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(54) **Safety barrier**

(57) It is presented a safety barrier for securing a working surface comprising a screen section (201) and a post (206) arranged along a first vertical side (204) of the screen section. A first hinge element (202) is arranged at the screen section for pivotally engaging with a first external anchoring element, thereby allowing pivotal

movement of the screen section (201) about a vertical pivot axis which extending along a first vertical side (204) of the screen section. The first hinge element (202) is arranged at a first end portion (310) of the post. A corresponding safety barrier system, and methods for mounting a safety barrier system on a floor are also presented.

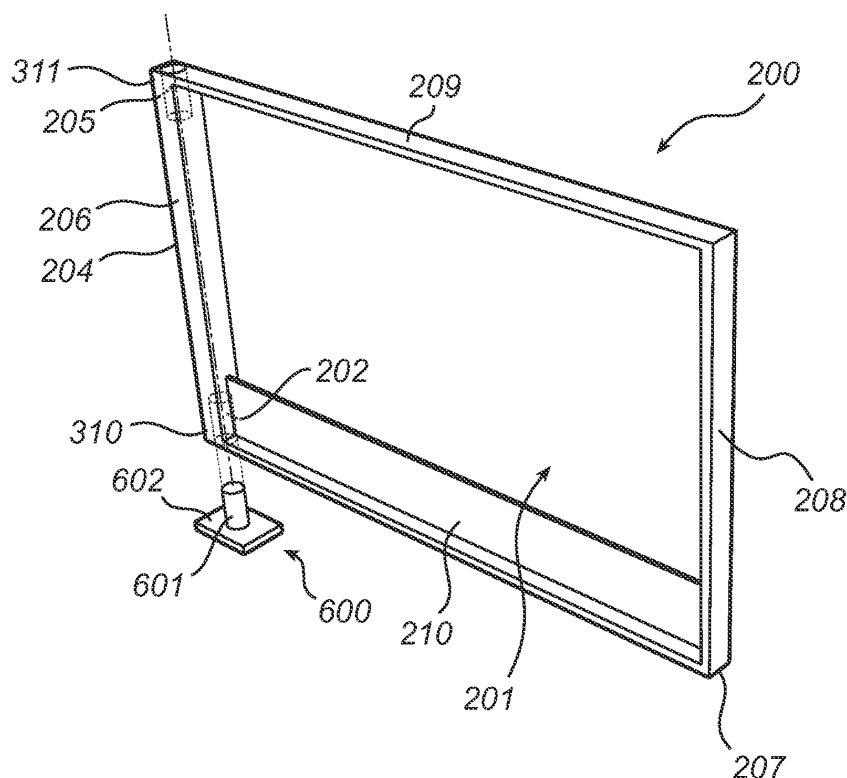


Fig. 2

Description

Technical Field

[0001] The present inventive concept generally relates to safety barriers, and more particularly to a safety barrier for securing a working surface, and a corresponding safety barrier system and method for mounting a safety barrier system.

Description of Related Art

[0002] In construction and renovation, safety barriers are mounted at working surfaces, primarily above ground level, in order to prevent workers, tools and material from falling down towards the ground. Safety barriers are also used in many other applications, such as a barricade preventing people from accessing an area.

[0003] The principles of a known safety barrier system, which is disclosed in US. Patent 4,787,475, is schematically illustrated in Fig. 1. The known safety barrier system is intended for temporary installation adjacent the outer perimeter of a wooden or concrete floor of a building under construction. The safety barrier system for temporarily installation comprises safety barrier 100 - 102, separate posts 103 - 106, and separate anchoring elements 107 - 110. Further, a safety barrier 100 each comprises a rectangular frame 120, which is provided with a pair of hinge elements, 141 and 142, which are arranged on an upper bar 121 of the frame. The hinge elements 141, 142 are arranged to allow pivotal engagement with a corresponding hinge element of an adjacent safety barrier section or with a post.

[0004] When mounting the safety barrier system above, a number of anchoring elements, here represented by 107 - 110 in Fig. 1a, are positioned and fixated onto the floor. Subsequently, posts 103 - 106 are mounted in the anchoring elements. Thereafter, safety barrier sections 100 - 102 are mounted by arranging their respective hinge elements 141, 142 onto a pair of corresponding adjacent posts, or alternatively a hinge element may be pivotally engaged with an adjacent safety barrier section. By only mounting one of the respective hinge elements 141, 142 of a safety barrier section, it may be utilized as a gate in an otherwise fixated row of safety barrier sections. This type of safety barrier system comprises a high number of constituent parts which in turn require a proportional corresponding number of assembling steps when mounting the system. When the system is mounted along an outer edge of the floor, the mounting personnel must perform all steps in the direct vicinity of the edge which involves a high risk for falling accidents.

