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(54) ADAPTER FOR MOUNTING A URINAL ON A BUILD-IN RESERVOIR FOR A WALL-MOUNTED TOILET

(57) The invention relates to an adapter for mounting a urinal on a build-in reservoir for a wall-mounted toilet, which build-in reservoir is arranged behind a pre-wall, in which an access opening is provided for access to the build-in reservoir, in which a discharge opening is provided, in which debouches an outlet pipe, and wherein two fastening threaded ends protrude through the pre-wall for mounting a wall-mounted toilet on the build-in reservoir,
which adapter comprises:
- an elongate frame configured to be fastened with one end onto the two fastening threaded ends of the build-in reservoir and wherein fastening means, which are configured to engage behind the pre-wall via the access opening and to fasten the other end of the frame against the pre-wall, are arranged on the other end of the frame;
- a cover arranged on the elongate frame, with at least one supply opening for passage of a flushing water supply pipe for a urinal and at least one discharge opening for passage of an outlet pipe of a urinal in the cover;
- hanging means arranged on the outer side of the cover, which hanging means are configured to hang a urinal against the outer side of the cover.

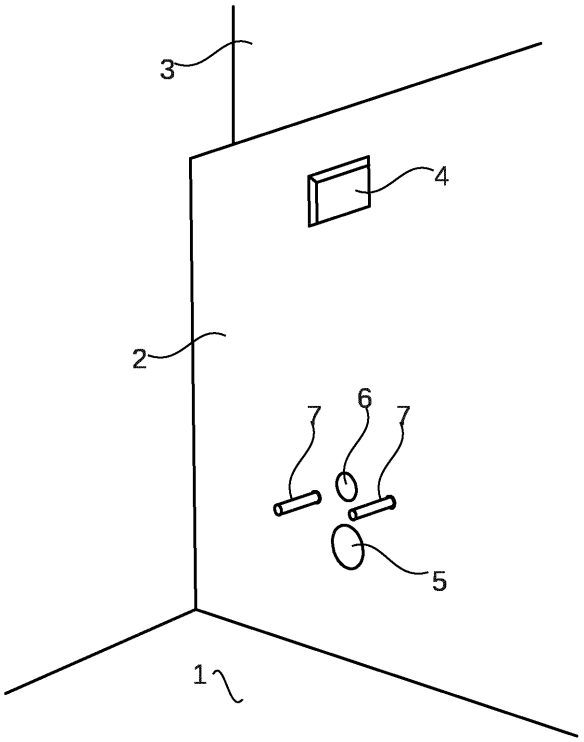


Fig. 1

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Description

[0001] The invention relates to an adapter for mounting a urinal on a build-in reservoir for a wall-mounted toilet, which build-in reservoir is arranged behind a pre-wall, in which an access opening is provided for access to the build-in reservoir, in which a discharge opening is provided, in which debouches an outlet pipe, and wherein two fastening threaded ends protrude through the pre-wall for mounting of a wall-mounted toilet on the build-in reservoir.

[0002] When renovating an existing sanitary unit it may be desired to replace the existing wall-mounted toilet with a urinal. Because the connections for a wall-mounted toilet are different than those for a urinal, the sanitary unit usually requires extensive modifications. The surface with which a wall-mounted toilet lies against the wall is furthermore not wholly overlapped by the surface with which a urinal lies against the wall, causing for instance discolorations due to sealant edges to remain partially visible.

[0003] A solution is to remove the pre-wall and the build-in reservoir for the wall-mounted toilet lying therebehind, relocate the discharge conduit and water supply conduit and so make the space suitable for hanging a urinal. This usually also means that at least the wall against which the urinal is hung must be re-finished, for instance with a new tile layer. This entails the necessary costs, and the work will render a sanitary unit unusable for several days.

[0004] In order to renovate an already existing urinal it is further known to place a cover plate against the wall where the old urinal was arranged, on which plate the new urinal is then arranged. Any aesthetic imperfections, such as for instance discolorations due to sealant edges, are concealed from view with the cover plate. In this solution the outlet pipe is extended by means of an adapter piece and a hose is coupled to the existing water connection for the old urinal, which hose is then connected to the new urinal. This solution is however not suitable for replacing a wall-mounted toilet with a urinal, because the connections of water conduit and discharge conduit are different. In addition, it is not simple to drill a fastening hole in the wall, since a build-in reservoir or frame of the wall-mounted toilet is generally present directly therebehind.

[0005] It is now an object of the invention to provide an adapter for mounting a urinal on a build-in reservoir for a wall-mounted toilet, wherein the above stated drawbacks are reduced or even obviated.

