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(54) Furniture component structure

(57) A structure (1) for a furniture component (2) has a door (5) rotatably supported by the structure (1) for

right-hand or left-hand rotation to provide selective access to a first plurality of containers (13) or to the remaining ones (14).

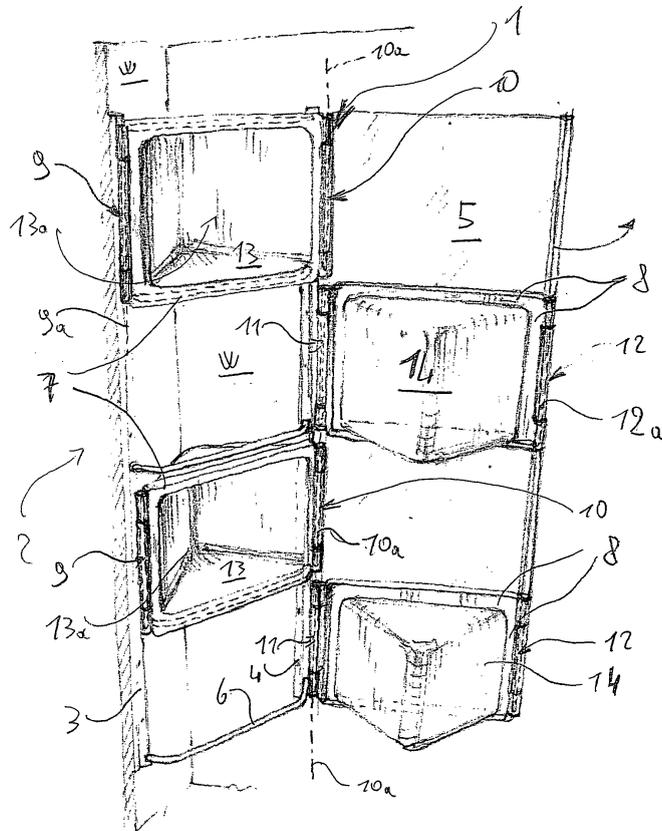


Fig. 2

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Description

[0001] This invention relates to a structure for a furniture component in accordance with the preamble of claim 1.

[0002] For simplicity, reference will be made herein without limitation to a hanging cabinet for installation in a bathroom, as a furniture component.

[0003] In the field of bathroom furniture, the need is strongly felt for a plurality of compartments, housings and the like for containing various objects and personal care objects. In this respect, it should be noted that the objects to be contained in the cabinet do not require a very large containment space, as they are mainly small objects, such as combs, brushes, bottles and tubes or small containers in general. However, a major need is to keep the objects well apart by classes and intended uses. Thus, for instance, oral care products, such as toothpastes, tooth brushes and mouthwashes should be kept apart from other products such as shampoos or shaving foam, to prevent any accidental misuse thereof.

[0004] Also, the need for neat compartment separation is also felt when the same cabinet is used by two or more people, as each of them would desire to keep his/her own personal objects and products apart from those of the others.

[0005] This invention is based on the issue of providing furniture component structure which has such structural and functional characteristics as to fulfill the above need, while obviating the above prior art drawbacks. Particularly, the problem to be solved is to minimize accidental misuses of the products and/or objects contained in the housings of the furniture component structure due to a wrong selection of the accessed compartment.

[0006] This problem is addressed by a furniture component structure as defined in claim 1.

[0007] Further features and advantages of the furniture component structure of this invention, will be apparent upon reading the following description of one preferred embodiment thereof, which is given by way of illustration and without limitation with reference to the accompanying figures, in which:

- Figure 1 is a perspective view of a furniture component structure of this invention;
- Figure 2 is a perspective view of the furniture component structure of Figure 1 with the door opened in the right-hand direction;
- Figure 3 is a perspective view of the furniture component structure of Figure 1 with the door opened in the left-hand direction;
- Figure 4 is a view of an enlarged detail of the upper end of Figure 2;
- Figure 5 is an exploded view of the detail of Figure 4;
- Figure 6 is a plan view of the furniture component structure of Figure 1 in an intermediate step of the right-hand door opening process;
- Figure 7 is a plan view of the furniture component

structure of Figure 1 in an intermediate step of the left-hand door opening process;

- Figure 8 is a plan view of a different embodiment of the furniture component structure of the invention in an intermediate step of the right-hand door opening process and
- Figure 9 is a schematic perspective view of a further embodiment of the furniture component structure of the invention with the door opened in the right-hand direction.

