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(54) **TOILET TOP MOUNT WATERSEALING MECHANISM**
TOILETTENAUFSATZ MIT WASSERDICHTUNGSMECHANISMUS
MÉCANISME D'ÉTANCHÉITÉ POUR MONTAGE SUPÉRIEUR DE TOILETTES

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WO-A1-2004/075708 KR-Y1- 200 410 526</p> |
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Description

Field of the Invention

[0001] The invention relates to the field of smart top mounts for toilets and is directed towards a top mount watersealing mechanism.

Background of the Invention

[0002] With the improvement of people's living standards and hygiene awareness, the popularizing rate of smart toilets is getting higher and higher. Many families have already chosen smart toilets when renovating, and moreover, some families have replaced ordinary toilet covers with smart toilet top mounts. In addition, some hotels and guest houses are also equipped with the smart toilets, making the application of the smart toilets wider.

[0003] With the increase of user demands, a variety of functions have been simultaneously integrated into a single smart top mount for a toilet, such as heating, warm water cleaning, warm air drying, deodorization and sterilization, and other functions. Thus, a variety of circuit equipment is usually buried into a top mount seat ring, for example, a heating wire for toilet cover heating and a circuit, which needs to be outwards connected into the base from a joint between the seat ring and a top mount base in an extending mode. In the long-term use of the top mount, a usage environment of the top mount is usually a humid environment, or in the case that the top mount needs to be cleaned, water vapor or water drops will enter the seat ring through a joint gap between the seat ring and the top mount base and adhere to the heating wire or the circuit, resulting in risks of short circuit and electric shock. Thus, it is necessary to conduct water isolation treatment on the joint gap between the seat ring and the top mount base.

[0004] WO 2004/075708 A1 shows a heated toilet seat, which can be detached from the toilet body while the female rotary hinge part is sealed by a sealing member.

Summary of the Invention

[0005] In view of the above defects of the prior art, the technical problem to be solved by the invention is to provide a top mount watersealing mechanism with excellent watersealing performance.

[0006] In order to realize the above purpose, the invention provides a top mount watersealing mechanism according to claim 1, including a top mount base, a top mount seat ring and a watersealing material, the top mount base includes a female connector, a male connector of the top mount seat ring is inserted into the female connector, a heater is contained in the top mount seat ring and connected with a control unit in the top mount base through an electric wire, the electric wire penetrates through the female connector and the male

connector, the male connector is filled with the water-sealing material, and the watersealing material wraps the corresponding electric wire.

[0007] Further, the watersealing material is a flexible material.

[0008] Further, the flexible material is silica gel.

[0009] Further, an outer wall of the watersealing material includes a plurality of outer folds, and a groove is included between each outer fold and a proximate outer fold.

[0010] Further, an inner wall of the watersealing material wrapping the electric wire includes a plurality of inner folds, and the inner folds extend towards connecting ends of the male connector and the female connector.

[0011] The invention has the technical effects of protecting a wire of a smart top mount to achieve a water-sealing effect and being convenient to detach.

[0012] The conception, specific structure and produced technical effects of the invention will be further explained below in combination with the drawings to fully understand the purposes, features and effects of the invention.

Brief Description of the Drawings

[0013] By reading the detailed description of the non-restrictive embodiment with reference to the drawings below, other features, purposes and advantages of the invention will be more apparent:

Fig. 1 shows a structural diagram of a top mount of the invention;

Fig. 2 shows a section view of the top mount of the invention;

Fig. 3 shows a structural diagram of a male connector side of the top mount of the invention; and

Fig. 4 shows a structural diagram of a watersealing material of the top mount of the invention.

[0014] The description on signs of the drawings: 1-top mount seat ring; 11-male connector; 2-top mount base; 21-female connector; 3-watersealing material; 31-outer fold; 32-inner fold; 4-electric wire; 10-gap.

Detailed Description of the Embodiment

[0015] A preferred embodiment of the invention is introduced below with reference to the drawings of the description to make its technical contents clearer and convenient to understand.

