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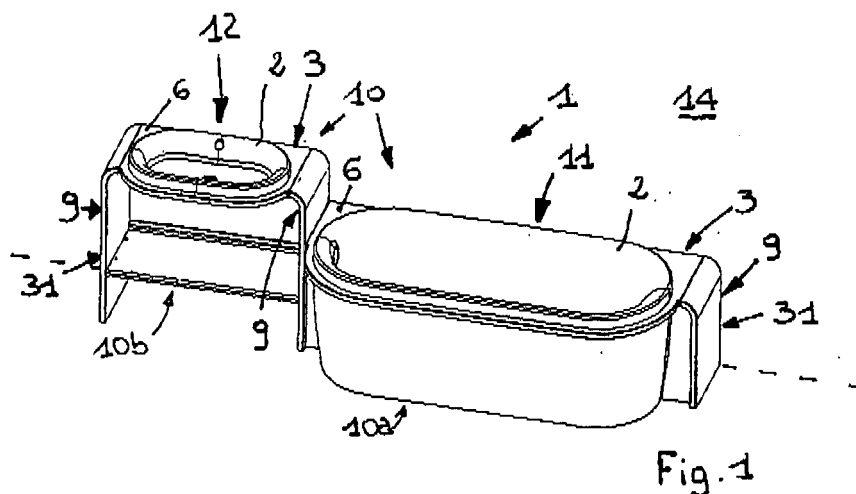
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(54) **Combined structure**

(57) A combined structure characteristically comprises at least two pieces of sanitary ware (10) connected

to one another in a single body. Said connection may be either removable or irremovable.



**Fig. 1**

## Description

**[0001]** The present invention relates to a combined sanitary ware structure. Such structures may be used above all in the bathrooms of homes. A piece of sanitary ware comprises an item of equipment for personal hygiene purposes, normally present in a home or place designed to accommodate persons for a more or less long period of time. The sanitary ware commonly used in homes comprise the following: toilet bowl, washbasin, bathtub, bidet, etc.

**[0002]** Individual pieces of sanitary ware are known, each completely independent and separate. Therefore they are positioned with a gap between them in bathrooms. They are also made in a single body and take on a fixed and predetermined configuration, irrespective of whether they are simply put near a single wall, positioned in a corner of the room, or recessed in a suitable housing in the wall. Therefore such sanitary ware does not allow optimisation of the space available, a particularly marked problem in small bathrooms.

**[0003]** The aim of the present invention is to overcome the above-mentioned disadvantages by providing a combined structure which allows the connection of a plurality of pieces of sanitary ware, for rational and optimised use of the space available. Another aim of the present invention is to provide a combined structure which can be adapted to the distribution of spaces in different bathrooms or to the requirements of the end user. Yet another aim of the present invention is to provide a combined structure able to cover a vast number of different products with a limited number of basic elements which can be combined with one another in various configurations. A further aim of the present invention is to provide a product which can take on multiple configurations, the user being able to change it from one configuration to another.

**[0004]** These aims and others, which are more apparent in the description which follows, are achieved, in accordance with the present invention, by a modular structure with the structural and functional characteristics described in the independent claims herein. Alternative embodiments of the structure are described in the dependent claims.

**[0005]** The invention is described in more detail below, with reference to the accompanying drawings, which illustrate a preferred non-limiting embodiment of the invention, and in which:

- Figure 1 is a perspective view of a first embodiment of the invention;
- Figures 2 to 5 are perspective views of other embodiments of the invention;
- Figure 6 is a plan view of a particular embodiment of the structure in accordance with the invention;
- Figure 7 is a perspective exploded view from below of a detail of a particular embodiment of the device in accordance with the invention;
- Figure 8 is a cross-section of a construction detail

from Figure 7;

- Figure 9 is a cross-section of a construction detail from Figure 7.

**[0006]** With reference to Figures 1 - 6, the numeral 1 denotes a combined structure. The combined structure 1 comprises at least two pieces of sanitary ware 10 connected to one another. In this way they form a single body. The pieces of sanitary ware 10 comprise items of equipment for personal hygiene purposes and/or for the disposal of organic waste.

**[0007]** In a first configuration the pieces of sanitary ware 10, of which there are at least two, are irremovably connected to one another.

**[0008]** In an alternative configuration the pieces of sanitary ware 10, of which there are at least two, are removably connected to one another.

