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(54) **Lower profile for balcony railing**

(57) The invention relates to a lower profile (21) for a balcony railing, the profile comprising a support structure (210, 211 to 213) extending in a longitudinal direction of the lower profile for supporting a bottom part of one or more railing posts (41 to 45). According to the invention, the lower profile (21) for a balcony railing further comprises a supporting structure (310, 312, 313) in the same profile, the structure extending in the longitudinal direction of the lower profile for supporting a bottom part of a cover plate structure (50) of the balcony railing.

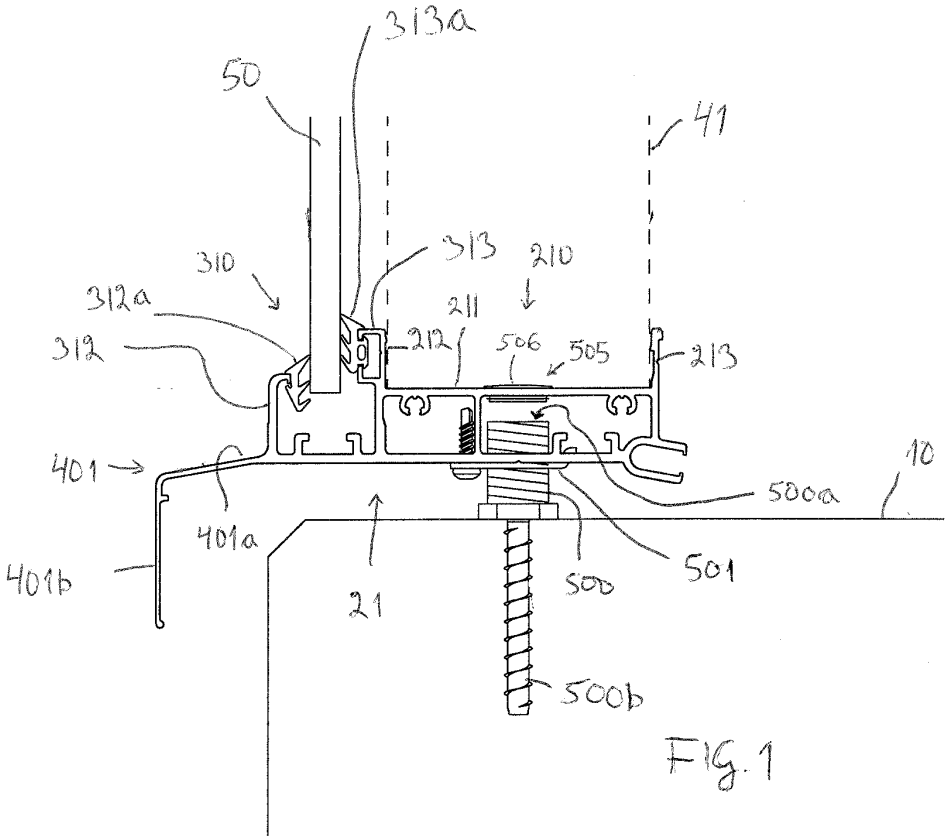


FIG. 1

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Description

Field

[0001] The invention relates to a lower profile for a balcony railing, comprising a support structure extending in a longitudinal direction of the lower profile for supporting a bottom part of one or more railing posts.

Background

[0002] So as to assure the safety of being on a balcony, the front edge of the balcony has a railing structure. A railing structure equipped with cover plates also acts as a visibility and wind screen.

[0003] The railing structure is most often fastened to the side of the balcony slab, that is, to the front edge in practice.

[0004] A second basic way also utilised in the present invention is to have the railing structure on the balcony slab. In such a structure, a lower support structure, such as a lower glass strip, of the cover plate structure of the balcony railing is separately fastened to the vertical posts of the railing structure and, when necessary, a lower external sill, or a similar water control, is separately fastened to the lower glass strip.

[0005] Said known solutions are not satisfactory in their present form, because there are problems relating to the number of parts in the structure, the tightness of the structure, and the amount of work and costs of the manufacture and installation.

[0006] Thus, there is a need for a new type of lower profile for a balcony railing.

Brief description

[0007] It is an object of the invention to provide an improved lower profile for a balcony railing. This is achieved by a lower profile for a balcony railing that is characterized in that the lower profile for the balcony railing further comprises a support structure in the same profile, the structure extending in the longitudinal direction of the lower profile for supporting a bottom part of the cover plate structure of the balcony railing.

