaposed on its front surface (7). While support element (2) makes a rotary movement on the apparatus (3), legs (10) are wedged between these said catches and the position of the support element can be fixed. Thanks to the placement of the leg (10) between any desired two of juxtaposed catches (12), support element (2) can be fixed at multiple positions. (Figs. 3A, 3B, 3C, 3D)

[0016] These positions allow glasses of various sizes and forms to be placed. For example, as also seen in fig. 5, the position in fig. 3A is appropriate for the placement of the long bodied and stemless glasses. Goblets can be easily placed to any one of said positions according to the heights of their stems. An exemplary placement is provided in fig. 4.

[0017] Another feature of the inventive glass holding system is that it can be closed in cases where support element (2) is not used. This position which is shown in fig. 3D can be obtained in such a way that the leg (10) of the support element (2) enters between any two of the catches (12) on the bottom side of the apparatus (3). When brought to this position, support element (2) does

not take up space in the basket (1), therefore it does not prevent the placement of goods other than glass such as dish, bowl, cooker. Thus, in cases where glass holding unit is not required, it is ensured that elements (2) can be passivated with no need to remove them from the basket.

[0018] Besides them, since the inventive unit contains a few and simple elements and connection apparatus (3) is easily mountable to the basket (1) by means of multiple grooves (6) and catches (5) on its rear surface (4), these make the invention applicable to the dishwasher baskets which are currently in use. In other words, owing to many grooves (6) on the rear surface (4) of the connection apparatus (3), apparatus (3) can be fitted on baskets of very different types. Owing to the structures of these grooves (6) intersecting each other (horizontally or vertically), apparatus (3) fits easily on the intersection points of the basket wires and its lateral movements are prevented. In this position, additionally the location of the apparatus (3) is fixed by ensuring that the catches (5) on the rear surface (4) of the apparatus (3) grasp the basket wires.

[0019] The connection of the support element (2) to the apparatus (3) contains mounting easiness. The end portion (11) of the element (2) is passed through said channel (13) and fitted on the circular surface in the inner space (14) by wedging between the projections (15, 15'). Both ends (11) of the support element (2) are fitted on the apparatuses (3) in this way and its legs (10) reach a position where they can be wedged between the catches (12). In this way, the mounting of the inventive unit is performed easily and rapidly.

Claims

1. A glass holding unit (A) for dishwasher baskets comprising at least one support element (2) in the form of wire, containing multiple curls in its middle portion (9) to allow glasses to rest between them, the legs (10) which extend laterally with a curl on the both ends of the middle portion (9) and the end portions (11) which are formed again with one curl each on the ends of the legs (10), and two connection apparatuses (3) which keep the legs (10) on two ends of this support element (2) and are fitted on the reciprocal wires of the basket (1), **characterized in that** there is provided a bearing (8) in the form of U which extends outwards from the front surface (7) of the connection element (3);
in the inner space (14) of the bearing (8) and at the bottom side of said U form, end portion (11) is borne such that it can rotate around its center;
there is provided one channel (13) which is in a form surrounding the side surfaces of the bearing (8), allows the rotation of said leg (10) so as to sweep an arc and is jointed to the inner space (14).

2. An unit (A) according to the claim 1, **characterized**

in that there are provided multiple catches (12) which are juxtaposed on the front surface (7) of the connection apparatus (3) and where said leg (10) is positioned by wedging between them at different angles.

3. An unit (A) according to the claim 1, **characterized in that** in the inner space (14), there are provided two projections (15, 15') which extend somewhat outwards in a form completing the circular surface on the bottom side of said U form and where the distance between them is sufficient to allow end portion (11) to wedge and enter.

4. An unit (A) according to the claim 1, **characterized in that** on the rear surface (4) of the connection apparatus (3), there is provided at least one groove (6) so as to fit on the wires of the basket (1).

5. An unit (A) according to the claim 1, **characterized in that** on the rear surface (4) of the connection apparatus (3), there is provided at least one catch (5) which grasps the wires of the basket (1) as tight engagement.

