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**DE-A- 3 601 171**                  **GB-A- 2 152 962**  
**US-A- 2 743 460**

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## Description

This invention relates to improvements in or relating to water closets and is more particularly concerned with the relative location of a w.c. bowl and cistern of the water closet.

Generally, when a water closet is installed, the cistern and bowl are mounted in a fixed relative relationship with one another with a connection being provided between the cistern and bowl for delivering water from the cistern to the bowl to thereby flush the bowl when required. Sometimes, after installation it becomes necessary to replace the bowl and/or the cistern and it tends to be disadvantageous that the bowl and/or cistern have to be replaced in practically identical relative alignment with one another at the same location. At the time of replacement it may be that an identical bowl and/or cistern can no longer be obtained or, for example, the fixing points for the bowl into the floor may no longer be convenient or the cistern may have changed in design such that it is now spaced from a rear supporting wall when correctly aligned with the water closet bowl, instead of fitting neatly against the wall. Thus, all sorts of difficulties may be encountered in replacing a w.c. bowl and/or cistern owing to the requirement of precise alignment of the bowl and cistern. Moreover, even on original installation of the water closet, difficulties may be encountered on fitting, because of the requirement that the bowl has to be precisely aligned with the cistern in a single relative position in order to provide a properly sealed water delivery connection between the cistern and bowl. This problem tends to be more acute with close-coupled water closets (water closets in which the cistern is fitted low down relative to the w.c. bowl and supported at the rear thereof in such manner that any water delivery connection between the cistern and bowl is substantially obscured from view). On the original installation of a low level, but not close-coupled, water closet, in general, a water delivery connecting pipe depends downwardly from the cistern and is bent at 90° to form a water inlet delivery pipe portion that extends through a suitably dimensioned aperture in the rear of the toilet bowl, said pipe portion being sealed thereto at the aperture. On such installation the pipe can be cut to allow the initial position of the bowl to be selected to some extent relative to the cistern but no such facility would be available on replacement of the bowl and/or cistern without providing a replacement connecting pipe and in any event, difficulties may still arise in fitting replacement parts in practice.

In close-coupled suites only one relative position of the cistern and bowl is satisfactory and there is no connecting pipe portion that could be cut or recut to account for any variation in this relative positioning.

Additionally, the production costs of the w.c. bowls utilised in close-coupled suites are relatively expensive and an expensive part of the process is the production of an integrally moulded ceramic chamber at the rear of

the bowl into which water from the cistern is directed before being directed around the flushing rim of the bowl, said cistern being supported directly above the chamber. The disadvantages of such water closets are discussed in Patent Specification No. GB-A-2152962, which is under the ownership of the present Applicant, the content of which is hereby incorporated into the present application by reference.

Patent Specification No. GB-A-2152962 shows an arrangement in which a cistern can be close-coupled to a w.c. bowl without necessarily forming the bowl with an integral ceramic chamber receiving flushing water and above which the cistern is supported. Instead, Patent Specification No. GB-A-2152962 envisages the provision of a less-expensive separately formed mounting bracket component which is attachable to the rear of the bowl and on which the cistern may be supported. However, this arrangement still tends to be disadvantageous in that the cistern has to be precisely relatively aligned with the bowl in one selected position and, as previously stated, this can lead to problems and at the very least to inconvenience. Additionally, there may be other disadvantages in this arrangement but it is not thought necessary to discuss other disadvantages here in detail.

It is an object of the present invention to at least alleviate one or more of the aforementioned, or other disadvantages associated with water closets.

According to the present invention there is provided apparatus comprising a w.c. bowl and cistern, the relative position of the cistern and bowl being adjustable to enable water to be delivered from the cistern into the bowl when the bowl is located in one of a plurality of selectable or adjustable positions relative to the cistern, and in which the cistern is flow connected to the bowl by means of a connection pipe or duct slidably received in a seal mounted in an aperture in the w.c. bowl, the apparatus characterised in that the relative position of the cistern and w.c. bowl is selectively adjustable by the relative position of the connection pipe or duct being slidably adjustable in said seal.

Usually, the bowl will be connectable relative to the cistern so that the cistern is adjustable forward and/or rearwardly relative to the bowl.

