



(11) **EP 2 344 006 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
15.04.2015 Bulletin 2015/16

(51) Int Cl.:
A47B 96/14 *(2006.01)* **A47B 96/06** *(2006.01)*

(21) Application number: **09822268.0**

(86) International application number:
PCT/SE2009/051063

(22) Date of filing: **24.09.2009**

(87) International publication number:
WO 2010/047643 (29.04.2010 Gazette 2010/17)

(54) **STORAGE SYSTEM COMPRISING UPRIGHT SEGMENTS AND JOINT PIECE**

AUFBEWAHRUNGSSYSTEM MIT AUFRECHTEN SEGMENTEN UND VERBINDUNGSSTÜCK

SYSTÈME DE STOCKAGE COMPRENANT DES SEGMENTS VERTICAUX ET DES PIÈCES DE
RACCORD

(84) Designated Contracting States:
**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 SE SI SK SM TR**

(30) Priority: **21.10.2008 SE 0802237**

(43) Date of publication of application:
20.07.2011 Bulletin 2011/29

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EP 2 344 006 B1

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Description

Technical field of the invention

[0001] The present invention relates to storage system for mounting on a wall and comprises at least one transverse mounting rail, at least one upright, at least one joint piece, and at least one suspension means having mounting means. The upright comprises a first segment and a second segment each having a front portion with slits adapted to receive the mounting means.

Background

[0002] It is well known in the art of storage systems to use systems with wall mounted transverse rails on which U-shaped uprights having slits for brackets or other mounting units mounted therein. The brackets are provided with hooks shaped for being received in the slits of the uprights. The slits are evenly distributed along the entire length of the uprights, which allows the brackets to be placed at any level and also easily be moved to a lower or higher position depending on what should be stored. Such systems are flexible and can be used for various kinds of storage, for instance in closets, as sectional bookcases, at offices, in store rooms, or in garages.

[0003] One drawback with the storage systems of today is that the components are difficult to handle in some logistic systems since they are prolonged. In particular the uprights are long in order for the storage system to be efficient and use most part of a floor-to-ceiling height for storage. Long components is also a problem when selling a storage system as a do-it-yourself kit since it is difficult to fit it into a normal car for transport from the store to the home of the user.

[0004] US 2005/0145588 shows a storage system where U-shaped uprights are divided into shorter segments and connected to each other end-to-end using a clip. In this way, one segment can be hung on a transversal mounting rail and another segment can be connected thereto and thus hang from the first segment by means of the clip. The sides of the upright's ends that are to be connected have J-shaped cut-outs and the clip has corresponding protrusions, one at each end of the clip, that fit into the cut-outs. Brackets can then be inserted into slits in the upright segments.

[0005] However, the height adjustable uprights in US 2005/0145588 do not provide a very stable solution. If heavy articles are to be stored in the lower parts of the storage system there is a risk that the lower upright segment is displaced away from the wall since the clip is rather loose. Storing of heavy articles below a joint might also force apart the end-to-end connection of the upright segments, which makes the system rickety.

[0006] Another problem with the storage system in US 2005/0145588 is that brackets can not be placed close to a connection joint between an upper and a lower segment of the uprights. One reason for this is simply that

the segments do not have any slits for brackets in the area between the J-shaped cut-out and the end of the segment. This limits the use of the storage system since the user does not have full freedom to place a bracket at any level.

Summary of the invention

[0007] It is therefore an object of the present invention to at least partly overcome the above-mentioned drawbacks and to provide an improved storage system, which in particular provides uprights that are manageable but still stable to provide efficient storing for different storing purposes.

[0008] The present invention relates to storage system for mounting on a wall comprising at least one transverse mounting rail, at least one upright, at least one joint piece, and at least one suspension means having mounting means. The upright comprises a first segment and a second segment each having a front portion with slits adapted to receive the mounting means, and at least two first spacer portions for locating the front portion spaced away from the wall to provide space for the mounting means. Moreover, the first segment is adapted to be releasably mounted to the mounting rail and has a lower end, and the second segment has at least one end which is adapted to be releasably joined end-to-end with the lower end of the first segment by means of the joint piece. For this purpose the joint piece has two first bore holes and each of the ends of the first and second segments has one second bore hole in registry with the first bore holes in use of the system. Further, the joint piece comprises at least two side portions, which, in use of the system, bear against the first spacer portions. The storage system comprises at least one second spacer portion, which, in use of the system, is adapted to provide space between the front portion and the joint piece to allow space for the mounting means. A centre-to-centre distance between the first bore holes is smaller than a centre-to-centre distance between the second bore holes when the first and second segments are positioned end-to-end, to allow a forced fit using fastening means through the bore holes.

[0009] Since the uprights are divided into two or more segments handling and logistics is facilitated as shorter segments are easier to manage than long ones. The disclosed joint piece enables a stable connection between the segments, since it both provides stability from its side portion abutting and bearing against the first spacer portions of the upright segments and have the forced end-to-end fit of the segments. Moreover, the forced fit provides a stable upright which is not prone to be displaced away from the wall and which has torsional rigidity. The storage system according to the invention is also easy to assemble and to take apart and reassemble.

[0010] Preferably, the slits are evenly repeated and run continuously along the entire length of the first and second segments. In this way brackets can be placed anywhere along the segments which makes the storage sys-

tem flexible and suitable for different types of storage.

[0011] Suitably, the evenly repeated slits are repeated with an interval between two adjacent slits, and a distance from one of the ends of the segments to a slit contiguous that end is half the distance of the interval distance between the slits. Having this relation between the end slits of the segments makes it possible to place a bracket not only close to a joint between two segments but also over the joint so that one bracket can at the same time be situated into the slits of both the first and the second segments.

[0012] Suitably, a width of the joint piece is smaller than a width of the first and second segment so that the joint piece can be fitted into the segments. In this way the side portions of the joint piece abuts and bear against the inside surfaces of the spacer portions of the segments. Thus, the joint piece is not obstructing the exterior of the segments.