[0008] Referring to the accompanying figures, numeral 1 generally designates a furniture component structure of the invention.

[0009] In the embodiment described herein, the furniture component 2 having the structure 1 as a part thereof is embodied by a hanging cabinet 2 for installation in a bathroom for containing objects and personal care products. Particularly, the embodiment as shown in Figures 1 to 7 is an angular hanging cabinet designed for installation in a corner of a bathroom or a shower box. In this respect it will be appreciated that, in this case, the structure is not required to have its own side walls, as it conveniently utilizes the walls W that form such corner. Nevertheless, it shall be understood that this particular embodiment, i.e. an angular structure, is only a preferred, non-limiting embodiment. Thus, for example, Figure 8 shows a structure 1 of the invention having a different shape. It will be further noted that the furniture component 2 may also have its own side walls, whereby it will not have to utilize the walls P to delimit an inner space, and the furniture component need not necessarily have a hanging construction.

[0010] The structure 1 comprises first support means 3 and second support means 4 extending parallel to each other in a first direction X-X at a predetermined distance L to laterally delimit the front opening for access to the inner space of the furniture component 2.

[0011] In this example, the first support means 3 and the second support means 4 are embodied by two respective profiles which are adapted to be fastened to the walls W by bolts, screws, hooks and the like. The two profiles 3 and 4 extend in the vertical direction X-X and are interconnected by a plurality of horizontal stringers 6 for stiffening the structure 1 and holding it together. Referring to the figures, the first support means 3 and the second support means 4 are situated on the left and right sides respectively of the structure 1 and the furniture component 2 as viewed from the front.

[0012] The structure 1 has a door 5, which is supported to reversible rotate from an open state (see Figs. 2, 3) to a closed state (see Fig. 1) in which said front access opening is closed. A first portion and a second portion are defined on the inside of the door 5, i.e. the side facing towards the inner space of the furniture component 2 when the door is in the closed configuration, which portions extend parallel to such vertical direction X-X to face towards the first support means 3 and the second support

means 4 respectively when the door is in the closed state.

[0013] According to a preferred embodiment, the structure has a plurality of first movable frames 7 and a separate plurality of second movable frames 8 through which the door 5 is supported for alternate right-hand or left-hand rotation from the closed state (see Fig. 1) to a first open state (see Fig. 2) or a second open state (see Fig. 3), in which the door is on the right or left side respectively of the structure 1.

[0014] Each first movable frame 7 of said plurality of first movable frames 7 is connected through first hinge means 9 to the first support means 3 and through second hinge means 10 to a point of the second portion of the door 5. The axis of rotation 9a of the first hinge means 9 and the axis of rotation 10a of the second hinge means 10 are parallel to the predetermined vertical direction X-X.

[0015] Likewise, each first movable frame 8 of said plurality of first movable frames 8 is connected through third hinge means 11 to the second support means 4 and through fourth hinge means 12 to a point of the first portion of the door 5. The axis of rotation 11a of the third hinge means 11 and the axis of rotation 12a of the fourth hinge means 12 are parallel to the predetermined vertical direction X-X.

[0016] The axes of rotation 9a, 10a, 11a and 12a are substantially coplanar. It shall be noted that the first hinge means 9 and the third hinge means 11 are fixed hinges with a part thereof being integral with the first support means 3 and the second support means 4 respectively. Conversely, the second hinge means 10 and the fourth hinge means 12 are movable hinges, with a part thereof being integral with the door 5 and move with the latter as it is opened in the left-hand or right-hand direction respectively.

[0017] A first container 13, having a front opening 13a, is associated to each first movable frame 7. The first container 13 is fixed to its movable frame 7 in such a position that, when the door 5 is in the closed state (see Fig. 1), the first container 13 is held in the inner space of the furniture component 2 and also has the front opening 13a facing towards the door 5.