It is believed that the forward and/or rearward adjustment facility provided will be sufficient to meet any needs of variation in the required relative positioning of the bowl and cistern both during original installation and on replacement of the bowl/or cistern if necessary. Nevertheless, it is possible that a relative sideways and/or up/down adjustment of the cistern and bowl could be provided if required.

Preferably, the cistern and bowl are adjustable over a range of possible relative positions inbetween a most forward position and a most rearward position.

In the present invention the cistern is flow connected to the bowl by means of a connection pipe or duct slidably received in a seal mounted in an aperture in the w.c. bowl. Owing to the sliding fit of the pipe connection

or duct in the seal the relative position of the bowl and cistern can be varied and during the variation of position the pipe connection moves further into or further out of the seal. Thus, the exterior surface of the pipe connection or duct is sealingly engaged in watertight manner with the interior surface of the seal over a range of relative axially displaced positions of the seal and pipe connection/duct. Where the invention is concerned with a close-coupled water closet, in order to support the cistern and in order to obscure the pipe connection/duct from view (at least from the front of the water closet) the w.c. bowl may include a rearward extension for supporting the cistern. The extension may be formed with a slot to allow the pipe connection/duct from the cistern to pass downwardly therethrough. Preferably, the pipe connection/duct is angled, usually through 90° so that a generally horizontal pipe connection/duct extends into said seal mounted in said aperture which may be defined in a generally vertical wall portion at the rear of the w.c. bowl. The cistern may be clamped relative to the bowl by clamping bracket means arranged to clamp onto the rearward extension, said extension forming a mounting platform for the cistern. The rearward extension is, preferably, integrally moulded with the bowl and thus will usually be of ceramic material. The slot in the rear extension is long enough to allow for adjustment of the pipe connection/duct in the seal over a range to suit.

In one embodiment, the clamping bracket means comprises an upper clamping bracket portion and a lower clamping bracket portion, said upper clamping bracket being positively retained to the cistern and the lower clamping portion being clamped to the underside of the rearward extension and the upper clamping portion by fastening means, preferably in the form of a captivated threaded bolt and locking sleeve. The upper clamping bracket portion may comprise a ring which is passed over a threaded pipe that depends downwardly from the cistern, said ring being locked to the cistern by means of a locking nut, said bolt being passed through receiving holes in the upper clamping portion and lower clamping portion, said lower clamping portion being clipped onto the pipe connection/duct underneath the rear extension. Said pipe connection/duct may include a locking ring engaged on the pipe connection/duct and threadably engaged with the threaded pipe which downwardly depends from the cistern. A rubber seal may be provided inbetween the downwardly depending pipe and the pipe connection/duct, said seal preferably being retained in a recess in the interior of the locking ring.

The seal is preferably in the form of a sealing sleeve having flange means that grips the material of the bowl that defines said aperture and said seal may be fitted with a water spreader device arranged inside the toilet bowl. Said connection pipe/duct and/or said seal and/or said spreader device may all be of plastics.

Advantageously, adjustment of the cistern relative to the bowl may be undertaken simply by releasing the locking sleeve thereby allowing freedom of relative for-

ward and rearward movement of the cistern and bowl to a new position at which the locking sleeve may be tightened.

Overall, embodiments of the present invention may offer a very simple cost-effective manner of flow-coupling a water closet cistern to a water closet bowl in an adjustable manner in which the relative position of the cistern and bowl can be adjusted easily. In order to achieve this, use may be made of a generally standard manner of retaining a pipe connection to the underside of a cistern by means of a downwardly depending externally threaded pipe that receives a locking ring attached to a connecting pipe portion, the arrangement being modified by part of clamping bracket means being retained to the cistern by a nut on the downwardly depending threaded pipe and part of the clamping bracket means being urged to grip onto the w.c. bowl (more specifically onto the underside of a rear extension platform) and retained to said first bracket means portion by fastening means preferably in the form of a captivated bolt and locking sleeve.

Thus, embodiments of the present invention may offer a deceptively simple manner of flow-coupling the cistern to the w.c. bowl which, nevertheless, offers significant advantages and versatility in installation which may be particularly valuable in replacement of the w.c. bowl or cistern at a later date.

