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(54) **Title:** FIXING DEVICE HAVING A GUIDING MEMBER FOR FIXING SANITARY FURNITURE ITEM TO A WALL AND A METHOD THEREOF

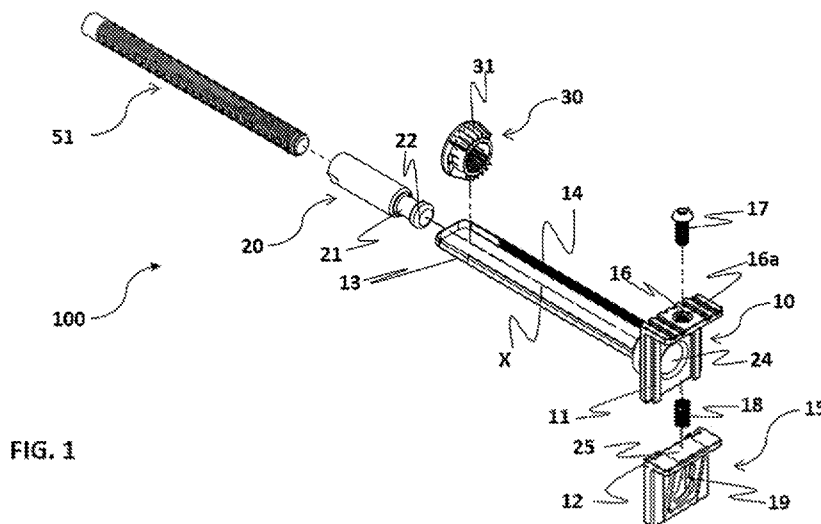


FIG. 1

(57) **Abstract:** The present invention relates to a fixing device (100) for wall (50) installation of a sanitary furniture item (60) comprising a clamping body (10) for abutting against an inner wall of the sanitary furniture item (60); an adjustment member (17); a through-hole for inserting the adjustment member (17) into the clamping body (10); a separate locking part (30); and a connection adaptor (20) which is insertable into the clamping body (10) and engageable with an affixing stud (51) to be anchored in the wall (50). The fixing device (100) further comprises a separate movable guiding member (15) on the clamping body (10), which includes a housing (19) in which an end portion (22) of the coupling adaptor (20) is guided; and in that the guiding member (15) comprises an inclined sliding surface (23) having the housing (19) for receiving the end portion (22) of the connection adaptor (20) to slide thereon when the adjustment member (17) is tightened; which generates a pulling action on the connection adaptor (20) and a pushing action of the clamping body (10) in an axial direction with respect to the affixing stud (51). The present invention also proposes a fixing kit and a method for wall installation of a sanitary furniture item with the proposed fixing device.



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**FIXING DEVICE HAVING A GUIDING MEMBER FOR FIXING SANITARY FURNITURE ITEM TO A WALL AND A METHOD THEREOF**

**Technical Field of the Invention**

5 The present invention relates to a fixing device for anchoring a sanitary furniture item, such as a toilet bowl and the like, to a wall, which is adjustable to different sizes, and which is easy to use and durable, as well as a fixing kit including the fixing device.

**Background of the Invention**

10 It is known in the prior art to use fixing devices for fixing sanitary furniture items. In the attachment of a sanitary furniture item, such as a toilet bowl and the like, to a wall, a fixing mount is used with an affixing stud anchored to the wall, and the fixing mount is fastened on the wall of the sanitary furniture item, at the desired position, by means of an adjustment member therein.

15 Said fixing devices are generally manufactured in standard sizes, and thus cannot be connected to items of different thicknesses, and they cause gaps in items that go beyond their size, thereby resulting in sagging and breakage of the items that are mounted. One of the problems with the prior art is that the teeth become abraded as a main body that is typically made of plastics is fixed with a connection member made of metal. In that case, the item to which it is attached cannot be removed when it is desired to be disassembled, in which case the item to be disassembled may have to be broken and discarded.

20 In the connection elements of the prior art, it is difficult to assemble the item without a full centering in the connection adaptor, which is used with the item and is an indispensable member for this assembly. There is very limited clearance for the sanitary item to be connected to move close to the wall. If the clamping angle is not matched, the item to be connected may tend to detach from the wall. Accordingly, there is a need for a more practical fixing device that can be applied to different sizes in a limited area.

**Objects of the Invention**

25 An object of the present invention is to provide a fixing device that is durable, useful, and practical, having an adjustable strip structure to match different thicknesses.

Another object of the present invention is to provide a fixing device that may be installed in an easier manner and may be removed smoothly when desired.

30 Another object of the present invention is to provide a fixing device wherein possible size differences are insignificant, also allowing a smooth installation of a sanitary furniture item such as a toilet bowl or the like at any wall thickness.

Another object of the present invention is to provide a durable fixing device wherein possible tooth abrasion is avoided in the adjustment.

Another object of the present invention is to provide a fixing device that can be mounted practically on the wall surface and does not allow reverse movement, by virtue of an angled guiding incorporated therein without the need for additional adjustment.

Yet another object of the present invention is to provide a safe fixing device where the loosening that occurs during the use of the item is eliminated thanks to the resilient spring and slide structure incorporated therein.

### **Summary of the Invention**

10 The present invention relates to a fixing device for wall installation of a sanitary furniture item comprising a clamping body for abutting against an inner wall of the sanitary furniture item; an adjustment member; a through-hole for inserting the adjustment member into the clamping body; a separate locking part for allowing depth adjustment; and a connection adaptor which is insertable into the clamping body and engageable with an affixing stud to be anchored in the wall. The fixing device further comprises a  
15 separate movable guiding member on the clamping body, which includes a housing in which an end portion of the coupling adaptor is guided; and in that the guiding member comprises an inclined sliding surface having the housing for receiving the end portion of the connection adaptor to slide thereon when the adjustment member is tightened; which generates a pulling action on the connection adaptor and a pushing action of the clamping body in an axial direction with respect to the affixing stud. The present  
20 invention also proposes a fixing kit and a method for wall installation of a sanitary furniture item with the proposed fixing device.

The proposed method comprises the steps of abutting the clamping body against an open end of a fixing device opening on the sanitary furniture item; guiding the locking part on the adjustable strips of the  
25 clamping body until abutting other open end of the fixing device opening on the sanitary furniture item; cutting the adjustable strips left behind the locking part with a cutting tool; attaching the connection adaptor of the fixing device to an affixing stud anchored in the wall; placing the sanitary furniture item with the fixing device to the affixing stud, and positioning the end portion of the connection adaptor within the housing of the inclined sliding surface to slide thereon; inserting and tightening the adjustment  
30 member for pushing against the guiding member wherein, owing to the presence of the sliding surface, tightening of the adjustment member generates a pulling action on the connection adaptor and a pushing action of the clamping body in an axial direction with respect to the affixing stud.

**Brief Description of the Drawings**

The fixing device of the present invention is illustrated in the accompanying drawings for better understanding thereof, which drawings are attached for better explaining the present invention and are not limiting the invention, in which:

- 5 Fig. 1 is an exploded view of a fixing device according to the present invention.
- Fig. 2 is a perspective view of the fixing device according to the present invention.
- Fig. 3 is a longitudinal cross-section view of the fixing device according to the present invention.
- Fig. 4 is a top view of the fixing device according to the present invention.
- Fig. 5 represents a perspective view of the fixing device according to the present invention, also showing  
10 enlarged views of the locking teeth and an engagement slot of the locking part.
- Fig. 6 is a cross-sectional view of the fixing device in Fig. 5, as well as an enlarged view of a position where the locking teeth and the coupling teeth are engaged.
- Fig. 7 is a perspective view of the fixing device according to the present invention and an enlarged view of an initial position of the locking part when it is attached to the adjustable strips.
- 15 Fig. 8 is a perspective view of the fixing device according to the present invention and an enlarged view of the sectioned locking part where the coupling teeth are engaged with the end portion.
- Fig. 9 is a cross-sectional view showing the fixing device according to the present invention before connecting the toilet bowl to a wall, and an enlarged view showing the position inside the toilet bowl.
- Fig. 10 is a cross-sectional view of the fixing device according to the present invention showing it in a  
20 position where it abuts on an inner wall of the toilet bowl and an enlarged view of the connection portion.
- Fig. 11 is a cross-sectional view of the fixing device in Fig. 9 where the locking part is driven on the adjustable strips and adjusted, and an enlarged view of the connection portion.
- Fig. 12 is a cross-sectional view of the fixing device in Fig. 9 where the locking part is adjusted in  
25 accordance with the thickness of the inner wall of the toilet bowl by means of the locking part, and an enlarged view of the connection portion.
- Fig. 13 is a cross-sectional and enlarged view of a position where the remaining strips are cut after it is made to rest on the wall with the locking part on the adjustable strips in Fig. 12, and the connection adaptor is inserted into the lower housing in the guiding member. In this position, the adjustment member has not yet been rotated and there is a gap (D) between the wall and the toilet bowl.