[0013] Advantageously, the first and second segments are essentially U-shaped so that the first spacer portions form shanks of the U-shape and the front portion forms the base intermediate the shanks. U-shaped uprights provide space for mounting means of brackets between the upright and the wall. Further, when the storage system is arranged at the wall the non-locating ends of the U-shape abut the wall, which provides stability for the storage system.

[0014] Preferably, the joint piece is essentially U-shaped so that its side portions form shanks of the U-shape and a base portion is intermediate the shanks. A U-shaped joint piece is advantageous since it provides space for mounting means of brackets between the rear side of the front portion of the segments and the joint piece. If both the joint piece and the segments are U-shaped the space between the joint piece and the segments is provided by having the U-shape of the joint piece in an opposite position in relation to the U-shape of the segments. Also, the base portion of a U-shaped joint piece provides a good abutment for fastening means such as screw nuts.

[0015] Suitably, the fastening means comprise screws each having a tapered portion towards a screw thread. Such cone screws enhance the tight forced fit between the first and the second segments.

[0016] Preferably, a depth of the second spacer portion is less than a depth of the first spacer portions to allow space for fastening means between the wall and the joint piece in use of the system. If for instance screws and screw nuts are used as fastening means, the space between the wall and the joint piece allows the screws or screw nuts to be fitted without interrupting the alignment of the upright along the wall.

[0017] Preferably, the first and second segments and the joint piece comprise a rigid material such as metal, which permits a stable upright and a stable joint. Preferred metals are for instance steel or aluminum.

Brief description if the drawings

[0018] This and other aspects of the present invention will now be described in more detail, with reference to the appended drawings showing currently preferred embodiments of the invention.

Figure 1 is perspective view of a storage system according to the invention.

Figures 2a - b are close up perspective views, as seen from two different directions, of the storage system shown in fig 1.

Figure 3 is a close up side view, partially in cross section, of the storage system shown in fig 1.

Figure 4 is a close up rear view, partially in cross section, of the storage system according shown in fig 1.

Figure 5 is a close up side view, in cross section, of the storage system shown in fig 1.

Detailed description of a preferred embodiment

[0019] The invention will now for the purpose of exemplification be described in more detail by means of an example and with reference to the accompanying drawings.

[0020] Figure 1 shows a storage system 1 according to the invention and Figures 2 - 5 show a portion of the storage system 1 in more detail at the joint between the two segments 7, 8 of one upright 3, i.e. at the lower end 13 of the first segment 7, which is joined end-to-end with the upper end 14 of the second segment 8. The storage system 1 is shown in an assembled storing position and includes different types of brackets 5 and hangers 5', which can be arranged in numerous different combinations. A transverse mounting rail 2 serves as mounting base and it has bore holes 30 through which fasteners can be used for mounting the storage system 1 to for instance a wall. A flange 31 extends along the whole mounting rail 2 at its lower end and is directed upwards for attachment of uprights 3 or other storage components such as other types of hangers 5'.

[0021] As is best seen in Figure 2 the uprights 3 are basically U-shaped comprising a front portion 9 and two spacer portions 11, 12 so that the spacer portions 11, 12 form the shanks of the U-shape, and the front portion 9 forms the base intermediate the shanks. When arranged at a wall, the uprights 3 are turned so that the non-locating ends of the spacer portions 11, 12 abut the wall. This provides stability for the storage system 1 and allows space 25 between the wall and the front portion 9 of the upright 3. The uprights 3 are arranged on the transverse mounting rail 2 at intervals basically corresponding to the width of the shelves or storing equipments that are arranged at the brackets 5. The uprights are made of a rigid material such as metal.

[0022] Pairs of laterally spaced apart slits 10 are provided in the front portion 9 and oriented in a longitudinal

direction and spaced apart over the entire length of the upright 3. The slits 10 are evenly repeated along the entire upright 3 and brackets 5 can be inserted into the slits 10 at locations chosen by the user for optimizing the storage. The space 25 between the front portion 9 and the wall allows for fastening means 6 of brackets 5 to be inserted into the slits 10. The brackets 5 can easily be moved to a different location on the uprights 3. In the embodiment of the storage system 1 shown in the Figures the uprights 3 have pairs of slits but it could just as well be single slits or triple or even quadruple or more slits depending on the usage and which kinds of brackets that are used. In addition, the slits do not have to be a certain shape but any kind of opening which is suitable for receiving fastening means 6 can be used.

[0023] In Figure 1, two of the shown uprights comprise two segments, one first, upper, segment 7 and one second, lower, segment 8. The first segment 7 has a cut-out 32 adjacent its upper end and is arranged on the transverse mounting rail 2 by means of the flange 31 of the mounting rail 2, which is received in the cut-out 32. Further, the first segment 7 has a lower end 13, which is joined end-to-end with the upper end 14 of the second segment 8. In this preferred embodiment of the present invention the length of the upright segments 7, 8 is about 0.5 - 1.5 m, but of course any segment size suitable for the usage and within the scope of the invention as defined by the appended claims is possible.

[0024] Figures 2a and 2b show a joint piece 4 used for the end-to-end connection between the first segment 7 and the second segment 8. Figure 2a shows the first segment 7 and the second segment 8 in a joined position. The joint piece 4 is arranged as a uniting and stabilizing element between the first segment 7 and the second segment 8. The joint piece 4 is made of a rigid material such as metal. As is best seen in Figure 2b, which shows the segments 7, 8 as separated, the joint piece 4 is U-shaped and comprises two side portions 19, 20 that form the shanks of the U-shape and a base portion 23 intermediate the side portions 19, 20. The width of the front portion 23 of U-shaped joint piece 4 is smaller than the width of the base portion 9 of the U-shaped first and second segment 7, 8 so that the joint piece 4 can be fitted into the segments 7, 8. However the joint piece 4 should only be slightly narrower than the inner sides of the segments 7, 8, as seen in its transverse direction, in order for the side portions 19, 20 of the joint piece 4 to abut and bear against the first spacer portions 11, 12 of the segments 7, 8 to provide support and a stable upright 3.

