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(54) Elevator cage chamber

(57) An elevator cage chamber including a cage floor, a plurality of side panels erected and fixed to along the periphery of the cage floor, a plurality of first side panel connecting members for connecting the side panels adjacent to each other, at least one second side panel connecting member provided with a hole for securing one of the side panels and the second side panel con-

necting member through the hole from within the cage chamber, and a plurality of securing members. The side panels are connected via one of the first side panel connecting members and the second side panel connecting member by the securing members.

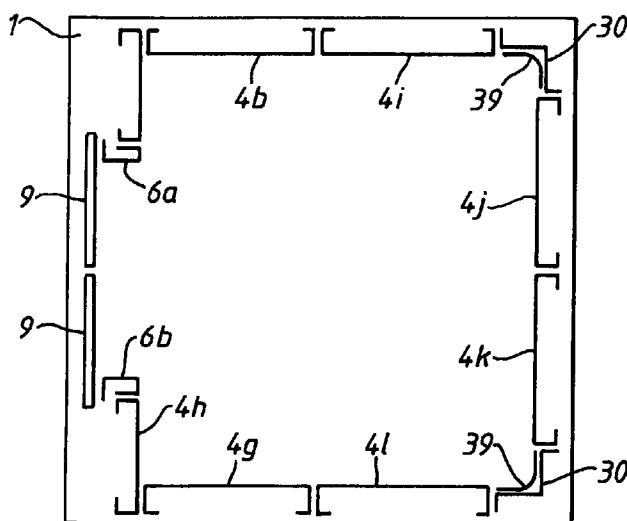


Fig. 1

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Description

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to a cage chamber of an elevator, and more particularly to a cage chamber of an elevator whose entire series of assembly operations can be performed from within the cage chamber.

Description of the Related Art

One example of a prior art elevator cage chamber is described with reference to Fig. 10 to Fig. 14. Fig. 10 is a perspective view showing the interior of the cage chamber of this elevator. In Fig. 10, reference numeral 1 indicates a cage floor. An exit/entrance 2 is provided on cage floor 1 at the front face of the cage chamber. Also, at the periphery of the top base of cage floor 1, there are fixed kick plates 3, with the exception of the part where exit/entrance 2 is provided. A plurality of side panels 4 are erected next to each other on the upper surface of kick plates 3. Joints 5 are provided between these side panels 4, chiefly with the object of ornamentation. Exit/entrance columns 6a, 6b are erected on both sides of exit/entrance 2, and a transom 7 is arranged at the top of exit/entrance 2 between exit/entrance columns 6a, 6b. A ceiling 8 is mounted and fixed on side panels 4 and exit/entrance columns 6a, 6b. A cage door 9 is arranged such that it can be opened and closed, in exit/entrance 2.

The shape of side panels 4 will now be described with reference to Fig. 11. Fig. 11 is a perspective view of one of side panels 4. In Fig. 11, side panel 4 consists of a panel 10 made of steel sheet. Both side edges of panel 10 are formed with bent portions 11 projecting so as to form flanges bent at right angles to the back of panel 10. A large number of connecting holes 12 are formed in each of bent portions 11. Also, in order to increase the bending rigidity of bent portions 11, reinforcing edge portions 13 are respectively formed by bending the edges of bent portions 11 again inwards at right angles. Furthermore, in order to maintain the rigidity of panel 10 as a whole, a reinforcing member 14 which is generally hat-shaped in cross-section is fixed by welding or adhesive etc to the back face of panel 10.

Furthermore, the upper and lower edges of panel 10 are formed with bent portions 15, 16 bent at right angles to the back face. Securing holes 17 to secure ceiling 8 and side panel 4 are formed in bent portion 15 at the upper edge of panel 10, and welded nuts 18 are respectively fixed to the back face of bent portion 15 in positions corresponding to these securing holes 17. Furthermore, securing holes 19 for securing kick plate 3 and side panel 4 are formed in bent portion 16 at the lower edge of panel 10, and welded nuts 20 are respectively fixed to the back face of bent portion 16 in positions corresponding to these securing holes 19.

Next, the securing structure of fellow bent portions 11 of adjacent side panels 4 will be described with reference to Fig. 12. Between respective bent portions 11, 11 of a pair of adjacent side panels 4, there is provided a vertically elongate strip-shaped joint 5 formed of a metallic material such as aluminium. This joint 5 is provided with a plurality of securing holes 21 arranged in its longitudinal direction. These securing holes 21 are arranged so as to correspond with connecting holes 12 provided in bent portions 11 of the side panels 4 when the cage chamber is assembled. Bolts 22 are then respectively inserted so as to pass through connecting holes 12, 12 of a pair of bent portions 11, 11 and securing holes 21 of joint 5, and nuts 24 are threaded on to these bolts 22 with washers 23 in between, respectively. These two adjacent side panels 4 are then connected by tightening these bolts 22. Also, securing of side panels 4 at the corners of the cage chamber is achieved by tightening bolts 22 respectively inserted through securing holes (not shown) formed in panel 10 of one side panel 4 as shown in Fig. 13. Next, the method of assembling the prior art cage chamber of an elevator as described above will be described with reference to Fig. 14. Fig. 14 is a plan view showing the cage chamber of this elevator. In Fig. 14, first of all, kick plates 3 (not shown) are fixed at the periphery of the upper face of cage floor 1 in the shaft of the elevator. Side panels 4 are composed of a series of side panels 4a, 4b, 4c, 4d, 4e, 4f, 4g and 4h arranged next to each other. Adjacent side panels 4 are connected as shown in Fig. 12 or Fig. 13, and side panel 4a and exit/entrance column 6a and side panel 4h and exit/entrance column 6b are respectively connected.

In order to ensure safety of the workers, it is desirable that these connecting operations should as far as possible be performed within the cage. Accordingly, first of all, a first unit is assembled by successively connecting exit/entrance column 6a, side panels 4a, 4b and 4c on cage floor 1, and this first unit is then erected and fixed on the prescribed kick plates 3 on cage floor 1. Next, a second unit is assembled by successively connecting exit/entrance column 6b side panels 4h, 4g and 4f on cage floor 1, and this second unit is then likewise erected and fixed on kick plates 3. Next, a third unit is assembled by connecting side panels 4d, 4e at the back face of the cage chamber, and then this third unit is likewise erected and fixed on kick plate 3. Then, at two locations at the corners of the rear face side of the cage chamber, the worker connects side panel 4c with side panel 4d, and side panel 4e with side panel 4f, using bolts and nuts at the outside of the cage chamber. For this purpose, the worker must enter into the gap between the cage chamber outside wall and the shaft wall. In this way, the operation of securing side panels 4 and exit/entrance columns 6a, 6b is completed. Finally, ceiling 8 is mounted on side panels 4 and exit/entrance columns 6a, 6b and secured and fixed in position. Securing the ceiling 8 to the side panels 4 is achieved by the worker climbing on to ceiling 8 and securing bolts along with ceiling 8 from

above to welded nuts 18 fixed to the upper edges of side panels 4.