**[0009]** In particular, the pieces of sanitary ware 10, of which there are at least two, are removably connected to one another in a predetermined and different plurality of configurations of the combined structure 1.

**[0010]** As illustrated in Figures 1 to 6, at least one piece of sanitary ware 10 comprises a basin or tub 2 designed to hold water and a frame 3. The frame 3 is advantageously made of plastic material; the basin or tub 2 is advantageously made of ceramic material.

**[0011]** In particular, each piece of sanitary ware 10 comprises the basin or tub 2 which holds water and the frame 3.

**[0012]** The frame 3 of at least one piece of sanitary ware 10 comprises side panels 9 which can be removably connected to the remaining portions of the piece of sanitary ware 10 to form a plurality of different configurations corresponding to a plurality of predetermined and different configurations of the combined structure 1.

**[0013]** In particular, the frame 3 of each piece of sanitary ware 10 comprises side panels 9 which can be removably connected to the remaining portions of the piece of sanitary ware 10 to form a plurality of different configurations corresponding to a plurality of predetermined and different configurations of the combined structure 1.

**[0014]** As illustrated in the accompanying drawings, the side panels 9 constitute supporting means 31.

**[0015]** Advantageously the supporting means 31 comprise at least one supporting leg 310.

**[0016]** In a particular configuration, the supporting means 31 comprise at least two supporting legs 310.

**[0017]** The side panels 9 can advantageously be fitted and removed by the user.

**[0018]** One of the side panels 9 can be removed to position the combined structure 1 in a corner position and therefore directly across two walls 14 as illustrated in Figure 2 or 3. In said Figures the walls 14 are indicated with a dashed line and for greater clarity any outlines of the combined structure 1 located behind the wall 14 are shown with a continuous line. In contrast,

**[0019]** Figure 4 shows a configuration in which two side panels 9 at the ends of the combined structure 1 are

removed to position the combined structure 1 in such a way that it is recessed in a housing in the wall 14 of the bathroom. In this configuration advantageously the combined structure 1 is directly connected to the wall 14 along three different sides.

**[0020]** Each frame 3 comprises a support 6 to which the basin or tub 2 is connected. The support 6 is removably connected to the basin or tub 2. The support 6 is substantially horizontal. The support 6 for the piece of sanitary ware 10 is directly and removably connected to the supporting means 31 for the piece of sanitary ware 10.

**[0021]** As illustrated in Figures 1 to 4, the support 6 for a first piece of sanitary ware 10a is removably and directly connected to the supporting leg 310 of a second piece of sanitary ware 10b.

**[0022]** Figure 7 shows a detail of the connection between the first and the second pieces of sanitary ware 10a, 10b.

**[0023]** As illustrated for example in Figure 7, the combined structure 1 comprises interconnecting means 7 between the first and the second pieces of sanitary ware 10a, 10b. These interconnecting means 7 in turn comprise threaded connecting means 8. In a non-limiting example configuration said threaded connecting means 8 are illustrated in Figures 7, 8 and 9. In particular Figures 8 and 9 show a detail of the connection between the support 6 of a first piece of sanitary ware 10a and the supporting leg 310 of a second piece of sanitary ware 10b. The threaded connecting means 8 comprise a pair of stud bolts 80 and a first and a second pair of screws 81, 82. Figure 8 shows a vertical cross-section at the axis of a screw belonging to the second pair of screws 82. Figure 9 shows a vertical cross-section at the axis of one of the stud bolts 80. The stud bolts 80 are connected to the first piece of sanitary ware 10a and by means of a nut 800 connect the latter to a first component 7a of the interconnecting means 7. Said component 7a is in turn connected to the supporting leg 310 of the second piece of sanitary ware 10b, by the second pair of screws 82. Advantageously, the threaded hole 810 designed to receive the second pair of screws 82 is a blind hole. In this way there are no unsightly interruptions in the opposite surface of the supporting leg 310.

**[0024]** Advantageously, the combined structure 1 comprises, between the two pieces of sanitary ware 10, interposed elements 110 to which the two pieces of sanitary ware 10 are connected. These interposed elements 110 may comprise a hollow space in which the pipes for the pieces of sanitary ware 10 pass.

**[0025]** The pieces of sanitary ware 10 are advantageously positioned side by side.

**[0026]** As illustrated in Figures 1 to 5, in plan view the pieces of sanitary ware 10 appropriately have a preferential direction of extension 4, 5.