[0006] This object is achieved according to the invention with an adapter for mounting a urinal on a build-in reservoir for a wall-mounted toilet, which build-in reservoir is arranged behind a pre-wall, in which an access opening is provided for access to the build-in reservoir, in which a discharge opening is provided, in which debouches an outlet pipe, and wherein two fastening threaded ends protrude through the pre-wall for mounting of a wall-mounted toilet on the build-in reservoir, which adapter comprises:

- an elongate frame configured to be fastened with one end onto the two fastening threaded ends of the build-in reservoir and wherein fastening means, which are configured to engage behind the pre-wall via the access opening and to fasten the other end of the frame against the pre-wall, are arranged on the other end of the frame;
- a cover arranged on the elongate frame, with at least one supply opening for passage of a flushing water supply pipe for a urinal and at least one discharge opening for passage of an outlet pipe of a urinal in the cover;
- hanging means arranged on the outer side of the cover, which hanging means are configured to hang a urinal against the outer side of the cover.

[0007] The adapter according to the invention is fastened with the frame to the fastening threaded ends, whereby the wall-mounted toilet is usually mounted. The frame is further at the other end arranged with fastening means in the access opening of the build-in reservoir, which is usually covered with a so-called push plate. In this way a firm fastening of the frame of the adapter is obtained, without any fastening hole having to be drilled or other structural modifications having to be made.

[0008] A cover is then placed over the frame, thus concealing the frame from view, while a space is formed between the cover and the pre-wall for relocating for instance the discharge conduit. A urinal can then be hung on the hanging means, against the cover.

[0009] A hose, which is already present in the build-in reservoir, can be connected to the water conduit via the access opening. This hose can then be guided out via the access opening and be connected to the urinal via the flushing water supply pipe in the cover. A flush valve can optionally be arranged between the hose and the flushing water supply pipe.

[0010] It is thus possible with the adapter according to the invention to mount a urinal on an existing build-in reservoir for a wall-mounted toilet without having to make structural modifications, such as removal of the build-in reservoir or re-tiling of the wall. An existing wall-mounted toilet can hereby be quickly converted into a urinal.

[0011] It is furthermore not necessary to make additional holes in the pre-wall, which has the result that the wall-mounted toilet can optionally be placed back at a later time.

[0012] A preferred embodiment of the adapter according to the invention further comprises an adapting pipe which is configured to be placed with one end in the outlet pipe and protrudes with the other end through the discharge opening in the cover, wherein the one end is arranged eccentrically relative to the other end.

[0013] The discharge opening for a wall-mounted toilet

usually lies lower relative to the floor than is desirable for a urinal. This height difference can be bridged with an eccentric adapter piece. In addition, the adapter piece can be tucked away behind the cover, concealing it from view.

[0014] In another preferred embodiment of the adapter according to the invention the fastening means arranged on the other end of the frame comprise a T-shaped bracket, the width of which is at least greater than the smallest width of the access opening in the pre-wall, and wherein the T-shaped bracket is arranged with the stem of the T-shape on this other end of the frame.

[0015] The T-shape can be placed into the access opening, and hooked behind the pre-wall by subsequently twisting it, in simple manner. The T-shaped bracket can subsequently be arranged with the stem of the T-shape (the vertical upright of the T-shape) on the frame. In this way drilling of fastening holes is not necessary either for fastening of the other end of the frame.

[0016] Yet another embodiment of the adapter according to the invention further comprises an operating element arranged on the outer side of the cover and, arranged on the inner side of the cover, a controllable valve which is configured to be arranged in the flushing water supply pipe, and wherein the operating element is coupled to the controllable valve for the purpose of operating it.

[0017] In this embodiment the flushing mechanism is manual and can be operated via the operating element. In another embodiment an automatic operation can also be provided, or a so-called waterless urinal can be applied.

[0018] The invention further relates to a combination of pre-wall, a build-in reservoir for a wall-mounted toilet and an adapter according to the invention, wherein the build-in reservoir comprises a vertically extending frame with arranged therein an outlet pipe and two parallel fastening threaded ends, which extend horizontally

wherein the pre-wall is arranged against the vertically extending frame, which pre-wall is provided with a discharge opening, substantially coaxially with the outlet pipe of the build-in reservoir, and an access opening for access to the build-in reservoir, wherein the fastening threaded ends extend through the pre-wall

wherein the frame of the adapter is arranged against the pre-wall, wherein the fastening threaded ends extend through the frame and the frame is fastened thereto, and wherein the fastening means engage via the access opening behind the pre-wall and attach the other end of the frame against the pre-wall; and wherein the cover is arranged on the elongate frame.

[0019] These and other features of the invention are further elucidated with reference to the accompanying drawings.

Figure 1 shows a sanitary unit where the wall-mounted toilet has been removed.

Figure 2 shows the sanitary unit according to figure 1, wherein the frame of an adapter according to the invention has been fastened.

Figure 3 shows a cross-section of a combination according to the invention.

Figure 4 shows a perspective view of the combination according to figure 3.

Figure 5 shows a second embodiment of a frame of the adapter according to the invention in perspective view.