Thus, with the conventional elevator cage chamber described above, at least the operation of securing side panel 4c with side panel 4d, and side panel 4e with side panel 4f which are the last to be secured, cannot be performed from inside the cage chamber. Instead, the worker must do this operation using a tool such as a spanner in the narrow gap between the outside wall of the cage chamber and the wall of the shaft, outside the cage chamber. This operation was therefore very poor in workability and inefficient and not only was a considerable amount of time required for the operation of assembly of the cage chamber, but also there was a risk of for example the worker falling to the bottom of the shaft. Also, in modern elevators, the design of the cage chamber interior is diversified in accordance with changes in taste of the users etc. With the conventional method of securing, however, due to the way in which the side panels are secured at the back, it was not easy to change cage chamber structural members such as the joint. It was therefore difficult to improve artistic design characteristics by changing structural members.

SUMMARY OF THE INVENTION

Accordingly, one object of this invention is to provide an elevator cage chamber wherein a series of assembly operations of the cage chamber can be performed safely, simply and reliably within the cage chamber.

Another object of this invention is to provide an elevator cage chamber wherein the efficiency of the cage chamber assembly operation at a site where the elevator is to be installed can be raised.

A further object of this invention is to provide an elevator cage chamber which is capable of responding to demands such as to improve artistic design characteristics of the interior of the cage chamber.

These and other objects of this invention can be achieved by providing an elevator cage chamber including a cage floor, a plurality of side panels erected and fixed to along the periphery of the cage floor, a plurality of first side panel connecting members for connecting the side panels adjacent to each other, at least one second side panel connecting member provided with a hole for securing one of the side panels and the second side panel connecting member through the hole from within the cage chamber, and a plurality of securing members. The side panels are connected via one of the first side panel connecting members and the second side panel connecting member by the securing members.

According to one aspect of this invention, there can be provided an elevator cage chamber including, a cage floor, a plurality of side panels erected and fixed along the periphery of the cage floor, a plurality of first side panel connecting members for connecting the side panels adjacent to each other, at least one second side panel connecting member provided with a mounting portion for securing one of the side panels and the second side

panel connecting member at the mounting portion from within the cage chamber, and a plurality of securing members. The side panels are connected via one of the first side panel connecting members and the second side panel connecting member by the securing members.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

Fig. 1 is a plan view showing an elevator cage chamber according to an embodiment of this invention;

Fig. 2 is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in the embodiment shown in Fig. 1;

Fig. 3 is a perspective view showing a side panel connecting member in the embodiment shown in Fig. 1;

Fig. 4 is a perspective view showing a part of a kick plate of the elevator cage chamber shown in Fig. 1;

Fig. 5 is a longitudinal cross-sectional view showing the securing portion of the side panel and the kick plate of the elevator cage chamber shown in Fig. 1;

Fig. 6 is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in an elevator cage chamber according to another embodiment of this invention;

Fig. 7 is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in an elevator cage chamber according to still another embodiment of this invention;

Fig. 8A is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in an elevator cage chamber according to a further embodiment of this invention;

Fig. 8B is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in an elevator cage chamber according to another embodiment of this invention;

Fig. 8C is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in an elevator cage chamber according to a further embodiment of this invention;

Fig. 9A is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in an elevator cage chamber according to another embodiment of this invention;

Fig. 9B is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in an elevator cage chamber according to still a further embodiment of this invention;

Fig. 10 is a perspective view showing the interior of one example of a conventional elevator cage chamber;

Fig. 11 is a perspective view showing a side panel of the elevator cage chamber shown in Fig. 10;

Fig. 12 is a cross-sectional view showing the major part of the connecting portion of adjacent side panels in the elevator cage chamber shown in Fig. 10;

Fig. 13 is a cross-sectional view showing the major part of the connecting portion of other adjacent side panels in the elevator cage chamber shown in Fig. 10; and

Fig. 14 is a plan view showing the elevator cage chamber shown in Fig. 10.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, the embodiments of this invention will be described below.

Fig. 1 is a plan view showing an elevator cage chamber according to an embodiment of this invention. In Fig. 1, side panels 4a, 4b, 4g and 4h and exit/entrance columns 6a, 6b are the same members as in the conventional example described above. However, the construction of side panels 4i, 4l, 4j and 4k is different in respect of their length dimension from the conventional side panels 4c, 4f, 4g and 4k. Moreover, side panel connecting members 30 are provided at two locations at the corner of the back face of the cage chamber. Specifically, the length of side panel 4i is formed to be shorter than that of conventional side panel 4c by an amount corresponding to the perpendicular distance from one end of side panel connecting member 30 to the plane of extension of the surface of side panel 4j, as shown by a length A in Fig. 2. Also, side panel 4l is shorter in length by length A compared with conventional side panel 4f, like the case of side panel 4i. Furthermore, as shown in Fig. 2, side panels 4j, 4k are respectively formed shorter by an amount corresponding to the perpendicular distance from the other end of side panel connecting member 30 to the plane of extension of the surface of side panel 4i, as shown by a length B. Welded nuts 31 for fixing side panel connecting member 30 are fixed on to one bent portion of each of side panels 4j, and 4k.

Next, the construction of the side panel connecting member 30 will be described. These side panel connecting members 30 are formed of steel material such as steel sheet and are formed in approximately W-shape in cross-section. More specifically, as shown in Fig. 3, an elongate flat plate is bent at right angles along a centre-line in its direction of elongation to form a connecting member body 32. Both edges of this flat plate are then further bent at right angles in the outward directions to form mounting flanges 33. Also, the length in the height direction of side panel connecting member 30 is the same as that of each of side panels 4i, 4j, 4k and 4l. Mounting flanges 33 of side panel connecting member 30 are formed with a plurality of securing holes 34 for side panels 4i, 4j or side panels 4k and 4l at a number

of locations in the height direction. Also, holes 35 for securing operation are provided to perform the operation of securing side panel 4j or side panel 4k by the worker inserting his hand, in portions of connecting member body 32 in the vicinity of securing holes 34. As shown in Fig. 2, the securing of side panel 4j or side panel 4k and side panel connecting member 30 is effected by inserting bolts 36 through securing holes 34 provided in mounting flange 33 of side panel connecting member 30 and threading bolts 36 on to the welded nuts 31, then tightening bolts 36 together with washers 37, respectively. In contrast, while securing of side panel 4i or side panel 4l and side panel connecting member 30 is effected by means of bolts 36, owing to the sequence of assembly of the cage chamber, it is not necessarily essential to weld nut 38 to side panel 4i beforehand. The cage chamber assembly sequence is described later.