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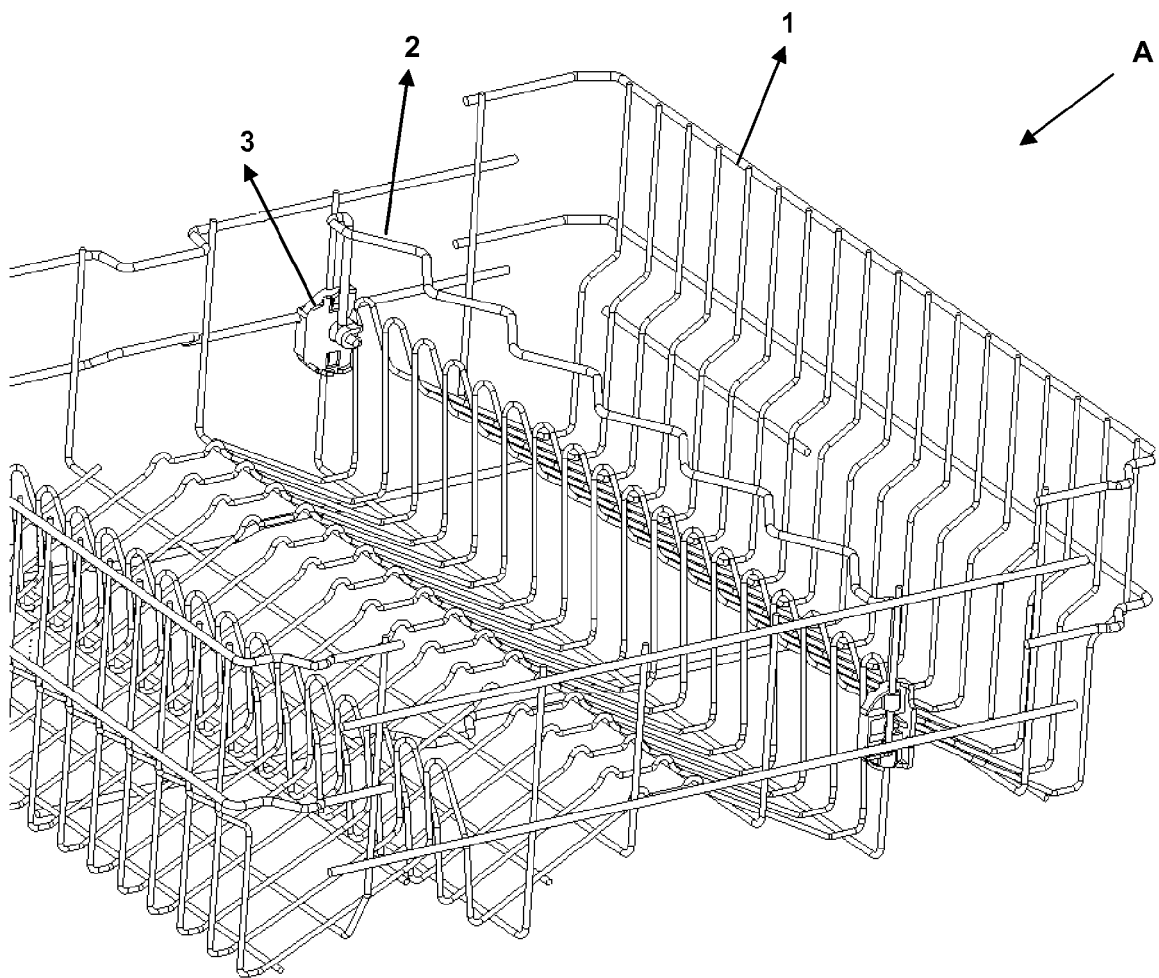