Figure 6 shows the frame of the adapter with a cover according to figure 5 in front view.

[0020] Figure 1 shows a sanitary unit with a floor 1 and pre-wall 2 arranged at a distance from a wall 3. Provided in pre-wall 2 is an access opening 4 and openings for an outlet pipe 5 and cistern pipe 6. Fastening threaded ends 7 further protrude from pre-wall 2.

[0021] In figure 2 an elongate frame 8 is arranged against pre-wall 2 and the two fastening threaded ends 7 protrude through this frame 8. On the upper side the frame 8 is fastened by a T-shaped bracket 9 which protrudes into the access opening 4.

[0022] Figure 3 shows a cross-sectional view of a combination according to the invention. Arranged against wall 3 is a vertically extending frame 10 against which the pre-wall 2 is placed. A cistern 11 for a wall-mounted toilet is provided in the vertical frame 10. The cistern 11 can be reached from the outside via access opening 4.

[0023] Installed under cistern 11 is an outlet pipe 5 with the fastening threaded ends 7 thereabove. The elongate frame 8 is placed thereon on the outer side of pre-wall 2, and secured with nuts 12. On the upper side the elongate frame 8 is likewise secured with a T-shaped bracket 9, which reaches behind pre-wall 2 via access opening 4.

[0024] A cover 14 is arranged over the frame 8. Provided in this cover 14 is a supply opening 15, through which a flushing water supply pipe 16 protrudes. This flushing water supply pipe 16 is connected via a hose 17, which runs along the access opening 4 to cistern 11, to a water conduit (not shown).

[0025] On the underside an adapting pipe 18 is placed in outlet pipe 5, whereby a height difference h is bridged. The adapting pipe 18 protrudes via a discharge opening 19 through the cover 14. Further arranged on cover 14 is an operating element 20 whereby the supply of flushing water can be controlled.

[0026] A urinal 21 can then be hung on cover 14 in usual manner. Figure 4 shows a perspective view of the combination according to figure 3. This shows that the original connections of the wall-mounted toilet, as shown in figure 1, have been concealed from view and a urinal 21 has been provided instead of the wall-mounted toilet.

[0027] Figure 5 shows a second embodiment of the adapter 30 according to the invention in perspective view.

[0028] The adapter 30 has a rectangular base frame 31 having on the underside two uprights 32 with holes 33 for passage of the fastening threaded ends of a build-in reservoir.

[0029] Provided above the two uprights 32 is a height-adjustable beam 34 on which a urinal can be hung. Provided parallel thereto is a height-adjustable beam 35 with an opening 36 for passage of the flushing water supply pipe.

[0030] Adjusting beam 34 and beam 35 in the height enables the adapter 30 to be adjusted to the diverse dimensions of different urinals.

[0031] A third beam 37 is further arranged parallel to the beams 34 and 35, and is height-adjustable. Arranged in this beam is a T-shaped bracket 38 which protrudes into the access opening of a build-in reservoir and so fastens the upper part of frame 31. The beam 37 is height-adjustable in order to thus be able to adjust the adapter to the different heights at which the access opening of a build-in reservoir is arranged.

[0032] Figure 6 shows the frame 30 of the adapter according to figure 5 in front view with the cover 39 adjacently thereof. In cover 39 a discharge opening 40 is provided at a fixed distance from openings 41 for passage of the fastening threaded ends of a build-in reservoir.

[0033] Because the fastening for a urinal is height-adjustable in this embodiment of the invention, fastening holes 42, 43, 44 are provided in cover 39 at different heights. A slotted hole 45 is thus also provided as supply opening, through which the height-adjustable flushing water supply pipe can protrude.

Claims

1. Adapter for mounting a urinal on a build-in reservoir for a wall-mounted toilet, which build-in reservoir is arranged behind a pre-wall, in which an access opening is provided for access to the build-in reservoir, in which a discharge opening is provided, in which debouches an outlet pipe, and wherein two fastening threaded ends protrude through the pre-wall for mounting a wall-mounted toilet on the build-in reservoir,
   which adapter comprises:

   - an elongate frame configured to be fastened with one end onto the two fastening threaded ends of the build-in reservoir and wherein fastening means, which are configured to engage behind the pre-wall via the access opening and to fasten the other end of the frame against the pre-wall, are arranged on the other end of the frame;
   - a cover arranged on the elongate frame, with at least one supply opening for passage of a flushing water supply pipe for a urinal and at least one discharge opening for passage of an outlet pipe of a urinal in the cover;
   - hanging means arranged on the outer side of the cover, which hanging means are configured to hang a urinal against the outer side of the cover.

2. Adapter according to claim 1, further comprising an adapting pipe which is configured to be placed with one end in the outlet pipe and protrudes with the other end through the discharge opening in the cover, wherein the one end is arranged eccentrically relative to the other end.