An ornamental surface plate 39 is stuck on as shown in Fig. 2 to the inside surface of side panel connecting member 30. Ornamental surface plate 39 is of the same length in the height direction as that of side panel connecting member 30 and is arranged so as to cover the entire inside surface of side panel connecting member 30. Holes 35 for securing operation of side panel connecting member 30 cannot therefore be seen from the inside of the cage chamber. Also, ornamental surface plate 39 is formed in a curved shape with curvature on its cross-sectional shape and its two side edges are fixed by sticking by means of adhesive etc to side panel connecting member 30. This ornamental surface plate 39 is integrally formed by polymer material such as ABS resin or hard PVC, or an extrusion of for example aluminium, or sheet bending operation of stainless steel or steel sheet or the like.

Next, the method of assembling the cage chamber will be described. First of all, exit/entrance column 6a, side panels 4a, 4b and 4i are connected up in sequence within the cage chamber just as conventionally. Next, as shown in Fig. 2, side panel connecting member 30 is secured by bolts 36, washers 37 and nuts 38 to the side edge portion of side panel 4i to form a first side panel unit, which is erected and fixed on the upper face of kick plate 3 on cage floor 1. In the same way, a second side panel unit consisting of the other exit/entrance column 6b, side panels 4h, 4g, 4l and side panel connecting member 30 is erected and fixed to the upper face of kick plate 3. Next, side panel 4j and 4k are connected by means of bolts (not shown) to form a third side panel unit, which is likewise erected and fixed on the upper face of kick plate 3.

The construction of kick plate 3 will now be described with reference to Fig. 4 and Fig. 5, together with the method of securing kick plate 3 and side panel 4. As shown in Fig. 4, kick plate 3 is composed of a strengthening member 40 made of steel sheet of channel-shaped cross-section, securing holes 41 are provided in the upper surface of strengthening member 40, and square holes 42 are provided in strengthening member 40 in the vicinity of this securing holes 41, respec-

tively. As shown in Fig. 5, securing of kick plate 3 and side panels 4 is effected by mounting side panels 4 on the upper surface of strengthening member 40 which is fixed on top of cage floor 1. In this condition, the worker inserts his hand through square holes 42 from within the cage chamber, to effect tightening of bolts 43 on to welded nuts 20 of bent portions 16 of side panels 4 through securing holes 41 from below, respectively. Finally, an ornamental plate 44 is stuck on to the surface of strengthening member 40 by the magnetic force of a plate-shaped magnet 45 provided on ornamental plate 44. This ornamental plate 44 may be formed of aluminium material or stainless steel material etc.

Once the above operation has been finished, the operation of securing side panel connecting members 30, 30 to respective side panels 4j and 4k is performed. This securing operation can be carried out from within the cage chamber. Specifically, the worker inserts his hand from within the cage chamber through holes 35 for securing side panel connecting member 30 and threads bolts 36 on to welded nuts 31 together with washers 37 through securing holes 34 provided in mounting flange 33 of side panel connecting member 30, respectively. He then uses a tool, such as a ratchet or spanner, to tighten up bolts 36 threaded on the rear side of side panel connecting member 30. Welded nuts 31 are fixed to respective side panels 4j and 4k, so there is no need to use a jig or the like to fix welded nuts 31 when bolts 36 are tightened.

Finally, ornamental surface plate 39 is stuck on to the inside face of side panel connecting member 30 from within the cage chamber. For this adhesive fixing, an adhesive or the like is employed; the portion of adhesive fixing is both side edges of ornamental surface plate 39.

As described above, with this embodiment, the series of assembly operations of the cage chamber can be performed from within the cage chamber, and the assembly operations in the place where the elevator is to be installed can be carried out in a simple and efficient manner. Furthermore, as there is no need for the work to be carried out in the restricted location of the gap between the outer wall of the cage chamber and the shaft wall, thus safety of the worker can be ensured.

Furthermore, the artistic design characteristics of the cage chamber are improved by hiding the entire inside surfaces of side panel connecting members 30, including securing operation holes 35 of side panel connecting members 30 by means of respective ornamental surface plates 39. In addition, the curved surface of ornamental surface plate 39 gives a visual impression of gentleness, further improving the artistic design characteristics of the cage chamber. This ornamental surface plate 39 can be formed of polymer material such as resin, metal such as aluminium or stainless steel, or coated steel sheet etc, so a wide range of selection of shape and material is therefore possible, making it possible to cope appropriately with the versatility of artistic design demanded in modern elevators.

In this embodiment, side panel connecting members 30 are provided at two corner parts of the cage chamber rear face. However, the cage chamber of an elevator according to this invention is not restricted to this embodiment. The side panel connecting members could be provided, for example, in the middle of the cage chamber side walls, instead of the corners of the rear face of the cage chamber. Also, regarding the number of side panel connecting members, if for example that number of side panel units as described above is taken as two units, a cage chamber can be assembled with a single side panel connecting member. Specifically, if adjacent side panels constituting the rear face of the cage chamber are finally connected by a side panel connecting member, the cage chamber can be assembled by means of a single side panel connecting member. In this way, the efficiency of the assembly operation of the cage chamber can be further improved, if the cage chamber is assembled using a single side panel connecting member.

Regarding the shape of ornamental surface plate 39, this is not restricted to a curved shape shown in Fig. 2 in which a curvature is conferred as in this embodiment, but could be, for example, a shape matching the inside faces forming right angles of connecting member body 32 of the side panel connecting member 30. An ornamental surface plate 46 could be employed having a shape formed with a mounting portion 47 by bending somewhat both side edges of a flat plate member, as shown in Fig. 6. Thus, the ornamental surface plate could be of diverse shapes; this affords an extremely wide range of design selection for the cage chamber, making it possible to fully satisfy the diverse tastes of users.

Regarding the shape of the side panel connecting member also, as shown by a reference numeral 48 in Fig. 7 for example, this may be formed with mounting portions 49 by bending the two edges of a flat sheet somewhat outward, and providing holes 50 for the securing operation, shaped as a square window, in the central flat sheet portion. In this case, an ornamental surface plate 51 shaped as a flat sheet may be employed as shown in Fig. 7.

Also, as another shape for the side panel connecting member, as shown by a reference numeral 52 in Fig. 8A, a shape may be employed that is produced, by bending an elongate flat strip member at right angles along its center line in the longitudinal direction to form a body portion 53, then by bending both side edges of body portion 53 inwards at right angles to from mounting portions 54, and then forming areas 55 for adhesive fixing of an ornamental surface plate 56 by again bending both side edges of mounting portions 54 inwards at right angles. Ornamental surface plate 56 in this case can be of curved shape as shown in Fig. 8A, obtained by conferring curvature on a flat strip in its middle.