[0025] Two first bore holes 15, 16 are located in the joint piece 4, one at each end thereof, and each of the ends 13, 14 of the first and second segments 7, 8 has one second bore hole 15, 16 in registry with the first bore holes 15, 16. An important feature of the storage system 1 is that the centre-to-centre distance d between the first bore holes 15, 16 is smaller than a centre-to-centre distance d' between the second bore holes 17, 18 when the first and second segments 7, 8 are positioned in abutment

end-to-end to one another, to allow a forced fit using fastening means 22 through the bore holes 15, 16, 17, 18. The magnitude of the size difference depends on the dimension of the system but for the shown storage system 1 a preferred difference is in the range of 0.1 - 2.0 mm. Figure 2b shows fastening means 22 in the shape of cone screws, *i.e.* screws that have screw heads having tapered portions 26 towards the screw thread 27. To enhance the forced fit of the first and second segments 7, 8 and to fit the screws 22 tight, the bore holes 17, 18 have inwardly tapering sides or bore walls 28.

[0026] Moreover, the side portions 19, 20 of the joint piece 4 serves as spacer portions and are adapted to provide space 21 between the rear side of the front portions 9 of the first and second segments 7, 8, and the base portion 23 of the joint piece 4. In other words, the space 21 between the joint piece 4 and the segments 7, 8 is provided by having the U-shape of the joint piece 4 in an opposite position in relation to the U-shape of the segments 7, 8.

[0027] As can be seen in Figure 2a, and is even better seen in Figure 3 and Figure 5, the height of the side portions 19, 20 is smaller than the height of the first spacer portions 11, 12 to allow space 24 for fastening means 22, such as screws and screw nuts, between the joint piece 4 and the wall to which the storage system 1 is arranged. In this preferred embodiment of the present invention the thickness of the material of the segments 7, 8 and the joint piece 4 is in the range of 1 - 10 mm, but of course any size of the segments and the joint piece suitable for the usage and within the scope of the invention as defined by the appended claims is possible. For instance, the joint piece could be made with threads instead of having a screw nuts. In such an embodiment it might be necessary to have collars projecting from the joint piece to fit the threads. Another possible fastening means is to use locking nuts.

[0028] Figure 3 shows a cross-section view seen from the side of a portion of a bracket 5 when arranged to an upright 3 at a joint between two segments 7, 8. The bracket 5 comprises mounting means 6 in form of L- or T-shaped projections 6, which are adapted to fit into the slits 10 of the upright 3. The L-shape serves as a hook to keep the bracket 5 in place at the upright 3 while the T-shape works to preserve the bracket 5 in place even if it is being subjected to a force directed upwards, such as an unintentional push. Other types of shapes of the mounting means 6 are possible as long as they are adapted to match with the shape of the slits 10 and with the size of the upright 3. A bracket 5 can have any suitable number of mounting means 6.

[0029] As can be seen in Figure 3 the side portions 19, 20 of the joint piece 4 provide space 21 for the mounting means 6 adjacent the joint piece 4. Thus it is possible to place a bracket 5 not only close to a joint between two segments 7, 8, but also over the joint so that one bracket 5 is at the same time situated into the slits 10 of both the first and the second segments 7, 8. A condition for this

to work properly for a regular bracket 5 is that the evenly repeated slits 10 of the first and second segments 7, 8 are repeated with an interval a between two adjacent slits, and that a distance b from one of the ends 13, 14 of the segments 7, 8 to a slit contiguous the end 13, 14 is half the distance of the interval a . In other words, the distance a should be essentially twice the distance b . The distances a and b can be seen in Figure 4.

[0030] Figure 4 shows the joint piece 4 in use joining the first and the second segments 7, 8 as seen from the rear side towards the wall onto which it is attached. The joint piece 4 fits tightly between the first spacer portions 11, 12 of the segments 7, 8 having the side portions 19, 20 of the joint piece 4 abutting and bearing against the first spacer portions 11, 12 of the segments 7, 8 to provide support and allow the upright 3 to be stable. Since both the segments 7, 8 and the joint piece 4 are made of rigid materials the complete upright behaves as a one piece upright with respect to stability, even though it comprises two separate segments 7, 8.

[0031] Figure 5 shows the joint piece 4 in use joining the first and the second segments 7, 8 as seen from the side. Cone screws are used as fastening means 22 and the bore holes 17, 18 in the first and the second segments 7, 8 respectively, are countersunk into the segments 7, 8. In addition to enhancing the forced fit between the first and second segments 7, 8, as described above, the countersunk screws also make sure that the fastening means 22 do not interrupt the brackets 5 or the mounting means 6 of the brackets 5.

[0032] The person skilled in the art realizes that the present invention by no means is limited to the preferred embodiment described above. On the contrary, many modifications and variations are possible within the scope of the appended claims. For instance, in the embodiment of the shown storage system 1, the second spacer portions 33, 34 and the side portions 19, 20 are the same i.e. the shanks of the U-shaped joint piece 4. However, the second spacer portions can be separate portions and located for instance in the centre of the joint piece, as long as they do not interrupt the mounting means 6 of the brackets 5. Another possibility is to have the U-shaped joint piece slightly wider than the upright segments so that the side portions of the joint piece abut the outside of the segments. In such an embodiment the shanks of the U-shaped segments comprise the second spacer portions.

[0033] Other useful possibilities of the storage system include having the transverse mounting rail made in shorter segments to facilitate handling and logistics. The mounting rail segments can then be arranged after each other when arranging the storage system to a wall. Of course it is also within the scope of the invention to have more than two upright segments joined after one another. Also, the bore hole in the lower end of an upright segment that is not joined to another segment can be used for fastening means attaching the lower end of the segment to the wall. Finally, in this description the term "bracket"

should be considered not only as a regular bracket, but also including any type of suspension means, for instance clothes hangers and various hooks and supports.

