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(11) **EP 3 543 413 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
25.09.2019 Bulletin 2019/39

(51) Int Cl.:
E03D 11/14 *(2006.01)* ***E03D 11/13*** *(2006.01)*
E03D 11/12 *(2006.01)*

(21) Application number: **19164451.7**

(22) Date of filing: **21.03.2019**

(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
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **21.03.2018 IT 201800003839**

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(54) **SANITARY FIXTURE INSTALLATION STRUCTURE, IN PARTICULAR FOR URINALS**

(57) An installation structure (1) for sanitary fixtures, in particular urinals, extends substantially along a longitudinal axis (X) and comprises a single central upright (2) extending along the axis (X), and at least one crosspiece (3) transversal to the upright (2); the upright (2) being provided with an axial length adjusting system (4), which allows the length of the upright (2) to be adjusted axially (X) along the axis.

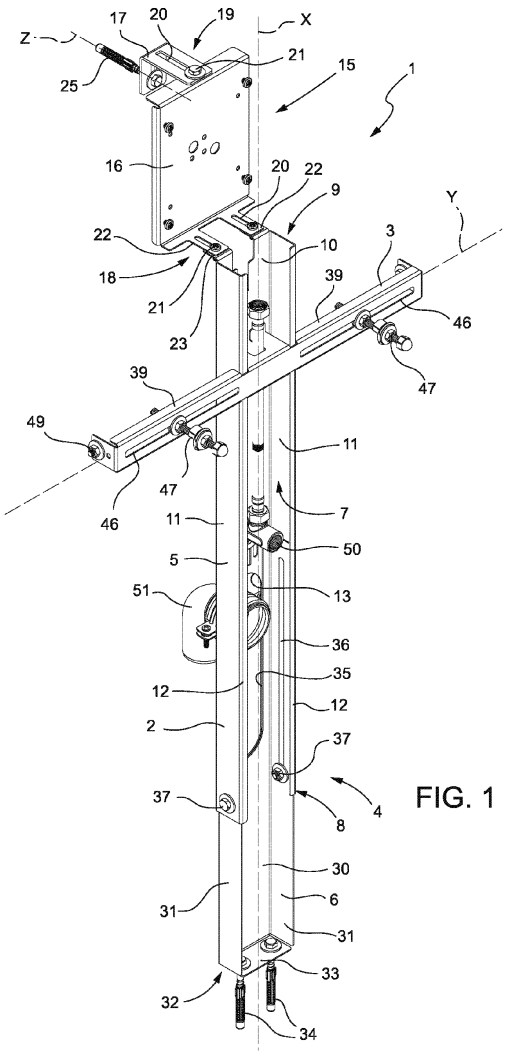

FIG. 1

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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This patent application claims priority from Italian patent application no. 102018000003839 filed on 21/03/2018.

TECHNICAL FIELD

[0002] The present invention relates to a sanitary fixture installation structure, in particular for urinals.

BACKGROUND ART

[0003] It is known that urinals, like other sanitary fixtures, having a bowl, are often installed by means of a built-in installation structure; a typical built-in installation structure for sanitary fixtures generally comprises a metal frame, fixed to which, besides the bowl of the sanitary fixture and the anchors for fixing the frame to a support wall, are also various structural elements and functional components, such as a flush cistern, tubes, controls, etcetera.

[0004] The frames of the installation structures, in particular those specifically designed to support urinals, are normally formed by a pair of vertical uprights provided with support feet, which rest on the floor, and by crosspieces transversal to the uprights, which support the various elements and sanitary components.

[0005] This type of structure is relatively bulky and heavy, being formed by several pieces, also of considerable dimensions.

[0006] Furthermore, to install the sanitary fixtures to walls of a different type (for example, in cement, masonry, plasterboard, etcetera) it is necessary to make use of special installation structures, which differ not only according to the sanitary fixture to be installed, but also on the type of wall on which the sanitary fixture must be installed.