3. Adapter according to claim 1 or 2, wherein the fastening means arranged on the other end of the frame comprise a T-shaped bracket, the width of which is at least greater than the smallest width of the access opening in the pre-wall, and wherein the T-shaped bracket is arranged with the stem of the T-shape on this other end of the frame.

4. Adapter according to any one of the foregoing claims, further comprising an operating element arranged on the outer side of the cover and, arranged on the inner side of the cover, a controllable valve which is configured to be arranged in the flushing water supply pipe, and wherein the operating element is coupled to the controllable valve for the purpose of operating it.

5. Combination of pre-wall, a build-in reservoir for a wall-mounted toilet and an adapter according to any one of the foregoing claims, wherein the build-in reservoir comprises a vertically extending frame with arranged therein an outlet pipe and two parallel fastening threaded ends, which extend horizontally

   wherein the pre-wall is arranged against the vertically extending frame, which pre-wall is provided with a discharge opening, substantially coaxially with the outlet pipe of the build-in reservoir, and an access opening for access to the build-in reservoir, wherein the fastening threaded ends extend through the pre-wall
   wherein the frame of the adapter is arranged against the pre-wall, wherein the fastening threaded ends extend through the frame and the frame is fastened thereto, and wherein the fastening means engage via the access opening behind the pre-wall and attach the other end of the frame against the pre-wall;
   and wherein the cover is arranged on the elongate frame.