Many advantages of the present invention will be evident from the following description and drawings:

An embodiment of apparatus in accordance with the present invention will now be described, by way of example only, with reference to the accompanying FIGURES of the drawings, in which:

FIGURE 1 shows a cut-away sectional side view showing part of a w.c. and part of a cistern of a close-coupled water closet;  
 FIGURE 2 shows a view similar to FIGURE 1 in which the relative position of the cistern and w.c. bowl has been selectively changed; and  
 FIGURE 3 shows a diagrammatic, exploded detailed view of parts connecting the cistern to the rear of the w.c. bowl.

Referring to the FIGURES of the drawings, a w.c. bowl 1 (only the upper rear part of which is shown in FIGURES 1 and 2) consists of a moulded vitreous china water closet basin having a flat rearward extension portion 1a (see FIGURE 3). The moulding of the bowl 1 is simplified in comparison with bowls normally utilised in close-coupled suites since it is not provided with the usual box-like extension housing a chamber which is in use positioned directly beneath the cistern for receiving water therefrom. The production of such w.c. bowls tends to be expensive and the production costs of the design of w.c. bowl 1, as illustrated, are significantly lower even though the design includes the upper flat rear extension portion 1a, of bifurcated form. Advantageous-

ly, the integrally moulded extension 1a forms a support platform for the cistern 2 (rather than support being provided by a separately formed bracket portion) such as for example illustrated in Patent Specification No. 2152962). The integrally moulded extension 1a forms a strong support for the cistern 2 in a manner to be described.

As should be evident from a comparison between FIGURES 1 and 2 the relative position of the bowl 1 and cistern 2 can be varied to suit, the extremes of forward/rearward relative positioning of the cistern and bowl being depicted in FIGURES 1 and 2. The cistern 2 and bowl 1 may be connected in any relative position that lies in between the positions shown in FIGURES 1 and 2, the arrangement thus offering a range of possible connecting positions of the cistern relative to the bowl.

FIGURES 1 and 2 show a rear circular aperture 1b into which seal in the form of a multi-flanged sealing sleeve 3 has been inserted. As should be evident from FIGURES 1 and 2 the sleeve 3 is positively and permanently fixed in the aperture 1b and is not adjustable axially relative to the aperture 1b. Three axially spaced flanges 3a,3b,3c sealingly grip the ceramic material defining the aperture 1b in a manner which should be evident from FIGURES 1 and 2, a further flange 3d of the sleeve 3 being of greater diameter than aperture 1b and limiting the depth of insertion of the sleeve 3 into the aperture 1b in the manner as shown in FIGURES 1 and 2. Forward end 3e of the sleeve 3 has a widened diameter portion which receives a water spreader device 4 (shown in dashed lines) which may be generally of a known type and more particularly may be of the type shown in Patent Specification No. 2152962. The rearward end of sleeve 3 slidingly receives horizontal pipe portion 5a of right-angled pipe connection 5 that, in use, delivers water from the cistern 2 to the w.c. bowl 1 via the spreader device 4. The spreader device 4, sleeve 3 and pipe connection 5 are all of plastics and as shown in FIGURE 1, the horizontal pipe portion 5a extends only a short distance X into the sleeve 3 and yet a seal is effected inbetween the outer diameter of the pipe portion 5a and the inner diameter of the sleeve 3, merely by a friction push fit. If desired, of course, the inner wall of the sleeve 3 and/or outer wall of the horizontal pipe portion 5a could be recessed to locate an arrangement of rubber ring seals if required. In any event, the engagement between the pipe connection 5a and the sleeve 3 in FIGURE 1 should provide a sufficient seal when delivering water from the cistern into the bowl 1. This position represents the extreme forward position of the bowl 1 relative to the cistern 2 in which a seal may still be effected between the pipe connection 5 and sleeve 3 whilst water is delivered from the cistern to the bowl.

However, in some instances the relative positioning of the bowl 1 and cistern 2 shown in FIGURE 1 may not be easy to duplicate when replacing the bowl and/or cistern for any reason or even on original installation. Therefore, the relative position of the bowl and cistern

is adjustable in the direction of the arrows Y (forward to rearward positioning) and the horizontal pipe portion 5a may be introduced further into the sleeve 3 (thereby moving the cistern forward relative to the bowl) as far as the extreme position in FIGURE 2. Any intermediate position of the pipe portion 5a within the sleeve 3 is possible in order to correctly align the cistern 2 and bowl 1 appropriately (for example in order to fix the cistern closely to a rear wall whilst maintaining the same floor position for a differently sized bowl).