[0007] The need to comprise a plurality of different structures significantly complicates the management, both of the production activity and the logistics, with consequent elevated costs. In fact, it is necessary to produce, store and manage different pieces.

[0008] Currently, an installation structure for urinals is not available, which allows the installation of different types of urinals in different types of wall.

DISCLOSURE OF INVENTION

[0009] It is an object of the present invention to provide an installation structure for sanitary fixtures, specifically for urinals, which allows the problems highlighted above to be overcome.

[0010] In particular, it is an object of the invention to provide a universal installation structure, which is adapted to be used not only with different sanitary fixtures, but also and above all, which allows the installation of sanitary fixtures on different types of walls.

[0011] It is a further object of the invention to provide an installation structure, which allows the volume and weight of known structures to be reduced, so that they are particularly simple, compact and light and nonetheless fully efficient and functional.

[0012] Thus, the present invention relates to an installation structure for sanitary fixtures, in particular for urinals, as defined in the appended claim 1.

[0013] Further preferred characteristics of the installation structure according to the invention are defined in the dependent claims.

[0014] The installation structure according to the invention is particularly simple, compact and light, allowing volumes and weights to be reduced with respect to the known structures, nonetheless proving to be fully efficient and functional.

[0015] The installation structure according to the invention allows different adjustments, so as to adapt the installation structure to different applications.

[0016] In particular, the installation structure according to the invention allows installation on different types of wall: one single installation structure is suitable for installation on walls in cement, masonry, plasterboard, prefabricated technical structures, etcetera.

[0017] The installation structure according to the invention also allows the mounting of different sanitary fixtures (urinals), being shaped so as to receive and support urinals having different shapes, sizes and fastening elements.

[0018] The installation structure according to the invention also allows all of the accessories needed for installation of the urinal to be mounted, thus proving to be highly versatile.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] Further features and advantages of the present invention will become clear from the following description of a non-limiting embodiment, given by way of example, with reference to the accompanying drawings, wherein:

- Figures 1 and 2 are a perspective front-side view and a perspective rear-side view respectively of an installation structure for sanitary fixtures, in particular for urinals, according to the invention;
- Figure 3 is an exploded perspective view of the installation structure in Figure 1.

BEST MODE FOR CARRYING OUT THE INVENTION

[0020] In the appended Figures, a built-in installation structure for sanitary fixtures, in particular urinals, is globally indicated with 1.

[0021] The installation structure 1 substantially extends along a central longitudinal axis X, which is vertical in a normal configuration of use, defining a central sym-

metry and centreline axis of the structure 1, and comprises a single central upright 2, extending along the axis X and thus vertical in use; and at least one crosspiece 3 transversal to the upright 2 and extending along a transversal axis Y substantially perpendicular to the axis X.

[0022] The upright 2 is positioned along the axis X and thus in a central position in the structure 1.

[0023] The upright 2 is provided with an axial length adjusting system 4, which allows the length of the upright 2 to be adjusted axially along the axis X.

[0024] For example, the upright 2 has a telescopic structure, comprising a pair of elements 5, 6 aligned along the axis X, inserted one in the other and coupled telescopically to form the adjusting system 4.

[0025] In greater detail, the upright 2 comprises: a base element 5, internally provided with a longitudinal seat 7 along the axis X; and a foot element 6, partially inserted in the seat 7 and axially slidable with respect to the element 5.

[0026] For example, the elements 5, 6 are defined by respective metal profiles.

[0027] In the illustrated non-limiting example, the elements 5, 6 have a substantially C shaped cross-section.

[0028] The element 5 extends axially between a lower axial end 8 and an upper axial end 9 and comprises a rear wall 10 and a pair of sides 11, which extend from respective longitudinal sides of the wall 10 and are substantially orthogonal to the wall 10.

[0029] Advantageously, the sides 11 have respective free edges 12 folded towards each other, substantially facing the wall 10.

[0030] The seat 7 is delimited by the wall 10 and by the sides 11 of the element 5 and is partially closed at the front by the edges 12.