Fig. 14 is a cross-sectional and partially enlarged view of the fixing device in Fig. 13 wherein the toilet bowl is made to rest against the wall, to which it is to be connected, by rotating the adjustment member by an Allen key or a similar apparatus and pushing the guiding member downwards.

Fig. 15 is a cross-sectional view showing the end portion when the connection adaptor in the housing is forced to descend as a result of the pressure of the adjustment member, resulting from the locking of the fixing device shown in Fig. 14.

### Detailed Description of the Invention

The present invention relates to a fixing device (100) for wall (50) installation of a sanitary furniture item (60) comprising a clamping body (10) for abutting against an inner wall of the sanitary furniture item (60); an adjustment member (17); a through-hole (16a) for inserting the adjustment member (17) into the clamping body (10); a separate locking part (30) that allows depth adjustment according to different wall thicknesses; and a connection adaptor (20) which is insertable into the clamping body (10) and engageable with an affixing stud (51) to be anchored in the wall (50). The fixing device (100) further comprises a separate movable guiding member (15) on the clamping body (10), which includes a housing (19) in which an end portion (22) of the coupling adaptor (20) is guided; and in that the guiding member (15) comprises an inclined sliding surface (23) having the housing (19) for receiving the end portion (22) of the connection adaptor (20) to slide thereon when the adjustment member (17) is tightened; which generates a pulling action on the connection adaptor (20) and a pushing action of the clamping body (10) in an axial direction with respect to the affixing stud (51). With this arrangement, the end portion is safely kept in the housing (19). The present invention also proposes a fixing kit and a method for wall installation of a sanitary furniture item with the proposed fixing device.

Referring to Fig. 1, the guiding member (15) comprises an inclined sliding surface (23) allowing the end portion (22) of the connection adaptor (20) to slide thereon, based on the thrust force from the adjustment member (17), so that the sanitary furniture item (60) rests against the wall (50). Thus, the fixing device (100) ensures that a sanitary furniture item (60) such as a toilet bowl or the like, to which it is connected, is fixed to the wall (50) without any gap in between.

With reference to Figs 1 and 2, the connection adaptor (20) comprises a neck portion (21) formed before the end portion (22) and having a smaller diameter than the end portion. The connection adaptor, which is generally cylindrical, is attached to the affixing stud (51) by means of a threaded structure therein, then it is passed through the housing (24) in the clamping body (10). Especially, by means of this neck portion (21), it is ensured that the connection adaptor (20) is kept in the housing (19) inside the guiding member.

Again, as shown in Figs 1 and 2, there is at least one sliding protrusion (11) on the clamping body (10) that extends perpendicular to a longitudinal axis of the fixing device (100). On the guiding member (15), there are sliding protrusions (11) extending in the vertical direction, being on the right and left of the inner housing (24), and at least one channel (12) sized and dimensioned according to each sliding protrusion (11). In another embodiment of the invention, the sliding protrusions (11) and the channel (12) structure can have interchangeable different cross-sections and sizes. The key point here is that the guiding member (15) is advanced on the clamping body by the pressure from the adjustment member (17), while the end portion (22) held in the housing (19) is advanced on the sliding surface (23), in which case when the connection adaptor is pulled, the toilet bowl or a similar item to which it is connected leans on the wall (50) (Figs 13 and 14). The sliding surface (23) is formed on the guide member (15) in a gradually increasing inclination such that the sliding surface (23) is inclined with respect to the vertical axis (X) of the fixing device (100).

As best seen in Fig. 5, the guiding member (15) comprises a flat upper abutment portion (25) pressed and pushed by the adjustment member (17). The guiding member (15), which is formed to have a substantially L-section, has a substantially flat upper abutment portion (25). The upper abutment portion is pushed by the adjustment member (17) and the resilient member (18).

In an advantageous embodiment of the invention, the clamping body (10) comprises a nut (16) made of metal and including the through-hole, through which the adjustment member (17) is passed. The nut (16) forms the through-hole (16) inside. Moreover, the nut (16) is preferably monolithic with the clamping body (10). In this way, problems such as teeth abrasion are eliminated, and it can be disassembled in an easier manner.

As seen in Figs 1 and 2, the guiding member (15) has a housing (19) consisting of a lower portion and an upper portion shaped like a pear. A region of the housing closer to the upper abutment portion (25) has a smaller diameter and the lower portion has a larger diameter value. Thus, as can be seen in Fig. 13, the connection adaptor (20) is first passed through the wide lower portion of the housing (19), then it is locked at the neck portion (21) and locked in the narrow upper portion.

As seen in Fig. 3, there is a pressure member (18) that applies a constant pressure, which is disposed between the clamping body (10) and the guiding member (15). The pressure member is preferably a spring, allowing a better centering while preventing possible disengagement. Figs 9-14 show the connection steps of the fixing device (100) to the toilet bowl. Said housing (19) is disposed on the sliding surface (23), and the sliding surface (23) extends in the vertical direction such that it is inclined with respect to the longitudinal axis (X). With the inclined structure, the gap (D) shown in Fig. 13 is closed by tightening with the adjustment member (17).

With reference to Fig. 10, the fixing device (100) is generally positioned such that it partially penetrates into the fixing device opening (61) of a sanitary furniture item (60) and abuts on the inner wall (63), it is also disposed to correspond to the adjustment opening (62) on the toilet bowl. In this way, in the fixing device (100) that rests against the inner wall (63), if the wall has a different thickness, it may be problematic to attach it from the backside. In order to avoid it, there are at least two opposite adjustable strips (13) in the form of a strip extending from the clamping body (10) and extending in the axial direction (X) of the fixing device (100). There is also a separate locking part (30) suitable to be moved on the adjustable strips (13) and held in the desired position, and a plurality of adjacent locking teeth (14) on the adjustable strips (13) to allow one-way movement of the locking part (30) towards the clamping body (10).

As best seen in Figs 5 and 6, there are coupling teeth (33) on the locking part (30) that engage with the locking teeth (14) on each of the adjustable strips (13). The locking teeth (14) allow one-way movement as in the hook-and-loop clamps. Furthermore, each coupling teeth (33) has at least one tooth opening (36) so that it is partially flexible. There are two openings on the right and left side so that the coupling teeth can be moved smoothly, while a rearward movement thereof is being prevented. In addition, each coupling teeth (33) has a V-shaped teeth end (34) for locking.

As seen in Fig. 5, there is provided an engagement slot (32) shaped and dimensioned according to each adjustable strip (13) so as to allow the attachment of the locking part (30) on the adjustable strips (13). With the engagement slot (32), the locking part (30) can be attached in an easier manner. In order to prevent the locking part (30) from being detached after it has been attached to the adjustable strip (13), there is a limiting protrusion (35) inside the engagement slot (32). Thus, with the sound that is heard after the limiting protrusion (35) has been passed, the user now understands that he should slide the locking part (30). Again, as seen in Fig. 5, each limiting protrusion (35) is positioned inside the engagement slot (32).

As the locking teeth (14) are adjacent to each other and have a "V" section, the coupling teeth (33) are moved on the inclined surface of the locking teeth (14) by means of their teeth end (34). The locking part (30) is prevented from moving backward, once it has overcome the inclined surface since the surface descends vertically. Said locking teeth (14) are disposed in a series adjacent to each other in the manner of hook-and-loop clamps.

There is provided an engagement slot (32) shaped and dimensioned according to each adjustable strip (13) so as to allow the attachment of the locking part (30) on the adjustable strips (13). The engagement slot (32) is formed at a distance extending perpendicular to the axis of the fixing device. When the user

pushes the locking part (30) into the adjustable strip (13) in the form of a flexible strip, in the direction of an arrow as shown in the drawings, the coupling teeth (33) are flush with the locking teeth (14). In order to prevent the locking part (30) from being detached after it has been attached to the adjustable strip (13), it comprises two opposing limiting protrusions (35), each at the right and left sides. Each limiting protrusion (35) is disposed of in the engagement slot (32).