In order to take account of the relative movement of the pipe connection 5 and sleeve 3, slot 1c is defined in the bifurcated extension portion 1a as will be apparent from FIGURE 3. FIGURE 2 shows pipe connection 5 moved to the inner end of the slot 1c whilst FIGURE 1 shows the pipe portion 5a at an outer end of the slot 1c. As shown in the FIGURES the slot 1c has an open end although it would be possible in an alternative embodiment to arrange for the slot to be closed if preferred.

Assembly of the cistern 2 onto the basin 1 should be generally self-explanatory from the FIGURES. An externally threaded cistern exit pipe 6 depends downwardly from the bottom of the cistern 2, said pipe 6 passing through the slot 1b and being sealingly retained to vertical portion 5b of pipe connection 5 by means of internally threaded, knurled locking ring 7 having a thread which co-operates with the external thread of pipe 6. Annular rubber seal 8 is positioned in between the end of pipe 6 and pipe portion 5b and is seated in an internal recess in the locking ring 7 in a manner which should be evident from FIGURES 1 and 2 of the drawings. As the locking ring 7 is tightened up on pipe portion 6 the rubber seal 8 is squeezed inbetween pipe 6 and pipe portion 5b to effect a watertight seal. In order to positively retain the cistern 2 to the bowl 1, the cistern 2 is locked to the rearward extension portion 1a by clamping means 9. Clamping means 9 consists of a two-part clamping bracket 9a,9b, retaining bolt 9c, locking sleeve 9d and flanged lock nut 9e.

In order to retain the cistern 2 to the extension portion 1a, ring portion R of upper clamping bracket 9a is passed over the threaded pipe 6 before lock nut 9e is screwed on to pipe portion 6, whilst locking bolt 9c is captivated in elongate slot S provided on horizontally depending portion H of bracket portion 9a. Locking bolt 9c has a captivated square located under domed head D, thereby preventing rotation of the bolt when properly seated in slot S. Thus nut 9e can be tightened on pipe 6 to retain clamping portion 9a thereto in a manner which should be evident from the drawings.

Lower clamping portion 9b has a "C" shaped gripping portion C which grips beneath the bifurcated limbs L1 and L2 of the extension portion 1a. The threaded shank of bolt 9c passes through round aperture E in clamping portion 9b and the two clamping portions 9a and 9b are releasably retained to one another via bolt 9c and locking sleeve 9d in a manner which should be clear from the drawings. Thus ring R of clamping portion

9a is locked inbetween the underside of the cistern 2 and flange f on locking nut 9e, and C shaped portion C of clamping portion 9b grips the underside of limbs L1 and L2 retaining the cistern in place.

In order that the cistern 2 is low enough in relation to the bowl 1, the underside of the cistern is shaped or recessed at 2a in order to accommodate ring portion R and bolt 9c as shown.

Thus the attachment of the cistern 2 relative to the bowl 1 can be achieved quickly and easily and a forward and rearward position of the bowl relative to the cistern can be adjusted automatically simply by loosening the locking sleeve 9d thereby allowing the limbs L1 and L2 to move relative to the clamping portion 9a and 9b. Once the new relative positioning of the cistern bowl has been selected the clamping portions 9a,9b can be tightened together once more by means of the locking sleeve 9d being tightened as appropriate.

Thus it should be possible to replace any close coupled horizontal outlet w.c. bowl that adheres to current British standards and low cost high volume production is envisaged for this arrangement owing to the connection parts being simply produced all from plastics and basically being of three part construction (i.e. spreader device 4, sleeve 3 and connecting part 5). It is advantageous that the position of the cistern 2 and bowl 1 can be adjusted by means of the single screw locking sleeve 9d.

It is believed that other advantages of the arrangement should be readily apparent and the connecting pipe 5 and sealing sleeve 3 could be utilised without the spreader device 4, if desired, in other arrangements.