[0031] The wall 10 has a through opening 13 elongated longitudinally along the axis X, positioned in a lower region (close to the lower end 8) of the element 5 and preferably delimited by a closed peripheral edge.

[0032] The wall 10 also has a pair of side-by-side through longitudinal slots 14, parallel to the axis X and positioned in an upper region (close to the upper end 9) of the element 5, above the opening 13.

[0033] The upper end 9 of the element 5 is provided with an adjustable head 15, shaped to adapt to different thicknesses and types of walls and also, if necessary, to receive and support a flow meter or another device for serving the sanitary fixture.

[0034] In particular, the head 15 comprises a plate 16, substantially parallel to the axis X, and a bracket 17, which extends from the plate 16, substantially orthogonal to the plate 16 and the axis X along a front axis Z, perpendicular to the plate 16.

[0035] The plate 16 is connected to the upper end 9 of the element 5 and the bracket 17 by means of respective adjustable fastening devices 18, 19, which allow the position along the axis Z of the plate 16 with respect to the element 5 and, of the bracket 17 with respect to the plate 16, respectively, to be adjusted independently.

[0036] For example, each fastening device 18, 19 comprises at least one eyelet 20 elongated parallel to the axis Z and engaged by a respective locking member 21.

[0037] In the example shown, the plate 16 has a pair of arms 22, which extend from the plate 16 parallel to the axis Z, provided with respective eyelets 20; respective locking members 21 (for example, bolts) engage the eyelets 20 and connect the arms 22 of the plate 16 to respective perforated appendages 23 positioned at the upper end 9 of the element 5.

[0038] The bracket 17 is, for example, L-shaped and has two orthogonal arms, respectively provided with an eyelet 20 elongated along the axis Z and engaged by a locking member 21 (for example, a bolt), which connects the bracket 17 to the plate 16, engaging a hole in the plate 16; and with a through opening 24, which receives an anchoring member 25 for fastening the installation structure 1 to an outer wall.

[0039] The element 6 comprises a rear wall 30, facing the wall 10 of the element 5, and a pair of sides 31, which extend from respective longitudinal sides of the wall 30 and are substantially orthogonal to the wall 30, facing respective sides 11 of the element 5.

[0040] Advantageously, at a longitudinal end 32, lower in use, the element 6 has a support plate 33 perpendicular to the wall 30 and sides 31. The support plate 33 has anchoring members 34 (for example screws) for fastening to an outer surface, for example to a floor.

[0041] The element 6 is partially housed in the seat 7 inside the element 5 and protrudes axially from the seat 7 outside the element 5, beyond the end 8 of the element 5, with the longitudinal end 32 provided with the support plate 33.

[0042] The wall 30 has a through opening 35 elongated longitudinally along the axis X, which is preferably (but not necessarily) open at the top (i.e. at an upper end of the element 6). The opening 35 is shaped so as to overlap the opening 13 of the element 5, at least partially, when the element 6 is housed in the seat 7 of the element 5.

[0043] The sides 31 of the element 6 are provided with respective longitudinal through slits 36, parallel to the axis X.

[0044] The adjusting system 4 comprises locking members 37, which engage the elements 5, 6 for locking the element 6 in a predetermined position with respect to the element 5.

[0045] In particular, the locking members 37 (for example, bolts) are inserted through respective holes 38 made in the sides 11 and they engage respective slits 36 of the element 6.

[0046] The crosspiece 3 extends transversely, in particular, substantially perpendicular, to the upright 2 and protrudes laterally from opposite sides of the upright 2 (and thus of the axis X) with respective opposite side portions 39 positioned on opposite sides of the upright 2.

[0047] The crosspiece 3, for example, is also formed by a metal profile, having a substantially C-shaped cross-section.

[0048] The crosspiece 3 is connected to the upright 2 by means of a position adjusting system 40, which allows the position of the crosspiece 3 to be varied along the upright 2 (along the axis X) and the crosspiece 3 to be fastened to the upright 2 in a predetermined position.

