

(19)



(11)

EP 3 354 806 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
01.09.2021 Bulletin 2021/35

(51) Int Cl.:
E03C 1/04 (2006.01)

(21) Application number: **18152215.2**

(22) Date of filing: **18.01.2018**

(54) **SEALING GASKET FOR SANITARY FITTING FOR MOUNTING IN A THROUGH HOLE OF A
SANITARY INSTALLATION**

DICHTUNG FÜR SANITÄRARMATUR ZUR BEFESTIGUNG IN EINEM DURCHGANGSLOCH EINER
SANITÄRINSTALLATION

JOINT D'ÉTANCHÉ POUR ROBINETTERIE SANITAIRE ETITÉ DESTINÉ À ÊTRE INSTALLÉ DANS
UN TROU TRAVERSANT D'UNE INSTALLATION SANITAIRE

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **31.01.2017 DE 102017101900**

(43) Date of publication of application:
01.08.2018 Bulletin 2018/31

(73) Proprietor: **ORAS OY
26100 Rauma (FI)**

(72) Inventor: **Icking, Thomas
26510 Rauma (FI)**

(74) Representative: **Ostertag & Partner Patentanwälte
mbB
Azenbergstraße 35
70174 Stuttgart (DE)**

(56) References cited:
**EP-A1- 0 193 437 DE-A1-102010 044 420
DE-U1- 9 304 056**

EP 3 354 806 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The invention relates to a sealing gasket for a sanitary fitting, wherein the sealing gasket is configured to be interposed between a contact surface of a housing base of the sanitary fitting and a support surface around a mounting through hole of a sanitary installation. The invention further relates to a centering sealing gasket and a sanitary fitting using such a sealing gasket.

2. Description of the Prior Art

[0002] A sanitary fitting usually comprises water connections protruding from a housing base of the sanitary fitting for connection of the sanitary fitting to the domestic plumbing lines. Furthermore such a sanitary fitting comprises a mounting stud bolt, which has a male screw thread and protrudes from the housing base for mounting purposes.

[0003] During the installation of such a sanitary fitting, the mounting stud bolt and the water connections are inserted into a through hole of a sanitary installation like e.g. a washing table, a washbasin, a washstand, a wall installation or a pedestal installation. In a next step, a retaining element is fastened on the mounting stud bolt on the opposite side of the mounting through hole. Due to the fastening of the retaining element a contact surface of the housing base is pressed against a support surface around the mounting through hole and the sanitary fitting gets fixed at the sanitary installation.

[0004] In order to prevent splash water from flowing in between the contact surface of the sanitary fitting and the support surface of the sanitary installation and onward through the mounting through hole a sealing gasket is interposed between the contact surface and the support surface. Such a sealing gasket also compensates for any unevenness of the support surface of the sanitary installation which is necessary because the sanitary installations are usually made of ceramics having a rather undefined surface flatness.

[0005] The sealing gaskets used for this purpose are usually rotationally symmetric rings or the like. However, it turned out that it is sometimes difficult to properly fix the sanitary fitting using such rotationally symmetric sealing gaskets.

[0006] From DE 10 2010 044 420 A1 sealing gasket for a sanitary fitting is known which is made of one piece in an injection molding process including two material components. A centering sleeve part of the sealing gasket is made of a hard material and an abutment part surrounding the centering sleeve part is made of a soft material. However, the sealing gasket is rotationally symmetric with respect to the fastening forces involved.

[0007] From DE 93 04 056 U1 a flat, ring-shaped seal-

ing gasket is known which is radially broader in a first angular part of the ring than in second angular part.

[0008] From EP 0 193 437 A1 a sanitary fitting with an inclined housing body is known. The sealing gasket comprises an identically inclined centering sleeve and therefore has a generally asymmetric appearance. However, the foot print of the sealing gasket in between the contact surface of the housing base and the support surface around the mounting through hole is symmetric.

SUMMARY OF THE INVENTION

[0009] It is therefore an object of the present invention to provide a sealing gasket for a sanitary fitting which allows a better fastening of the sanitary fitting. In particular, it is an object of the invention to provide a way to more uniformly distribute the forces exerted on the sealing gasket throughout the fastening of the retaining element.

[0010] This object is achieved by a sealing gasket according to claim 1.

[0011] The inventor has realized that the mounting stud bolt is usually arranged eccentric with respect to the contact surface of the housing base in order to provide sufficient space for the connection of the water connections inside the housing base. However, due to the eccentric arrangement of the mounting stud bolt the distribution of forces exerted on the sealing gasket between the contact surface and the support is imbalanced, because the distribution of the exerted forces is defined by a system of lever arms of different lengths. Therefore, the part of the sealing gasket contacting the side of the housing base corresponding to the shorter lever arm (usually the side pointing to the backside of the sanitary fitting) is compressed stronger than the remaining part corresponding to the longer lever arm. Accordingly, the sanitary fitting tilts to the side of the short lever arm and the housing base finally contacts the sanitary installation in a single point and exerts a high point load on the sanitary installation usually made of ceramics.

