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(54) Elevator car with simplified assembly

(57) A car with simplified assembly, particularly for elevators and the like, comprising a lower carrying platform (2), substantially vertical perimetric walls (3), an upper covering ceiling, and at least one door, each one of the walls (3) comprising a plurality of panels (6) with a lower end (6a) which is adapted for quick coupling from the inside of the car along the corresponding edge (4) of the platform (2), the panels (6) being provided laterally with means for detachable mutual locking.

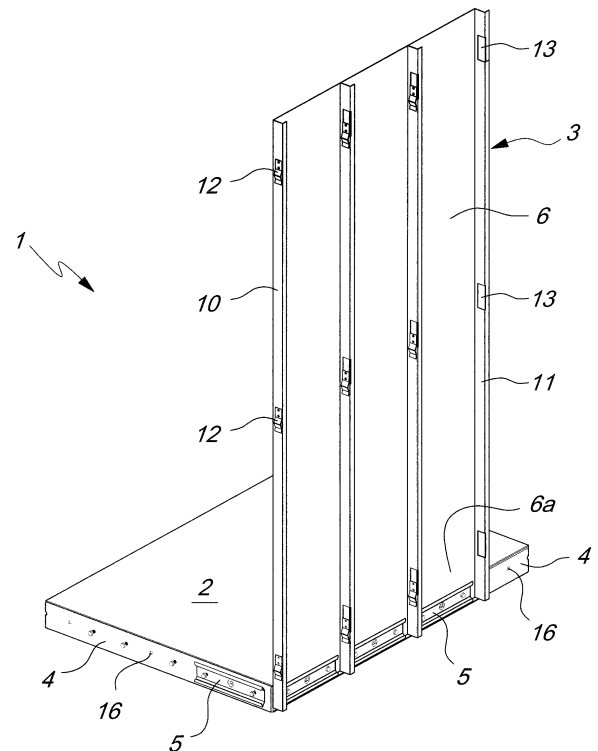


Fig. 2

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Description

[0001] The present invention relates to a car with simplified assembly, particularly for elevators and the like.

[0002] Elevator cars are known which generally comprise a lower carrying platform, vertical perimetric walls, an upper ceiling for covering, and one or more doors; said cars are assembled directly in the elevator shaft, with accordingly limited installation spaces, and the walls in particular are constituted by a series of adjacent panels, which are bolted to each other and to the edges of the platform from the outside of the car.

[0003] However, fixing these panels from the outside of the car is awkward to achieve due to the mentioned tight installation spaces, and the assembly difficulties also affect assembly times, extending them.

[0004] The aim of the present invention is to solve the problems described above, by providing a car with simplified assembly, particularly for elevators and the like, which can be assembled easily from the inside and in less time.

[0005] Within this aim, an object of the invention is to provide a car which, by way of its particular constructive characteristics, is capable of giving the greatest assurances of reliability and safety in use.

[0006] Another object of the present invention is to provide a car which is simple, relatively easy to provide in practice, effective in operation, and furthermore competitive from an economic standpoint.

[0007] This aim and these and other objects that will become better apparent hereinafter are achieved by a car with simplified assembly, particularly for elevators and the like, which comprises a lower carrying platform, substantially vertical perimetric walls, an upper covering ceiling, and at least one door, characterized in that each one of said walls comprises a plurality of panels with a lower end which is suitable for quick coupling from the inside of the car along the corresponding edge of said platform, said panels being provided laterally with means for detachable mutual locking.

[0008] Further characteristics and advantages of the invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment of a car according to the invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of a detail of a car according to the invention during a step of assembly; Figure 2 is a perspective view of a detail of an assembled car;

Figure 3 is an enlarged-scale perspective view of a detail of a lower end of a panel which constitutes the walls of the car;

Figure 4 is a perspective view of a fixing element for the coupling of a panel along the edge of the lower platform of the car;

Figure 5 is a plan view of a detail of a fixing element

connected to the lower platform of the car;

Figure 6 is a side view of a detail of a fixing element connected to the lower platform of the car.

[0009] With reference to the figures, the reference numeral 1 generally designates a car according to the invention.

[0010] The car 1 is constituted by a lower carrying platform 2, by substantially vertical perimetric walls 3, by an upper covering ceiling, and by at least one door. For the sake of simplicity, the upper ceiling and the door have not been shown in the figures, since they are entirely known.