[0049] In particular, the crosspiece 3 has a central coupling seat 41, positioned along the axis X and fitted to the upright 2, and a pair of arms 42, which extend from the crosspiece 3, in particular, from the coupling seat 41, and engage respective slots 14 of the element 5 by means of respective locking members 43 (for example, bolts), cooperating with the upright 2 for locking the crosspiece 3 on the upright 2.

[0050] The arms 42 also delimit an auxiliary seat 44 configured to receive a pipe or another service component of the sanitary fixture.

[0051] Then, the crosspiece 3 has a pair of transverse slits 46, extending along the crosspiece 3 (and thus parallel to the axis Y and orthogonal to the axis X) on opposite sides of the coupling seat 41 and positioned, in particular, on respective side portions 39.

[0052] The slits 46 are designed to receive respective support members 47, arranged through respective slits 46 and intended to support the sanitary fixture to be mounted on the installation structure 1, in particular a bowl of the urinal; the support members 47 are sliding in the respective slits 46, to vary the position of the support members 47 along the axis Y and they are provided with respective locking members 48, for example, threaded members, for being locked on the crosspiece 3 in the desired position.

[0053] The crosspiece 3 is also provided with lateral anchoring members 49, positioned at respective opposite ends of the crosspiece 3, in particular, on respective end plates, which are facing and parallel to each other and to respective sides 11 of the element 5 of the upright 2, for fastening the installation structure 1 to an outer wall.

[0054] The installation structure 1 is configured to receive and/or support, besides the sanitary fixture bowl (by means of the support members 47) also auxiliary components, which serve the sanitary fixture, such as, for example, components for commanding and controlling the sanitary fixture and hydraulic lines, which connect the sanitary fixture to an external supply network (to supply water to the sanitary fixture) and to an outer drainage pipe (for discharging the water from the sanitary fixture).

[0055] In the illustrated example, the installation structure 1 supports an inlet connection 50, which is connected, in use, to a water inlet pipe to take the water to the sanitary fixture, and an outlet connection 51, connected, in use, to a drain of the sanitary fixture.

[0056] The inlet connection 50 is provided, for example, with a protection and support element 52, for example, in rubber, which is adjustably connected to the upright 2. For example, the element 52 is connected to the upright 2 by means of a pair of locking members 53 (bolts), which engage respective slots 14.

[0057] The outlet connection 51, for example, in the shape of an elbow, is housed through the opening 13 and the opening 35, overlapping each other; the position of the outlet connection 51 is adjustable along the axis X, the outlet connection 51 being slidable in the openings 13, 35 and supported by a support group 54, which is adjustable in height, i.e. parallel to the axis X. For example, the support group 54 comprises a collar, which hooks to a horizontal portion of the outlet connection 51, and a vertical stem, which is adjustable (for example, by means of a threaded device), which connects the collar to a plate 55 fixed to the upright 2, in particular, to the wall 10. Advantageously, the upright 2 has two plates 55 spaced along the axis X, for example, at axially opposite ends of the opening 13.

[0058] Advantageously, each plate is formed by a portion of the wall 10 folded orthogonally to the wall 10. The plate 55 is delimited by a perimeter cut in the wall 10 and joined to the wall 10 on a root side, so as to be easily folded in the position of use when necessary. Figure 2 shows a plate 55, (above the opening 13) which is not yet folded in the use position and consequently parallel to the wall 10, and a plate 55 (below the opening 13), which is folded with respect to the wall 10 in the use position.