Summary

[0005] In view of the above, it would be desirable to achieve a safety barrier which is easy and safe to mount. It would also be desirable to achieve a safety barrier sys-

tem which comprises a small number of constituent parts, and which has a reduced required number of steps involved when mounting the system.

[0006] According to a first aspect of the present inventive concept there is provided a safety barrier for securing a working surface comprising a screen section, a first hinge element arranged at the screen section for pivotally engaging with a first external anchoring element, thereby allowing pivotal movement of the screen section about a vertical pivot axis extending along a first vertical side of the screen section. The safety barrier further comprises a post, which has a first end portion and an opposite second end portion. The post is arranged along the first vertical side of the screen section, and the first hinge element is arranged at the first end portion of the post.

[0007] Thus, there is provided a safety barrier for securing of a working surface which utilizes a single mounting point, the first hinge, to engage pivotally with an external anchoring element. Further, the safety barrier is arranged with an integrated post which provides stability to the safety screen such that no free-standing posts are required when mounting the safety barrier. This strongly limits the number of constituent parts and steps that are required for mounting the safety barrier into place. Furthermore, the inventive concept provides a user friendly and quick mounting of the safety barrier, as only a single mounting point is to be engaged with the first external anchoring point. The mounting is conveniently simplified by the positioning of the first hinge at a lower corner of the screen section, which also provides safe mounting of the safety barrier. That is, when subsequent to the arranging of the anchoring element at an edge of an open floor, e.g. at a construction site, the user simply places the lower corner of the safety barrier, at which the first hinge is arranged, at the vicinity of the external anchoring point, then tips up the safety barrier on a lower corner of its second end, continues with guiding the first hinge element into the anchoring element, and subsequently releases the safety barrier. All of these steps may be performed while the user is positioned at a safety distance from the edge of the floor. The maximum safety distance is approximately the length of the screen section. Because of the pivotal engagement with the anchoring element, the mounted safety barrier may then subsequently be pushed into a closed position, e.g. pushed against an adjacent safety barrier or other suitable stopping element, to orient the safety screen along the edge of the floor, while the user is at all times positioned on the safe side of the safety barrier.

[0008] The pivotal engagement of the safety barrier further provides flexibility when mounting the safety barrier. As it may be turned in any desired direction, (temporary) redirecting of the safety barrier is simplified, it may be opened to be used as a gate etc.

[0009] In accordance with an embodiment of the safety barrier, the safety barrier further comprises a second hinge element, which is arranged at the screen section for pivotally engaging with one of an adjacent safety bar-

rier, and a second external anchoring element. Thus the safety barrier is arranged to allow engaging with other safety barriers, i.e. interconnection of adjacent safety barriers, to form an extended safety barrier. Further, the second hinge element may be arranged to allow engaging with a second external anchoring means. The second external anchoring element may in turn be arranged to be engaged with an adjacent safety barrier or an external fixing element, e.g. a roof.

[0010] In accordance with an embodiment of the safety barrier, the second hinge element is arranged at the second end portion of the post. By having both the first hinge element and the second hinge element arranged on opposite ends of the post, the first and second hinge element may be formed in a common mechanical part. It is also advantageous in the manufacturing process as machining devices for forming of, or alternatively mounting of, the first and second hinge will only require access to one side of the safety barrier.

[0011] In accordance with an embodiment of the safety barrier, the first hinge element and the second hinge element are arranged in opposite vertical directions, allowing for interconnecting vertically adjacent safety barriers.

[0012] In accordance with an embodiment of the safety barrier, the post is a vertically arranged tubular member. The tubular member provides a strong, and yet light mechanical solution for the post and further forms the pivotal axis about which the screen section is pivotally movable. The tubular member may be hollow, and may receive an external anchoring element. Thus, a mechanically simple pivotal engagement with external anchoring elements or adjacent safety barriers is provided.

[0013] In accordance with an embodiment of the safety barrier, at least one of the first end portion and the second end portion is interspaced a predetermined distance from the screen section. This has the effect that an end portion is exposed and may be received in an external anchoring element. In the embodiment where the post is a tubular member, the tubular member may be received in a corresponding tubular external anchoring element. Thus, a mechanically simple pivotal engagement with external anchoring element is provided.

[0014] In accordance with an embodiment of the safety barrier, the safety barrier further comprises a locking element for securing of a second end portion of the screen section, thus providing means for fixating the safety barrier in a desired position.

[0015] According to a second aspect of the present inventive concept, there has been provided a safety barrier system for securing a working surface which comprises a plurality of horizontally distanced first external anchoring elements, and a first set of safety barriers according to the present inventive concept. A first hinge element of each safety barrier of the first set is pivotally engaged with a respective first external anchoring element. Thus, a safety barrier system is provided in which contains a decreased number of different types of mounting parts. The system further has the advantage of pro-

viding a flexible safety barrier system, in which any one of the constituent safety barriers may be allowed to rotate about its pivot axis, while the remaining safety barriers are kept in a locked position (if initially locked).