[0016] As shown in Fig. 1 to Fig. 4, the invention provides a top mount watersealing mechanism, including a top mount seat ring 1, a top mount base 2 and a watersealing material 3, the top mount base 2 includes a female connector 21, a male connector 11 of the top mount

seat ring 1 is inserted into the female connector 21 to make the top mount seat ring 1 pivotable with the top mount base 2 as a fulcrum, a heater is contained in the top mount seat ring 1 and connected with a control unit in the top mount base 2 through an electric wire 4, the electric wire 4 penetrates through the female connector 21 and the male connector 11, the male connector 11 is filled with the watersealing material 3, and the watersealing material 3 wraps the corresponding electric wire 4.

[0017] The female connector 21 and the male connector 11 are usually arranged to be hollow to facilitate passage of the electric wire 4.

[0018] Further, the watersealing material 3 is a flexible material.

[0019] Further, the flexible material is silica gel, which makes it more tightly bonded with the male connector 11, and has better watersealing performance.

[0020] Further, an outer wall of the watersealing material 3 includes a plurality of outer folds 31, and a groove is included between each outer fold 31 and a corresponding proximate outer fold. An outer diameter of the watersealing material 3 can be slightly larger than an inner diameter of the male connector 11. Thus, the watersealing material is not prone to being loosen from the male connector 11, thereby enhancing a sealing effect. In addition, when liquid flows in from a gap 10 between the male connector 11 and the female connector 21, each outer fold 31 can prevent the liquid from flowing into the top mount seat ring 1 or the top mount base 2. Even if part of the liquid flows in, under ideal conditions, the liquid can be gradually blocked by the first, second or third outer fold or the like, which increases the reliability of the watersealing material 3.

[0021] Further, an inner wall of the watersealing material 3 wrapping the electric wire 4 includes a plurality of inner folds 32, and the inner folds 32 extend towards connecting ends of the male connector 11 and the female connector 21. A gap between the electric wire 4 and the watersealing material 3 can be filled with the inner folds 32 after the electric wire 4 penetrates through, the inner folds 32 can also be made to stay at positions where they are located in the pivoting process of the top mount seat ring 1 while fixing the electric wire 4, which prevents problems of functional circuits of the top mount caused by abrasion or displacement of the electric wire 4 due to frequent pivoting of the seat ring.

Claims

1. A top mount watersealing mechanism for toilets, wherein the top mount watersealing mechanism comprises a top mount base (2), a top mount seat ring (1) and a watersealing material (3), the top mount base (2) comprises a female connector (21), a male connector (11) of the top mount seat ring is inserted into the female connector (21), a heater is contained in the top mount seat ring (1) and connect-

ed with a control unit in the top mount base (2) through an electric wire (4), **characterized in that** the electric wire (4) penetrates through the female connector (21) and the male connector (11), the male connector (11) is filled with the watersealing material (3), and the watersealing material (3) wraps the corresponding electric wire (4).

2. The top mount watersealing mechanism according to claim 1, **characterized in that** the watersealing material (3) is a flexible material.
3. The top mount watersealing mechanism according to claim 2, **characterized in that** the flexible material (3) is silica gel.
4. The top mount watersealing mechanism according to one of the preceding claims, **characterized in that** an outer wall of the watersealing material (3) comprises a plurality of outer folds (31), and a groove is comprised between each outer fold (31) and a proximate outer fold.
5. The top mount watersealing mechanism according to claim 4, **characterized in that** an inner wall of the watersealing material (3) wrapping the electric wire (4) comprises a plurality of inner folds (32), and the inner folds (32) extend towards connecting ends of the male connector (11) and the female connector (21).

Patentansprüche

1. Wasserabdichtungsmechanismus für Aufsatz für Toiletten, wobei der Wasserabdichtungsmechanismus eine Aufsatz-Basis (2), einen Aufsatz-Sitzring (1) und ein Wasserabdichtungsmaterial (3) umfasst, wobei die Aufsatz-Basis (2) ein weibliches Verbindungselement (21) umfasst, wobei ein männliches Verbindungselement (11) des Aufsatz-Sitzrings in das weibliche Verbindungselement (21) eingesetzt ist, wobei ein Heizelement in dem Aufsatz-Sitzring (1) enthalten ist und mit einer Steuereinheit in der Aufsatz-Basis (2) durch eine elektrische Leitung (4) verbunden ist, **dadurch gekennzeichnet, dass** die elektrische Leitung (4) durch das weibliche Verbindungselement (21) und das männliche Verbindungselement (11) hindurchgeht, das männliche Verbindungselement (11) mit dem wasserabdichtenden Material (3) gefüllt ist und das wasserabdichtenden Material (3) die entsprechende elektrische Leitung (4) umhüllt.
2. Wasserabdichtungsmechanismus nach Anspruch 1, **dadurch gekennzeichnet, dass** das Wasserabdichtungsmaterial (3) ein flexibles Material ist.

