



(11) **EP 2 366 838 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
21.09.2011 Bulletin 2011/38

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

(21) Application number: **11156539.6**

(22) Date of filing: **02.03.2011**

(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

(30) Priority: **16.03.2010 IT MI20100427**

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(54) **Frame for fixing sanitary fixtures to a wall**

(57) Frame for fixing sanitary fixtures to a wall, which comprises at least two uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) mutually connected by at least one first crosspiece (3; 13; 23; 33; 43), wherein each upright (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) comprises at least one outer lateral wall (1a, 2a) and at least one inner lateral wall (1b, 2b), which walls are mutually connected by at least one first vertical wall (1c, 2c), wherein the first crosspiece (3; 13; 23; 33; 43) comprises at least one upper wall (3a) and at least one lower wall (3b), which walls are mutually connected by at least one first vertical wall (3c), the first

crosspiece (3; 13; 23; 33; 43) being fastened to the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) by means of fastening members (6) inserted into holes made in the first vertical wall (1c, 2c) of the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) and in the first vertical wall (3c) of the first crosspiece (3; 13; 23; 33; 43), wherein the ends of the first crosspiece (3; 13; 23; 33; 43) are inserted into corresponding openings made in both lateral walls (1a, 1b, 2a, 2b) of the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42).

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Description

[0001] The present invention relates to a frame for fixing sanitary fixtures to a wall, and in particular a frame which can be fixed to a wall by means of screws and plugs for supporting water-closets, bidets, washbasins and the like, which protrude from the same wall.

[0002] Italian utility model 234115 discloses a frame comprising two uprights mutually connected by a crosspiece, wherein each upright comprises two lateral walls and a vertical wall. The crosspiece comprises an upper wall, a lower wall and a vertical wall and is fastened to the uprights by means of bolts inserted into holes made in the vertical walls of the uprights and of the crosspiece.

[0003] The crosspiece of said known frame is provided with two outer wings which surround the outer lateral walls of the uprights, however, also with this arrangement, the union between crosspiece and uprights is not particularly solid.

[0004] DE 202004018435 U1, EP 1813733 A2 and EP 1674622 A1 disclose other frames similar to said known frame and having substantially the same technical problem.

[0005] It is therefore an object of the present invention to provide a frame free from said disadvantages. Said object is achieved with a frame, whose main features are disclosed in the first claim, while other features are disclosed in the remaining claims.

[0006] Thanks to the particular mutual coupling between the crosspiece and the uprights, the frame according to the present invention not only is more solid than said known frame, but it is also easier to be assembled, especially if rivets are used instead of the screws in combination with uprights provided with an additional vertical wall, which would render very difficult the use of screws as in the prior art.

[0007] The particular structure of the frame according to the present invention allows the use of crosspieces with two vertical walls which contact both lateral walls of the uprights, so as to further strengthen the frame.

[0008] Further advantages and features of the frame according to the present invention will become clear to those skilled in the art from the following detailed and non-limiting description of five embodiment thereof with reference to the attached drawings, wherein:

- figure 1 shows a front perspective view of the frame according to the first embodiment;
- figure 2 shows a rear perspective view of the frame of figure 1;
- figure 3 shows enlarged detail III of figure 1;
- figure 4 shows enlarged detail IV of figure 2;
- figure 5 shows an enlarged top view of an upright of the frame of figure 1;
- figure 6 shows a front perspective view of the frame according to the second embodiment;
- figure 7 shows a rear perspective view of the frame of figure 6;

- figure 8 shows a front perspective view of the frame according to the third embodiment;
- figure 9 shows a rear perspective view of the frame of figure 8;
- figure 10 shows a front perspective view of the frame according to the fourth embodiment;
- figure 11 shows a rear perspective view of the frame of figure 10; and
- figure 12 shows a front perspective view of the frame according to the fifth embodiment.

