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(54) **DEVICE FOR FASTENING AND LEVELLING SANITARY FITTINGS ONTO WALLS**

(57) The object of the invention is a device to fasten and level sanitary fittings onto walls (8), comprising: a laminar body (1), which comprises a front side and a rear side (1.2); two profiles (7) which are part of the laminar body (1); fastening orifices (2, 3) to fasten the device to the wall (8), comprising: a central orifice (2), lateral orifices (3), levelling means (5, 6) arranged in the laminar body (1), each of which being individually adjustable throughout its length with respect to the rear side (1.2) and providing support against the wall (8); such that the device has fastening and levelling features with respect to the three coordinate axes (X, Y, Z) by means of the combined adjustment of the fastening orifices (2, 3) and the levelling means (5, 6).

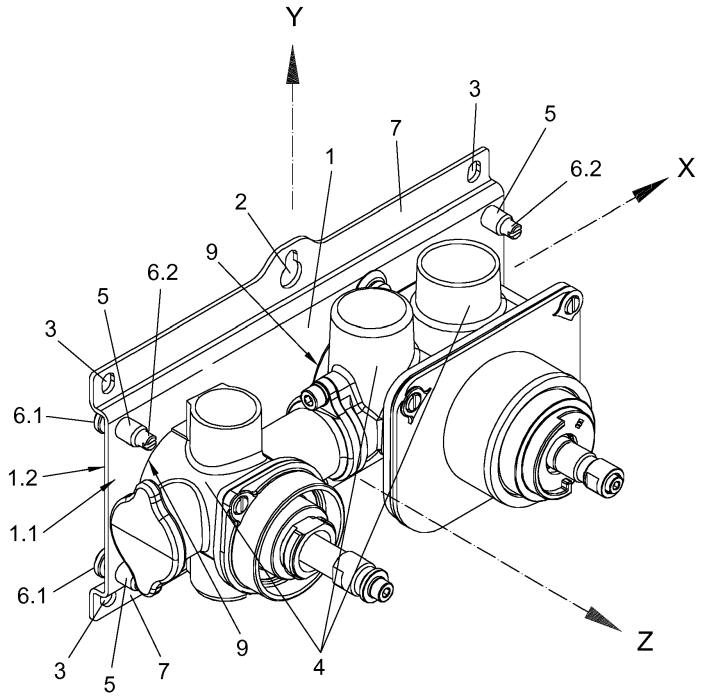

FIG. 2

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Description

OBJECT OF THE INVENTION

[0001] This invention refers to a device for fastening and levelling sanitary fittings onto walls with respect to the three coordinate axes.

BACKGROUND OF THE INVENTION AND TECHNICAL PROBLEM TO BE SOLVED

[0002] It is of utmost importance that upon fastening or installing sanitary fittings on walls they are arranged forming a desired angle with respect to each of the three coordinate axes (X, Y, Z). This is so because these sanitary fittings are joined or connected to additional fittings that provide continuity to the plumbing installation, etc.

[0003] In this way, if the sanitary fittings are not fastened in the desired angle, the installation of subsequent fittings is thus undesirably restricted. The final result may not be successful when tile lines (tile joints), both vertical and horizontal, do not match.

[0004] Usually, each wall onto which sanitary fittings are to be installed creates a different angle with respect to a vertical plane. In addition, walls usually comprise irregularities that make the fastening of said fittings with the desired arrangement even more complicated.

[0005] Nowadays supports for the appropriate levelling of the sanitary fittings with respect to the three coordinate axes (X, Y, Z) according to a desired angle are known. However, a problem with these supports is that they comprise complex levelling systems which, depending on the space available, sometimes complicate even more the correct fastening of the sanitary fittings. Another problem of said supports is that they also entail an additional cost due to their complex manufacturing, assembly and installation.

DESCRIPTION OF THE INVENTION

[0006] With the aim of attaining these goals and solving the different technical problems mentioned so far, apart from others described further on, the present invention describes a device for fastening and levelling sanitary fitting onto walls, comprising a laminar body, which in turn comprises a front side to be arranged facing the sanitary fittings fastened to the laminar body; and a rear side to be arranged facing the wall.