[0016] In accordance with an embodiment of the safety barrier system, the system further comprises a second set of safety barriers according to the inventive concept. Each safety barrier of the second set is pivotally engaged with a vertically adjacent safety barrier of the first set by engaging their first hinge element with a second hinge element of the vertically adjacent safety barrier of the first set either directly or by means of a second external anchoring element. The safety barrier system is in this way advantageously allowed to be extended along the vertical axis in addition to the horizontal axis. This way not only an edge of a floor or a roof on a building construction site may be secured, but an entire wall opening, e.g. of a compartment in a building under construction, may be covered by the safety barrier system according to the present inventive concept.

[0017] In accordance with an embodiment of the safety barrier system, horizontally adjacent safety barriers are arranged to overlap. This is advantageous, since a high permissible deviation of the interspacing of adjacent first external anchoring elements is then allowed. During positioning of the first external anchoring points, e.g. floor anchoring points, the user does not have to measure the inter distances between the anchoring points with a high precision which saves time in the mounting process. Further, if the distance which is to be secured by the safety barrier system is not an integer of the length of the safety barriers, the overlapping of the safety barriers allows a quick and user friendly way of adapting the total length of the system.

[0018] Further, the pivotal arrangement of the safety barriers in combination with allowing overlap of adjacent horizontal safety barriers, such that the second end of a safety barrier section is allowed to engage with an adjacent safety barrier at some point of its screen section (instead of arranging them edge by edge) allows for adapting the safety barrier system to fit along a curved edge.

[0019] According to a third aspect of the present inventive concept there is provided a method for mounting a safety barrier system on a floor comprising: providing a plurality of first external anchoring elements being fixated to the floor at predetermined distances, providing a first set of safety barriers having a first hinge element arranged at a first end for pivotally engaging with a first external anchoring element, mounting a respective safety barrier by: placing the first end of the safety barrier at the vicinity of a respective first external anchoring element, tipping up the safety barrier on a lower corner of its second end, guiding the first hinge element into engaging with the first external anchoring element, and releasing the safety barrier.

[0020] Thus, a method which provides a safe and quick manner to mount a safety barrier system is provided. The

steps of mounting the safety barriers to protect a working space or similar may be performed at a safe distance from the first external anchoring elements, which are typically arranged at unprotected edges, where there is a high risk for falling accidents.

[0021] In accordance with an embodiment of the method, each safety barrier of the first set comprises a second hinge element arranged at the first side. The method further comprises providing a second set of safety barriers having a first hinge element arranged at a first end, and mounting the second set of safety barriers on top of the first set of safety barriers by engaging the first hinge element with a respective second hinge element of an underlying safety barrier of the first set.

[0022] This way a safety barrier system which is extendable in both horizontal and vertical directions is provided. The mounting of the second set of safety barriers may advantageously be performed while the user is at all times protected by the safety barrier system formed by the first set of safety barriers.

[0023] According to an embodiment of the method, each safety barrier of the first set comprises a second hinge element arranged at the first side, and the method further comprises: providing a second set of safety barriers having a first hinge element arranged at a first end, providing a plurality of second external anchoring elements, each being arranged for in a first end engaging with a first hinge element of a safety barrier of the second set, and in a second end engaging with a second hinge element of a safety barrier of the first set, mounting a second external anchoring element onto a respective safety barrier of the first set, and mounting the second set of safety barriers by engaging the first hinge element with a respective second external anchoring element.

[0024] Thus, the safety barriers are vertically interconnected by means of a second external anchoring element, whereby the number of protruding portions extending outside of the main design of the safety barrier may be minimized which is advantageous from the point of transporting, and handling of the safety barriers.

[0025] According to another aspect of the present inventive concept, a method for mounting a safety barrier system is provided. The method comprises: providing a plurality of distanced first external anchoring elements, mounting a first set of safety barriers according to the present inventive concept onto a respective first external anchoring element, providing each safety barrier of the first set with a second external anchoring element, and mounting a second set of safety barriers according to present inventive concept onto a respective second external anchoring element.

[0026] According to embodiments of the methods above, the methods further comprises providing at least one third external anchoring element which is arranged to engage with a second hinge element and an external fixing structure, mounting the third external anchoring element onto at least one safety barrier, and fixating the third external anchoring element to the external fixing

structure. Thus, the safety barrier system may advantageously be fixated to an external fixing structure by arranging an anchoring element in the second hinge element of at least one safety barrier.