Although the adjustable strips (13) according to the invention are illustrated in the drawings as integral to the clamping body (10), it is conceivable to use an intermediate connection element. It may be configured to be in mechanical communication with the clamping body (10) through different fixing devices or intermediate adjustment elements. As shown in Figs 1-5, the adjustable strip (13) is suitable to be cut after the locking part (30) is slid and guided. Accordingly, the adjustable strip (13) is made of a flexible and plastic material.

As in Fig. 12, after the locking part (30) is brought into the appropriate position, the remaining adjustable strips are cut with a suitable chisel or a similar element. In a preferred embodiment of the invention, the adjustable strip (13) may be manufactured integral with the clamping body (10) by plastic injection. In a preferred embodiment of the invention, the locking teeth (14) of the two adjustable strips (13) extend in the axial direction (X) in such a manner to face each other and be adjacent to the fixing device. In another embodiment of the invention, it is possible to position more than two adjustable strips (13) in different positions so as not to be directly opposite to each other.

The locking teeth (14) may extend facing each other and adjacent to the fixing device and in the axial direction (X). Additionally, the adjustable strips (13) extending in the axial direction (X) converge so that they are integrated with each other and also comprise an intermediate portion so as to have a U-section. The locking teeth (14) also start after a distance on the adjustable strips (13), and the locking part (30) is easily fitted into the portion where the locking teeth (14) are not present. Said locking part (30) is configured to preferably have a hollow circular cross-section, in order to move on the connection adaptor (20). Furthermore, there is a plurality of fins (31) extending in the radial direction on the locking part (30), which ensure a better holding and centering after the connection. The fins (31) are crushed by the resulting tensile force and ensure that the locking part (30) is held in the most appropriate position without squeezing and snagging.

As seen in Fig. 7, before using the fixing device (100), an affixing stud (51) preferably having a threaded portion thereon is properly inserted into the wall (50) where it is to be connected. Then, a connection adaptor (20), preferably cylindrical, that comprises an inner threaded portion to engage with the affixing stud (51) is used and engaged into the affixing stud (51). Again, in Fig. 1, there is a plurality of support ribs on the lateral walls of the clamping body (10). The support ribs extend in a direction perpendicular to

the axis of the fixing device. The sanitary furniture item (60) may be a toilet bowl, water closet, or the like. In addition, the invention may be provided as a kit so that in addition to the fixing device described above, the connection element (17) and the affixing stud (51) can be provided as a kit.

- 5 Referring to the Figs. 9 to 13, the method for wall installation of the sanitary furniture item (60) with the fixing device (100) is shown step by step. Accordingly, the present also proposes a method for wall (50) installation of the sanitary furniture item (60) with the fixing device (100) as disclosed above. The method comprises the steps of abutting the clamping body (10) against an open end of a fixing device opening (61) on the sanitary furniture item (60); guiding the locking part (30) on the adjustable strips (13) of the
- 10 clamping body (10) until abutting other open end of the fixing device opening (61) on the sanitary furniture item (60); cutting the adjustable strips (13) left behind the locking part (30) with a cutting tool; attaching the connection adaptor (20) of the fixing device (100) to an affixing stud (51) anchored in the wall (50); placing the sanitary furniture item (60) with the fixing device (100) to the affixing stud (51), and positioning the end portion (22) of the connection adaptor (20) within the housing (19) of the
- 15 inclined sliding surface (23) to slide thereon; inserting and tightening the adjustment member (17) for pushing against the guiding member (15) wherein, owing to the presence of the sliding surface (23), tightening of the adjustment member (17) generates a pulling action on the connection adaptor (20) and a pushing action of the clamping body (10) in an axial direction with respect to the affixing stud (51).
- 20 The invention will herein be explained in detail with reference to the accompanying drawings and the list of part numbers used in the Figs is as follows.

Reference list:

10. Clamping body
11. Sliding protrusion
- 25 12. Channel
13. Adjustable strip
14. Locking teeth
15. Guiding member
16. Nut
- 30 16a. Through hole
17. Adjustment member
18. Resilient member
19. Housing
20. Connection adaptor
- 35 21. Neck portion
22. End portion

- 23. Sliding surface
- 24. Inner housing
- 25. Upper abutment portion
- 5 30. Locking part
- 31. Fin
- 32. Engagement slot
- 33. Coupling teeth
- 34. Teeth end
- 35. Limiting protrusion
- 10 36. Teeth gap
- 50. Wall
- 51. Affixing stud
- 60. Sanitary furniture item
- 61. Fixing device opening
- 15 62. Adjustment hole
- 63. Inner wall
- 100. Fixing device
- D. Gap
- X. Longitudinal axis
- 20 Y. Vertical axis

**CLAIMS**

1. A fixing device (100) for wall (50) installation of a sanitary furniture item (60), the fixing device (100) comprising
  - 5 a clamping body (10) for abutting against an inner wall of the sanitary furniture item (60);
  - an adjustment member (17);
  - a through-hole (16) for inserting the adjustment member (17) into the clamping body (10);
  - a separate locking part (30) for allowing depth adjustment; and
  - a connection adaptor (20) which is insertable into the clamping body (10) and engageable with
  - 10 an affixing stud (51) to be anchored in the wall (50), **characterized in that** the fixing device (100) further comprises:
    - a separate guiding member (15) movable on the clamping body (10), which includes a housing (19) in which an end portion (22) of the coupling adaptor (20) is guided; and **in that** the guiding member (15) comprises an inclined sliding surface (23) having said housing (19) for receiving the end portion (22)
    - 15 of the connection adaptor (20) to slide thereon when the adjustment member (17) is tightened; which generates a pulling action on the connection adaptor (20) and a pushing action of the clamping body (10) in an axial direction with respect to the affixing stud (51).
2. The fixing device (100) according to claim 1, wherein the connection adaptor (20) comprises a  
20 neck portion (21) formed before the end portion (22) and having a smaller diameter than the end portion.
3. The fixing device (100) according to claim 1 or 2, wherein the clamping body (10) comprises at least one sliding protrusion (11) extends perpendicular to a longitudinal axis of the fixing device (100).
- 25 4. The fixing device (100) according to claim 3, wherein the guiding member (15) comprises at least one channel (12) shaped and dimensioned according to each sliding protrusion (11).
5. The fixing device (100) according to any one of the preceding claims, wherein the guiding member (15) comprises a flat upper abutment portion (25) for pushing by the adjustment member (17).  
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6. The fixing device (100) according to any one of the preceding claims, wherein the clamping body (10) comprises a nut (16) made of metal, through which the adjustment member (17) is passed wherein the nut (16) is monolithic with the clamping body (10).
- 35 7. The fixing device (100) according to any one of the preceding claims, wherein the guiding member (15) has a housing (19) in the form of a pear wherein the housing (19) comprises a lower portion and an upper portion with a lower cross-section than the lower portion.

8. The fixing device (100) according to any one of the preceding claims, wherein the fixing device (100) comprises a pressure member (18) for applying constant pressure, wherein the pressure member (18) is disposed between the clamping body (10) and the guiding member (15).

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9. The fixing device (100) according to any one of the preceding claims, wherein the sliding surface (23) is formed on the guide member (15) in a gradually increasing inclination such that sliding surface (23) is inclined with respect to the vertical axis (X) of the fixing device (100).

10. The fixing device (100) according to any one of the preceding claims, wherein the fixing device (100) has at least two opposite adjustable strips (13) in the form of a strip extending from the clamping body (10) in the axial direction (X) of the fixing device (100).

11. The fixing device (100) according to claim 10, wherein the fixing device (100) has a separate locking part (30) suitable to be moved on the adjustable strips (13), and a plurality of adjacent locking teeth (14) on the adjustable strips (13) to allow one-way movement of the locking part (30) towards the clamping body (10).

12. The fixing device (100) according to claim 10 or 11, wherein the fixing device (100) has coupling teeth (33) on the locking part (30) that engage with the locking teeth (14) on each of the adjustable strips (13).

13. The fixing device (100) according to claim 12, wherein each coupling teeth (33) has at least one tooth opening (36).

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14. The fixing device (100) according to claim 12 or 13, wherein each coupling teeth (33) comprises a V-shaped teeth end (34) for engaging with locking teeth (14).

15. The fixing device (100) according to any one of the preceding claims 10 to 14, wherein the locking part (30) has an engagement slot (32) shaped and dimensioned according to each adjustable strip (13) so as to allow the attachment of the locking part (30) on the adjustable strips (13).

16. The fixing device (100) according to any one of the preceding claims 10 to 15, wherein the locking part (30) has two opposing limiting protrusions (35) in order to prevent the locking part (30) from being detached after the locking part (30) is attached to the adjustable strip (13).