A further embodiment of an elevator cage chamber according to this invention will now be described with reference to Fig. 8B. This embodiment differs from the embodiment described above and shown in Fig. 8A in respect of the construction whereby an ornamental sur-

face plate 56B is fixed to side panel connecting member 52. Specifically, thin-sheet shaped magnets 56h are adhesively fixed beforehand by means of adhesive or the like to the areas corresponding to areas 55 of the back face of ornamental surface plate 56B. Ornamental surface plate 56B is fixed to side panel connecting member 52 using the magnetic force of plate magnets 56b. By sticking the ornamental surface plate on to the side panel connecting member in this way using plate magnets, the operation of mounting the ornamental surface plate can be facilitated. In addition, since mounting/removal of the ornamental surface plate can easily be performed, it is easy to change the ornamental surface plate, so that the design of the cage chamber can easily be altered in accordance with changes in users tastes.

The concept of the embodiment shown in Fig. 8B, that is the fixing of ornamental surface plate 56B to side panel connecting member 52 using the magnetic force of plate magnets 56b, can be applied to the embodiment shown in Fig. 2. Another embodiment of an elevator cage chamber according to this invention provided based on this concept is shown in Fig. 8C. In Fig. 8C, thin-sheet shaped magnets 56C are adhesively fixed to the edge portions of the back face of an ornamental surface plate 39C. Ornamental surface plate 39C is fixed to side panel connecting member 30 using the magnetic force of plate magnets 56C. With this embodiment, the same effects can be expected as in the embodiment shown in Fig. 8B.

Next, another embodiment of an elevator cage chamber according to this invention will be described with reference to Fig. 9A. This embodiment differs from the embodiment described above and shown in Fig. 8A in respect of the construction of the mounting portions of the ornamental surface plate and side panel connecting member. Specifically, a side panel connecting member 57 is equipped with recesses 58 at both side edges thereof and these recesses 58 have a shape such that the side edge portions of an ornamental surface plate 59 can be respectively fixed by fitting into recesses 58. Ornamental surface plate 59 is then fixed to side panel connecting member 57 by fitting the side edge portions of ornamental surface plate 59 into respective recesses 58. In this case, side panel connecting member 57 may be formed of an extrusion consisting of aluminium or the like. To fix ornamental surface plate 59 to side panel connecting member 57, the bottom edge of ornamental surface plate 59 may be fitted into recesses 58 of side panel connecting member 57 from the top of the cage chamber, and fitting-in and fixing then performed by gradually lowering ornamental surface plate 59. In this way, in this embodiment, without using adhesive or tools etc, mounting and removal of ornamental surface plate 59 on side panel connecting member 57 can easily be achieved. Consequently, not only is the cage chamber assembly operation facilitated, but improved artistic design characteristics can easily be obtained by replacing the ornamental surface plates.

The construction of the mounting portions of the ornamental surface plate and side panel connecting

member shown in Fig. 9A can be applied to the embodiment shown in Fig. 2. Another embodiment of an elevator cage chamber according to this invention provided based on this concept is shown in Fig. 9B. In Fig. 9B, a side panel connecting member 30B is equipped with recesses 58B at both side edges thereof, and these recesses 58 have a shape such that the side edge portions of an ornamental surface plate 39 can be respectively fixed by fitting into recesses 58B. Ornamental surface plate 39 is then fixed to side panel connecting member 30B by the same operation as that of the embodiment shown in Fig. 9A.

With this invention, as described above, as the series of assembly operations of the cage chamber can be performed from the interior of the cage chamber, worker safety can thereby be ensured, and the assembly operation can be performed in a convenient and reliable manner. The efficiency of the assembly operation of the cage chamber at the elevator installation site can thereby be greatly increased.

Also, by providing an ornamental surface plate so as to cover most of the side panel connecting members from within the cage chamber, the inside surface of the side panel connecting members is covered over and hidden, thereby making it possible to improve artistic design characteristics of the cage chamber, and furthermore, enabling a cage chamber to be provided of highly artistic design characteristics suited to the tastes of users, by suitably selecting the shape and/or material of the ornamental surface plate.

Obviously, numerous modifications and variations of the present invention are possible in light of above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

Claims

1. An elevator cage chamber, comprising:
 - a cage floor;
 - a plurality of side panels erected and fixed to along the periphery of said cage floor;
 - a plurality of first side panel connecting members for connecting said side panels adjacent to each other;
 - at least one second side panel connecting member provided with a hole for securing one of said side panels and said second side panel connecting member through said hole from within said cage chamber; and
 - a plurality of securing members;
 - said side panels being connected via one of said first side panel connecting members and said second side panel connecting member by said securing members.
2. The elevator cage chamber according to Claim 1, further comprising an ornamental surface plate provided on said second side panel connecting member

for covering at least said hole from within said cage chamber.

3. An elevator cage chamber, comprising:
 - a cage floor; 5
 - a plurality of side panels erected and fixed along the periphery of said cage floor;
 - a plurality of first side panel connecting members for connecting said side panels adjacent to each other; 10
 - at least one second side panel connecting member provided with a mounting portion for securing one of said side panels and said second side panel connecting member at said mounting portion from said cage chamber; and 15
 - a plurality of securing members;
 - said side panels being connected via one of said first side panel connecting members and said second side panel connecting member by said securing members. 20
4. The elevator cage chamber according to Claim 3, further comprising an ornamental surface plate provided on said second side panel connecting member for covering at least said mounting portion from within said cage chamber. 25
5. The elevator cage chamber according to Claim 2 or Claim 4, wherein:
 - said ornamental surface plate is stuck on an inside face of said second side panel connecting member from within said cage chamber. 30
6. The elevator cage chamber according to Claim 2 or Claim 4, wherein: 35
 - said ornamental surface plate is provided with a magnet fixed to a back face of said ornamental surface plate, and said ornamental surface plate is fixed to an inside face of said second side panel connecting member by magnetic force from within said cage chamber. 40
7. The elevator cage chamber according to Claim 2 or Claim 4, wherein:
 - said second side panel connecting member is provided with recesses, each for fitting one of edge portions of said ornamental surface plate in said recess, respectively; and 45
 - said ornamental surface plate is fixed to said second side panel connecting member by fitting each of said edge portions of said ornamental surface plate into one of said recesses from within said cage chamber, respectively. 50
8. The elevator cage chamber according to Claim 2: 55
 - wherein a first side panel unit, a second side panel unit and a third side panel unit are provided, each of which is erected and fixed along the periphery of said cage floor;

wherein said first side panel unit is composed of a plurality of said side panels, at least one of said first side panel connecting member, said second side panel connecting member, and a plurality of said securing members, and

in said first side panel unit, said side panels adjacent to each other are connected via said first side plate connecting member by said securing members, and one end portion of said side panel positioned at one end of said first side panel unit is connected to a first end portion of said second side panel connecting member by said securing members;

wherein said second side panel unit is composed of a plurality of said side panels, at least one of said first side panel connecting member, said second side panel connecting member, and a plurality of said securing members, and

in said second side panel unit, said side panels adjacent to each other are connected via said first side panel connecting member by said securing members, and one end portion of said side panel positioned at one end of said second side panel unit is connected to a first end portion of said second side panel connecting member by said securing members;

wherein said third side panel unit is composed of a plurality of said side panels, at least one of said first side panel connecting members, and a plurality of said securing members, and

in said third side panel unit, said side panels adjacent to each other are connected via said first side panel connecting member by said securing members; and

wherein a second end portion of said second side panel connecting member in said first side panel unit is connected to an end portion of said side panel positioned at one end of said third side panel unit by said securing members through said hole, and a second end portion of said second side panel connecting member in said second side panel unit is connected to an end portion of said side panel positioned at the other end of said third side panel unit by said securing members through said hole.