3. Wasserdichtungsmechanismus nach Anspruch 2, **dadurch gekennzeichnet, dass** das flexible Material (3) Silikagel ist.
4. Wasserabdichtungsmechanismus nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** eine Außenwand des Wasserabdichtungsmaterials (3) eine Mehrzahl von Außenfalten (31) aufweist und eine Nut zwischen jeder Außenfalte (31) und einer benachbarten Außenfalte vorhanden ist.
5. Wasserabdichtungsmechanismus nach Anspruch 4, **dadurch gekennzeichnet, dass** eine Innenwand des Wasserabdichtungsmaterials (3), das die elektrische Leitung (4) umhüllt, eine Mehrzahl von inneren Falten (32) umfasst und die inneren Falten (32) sich in Richtung der Verbindungsenden des männlichen Verbindungselements (11) und des weiblichen Verbindungselements (21) erstrecken.

intérieure du matériau d'étanchéité à l'eau (3) enveloppant le fil électrique (4) présente une pluralité de plis internes (32), et les plis internes (32) s'étendent vers les extrémités de raccordement du raccord mâle (11) et du raccord femelle (21).

Revendications

1. Mécanisme d'étanchéité à l'eau pour abattant de toilettes, ledit mécanisme d'étanchéité à l'eau pour abattant comprenant une base d'abattant (2), une lunette d'abattant (1) et un matériau d'étanchéité à l'eau (3) ; la base d'abattant (2) comprenant un raccord femelle (21) ; un raccord mâle (11) de la lunette d'abattant (1) étant inséré dans le raccord femelle (21) ; un élément chauffant étant contenu dans la lunette d'abattant (1) et relié par un fil électrique (4) à une unité de commande située dans la base d'abattant (2), **caractérisé en ce que** le fil électrique (4) pénètre dans le raccord femelle (21) et le raccord mâle (11), le raccord mâle (11) est rempli du matériau d'étanchéité à l'eau (3), et le matériau d'étanchéité à l'eau (3) enveloppe le fil électrique (4) correspondant.
2. Mécanisme d'étanchéité à l'eau pour abattant selon la revendication 1, **caractérisé en ce que** le matériau d'étanchéité à l'eau (3) est un matériau souple.
3. Mécanisme d'étanchéité à l'eau pour abattant selon la revendication 2, **caractérisé en ce que** le matériau souple est du gel de silice.
4. Mécanisme d'étanchéité à l'eau pour abattant selon l'une des revendications précédentes, **caractérisé en ce qu'une** paroi extérieure du matériau d'étanchéité à l'eau (3) présente une pluralité de plis externes (31), et un creux est présent entre chaque pli externe (31) et un pli externe adjacent.
5. Mécanisme d'étanchéité à l'eau pour abattant selon la revendication 4, **caractérisé en ce qu'une** paroi