Claims

1. Storage system (1) for mounting on a wall comprising at least one transverse mounting rail (2), at least one upright (3), at least one joint piece (4), and at least one suspension means (5) having mounting means (6), wherein the upright (3) comprises a first segment (7) and a second segment (8) each having a front portion (9) with slits (10) adapted to receive said mounting means (6), and at least two first spacer portions (11, 12) for locating said front portion (9) spaced away from said wall to provide space for said mounting means (6), wherein said first segment (7) is adapted to be releasably mounted to said mounting rail (2) and has a lower end (13), and wherein said second segment (8) has at least one end (14) which is adapted to be releasably joined end-to-end with said lower end (13) of said first segment (7) by means of said joint piece (4), wherein said joint piece (4) has two first bore holes (15, 16) and each of said ends (13, 14) of said first and second segments (7, 8) has one second bore hole (17, 18) in registry with said first bore holes (15, 16) in use of said system (1), **characterized in that**

- said joint piece (4) comprises at least two side portions (19, 20) which, in use of said system (1), bear against said first spacer portions (11, 12),

- said storage system (1) comprises at least one second spacer portion (33, 34) which, in use of said system (1), is adapted to provide space (21) between said front portion (9) and said joint piece (4) to allow space for said mounting means (6), and

- a centre-to-centre distance (d) between said first bore holes (15, 16) is smaller than a centre-to-centre distance (d') between said second bore holes (17, 18) when said first and second segments (7, 8) are positioned end-to-end, to allow a forced fit using fastening means (22) through said bore holes (15, 16, 17, 18).

2. Storage system (1) according to claim 1, wherein said slits are evenly repeated and run continuously along the entire length of said first and second segments.
3. Storage system (1) according to claim 2, wherein said evenly repeated slits are repeated with an interval (a) between two adjacent slits, and wherein a distance (b) from one of said ends (13, 14) of said segments (7, 8) to a slit contiguous said end (13, 14)

is half the distance of said interval (a).

4. Storage system (1) according to anyone of claims 1 - 3, wherein a width of said joint piece (4) is smaller than a width of said first and second segment (7, 8) so that said joint piece (4) can be fitted into said segments (7, 8). 5
5. Storage system (1) according to anyone of claims 1 - 4, wherein said first and second segments (7, 8) are essentially U-shaped so that said first spacer portions (11, 12) form shanks of said U-shape and said front portion (9) forms the base intermediate said shanks. 10
6. Storage system (1) according to anyone of claims 1 - 5, wherein said joint piece (4) is essentially U-shaped so that said side portions (19, 20) form shanks of said U-shape and a base portion (23) is intermediate said shanks. 15
7. Storage system (1) according to anyone of claims 1 - 6, wherein said fastening means (22) comprise screws each having a tapered portion (26) towards a screw thread (27). 20
8. Storage system (1) according to anyone of claims 1 - 7, wherein a depth of said second spacer portion (33, 34) is less than a depth of said first spacer portions (11, 12) to allow space (24) for fastening means (22) between said wall and said joint piece (4) in use of said system (1). 25
9. Storage system (1) according to anyone of claims 1 - 8, wherein said first and second segments (7, 8) comprise a rigid material such as metal. 30
10. Storage system (1) according to anyone of claims 1 - 9, wherein said joint piece (4) comprises a rigid material such as metal. 35

Patentansprüche

1. Aufbewahrungssystem (1) zum Anbringen an einer Wand, umfassend zumindest eine quer verlaufende Anbringungsschiene (2), zumindest einen Pfosten (3), zumindest ein Verbindungsstück (4) und zumindest ein Aufhängungsmittel (5) mit Anbringungsmitteln (6), wobei der Pfosten (3) ein erstes Segment (7) und ein zweites Segment (8) umfasst, die jedes einen Frontabschnitt (9) mit Schlitz (10), die zum Aufnehmen der Anbringungsmittel (6) geeignet sind, und zumindest zwei erste Distanzstückabschnitte (11, 12) zum Anordnen des Frontabschnitts (9) von der Wand weg beabstandet zum Vorsehen von Raum für die Anbringungsmittel (6) aufweist, wobei das erste Segment (7) dazu geeignet ist, lösbar an 45

der Anbringungsschiene (2) angebracht zu sein, und ein unteres Ende (13) aufweist, und wobei das zweite Segment (8) zumindest ein Ende (14) aufweist, das dazu geeignet ist, mithilfe des Verbindungsstücks (4) lösbar Ende an Ende mit dem unteren Ende (13) des ersten Segments (7) verbunden zu sein, wobei das Verbindungsstück (4) zwei erste Bohrlöcher (15, 16) aufweist und jedes der Enden (13, 14) des ersten und zweiten Segments (7, 8) ein zweites Bohrloch (17, 18) im Gebrauch des Systems (1) deckungsgleich mit den ersten Bohrlöchern (15, 16) aufweist, **dadurch gekennzeichnet, dass**

- das Verbindungsstück (4) zumindest zwei Seitenabschnitte (19, 20) umfasst, die im Gebrauch des Systems (1) an die ersten Distanzstückabschnitte (11, 12) drücken,
- das Aufbewahrungssystem (1) zumindest einen zweiten Distanzstückabschnitt (33, 34) umfasst, der im Gebrauch des Systems (1) dazu geeignet ist, Raum (21) zwischen dem Frontabschnitt (9) und dem Verbindungsstück (4) vorzusehen, um den Anbringungsmitteln (6) Raum zu bieten, und
- ein Mitte/Mitte-Abstand (d) zwischen den ersten Bohrlöchern (15, 16) kleiner als ein Mitte/Mitte-Abstand (d') zwischen den zweiten Bohrlöchern (17, 18) ist, wenn das erste und zweite Segment (7, 8) Ende an Ende positioniert sind, um Zwangspassung unter Benutzung von Befestigungsmitteln (22) durch die Bohrlöcher (15, 16, 17, 18) zu ermöglichen.