[0012] By using a asymmetric sealing gasket one may counteract on this imbalance by providing a larger reaction force for the smaller lever arm and a smaller reaction force for the longer lever arm. Generally speaking, a first part of the sealing gasket yields to a lesser extent than a second part of the sealing gasket under the load of forces exerted by the contact surface and the support surface on the sealing gasket.

[0013] Or otherwise stated, the first part of the sealing gasket is stiffer than the second part. Thereby, the sanitary fitting does not tilt during fastening and the housing base and the contact surface are flatly pressed on the sealing gasket. This results in a reduced point load on the sanitary installation which may prevent cracking of any ceramic parts. Furthermore, this results in a higher resistance against twisting of the sanitary fitting, because the sanitary fitting mainly resides on the sealing gasket generally having a higher friction coefficient than only a

small metallic backside edge of the housing base.

[0014] Because the general shape of the sealing gasket depends on the shape of the housing base of the sanitary fitting, the sealing gasket may have any usually used general shape like substantially a ring shape, an elliptical shape, a rectangular shape or the like. Asymmetric shapes are used, although in the context of this invention an asymmetric sealing gasket mainly refers to the distribution of the counterforces exerted by the sealing gasket when interposed between the contact surface and the support surface.

[0015] The sealing gasket may or may not include further parts which are not relevant for the distribution of the forces.

[0016] Furthermore, the first part of the sealing gasket may have a different cross section than the second part. A different cross section provides a different stiffness even if the same material is used for both parts of the sealing gasket.

[0017] Furthermore, the cross section of the first part may have a larger area than the cross section of the second part. Therefore, the first part of the sealing gasket is more massive than the second part of the sealing gasket and consequently is stiffer if made from the same material.

[0018] Furthermore, the first part of the sealing gasket may comprise a strengthening element, in particular ribs or headings. The stiffness of the different parts of the sealing gasket is not only influenced by the overall area of the cross section but also by its shape. Therefore, the first part of the sealing gasket may be stiffened by providing strengthening elements which add additional area to the cross section area or which are provided by a reshaped cross section having the same cross section area than the second part.

[0019] Furthermore, a sealing gasket not according to the invention may have a substantially rotational symmetric geometry but the first part is made of a material with a lower elasticity than the material of the second part. In particular, the sealing gasket may be provided with different shore hardness on the first and the second parts. This may be achieved for example by a subsequent thermal hardening of the first part of an originally symmetric sealing gasket.

[0020] The eccentric arrangement of the mounting stud bolt with respect to the contact surface defines two lever arms having different lengths. Therefore, it is advantageous if the stiffness of the first part and the stiffness of the second part of the sealing gasket are chosen such that counter forces exerted by the first and the second part compensate for the different lengths of the lever arms. This can be achieved by using the ratio of the lever arm lengths to determine the ratio of the stiffness values of the first and second parts.

[0021] Furthermore, the sealing gasket may comprise an orientation element which allows to properly orientate the sealing gasket with respect to the eccentric arrangement of the mounting stud bolt. Such an orientation ele-

ment may for example be a lug having a through hole for the mounting stud bolt and protruding inwards from the sealing gasket.

[0022] Furthermore, the first part of the sealing gasket circumferentially runs along an angle of less than approximately 120°, in particular 90°, in particular 40°, and the second part respectively runs along an angle of at least approximately 240°, in particular 270°, in particular 320°.

[0023] Regarding the sealing gasket the object of the invention is achieved by a sealing gasket configured to be interposed between a contact surface of a housing base of a sanitary fitting and a support surface around a mounting through hole of a sanitary installation, wherein the sealing gasket is asymmetric such that a first part of the sealing gasket yields to a lesser extent than a second part of the sealing gasket under the load of forces exerted by the contact surface and the support surface on the sealing gasket when a retaining element is fastened on a mounting stud bolt of the sanitary fitting. The advantageous features mentioned above for the sanitary fitting also apply correspondingly to the sealing gasket.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] Various features and advantages of the invention may be more readily understood with reference to the following detailed description which refers to the following drawings in which:

- | | | |
|----|----------|---|
| 30 | Figure 1 | shows a side view of a sanitary fitting mounted on a sanitary installation by interposition of a sealing gasket; |
| 35 | Figure 2 | shows a side view of a sanitary fitting having a sealing gasket according to the state of the art when a retaining element is fastened; |
| 40 | Figure 3 | shows a perspective top view of a sealing gasket according to the invention; |
| | Figure 4 | shows a perspective bottom view of the sealing gasket according to the invention; |
| 45 | Figure 5 | shows a bottom view of the sealing gasket; |
| | Figure 6 | shows a section along cut line A-A shown in Figure 5; |
| 50 | Figure 7 | shows a perspective top view of a sealing gasket according to a second embodiment; |
| | Figure 8 | shows a perspective bottom view of the sealing gasket of Figure 7; |
| 55 | Figure 9 | shows a bottom view of the sealing gasket of Figure 7; |

Figure 10 shows a section along cut line A-A shown in Figure 9;

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0025] Figure 1 shows sanitary fitting 10 mounted to a mounting plate 12 of washing basin as an exemplary sanitary installation.