**[0027]** As illustrated in Figures 1 to 5, the pieces of sanitary ware 10 comprise a washbasin 12 and a bathtub 11.

**[0028]** As illustrated in Figures 1 to 4, the preferential

direction of extension 4 of the washbasin 12 is parallel with the preferential direction of extension 5 of the bathtub 11. In an alternative configuration illustrated for example in Figure 5, the preferential direction of extension 4 of the washbasin 12 is at a right angle to the preferential direction of extension 5 of the bathtub 11. The pieces of sanitary ware 10 may comprise any other piece of sanitary ware 10, for example a bidet. In a configuration illustrated in Figure 6 the combined structure 1 comprises a plurality of pieces of sanitary ware 10 of the same type, for example two washbasins 12 connected to one another.

**[0029]** In a configuration illustrated in Figure 5 the combined structure 1 comprises means 13 for delimiting a bathtub zone and a washbasin zone. The delimiting means 13 comprise a panel 130 hinged at a vertical edge 131. The panel 130 is advantageously hinged at the zone where the two pieces of sanitary ware 10, for example the bathtub 11 and the washbasin 12, are joined. In a first position, in which it is at a right angle to the preferential direction of extension 5 of the bathtub 11, the panel 130 forms a separator panel between the bathtub zone and the washbasin zone. This is particularly suitable if there is a shower in the bathtub 11, since in such a case the panel 130 helps to limit the drops and splashes coming out of the bathtub 11. If the preferential direction of extension 4 of the washbasin 12 is at a right angle to the preferential direction of extension 5 of the bathtub 11, in said first position the panel 130 may also be advantageously used by persons using the washbasin 12. Advantageously, the panel 130 comprises a mirror; the panel 130 also suitably comprises a storage compartment; and the panel may optionally comprise a lighting system. To minimise the dimensions, the panel 130 may then be rotated about its hinge and positioned parallel with the wall 14 next to which the bathtub 11 is positioned.

**[0030]** The invention brings important advantages.

**[0031]** Firstly, it allows optimisation of the space available.

**[0032]** Secondly, it allows the end user to change the layout of the pieces of sanitary ware to suit the bathroom in which they must be placed even after moving house.

**[0033]** Advantageously, it allows the reseller to assemble the various components in such a way as to achieve a large number of different products and/or configurations simply by combining a relatively small number of basic elements. This implies a substantial saving on warehousing costs, since the reseller only has to guarantee the supply and availability of a limited number of basic elements to cover a very wide range. Another advantage is linked to the increased availability of spare parts.

**[0034]** The invention described may be modified and adapted without thereby departing from the scope of the inventive concept.

**[0035]** Moreover, all details of the invention may be substituted by other technically equivalent elements.

**[0036]** In practice, all of the materials used, as well as

the dimensions may be any, according to requirements.

#### Claims

1. A combined structure **characterised in that** it comprises at least two pieces of sanitary ware (10) connected to one another.
2. The combined structure according to claim 1, **characterised in that** the pieces of sanitary ware (10), of which there are at least two, are irremovably connected to one another.
3. The combined structure according to claim 1, **characterised in that** the pieces of sanitary ware (10), of which there are at least two, are removably connected to one another.
4. The sanitary ware structure according to claim 3, **characterised in that** the pieces of sanitary ware (10), of which there are at least two, are removably connected to one another in a predetermined and different plurality of configurations of the combined structure (1).
5. The combined structure according to any of the foregoing claims, **characterised in that** at least one piece of sanitary ware (10) comprises a basin or tub (2) which holds water and a frame (3).
6. The combined structure according to claim 5, **characterised in that** each piece of sanitary ware (10) comprises the basin or tub (2) which holds water and the frame (3).
7. The combined structure according to claim 5 or 6, **characterised in that** the frame (3) of at least one piece of sanitary ware (10) comprises side panels (9) which can be removably connected to the remaining portions of the piece of sanitary ware (10) to form a plurality of different configurations corresponding to a plurality of predetermined and different configurations of the combined structure (1).
8. The combined structure according to claim 7, **characterised in that** the frame (3) of each piece of sanitary ware (10) comprises side panels (9) which can be removably connected to the remaining portions of the piece of sanitary ware (10) to form a plurality of different configurations corresponding to a plurality of predetermined and different configurations of the combined structure (1).
9. The combined structure according to claim 7 or 8, **characterised in that** the side panels (9) constitute supporting means (31).