2. Aufbewahrungssystem (1) nach Anspruch 1, wobei die Schlitz gleichmäßig wiederholt sind und fortlaufend entlang der gesamten Länge des ersten und zweiten Segments verlaufen.
3. Aufbewahrungssystem (1) nach Anspruch 2, wobei die gleichmäßig wiederholten Schlitz mit einem Zwischenraum (a) zwischen benachbarten Schlitz wiederholt sind, und wobei ein Abstand (b) von einem der Enden (13, 14) der Segmente (7, 8) zu einem an das Ende (13, 14) angrenzenden Schlitz die Hälfte des Zwischenraums (a) beträgt.
4. Aufbewahrungssystem (1) nach einem der Ansprüche 1 bis 3, wobei eine Breite des Verbindungsstücks (4) kleiner als eine Breite des ersten und zweiten Segments (7, 8) ist, sodass das Verbindungsstück (4) in die Segmente (7, 8) eingepasst sein kann.
5. Aufbewahrungssystem (1) nach einem der Ansprüche 1 bis 4, wobei das erste und zweite Segment (7, 8) im Wesentlichen U-förmig sind, sodass die ersten Distanzstückabschnitte (11, 12) Schenkel der U-Form ausbilden und der Frontabschnitt (9) die Basis 55

zwischen den Schenkeln ausbildet.

6. Aufbewahrungssystem (1) nach einem der Ansprüche 1 bis 5, wobei das Verbindungsstück (4) im Wesentlichen U-förmig ist, sodass die Seitenabschnitte (19, 20) Schenkel der U-Form ausbilden und ein Basisabschnitt (23) zwischen den Schenkeln liegt. 5
7. Aufbewahrungssystem (1) nach einem der Ansprüche 1 bis 6, wobei die Befestigungsmittel (22) Schrauben umfassen, die jede einen sich verjüngenden Abschnitt (26) zu einem Schraubgewinde (27) hin aufweisen. 10
8. Aufbewahrungssystem (1) nach einem der Ansprüche 1 bis 7, wobei eine Tiefe des zweiten Distanzstückabschnitts (33, 34) geringer als eine Tiefe der ersten Distanzstückabschnitte (11, 12) ist, um im Gebrauch des Systems (1) Raum (24) für Befestigungsmittel (22) zwischen der Wand und dem Verbindungsstück (4) zu ermöglichen. 15 20
9. Aufbewahrungssystem (1) nach einem der Ansprüche 1 bis 8, wobei das erste und zweite Segment (7, 8) ein starres Material, wie etwa Metall, umfassen. 25
10. Aufbewahrungssystem (1) nach einem der Ansprüche 1 bis 9, wobei das Verbindungsstück (4) ein starres Material, wie etwa Metall, umfasst. 30

Revendications

1. Système de stockage (1) destiné à être monté sur un mur, comprenant au moins un rail de montage (2) transversal, au moins un montant (3), au moins une pièce de raccord (4) et au moins un moyen de suspension (5) possédant un moyen de montage (6), dans lequel le montant (3) comprend un premier segment (7) et un deuxième segment (8) possédant chacun une partie frontale (9) avec des fentes (10) adaptées pour recevoir ledit moyen de montage (6), et au moins deux premières parties d'espacement (11, 12) destinées à placer ladite partie frontale (9) à distance dudit mur pour fournir de l'espace pour ledit moyen de montage (6), dans lequel le premier segment (7) est adapté pour être monté de façon détachable audit rail de montage (2) et présente une extrémité inférieure (13), et dans lequel ledit deuxième segment (8) présente au moins une extrémité (14) adaptée pour être reliée de façon détachable bout-à-bout à ladite extrémité inférieure (13) dudit premier segment (7) au moyen de ladite pièce de raccord (4), dans lequel ladite pièce de raccord (4) présente deux premiers alésages (15, 16) et chacune desdites extrémités (13, 14) desdits premier et deuxième segments (7, 8) présente un deuxième alésage (17, 18) coïncidant avec lesdits premiers alésages (15, 16) 35 40 45 50 55

lors de l'utilisation dudit système (1), **caractérisé en ce que**

- ladite pièce de raccord (4) comprend au moins deux parties latérales (19, 20) s'appuyant contre ladite première partie d'espacement (11, 12) lors de l'utilisation dudit système (1),
 - ledit système de stockage (1) comprend au moins une deuxième partie d'espacement (33, 34) adaptée pour fournir de l'espace (21) entre ladite partie frontale (9) et ladite pièce de raccord (4) lors de l'utilisation du système (1), afin de créer de l'espace pour ledit moyen de montage (6), et
 - une distance centre-à-centre (d) entre lesdits premiers alésages (15, 16) est inférieure à une distance centre-à-centre (d') entre lesdits deuxième alésages (17, 18) lorsque lesdits premier et deuxième segments (7, 8) sont positionnés bout-à-bout, pour permettre un ajustement forcé à travers lesdits alésages (15, 16, 17, 18) à l'aide d'un moyen de fixation (22).
2. Système de stockage (1) selon la revendication 1, dans lequel lesdites fentes sont réparties de façon régulière et s'étendent en continu sur toute la longueur desdits premier et deuxième segments.
 3. Système de stockage (1) selon la revendication 2, dans lequel lesdites fentes réparties de façon régulière sont réparties avec un intervalle (a) entre deux fentes, et dans lequel une distance (b) entre l'une desdites extrémités (13, 14) desdits segments (7, 8) et une fente contigüe à ladite extrémité (13, 14) mesure la moitié de la distance dudit intervalle (a).
 4. Système de stockage (1) selon l'une quelconque des revendications 1 - 3, dans lequel une largeur de ladite pièce de raccord (4) est inférieure à une largeur desdits premier et deuxième segments (7, 8), de sorte que ladite pièce de raccord (4) peut être ajustée dans lesdits segments (7, 8).
 5. Système de stockage (1) selon l'une quelconque des revendications 1 - 4, dans lequel lesdits premier et deuxième segments (7, 8) présentent essentiellement une forme en U, de telle manière que lesdites premières parties d'espacement (11, 12) forment des branches de ladite forme en U et ladite partie frontale (9) forme la base entre lesdites branches.
 6. Système de stockage (1) selon l'une quelconque des revendications 1-5, dans lequel ladite pièce de raccord (4) présente essentiellement une forme en U, de telle manière que lesdites parties latérales (19, 20) forment des branches de ladite forme en U et une partie de base (23) se trouve entre les branches.