[0009] Referring to figures 1 to 5, it is seen that the frame according to the first embodiment of the invention, which frame is suitable for fixing a water-closed to a wall, comprises in a known way at least two uprights 1, 2 mutually connected by at least one first crosspiece 3. Each upright 1, 2 comprises at least one outer lateral wall 1a, 2a and at least one inner lateral wall 1b, 2b, which walls are mutually connected by at least one first vertical wall 1c, 2c. First crosspiece 3 comprises at least one upper wall 3a and at least one lower wall 3b, which walls are mutually connected by at least one first vertical wall 3c. First crosspiece 3 can further comprise an upper recess 4 and/or a lower recess 5 for supporting one or more tubes. Upper wall 3a and lower wall 3b of first crosspiece 3 can be interrupted or bent in correspondence with upper recess 4 and lower recess 5, respectively. First crosspiece 3 is fastened to uprights 1, 2 by means of fastening members 6 inserted into holes made in first vertical wall 1c, 2c of uprights 1, 2 and in first vertical wall 3c of first crosspiece 3. The walls of uprights 1, 2 and/or of first crosspiece 3 are provided with holes for screws and/or other members suitable for fixing the frame, a sanitary fixture and the relevant tubes to a wall.

[0010] The ends of first crosspiece 3 are inserted into corresponding openings into corresponding openings made in both lateral walls 1a, 1b and 2a, 2b of the uprights 1, 2, while fastening members 6 are preferably rivets. Upper wall 3a, lower wall 3b and/or first vertical wall 3c of first crosspiece 3 preferably contact both lateral walls 1a, 1b and 2a, 2b of uprights 1, 2. Upper wall 3a and lower wall 3b of first crosspiece 3 are preferably tapered at the ends of first crosspiece 3, so as to form a protrusion 7 which stops the insertion of first crosspiece 3 into uprights 1, 2, so as to facilitate their correct arrangement. Uprights 1, 2 preferably comprise a second vertical wall 1d, 2d which mutually connects outer lateral wall 1a, 2a and inner lateral wall 1b, 2b, so that the cross-section of uprights 1, 2 is substantially rectangular.

[0011] Referring to figures 6 and 7, it is seen that the frame according to the second embodiment of the invention, which frame is suitable for fixing a bidet to a wall, is similar to the first embodiment, however the ends of a second crosspiece 18 parallel to first crosspiece 13 are inserted into corresponding openings made in both lateral walls of uprights 11, 12. First crosspiece 13 and second crosspiece 18 are fastened to uprights 11, 12 by means of fastening members, preferably rivets, in the

same manner of first crosspiece 13. First crosspieces 13 and second crosspiece 18 have a second vertical wall 13d, 18d which preferably contacts both lateral walls of uprights 11, 12 and which mutually connects the upper wall and the lower wall of crosspieces 13, 18, so that the cross-section of uprights 13, 18 is substantially rectangular.

[0012] Referring to figures 8 and 9, it is seen that the frame according to the third embodiment of the invention, which frame is suitable for fixing a washbasin to a wall, is similar to the second embodiment, however first crosspiece 23 has only a vertical wall, while second crosspiece 28 has two vertical walls, these three vertical walls preferably contacting both lateral walls of uprights 21, 22.

[0013] Referring to figures 10 and 11, it is seen that the frame according to the fourth embodiment of the invention, which frame is suitable for fixing a water-closet with a water tank to a wall, is similar to the third embodiment, however uprights 31, 32 are mutually connected also by a third crosspiece 39, similar to second crosspiece 38 and parallel to first crosspiece 33 and to second crosspiece 38.

[0014] Referring to figure 12, it is seen that the frame according to the fifth embodiment of the invention, which frame is suitable for fixing a water-closet with a water tank to a wall, is similar to the fourth embodiment, however uprights 41, 42 are mutually connected also by a second crosspiece 48 and a third crosspiece 49, which are parallel to first crosspiece 43 and are formed by a single vertical wall. In this case, the openings in the lateral walls of uprights 41, 42 for crosspieces 48, 49 are slits.

[0015] In these or other embodiments the fastening members can be the same members, in particular screws, which are used for fixing the frame, a sanitary fixture and/or the relevant tubes to a wall, and which cross both an upright and the end of a crosspiece inserted into this upright, so as to strengthen and/or simplify the structure of the frame.