[0027] Furthermore, the second and third aspects of the invention may generally have the same features and advantages as the first aspect

[0028] Other objectives, features and advantages of the present inventive concept will appear from the following detailed disclosure, from the attached dependent claims as well as from the drawings.

[0029] Generally, all terms used in the claims are to be interpreted according to their ordinary meaning in the technical field, unless explicitly defined otherwise herein. All references to "a/an/the [element, device, component, element, step, etc]" are to be interpreted openly as referring to at least one instance of the element, device, component, element, step, etc., unless explicitly stated otherwise. The steps of the methods disclosed herein do not have to be performed in the exact order disclosed, unless explicitly stated.

[0030] It will be further understood that terms used herein should be interpreted as having a meaning that is consistent with their meaning in the context of this specification and the relevant art and will not be interpreted in an idealized or overly formal sense unless expressly so defined herein.

Brief Description of the Drawings

[0031] Embodiments of the present inventive concept will now be described in more detail, reference being made to the enclosed drawings, in which:

Fig. 1 illustrates a schematic perspective view of a known safety barrier system.

Fig. 2 is a schematic perspective front view illustrating a safety barrier according to an embodiment of the present inventive concept.

Fig. 3a and b are schematic front views illustrating embodiments of a safety barrier system according to the present inventive concept.

Fig. 4 is a schematic illustration of an embodiment of a safety barrier system according to the present inventive concept.

Fig. 5a is a schematic illustration of an embodiment of an anchoring element according to the present inventive concept,

Fig. 5b is a schematic illustration of an embodiment of an anchoring element according to the present inventive concept, and

Fig. 5c is a schematic illustration of an embodiment of a safety barrier system according to the present inventive concept.

Fig. 6a-c are a schematic illustrations of an embodiment of a method for mounting a safety barrier system according to the present inventive concept.

Detailed Description of Embodiments

[0032] Embodiments of the present inventive concept will now be described more fully hereinafter with reference to the accompanying drawings, in which certain embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided by way of example so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout.

[0033] Fig. 2 is a schematic front view illustrating a safety barrier according to an embodiment of the present inventive concept. The safety barrier 200 comprises a rectangular screen section 201 which is intended for substantially vertical mounting, preferably with one of its longer sides parallel with the ground. Vertical mounting should here be interpreted as substantially upright with respect to the ground, floor or support structure (e.g. a beam) onto which the safety barrier is mounted. Depending on the specific safety classification of a safety barrier, the mounting angle is specified within predetermined limits (EN 13374 - Temporary edge protection systems - Product specification, test methods: Class A and B 90 deg \pm 15 deg). The safety barrier has the functionality to prevent people, tools, construction material etc. from falling over an edge of e.g. a floor, or alternatively hindering passage into a closed area.

[0034] The screen section 201 is here arranged comprising a top rail 209 and a toe board 210 as illustrated in Fig. 2. However, depending of the specific use and safety classification other designs are applicable, e.g. a top rail, a mid rail and a toe board, a transparent plate, an opaque plate, a perforated panel, a meshed metal or yarn net panel or similar.

[0035] In this exemplifying embodiment a post 206 is integrated in the screen section 201 and basically constitutes a first vertical side 204 of the screen section 201. The safety barrier 200 is further arranged with a first hinge element 202, which is arranged at a lower corner of a first vertical side 204 of the screen section 201. The first hinge element 202 is in this exemplifying embodiment arranged as a cylindrical cavity formed in the lower end of the post 206. The cavity, i.e. the first hinge element 202, is adapted to easily fit onto a corresponding protruding portion 601 of a first external anchoring element 600, e.g. a separate floor fixture as illustrated in Fig. 2. For the sake of simplicity, the first external anchoring element is herein after referred to as a floor anchoring element. It should be understood that the term first external anchoring element applies to any anchoring element onto which the safety barrier should be mounted, and that the anchoring element is arranged on the ground, the floor or any support structure (e.g. a beam).

[0036] The cylindrical protrusion 601 of the floor anchoring element 600 is arranged on a base plate 602,

and is adapted to be received in the first hinge element 202 of the safety barrier 200. In a mounted position, the first hinge element 202 and the protrusion 601 are engaged such that the safety barrier is pivotally movable about a vertical pivot axis extending along the first vertical side 204 of the screen section 201.

[0037] The floor anchoring element may be free standing. A free standing floor anchoring element is preferably designed to be heavy enough or stable enough to withstand any forces acting on it caused by the safety barriers own weight and additional forces acting on the safety barrier caused by wind, falling objects etc. However, the floor anchoring element is preferably secured in the floor for a safe mounting of the safety barrier. Securing of the floor anchoring element can be done by means of embedment, screw anchorage, screw hooks, welding etc. Alternatively, the floor anchoring element may be provided as a drilled or casted hole in the floor. Furthermore, prefabricated concrete slabs may contain concrete embedded floor anchoring elements which are adapted for mounting safety barriers according to the present inventive concept onto. Prefabrication of the anchoring elements provides convenient and quick mounting of the safety barrier, which will be further discussed herein under.