[0007] An important feature of the present invention is that the device additionally comprises: two profiles, one in an upper edge and another one in a lower edge of the laminar body based on how the device is fastened to the wall, both profiles being arranged in a displaced plane relative to the laminar body towards the rear side; fastening orifices to fasten the device to the wall, which comprise a central orifice arranged in a middle point of the longitudinal extension of the profile of the upper edge and lateral orifices at least in the profile of the upper edge; and levelling means arranged in the laminar body, each of which being individually adjustable throughout its length with respect to the rear side and providing support against the wall.

[0008] In this way, it is possible to fasten and level the device with respect to the three coordinate axes by means of the combined adjustment of the fastening orifices and levelling means, the fastening orifices and the levelling means being handled independently from each other.

[0009] Another important feature of the present invention is that each of the levelling means comprises a threaded body and an externally threaded extension element to be threadable through the threaded body.

[0010] Additionally, each of the extension elements may comprise a bed to provide support against the wall and a head for its handling. Each extension element is immobilized by means of a locknut.

DESCRIPTION OF THE DRAWINGS

[0011] For a better understanding of the present description, the invention is complemented with a set of drawings in which, for illustration purposes and without limitation, the following has been represented:

- Figure 1 shows a perspective view of the device for fastening and levelling sanitary fittings onto walls which is the object of the present invention, according to a preferred embodiment.
- Figure 2 shows a perspective view of the complete device for fastening and levelling sanitary fittings onto walls which is the object of the present invention, with sanitary fittings fastened thereto, according to another preferred embodiment.
- Figure 3 shows a lateral view of the device for fastening and levelling sanitary fittings onto walls which is the object of the present invention, with sanitary fittings fastened thereto, according to another preferred embodiment.
- Figure 4 shows a cross-sectional elevation view of the device for fastening and levelling sanitary fittings onto walls which is the object of the present invention, with sanitary fittings fastened thereto, according to another preferred embodiment.

[0012] Below is a list of the different components that have been represented in the drawings and which are comprised in the invention:

X = Horizontal coordinate axis
X = Vertical coordinate axis
Z = Depth coordinate axis
1 = Laminar body
1.1 = Front side
1.2 = Rear side
2 = Central orifice for planning or marking
3 = Lateral orifice

4 = Sanitary fitting
5 = Threaded body
6 = Extension element
6.1 = Support
6.2 = Head
6.3 = Locknut
7 = Profile
8 = Wall
9 = Housings

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION

[0013] As previously mentioned, and as it appears in the figures, the present invention describes a device for fastening and levelling sanitary fittings onto walls (8), despite them being walls (8) with undesired inclination and/or superficial irregularities. The present device is simple and easy to use for obtaining a desired orientation with respect to a horizontal coordinate axis (X), a vertical coordinate axis (Y) and a depth coordinate axis (Z), that is to say with respect to each of the three coordinate axes (X, Y, Z).

[0014] The present device comprises a laminar body (1), which in turn comprises a front side (1.1) and a rear side (1.2). The front side (1.1) is configured to be arranged facing the fittings which are fastened to the device through housings (9). Said fastening is carried out by partially inserting the fittings in the housings (9) or through conventional fastening means in said housings (9). The rear side (1.2) whereas is configured to be arranged facing the surface or wall (8) onto which the device which is the object of the present invention is fastened.

[0015] Preferably, the laminar body (1) comprises several lengths depending on the number of fittings to be housed. Should the number of fittings be higher than one, these are to be arranged with respect to the horizontal coordinate axis (X), as it is shown in Figures 2 and 4. Therefore, the dimensions, and especially the horizontal extension, are variable, depending on the number and size of fittings to be housed.

[0016] The device also comprises fastening orifices (2, 3) with the aim of fastening the device to the wall (8). In a preferred embodiment, the fastening orifices (2, 3) comprise a central orifice (2) and at least two lateral orifices (3), one at each side of the central orifice (2), with respect to the horizontal coordinate axis (X). Preferably, although not necessarily, the central orifice (2) is an elongated orifice such that it has a linear stretch in an upward direction according to the position for use of the present device. This linear stretch has smaller dimensions than the rest of the orifices used for its levelling. Said central orifice (2) is clearly seen in Figures 1 and 2.