[0026] For this purpose the mounting plate 12 of the washing basin comprises a mounting through hole 14. The region adjacent to the mounting through hole 14 defines a support surface 16, which substantially supports a housing base 18 of the sanitary fitting 10.

[0027] The housing base 18 of the sanitary fitting 10 often has a sleeve shape comprising an inner shoulder recessing slightly in axial direction and thereby providing a contact surface 20 which is oriented towards the mounting plate 12 and configured to receive a sealing gasket 34. The contact surface 20 has a substantially ring shaped foot print in accordance with the general layout of the housing base 18.

[0028] For connection of the sanitary fitting 10 to domestic plumbing lines the sanitary fitting 10 comprises water connection lines 22 and 24 protruding from the housing base 18.

[0029] Furthermore, the sanitary fitting 10 comprises a mounting stud bolt 26 protruding from the housing base 18 as an integrated part of the sanitary fitting 10 or screwed into the sanitary fitting 10. The mounting stud bolt 26 comprises a male screw thread on which a retaining element 28 may be fastened against the mounting plate 12 using a securing nut 30.

[0030] However, because of the space needed for the water connection lines 22, 24 the mounting stud bolt 26 is arranged eccentrically with respect to the contact surface 20 of the housing base 18. In particular, the mounting stud bolt 26 is radially shifted towards the backside of the sanitary fitting 10, namely the side opposite to a protruding water outlet 32.

[0031] In order to prevent spray water from flowing in between the housing base 18 and the mounting plate 12, the sealing gasket 34 is interposed between the contact surface 20 of the housing base 18 and the support surface 16 around the mounting through hole 14 of the mounting plate 12.

[0032] As it can be seen from Figure 2 which shows the use of a sealing gasket 34 according to the state of the art, the forces, which are exerted by the contact surface 20 and the support surface 16 on the sealing gasket 34 when the retaining element 28 is fastened, are distributed unequally because of the different lengths of the lever arms A and B with respect to the mounting stud bolt 26.

[0033] Therefore, the sealing gasket 34 gets compressed stronger by a backside edge 36 of the housing base 18 than by a front edge 38 of the housing base 18. Consequently, the backside edge 36 contacts the mount-

ing plate 12 long before the front edge 38 resulting in a tilt of the sanitary fitting 10 towards the backside edge 34 and in a difficult fastening of the sanitary fitting 10 using a sealing gasket 34 according to the state of the art.

[0034] Therefore, Figures 3-7 show an exemplary sealing gasket 34 according to the present invention having a substantially round ring shape with a flat top surface 40 from which a circumferential sleeve 42 projects axially on the outer circumference. Thereby, a free shoulder 44 is provided pointing towards the inside, which runs along the circumference in an angular section of approximately 320°.

[0035] Along the remaining 40° angular section of the sealing gasket 34 the sealing gasket 34 is more massive such that the space above the shoulder 44 next to the circumferential sleeve 42 is filled. This can be best seen from Figure 6 showing a cross section of the sealing gasket 34. The radial cross section of the sealing gasket 34 within the 40° angular section, which defines a first part 46 of the sealing gasket 34, has an approximately rectangular, in particular quadratic, shape. In contrast, the cross section within the other 320° angular section, which defines a second part 48 of the sealing gasket 34, has substantially an L-shape. Therefore, the area of the cross section of the first part 46 is larger than the cross section of the second part 48. Consequently, the first part 46 is stiffer than the second part 48.

[0036] Furthermore, the sealing gasket 34 comprises a lug 50 which radially protrudes inwards from the general ring shape and which provides a through hole 52 for receiving the mounting stud bolt 26 of the sanitary fitting 10.

[0037] When mounting the sanitary fitting 10 with the sealing gasket 34 according to the invention, the first part 46 of the sealing gasket 34 yields to a lesser extent than a second part 48 of the sealing gasket 34 under the load of forces exerted by the contact surface 20 and the support surface 16 when the retaining element 28 is fastened on the mounting stud bolt 26. Accordingly, the sealing gasket 34 is more evenly compressed even though the mounting stud bolt 26 is arranged eccentric with respect to the contact surface 20 of the housing base 18.

[0038] Figures 7-10 show a second embodiment of the sealing gasket 34, wherein elements having the same structural function have the same reference number.

[0039] As can be seen from Figures 7 and 10 the sealing gasket 34 according to the second embodiment comprises a frustoconical centering shoulder 80 recessing inwards from the flat top surface 40. Furthermore, the top surface 40 is surrounded on its circumference by a small sealing lip 81 protruding axial upwards from the top surface 40.

[0040] Furthermore, the sealing gasket 34 comprises a centering apron 82 provided on radially inwards and protruding downwards for centering the sealing gasket 34 inside the mounting through hole 14.

[0041] In this embodiment of the sealing gasket 34 the first part 46 is formed by a filled space between the centering apron 82 and the circumferential sleeve 42.