[0011] A plurality of fixing elements 5 for the quick coupling of panels 6 are distributed along the edges 4 of the platform 2; said panels, by being provided laterally with detachable mutual locking means, constitute the walls 3 when they are assembled adjacent to each other; in particular, each panel 6 has a lower end 6a for coupling to the corresponding fixing element 5.

[0012] Each one of the fixing elements 5 comprises a flat base 5a, in which there are laterally two holes 7 for locking the fixing element 5 to the edges 4 of the platform 2 by way of screw means.

[0013] In particular, the holes 7 have a raised contour 7a, which is suitable to space the base 5a from the surface of the edges 4, forming, in the assembled configuration, a gap 8 for the simplified insertion of the panels 6 between the platform 2 and the base 5a.

[0014] Each of the fixing elements 5 is provided with at least one upper flap 5b which is inclined outward so as to allow, during the assembly of the car 1, the guided coupling of the panels 6. Preferably, there are two inclined flaps 5b, an upper one and a lower one, so that the position of each one of the fixing elements 5 becomes interchangeable.

[0015] Each one of the panels 6 has, at the lower coupling end 6a, two slots 9 which are open downward for detachable interlocking coupling to the respective fixing element 5; in particular, the slots 9 straddle the corresponding contours 7a of the holes 7 of the fixing element 5, providing a coupling with play (of a few millimeters) in order to recover any size errors, which are possible during the assembly of the panels 6.

[0016] Said means for the detachable mutual locking of the panels 6 are provided at two sides 10, 11 of each of the panels 6, and the sides 10, 11 are mutually complementarily shaped; each one of the sides 10, 11 can be coupled detachably to the side 11, 10 of the panel 6 that is directly adjacent so as to constitute the walls of the car 1.

[0017] Such locking means comprise, for each one of the panels 6, at least one elastically deformable tab 12, which is rigidly coupled to one of the two sides 10, and at least one corresponding slot 13 provided on the other side 11.

[0018] In particular, the tab 12 of the side 10 of one panel 6 can engage with a detachable interlocking in the

corresponding slot 13 of the side 11 of the adjacent panel 6.

[0019] It should be noted that the interlocking of the tab 12 in the slot 13 occurs in practice with slight forcing, which advantageously prevents oscillations of the panels 6 during the motion of the car; in particular, such forced interlocking is allowed by a slight lateral offset of the mutual positioning of the tab 12 and of the corresponding slot 13.

[0020] Further, for each one of the panels 6 there is a safety screw (not shown in the figures), which is inserted in corresponding openings 14, 15, 16 provided respectively in the fixing element 5, in the panel 6, and in the platform 2, said openings being conveniently substantially coaxial; said safety screw allows greater retention of the walls of the car 1, preventing accidental disengagements of the panels 6.

[0021] In practice it has been found that the invention fully achieves the intended aim and objects, since the car 1, once the fixing elements 5 have been connected to the platform 2, can be assembled in the shaft of the elevator directly from the inside of the car 1, with broad and comfortable installation and maneuvering spaces for the installation workers, and with evident gains in terms of simplicity of assembly and in terms of assembly costs and times.

[0022] Advantageously, the mutual locking of the panels 6 by means of the corresponding tabs 12 and slots 13 is detachable, and this allows at all times the optional replacement of one of the panels 6 which constitute the walls 3 of the car 1.

[0023] Conveniently, one (or more) of the panels 6 can be made to size in order to adapt the car 1 to any size of the elevator shaft.

[0024] Conveniently, the complementarily shaped sides 10, 11 have a transverse cross-section which is substantially L-shaped.

[0025] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims; all the details may further be replaced with other technically equivalent ones.

[0026] In the exemplary embodiments shown, individual characteristics, given in relation to specific embodiments, may actually be interchanged with other different characteristics that exist in other exemplary embodiments.

[0027] Moreover, it is noted that anything found to be already known during the patenting process is understood not to be claimed and to be the subject of a disclaimer.

[0028] In practice, the materials used, as well as the shapes and the dimensions, may be any according to the requirements and the state of the art without thereby abandoning the scope of the protection of the appended claims.

[0029] The disclosures in Italian Patent Application No. BO2004A000704 from which this application claims pri-

ority are incorporated herein by reference.

