Title: MULTIFUNCTION WALL STRUCTURE FOR BATHROOMS

Abstract: A multifunction wall structure (1, 101) which comprises hydraulic connections (4, 6, 104, 106) and hydro-sanitary accessories is characterized in that it comprises a subhorizontal functional cross-member (2, 102) which is fixed to a fixing wall and two panels (20, 21, 120, 121) supported by the said functional cross-member (2, 102). The multifunction wall structure may be used both for delimiting a shower box and for providing a functional support for the conventional components of bathrooms.
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
Title: Multifunction wall structure for bathrooms

The present invention relates to a multifunction structure for bathrooms; more particularly it relates to a multifunction wall structure for box showers or to a bathroom assembly able to house hydraulic connections and hydro-sanitary accessories.

As is well-known, in conventional box showers, the shower tray is normally installed so as to have at least one of its sides in contact with corresponding walls. The other sides are in contact with panels which define side walls of the shower which may be movable individually or simultaneously so as to allow access to the box shower.

In conventional box showers, all the internal hydro-sanitary accessories, such as the connections for the shower head which is fixed or connected to a flexible pipe, the taps or the like, and all the hydraulic connections are arranged inside the walls before the laying of covering tiles and before the installation of the panels of the shower box.

Such an arrangement of the hydro-sanitary accessories and the associated hydraulic connections results in the need to break the tiles and walls should it be required to perform repairs or replace parts. This work is therefore costly in terms of time and money.

The need to make the abovementioned operations less expensive has led the Applicant to develop a box shower with a centralising column, which forms the object of the European patent granted under No. 348653; in this patent, a box shower comprises a shower tray, two sides of which are adjacent to masonry walls or the
like and the other walls of which are adjacent to a structure able to support side panels of the box shower. A vertical column is present between the two side panels and, starting from a zone of the tray situated at a distance from the masonry walls, houses the hydraulic connections and the hydro-sanitary accessories, overcoming the problems which affected the known solutions.

This technical solution leaves unchanged, however, the conventional structure of box showers in terms of parts for mounting the side panels and for effecting connection to the masonry walls.

The technical problem of the present invention is to provide a structure for bathrooms which is improved in terms of the support for the panels.

This technical problem is solved by a multifunction wall structure for bathrooms able to house hydraulic connections and hydro-sanitary accessories, characterized in that it comprises a subhorizontal functional cross-member fixed to a fixing wall and at least one vertical dividing panel supported by said cross-member.

The characteristic features and advantages of the invention will emerge from the description, given hereinbelow, of an example of embodiment thereof provided by way of a non-limiting illustration with reference to the accompanying drawings, in which:

- Figures 1A and 1B show a front view and an axonometric view, respectively, of a multifunction wall structure for a box observed from the inside of the box shower;

- Figures 2A and 2B show a front view and an
axonometric view, respectively, of the multifunction wall structure for a box shower according to Figures IA and IB observed from outside the box shower;

- Figure 3 shows a plan view, from above, of the multifunction wall structure for a box shower according to the previous figures;

- Figure 4 shows a side view of the multifunction wall structure according to the previous figures;

- Figure 5 shows a detail of Figure 4;

- Figure 6 shows a bathroom assembly according to the present invention.

Figures IA and IB show a multifunction wall structure for a box shower 1 from the inside of the shower box.

A functional cross-member 2 is rigidly fixed to a wall, referred to below as fixing wall (schematically shown in Figure 2B); the fixing wall, in the zone where it is joined to the functional cross-member 2, is provided with hydraulic connections designed to supply the hydro-sanitary accessories of the box shower with hot and cold water.

The functional cross-member 2 is "subhorizontal", namely is arranged in a position which is horizontal or slightly inclined.

The functional cross-member 2 is hollow so that it is able to house the hot water and cold water pipes emerging from the wall. These pipes, which are denoted in Figure 2A by 4 and 6, supply water to a mixer or, alternatively, to two different hot and cold water taps or valves, the controls of which are denoted by 8 and 10.