Claims

1. A sealing gasket (34) for a sanitary fitting (10), wherein the sealing gasket (34) is configured to be interposed between a contact surface (20) of a housing base (18) of the sanitary fitting (10) and a support surface (16) around a mounting through hole (14) of a sanitary installation (12), wherein a mounting stud bolt (14) is arranged eccentrically with respect to the contact surface (20) at the housing base (18), wherein
 - a) the sealing gasket (34) is asymmetric such that a first part (46) of the sealing gasket (34) yields to a lesser extent than a second part (48) of the sealing gasket (34) under the load of forces exerted by the contact surface (20) and the support surface (16) on the sealing gasket (34) when a retaining element (28) is fastened on the mounting stud bolt (26) of the sanitary fitting (10), wherein the first part (46) of the sealing gasket (34) has a radial cross section which has an approximately rectangular shape and wherein the second part (48) of the sealing gasket (34) has a cross section which has substantially an L-shape and wherein the first part (46) of the sealing gasket (34) circumferentially runs along an angle of less than approximately 120°, in particular 90°, in particular 40°, and the second part (48) respectively runs along an angle of at least approximately 240°, in particular 270°, in particular 320°.
2. The sealing gasket according to claim 1, wherein the first part (46) of the sealing gasket (34) is stiffer than the second part (48).
3. The sealing gasket according to any of the preceding claims, wherein the first part (46) of the sealing gasket (34) has a different cross section than the second part (48).
4. The sealing gasket according to claim 3, wherein the cross section of the first part (46) has a larger area than the cross section of the second part (48).
5. The sealing gasket according to any of the preceding claims, wherein the first part (46) of the sealing gasket (34) comprises a strengthening element, in particular ribs or headings.
6. The sealing gasket according to any of the preceding claims, wherein the eccentric arrangement of the mounting stud bolt (46) with respect to the contact surface (20) defines two lever arms (A, B) having different lengths and wherein the stiffness of the first part (46) and the stiffness of the second part (48) of the sealing gasket (34) are chosen such that counter

forces exerted by the first part (46) and the second part (48) compensate for the different lengths of the lever arms (A, B).

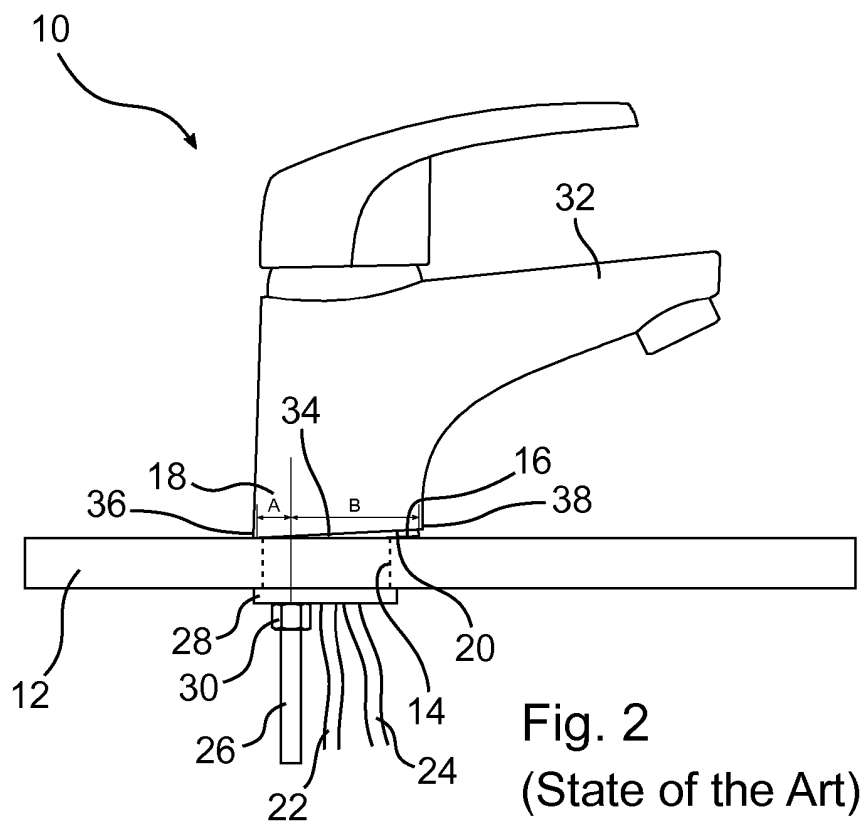
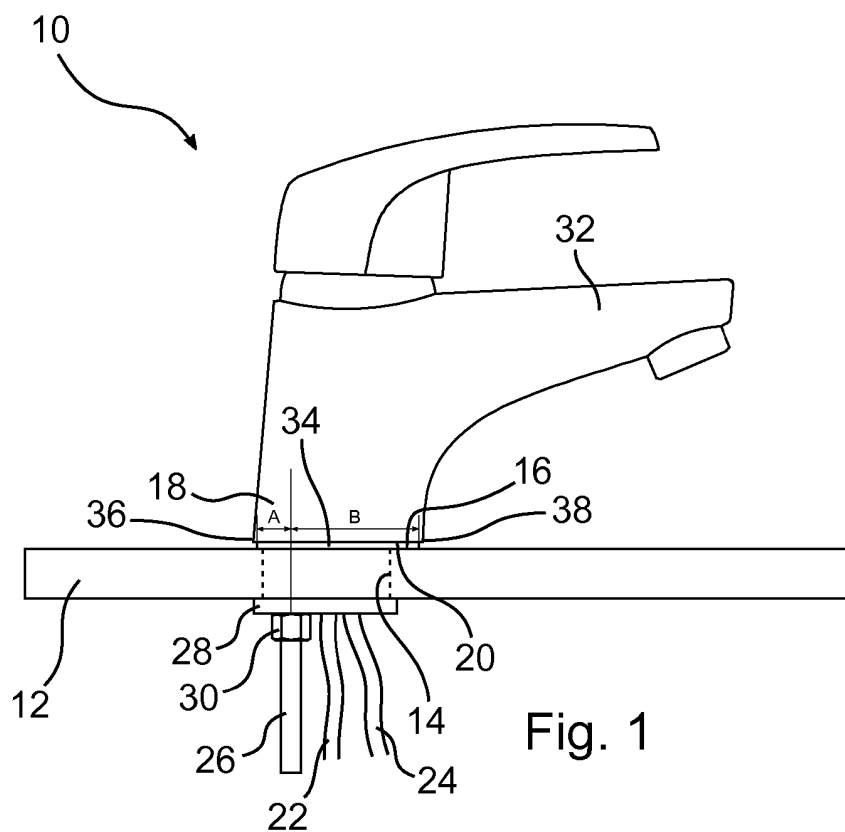
7. The sealing gasket according to any of the preceding claims, wherein the sealing gasket (34) comprises an orientation element (50) which allows to properly orientate the sealing gasket (34) with respect to the eccentric arrangement of the mounting stud bolt (26).
8. A centering sealing gasket (34) comprising
 - a) a sealing gasket (34) according to any of the preceding claims and
 - b) a frustoconical centering shoulder (80) recessing inwards from the flat top surface (40) and a centering apron (82) provided radially inwards and protruding downwards from the sealing gasket (34) for centering the centering sealing gasket (34) inside the mounting through hole (14).
9. A sanitary fitting (10) comprising
 - a) a housing base (18) having a contact surface (20);
 - b) a mounting stud bolt (26) configured to be inserted into a mounting through hole (14) of a sanitary installation (12), wherein the mounting stud bolt (14) is arranged eccentrically with respect to the contact surface (20) at the housing base (18);
 - c) a sealing gasket (34) respectively a centering sealing gasket (34) according to any of the preceding claims configured to be interposed between the contact surface (20) of the housing base (18) and a support surface (16) around the mounting through hole (14);
 - d) a retaining element (28) configured to be fastened on the mounting stud bolt (26) on a side of mounting through hole (14) of the sanitary installation (12) opposite to the housing base (18) in order to fasten the sanitary fitting (10) at the sanitary installation (12).