[0059] In use, the installation structure 1 allows a plurality of adjustments, in particular:

- adjustment to adapt to different types and/or thicknesses of the wall in which the installation structure is mounted, by means of the head 15 and the fastening devices 18, 19;
- adjustment in height of the flow meter, adjusting the length (height) of the upright 2 and consequently the position of the head 15;
- adjustment in height of the water inlet, adjusting the position of the inlet connection 50 along the axis X;
- adjustment in height of the drain, adjusting the position of the outlet connection 51 along the axis X;
- adjustment in height, by means of the axial length adjusting system 4 of the upright 2, which allows the height of the element 6 and the overall height of the installation structure 1 to be varied;
- adjustment of the fixing height of the sanitary fixture, by means of the position adjusting system 40, which allows the position of the crosspiece 3 along the upright 2 to be varied;
- adjustment of the fixing width of the sanitary fixture, adjusting the position of the support members 47 in the respective slits 46.

[0060] Finally, it is understood that modifications and variations can be made to the installation structure described and illustrated herein, which do not depart from the scope of the appended claims.

Claims

1. An installation structure (1) for sanitary fixtures, in particular urinals, extending substantially along a central longitudinal axis (X), defining a central symmetry and centreline axis of the structure (1), and comprising a single central upright (2), extending along the axis (X) and positioned along the axis (X) in a central position in the structure (1), and at least one crosspiece (3) transversal to the upright (2) and protruding laterally on opposite sides of the upright (2) with respective opposite side portions (39) positioned on opposite sides of the upright (2); the upright (2) being provided with an axial length adjusting system (4), configured to axially adjust the length of the upright (2) along the axis (X); and wherein the crosspiece (3) is connected to the upright (2) by means of a position adjusting system (40) configured to vary the position of the crosspiece (3) along the upright (2) and along the axis (X) and fix the crosspiece (3) to the upright (2) in a predetermined position.

2. An installation structure according to claim 1, wherein the upright (2) has a telescopic structure, comprising a pair of elements (5, 6) aligned along the axis (X), inserted one in the other and coupled telescopically to define the adjusting system (4).

3. An installation structure according to claim 2, wherein the upright (2) comprises: a base element (5), internally provided with a longitudinal seat (7) along the axis (X); and a foot element (6), partially inserted in the seat (7) and axially slidable with respect to the base element (5); the adjusting system (4) further comprising locking members (37), which engage the elements (5, 6) for locking the foot element (6) in a predetermined position along the axis (X) with respect to the base element (5).

4. An installation structure according to claim 3, wherein the elements (5, 6) are provided with respective through openings (13, 35) elongated longitudinally along the axis (X) and shaped so as to overlap at least partially when the foot element (6) is housed in the seat (7) of the base element (5).

5. An installation structure according to one of the preceding claims, comprising an adjustable head (15), positioned at a top end (9) of the upright (2) and comprising a plate (16), substantially parallel to the axis (X), and a bracket (17), projecting from the plate (16) and substantially perpendicular to the plate (16) and the axis (X) along a front axis (Z), perpendicular to the plate (16); the plate (16) being connected to the upright (2) and the bracket (17) by means of respective adjustable fastening devices (18, 19), configured to independently adjust the position along the front axis (Z) of the plate (16) with respect to the base element (5) and of the bracket (17) with respect to the plate (16), respectively.

6. An installation structure according to one of the preceding claims, wherein the position adjusting system (40) comprises a pair of side-by-side through longitudinal slots (14), formed on the upright (2) and parallel to the axis (X); and a pair of arms (42) which project from the crosspiece (3) and engage respective longitudinal slots (14) by means of respective locking members (43), cooperating with the upright (2) for locking the crosspiece (3) on the upright (2).

7. An installation structure according to claim 6, wherein the arms (42) delimit an auxiliary seat (44) configured to receive a pipe or another service component.

8. An installation structure according to one of the preceding claims, wherein the crosspiece (3) has a central coupling seat (41) positioned along the axis (X) and fitted to the upright (2); the upright (2) being slidable in the coupling seat (41) along the axis (X).

9. An installation structure according to one of the preceding claims, wherein the crosspiece (3) has a pair of transverse slits (46), extending along the crosspiece (3) on opposite sides of the coupling seat (41) and shaped to receive respective support members (47), arranged through respective transverse slits (46) and intended to support a sanitary fixture bowl to be mounted on the installation structure (1).