[0038] To continue with the exemplifying embodiment of Fig. 2, the safety barrier 200 is further arranged having a second hinge element 205 arranged at the first vertical side 204. The second hinge element 205 is here a cylindrical cavity arranged in the upper corner on the first vertical side 204 of the screen section 201. The second hinge element 205 is arranged for vertically engaging with a second external anchoring element which will be described further down.

[0039] With reference now to Fig. 3a, an embodiment of the safety barrier 300 is arranged having a rectangular screen section 201 comprising a metal frame 309 in which a meshed metal net is arranged. The screen section 201 further comprises a toe board 210, which is arranged along the side of the screen section 201 which faces the floor. The functionality of the toe board 210 is to prevent small objects from falling over the edge of the floor.

[0040] A post, being a tubular member 306, is arranged at a first vertical side 204 of the safety barrier 300. The tubular member 306 is a hollow metal tube which extends along and parallel to the first vertical side 204, and which in this embodiment is distanced from the screen section 201 by means of two spacers 307, e.g. two metal portions. The spacers 307, safety screen frame 309, and the tubular member 306 are joint together by means of e.g. welding, or bolting. The lower end portion 310 of the tubular member 306 makes up the first hinge element 302, and the upper end portion 311 of the tubular member 306 makes up the second hinge element 305. The hinge elements 302, 305 are as described above arranged to fit a respective external anchoring element.

[0041] The exemplifying embodiment above is a EN

13374 Class A safety barrier in which in opening in the mesh of the screen section is allowed to be a maximum of 25 cm. Due to the simple construction, although having a screen section which is arranged having a robust frame and having a framed mesh, the total weight of the safety barrier is 14 kg, which makes it easy to handle. The framed mesh allows access to the edge without having to open the safety barrier, as the construction worker may work through the mesh. In alternative embodiments, soft nets with smaller mesh may be added outside a mesh with large frames.

[0042] Fig. 3b illustrates an embodiment of a safety barrier according to the present inventive concept which has a post 306 arranged along a first vertical side 204 of the screen section 201. The screen section 201 comprises a meshed net and a toe board 210 arranged in a metal frame 409. The metal frame 409 is substantially shaped like a rectangular with bent corners, which rectangular is partly open along the first vertical side 204 of the screen section 201, such that two sub portions 407 of the frame 409 are left at the corners 412 of rectangle which are arranged at the post 306. The sub portions 407 are bent such that an angle larger than 90 deg is formed for the corners 412. Further, the sub portions 407 are welded onto the post 306. The post 306 is a hollow metal tube which extends along and parallel to the first vertical side 204, and in this embodiment the first hinge element 302 and the second hinge element 305 of the post are accessible due to the shape of the frame. The metal frame 409 is formed in one piece by bending a metal bar.

[0043] Referring now to Fig. 6a, when the safety barrier 300 is to be mounted onto a fixated floor anchoring element 600b, a user first positions the safety barrier 300b such that the first hinge element 302 is arranged at the vicinity of the floor anchoring element 600b. This is preferably done while the user is positioned at a safety distance from the unprotected floor edge. The user may lift the safety barrier 300b into place by grabbing its second side 208.

[0044] Subsequently, the user tips up the safety barrier using the lower corner 207 of the second side 208 of the safety barrier 300 as a pivot, thereby raising the first hinge element 302 into the air and making it possible to in a controlled manner guide the first hinge element 302 onto the floor anchoring element 600b. After the safety barrier has been mounted, it may be folded towards its intended position (e.g. along the edge of the floor)), see Fig. 6b, and secured against an external post, building, adjacent safety barrier etc. by means of a locking element 315, see Fig. 6c. The locking element may be a strap, a hook or any other suitable locking. Preferably the second side 208 of the safety barrier is secured, however the locking element may be arranged at any suitable point of the screen section 201.

[0045] Fig. 4 illustrates an embodiment of a safety barrier system arranged by a plurality of the safety barriers 300. A plurality of horizontally distanced floor anchoring elements 600a-b are secured to a floor. Safety barriers

300a-c, are arranged onto the floor anchoring means by engaging their respective first hinge elements pivotally with a respective floor anchoring element 600a-b. The distance of adjacent floor anchoring elements 600a-b is arranged such that horizontally adjacent safety barriers overlap.