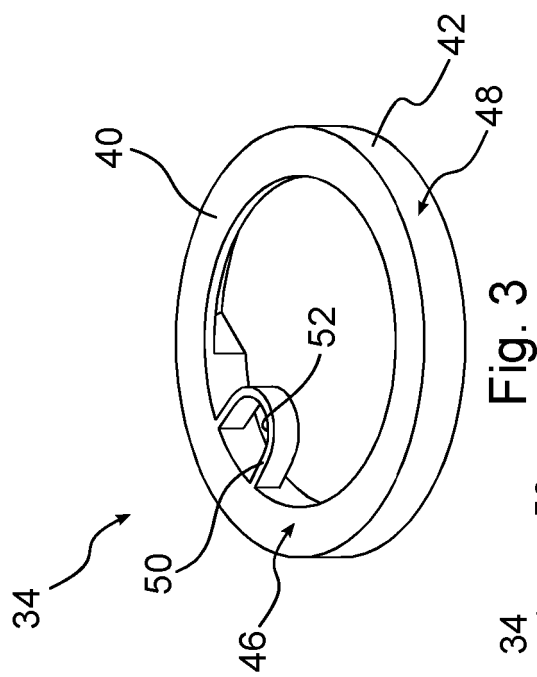
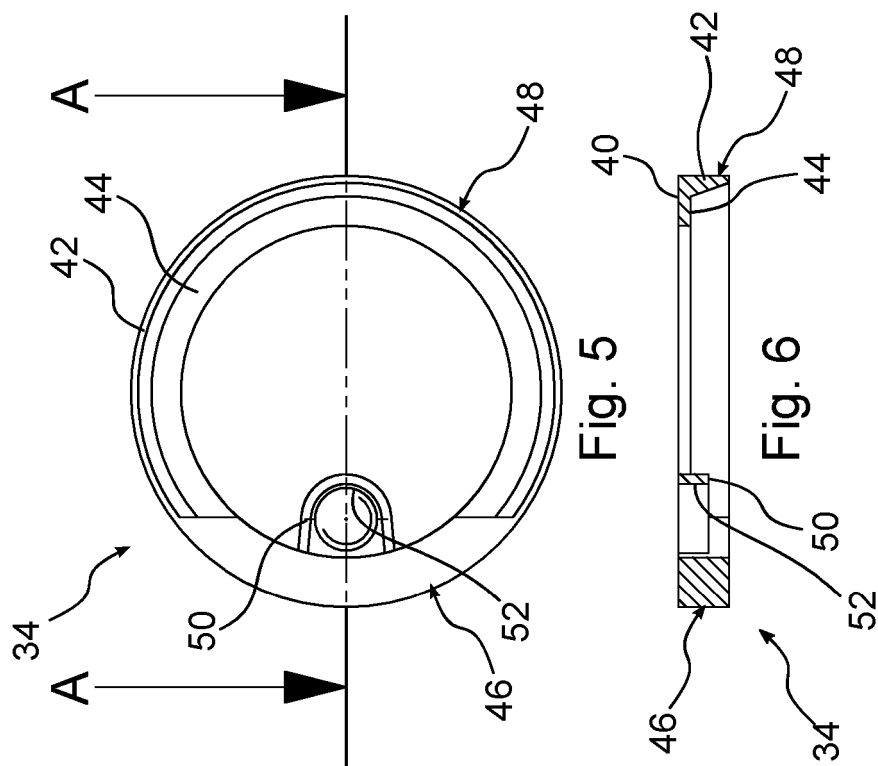
Patentansprüche