It is to be appreciated that the present invention offers many improvements, at least some of which might be patentable individually or in combination. Any individual feature as aforementioned or as shown, or as implicit herein or combinations thereof or functions or methods apertaining thereto may be patentably inventive and any specific term as used herein should not be construed as unnecessarily or unduly limiting; the scope of such a term should extend to, or may be replaced or supplemented by, any reasonable equivalent or generic expression. The singular may include the plural and vice versa where sensible. Therefore, further according to the present invention there is provided an adjustable connection for connecting a cistern to a w.c. bowl so that, in use, water can flow from the cistern into the bowl, said connection allowing the relative position of the cistern and w.c. bowl to be adjusted to one of a plurality of selectable or adjustable positions relative to the cistern, in which water can be delivered from the cistern into the bowl, said adjustable connection characterised by a connection pipe or duct slidably received or receivable in a seal mountable in an aperture in the w.c. bowl. Preferably, said adjustable connection includes clamping bracket means arranged to clamp the cistern to the w.c. bowl.

Reference is made to AU-573,316 which is relevant

to the pre-characterising clause of Claim 1.

## Claims

1. Apparatus (1,2) comprising a w.c. bowl (1) and cistern (2), the relative position of the cistern (2) and bowl (1) being adjustable to enable water to be delivered from the cistern (2) into the bowl (1) when the bowl (1) is located in one of a plurality of selectable or adjustable positions relative to the cistern (2), and in which the cistern (2) is flow connected to the bowl (1) by means of a connection pipe or duct (5) slidably received in a seal (3) mounted in an aperture (1b) in the w.c. bowl (1), the apparatus (1,2) characterised in that the relative position of the cistern (2) and w.c. bowl (1) is selectively adjustable by the relative position of the connection pipe or duct (5) being slidably adjustable in said seal (3).
2. Apparatus as claimed in Claim 1 in which the seal (3) is fitted with a water spreader device (4).
3. Apparatus as claimed in Claim 1 or Claim 2 in which the cistern (2) can be clamped relative to the bowl (1) by clamping bracket means (9) of the apparatus arranged (1,2) to clamp onto a rearward extension (1a) of the w.c. bowl (1), said extension (1a) forming a mounting platform for the cistern.
4. Apparatus as claimed in any one of the preceding claims in which said bowl (1) and cistern (2) are of the close-coupled type.
5. Apparatus as claimed in any one of the preceding claims in which the bowl (1) is connectable relative to the cistern (2) so that the cistern (2) is adjustable forward and/or rearwardly relative to the bowl.
6. Apparatus (1,2) as claimed in any one of the preceding claims in which the seal (3) is in the form of a sealing sleeve (3) having flange means (3a,3b,3c) that grip the material of the bowl (1) that defines said aperture (1b).
7. Apparatus (1,2) as claimed in Claim 3 or any claim dependent therefrom in which the extension (1a) is formed with a slot (1c) to allow the pipe connection/duct (5) from the cistern (2) to pass downwardly therethrough.
8. Apparatus (1,2) as claimed in Claim 7 when dependent from Claim 6 in which the pipe connection/duct (5) is angled so that a generally horizontal pipe portion (5a) of the pipe connection/duct (5) extends into said seal (3) mounted in said aperture (1b).
9. Apparatus (1,2) as claimed in Claim 3 or any claim

dependent therefrom in which the clamping bracket means (9) comprises an upper clamping bracket portion (9a) and a lower clamping bracket portion (9b), said upper clamping bracket portion (9a) being positively retained to the cistern (2) and the lower clamping portion (9b) being clamped to the underside of the rearward extension (1a) and the upper clamping portion (9a) by fastening means (9c,9d).

10. Apparatus (1,2) as claimed in Claim 9 in which the upper clamping bracket portion (9a) comprises a ring (R) which is passed over a threaded pipe (6) that depends downwardly from the cistern (2), said ring (R) being locked to the cistern by means of a locking nut (9e), a bolt (9c) being passed through receiving holes (S,E) in the upper clamping portion (9a) and lower clamping portion (9b), said lower clamping portion (9b) being clipped onto the pipe connection/duct (5) underneath the rear extension (1a).

11. Apparatus (1,2) as claimed in Claim 10 in which said pipe connection/duct (5) includes a locking ring (7) engaged on the pipe connection/duct (5) and threadably engaged with the threaded pipe (6) which downwardly depends from the cistern (2).

12. Apparatus (1,2) as claimed in Claim 11 in which a rubber seal (8) is provided inbetween the downwardly depending pipe (6) and the pipe connection/duct (5).