7. Système de stockage (1) selon l'une quelconque des revendications 1-6, dans lequel ledit moyen de fixation (22) comprend des vis présentant respectivement une partie effilée (26) vers une tête de vis (27). 5
8. Système de stockage (1) selon l'une quelconque des revendications 1-7, dans lequel une profondeur de ladite deuxième partie d'espacement (33, 34) est inférieure à une profondeur desdites premières parties d'espacement (11, 12) pour assurer un espace (24) 10 pour le moyen de fixation (22) entre ledit mur et ladite pièce de raccord (4) lors de l'utilisation dudit système (1).
9. Système de stockage (1) selon l'une quelconque des revendications 1-8, dans lequel lesdits premier et deuxième segments (7, 8) comprennent un matériau rigide tel que du métal. 15
10. Système de stockage (1) selon l'une quelconque des revendications 1-9, dans lequel ladite pièce de raccord (4) comprend un matériau rigide tel que du métal. 20

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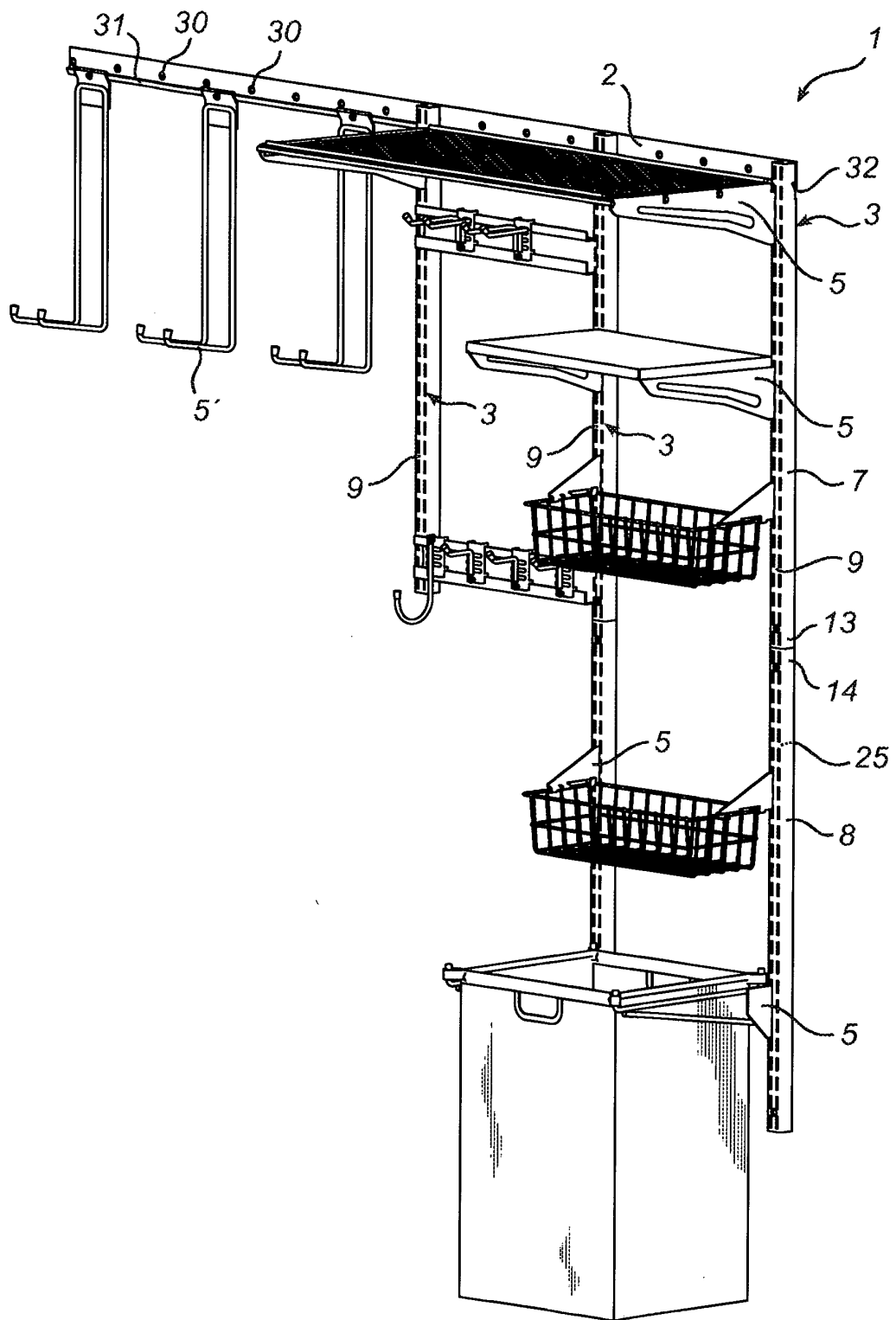