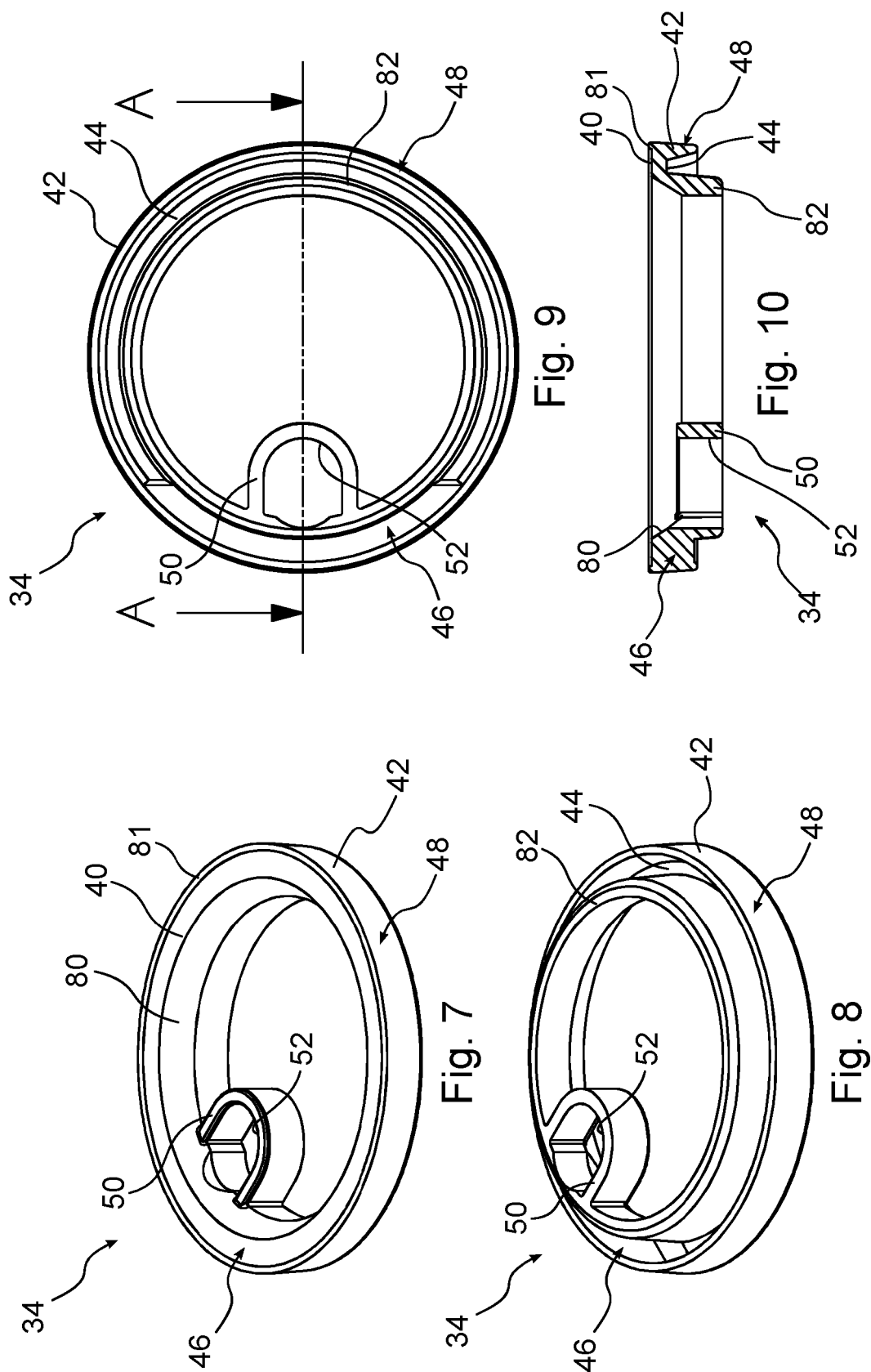
1. Dichtung (34) für eine Sanitärarmatur (10), wobei die Dichtung (34) dazu eingerichtet ist, zwischen einer Kontaktfläche (20) einer Gehäusebasis (18) der Sanitärarmatur (10) und einer Stützfläche (16) um ein Befestigungsdurchgangsloch (14) einer Sanitärinstallation (12) herum zwischengelegt zu werden, wobei ein Befestigungsstehbolzen (14) exzentrisch bezüglich der Kontaktfläche (20) an der Gehäusebasis (18) angeordnet ist, wobei