[0016] Further modifications and/or additions may be made by those skilled in the art to the hereinabove disclosed and illustrated embodiments while remaining within the scope of the following claims. In particular, further embodiments of the invention may comprise the technical features of one of the following claims with the addition of one or more technical features, taken singularly or in any mutual combination, disclosed in the text and/or illustrated in the drawings.

Claims

1. Frame for fixing sanitary fixtures to a wall, which comprises at least two uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) mutually connected by at least one first crosspiece (3; 13; 23; 33; 43), wherein each upright (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) comprises at least one outer lateral wall (1a, 2a) and at least one inner lateral wall (1b, 2b), which walls are mutually

connected by at least one first vertical wall (1c, 2c), wherein the first crosspiece (3; 13; 23; 33; 43) comprises at least one upper wall (3a) and at least one lower wall (3b), which walls are mutually connected by at least one first vertical wall (3c), the first crosspiece (3; 13; 23; 33; 43) being fastened to the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) by means of fastening members (6) inserted into holes made in the first vertical wall (1c, 2c) of the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) and in the first vertical wall (3c) of the first crosspiece (3; 13; 23; 33; 43), **characterized in that** the ends of the first crosspiece (3; 13; 23; 33; 43) are inserted into corresponding openings made in both lateral walls (1a, 1b, 2a, 2b) of the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42).

2. Frame according to the previous claim, **characterized in that** said fastening members (6) are rivets.

3. Frame according to one of the previous claims, **characterized in that** the upper wall (3a), the lower wall (3b) and/or the first vertical wall (3c) of the first crosspiece (3; 13; 23; 33; 43) contact both lateral walls (1a, 1b, 2a, 2b) of the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42).

4. Frame according to one of the previous claims, **characterized in that** the upper wall (3a) and the lower wall (3b) of the first crosspiece (3) are tapered at the end of the first crosspiece (3), so as to form a protrusion (7) which stops the insertion of the first crosspiece (3) into the uprights (1, 2).

5. Frame according to one of the previous claims, **characterized in that** the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) comprise a second vertical wall (1d, 2d) which mutually connects the outer lateral wall (1a, 2a) and the inner lateral wall (1b, 2b), so that the cross-section of the uprights (1, 2; 11, 12; 21, 22; 31, 32; 41, 42) is substantially rectangular.

6. Frame according to one of the previous claims, **characterized in that** the ends of a second crosspiece (18; 28; 38; 48) and/or of a third crosspiece (39; 49) parallel to the first crosspiece (13; 23; 33; 43) are inserted into corresponding openings made in both lateral walls of the uprights (11, 12; 21, 22; 31, 32; 41, 42) and are fastened to the uprights (11, 12; 21, 22; 31, 32; 41, 42) by means of fastening members in the same way of the first crosspiece (3; 13; 23; 33; 43).

7. Frame according to one of the previous claims, **characterized in that** one or more of said crosspieces (13, 18; 28; 38, 39) have a second vertical wall (13d, 18d) which mutually connects the upper wall and the lower wall of the crosspieces (13, 18; 28; 38, 39), so that the cross-section of these crosspieces (13, 18;

28; 38, 39) is substantially rectangular.

8. Frame according to the previous claim, **characterized in that** said second vertical wall (13d, 18d) contacts both lateral walls of the uprights (11, 12; 21, 22; 31, 32). 5
9. Frame according to one of the previous claims, **characterized in that** said fastening members are members suitable for fixing the frame, a sanitary fixture and/or the relevant tubes to a wall, which members cross both an upright and the end of a crosspiece inserted into this upright. 10

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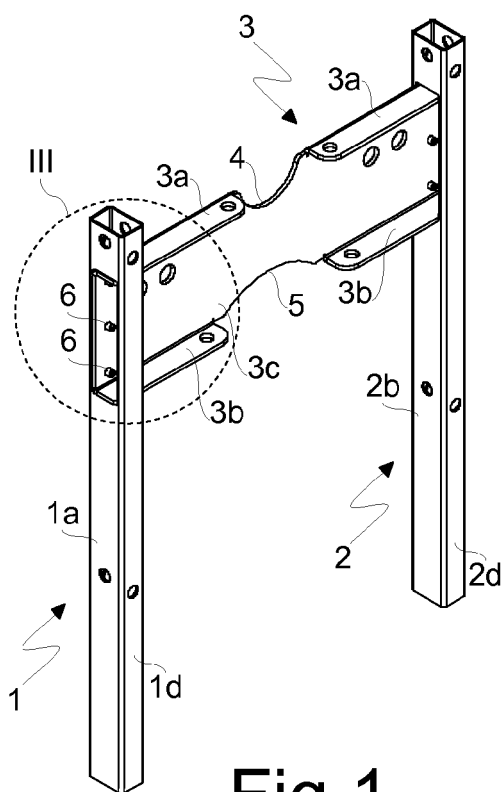