10. The combined structure according to claim 9, **characterised in that** the supporting means (31) comprise at least one supporting leg (310).
11. The combined structure according to claim 10, **characterised in that** the supporting means (31) comprise at least two supporting legs (310).
12. The combined structure according to any of the claims from 7 to 11, **characterised in that** the side panels (9) can be fitted and removed by the user.
13. The combined structure according to any of the claims from 5 to 12, **characterised in that** each frame (3) comprises a support (6) to which the basin or tub (2) is connected.
14. The combined structure according to claim 13, **characterised in that** the support (6) is removably connected to the basin or tub (2).
15. The combined structure according to claim 13 or 14, **characterised in that** the support (6) is substantially horizontal.
16. The combined structure according to claim 13 or 14 or 15, when they are dependent on claim 9, **characterised in that** the support (6) for the piece of sanitary ware (10) is directly and removably connected to the supporting means (31) of the piece of sanitary ware (10).
17. The combined structure according to any of the claims from 13 to 16, when they are dependent on claim 10, **characterised in that** the support (6) of a first piece of sanitary ware (10a) is removably and directly connected to the supporting leg (310) of a second piece of sanitary ware (10b).
18. The combined structure according to claim 17, comprising interconnecting means (7) between the first and the second pieces of sanitary ware (10a, 10b), the interconnecting means (7) comprising threaded connecting means (8).
19. The combined structure according to any of the foregoing claims, comprising, between the two pieces of sanitary ware (10), interposed elements (110) to which the two pieces of sanitary ware (10) are connected.
20. The combined structure according to any of the foregoing claims, **characterised in that** the pieces of sanitary ware (10) are positioned side by side.
21. The combined structure according to any of the foregoing claims, **characterised in that** in plan view the pieces of sanitary ware (10) have a preferential di-

rection of extension (4, 5).

22. The combined structure according to any of the foregoing claims, **characterised in that** the pieces of sanitary ware (10) comprise a washbasin (12) and a bathtub (11). 5
23. The combined structure according to claim 22, when it is dependent on claim 21, **characterised in that** the preferential direction of extension (4) of the washbasin (12) is parallel with the preferential direction of extension (5) of the bathtub (11). 10
24. The combined structure according to claim 22, when it is dependent on claim 21, **characterised in that** the preferential direction of extension (4) of the washbasin (12) is at a right angle to the preferential direction of extension (5) of the bathtub (11). 15
25. The combined structure according to any of the claims from 22 to 24, comprising means (13) for delimiting a bathtub zone and a washbasin zone, the delimiting means (13) comprising a panel (130) hinged at a vertical edge (131). 20  
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26. The combined structure according to claim 25, **characterised in that** the panel (130) comprises a mirror.
27. The combined structure according to claim 25 or 26, **characterised in that** the panel (130) comprises a storage compartment. 30
28. The combined structure according to claim 25 or 26 or 27, **characterised in that** the panel (130) comprises a lighting system. 35

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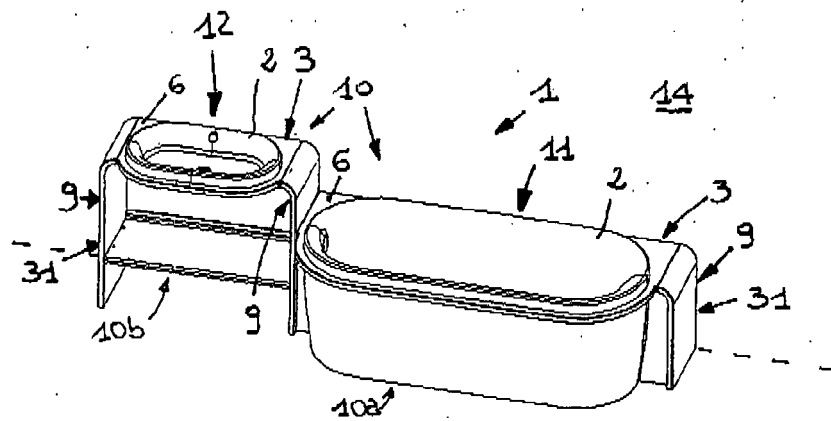