[0018] Conversely, a second container 14, having a front opening 14a, is associated to each second movable frame 8. The second container 14 is fixed to its movable frame 8 in such a position that, when the door 5 is in the closed state (see Fig. 1), the second container 14 is held in the inner space of the furniture component 2 and also has the front opening 14a facing towards the door 5.

[0019] Referring to Figures 1 to 3, in this example the furniture component 2 has four movable frames and four respective containers. In greater detail: two first movable frames 7, each having a respective first container 13 and two second movable frames 8, each having a respective second container 14. These movable frames 7 and 8 are sequentially aligned in the direction X-X and preferably in alternate arrangement. In this example, from top to bottom, the first and third positions are occupied by a first

movable frame 7 with a respective first container 13, and the second and fourth positions are occupied by a second movable frame 8 with a respective second container 14.

[0020] As a result, when the door 5 is in the closed state (see Fig. 1), the four containers are disposed one above the other in the vertical direction X-X.

[0021] When the door 5 is in the closed state (see Fig. 1), each first movable frame 7 extends linearly between the axis of rotation 9a of the first hinge means 9 and the axis of rotation 10a of the second hinge means 10 in a direction Y-Y perpendicular to the vertical direction X-X.

[0022] Likewise, when the door 5 is in the closed state (see Fig. 1), each second movable frame 8 extends linearly between the axis of rotation 11a of the third hinge means 11 and the axis of rotation 12a of the fourth hinge means 12 in the above direction Y-Y.

[0023] According to a preferred embodiment, each movable frame 7, 8 defines an annular edge, i.e. a peripheral frame, which acts as a front opening 13a, 14a of a corresponding container 13, 14. Particularly, each container 13, 14 is fixed to the front of its annular edge.

[0024] According to the preferred embodiment of the figures, each movable frame 7, 8 may advantageously be formed on one piece with its container 13, 14. Thus, the annular edge that delimits the front opening 13a, 14a of each container 13, 14 also provides the load bearing function assured by the movable frames 7, 8, thereby affording an apparent simplification of the overall structure. Here, the hinge means 9, 10, 11, 12 may be formed by providing female hinge members at the opposite vertical sides of each annular edge of the container 13, 14, such as slots for receiving a corresponding hinge pin, which is supported, as the case may be, by the first support means 3, the second support means 4 and the door 5.

[0025] Preferably, the containers may be formed by die-casting of a plastic material, whereas the first support means 3, the second support means 4, the horizontal stringers 6 and the hinge pins are formed of a metal material.

[0026] Considering the above structure 1, from the door closed state (see Fig. 1), the left end of the door may be set into right-hand rotation about the axis 11a of the third hinge means 11 to the state as shown in Figure 2, in which access to the front openings 13a of the first containers 13 is allowed and, at the same time, the second containers 14 are attached to the inner side of the door 5 and access to their front openings 14a is prevented.

[0027] Conversely, still from the door closed state (see Fig. 1), the right end of the door may be set into left-hand rotation about the axis 9a of the first hinge means 9 to the state as shown in Figure 3, in which access to the front openings 14a of the second containers 14 is allowed and, at the same time, the first containers 13 are attached to the inner side of the door 5 and access to their front openings 13a is prevented.

[0028] In the embodiment as shown in Figures 1 to 7,

the containers 13, 14 have a substantially triangular prismatic shape.

[0029] The shape of the containers may be apparently different from the one described above. Nevertheless, the containers shall have such a shape and size as to not interfere with the first support means 3 and the second support means 4 as the door 4 is rotated to any one of the two above mentioned open states (see Figs. 2 and 3). For this purpose, with the containers attached to their respective movable frames, one need simply check that the size of each container 13, 14 is inscribed in a right cylinder having its center in the axis of rotation 9a or 11a of the respective fixed hinge means 9 or 11 and a radius R equal to the above mentioned predetermined small distance L between the first support means 3 and the second support means 4.

[0030] Figure 8 shows an embodiment in which the containers 13, 14 have a rectangular shape, that meet the above condition.

[0031] Figure 9 is a schematic and simplified view of a further embodiment of the structure 1 of the invention. According to this embodiment, there are two first movable frames 7, sequentially aligned along the vertical direction X-X, and the second movable frames 8 are sequentially aligned along the vertical direction X-X to be adjacent the first movable frames 7. Two separate adjacent columns are thus defined in the structure 1, the one being formed of the first frames 7 and the corresponding first containers 13 and the other being formed of the second frames 8 and the corresponding second containers 14.