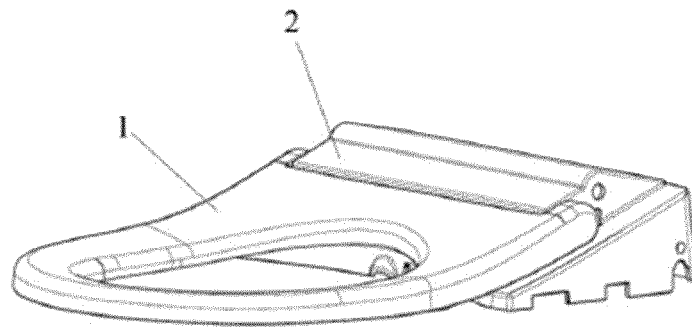


Fig. 1

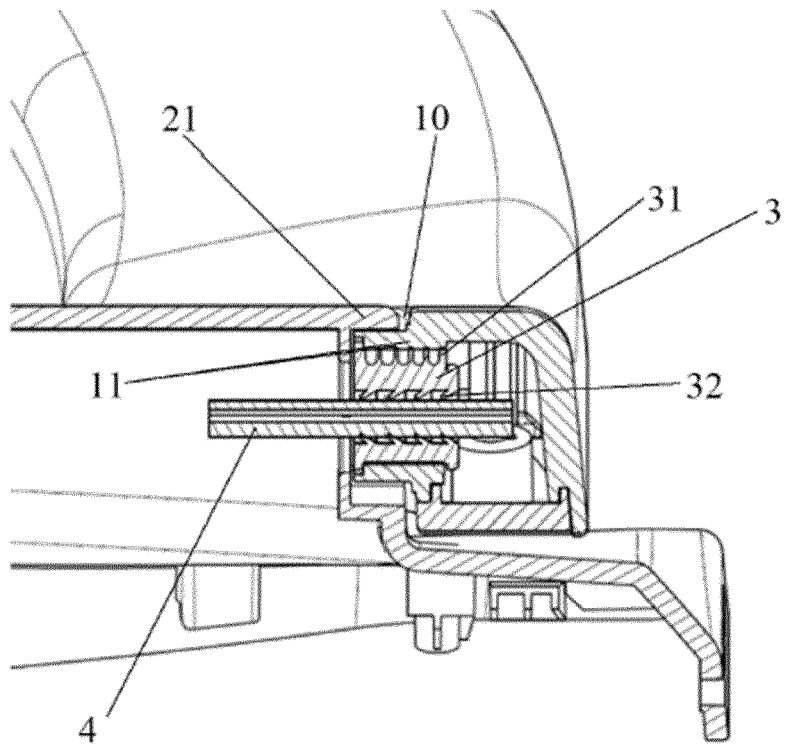


Fig. 2

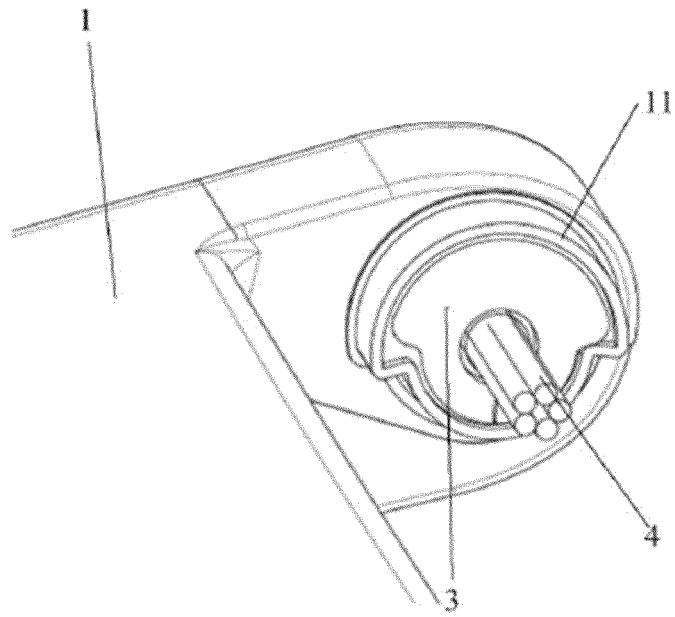


Fig. 3

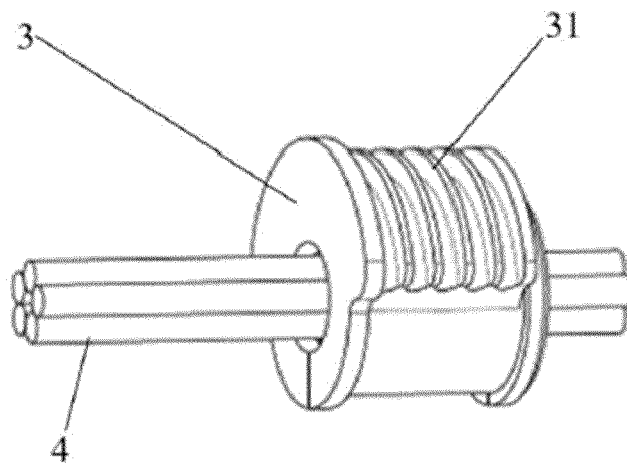


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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