Figure – 1

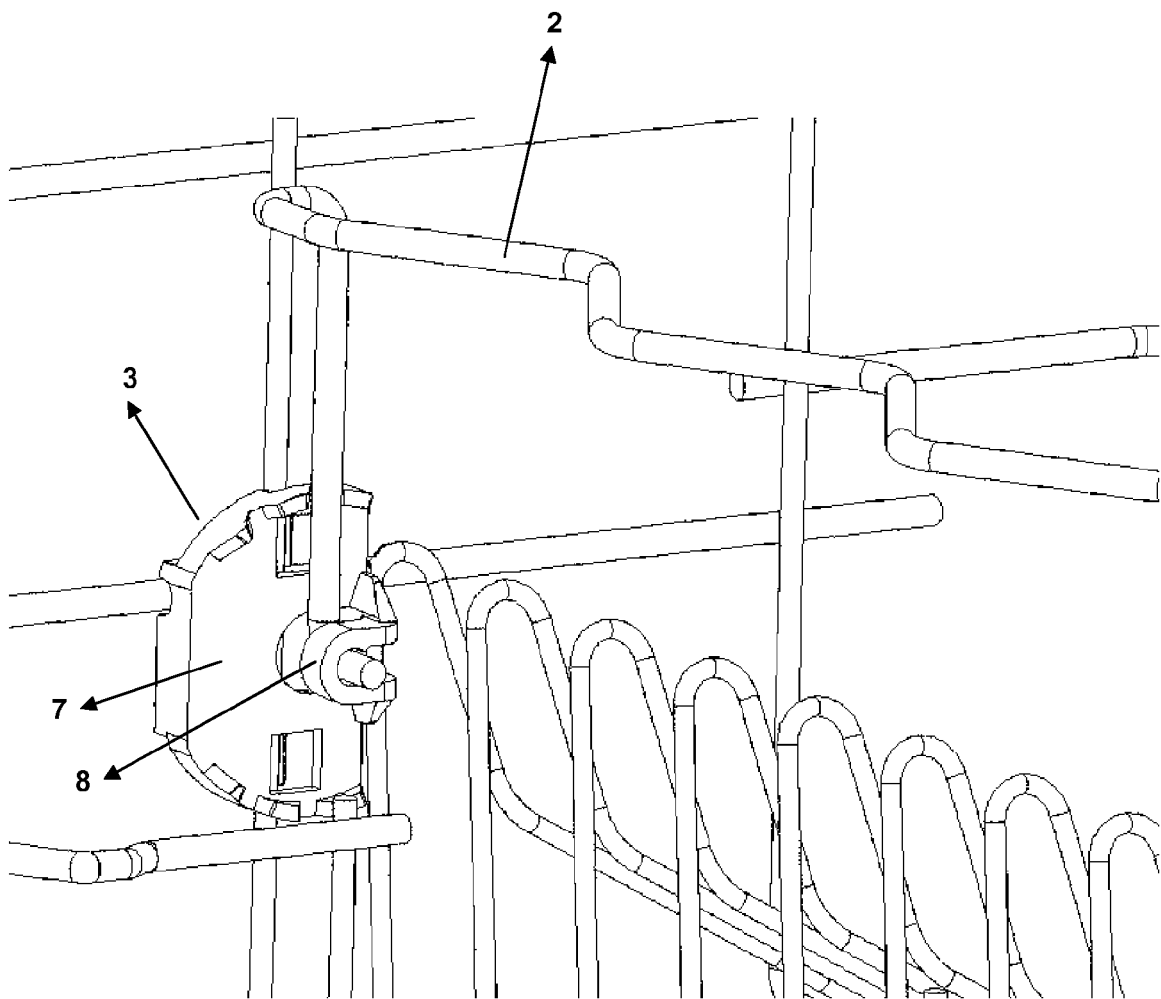


Figure – 2

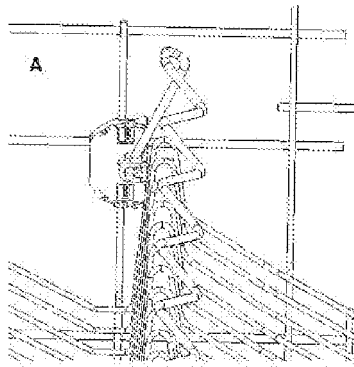


Figure – 3A

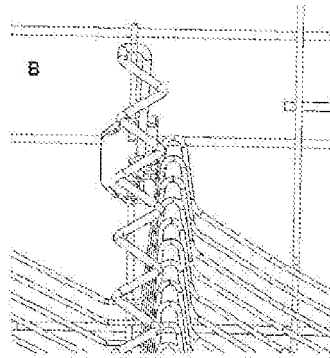


Figure – 3B

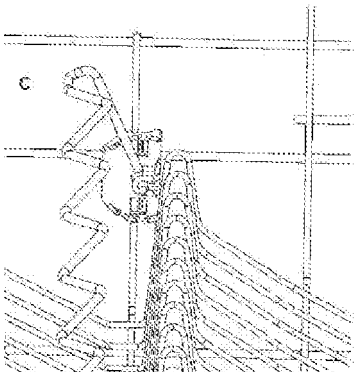


Figure – 3C

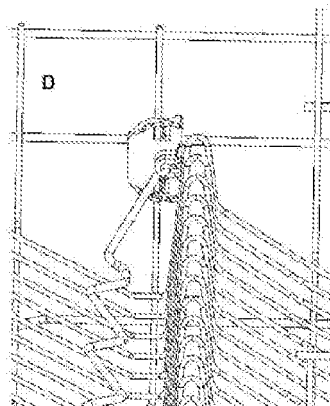