[0032] By setting the left end of the door 5 into right-hand rotation about the axis 11a of the third hinge means 11 to the state as shown in Figure 9, access is granted to the front openings 13a of the first containers 13 of the left column, and at the same time the second containers 14 of the right column are attached to the inner side of the door 5 and access to their front openings 14a is prevented. Conversely, by setting the left end of the door 5 into left-hand rotation about the axis 9a of the first hinge means 9, access is granted to the front openings 14a of the second containers 14 and at the same time the first containers 13 are attached to the inner side of the door 5 and access to their front openings 13a is prevented.

[0033] It will be appreciated that other arrangements of the movable frames and their respective containers relative to the structure 1 may be provided, such as an essentially horizontally extending arrangement, instead of the above vertically extending arrangement.

[0034] As clearly shown in the above description, the furniture component structure of the present invention fulfills the above mentioned need and also obviates prior art drawbacks as set out in the introduction of this disclosure. Thus, right-hand or left-hand rotation of the door provides access to part of the containers of the furniture component structure and prevents access to the remaining containers and vice versa. Selective access to the various containers is thus simply and effectively provided, while avoiding any accidental errors.

[0035] A further advantage of the furniture component structure of the invention is the structural simplicity of the present solution.

[0036] Yet another advantage of the furniture component structure of this invention is that one door may be simply used, while providing selective access to the containers, as described above.

[0037] Those skilled in the art will obviously appreciate that a number of changes and variants may be made to the furniture component structure as described hereinbefore, in response to specific requirements, without departure from the scope of the invention, as defined in the following claims.

Claims

1. A furniture component structure, comprising

- first support means and second support means extending parallel to each other in a first direction at a predetermined distance to laterally delimit a front opening for access to the inner space of the furniture component and
- a door associated to said structure to reversibly move from an open state to a closed state in which it closes said front access opening, a first portion and a second portion being defined in said door, which portions extend along said first direction to face towards said first support means and said second support means respectively when said door is in said closed state,

characterized in that it comprises:

- a first movable frame connected through first hinge means to said first support means and through second hinge means to a point of said second portion of said door, the axis of rotation of said first hinge means and said second hinge means being parallel to said predetermined direction;
- a second movable frame connected through third hinge means to said second support means and through fourth hinge means to a point of said first portion of said door, the axis of rotation of said third hinge means and said fourth hinge means being parallel to said predetermined direction, to alternately cause the door to rotate about the axis of rotation of said first hinge means and said third hinge means;
- a first container having a front opening, said first container being fixed to said first movable frame in such a position as to be held in said inner space of the furniture component and have said front opening substantially facing said door, when said door is in the closed state and
- a second container having a front opening, said

second container being fixed to said second movable frame in such a position as to be held in said inner space of the furniture component and have said front opening substantially facing said door, when said door is in the closed state.

2. A furniture component structure as claimed in claim 1, comprising at least two of said first frame with a first container fixed thereto.

3. A furniture component structure as claimed in claim 1, comprising at least two of said second frame with a second container fixed thereto.

4. A furniture component structure as claimed in any one of claims 1 to 3, wherein said first movable frames and said second movable frames are sequentially aligned in said first direction

5. A furniture component structure as claimed in claims 2 and 3, wherein said first movable frames and said second movable frames are sequentially aligned in said first direction in alternate arrangement.

6. A furniture component structure as claimed in claims 2 and 3, wherein said first movable frames are sequentially aligned in said first direction and said second movable frames are sequentially aligned in said first direction in such positions to be adjacent to said first movable frames, thereby forming two adjacent rows of said first containers and said second containers respectively.

7. A furniture component structure as claimed in any one of claims 1 to 6, wherein, with the door in the closed state:

- said first movable frame extends linearly between the axis of rotation of said first hinge means 9 and the axis of rotation of said second hinge means and

- said second movable frame extends linearly between the axis of rotation of said third hinge means and the axis of rotation of said fourth hinge means.

8. A furniture component structure as claimed in any one of claims 1 to 7, wherein each of said first movable frame and said second movable frame defines an annular edge having a container fixed thereto at its front opening.