[0008] Preferred embodiments of the invention are disclosed in the dependent claims. The preferred embodiments enhance the advantages of the basic invention.

[0009] The lower profile for a balcony railing according to the invention provides several advantages, such as fast manufacture and installation, good strength and tightness, in particular.

List of figures

[0010] The invention is now described in closer detail in connection with preferred embodiments and with reference to the accompanying drawings, in which

Figure 1 shows a first embodiment of the invention as seen from an end of a lower profile;
Figure 2 shows the first embodiment of the invention with a post and a cover plate;
Figure 3 shows a second embodiment of the invention;
Figure 4 shows a balcony with a railing structure.

Description of embodiments

[0011] Reference is made to the figures, where the target of application is a balcony 1 with a balcony slab 10, which is e.g. a concrete slab 10 of suitable strength, either an element or cast in place. A railing structure 20 comprises a lower profile 21, such as a lower rail 21, on top of the balcony slab. In addition, the railing structure 20 comprises an upper profile 31, such as an upper rail 31, and posts 41 to 45 between the lower profile 21 and the upper profile to support the upper profile. The railing structure also comprises a cover plate structure 50 formed of one or more pieces. The cover plate structure 50 may be a railing glass or plate, for instance.

[0012] The lower profile 21 may be an aluminium strip, such as a profile strip, made by extrusion, for instance. The lower profile for a balcony railing comprises a support structure 210 extending in the longitudinal direction of the lower profile to support a bottom part of one or more railing posts 41 to 45. The lower profile 21 of the balcony railing also comprises in the same profile a support structure 310 extending in the longitudinal direction of the lower profile for supporting the cover plate structure 50 of the balcony railing from beneath. In other words, the support structure 310, i.e. the glass strip, supporting the cover plate structure 50 is part of the same integrated lower profile where the support structure 210 for the railing posts is also provided.

[0013] The support structure 210 for one or more railing posts 41 to 45 on the lower profile 21 comprises a crosswise support 211 that supports the post from beneath and, on the edges of the structure, side supports 212, 213 that support the post on different sides of the bottom end of the post.

[0014] The support structure integrated into the same lower profile 21 for supporting the cover plate structure comprises side supports 312, 313 which, through seals 312a, 313a fastened to the side supports 312, 313, support the cover plate structure 50 at its bottom part.

[0015] Figures 1 to 3 show that the outer side support 212 of the support structure 210 supporting the post from below comprises as a structure projecting outwards therefrom a side support 313, which thus constitutes an inner side support 313 of the cover plate structure 50.

[0016] Figures 1 to 3 further show that according to an embodiment the support structure 210, 211 to 213 for supporting the bottom part of one or more railing posts 41 to 45 and the support structure 310, 312, 313 for supporting the bottom part of the cover plate structure 50 are substantially parallel when the lower profile is viewed

from a direction of its end.

[0017] The seals 312a, 313a may be made of rubber or silicone, for instance. Figure 4 shows no seals 312a, 313a. The inner side support 313 of the cover plate structure in the lower profile 21 is provided with a chamber for the inner seal 313a while the outer side support 312 is provided with a protrusion for a chamber of the outer seal 312a.

[0018] According to an embodiment, the lower profile 21 for the balcony railing further comprises a water control surface 401 in the same profile, as in Figures 1 to 2, or a connecting structure 402 for a water control surface 403, as in Figure 3. The water control surface 401, 403 is a structure called an external sill.

[0019] The water control surface 401, or 403, comprises a descending surface 401 a, or 403a, receding outwards from the lower profile, i.e. in the direction of outdoor air, i.e. a surface oriented diagonally downwards, and a substantially vertical second surface 401 b, or 403b, serving as its extension. It can be seen that the second surface 401 b, 403b, is substantially parallel with the side supports 212, 213 and 312, 313.

[0020] In other words, the second surface, i.e. the substantially vertical surface 401 b, or 403b, is at an angle to the descending surface 401 a, or 403a. The inclined descending surface 401 a, or 403a, is at an angle of 15 degrees, for example, to the horizontal.