Fig.1

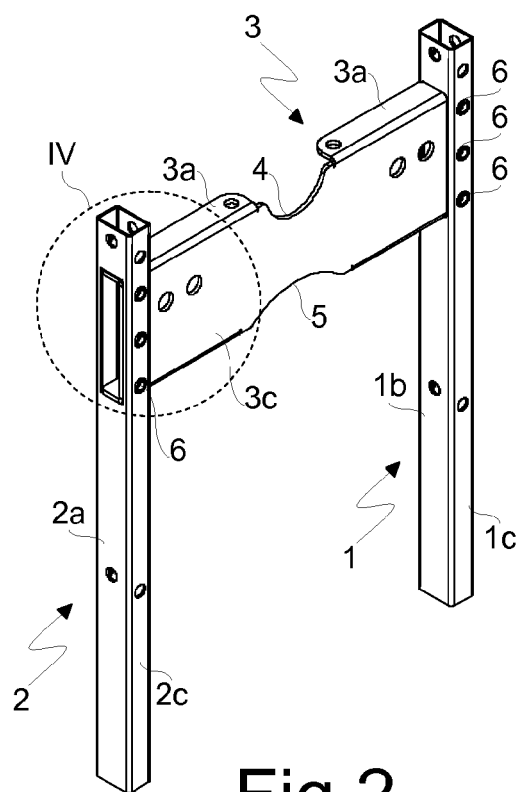


Fig.2

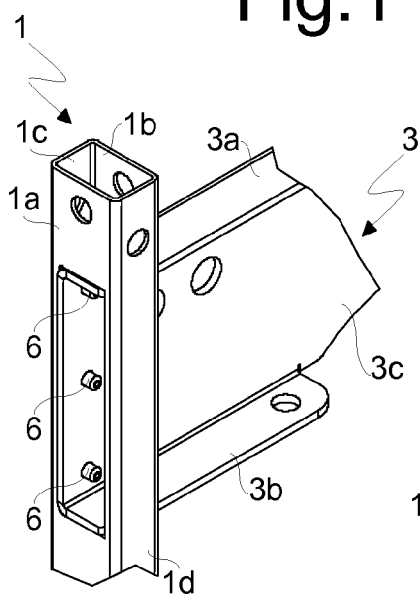


Fig.3

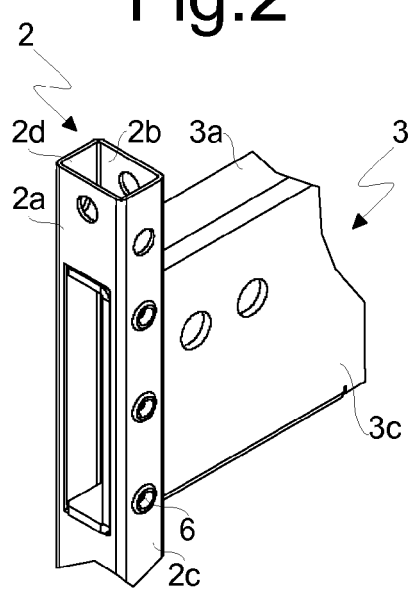


Fig.4

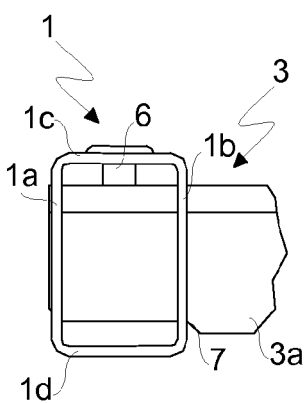