13. An adjustable connection for connecting a cistern (2) to a w.c. bowl (1) so that, in use, water can flow from the cistern (2) into the bowl (1), said connection allowing the relative position of the cistern (2) and w.c. bowl (1) to be adjusted to one of a plurality of selectable or adjustable positions relative to the cistern (2), in which water can be delivered from the cistern (2) into the bowl (1), said connection characterised by a connection pipe or duct (5) slidingly received or receivable in a seal (3) mountable in an aperture (1b) in the w.c. bowl.

14. A connection as claimed in Claim 13 which includes clamping bracket means (9) arranged to clamp the cistern (2) to the w.c. bowl (1).

#### Patentansprüche

1. Vorrichtung (1, 2) umfassend eine WC-Schüssel (1) und einen Spülkasten (2), wobei die relative Stellung des Spülkastens (2) und der Schüssel (1) einstellbar ist, um zu ermöglichen, Wasser aus dem Spülkasten (2) in die Schüssel (1) zu fördern, wenn die Schüssel (1) in einer von mehreren wählbaren oder einstellbaren Stellungen relativ zum Spülka-

sten (2) angeordnet ist, und bei welcher der Spülkasten (2) strömungsseitig mit Hilfe eines Verbindungsrohres oder einer Leitung (5) an die Schüssel (1) angeschlossen ist, welches bzw. welche verschiebbar in einer Dichtung (3) aufgenommen ist, die in einer Öffnung (1b) in der WC-Schüssel (1) vorgesehen ist, **dadurch gekennzeichnet, daß** die relative Stellung des Spülkastens (2) und der WC-Schüssel (1) selektiv durch die relative Stellung des Verbindungsrohres oder der Leitung (5) einstellbar ist, welches bzw. welche verschiebbar in der Dichtung (3) verstellbar ist.

2. Vorrichtung nach Anspruch 1, **dadurch gekennzeichnet, daß** die Dichtung (3) mit einem Wasserverteiler (4) ausgerüstet ist.

3. Vorrichtung nach Anspruch 1 oder 2, **dadurch gekennzeichnet, daß** der Spülkasten (2) relativ zur Schüssel (1) durch eine Klemmhalterung (9) der Vorrichtung festgeklemmt werden kann, welche zum Festklemmen an einer rückseitigen Verlängerung (1a) der WC-Schüssel (1) vorgesehen ist, wobei die Verlängerung (1a) eine Montageplattform für den Spülkasten bildet.

4. Vorrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, daß** die Schüssel (1) und der Spülkasten (2) aus der fest miteinander gekoppelten Ausführungsart bestehen.

5. Vorrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, daß** die Schüssel (1) bezogen auf den Spülkasten (2) derart anschließbar ist, daß der Spülkasten (2) relativ zur Schüssel nach vorne und/oder nach hinten verstellbar ist.

6. Vorrichtung (1, 2) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, daß** die Dichtung (3) in Form einer Dichtmanschette (3) mit Flanscheinrichtungen (3a, 3b, 3c) ausgebildet ist, die an dem die Öffnung (1b) festlegenden Material der Schüssel (1) angreifen.

7. Vorrichtung (1, 2) nach Anspruch 3 oder einem von diesem Anspruch abhängigen Anspruch, **dadurch gekennzeichnet, daß** die Verlängerung (1a) mit einem Schlitz (1c) versehen ist, um ein Hindurchführen der Rohrverbindung/Leitung (5) von dem Spülkasten (2) nach unten zu ermöglichen.

8. Vorrichtung (1, 2) nach Anspruch 7, sofern dieser von Anspruch 6 abhängig ist, **dadurch gekennzeichnet, daß** die Rohrverbindung/Leitung (5) derart abgewinkelt ist, daß ein im allgemeinen horizontaler Rohrabschnitt (5a) der Rohrverbindung/Leitung (5) sich in die in der Öffnung (1b) vorgesehene

Dichtung (3) hinein erstreckt.