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17. The fixing device (100) according to claim 16, wherein each limiting protrusion (35) is disposed of in an engagement slot (32).

18. The fixing device (100) according to claim 11, wherein the locking teeth (14) are adjacent to each other and have a "V" shaped cross-section.

19. The fixing device (100) according to any one of the preceding claims 10 to 18, wherein the locking teeth (14) of the two adjustable strips (13) extend in the axial direction (X) so as to face each other and be adjacent to the fixing device (100).

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20. The fixing device (100) according to claim 19, wherein the two adjustable strips (13) have a U-shaped cross-section so that the adjustable strips (13) are monolithic with each other.

21. The fixing device (100) according to claim 11, wherein the adjustable strip (13) is made of a flexible and plastic material so that the adjustable strip (13) is suitable to be cut after the locking part (30) is slid and guided.

22. The fixing device (100) according to any one of the preceding claims, wherein the locking part (30) has a circular cross-section in order to move on the connection adaptor (20).

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23. The fixing device (100) according to any one of the preceding claims, wherein the locking part (30) has a plurality of fins (31) extending in the radial direction on the locking part (30), which ensure a better holding and centering.

24. The fixing device (100) according to any one of the preceding claims, wherein the connection adaptor (20) comprises an inner threaded portion to engage with the affixing stud (51), when used.

25. A toilet bowl including a fixing device (100) according to any one of the preceding claims.

26. A fixing kit, characterized by comprising:

a fixing device (100) according to any one of claims 1 to 24; and an affixing stud (51).

30

27. A method for wall (50) installation of a sanitary furniture item (60) with a fixing device (100) according to any one of the preceding claims 10 to 21, comprises the steps of:

abutting the clamping body (10) against an open end of a fixing device opening (61) on the sanitary furniture item (60);

5 guiding the locking part (30) on the adjustable strips (13) of the clamping body (10) until abutting another open end of the fixing device opening (61) on the sanitary furniture item (60);

cutting the adjustable strips (13) left behind the locking part (30) with a cutting tool;

attaching the connection adaptor (20) of the fixing device (100) to an affixing stud (51) anchored in the wall (50);

10 placing the sanitary furniture item (60) with the fixing device (100) to the affixing stud (51), and positioning the end portion (22) of the connection adaptor (20) within the housing (19) of the inclined sliding surface (23) to slide thereon;

15 inserting and tightening the adjustment member (17) for pushing against the guiding member (15) wherein, owing to the presence of the sliding surface (23), tightening of the adjustment member (17) generates a pulling action on the connection adaptor (20) and a pushing action of the clamping body (10) in an axial direction with respect to the affixing stud (51).