[0030] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A car with simplified assembly, particularly for elevators and the like, comprising a lower carrying platform (2), substantially vertical perimetric walls (3), an upper covering ceiling, and at least one door, **characterized in that** each one of said walls (3) comprises a plurality of panels (6) with a lower end (6a) which is suitable for quick coupling from the inside of the car along the corresponding edge (4) of said platform (2), said panels (6) being provided laterally with means for detachable mutual locking.
2. The car according to claim 1, **characterized in that** said platform (2) comprises fixing elements (5) which are distributed along the edges (4) for the quick coupling of said panels (6).
3. The car according to the preceding claims, **characterized in that** each one of said panels (6) has, at said lower coupling end (6a), at least one slot (9) which is open downward for detachable interlocking coupling with the respective fixing element (5).
4. The car according to one or more of the preceding claims, **characterized in that** said detachable mutual locking means are provided at two sides (10, 11) which are mutually complementarily shaped of each one of said panels (6), each one of said sides (10, 11) being associable with the side (11, 10) of the adjacent panel (6) so as to constitute said walls (3) of said car (1).
5. The car according to one or more of the preceding claims, **characterized in that** said locking means comprise, for each one of said panels (6), at least one elastically deformable tab (12), which is rigidly coupled to at least to one of said sides (10, 11), and at least one corresponding slot (13) provided on the other side (11, 10), said tab (12) of the side (10, 11) of one panel (6) being engageable with a detachable interlocking in the corresponding slot (13) of the side (11, 10) of the adjacent panel (6).
6. The car according to one or more of the preceding claims, **characterized in that** said tab (12) can engage with a forced interlocking in said slot (13), said forced interlocking being allowed by a slight lateral

offset of the mutual positioning of said tab (12) and said slot (13).

7. The car according to one or more of the preceding claims, **characterized in that** each one of said fixing elements (5) comprises a base (5a) on which there are at least two holes (7) for locking said platform (2) to said edges (4) by way of screw means. 5
8. The car according to one or more of the preceding claims, **characterized in that** said holes (7) have a raised contour (7a), which is adapted to space said base (5a) from the surface of said edges (4), forming, in the assembled configuration, a gap (8) for the simplified insertion of said panels (6) between said platform (2) and said base (5a). 10 15
9. The car according to one or more of the preceding claims, **characterized in that** said fixing elements (5) have at least one upper flap (5b) which is inclined outward for the guided coupling of said panels (6). 20
10. The car according to one or more of the preceding claims, **characterized in that** it comprises, for each one of said panels (6), at least one safety screw, which is inserted in corresponding openings (14, 15, 16) provided respectively in said fixing element (5), in said panel (6) and in said platform (2). 25

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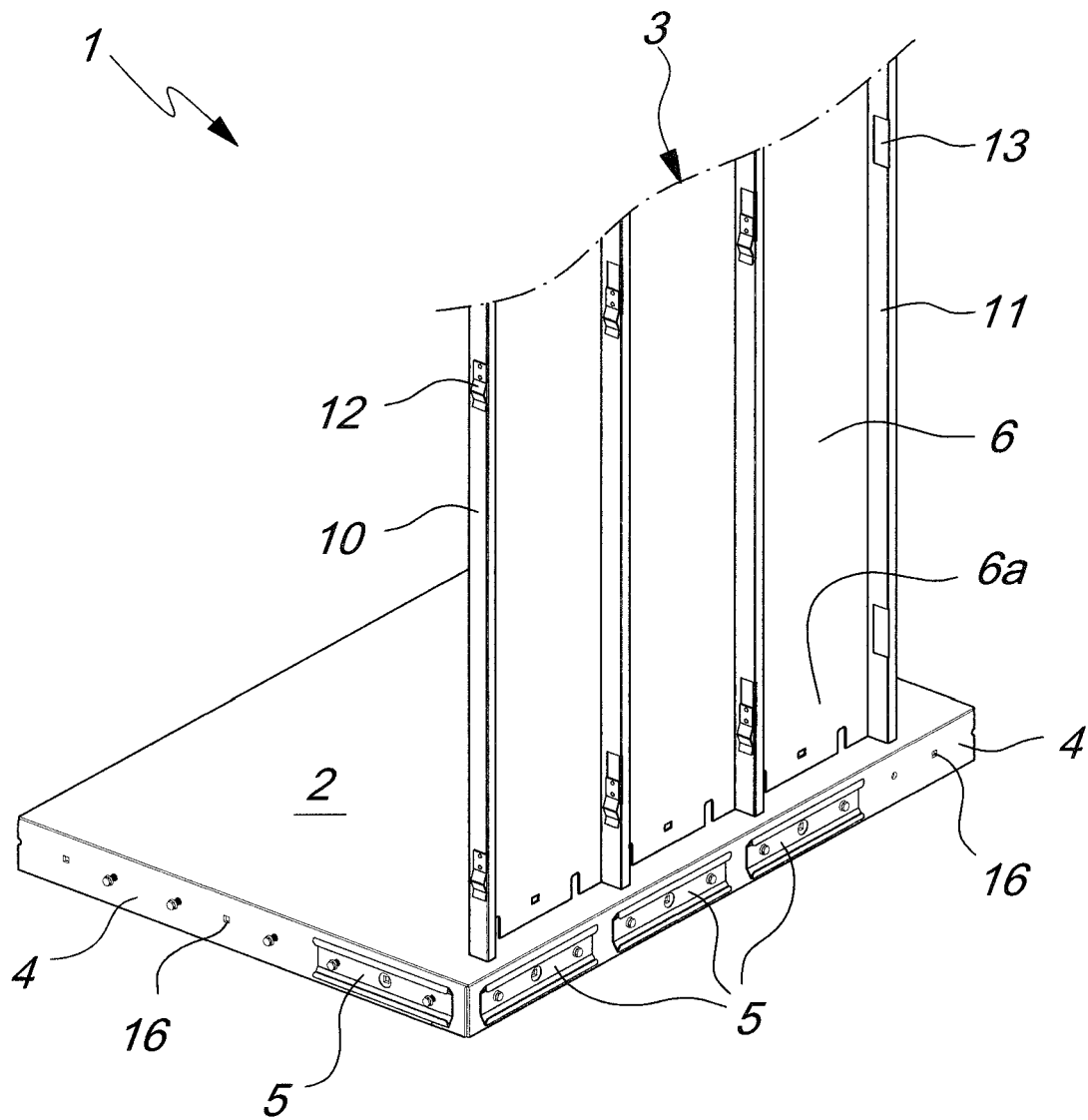