[0046] Previously, an external anchoring element in the form of a floor anchoring element 600 was described. Referring now to Fig. 5a the second hinge element 305 is arranged to receive a second external anchoring element 700a. The second external anchoring element 700a is here cylindrically shaped. In its first end 701 the second external anchoring element 700a (also referred to as a connecting anchoring element) is arranged to engage with a tubular second hinge element 305. In a similar way the second end 702 of the connecting anchoring element 700a is arranged to engage with a tubular first hinge element 302'. Thus, the second external anchoring element 700a is arranged such that two vertically adjacent safety barriers 300a, 300e can be interconnected. Fig. 5b illustrates an alternative embodiment of a second external anchoring element 700b, which is arranged for interconnecting safety barriers by engaging with (receiving) cylindrically arranged hinge means.

[0047] In embodiments of the safety barrier according to the present inventive concept, the second hinge element and the first hinge element are arranged such that a first hinge element is pivotally connectable to a second hinge element of a vertically adjacent safety barrier (not shown) such that no connecting anchoring element is necessary. The second external anchoring element may alternatively be fixated in a first or second hinge element (not shown). Either way the second vertically mounted set of safety barriers may then be mounted directly onto an underlying safety barrier.

[0048] In Fig. 5c, a second set of safety barriers 300e-h is arranged on top of the under laying safety barriers 300 a-d. This is made possible by means of second external anchoring elements 700, as described above with reference to Figs. a-b, which have been mounted as a connector between vertically adjacent safety barriers. Thus, the step of mounting the second set of safety barriers is performed by engaging the first hinge element with a respective second external anchoring element of an underlying safety barrier. The barrier safety system 500 is further secured to a second surface (the ceiling), opposite to the floor, by means of third external anchoring elements 505 which are preferably vertically adjustable. Here the third external anchoring element is engaged with a roof. However, any suitable fixing structure is applicable.

[0049] To achieve a safety barrier system in accordance with the present inventive concept, a method for mounting a safety barrier system on a floor comprises providing a plurality of distanced floor anchoring elements, mounting a first set of safety barriers onto a respective floor anchoring element. Thereby a row of safety barriers is achieved.

[0050] Each safety barrier is typically secured with a locking device to an adjacent safety barrier to form a rigid barrier. Further, the row of safety barriers may be expanded vertically by providing a second set of safety barriers having a first hinge element arranged at a first end, and mounting the second set of safety barriers on top of the first set of safety barriers by engaging the first hinge element with a respective second hinge element of an underlying safety barrier.

[0051] The connection between the vertically adjacent safety barriers may be performed utilizing a second external anchoring element 700, as described above. Typically, at least one safety barrier is secured to a vertically or horizontally adjacent safety barrier with a locking element 315 (see Fig. 6c).

[0052] The safety barrier system may be further stabilized by providing at least one third external anchoring element which is arranged to engage with a second hinge element and an external fixing structure, e.g. a roof as illustrated in Fig. 5a. The third external anchoring element is mounted onto a safety barrier and fixated to the external fixing structure.

[0053] The invention has mainly been described above with reference to a few embodiments. However, as is readily appreciated by a person skilled in the art, other embodiments than the ones disclosed above are equally possible within the scope of the invention, as defined by the appended patent claims.

Claims

1. A safety barrier (200) for securing a working surface, said safety barrier comprising:

a screen section (201);
a first hinge element (202) arranged at said screen section for pivotally engaging with a first external anchoring element, thereby allowing pivotal movement of said screen section (201) about a vertical pivot axis extending along a first vertical side (204) of said screen section; and
a post (206) having a first end portion (310) and an opposite second end portion (311), said post being arranged along said first vertical side of said screen section, and wherein said first hinge element (202) is arranged at said first end portion (310) of said post.

2. A safety barrier (200) according to claim 1, further comprising a second hinge element (205) arranged at said screen section (201) for pivotally engaging with one of an adjacent safety barrier, and a second external anchoring element (700).

3. A safety barrier (200) according to claim 2, wherein said second hinge element (205) is arranged at said second end portion (311).

4. A safety barrier (200) according to any one of the preceding claims, wherein said first hinge element (202) and said second hinge element (205) are arranged in opposite vertical directions.

5. A safety barrier (300) according to any one of the preceding claims, wherein said post is a vertically arranged tubular member (306).

6. A safety barrier (300) according to any one of the preceding claims, wherein at least one of said first end portion (310) and said second end portion (311) is interspaced a predetermined distance from said screen section (201).

7. A safety barrier according to any one of the preceding claims, further comprising a locking element (315) for securing of a second end portion (208) of said screen section (201).

8. A safety barrier system for securing a working surface, said system comprising:

a plurality of horizontally distanced first external anchoring elements;

and

a first set of safety barriers according to any one of the preceding claims;

wherein a first hinge element of each safety barrier of said first set is pivotally engaged with a respective first external anchoring element.