[0017] Additionally, the present device according to a preferred embodiment comprises two profiles (7), arranged externally to the laminar body (1) in an upper edge and in a lower edge of the device, forming a step-shaped configuration with respect to the laminar body (1) towards the rear side (1.2), thus being located in a parallel plane with respect to the laminar body (1). The profiles (7) are configured to act as contact areas with the walls (8). Therefore, by means of the U-shaped transverse section, a cavity or hollow is created, which may attain the goal of solving irregularities on the walls (8) where the present device is fastened, thus facilitating both its fastening and levelling.

[0018] The fastening orifices (2, 3) are arranged in the profiles (7) and are configured to be crossed by elements such as nails and screws to fasten this device to the wall (8).

[0019] In the preferred embodiment shown in Figure 2, which comprises a smaller horizontal longitudinal extension than the preferred embodiment shown in Figure 1, the central orifice (2) is arranged in the middle point of the horizontal longitudinal extension of the profile (7) arranged on the upper edge of the device, and on each of side of said orifice (2) there is at least one of the lateral orifices (3) also in said profile (7) separated with respect to the central orifice (2) to provide a stable fastening. Both in the preferred embodiment shown in Figure 1 and in that shown in Figure 2, the device comprises one of the lateral orifices (3) in each of the corners of the device.

[0020] In the profile (7) arranged on the lower edge, no central orifice (2) is arranged, but two of the lateral orifices (3) separated from each other are included so as to provide the device with stable fastening. The greater the longitudinal extension with respect to the horizontal coordinate axis (X), the greater the number of lateral orifices (3) are located in the device, the lateral orifices (3) being separated from each other so that stable fastening is provided.

[0021] The device which is the object of the present invention also comprises levelling means (5, 6). The number and the location of the levelling means (5, 6) vary based on aspects such as the dimensions of the device, number and weight of the fittings to be housed, status of the wall (8), etc. In the preferred embodiments shown in Figures 1 and 2, the device comprises one of the levelling means (5, 6) in each of the corners of the laminar body (1).

[0022] Each of the levelling means (5, 6) comprises an internally threaded body (5) and an externally threaded extension element (6) to be threadable through the threaded body (5) by a user manipulating the present device.

[0023] The threaded body (5) is arranged making up a unitary element together with the laminar body (1), although in another preferred embodiment they are independent elements joined to the laminar body (1), for example, by welding, now stapling As it may be observed in the figures, each of the extension elements (6) is arranged threaded through the related threaded body (5), also passing through the laminar body (1).

[0024] The extension elements (6) comprise a head (6.2) at the end of each of the extension elements (6) arranged in the front side (1.1) with the aim of serving as handling point of said extension elements (6) to be then

threaded to a greater or lesser extent. The heads (6.2) may be handled manually or by means of mechanical elements such as screwdrivers or the like.

[0025] Each extension element (6) is immobilized by means of a locknut (6.3) coupled to said extension element (5).

[0026] The opposite ends, that is, the ends of each of the extension elements (6) arranged in the rear side (1.2) serve as support against the wall (8) onto which the present devices are fastened. Due to this goal of the ends of the extension elements (6), in a preferred embodiment, said extension elements (6) additionally comprise a support (6.1) at each of said ends, being the supports (6.1) clearly appreciated in Figures 2 and 3.

[0027] Among other objects, the supports (6.1) are aimed to increasing the contact surface between the extension elements (6) and the wall (8), apart from providing a support that does not damage or alter the contact surface between the extension elements (6) and the wall (8). The supports (6.1), in its most retracted position, are housed in the hollow or cavity generated by the step existing between the laminar body (1) and the profiles (7), not preventing the present device from being fastened or levelled should it not be required its extension or protuberance with respect to the laminar body (1), and the profiles (7), to level said device.