Fig. 1

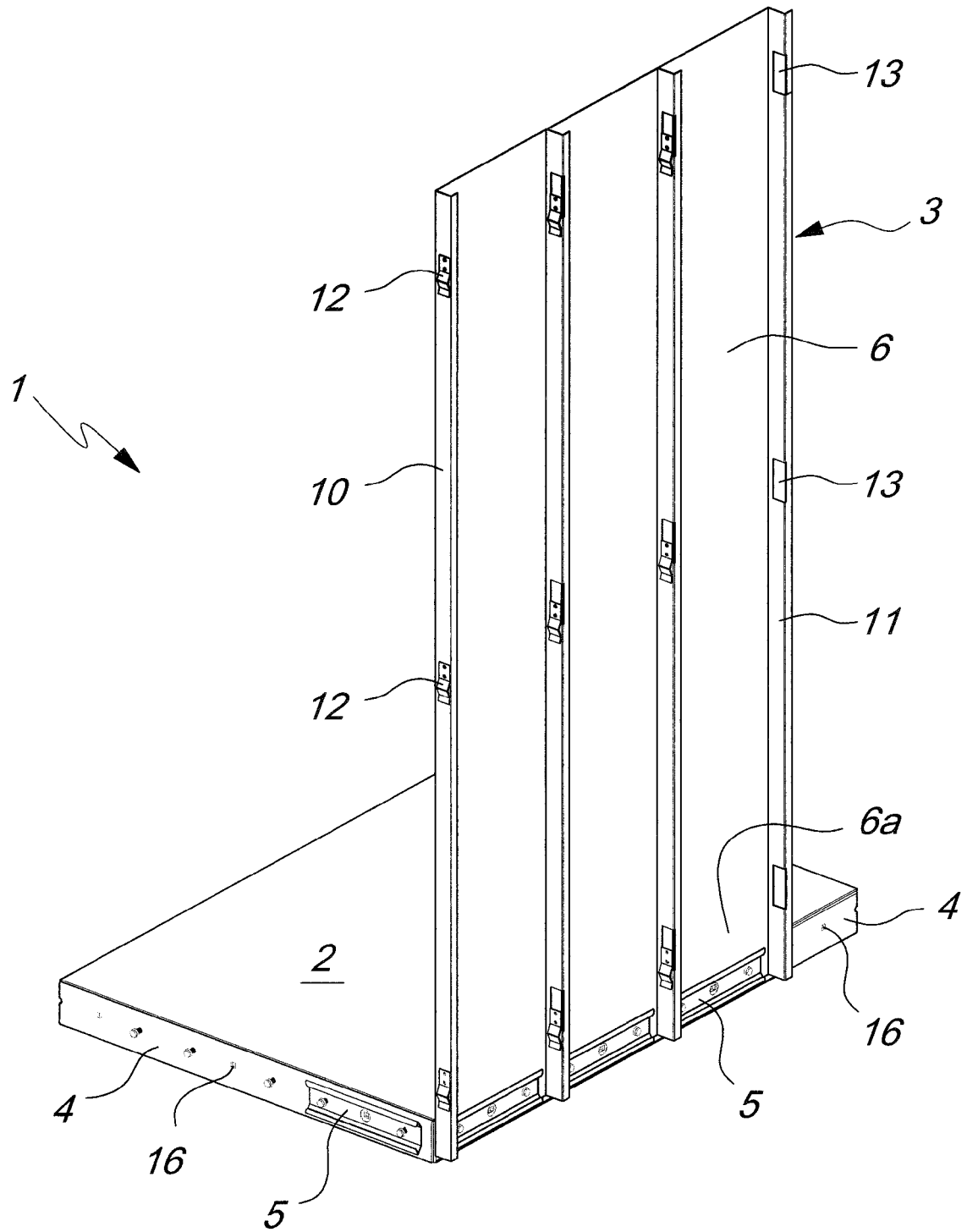


Fig. 2