- a) die Dichtung (34) derart asymmetrisch ausgebildet ist, dass ein erster Teil (46) der Dichtung (34) zu einem geringeren Maße als ein zweiter Teil (48) der Dichtung (34) unter der Last von Kräften nachgibt, die durch die Kontaktfläche (20) und die Stützfläche (16) auf die Dichtung (34) wirken, wenn ein Halteelement (28) an dem Befestigungsstehbolzen (26) der Sanitärarmatur (10) befestigt wird, wobei der erste Teil (46) der Dichtung (34) einen radialen Querschnitt hat, der eine annähernd rechteckige Form hat, und wobei der zweite Teil (48) der Dichtung (34) einen Querschnitt hat, der im Wesentlichen eine L-Form hat und wobei der erste Teil (46) der Dichtung (34) in Umfangsrichtung entlang eines Winkels von weniger als ungefähr 120°, insbesondere 90°, insbesondere 40°, verläuft und der zweite Teil (48) entsprechend entlang eines Winkels von mindestens ungefähr 240°, insbesondere 270°, insbesondere 320°, verläuft..
2. Die Dichtung nach Anspruch 1, wobei der erste Teil (46) der Dichtung (34) steifer ist als der zweite Teil (48).
3. Die Dichtung nach einem der vorhergehenden Ansprüche, wobei der erste Teil (46) der Dichtung (34) einen anderen Querschnitt hat als der zweite Teil (48).
4. Die Dichtung nach Anspruch 3, wobei der Querschnitt des ersten Teils (46) eine größere Fläche als der Querschnitt des zweiten Teils (48) hat.
5. Die Dichtung nach einem der vorhergehenden Ansprüche, wobei der erste Teil (46) der Dichtung (34) ein Verstärkungselement aufweist, insbesondere Rippen oder Sicken.
6. Die Dichtung nach einem der vorhergehenden Ansprüche, wobei die exzentrische Anordnung des Befestigungsstehbolzens (46) bezüglich der Kontaktfläche (20) zwei Hebelarme (A, B) definiert, die unterschiedliche Längen haben, und wobei die Steifheit des ersten Teils (46) und die Steifheit des zweiten Teils (48) der Dichtung (34) derart gewählt sind, dass Gegenkräfte, die von dem ersten Teil (46) und dem zweiten Teil (48) ausgeübt werden, die unterschiedlichen Längen der Hebelarme (A, B) kompensieren.
7. Die Dichtung nach einem der vorhergehenden Ansprüche, wobei die Dichtung (34) ein Orientierungselement (50) aufweist, welches es erlaubt, die Dichtung (34) bezüglich der exzentrischen Anordnung des Befestigungsstehbolzens (26) richtig zu orientieren.
8. Eine Zentrierdichtung (34), umfassend
- a) eine Dichtung (34) nach einem der vorhergehenden Ansprüche und
- b) eine kegelstrumpfförmige Zentrierschulter (80), die von der flachen Oberseite (40) nach innen zurückspringt, und eine Zentrierschürze (82), die radial nach innen bereitgestellt ist und von der Zentrierdichtung (34) nach unten vorsteht, um die Zentrierdichtung (34) in dem Befestigungsdurchgangsloch (14) zu zentrieren.
9. Eine Sanitärarmatur (10), umfassend
- a) eine Gehäusebasis (18) mit einer Kontaktfläche (20);
- b) ein Befestigungsstehbolzen (26), der dazu eingerichtet ist, in ein Befestigungsdurchgangsloch (14) einer Sanitärinstallation (12) eingesetzt zu werden, wobei der Befestigungsstehbolzen (14) exzentrisch bezüglich der Kontaktfläche (20) an der Gehäusebasis (18) angeordnet ist;
- c) eine Dichtung (34), die dazu eingerichtet ist, zwischen die Kontaktfläche (20) der Gehäusebasis und einer Stützfläche (16) um das Befestigungsdurchgangsloch (14) herum eingefügt zu werden;
- ein Halteelement (28), das dazu eingerichtet ist, an dem Befestigungsstehbolzen (26) auf einer der Gehäusebasis (18) gegenüberliegenden Seite des Befestigungsdurchgangslochs (14) der Sanitärinstallation (12) befestigt zu werden, um die Sanitärarmatur (10) an der Sanitärinstallation (12) zu befestigen.
- ### Revendications
1. Joint d'étanchéité (34) pour une robinetterie sanitaire (10), dans lequel le joint d'étanchéité (34) est configuré pour être interposé entre une surface de contact (20) d'une base de logement (18) de la robinetterie sanitaire (10) et une surface de support (16) autour d'un trou traversant de montage (14) d'une installation sanitaire (12), dans lequel une tige filetée (14) est agencée de façon excentrée par rapport à la surface de contact (20) au niveau de la base de logement (18) ;
- dans lequel :
- a) le joint d'étanchéité (34) est asymétrique de sorte qu'une première partie (46) du joint d'étanchéité (34) est déformée selon un degré moindre qu'une seconde partie (48) du joint d'étanchéité (34) sous l'effet de la charge de forces qui sont exercées par la surface de contact (20) et par la surface de support (16) sur le joint d'étanchéité