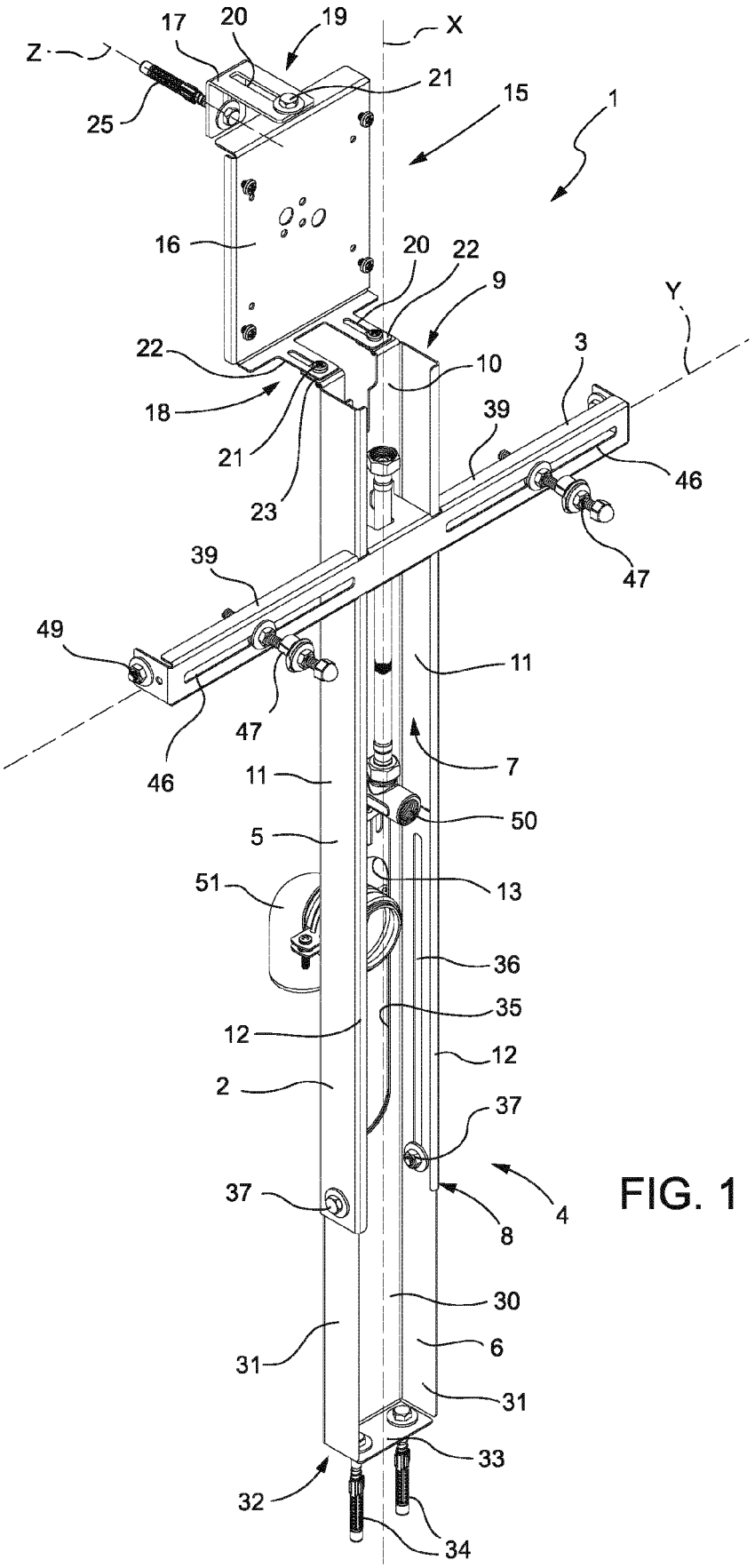
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FIG. 1