9. A safety barrier system according to claim 8, wherein said safety barriers of said first set are according to any one of claims 2 - 7, said system further comprising

a second set of safety barriers according to any one of claims 1-7,

wherein each safety barrier of said second set is pivotally engaged with a vertically adjacent safety barrier of said first set by engaging said first hinge element with a second hinge element of said vertically adjacent safety barrier of said first set either directly or by means of a second external anchoring element.

10. A safety barrier system according to claim 8 or 9, wherein horizontally adjacent safety barriers are arranged to overlap.

11. A method for mounting a safety barrier system on a floor, said method comprising:

- providing a plurality of first external anchoring elements being fixated to said floor at predetermined distances;

- providing a first set of safety barriers having a first hinge element arranged at a first end for pivotally engaging with a first external anchoring

element;

- mounting a respective safety barrier by:

placing said first end of said safety barrier
at the vicinity 5
of a respective first external anchoring ele-
ment;
tipping up said safety barrier on a lower cor-
ner of its second end;
guiding said first hinge element into engag- 10
ing with said first external anchoring ele-
ment; and
releasing said safety barrier.

12. A method according to claim 11, wherein each safety 15
barrier of said first set comprises a second hinge
element arranged at said first side, said method fur-
ther comprising:

- providing a second set of safety barriers having 20
a first hinge element arranged at a first end; and
- mounting said second set of safety barriers on
top of said first set of safety barriers by engaging
said first hinge element with a respective second
hinge element of an underlying safety barrier of 25
said first set.

13. A method according to claim 11, wherein each safety 30
barrier of said first set comprises a second hinge
element arranged at said first side, said method fur-
ther comprising:

- providing a second set of safety barriers having
a first hinge element arranged at a first end;
- providing a plurality of second external anchor- 35
ing elements, each being arranged for in a first
end engaging with a first hinge element of a safe-
ty barrier of said second set, and in a second
end engaging with a second hinge element of a
safety barrier of said first set; 40
- mounting a second external anchoring element
onto a respective safety barrier of said first set;
- mounting said second set of safety barriers by
engaging said first hinge element with a respec-
tive second external anchoring element. 45

14. A method for mounting a safety barrier system com-
prising:

- providing a plurality of distanced first external 50
anchoring elements;
- mounting a first set of safety barriers according
to anyone of claims 2 - 8 onto a respective first
external anchoring element;
- providing each safety barrier of said first set 55
with a second external anchoring element; and
- mounting a second set of safety barriers ac-
cording to anyone of claims 1 - 8 onto a respec-

tive second external anchoring element.

15. A method according to any one of claims 11 - 14,
further comprising:

- providing at least one third external anchoring
element which is arranged to engage with a sec-
ond hinge element and an external fixing struc-
ture;
- mounting said third external anchoring element
onto at least one safety barrier; and
- fixating said third external anchoring element
to said external fixing structure.