[0021] With reference to Figure 3 in particular, the water control surface 401 on the lower profile 21 belongs to the same integral entity as the support structure 210, 211 to 213 for supporting one or more bottom parts of the railing post 41 to 45 and the support structure 310, 312, 313 for supporting the bottom part of the cover plate structure 50 of the balcony railing. Consequently, the element in question is the lower profile 21 of the balcony railing to be installed on the slab 10, the same profile being also provided with a bearing/support profile for the railing glass, or a similar cover plate 50, of the balcony railing as well as an external sill profile.

[0022] The water control surface, i.e. the external sill profile, may also be an attachable part as shown in Figure 3 by the water control 403. In that case the water control surface 403 has a connecting structure 404 in the lower profile, which belongs to the same integral entity as the support structure 210, 211 to 213 for supporting the bottom part of one or more railing posts and the support structure 310, 312, 313 for supporting the bottom part of the cover plate structure 50 of the balcony railing. The edge of the water control surface 403 is provided with a fastening part 403c that is placed into a chamber 404, i.e. the connecting structure 404.

[0023] It is noted that the connecting point 404 for the water control surface 403 is at least partly below the support structure 310, 312 of the cover plate structure 50 of the balcony railing.

[0024] An integrated lower profile 21 intended for a balcony railing containing several structures and a railing structure 20 containing such a lower profile are disclosed above.

[0025] For the lower profile shown in Figures 1 to 2, a height adjuster 500 to 501 is provided for adjusting the height position of the lower profile 21 in relation to the balcony slab 10. This enables the effect of the inclination of the balcony slab to be eliminated, i.e. the lower profile 21 to be positioned horizontally even if the balcony slab 10 were inclined. For the use of the height adjuster 500 to 501, the lower profile 21 comprises on its surface 211 a through hole 505 which is penetrable in a substantially vertical direction, i.e. the adjustment is carried out by a tool through the surface 211 from top towards bottom by means of a driver 500a, i.e. a turning point, provided in the middle of the part 500. The height adjuster 500 to 501 includes a male thread sleeve 500 rotatable from above on its driver and cooperating with a female thread sleeve 501 provided in a hole penetrating through the lower surface of the lower profile 21. The driver 501 a is a hexagon socket base, for instance. The rotatable male thread sleeve 500 is fastened to the balcony slab 10 by a screw 500b. In Figures 1 to 3, the through hole 505 is covered by a shield plug 506 after the adjustment has been made.

[0026] It is obvious for a person skilled in the art that as technology advances the basic idea of the invention may be implemented in many ways. The invention and its embodiments are thus not restricted to the examples described above but may vary within the scope of the claims.

Claims

1. A lower profile (21) for a balcony railing, comprising a support structure (210, 211 to 213) extending in a longitudinal direction of the lower profile for supporting a bottom part of one or more railing posts (41 to 45), **characterized in that** the lower profile (21) for the balcony railing further comprises a support structure (310, 312, 313) in the same profile, the structure extending in the longitudinal direction of the lower profile for supporting a bottom part of a cover plate structure (50) of the balcony railing.

2. A lower profile for a balcony railing as claimed in claim 1, **characterized in that** the lower profile (21) for a balcony railing also comprises a water control surface (401) or a connecting structure (404) for the water control surface (403) in the same profile.

3. A lower profile for a balcony railing as claimed in claim 2, **characterized in that** the water control surface (401) in the lower profile (21) belongs to the same integral entity as the support structure (210, 211.213) for supporting the bottom part of one or more railing posts and the support structure (310, 313, 313) for supporting the bottom part of the cover plate structure (50) of the balcony railing.

4. A lower profile for a balcony railing as claimed in claim 2, **characterized in that** the connecting structure (404) for the water control surface (401) in the lower profile (21) belongs to the same integral entity as the support structure (210, 211 to 213) for supporting the bottom part of one or more railing posts and the support structure (310, 312, 313) for supporting the bottom part of the cover plate structure (50) of the balcony railing.

5. A lower profile as claimed in any one of the preceding claims, **characterized in that** the support structure for supporting the bottom part of one or more railing posts and the support structure for supporting the bottom part of the cover plate structure of the balcony railing are substantially parallel.

6. A lower profile as claimed in claim 2 or 3, **characterized in that** the connecting structure (404) for the water control (403) is at least partly below the support structure (310, 312) of the cover plate structure (50) of the balcony railing.

7. A lower profile as claimed in any one of the preceding claims, **characterized in that** a height adjuster (500, 501, 500a) is provided for the lower profile (21) for adjusting the height position of the lower profile in relation to the balcony slab.