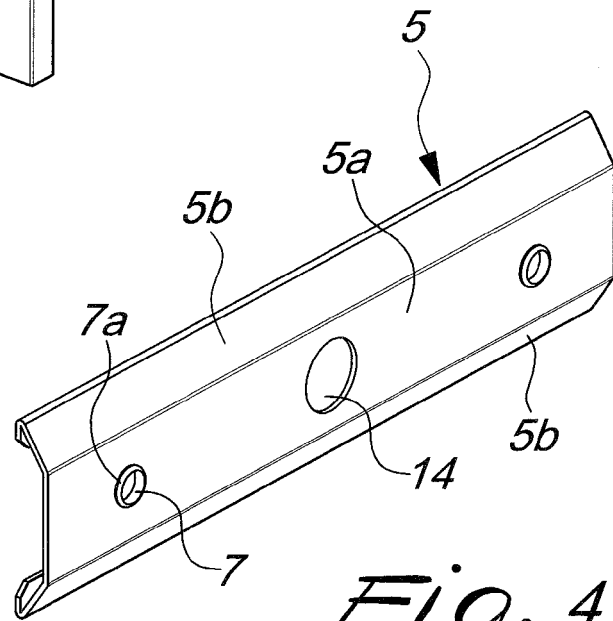
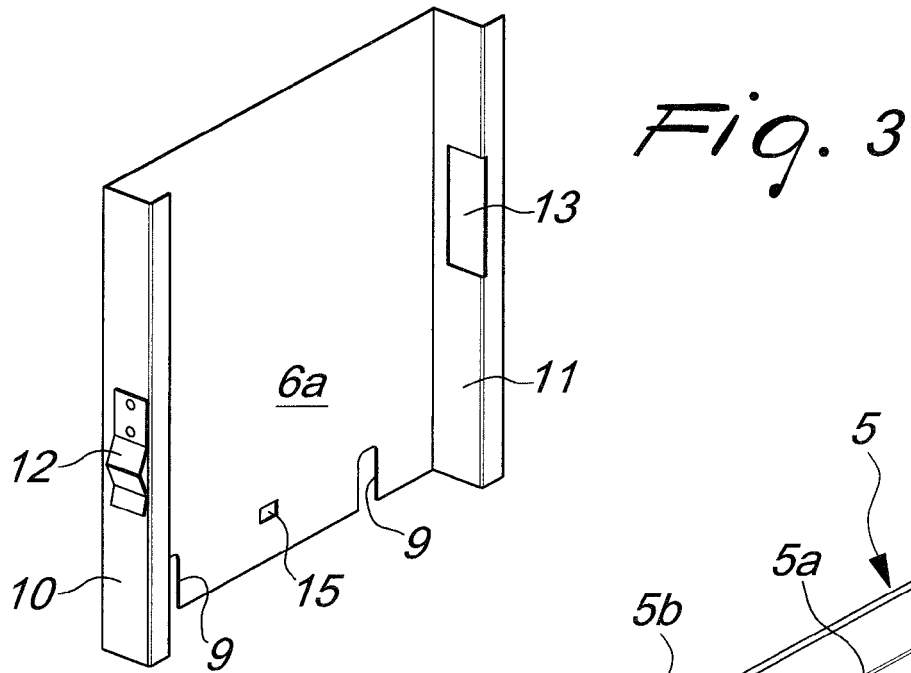


Fig. 6