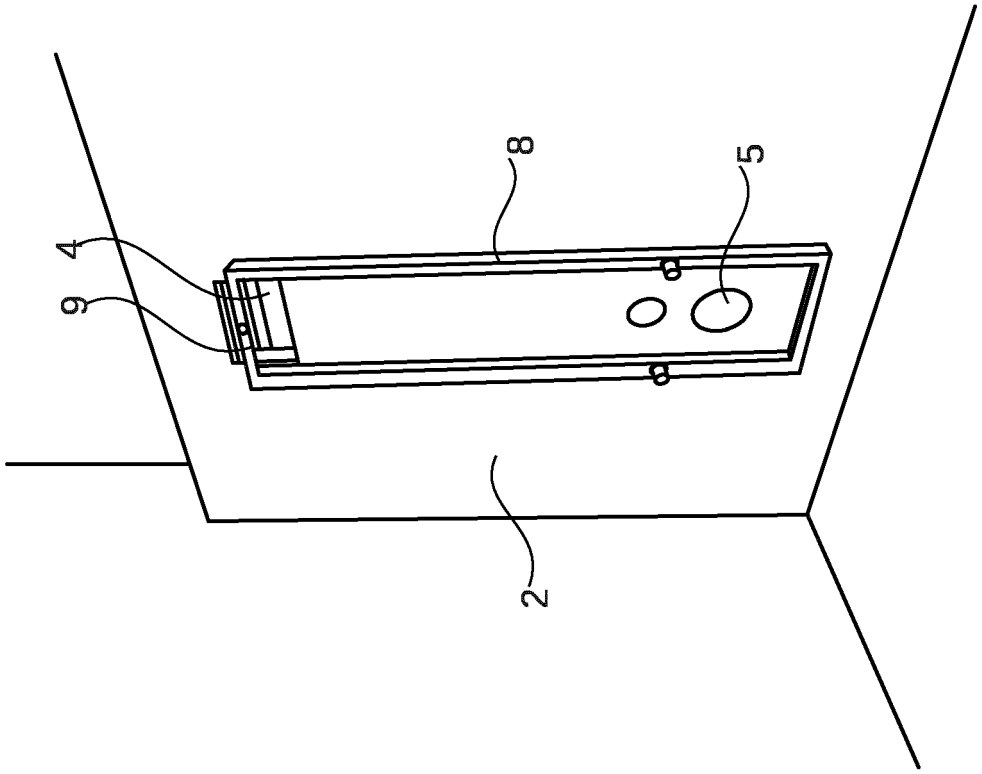


Fig. 2

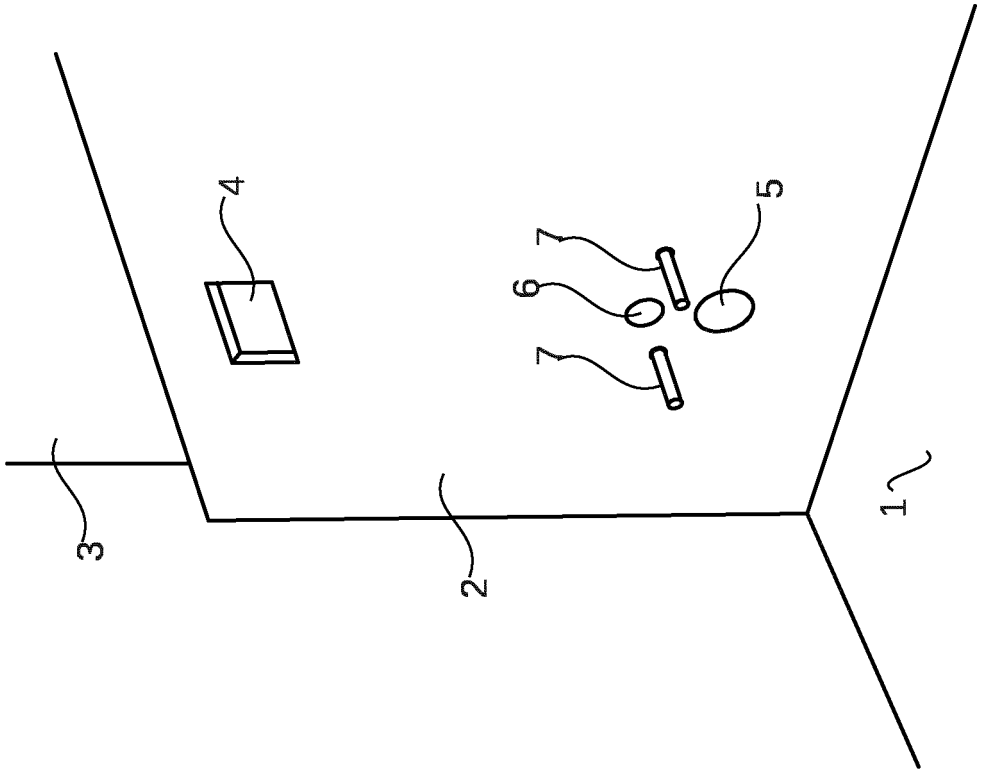