9. Vorrichtung (1, 2) nach Anspruch 3 oder einem von diesem abhängigen Anspruch, **dadurch gekennzeichnet, daß** die Klemmhalterung (9) ein oberes Klemmhalterungsteil (9a) und ein unteres Klemmhalterungsteil (9b) aufweist, wobei das obere Klemmhalterungsteil (9a) fest an dem Spülkasten (2) gehalten und das untere Klemmteil (9b) an der Unterseite der rückseitigen Verlängerung (1a) und dem oberen Klemmteil (9a) durch Befestigungsmittel (9c, 9d) festgeklemmt ist.
10. Vorrichtung (1, 2) nach Anspruch 9, **dadurch gekennzeichnet, daß** das obere Klemmhalterungsteil (9a) einen Ring (R) aufweist, welcher über ein sich von dem Spülkasten (2) nach unten erstreckendes Gewinderohr (6) geschoben ist, wobei der Ring (R) mittels einer Verriegelungsmutter (9e) an dem Spülkasten verriegelt ist, eine Schraube (9c) durch Aufnahmebohrungen (S, E) in dem oberen Klemmteil (9a) und dem unteren Klemmteil (9b) hindurchgeführt ist, das untere Klemmteil (9b) auf die Rohrverbindung/Leitung (5) unterhalb der rückseitigen Verlängerung (1a) aufgesteckt ist.
11. Vorrichtung (1, 2) nach Anspruch 10, **dadurch gekennzeichnet, daß** die Rohrverbindung/Leitung (5) einen Verschlußring (7) umfaßt, welcher an der Rohrverbindung/Leitung (5) angreift und mit dem Gewinderohr (6), welches sich von dem Spülkasten (2) nach unten erstreckt, in Gewindeeingriff steht.
12. Vorrichtung (1, 2) nach Anspruch 11, **dadurch gekennzeichnet, daß** eine Gummidichtung (8) zwischen dem sich nach unten erstreckenden Rohr (6) und der Rohrverbindung/Leitung (5) vorgesehen ist.
13. Einstellbare Verbindung zum Anschließen eines Spülkastens (2) an eine WC-Schüssel (1), so daß Wasser beim Gebrauch aus dem Spülkasten (2) in die Schüssel (1) fließen kann, wobei die Verbindung gestattet, die relative Stellung des Spülkastens (2) und der WC-Schüssel (1) auf eine von mehreren wählbaren oder einstellbaren Stellungen relativ zum Spülkasten (2) einzustellen, in denen Wasser aus dem Spülkasten (2) in die Schüssel (1) geleitet werden kann, **gekennzeichnet durch** ein Verbindungsrohr oder eine Leitung (5), welches bzw. welche verschiebbar in einer Dichtung (3) aufgenommen ist oder in einer solchen aufnehmbar ist, die in eine Öffnung (1b) in der WC-Schüssel eingesetzt ist.
14. Verbindung nach Anspruch 13, **gekennzeichnet durch** eine Klemmhalterung (9), welche zum Festklemmen des Spülkastens (2) an der WC-Schüssel

(1) vorgesehen ist.

## Revendications

- 5
1. Equipement (1, 2) comprenant une cuvette (1) et un réservoir (2) de W.C., la position relative du réservoir (2) et de la cuvette (1) pouvant être réglée pour permettre à l'eau d'être amenée du réservoir (2) à l'intérieur de la cuvette (1) lorsque la cuvette (1) est placée dans l'une d'une pluralité de positions sélectionnables ou réglables par rapport au réservoir (2), et dans lequel le réservoir (2) est raccordé, en écoulement, à la cuvette (1) au moyen d'un tuyau ou d'un conduit de raccordement (5) reçu de façon glissante dans un joint d'étanchéité (3) monté dans une ouverture (1b) pratiquée dans la cuvette de W.C. (1), l'équipement (1, 2) étant caractérisé en ce que la position relative du réservoir (2) et de la cuvette de W.C. (1) est sélectivement réglable par la position relative du tuyau ou du conduit de raccordement (5) qui est réglable, de façon glissante, dans ledit joint d'étanchéité (3).
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- 25
2. Equipement selon la revendication 1, dans lequel le joint d'étanchéité (3) est pourvu d'un dispositif diffuseur d'eau (4).
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3. Equipement selon la revendication 1 ou 2, dans lequel le réservoir (2) peut être fixé par rapport à la cuvette (1) grâce à des moyens à pattes de fixation (9) de l'équipement disposé (1, 2) permettant une fixation sur un prolongement vers l'arrière (1a) de la cuvette de W.C. (1), ledit prolongement (1a) formant une plate-forme de montage du réservoir.
- 35
4. Equipement selon l'une quelconque des revendications précédentes, dans lequel lesdites cuvette (1) et réservoir (2) sont du type attendant.
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- 45
5. Equipement selon l'une quelconque des revendications précédentes, dans lequel la cuvette (1) peut être raccordée par rapport au réservoir (2) de telle sorte que le réservoir (2) est réglable vers l'avant et/ou vers l'arrière par rapport à la cuvette.
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- 55
6. Equipement (1, 2) selon l'une quelconque des revendications précédentes, dans lequel le joint d'étanchéité (3) se présente sous la forme d'un manchon d'étanchéité (3) qui comporte des moyens à rebords (3a, 3b, 3c) serrant le matériau de la cuvette (1) qui définit ladite ouverture (1b).
7. Equipement (1, 2) selon la revendication 3 ou l'une quelconque des revendications qui en dépendent, dans lequel le prolongement (1a) présente une encoche (1c) permettant le passage vers le bas, à travers elle, du tuyau/conduit de raccordement (5) qui