Figures IA and 2A show a first control 8 for
activating the water flow and a second control 10 for mixing said flow. By means of the switching device 17, the pipes 4 and 6 supply water alternatively to a shower head 11, via a rigid pipe 12, fixed to the functional cross-member 2 and/or to the upper panel 20, or to a handheld shower head 14, via a flexible pipe 15. The handheld shower head 14 and the fixed shower head are also shown in greater detail in Figure 4.

The functional cross-member 2 may also house other accessories such as a soap holder, shampoo holder, support shelf for objects, towel rail, gripping handles or the like.

All the hydro-sanitary accessories are housed on the side of the functional cross-member 2 facing the inside of the box shower, except for the controls 8, 10 of the taps or valves which are accessible on both sides of the functional cross-member 2, as can be clearly seen in Figures 2A and 2B; in these figures duplicate controls 24 and 26 for the taps or valves are present.

It is possible to regulate the flow of hot water and cold water equally well from the side of the functional cross-member 2 directed towards the shower box or from the opposite side with the aid of a device 30, known per se, which connects together the two opposite sides of the functional cross-member 2 as shown in Figure 4 in the circle indicated by a broken line.

Figure 5 shows on a larger scale the device 30 described.

The two controls 24 and 10 can be seen in this device 30; the water supplied by the hydraulic
connections 4, 6 (not shown in the Figure) reaches the
device 30 which allows regulation of the hot and cold
water both from inside the box shower (by operating the
controls 8, 10) and from outside (by operating the
duplicate controls 24, 26).

Advantageously, according to the invention, two
panels 20, 21 are associated with the functional cross-
member 2. The panels are rigidly fixed to the
functional cross-member 2.

Both of them are inserted inside the functional
cross-member 2, one upwards and the other one
downwards, and are securely fixed in position.

Each panel 20, 21 is preferably made of glass with
a thickness which varies depending on the dimensions
required for the panel. Alternatively, the panel 20,
21 may also be made of other compatible materials which
are both transparent and opaque.

Preferably, the panels are made of 8-mm thick,
tempered, transparent, safety glass.

The functional cross-member 2, on the other hand,
is preferably made internally of plastic and externally
of metal, such as aluminium for example.

Figure 3 shows a plan view, from above, of the
structure 1 in which it is possible to see further and
more clearly the two pairs of controls 8, 10 and
duplicate controls 24, 26, as well as the fixed shower
head 11, the handheld shower head 14 and the top part
of the panel 20.

The multifunction wall structure 1 may be
associated with a closing door and/or other fixed
vertical panels and may be adapted for arrangement
inside a steam room or positioning on a bath tub.
In particular, the multifunction wall structure 1 may be integrated with a small corner wall fixed on the opposite side to the fixing wall, which extends heightwise preferably along the whole length of the multifunction wall structure 1 and widthwise along part of the profile of the shower box, so as to increase further the stability of the multifunction wall structure itself.

The small wall is preferably made of the same material as the multifunction wall structure (and has a limited width, preferably between 15 and 30 cm).

The panel 20 may also have a reinforcing bar. This bar may be positioned equally well at different heights of the panel 20, but preferably along its upper edge.

In a second embodiment of the present invention, the structure may be used as a bathroom assembly 101, as shown in Figure 6, where components in common with the structure of the previous figures will have a reference number increased by 100.

Preferably the bathroom assembly 101 comprises a subhorizontal functional cross-member 102, an upper mirror panel 120 fitted onto the functional cross-member 102, which replaces the mirror of conventional assemblies, and a bottom panel 121 which may act as a simple decorative element of the assembly.

Alternatively, the panels may be either both transparent or both in the form of a mirror.

The subhorizontal functional cross-member 102 is fixed to a wall (not shown in the figures) and houses inside it hydraulic connections 104, 106 leading from the said wall.
Hydro-sanitary accessories are housed on the functional cross-member 102 and are supplied with water from the hydraulic connections 104, 106. Preferably, these accessories comprise a washbasin 103, hydraulic operating devices 108 and 110, toothbrush holders and the like.

The assembly may be positioned so that the functional cross-member 102 is arranged parallel to a wall, as though it were a conventional furniture unit for a bathroom with washbasin and mirror.