Fig. 1

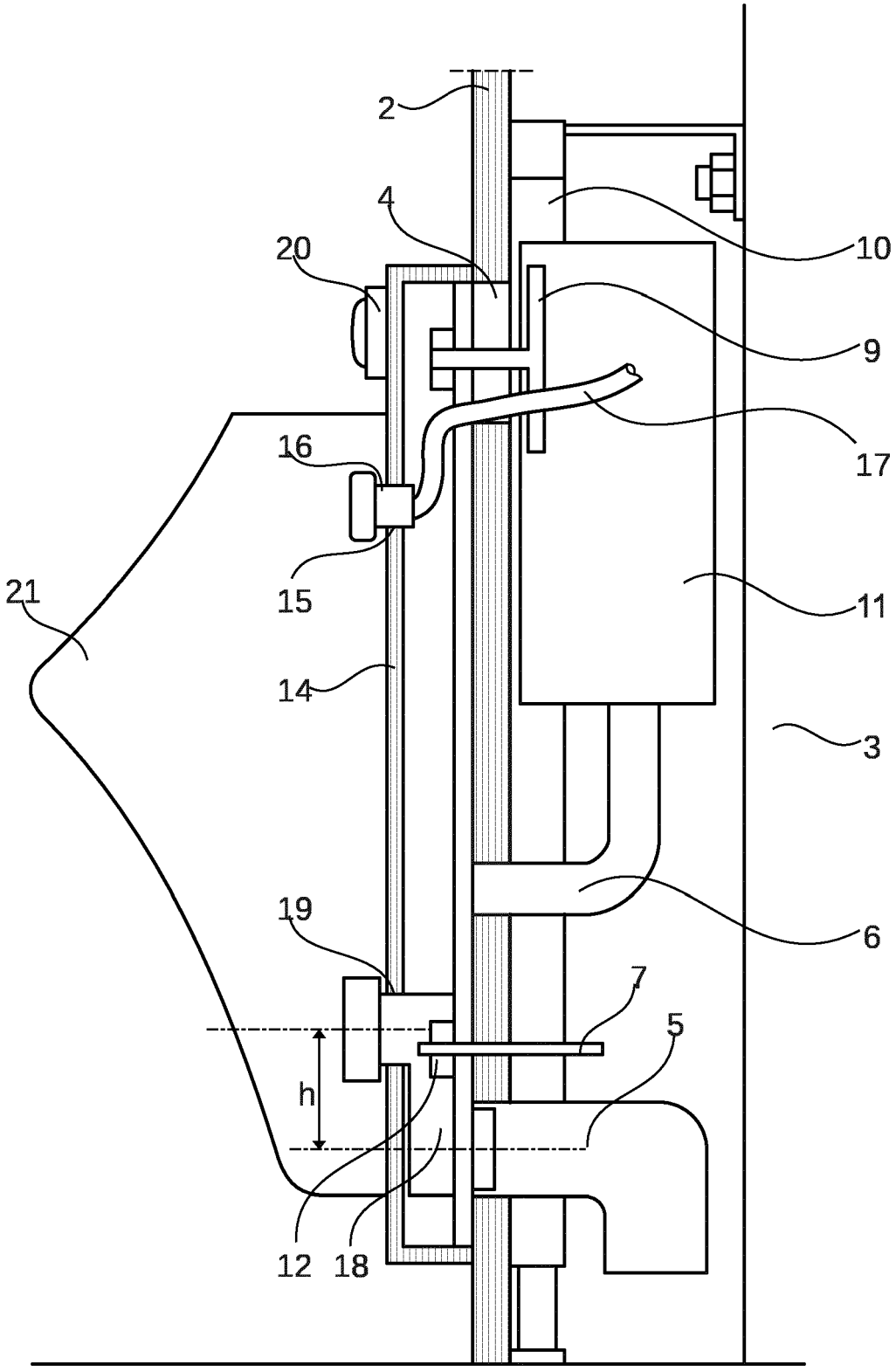


Fig. 3

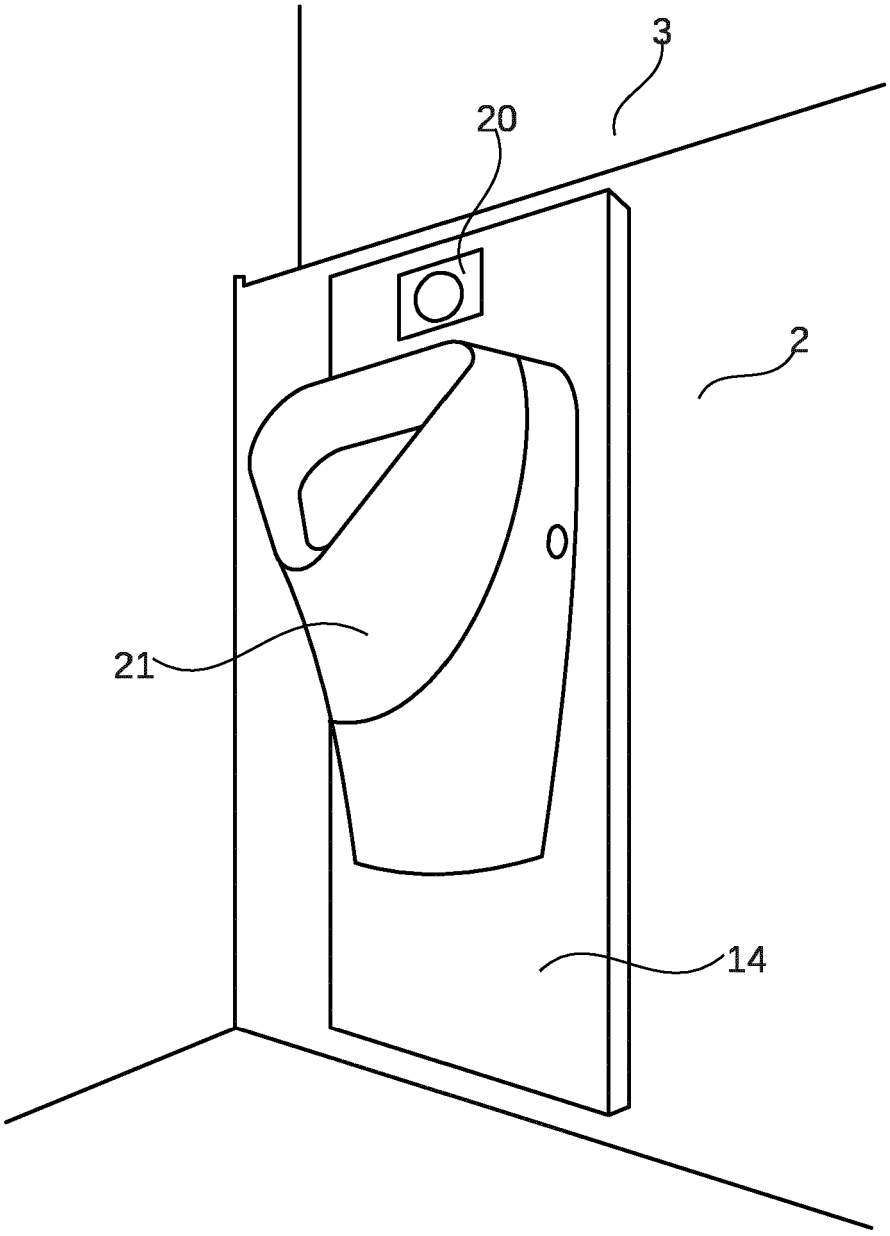