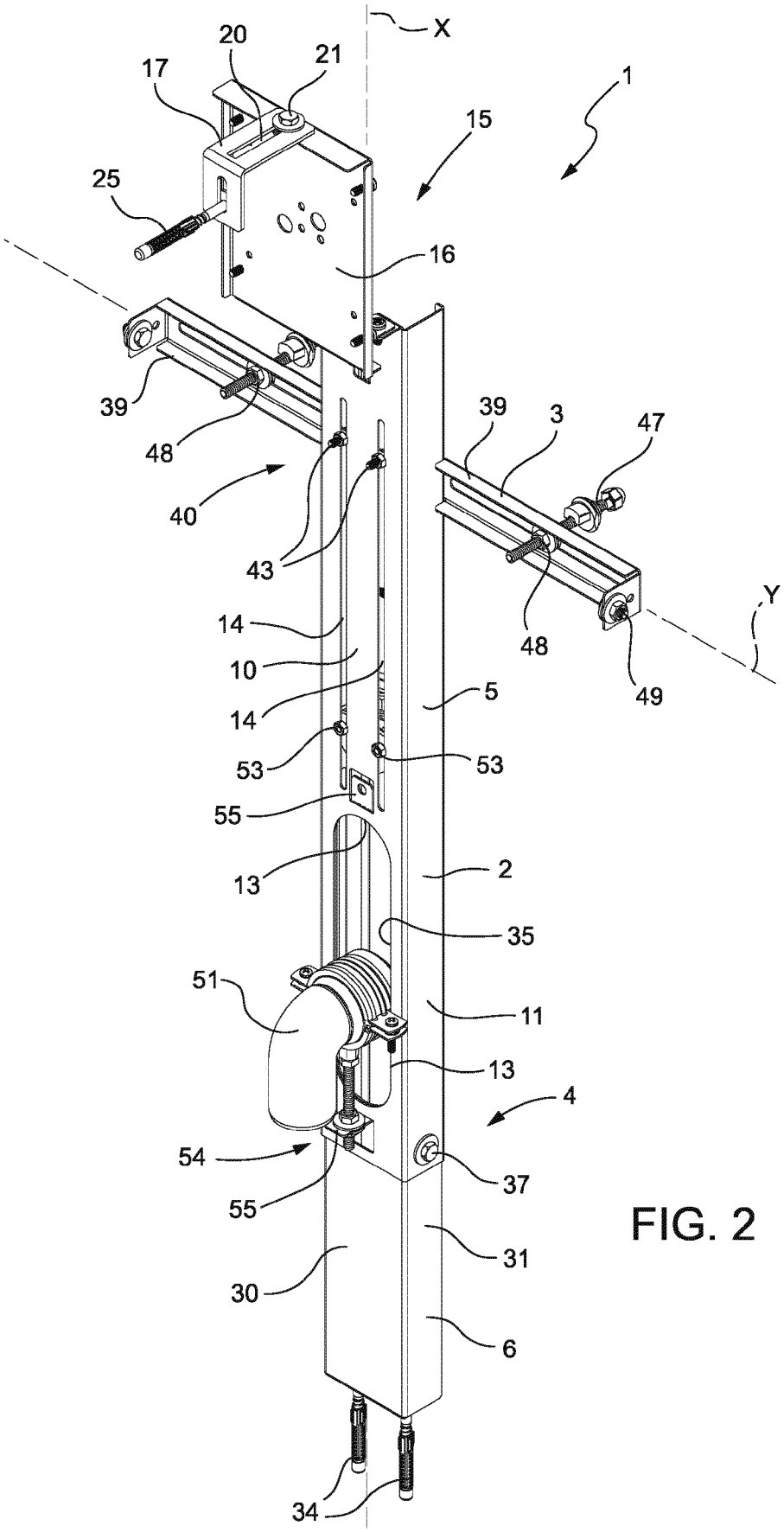
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FIG. 2