[0028] The main goal of these extension elements (6) is having an adjustable extension from their rear side (1.2), individually, to solve or compensate irregularities and/or inclination on the wall (8) area onto which the present device is fastened. An example is shown in Figure 3 wherein an inclination is compensated with respect to a vertical plane by means of a pair of extension elements (6) close to the profile (7) arranged on the upper edge. If the inclination is opposite to the one shown in Figure 3, the device comprises the extension elements (6) closest to the lower edge of the device.

[0029] In both cases, the device may comprise some of the extension elements (6) close to the upper edge and other extension elements (6) close to the lower edge, maintaining the related ones in the retracted position, the supports close to the laminar body (1), and the related ones extended, that is with the supports (6.1) as far from the laminar body (1) as it is required. An example similar to the above-mentioned situation is shown in Figure 4, where three out of the four supports (6.1) comprised in the device, are appreciated, each of them being extended at different extents according to the wall (8) requirements resulting from the irregularities thereon.

[0030] For the fastening and levelling of the present device, the first step is to place the device in such a way that a screw or nail arranged in the wall (8) is arranged through the central orifice (2). The device simply hangs from said screw or nail, its position not being fastened. It is thus horizontally levelled, that is, a horizontal longitudinal axis that goes through the device through its centre with respect to the horizontal coordinate axis (X) is levelled. A level may be employed to facilitate said horizontal levelling.

[0031] It is worth noting that, before inserting the screws, blind bores need to be carried out in the wall, using the lateral orifices (3) of the profile (7) to mark them on said wall.

[0032] Later, through at least some lateral orifices (3), nails or screws are inserted to pre-fasten the device onto the wall (8) by partially inserting it in said wall (8). Preferably, these nails or screws are not completely inserted, only insofar as it is necessary to maintain the device in horizontal position. Afterwards, with the individual adjustment of each of the levelling means (5, 6) by screwing or unscrewing the extension elements (6) through the threaded bodies (5), the position is finally defined with respect to the three coordinate axes (X, Y, Z).

[0033] Once it is positioned as desired, the nails or screws located through the lateral orifices (3) fasten in a definite manner the position of the device by being introduced to the greatest extent possible according to the levelling and positioning established by the extension elements (6), that is to say by the levelling means (5, 6). When there are some of the lateral orifices (3) where no nails or screws have been introduced to pre-fasten the device to the wall (8), the nails or screws may be inserted to the greatest extent possible according to the levelling and positioning established by the extension elements (6) for its definitive fastening.

[0034] Additional elements may be used such as the level to arrange the device with the inclination or angle desired at any time during the fastening and levelling of the present device.

[0035] Once the nature of the invention has been described, it is thus stated, for the relevant purposes, that it is not limited to the exact details of this description, but on the contrary, whichever amendments are deemed appropriate may be introduced, insofar as the essential features thereon are not altered. In consequence, the scope of the invention is defined by the following claims.

Claims

1. Device for fastening and levelling sanitary fittings onto walls (8), comprising:

- a laminar body (1), which in turn comprises:
  - o a front side (1.1) to be arranged facing the sanitary fittings (4) fastened to the laminar body (1); and
  - o a rear side (1.2) to be arranged facing the wall (8);

characterized in that the device additionally comprises:

- two profiles (7) integrated in the laminar body (1), one on an upper edge and another one on

a lower edge of the laminar body (1) according to the position of the device being fastened to the wall (8), both profiles (7) being arranged in a displaced plane with respect to the laminar body (1) towards the rear side (1.2);
- fastening orifices (2, 3) to fasten the device to the wall (8), comprising:

o a central orifice (2) arranged in a middle point of the longitudinal extension of the profile (7) of the upper edge, and
o lateral orifices (3) at least in the profile (7) of the upper and lower edge;

- levelling means (5, 6) arranged in the laminar body (1), the extension of each being individually adjustable with respect to the rear side (1.2) and providing support against the wall (8);

such that the device is to be fastened and levelled with respect to the three coordinate axes (X, Y, Z) by means of the combined adjustment of the fastening orifices (2, 3) and the levelling means (5, 6), the fastening orifices (2, 3) and the levelling means (5, 6) being handled independently from each other.