Fig.5

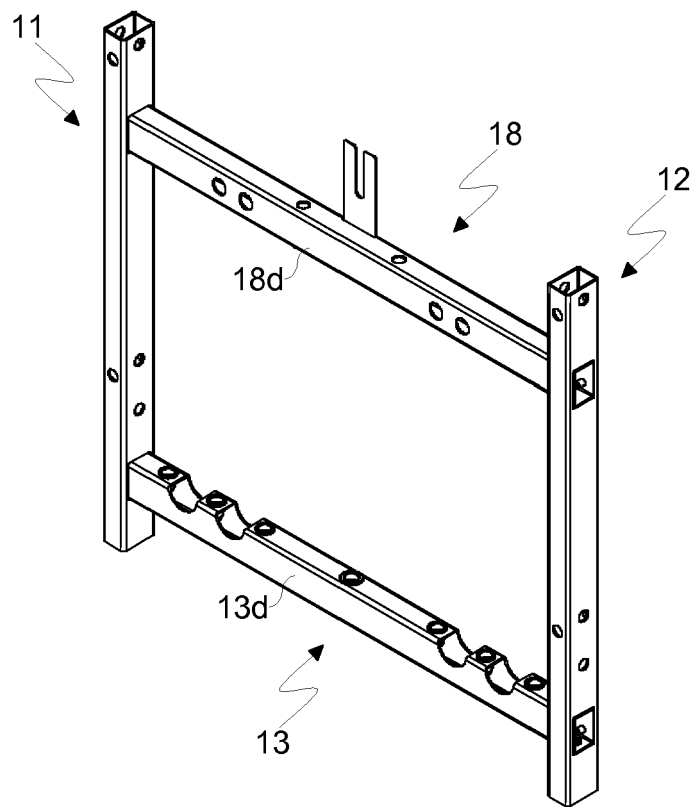


Fig.6

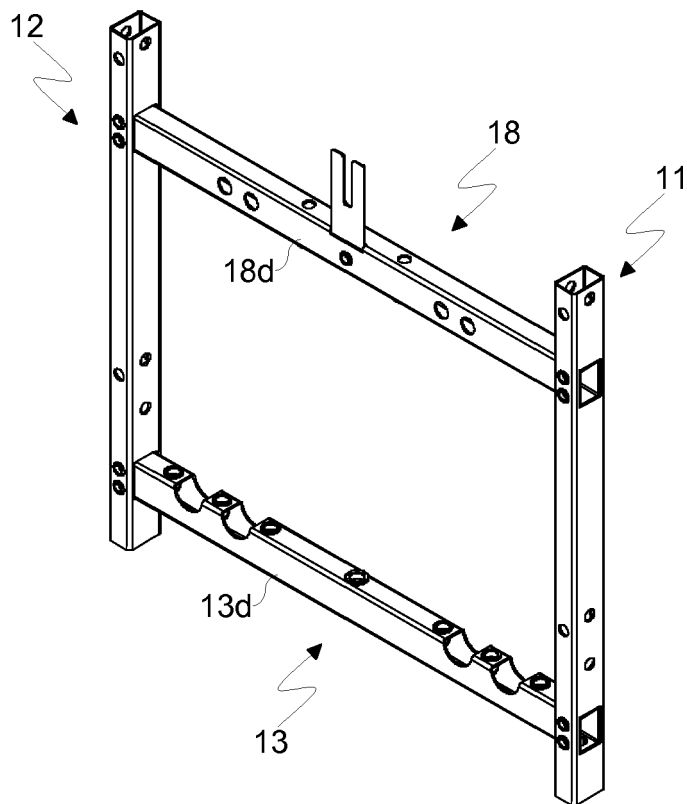


Fig.7

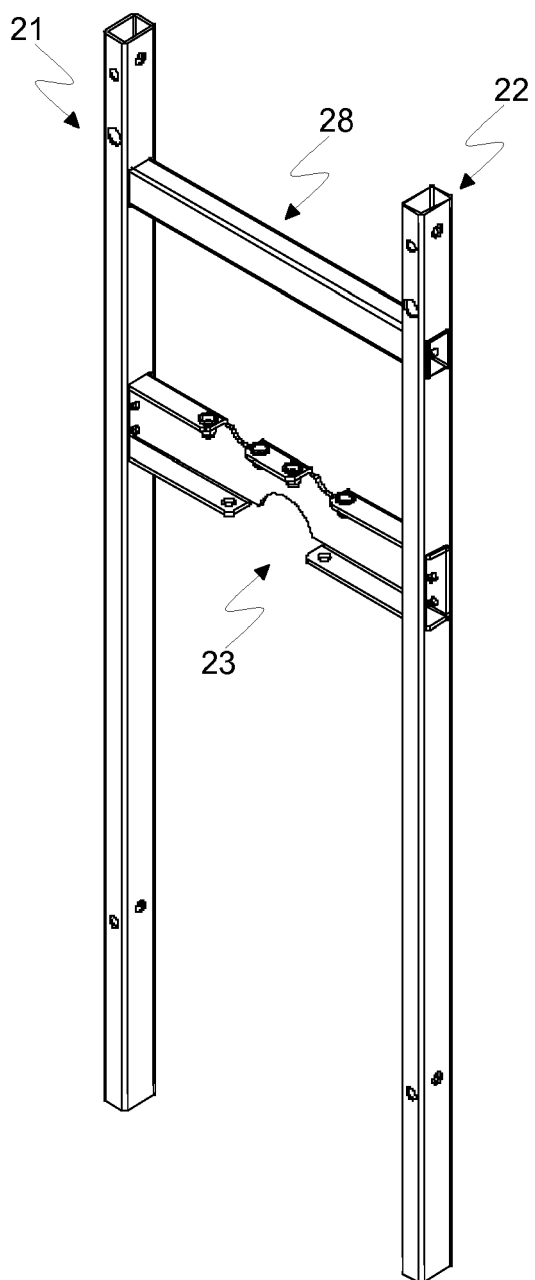


Fig.8

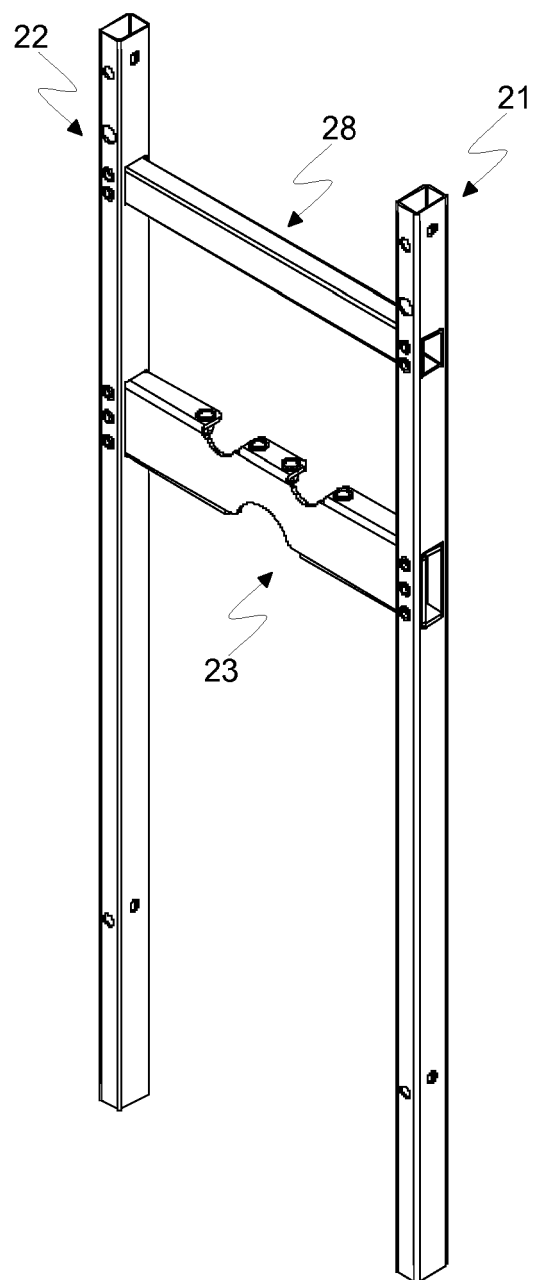