Fig. 1

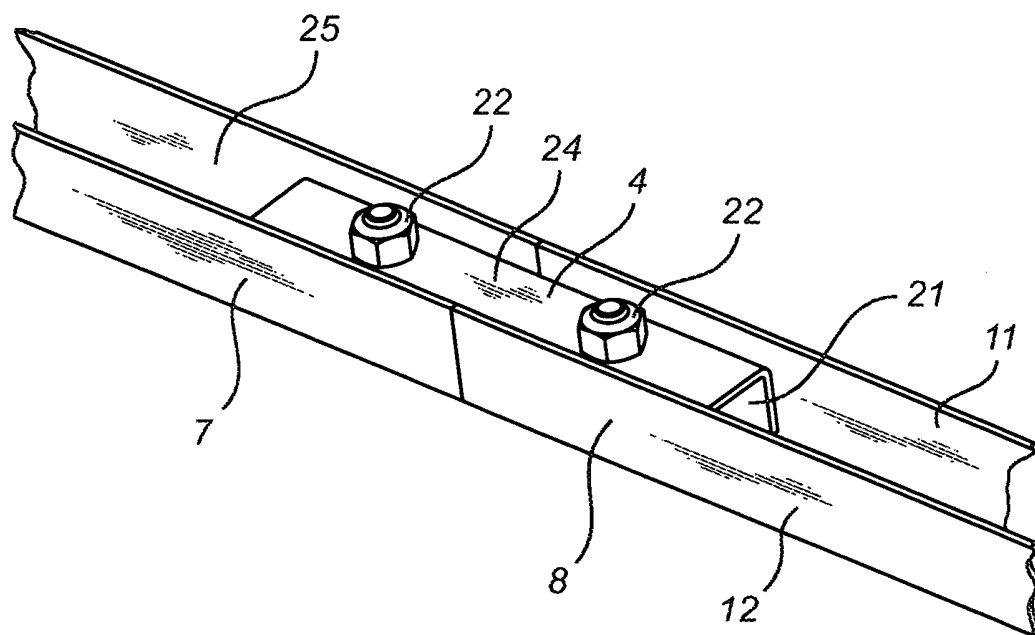


Fig. 2a

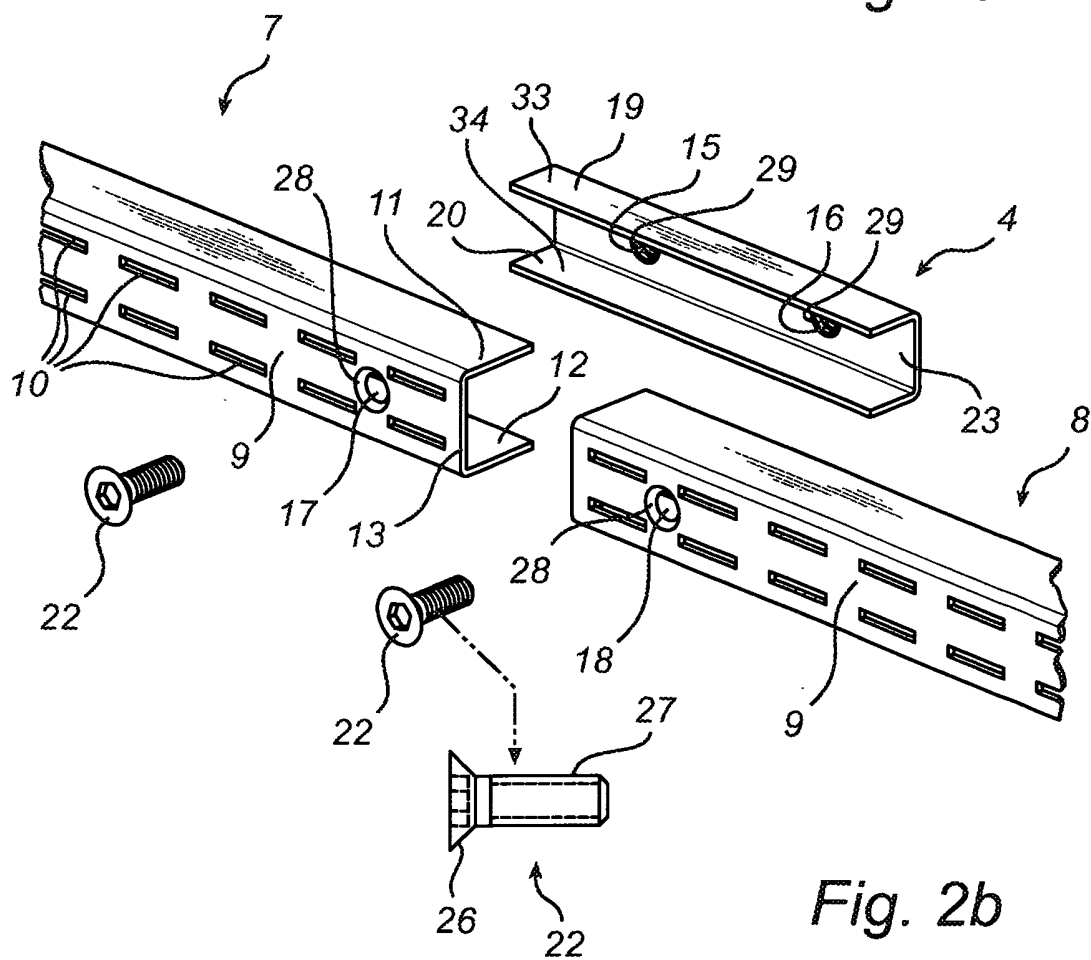
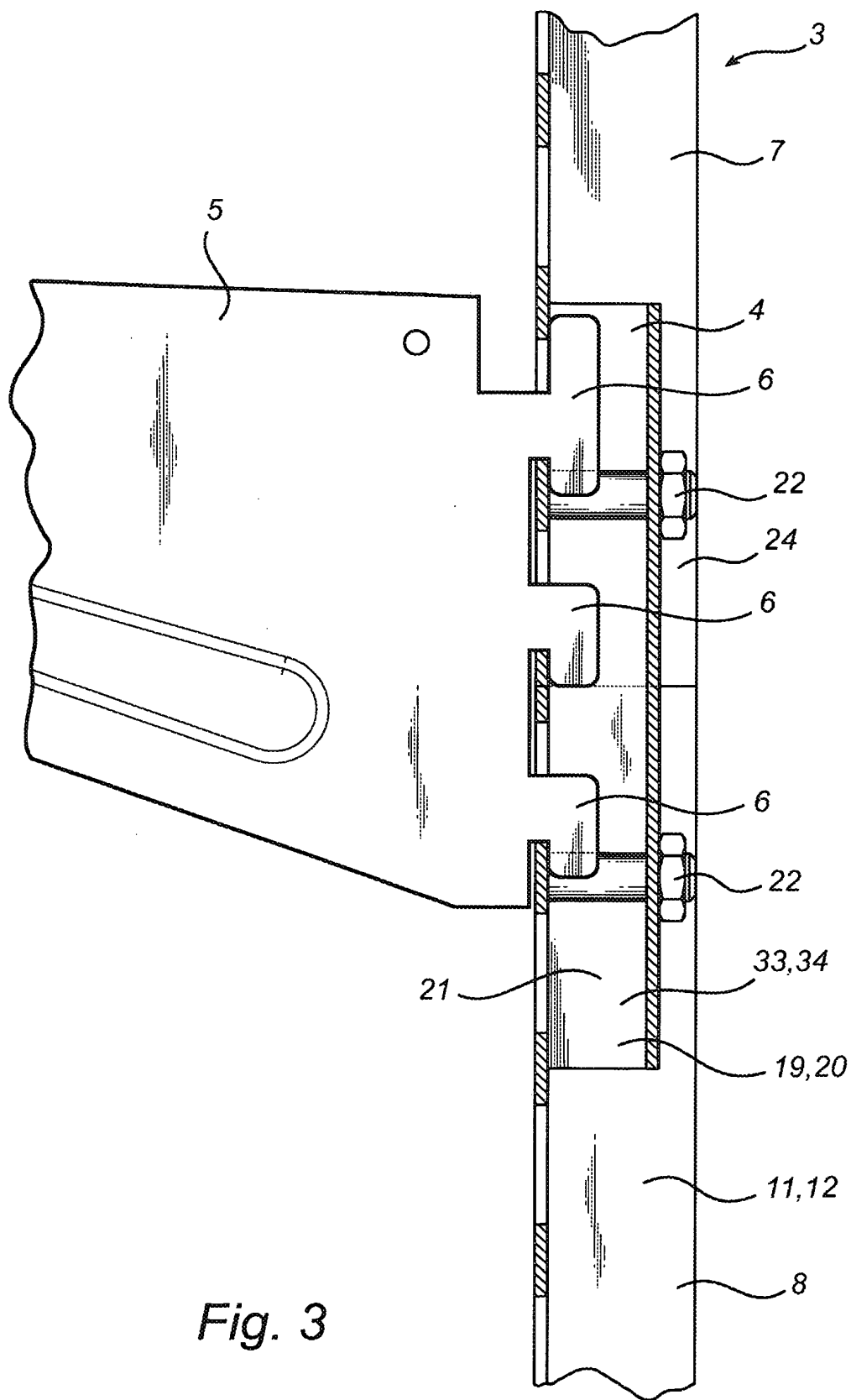