2. Device according to claim 1, **characterized in that** each of the levelling means (5, 6) comprises a threaded body (5) and an extension element (6) externally threaded to be threadable through the threaded body (5); where the extension element (6) is immobilized by a locknut (6.3) coupled to said extension element (5).

3. Device according to claim 2, **characterized in that** each of the extension elements (6) comprises a support (6.1) to provide support against the wall (8) and a head (6.2) for its handling.

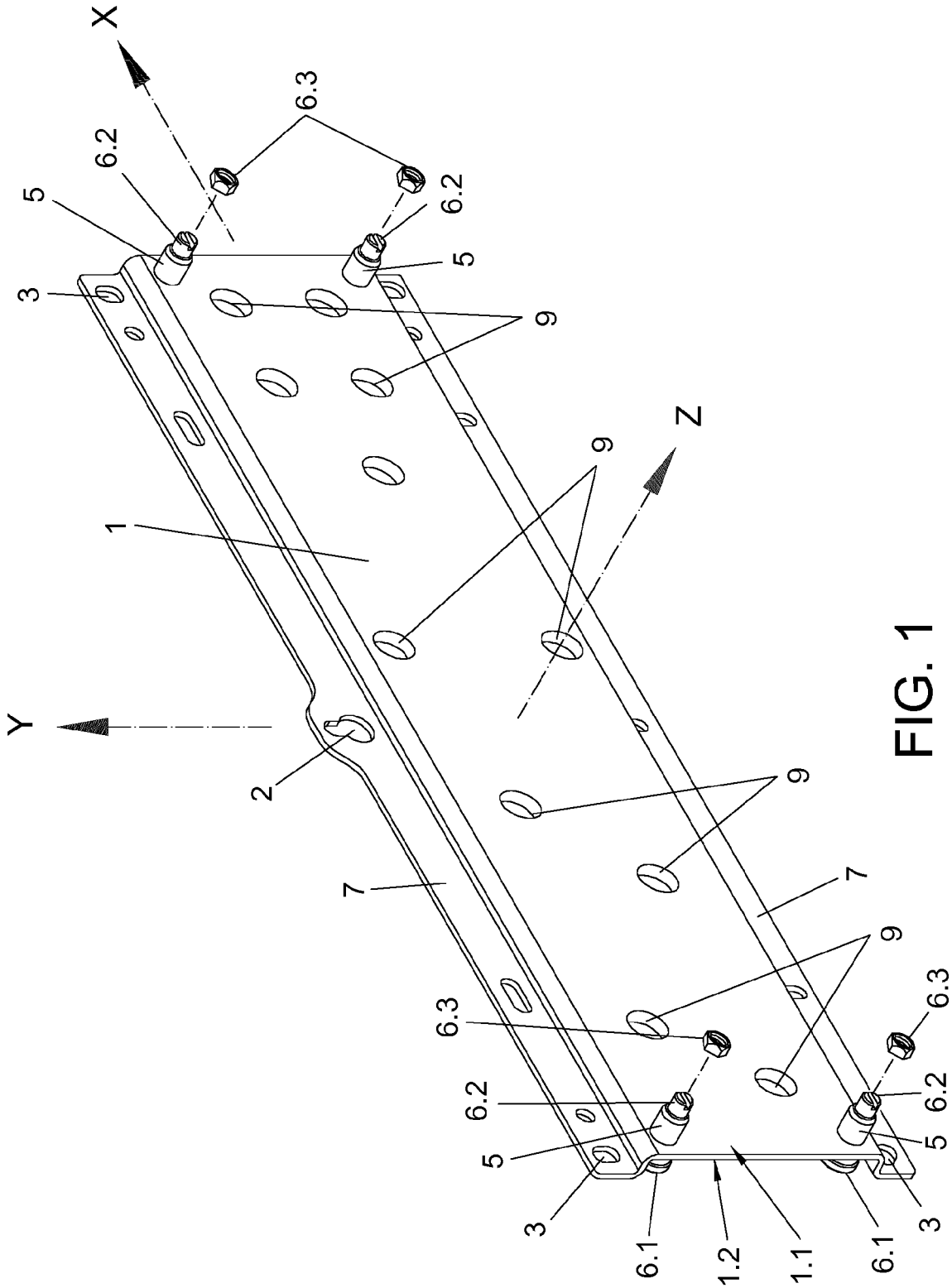

FIG. 1

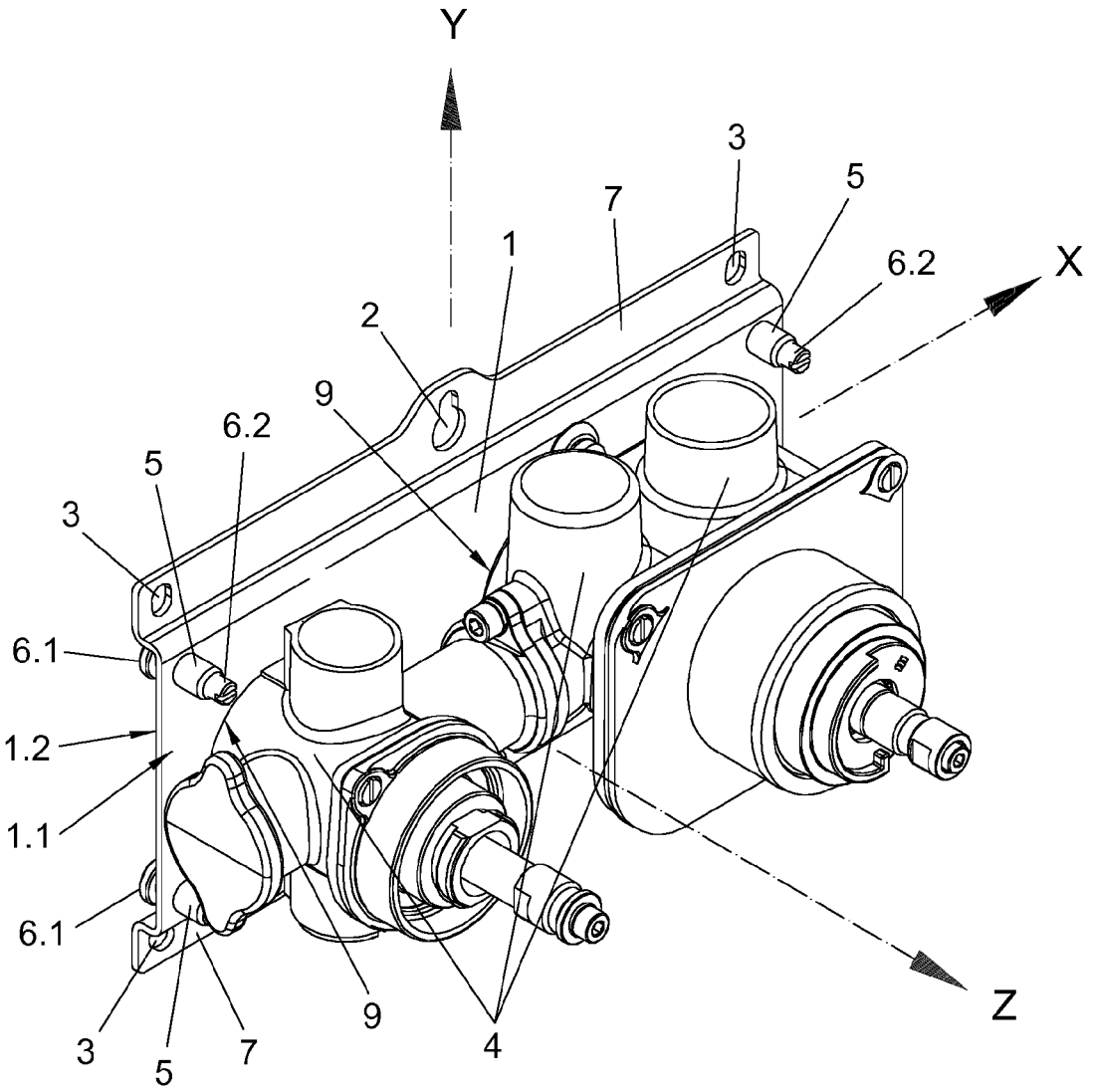

FIG. 2

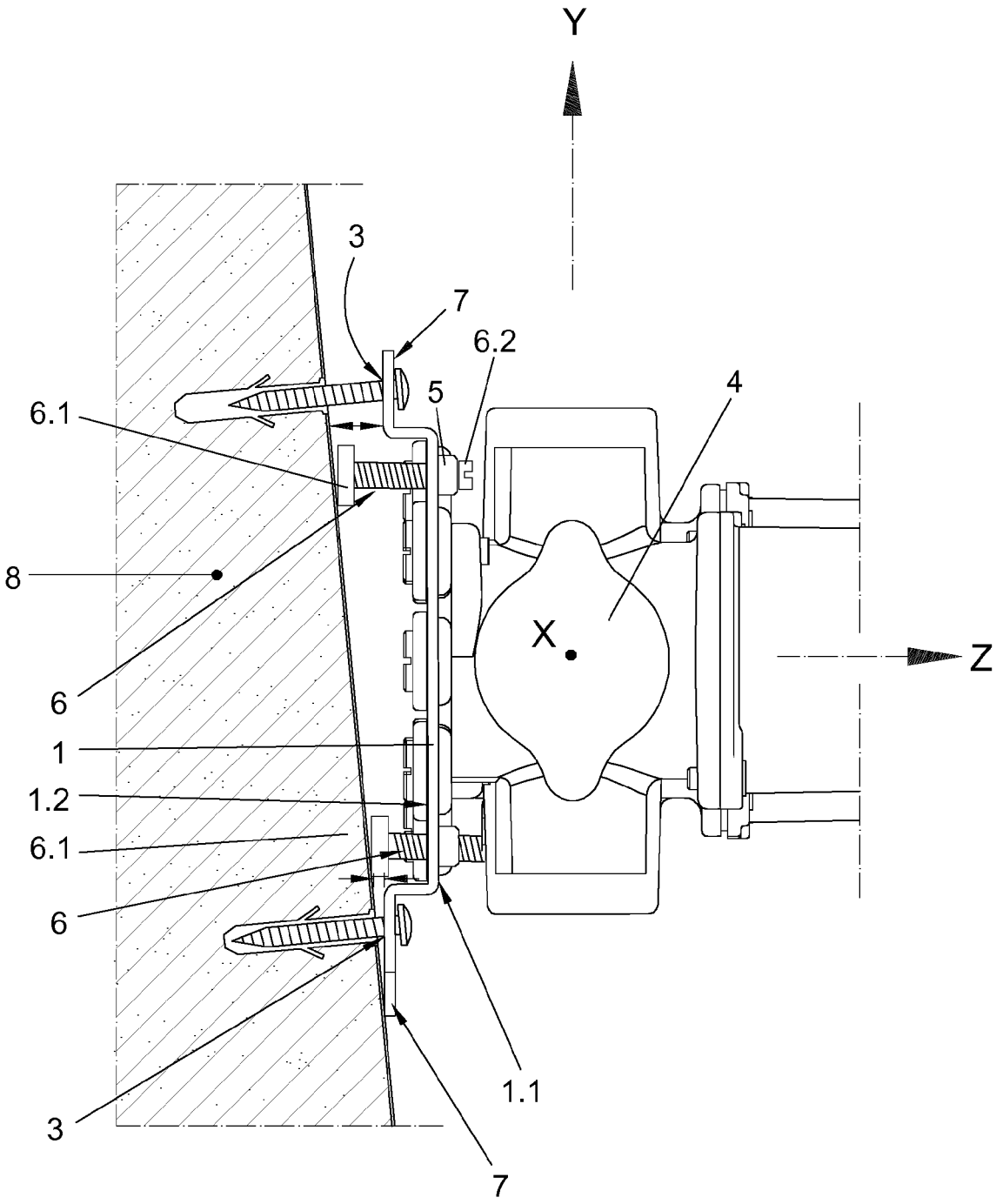

FIG. 3

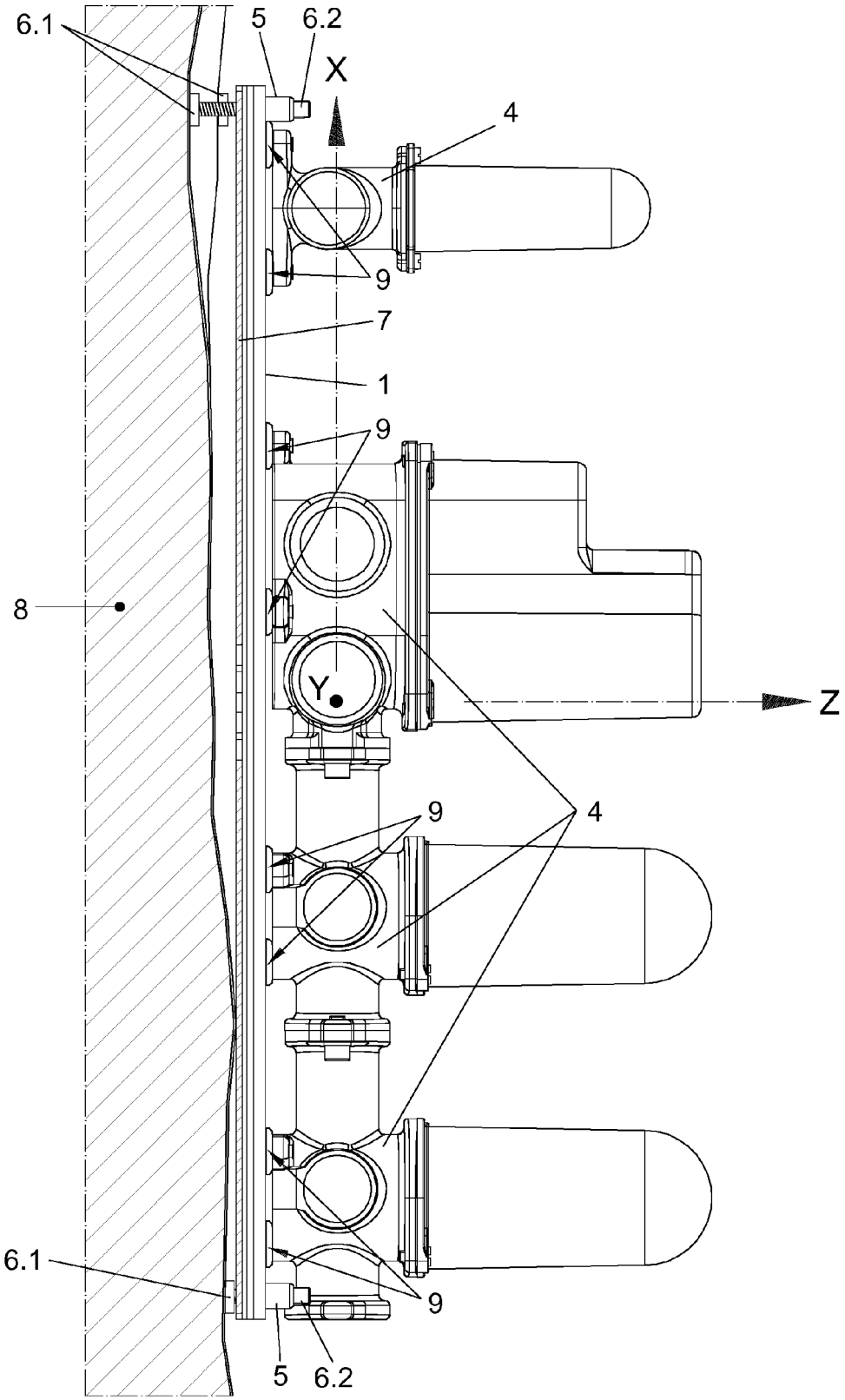

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 15 19 2906

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TECHNICAL FIELDS SEARCHED (IPC)
E03C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	20 April 2016	Geisenhofer, Michael

CATEGORY OF CITED DOCUMENTS

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