Fig. 1

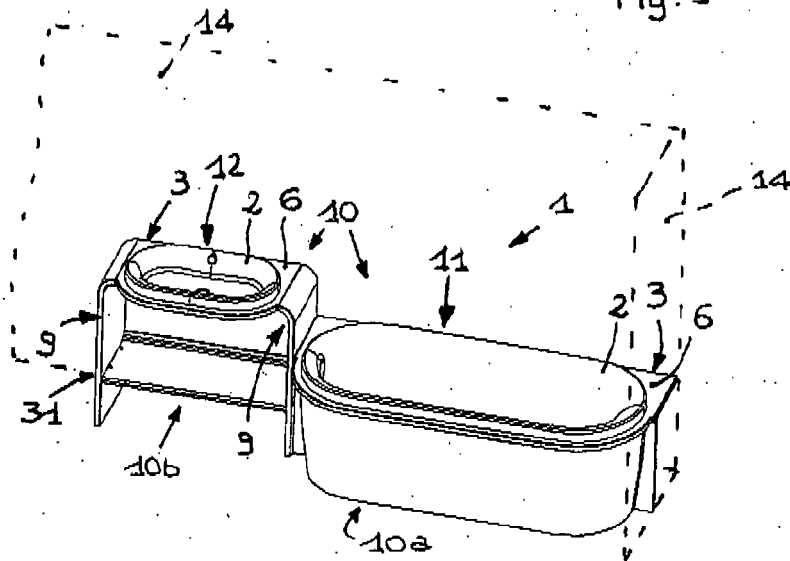


Fig. 2

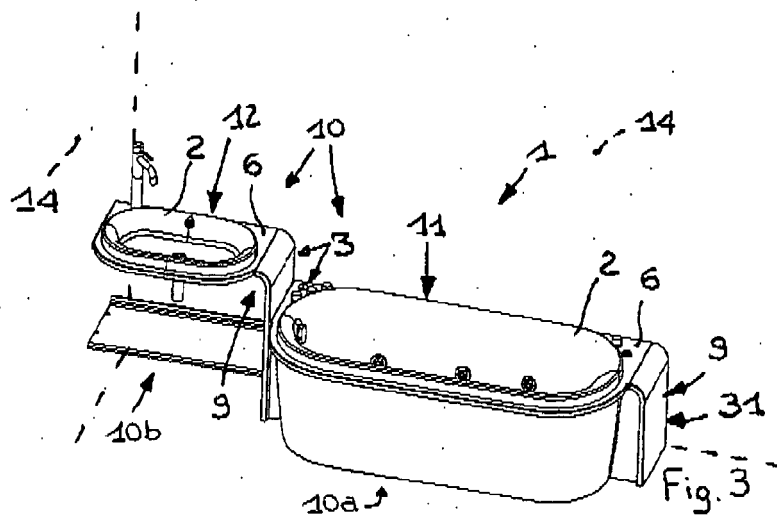
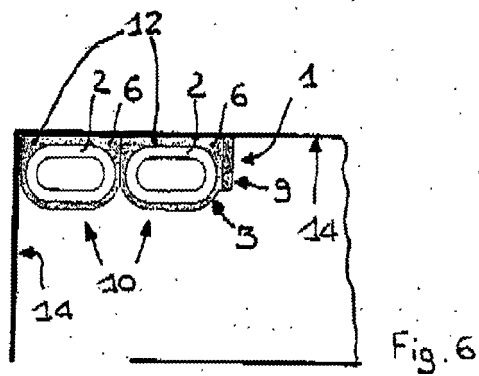
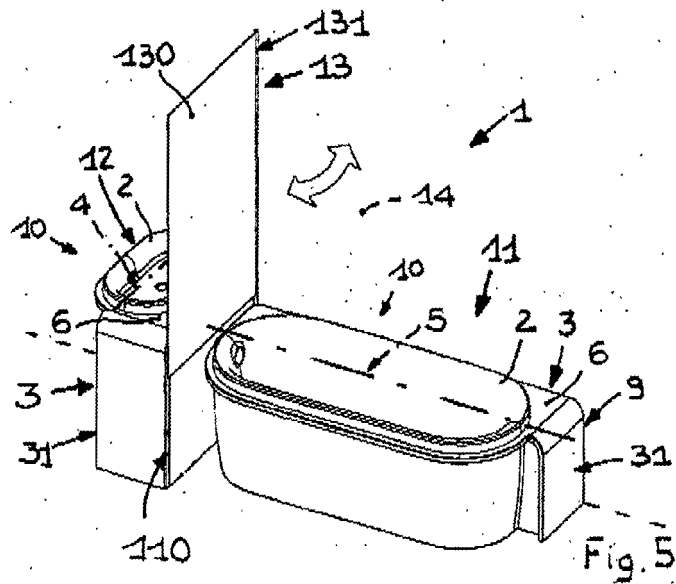
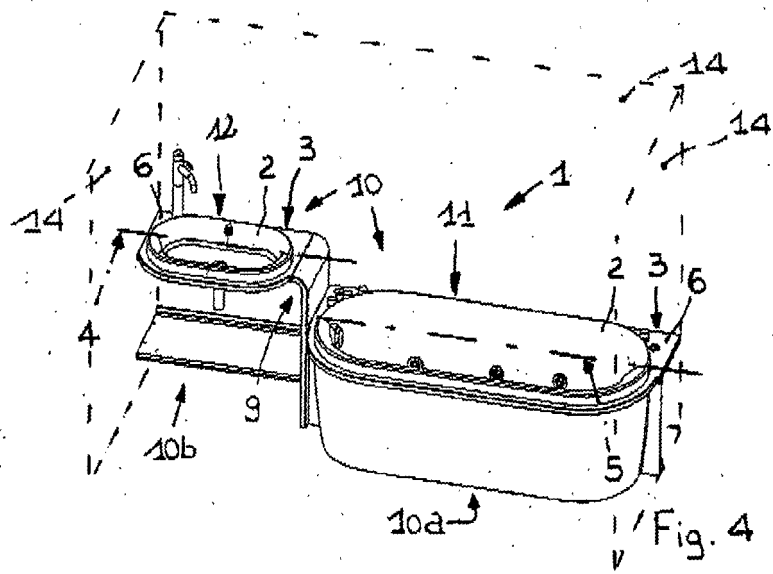