- 5 té (34) lorsqu'un élément de retenue (28) est fixé sur la tige filetée de montage (26) de la robinetterie sanitaire (10), dans lequel la première partie (46) du joint d'étanchéité (34) présente une section en coupe transversale radiale qui présente une forme approximativement rectangulaire et dans lequel la seconde partie (48) du joint d'étanchéité (34) présente une section en coupe transversale qui présente une forme sensiblement en L et dans lequel la première partie (46) du joint d'étanchéité (34) court de façon circonférentielle selon un angle qui est inférieur à 10 approximativement 120°, en particulier à 90°, en particulier à 40°, et la seconde partie (48) court respectivement selon un angle d'au moins 15 approximativement 240°, en particulier de 270°, en particulier de 320°.
2. Joint d'étanchéité selon la revendication 1, dans lequel la première partie (46) du joint d'étanchéité (34) présente une raideur plus importante que celle de la seconde partie (48). 20
3. Joint d'étanchéité selon l'une quelconque des revendications précédentes, dans lequel la première partie (46) du joint d'étanchéité (34) présente une section en coupe transversale qui est différente de celle de la seconde partie (48). 25
4. Joint d'étanchéité selon la revendication 3, dans lequel la section en coupe transversale de la première partie (46) présente une aire plus grande que la section en coupe transversale de la seconde partie (48). 30
5. Joint d'étanchéité selon l'une quelconque des revendications précédentes, dans lequel la première partie (46) du joint d'étanchéité (34) comprend un élément de renforcement, en particulier des nervures ou des bourrelets. 35
- 40
6. Joint d'étanchéité selon l'une quelconque des revendications précédentes, dans lequel l'agencement excentré de la tige filetée de montage (46) par rapport à la surface de contact (20) définit deux bras de levier (A, B) qui présentent des longueurs différentes et dans lequel la raideur de la première partie (46) et la raideur de la seconde partie (48) du joint d'étanchéité (34) sont choisies de telle sorte que des forces antagonistes qui sont exercées par la première partie (46) et par la seconde partie (48) compensent les 45 longueurs différentes des bras de levier (A, B). 50
7. Joint d'étanchéité selon l'une quelconque des revendications précédentes, dans lequel le joint d'étanchéité (34) comprend un élément d'orientation (50) qui permet d'orienter de façon appropriée le joint d'étanchéité (34) par rapport à l'agencement excentré de la tige filetée de montage (26). 55
8. Joint d'étanchéité de centrage (34) comprenant :
- a) un joint d'étanchéité (34) selon l'une quelconque des revendications précédentes ; et
- b) un épaulement de centrage tronconique (80) qui est évidé vers l'intérieur depuis la surface de sommet plane (40) et une jupe de centrage (82) qui est prévue radialement vers l'intérieur et qui fait saillie vers le bas depuis le joint d'étanchéité (34) pour centrer le joint d'étanchéité de centrage (34) à l'intérieur du trou traversant de montage (14).
9. Robinetterie sanitaire (10) comprenant :
- a) une base de logement (18) qui comporte une surface de contact (20) ;
- b) une tige filetée de montage (26) qui est configurée pour être insérée à l'intérieur d'un trou traversant de montage (14) d'une installation sanitaire (12), dans lequel la tige filetée de montage (14) est agencée de façon excentrée par rapport à la surface de contact (20) au niveau de la base de logement (18) ;
- c) un joint d'étanchéité (34), respectivement un joint d'étanchéité de centrage (34), selon l'une quelconque des revendications précédentes qui est configuré pour être interposé entre la surface de contact (20) de la base de logement (18) et une surface de support (16) autour du trou traversant de montage (14) ; et
- d) un élément de retenue (28) qui est configuré pour être fixé sur la tige filetée de montage (26) sur un côté du trou traversant de montage (14) de l'installation sanitaire (12) qui est opposé à la base de logement (18) afin de fixer la robinetterie sanitaire (10) au niveau de l'installation sanitaire (12).







REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 102010044420 A1 [0006]
- DE 9304056 U1 [0007]
- EP 0193437 A1 [0008]