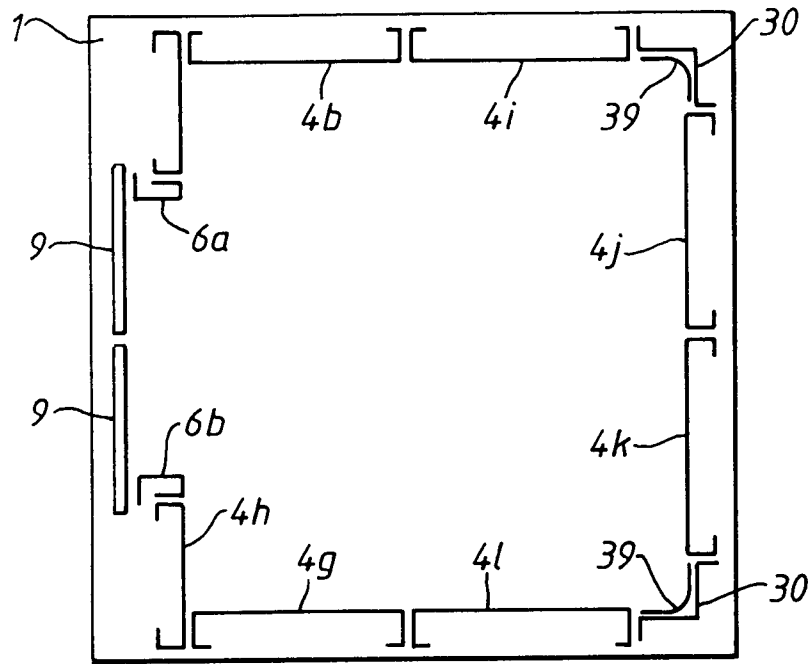


Fig. 1

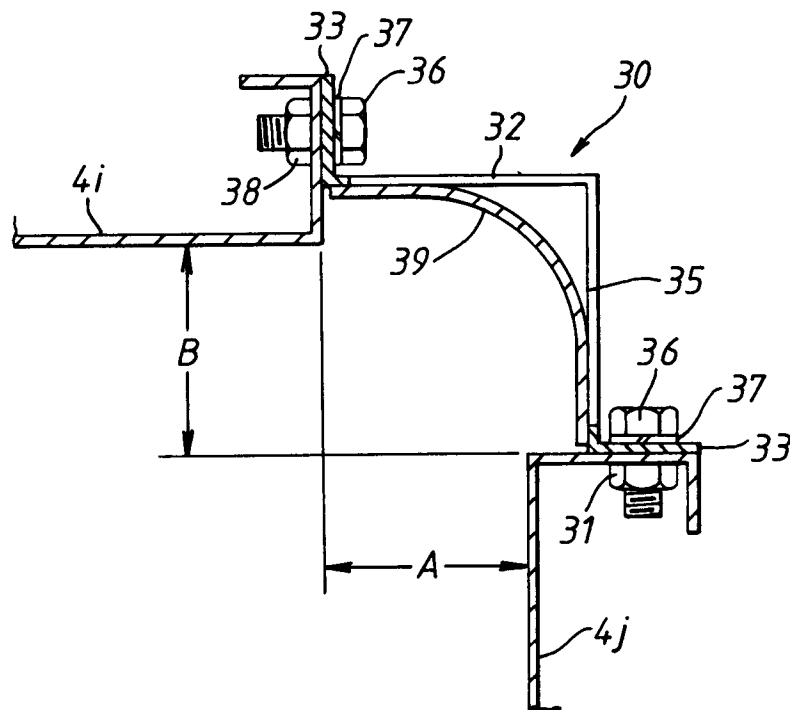


Fig. 2

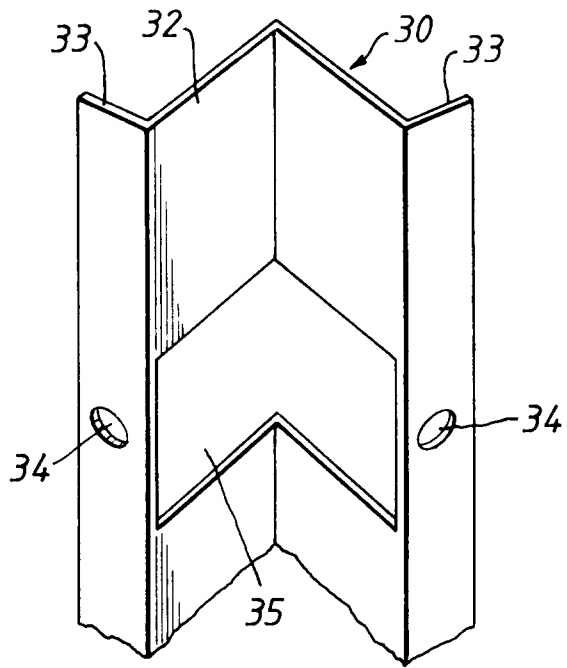


Fig. 3

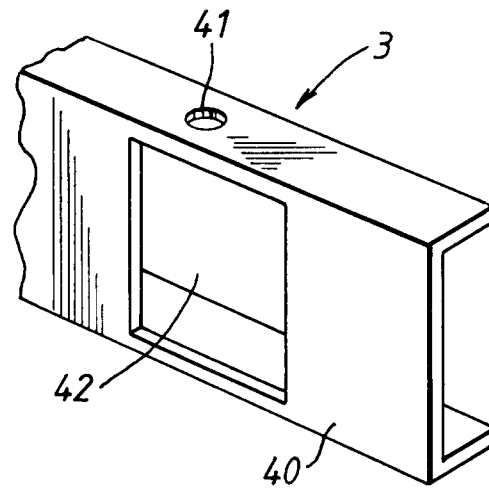


Fig. 4

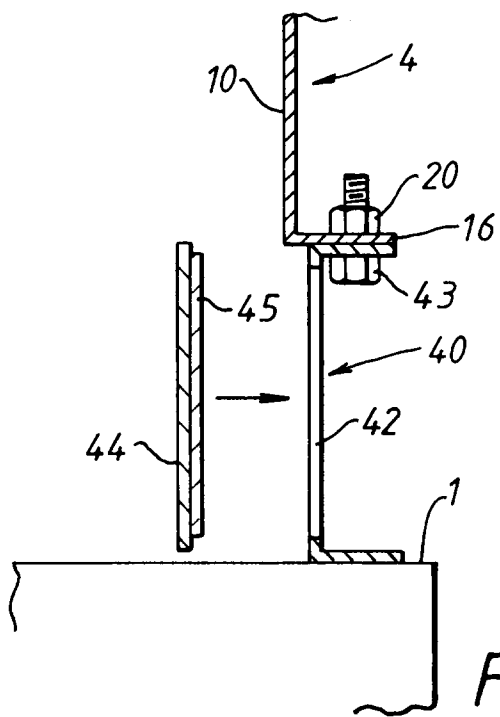