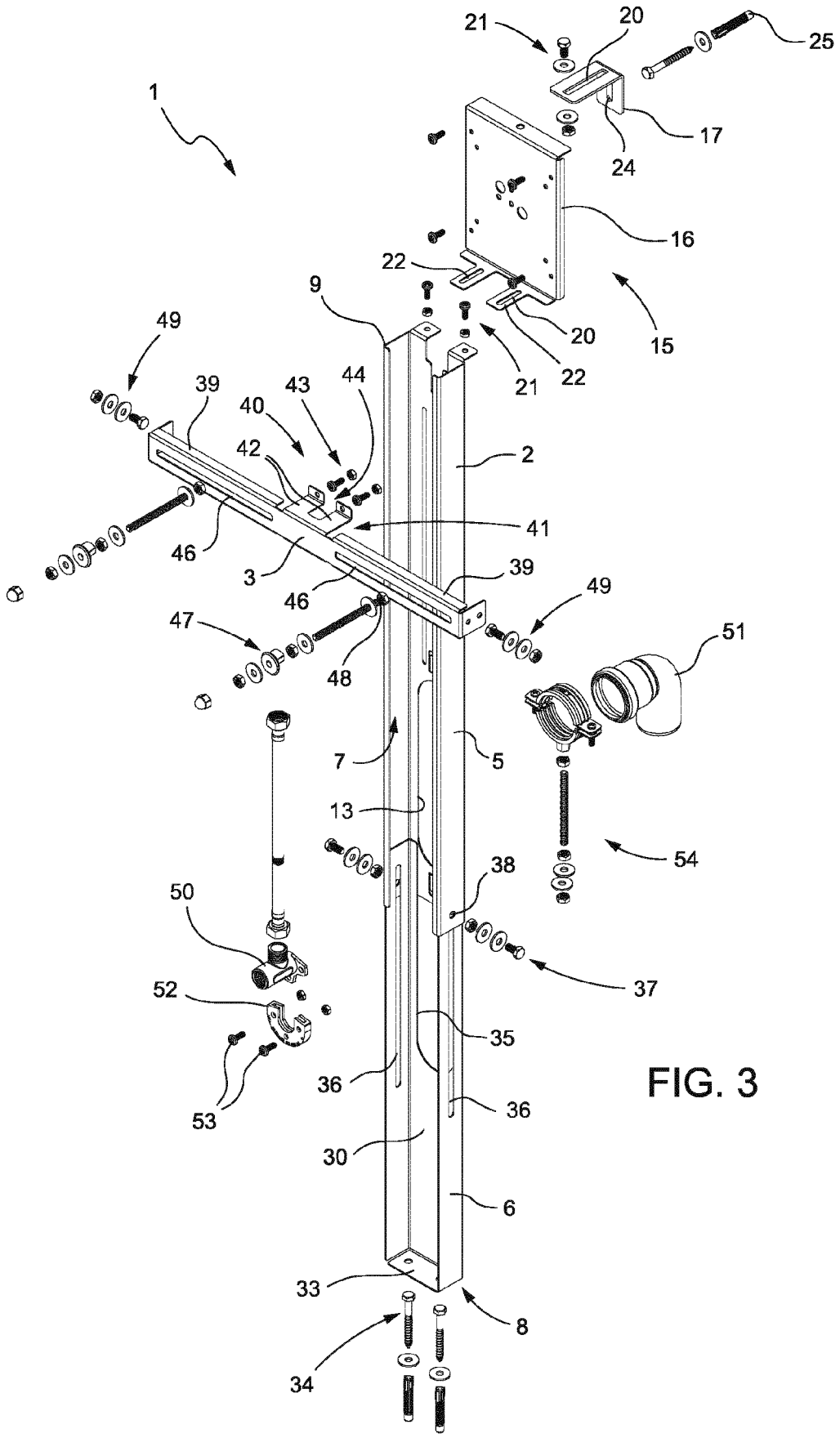
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FIG. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 19 16 4451

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	2 July 2019	Isailovski, Marko

CATEGORY OF CITED DOCUMENTS

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