Fig.9

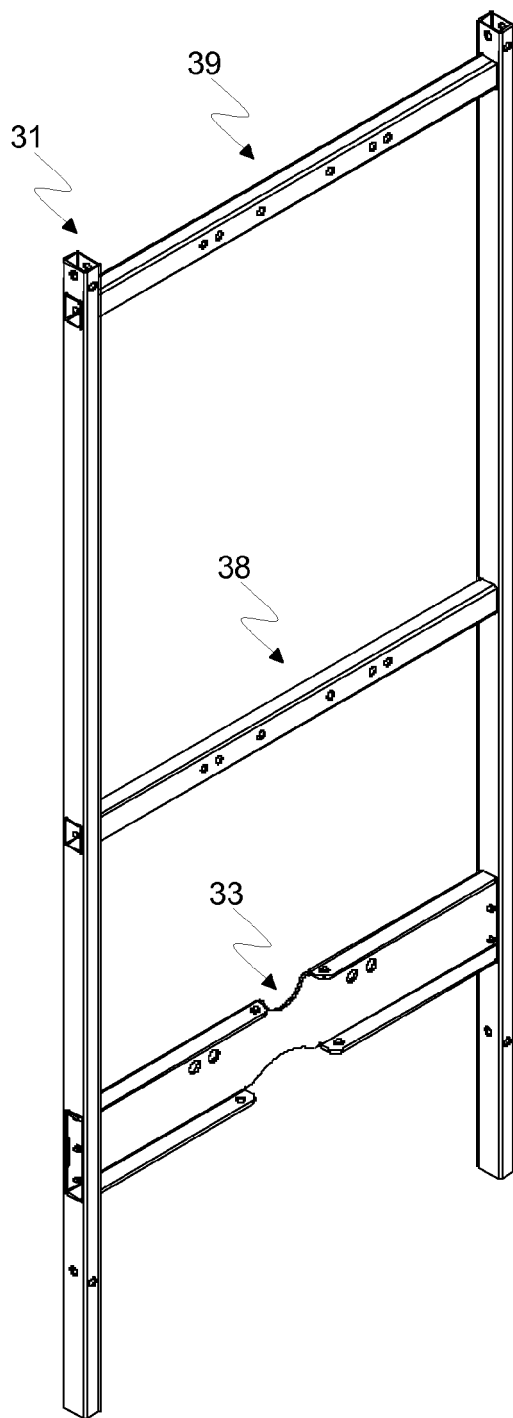


Fig.10

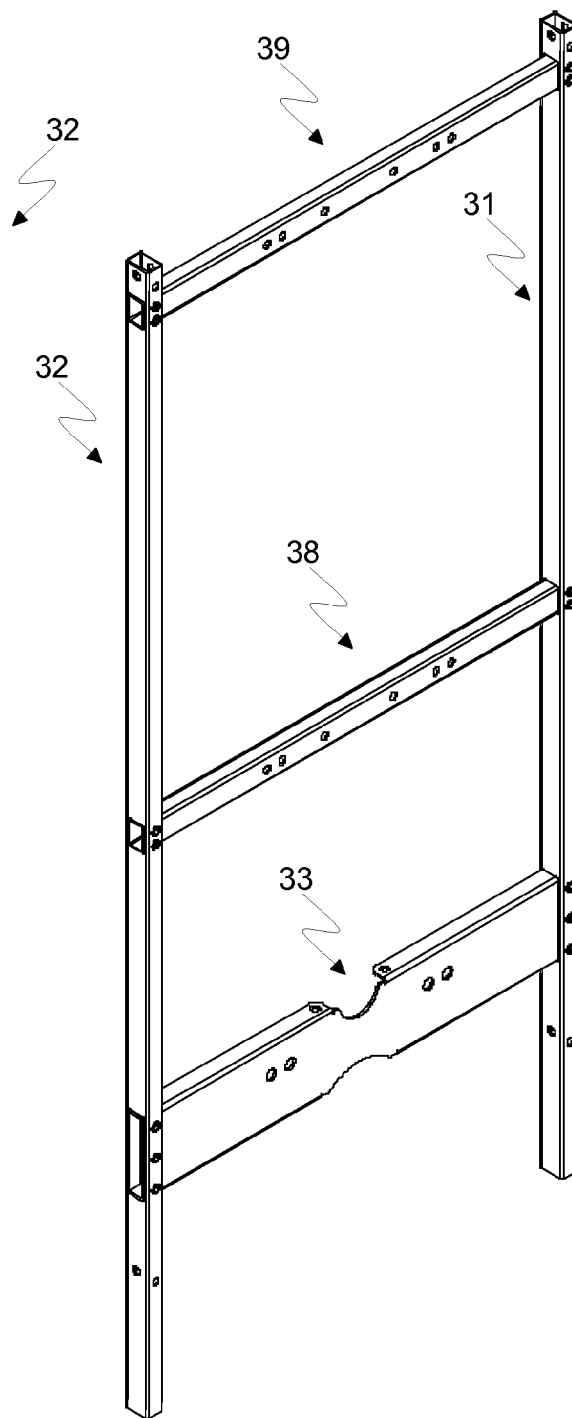


Fig.11

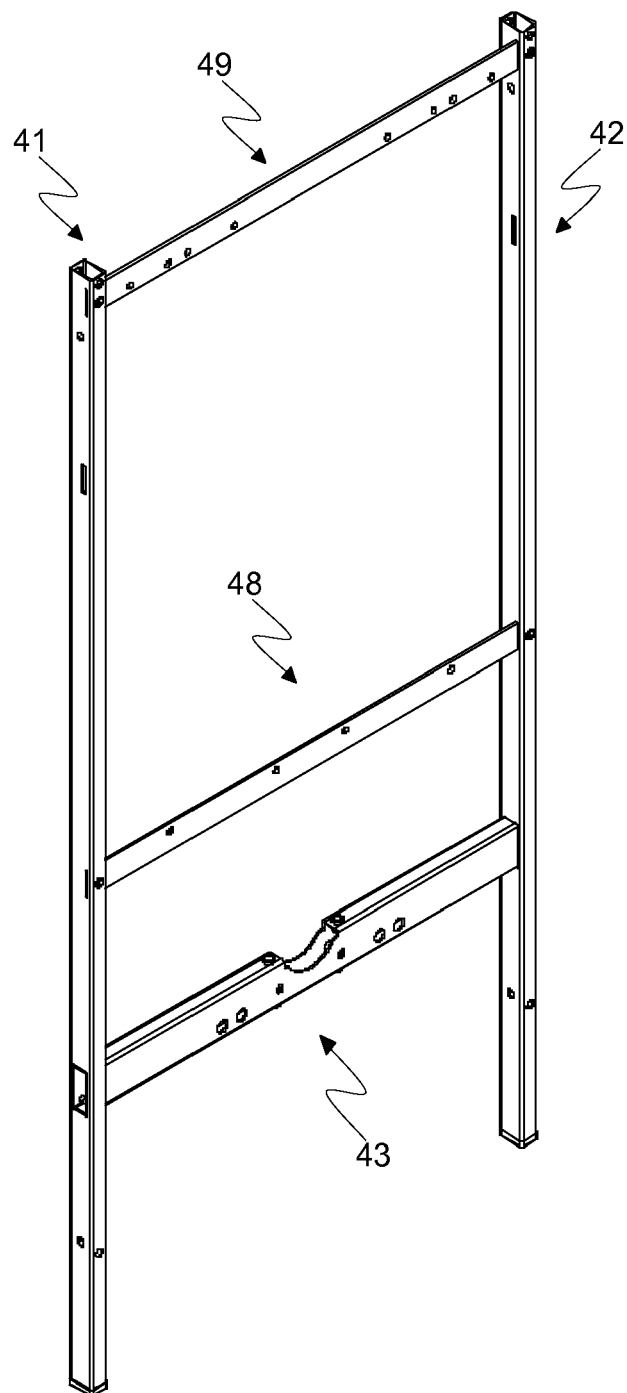


Fig.12



EUROPEAN SEARCH REPORT

Application Number
EP 11 15 6539

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			E03D
Place of search		Date of completion of the search	Examiner
Munich		22 June 2011	Isailovski, Marko
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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22-06-2011

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