9. A furniture component structure as claimed in claim 8, wherein said container is formed of one piece with said annular edge.

10. A furniture component structure as claimed in claim 8 or 9, wherein said annular edge has respective

hinge elements at opposed sides extending parallel to said predetermined direction, for hinge-like connection with their respective supports and the door.

11. A furniture component structure as claimed in any one of claims 1 to 10, wherein said first container is inscribed in a cylinder having its center in the axis of rotation of said first hinge means and a radius equal to said predetermined small distance.

12. A furniture component structure as claimed in any one of claims 1 to 11, wherein said second container is inscribed in a cylinder having its center in the axis of rotation of said first hinge means and a radius equal to said predetermined small distance.

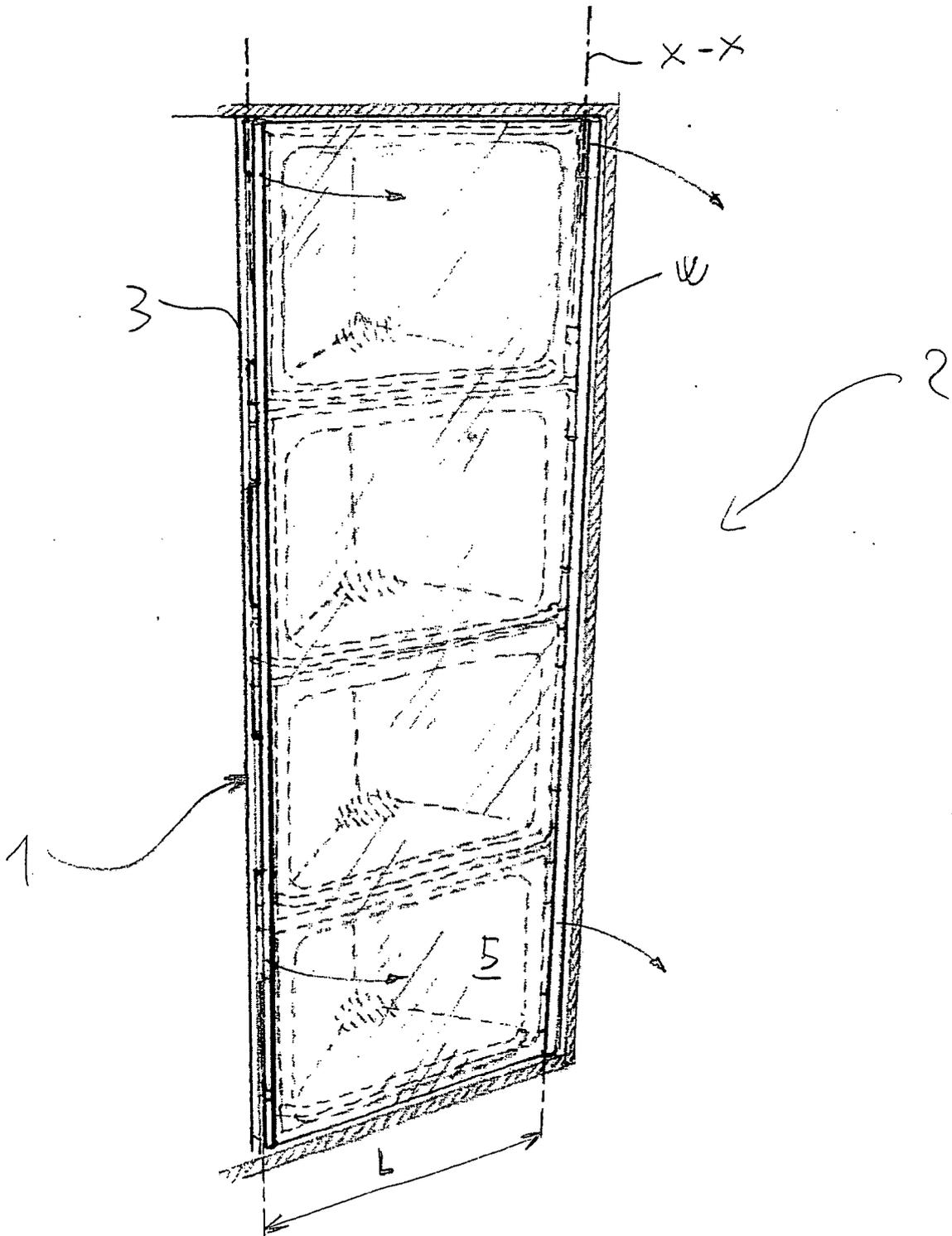


Fig. 1

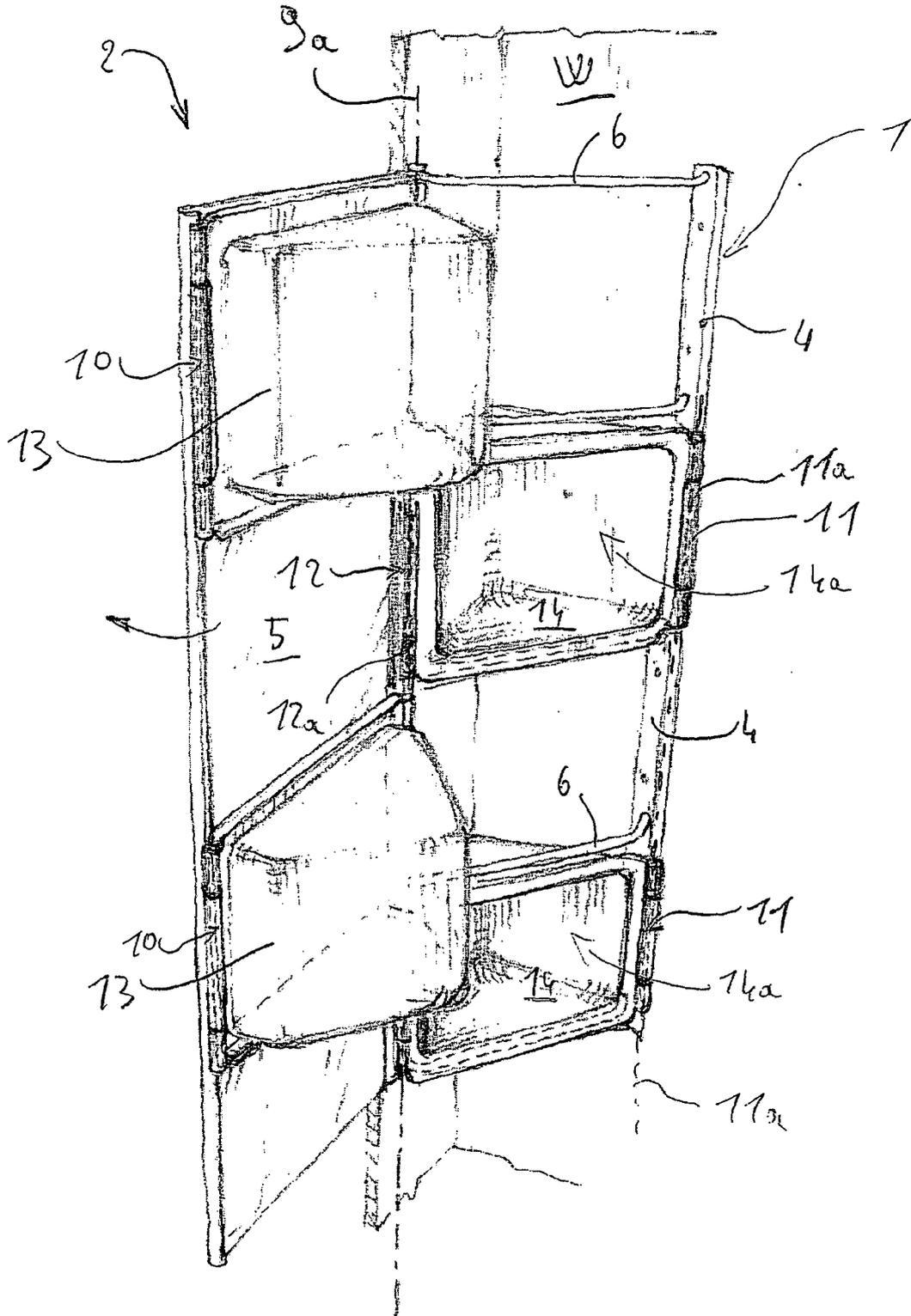
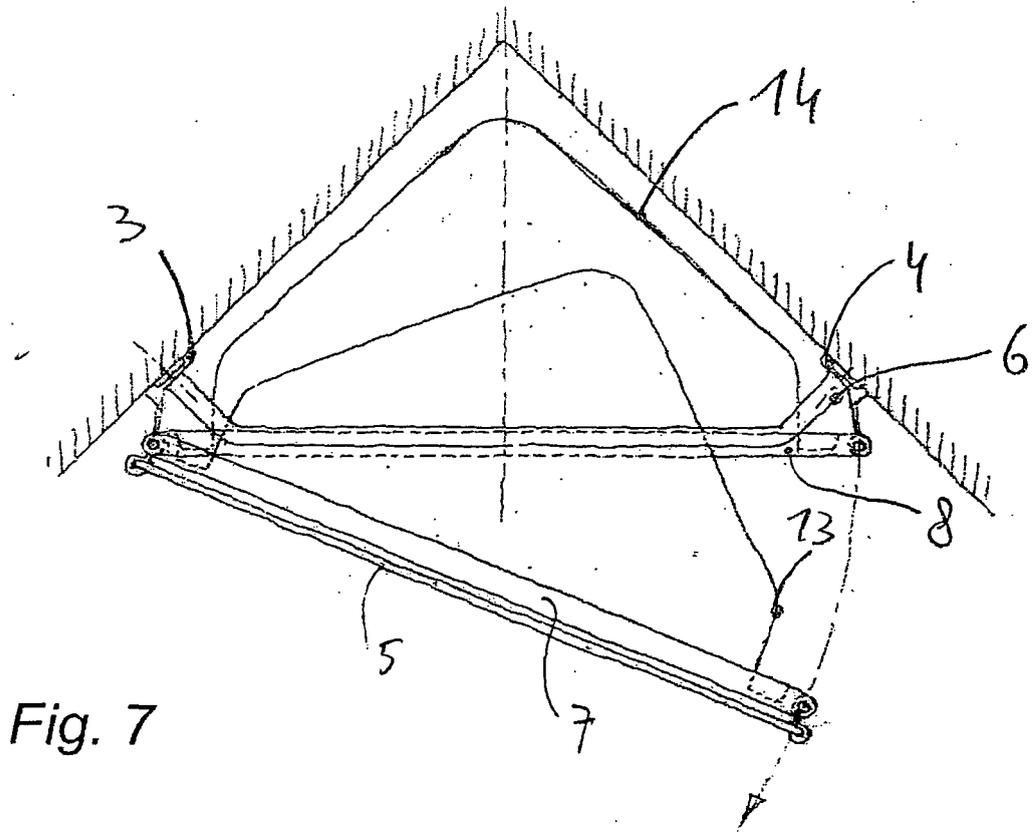
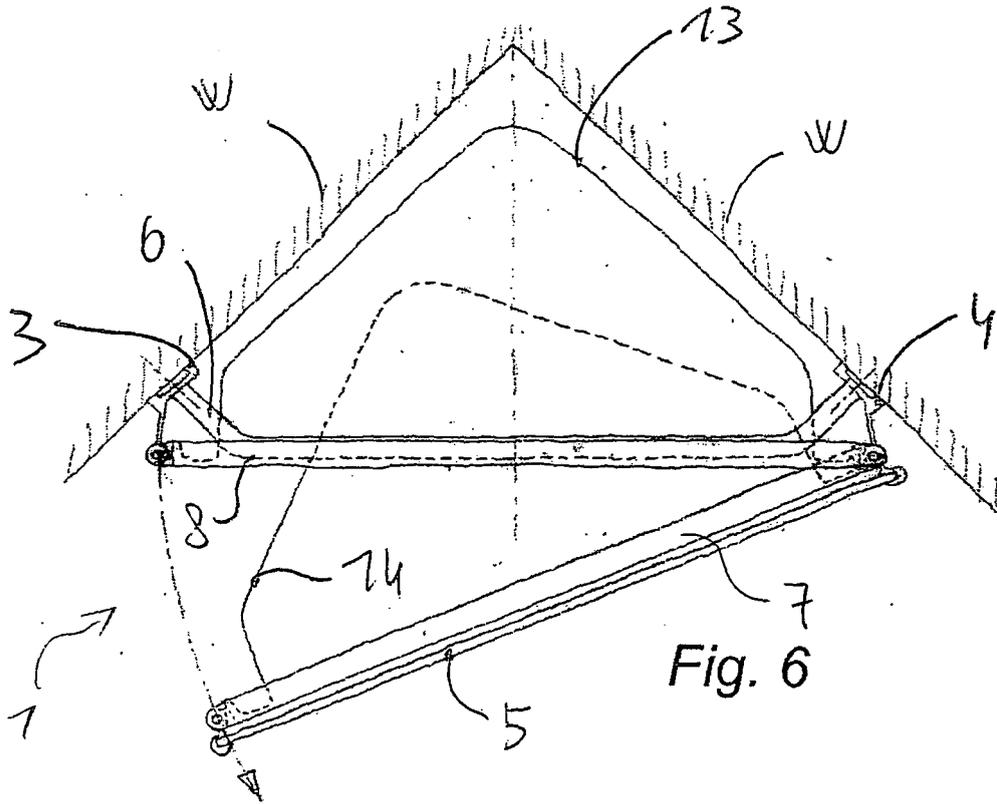