Fig. 4

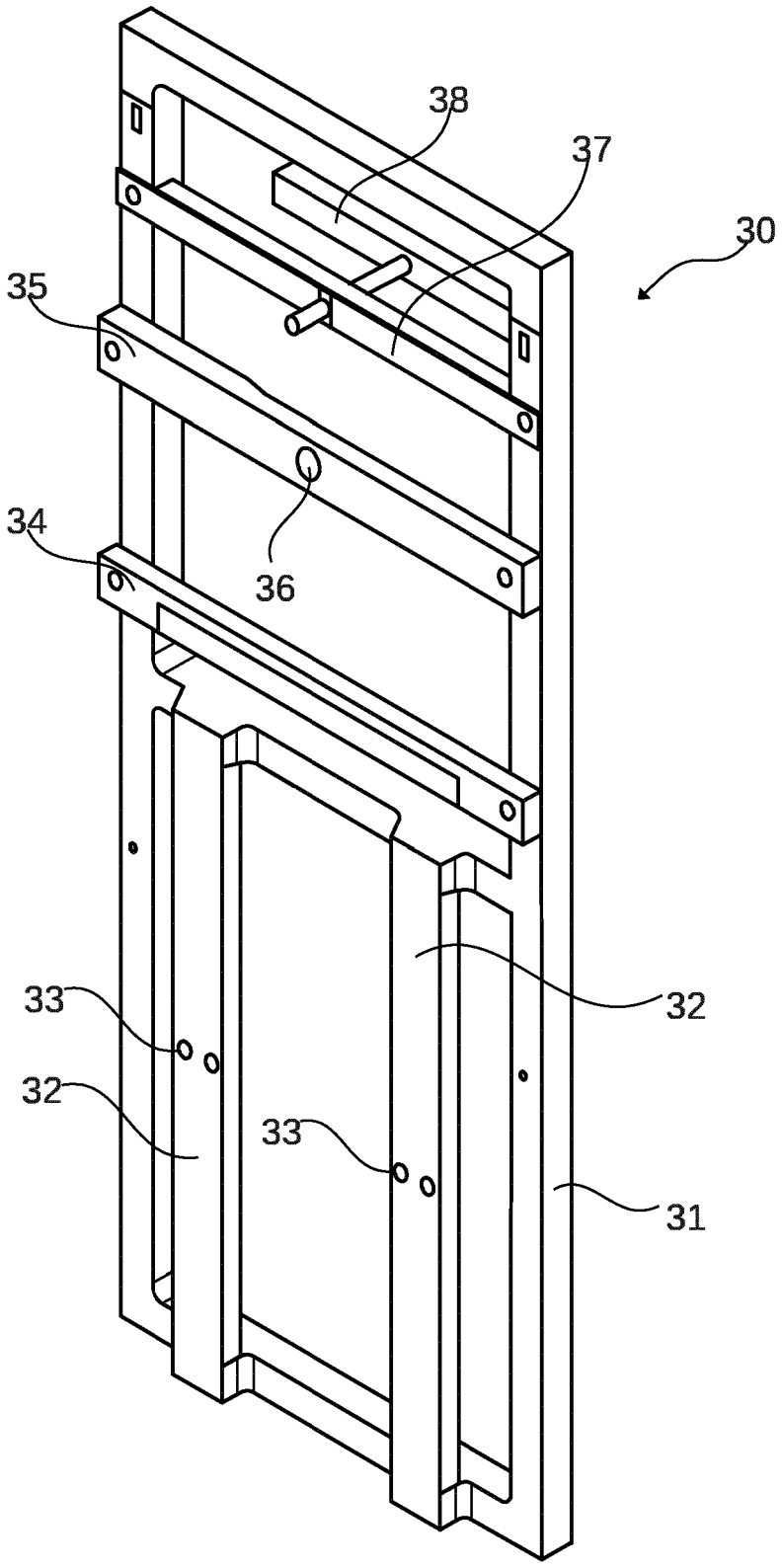
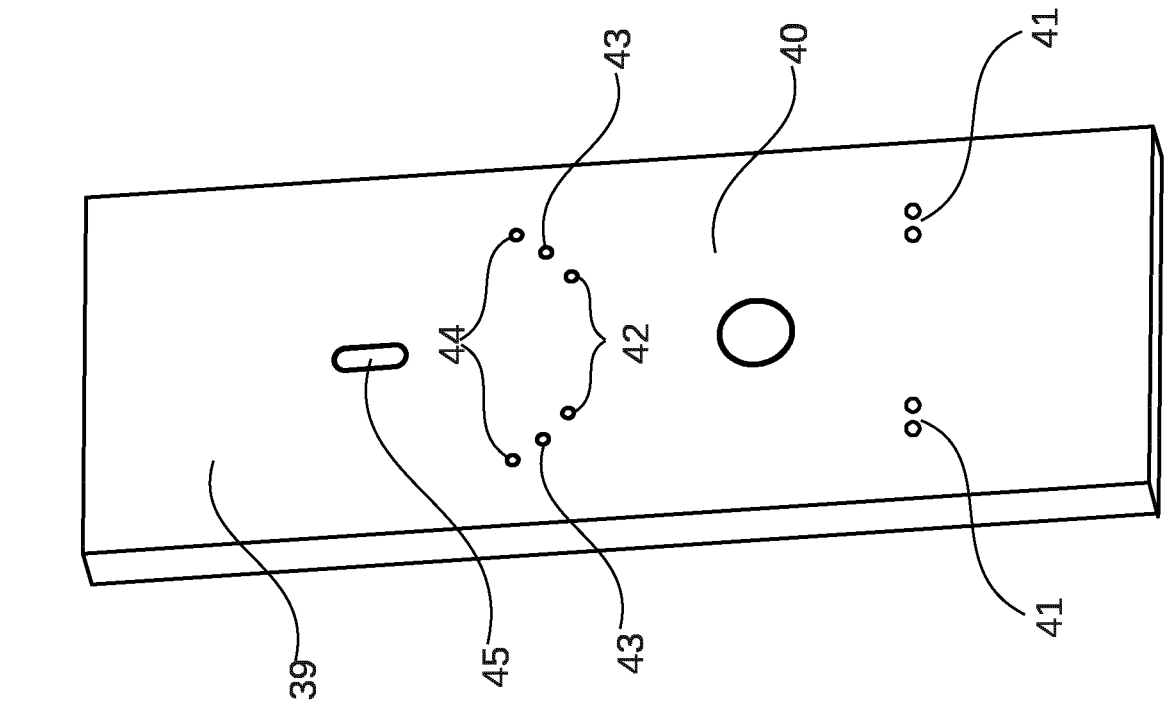