Fig. 5

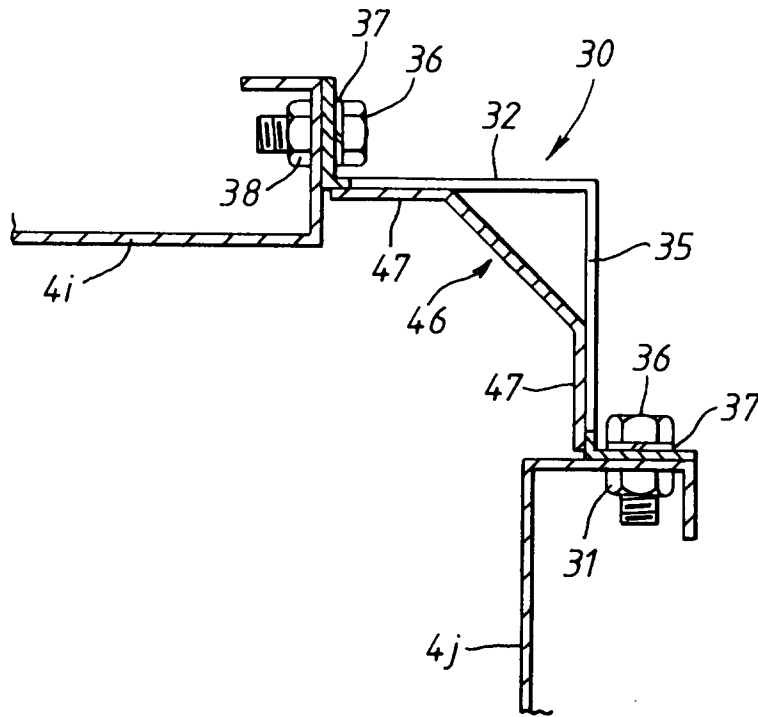


Fig. 6

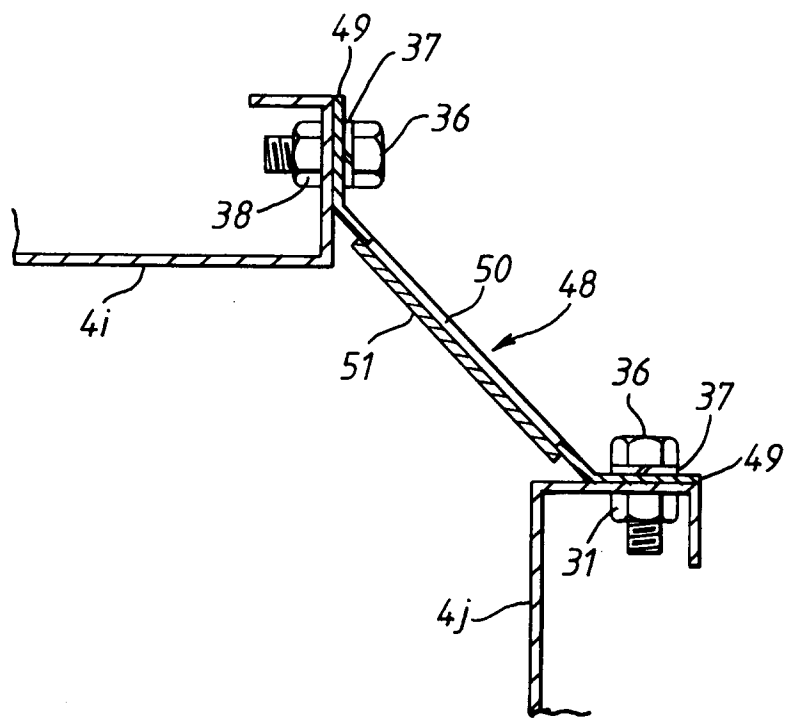
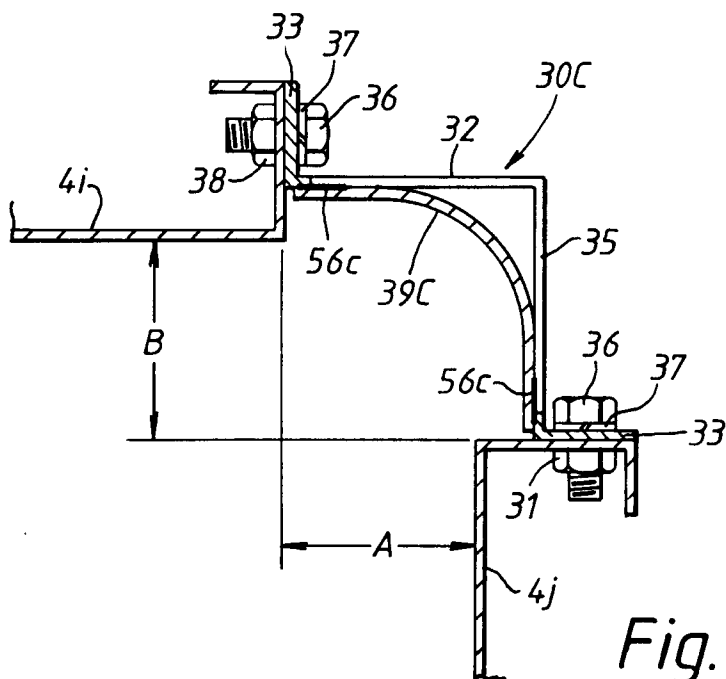
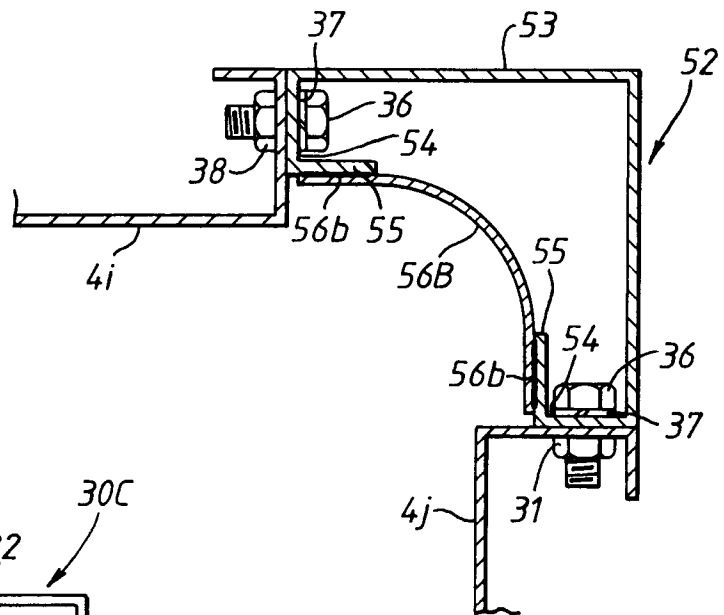
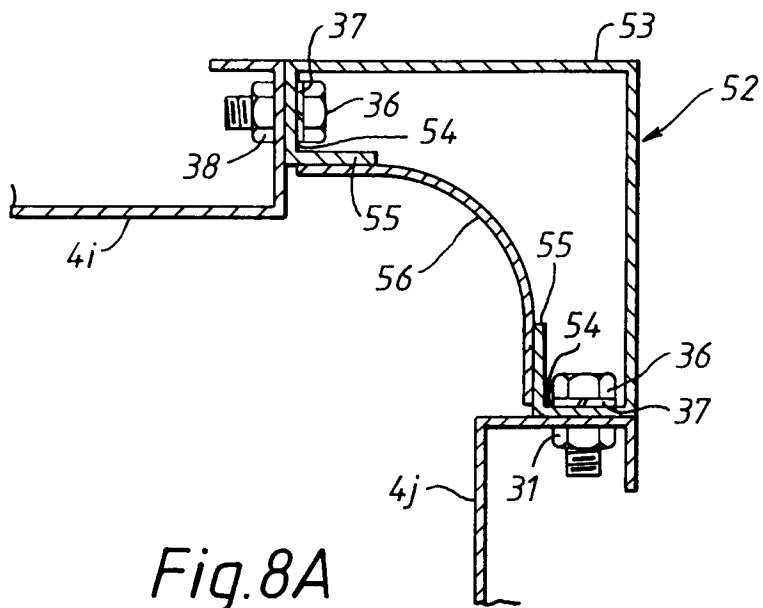