8. A lower profile as claimed in claim 7, **characterized in that** the lower profile (21) comprises a through hole (505) for the height adjuster (500, 501, 500a).

9. A lower profile as claimed in any one of the preceding claims, **characterized in that** the lower profile is an extruded aluminium profile.

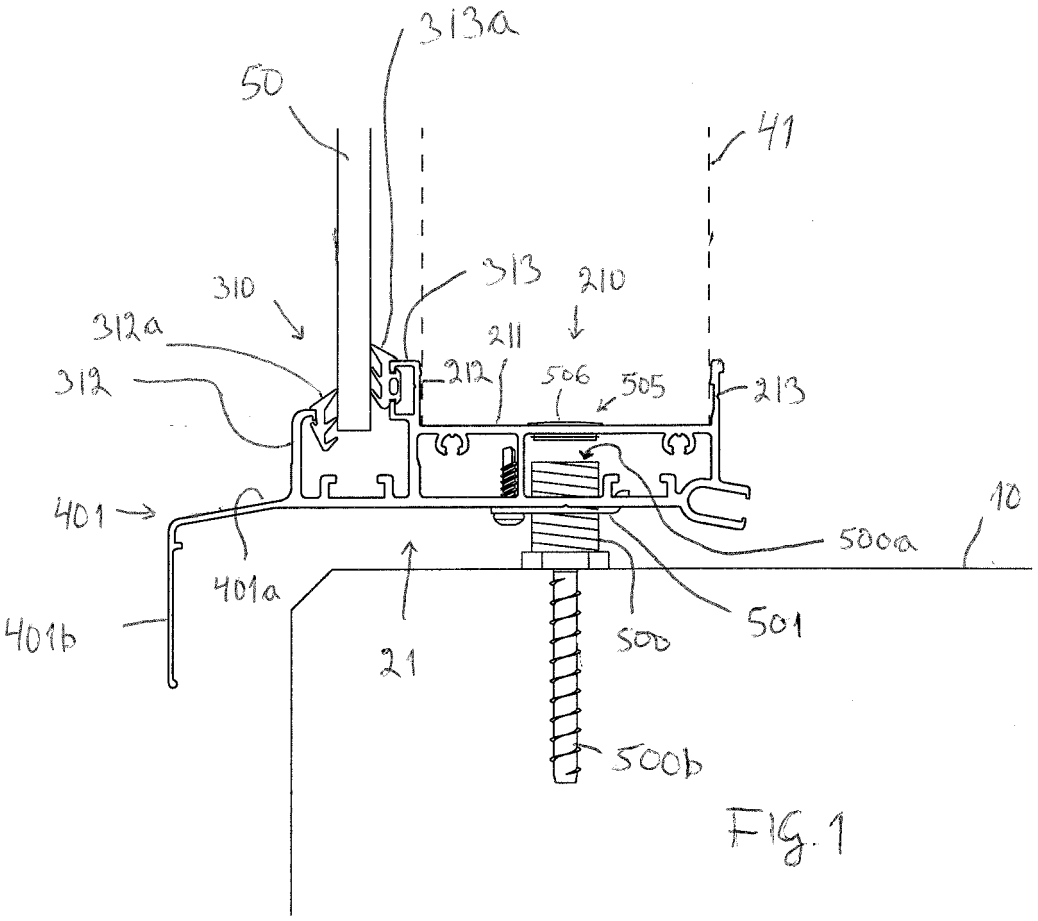

313a
50
41
313
210
310
312a
211
312
212
506
505
213
401
10
500a
401a
401b
21
501
500
500b