Figure – 3D

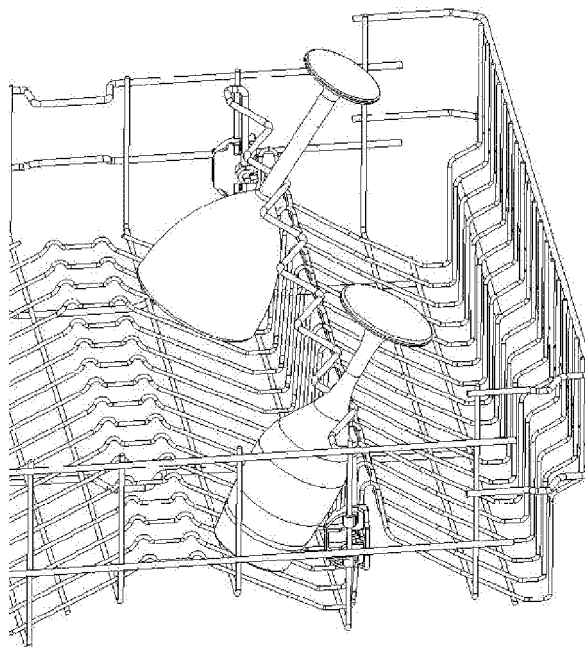


Figure – 4

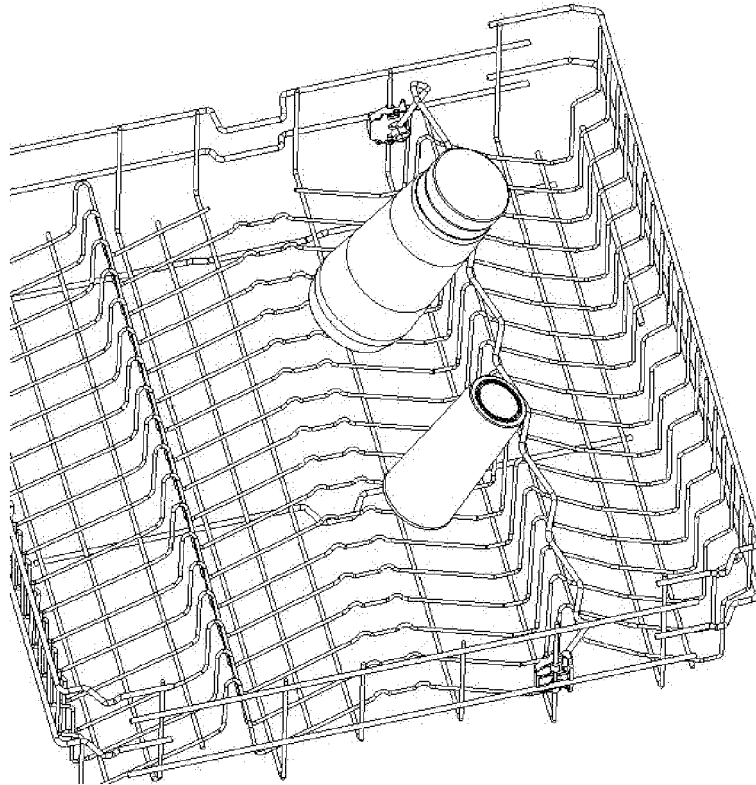


Figure – 5

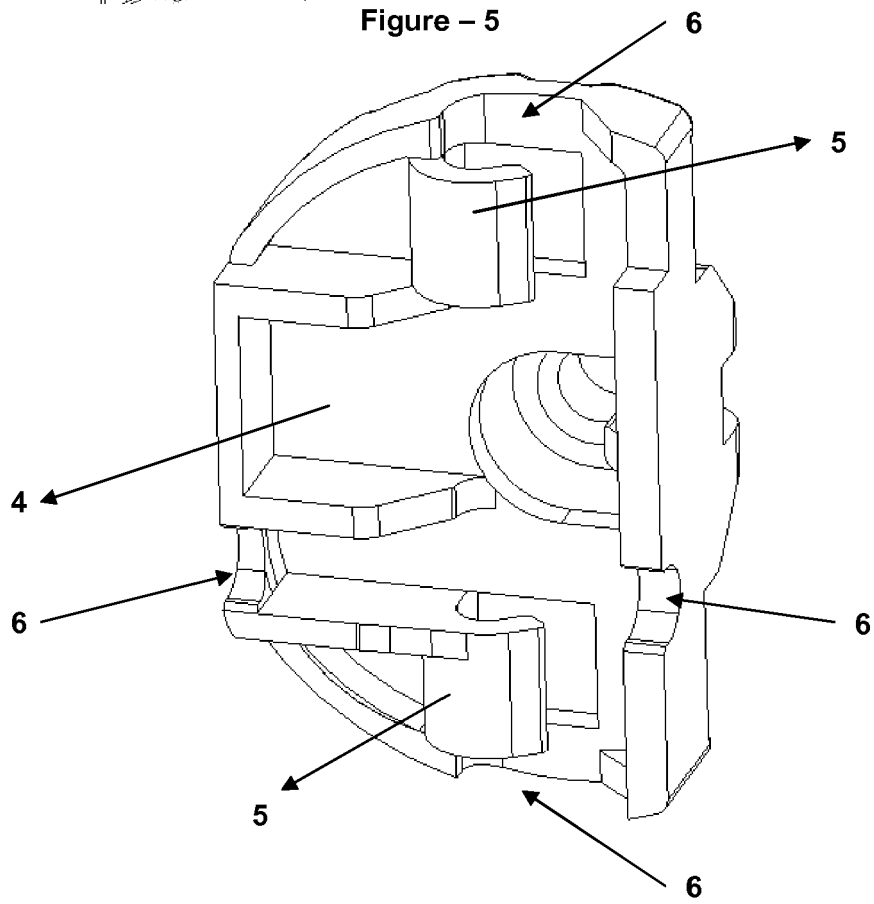


Figure – 6

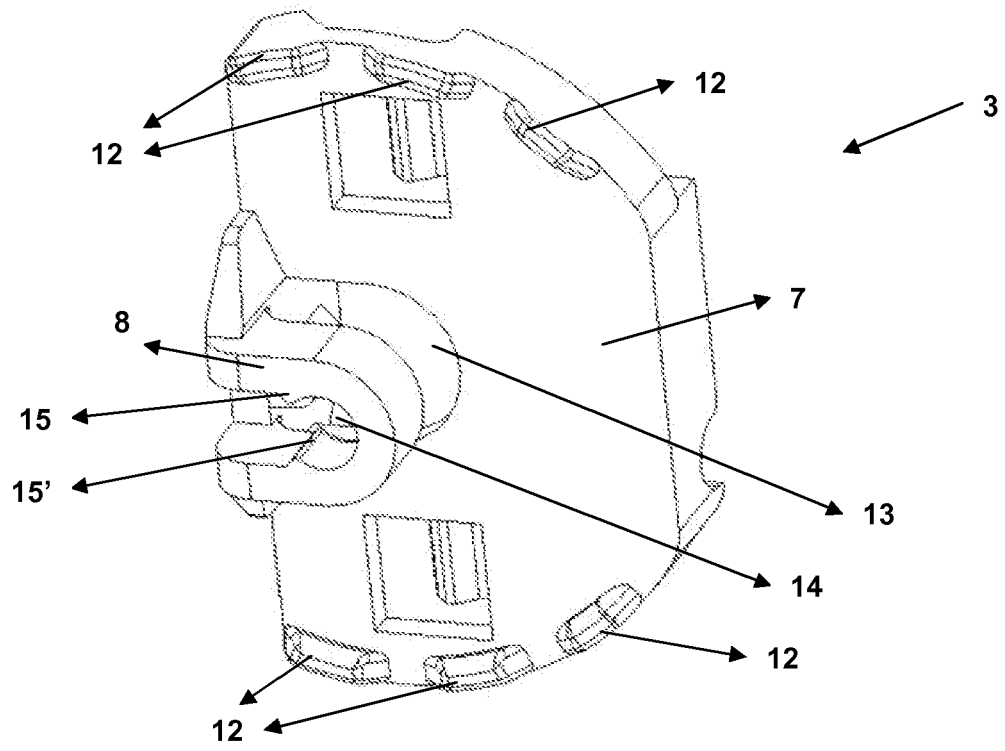


Figure - 7

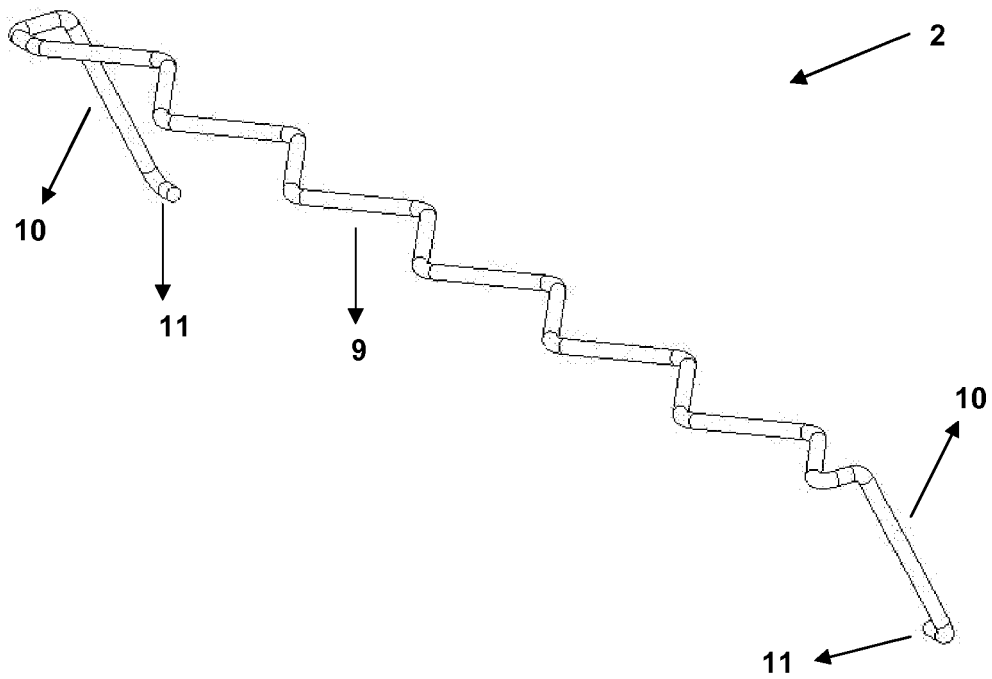


Figure - 8



European Patent
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Application Number
EP 07 11 6362

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Y	----- US 3 612 285 A (MASON ANTHONY) 12 October 1971 (1971-10-12) * column 1, line 49 - line 75; figure 1 *	1	
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Place of search		Date of completion of the search	Examiner
Munich		19 March 2008	Lodato, Alessandra
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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