Fig. 2b



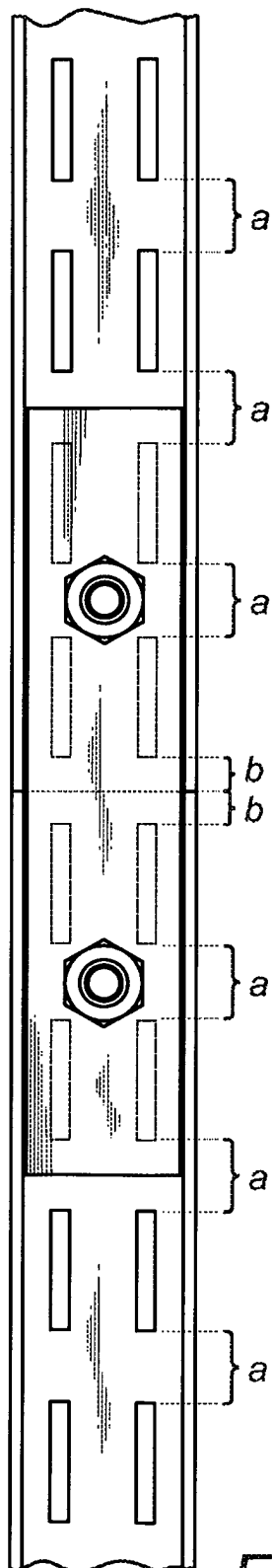


Fig. 4

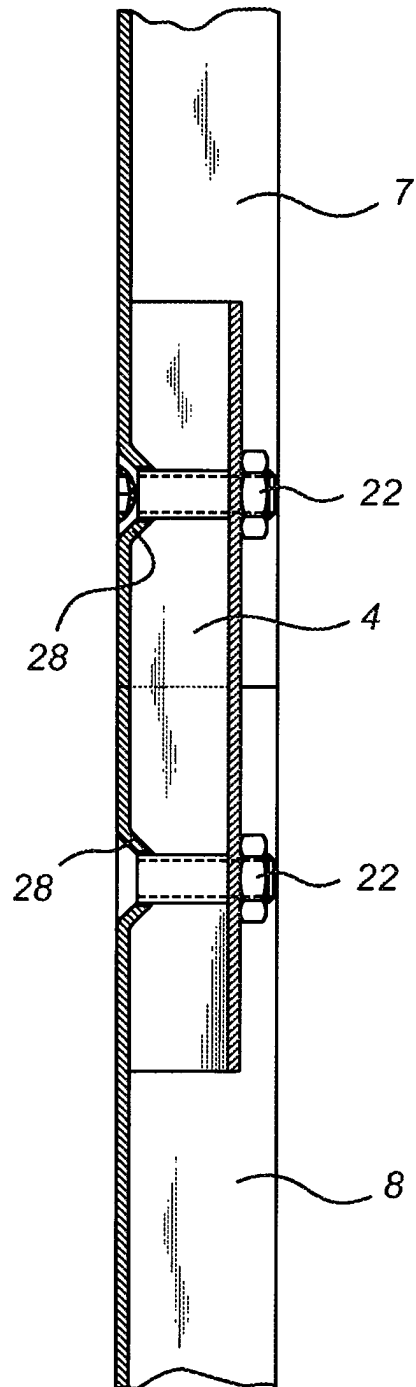


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 20050145588 A [0004] [0005] [0006]