FIG. 1

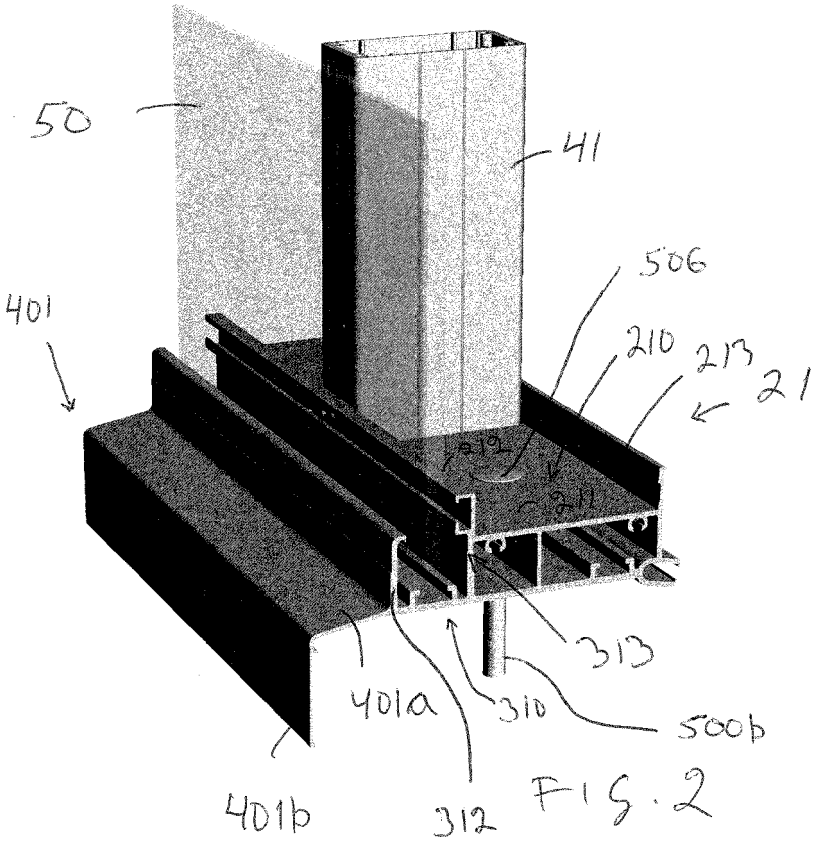


FIG. 2

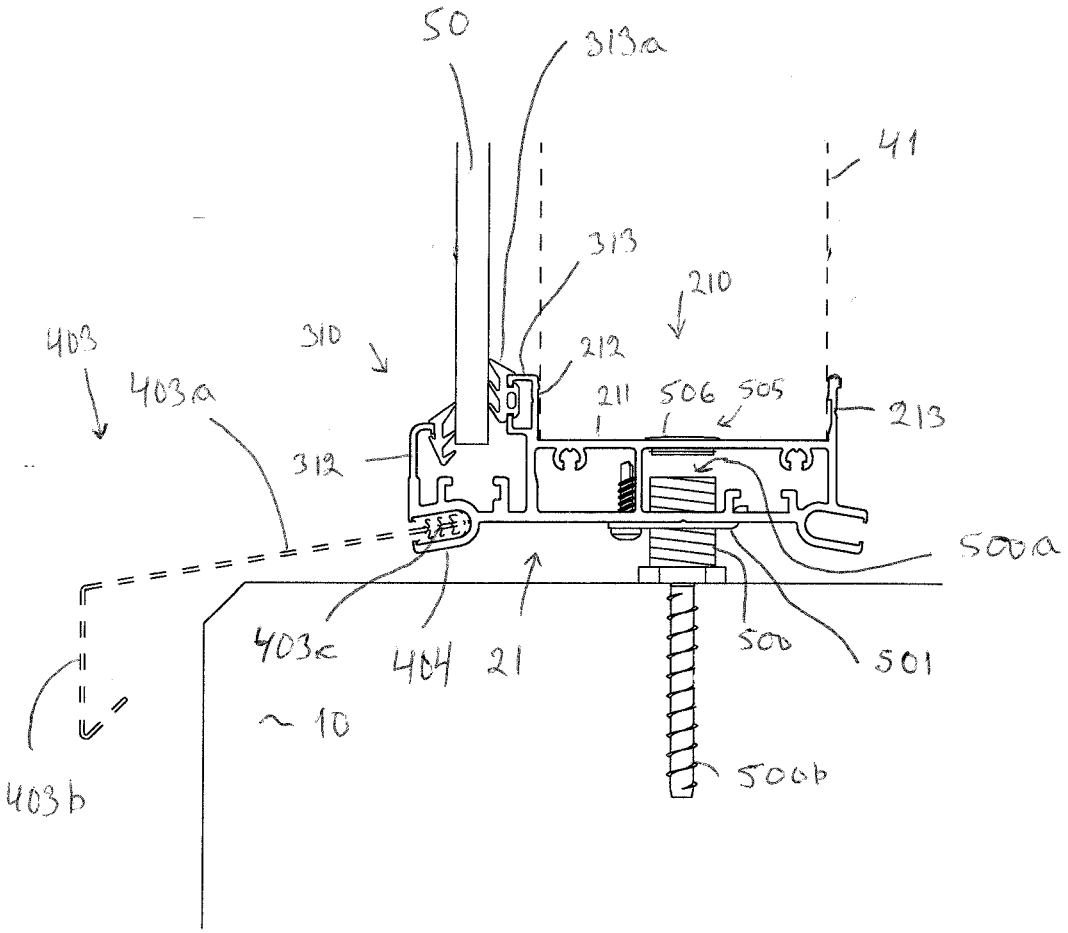

50
313a
41
313
210
403
310
212
403a
211
506
505
213
312
500a
403c
404
21
500
501
10
403b
500b

Fig. 3

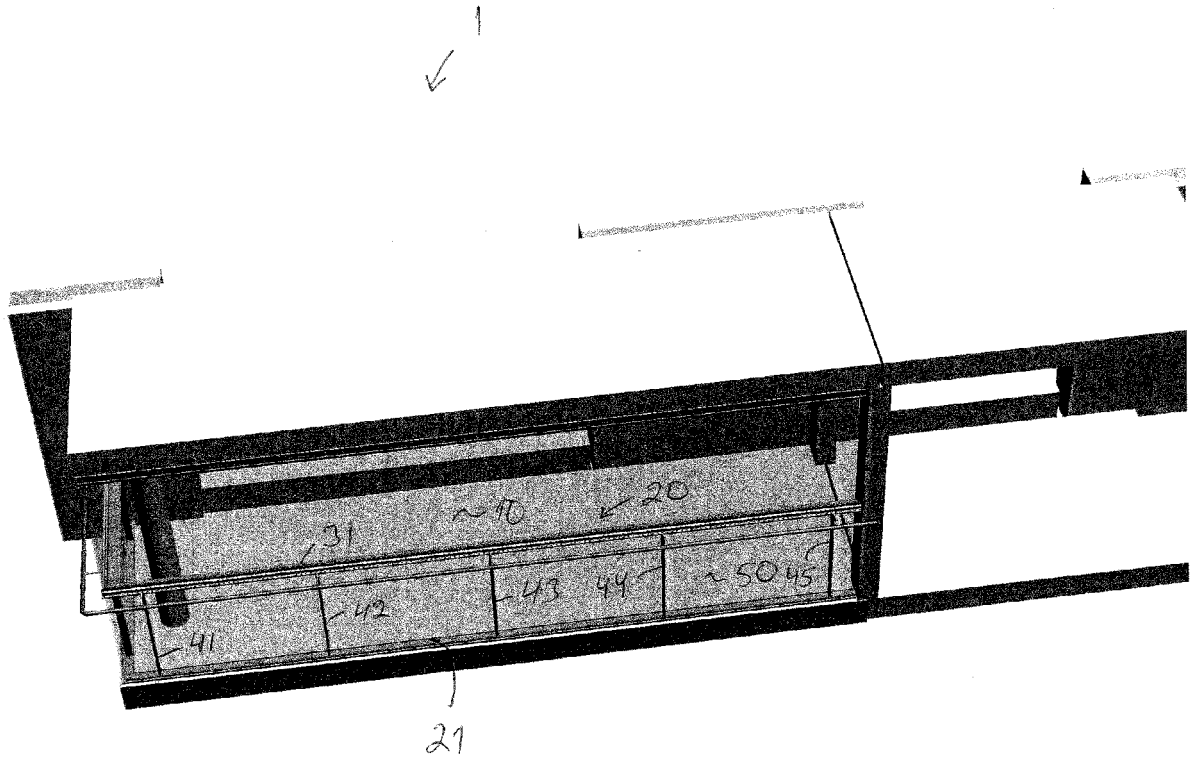


FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 14 16 3023

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	DE 20 2009 013777 U1 (WENDLANDT BALKONBAU GMBH [DE]) 7 January 2010 (2010-01-07) * paragraphs [0021], [0023] * * figures 1-4 *	1-9	TECHNICAL FIELDS SEARCHED (IPC) E04B E04F
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	11 July 2014	Arsac England, Sally

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EUROPEAN SEARCH REPORT

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	11 July 2014	Arsac England, Sally

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