vient du réservoir (2).

8. Equipement (1, 2) selon la revendication 7 lorsqu'elle dépend de la revendication 6, dans lequel le tuyau/conduit de raccordement (5) est incliné de telle façon qu'une partie de tuyau globalement horizontale (5a) du tuyau/conduit de raccordement (5) s'étend dans ledit joint d'étanchéité (3) monté dans ladite ouverture (1b). 5
9. Equipement (1, 2) selon la revendication 3 ou l'une quelconque des revendications qui en dépendent, dans lequel les moyens à pattes de fixation (9) comprennent une partie supérieure de patte de fixation (9a) et une partie inférieure de patte de fixation (9b), ladite partie supérieure de patte de fixation (9a) étant mécaniquement retenue sur le réservoir 2 et la partie inférieure de fixation (9b) étant fixée à la face inférieure du prolongement vers l'arrière (1a) et à la partie supérieure de fixation (9a) grâce à des moyens de serrage (9c, 9d). 10 15 20
10. Equipement (1, 2) selon la revendication 9, dans lequel la partie supérieure de patte de fixation (9a) comprend une bague (R) qui est passée par-dessus un tube fileté (6) qui descend depuis le réservoir (2), ladite bague (R) étant bloquée sur le réservoir au moyen d'un écrou de blocage (9e), un boulon (9c) étant passé à travers des orifices récepteurs (S, E) pratiqués dans la partie supérieure de fixation (9a) et la partie inférieure de fixation (9b), ladite partie inférieure de fixation (9b) étant attachée sur le tuyau/conduit de raccordement (5) au-dessous du prolongement vers l'arrière (1a). 25 30 35
11. Equipement (1, 2) selon la revendication 10, dans lequel ledit tuyau/conduit de raccordement (5) inclut une bague de blocage (7) engagée sur le tuyau/conduit de raccordement (5) et engagée par enfillement par le tube fileté (6) qui descend depuis le réservoir (2). 40
12. Equipement (1, 2) selon la revendication 11, dans lequel un joint d'étanchéité en caoutchouc (8) est prévu entre le tube descendant (6) et le tuyau/conduit de raccordement (5). 45
13. Raccordement réglable pour raccorder un réservoir (2) à une cuvette de W.C. (1) de telle sorte que, en fonctionnement, l'eau peut s'écouler du réservoir (2) à l'intérieur de la cuvette (1), ledit raccordement permettant le réglage de la position relative du réservoir (2) et de la cuvette de W.C. (1) dans l'une d'une pluralité de positions sélectionnables ou réglables par rapport au réservoir (2), dans lequel l'eau peut être amenée du réservoir (2) à l'intérieur de la cuvette (1), ledit raccordement étant caractérisé en ce qu'un tuyau ou un conduit de raccorde-

ment (5) est reçu ou peut être reçu, de façon glissante, dans un joint d'étanchéité (3) pouvant être monté dans une ouverture (1b) pratiquée dans la cuvette de W.C.

14. Raccordement selon la revendication 13, qui inclut des moyens à pattes de fixation (9) disposés pour fixer le réservoir (2) sur la cuvette de W.C. (1).