Fig. 3



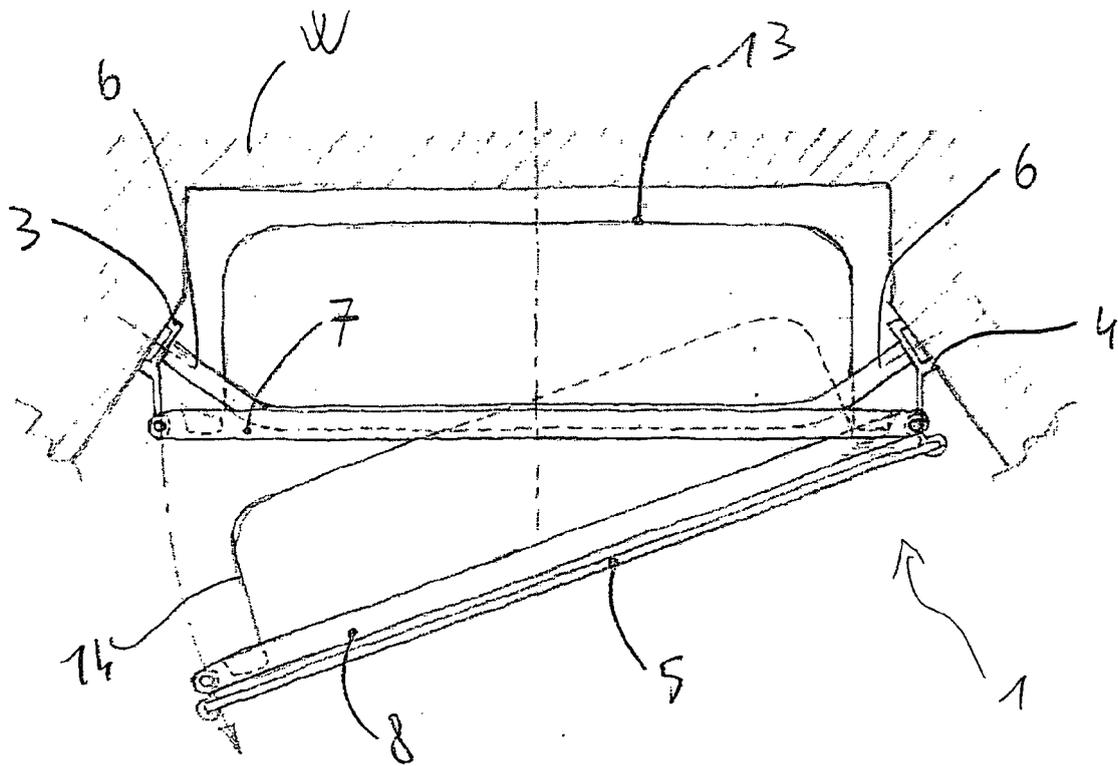


Fig. 8