Fig. 7



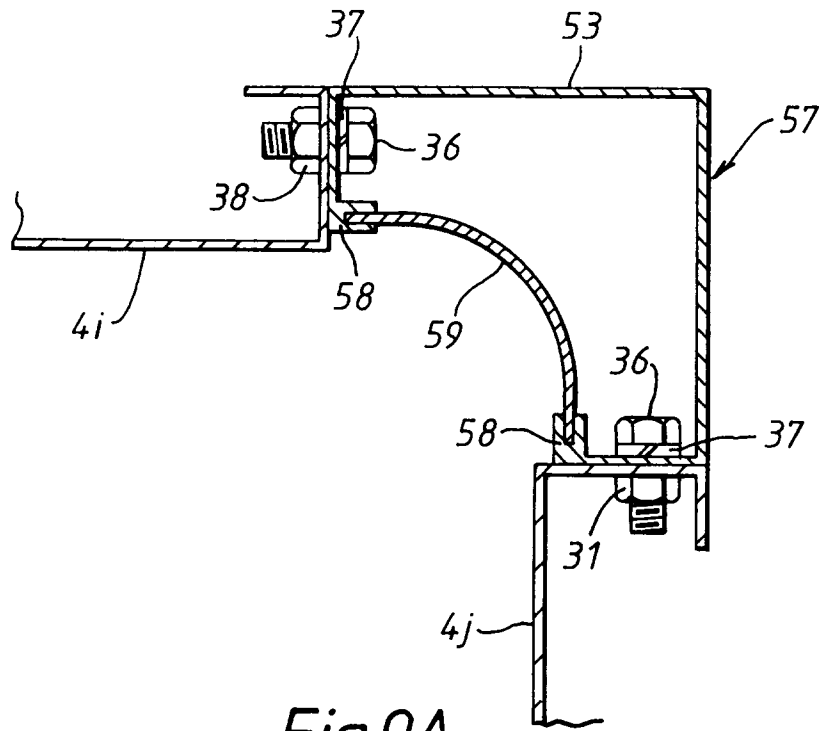


Fig. 9A

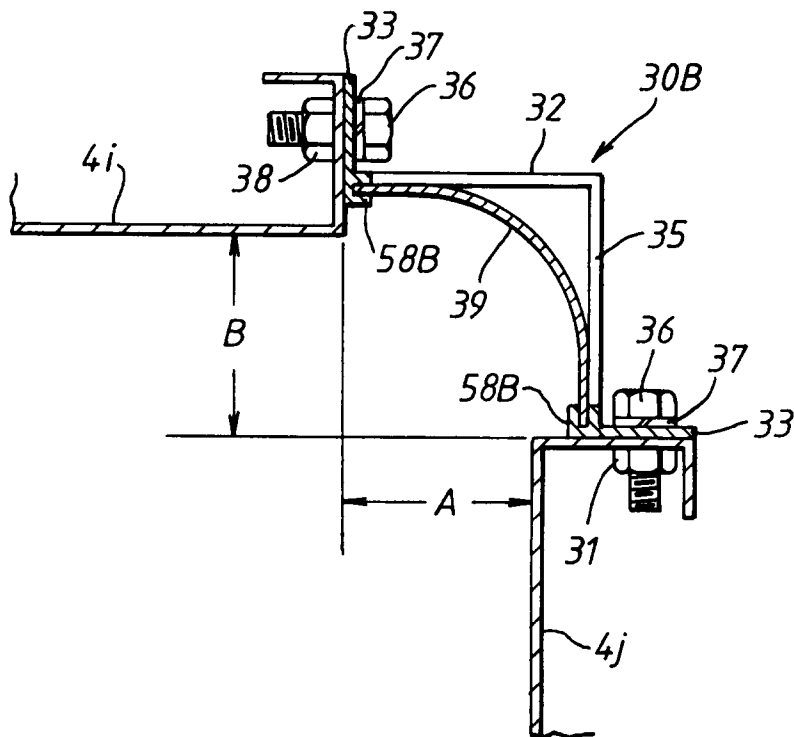


Fig. 9B

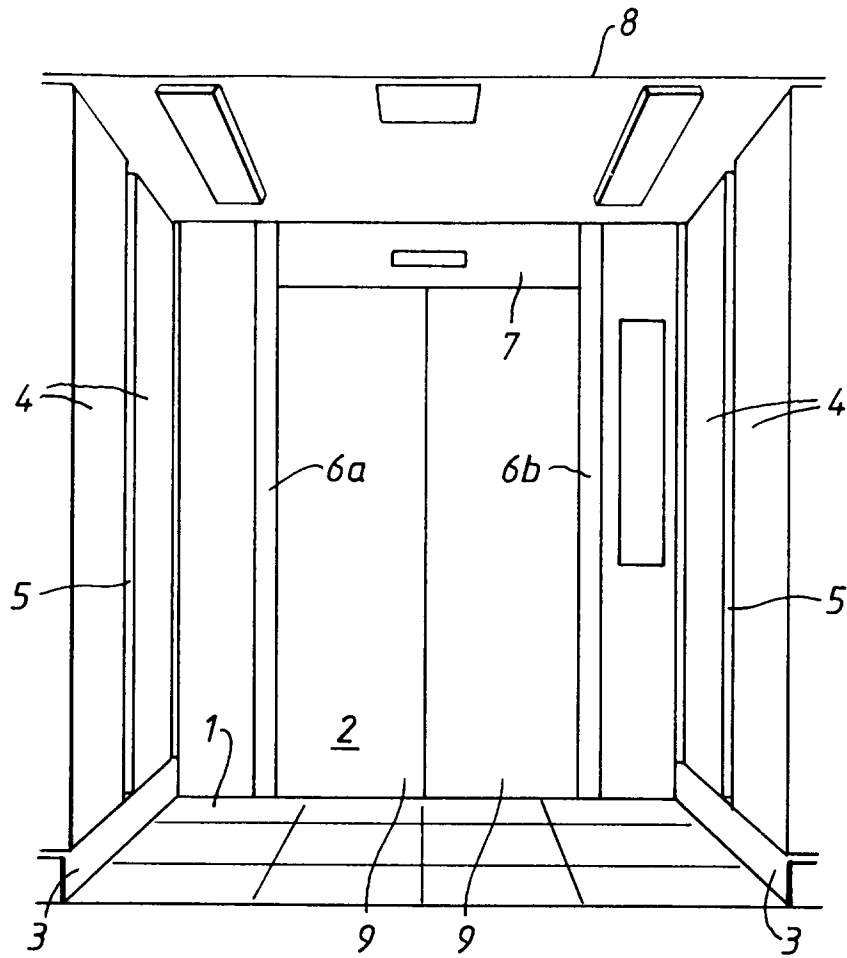


Fig. 10 (PRIOR ART)

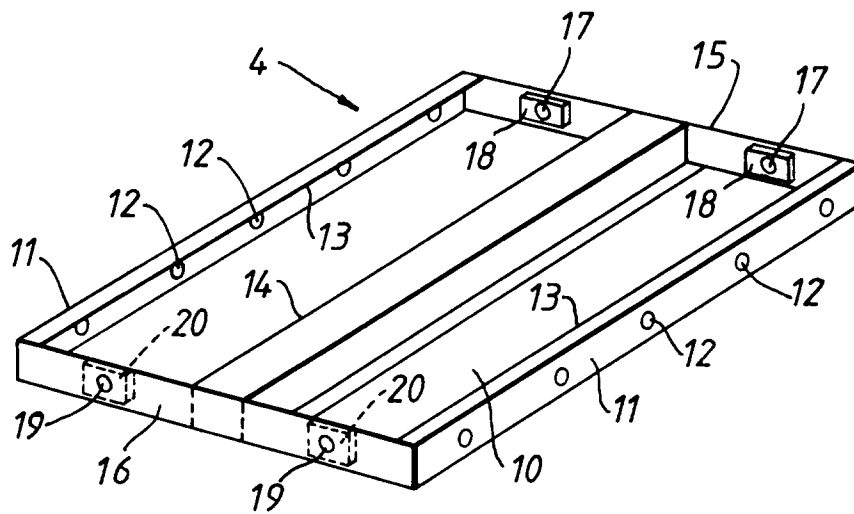