Fig. 3



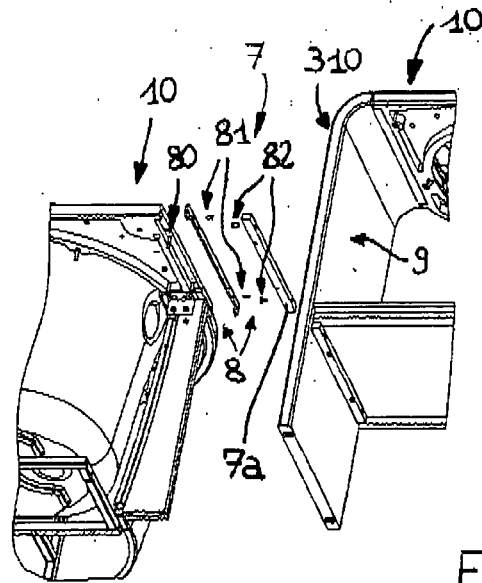


Fig. 7

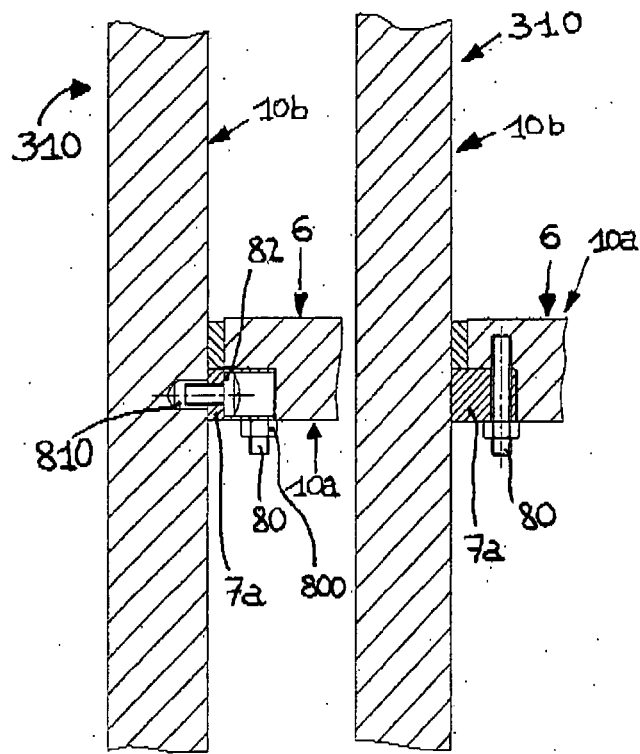


Fig. 8

Fig. 9