A small corner wall such as that envisaged for the first embodiment may also be envisaged in this embodiment.

It is clear how, in this case, the multifunction wall structure performs not only the function of delimiting and servicing a shower box, but also that of a functional support for the conventional components of bathrooms.

In one variant of both embodiments a single panel may be used in place of the pairs of panels 20, 21 and 120, 121; in the box shower configuration, moreover, the single panel is suitably provided with holes, along the functional cross-member 2, on the opposite side to the said shower box, so as to be able to envisage the use of the duplicate controls 24, 26.

In a further variant of both the embodiments the functional cross-member 2 may be inclined at a greater angle, for example 45°, relative to the subhorizontal position of the basic configuration.
CLAIMS

1. Multifunction wall structure (1, 101) able to house hydraulic connections (4, 6, 104, 106) and hydro-sanitary accessories, characterized in that it comprises a subhorizontal functional cross-member (2, 102) which is fixed to a fixing wall and two panels (20, 21, 120, 121) supported by said functional cross-member (2, 102).

2. Multifunction wall structure (1, 101) according to Claim 1, in which the panels (20, 21, 120, 121) are inserted inside the functional cross-member (2, 102).

3. Multifunction wall structure according to Claim 1, in which the panels (20, 21, 120, 121) are made of glass or the like.

4. Multifunction wall structure according to Claim 1, in which the panels (20, 21, 120, 121) are transparent.

5. Multifunction wall structure according to Claim 1, in which the panels (20, 21, 120, 121) are opaque.

6. Multifunction wall structure according to one of the preceding claims, comprising a water regulating device (30) for opening and mixing hot and/or cold water both from inside the shower box, by means of controls (8, 10), and from outside the shower box, by means of duplicate controls (24, 26).

7. Multifunction wall structure (1, 101) according to one of the preceding claims, in which the panel (20) arranged above the functional cross-member (2) has a reinforcing bar.

8. Multifunction wall structure (1, 101)
according to one of the preceding claims, in which the multifunction wall structure is associated with a small corner wall, which extends heightwise preferably along the whole length of the multifunction wall structure and widthwise along part of the profile of the shower box.

9. Shower box structure comprising the multifunction wall structure (1), according to the preceding claims, in which the hydro-sanitary accessories are housed on the side of the functional cross-member (2) facing the inside of the shower box.

10. Shower box structure according to the preceding claim, in which the hydro-sanitary accessories comprise, together or alternatively, flexible pipes (15), handheld shower heads (14), fixed shower heads (11), mixers, controls (8, 10), hot and cold water taps, soap holders and the like.

11. Shower box structure according to Claim 9, comprising furthermore support shelves for objects, towel rails, gripping handles or the like.

12. Shower box structure according to one of Claims 9, 10 or 11, in which duplicate controls (24, 26) are positioned on the side of the functional cross-member (2) facing the outside of the shower box.

13. Bathroom assembly comprising a multifunction wall structure (10) according to Claims 1 to 8, in which the hydro-sanitary accessories are housed only on one side of the functional cross-member (102).

14. Bathroom assembly according to the preceding claims, in which the accessories comprise, together or alternatively, washbasins (103), hydraulic operating devices (108, 110), toothbrush holders and the like.
INTERNATIONAL SEARCH REPORT

A CLASSIFICATION OF SUBJECT MATTER

INVENTION:

E03C1/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

E03C A47K

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>DE 197 10 072 A1 (HUBER FERDINAND DIPL.ING) [DE] HUBER FERDINAND [DE]) 6 November 1997 (1997-11-06) column 13, lines 43-68 column 14, lines 19-37 figures 6,10-13</td>
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Further documents are listed in the continuation of Box C

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

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Date of the actual completion of the international search

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Name and mailing address of the ISA

European Patent Office, P B 5818 Patentilaan 2 NL - 2280 HV Rijswijk

Tel (+31-70) 340-2040, Tx 31 651 epc nl, Fax (+31-70) 340-3016

Authorized officer

Urbahn, Stephanie
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