Fig. 11 (PRIOR ART)

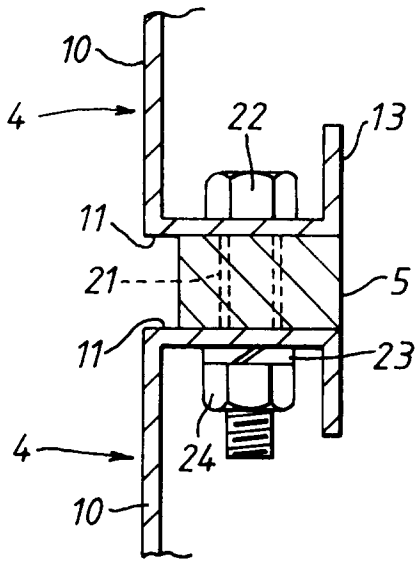


Fig. 12 (PRIOR ART)

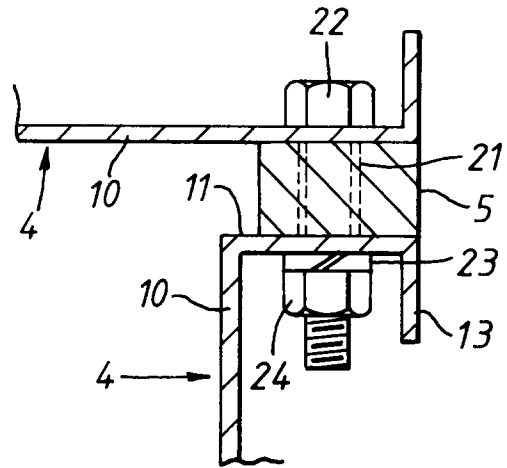


Fig. 13 (PRIOR ART)

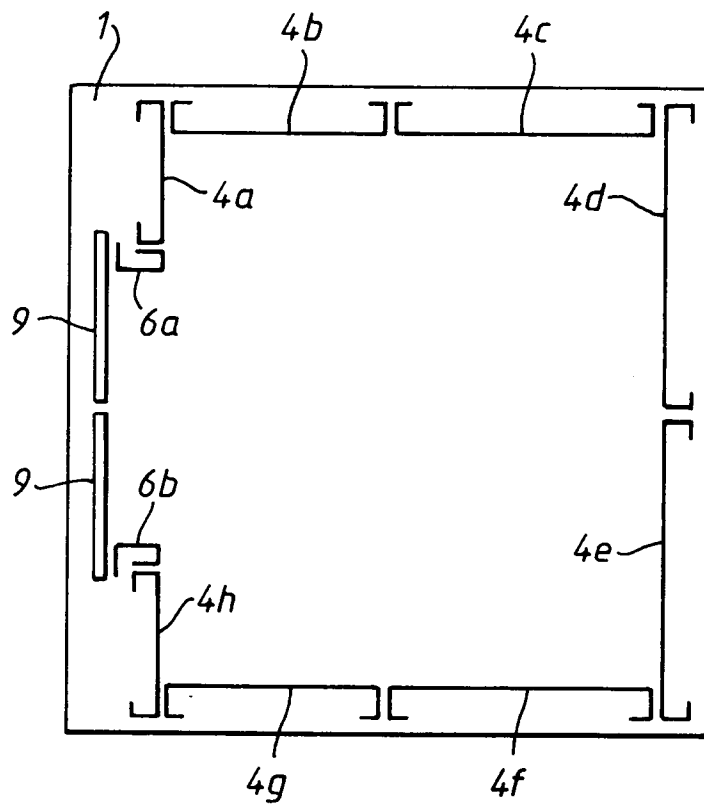


Fig. 14 (PRIOR ART)