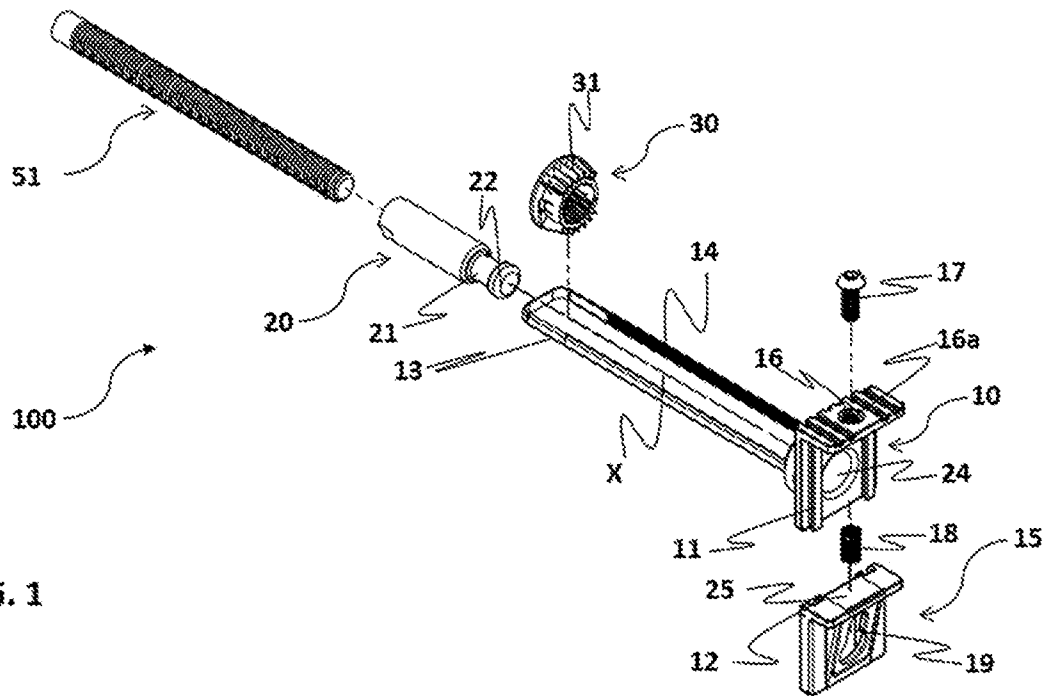


FIG. 1

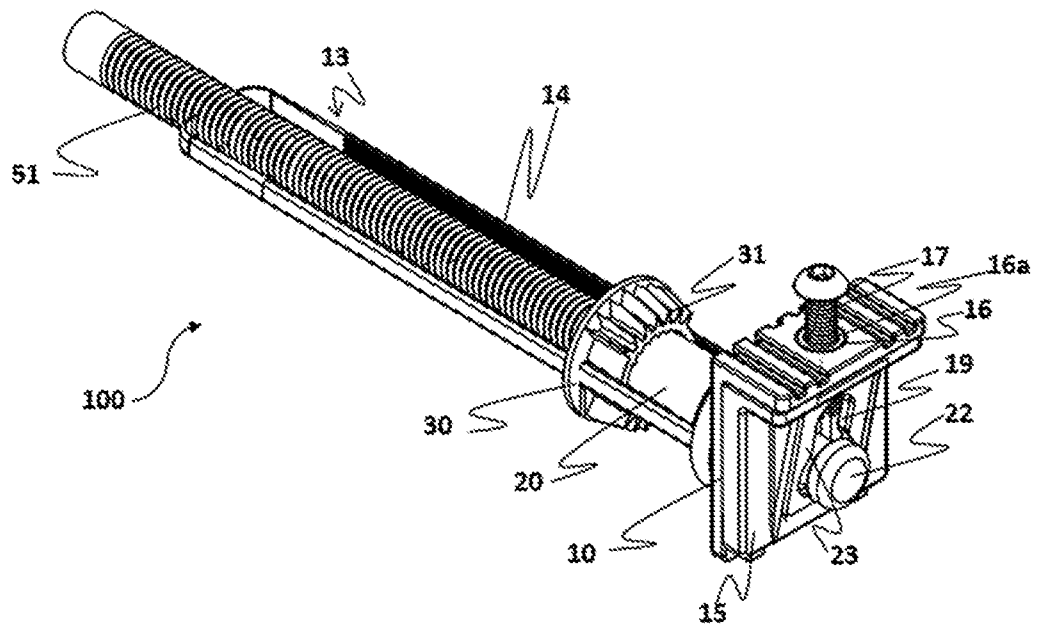


FIG. 2

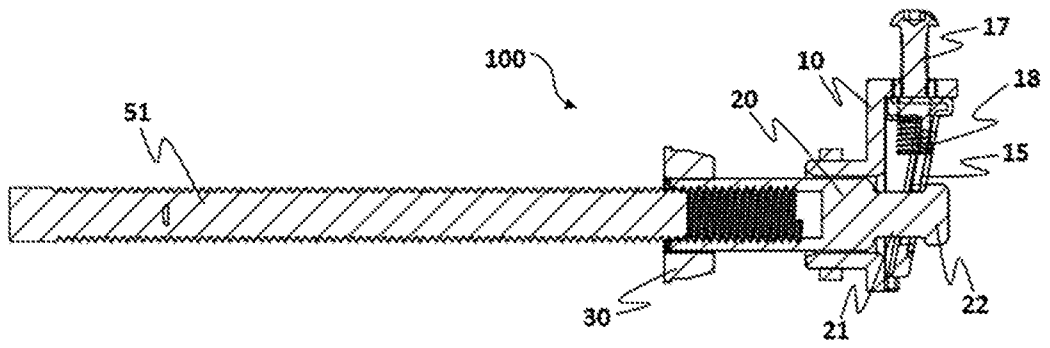


FIG. 3

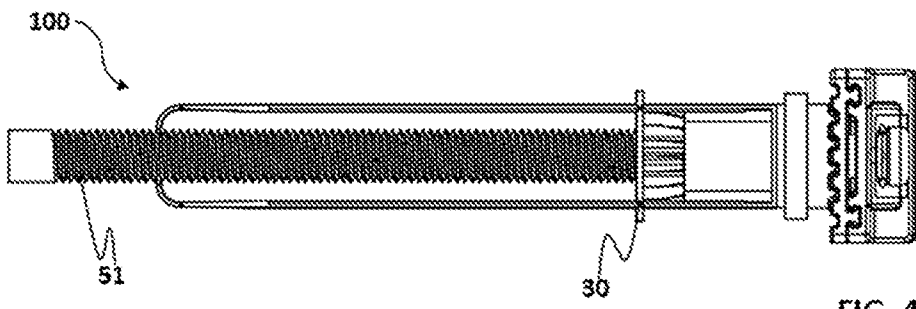


FIG. 4

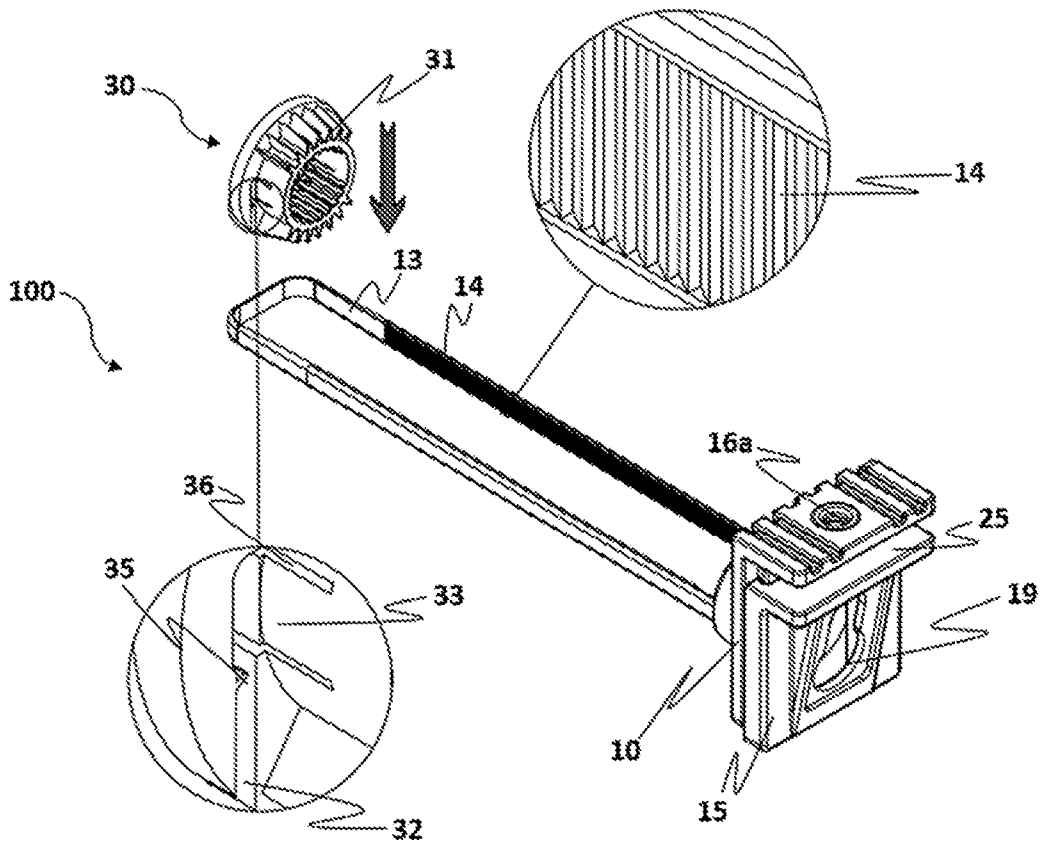


FIG. 5

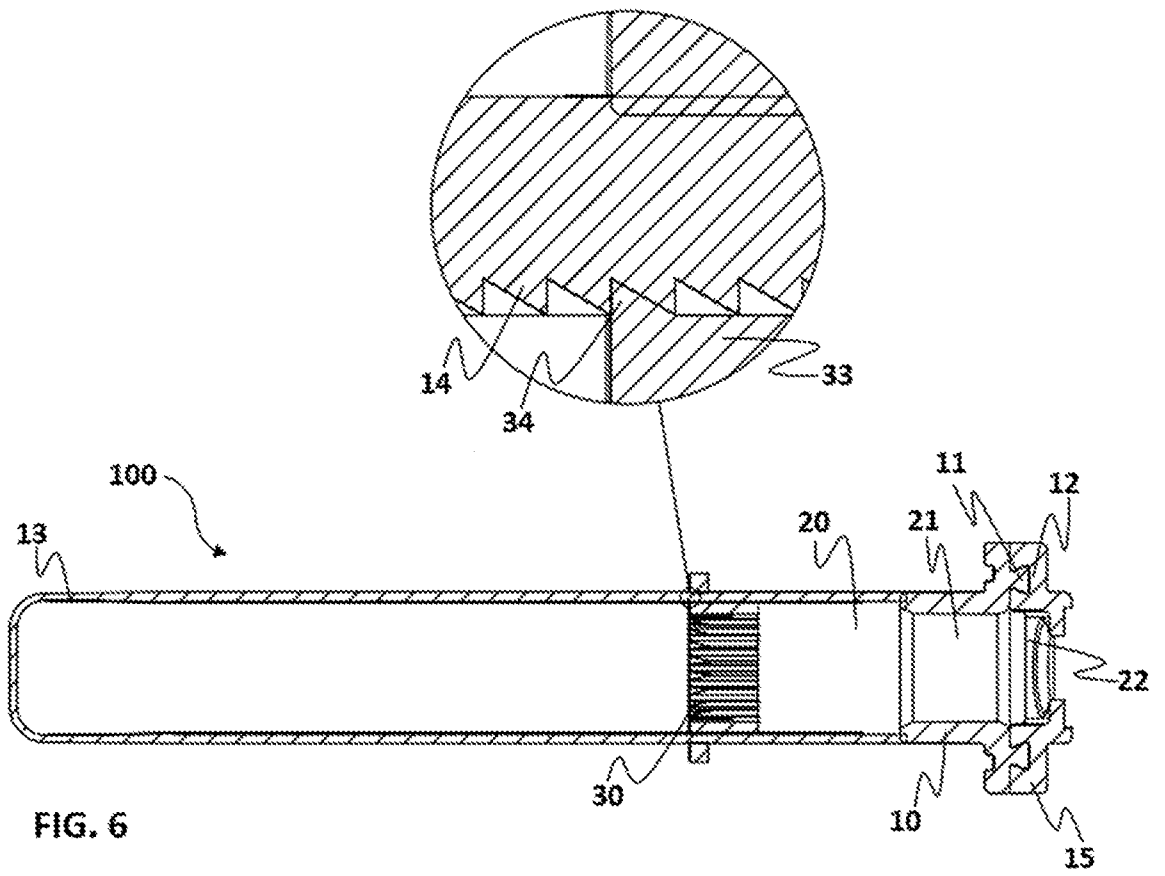


FIG. 6

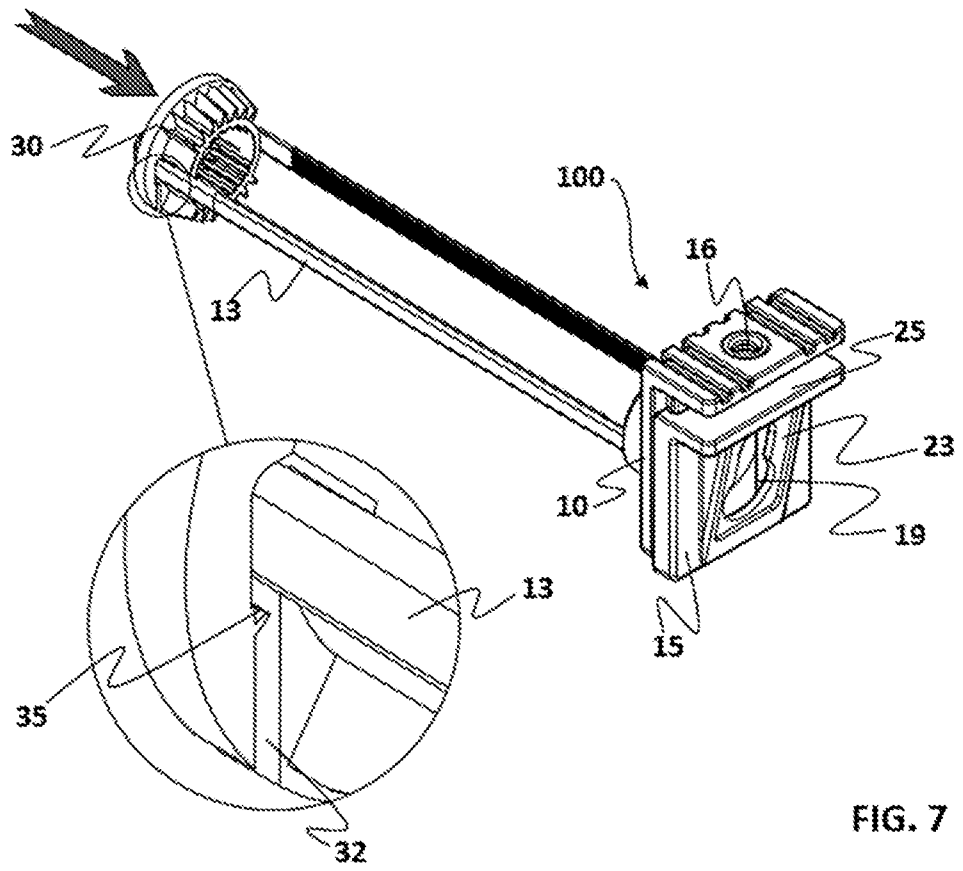


FIG. 7

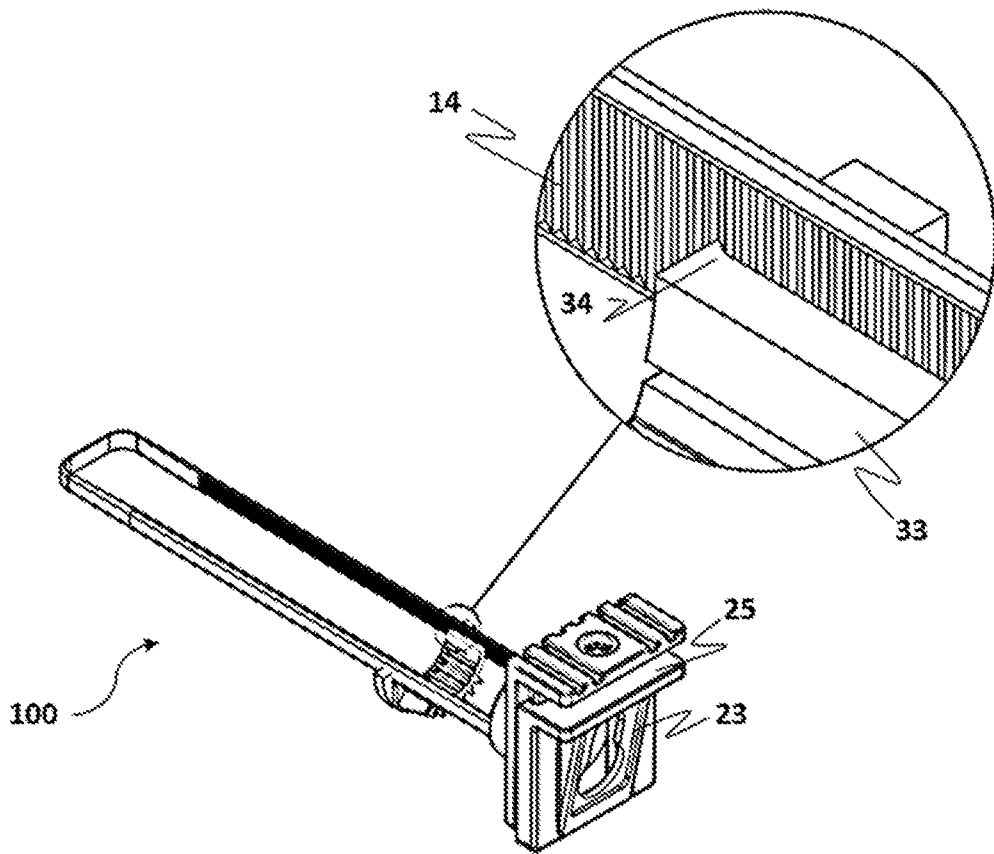


FIG. 8

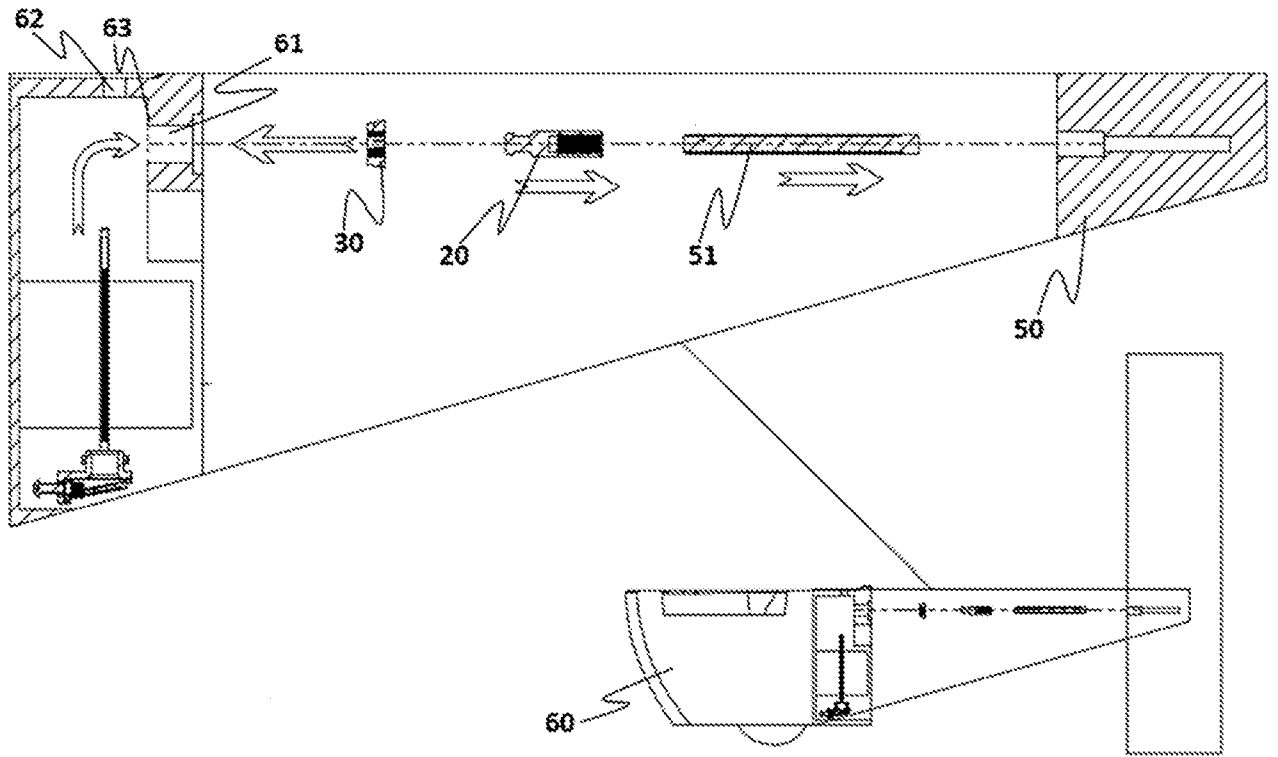


FIG. 9

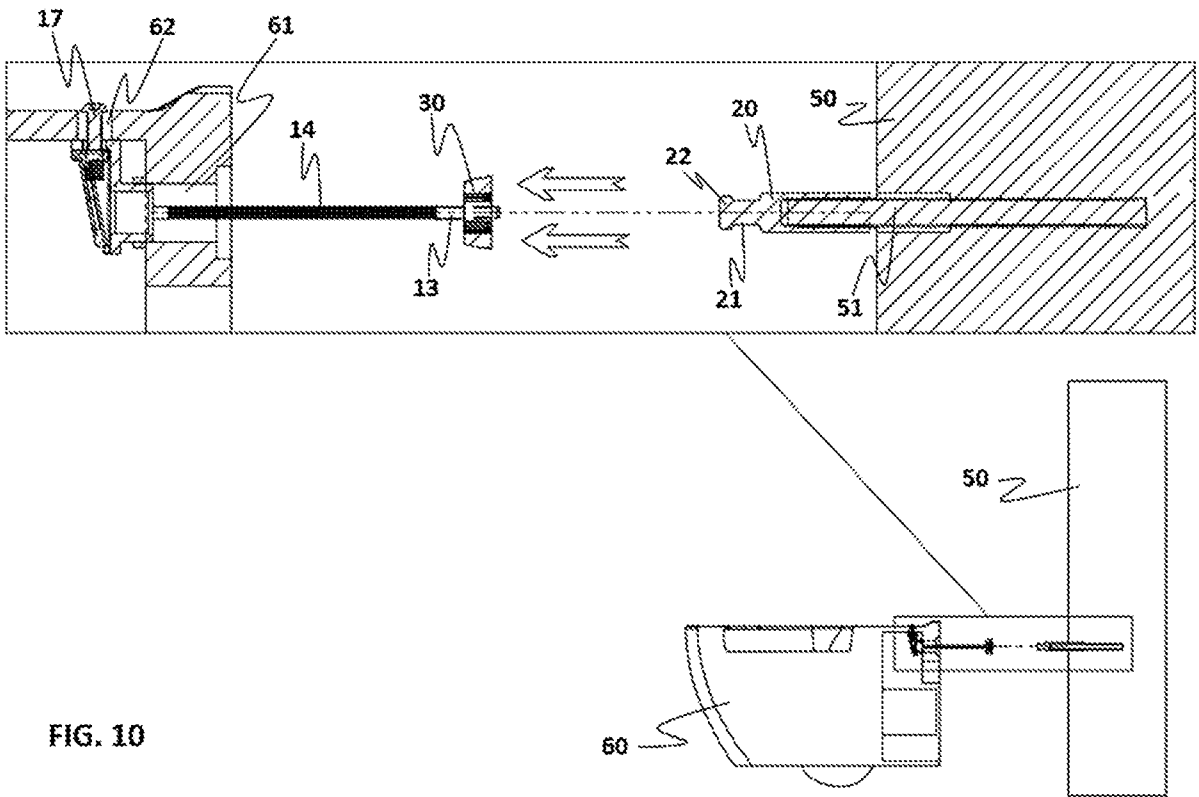


FIG. 10

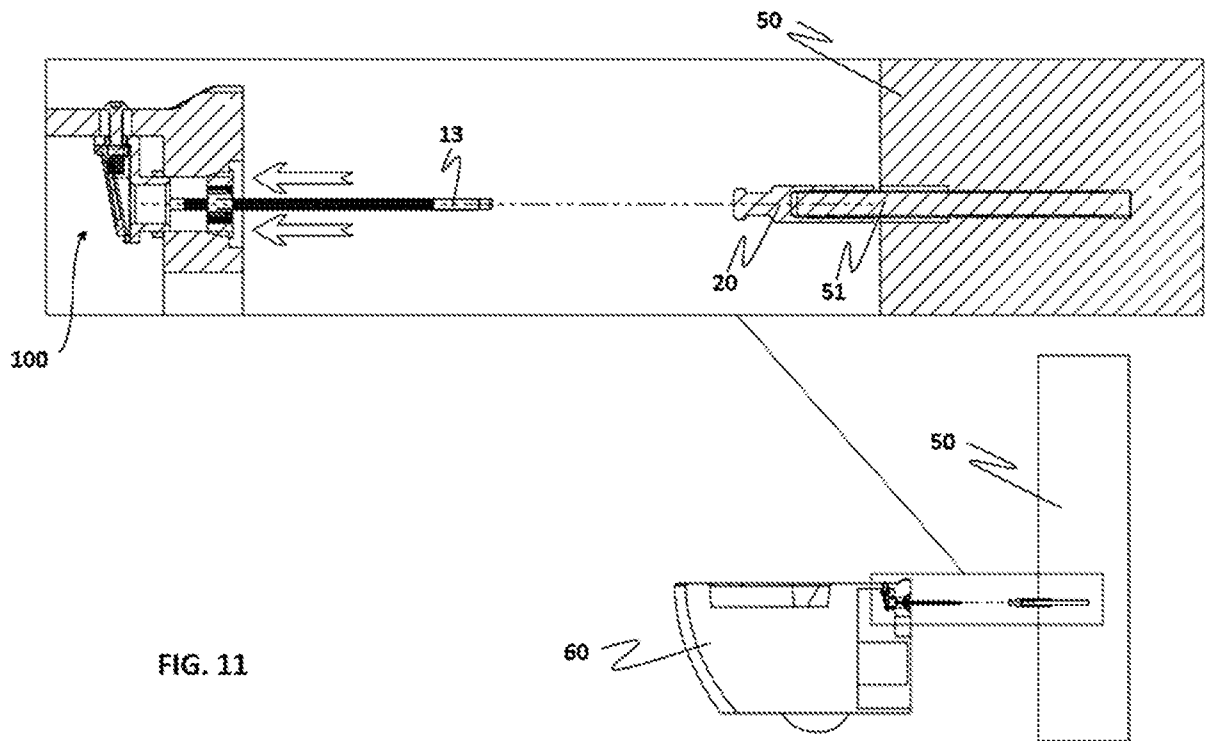


FIG. 11