Fig. 5



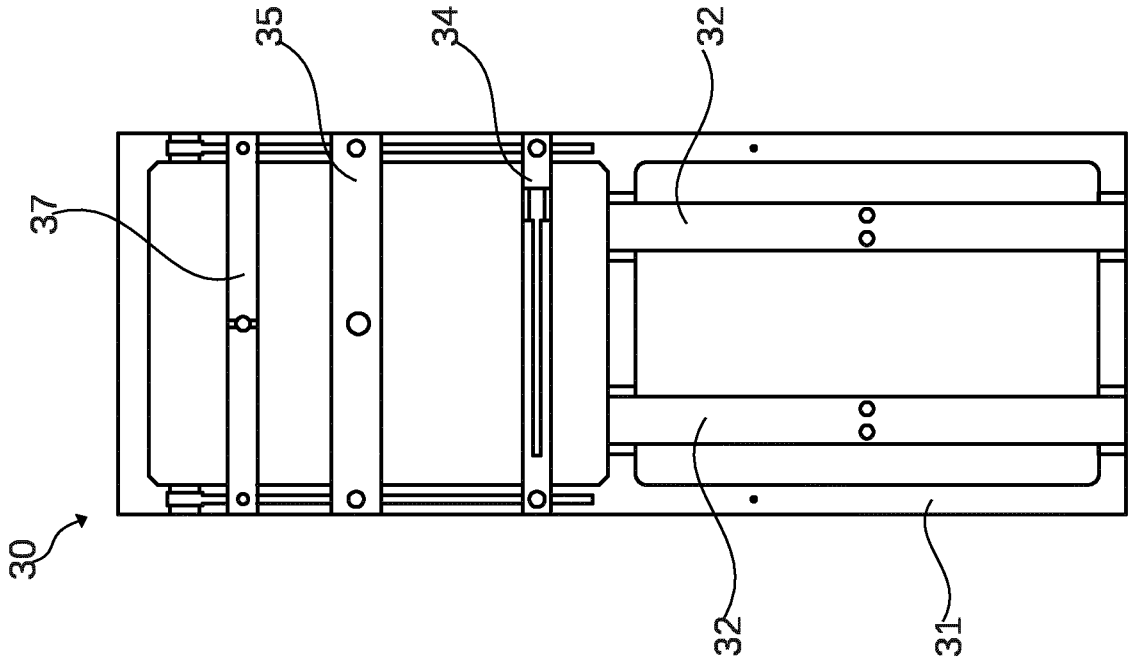


Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 24 20 1030

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	EP 3 243 967 A1 (WISA BV [NL]) 15 November 2017 (2017-11-15) * page 2, paragraph 8 - page 3, paragraph 19 * * page 3, paragraph 23 - paragraph 29; figures * -----	1-5 2	INV. E03D11/12 E03D11/13 E03D11/14 E03D13/00
Y	DE 10 2012 005464 B4 (ZIMMERMANN JOSEF [DE]) 17 November 2022 (2022-11-17) * page 2, paragraph 11 - paragraph 12; claim 1; figure * -----	2	
A	IT 2021 0000 0404 A1 (MUSCO ANTONIO [IT]; MINELLI SILVANO [IT]) 12 July 2022 (2022-07-12) * page 1, line 22 - page 2, line 27 * * page 17, line 31 - page 30, line 31; figures * -----	1-5	
			TECHNICAL FIELDS SEARCHED (IPC) E03D E03C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	4 February 2025	Fajarnés Jessen, A

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DE 102012005464 B4	17-11-2022	NONE	
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