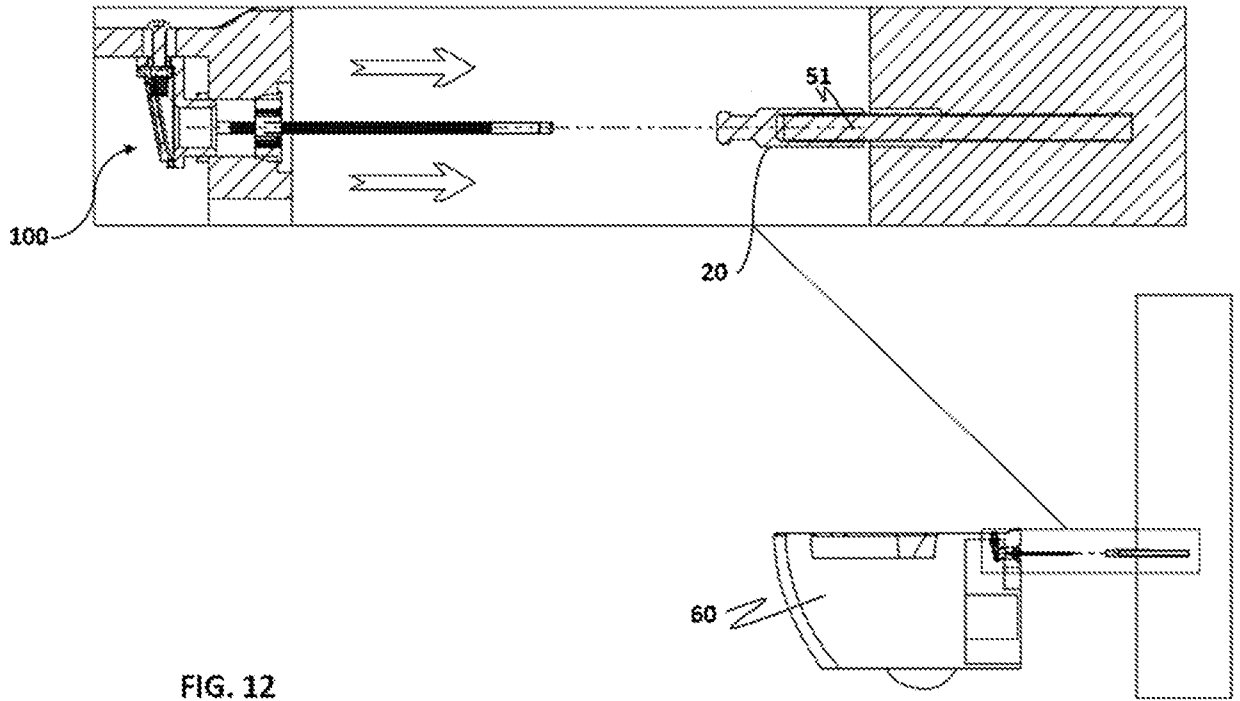


FIG. 12

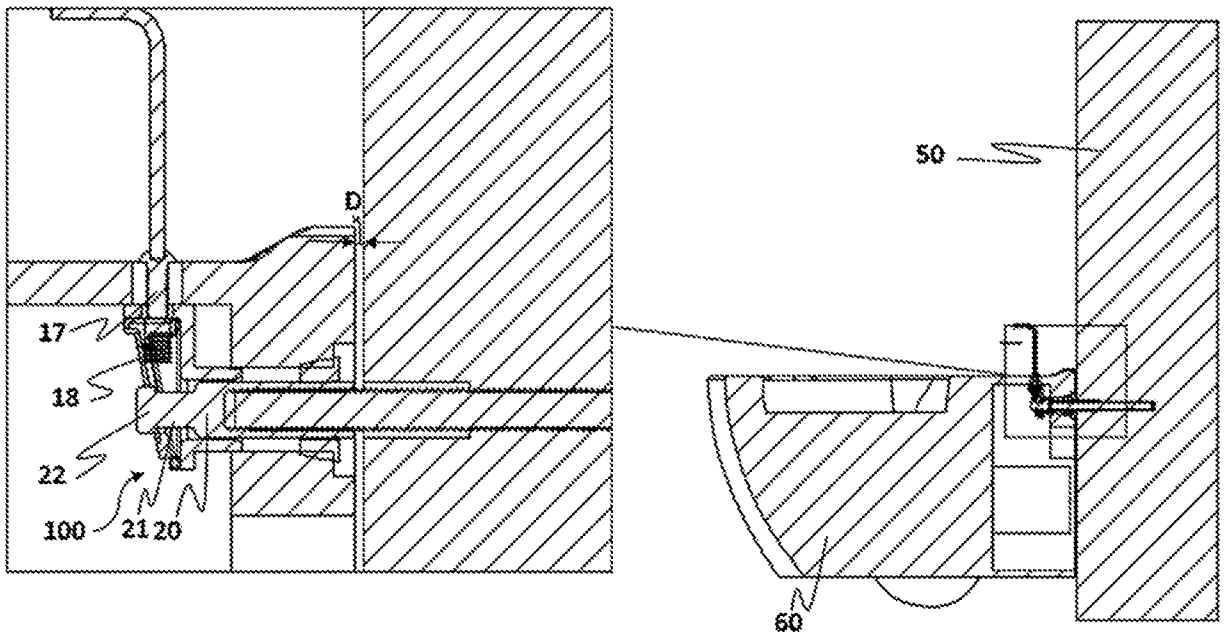


FIG. 13

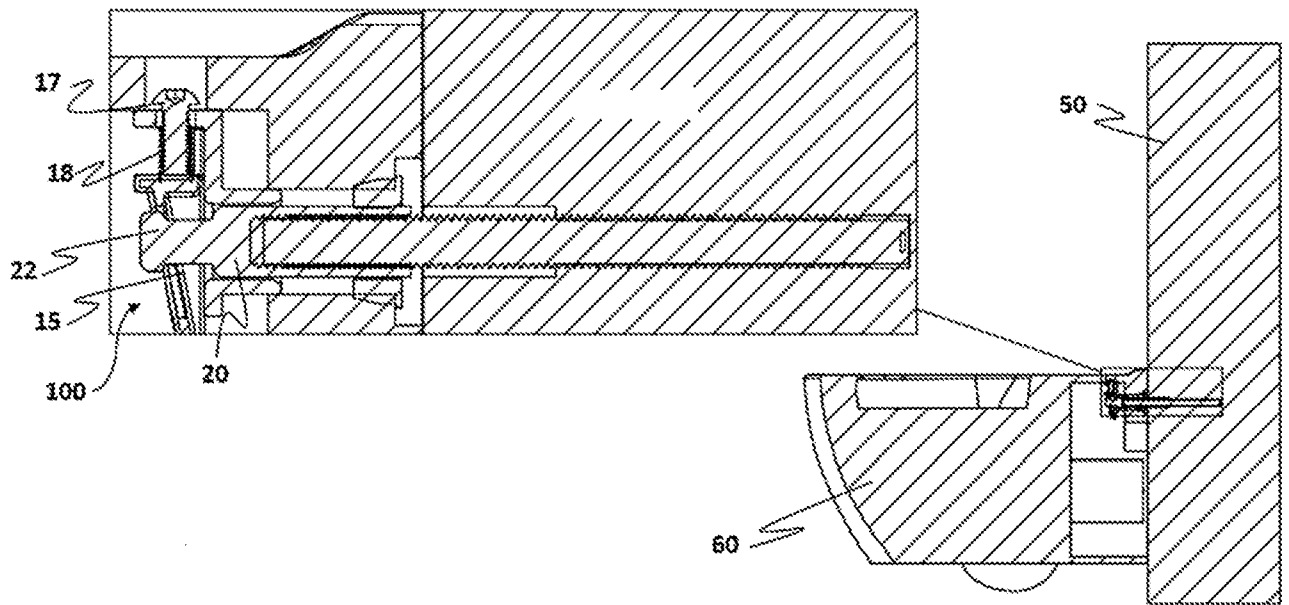


FIG. 14

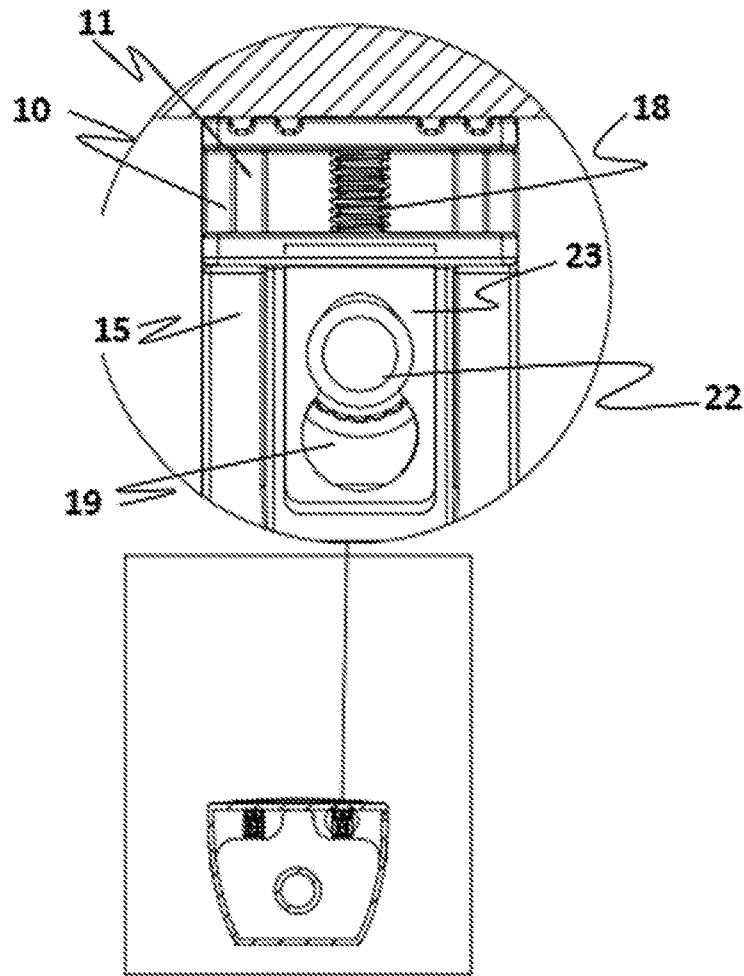


FIG. 15

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/TR2020/051459

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> E03D 11/14 (2006.01)i; E03C 1/32 (2006.01)i  According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) E03D; E03C  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2017203335 A1 (CERAVALLS PUJOL R, LOPEZ PUCHE N, PHOL R S, PUCHE N L) 30 November 2017 (2017-11-30) the whole document	1-27
A	EP 3033979 A1 (FISCHERWERKE GMBH & CO KG [DE]) 22 June 2016 (2016-06-22) the whole document	1-27
A	EP 3428353 A1 (GEBERIT INT AG [CH]) 16 January 2019 (2019-01-16) the whole document	1-27
A	EP 3211145 A1 (FISCHERWERKE GMBH & CO KG) 30 August 2017 (2017-08-30) the whole document	1-27
A	EP 1338711 A1 (FISCHER ITAL UNIPERSONALE, FISCHERWERKE GMBH & CO KG) 27 August 2003 (2003-08-27) the whole document	1-27
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search <b>14 April 2021</b>		Date of mailing of the international search report <b>14 April 2021</b>
Name and mailing address of the ISA/TR <b>Turkish Patent and Trademark Office (Turkpatent) Hipodrom Caddesi No. 13 06560 Yenimahalle Ankara Turkey</b> Telephone No. (90-312) 303 11 82 Facsimile No. +903123031220		Authorized officer  <b>Dr. Fatih TUNÇDEMİR</b>  Telephone No. +903123031266

**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members**

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**PCT/TR2020/051459**

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