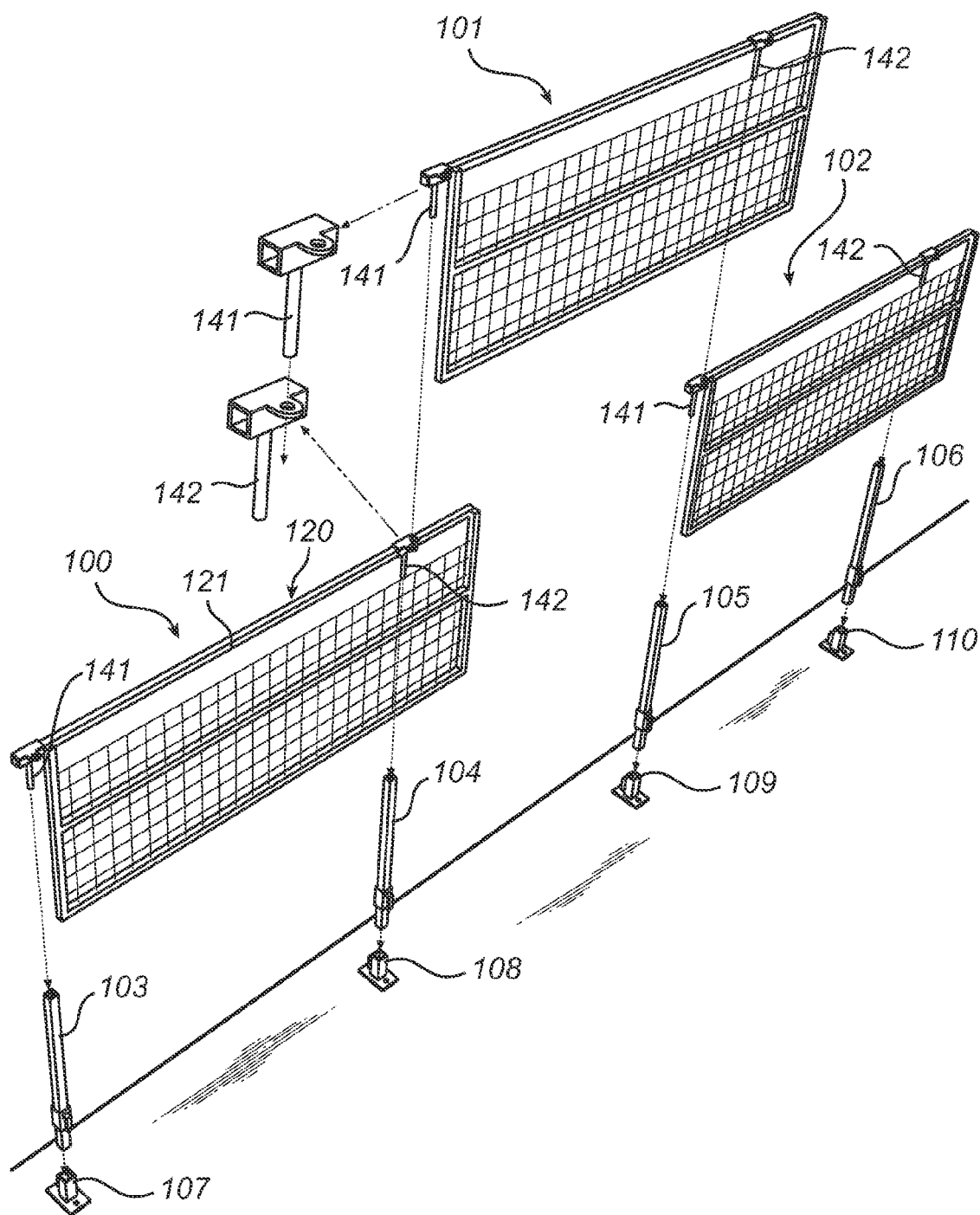


Fig. 1

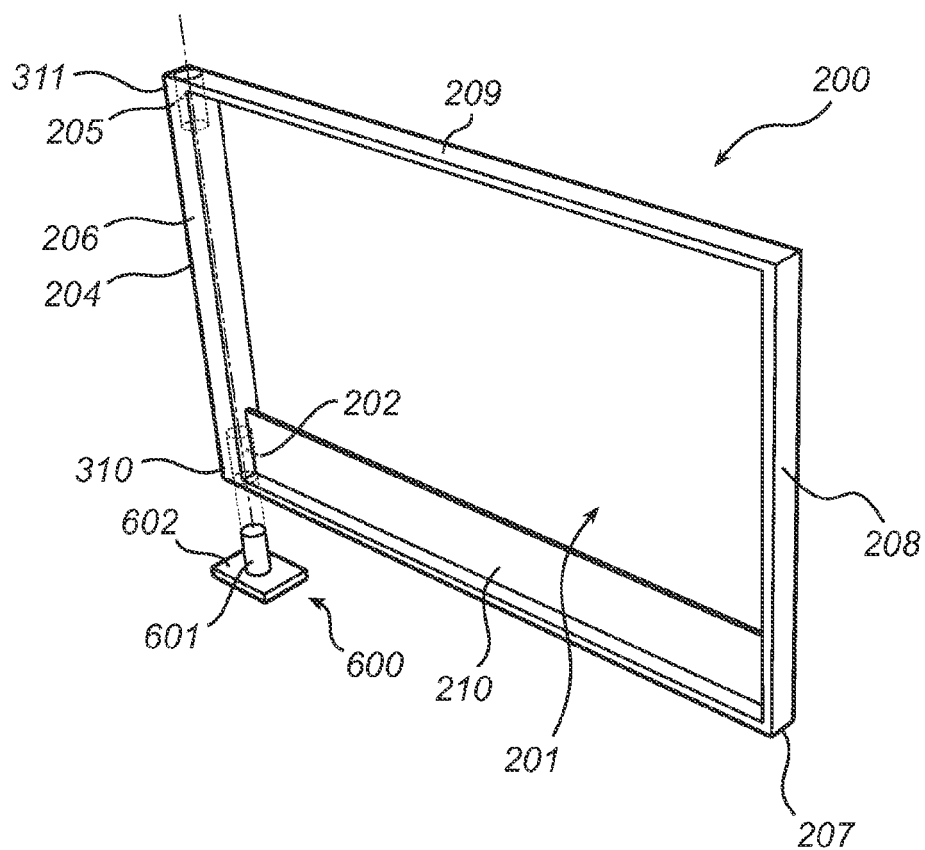


Fig. 2

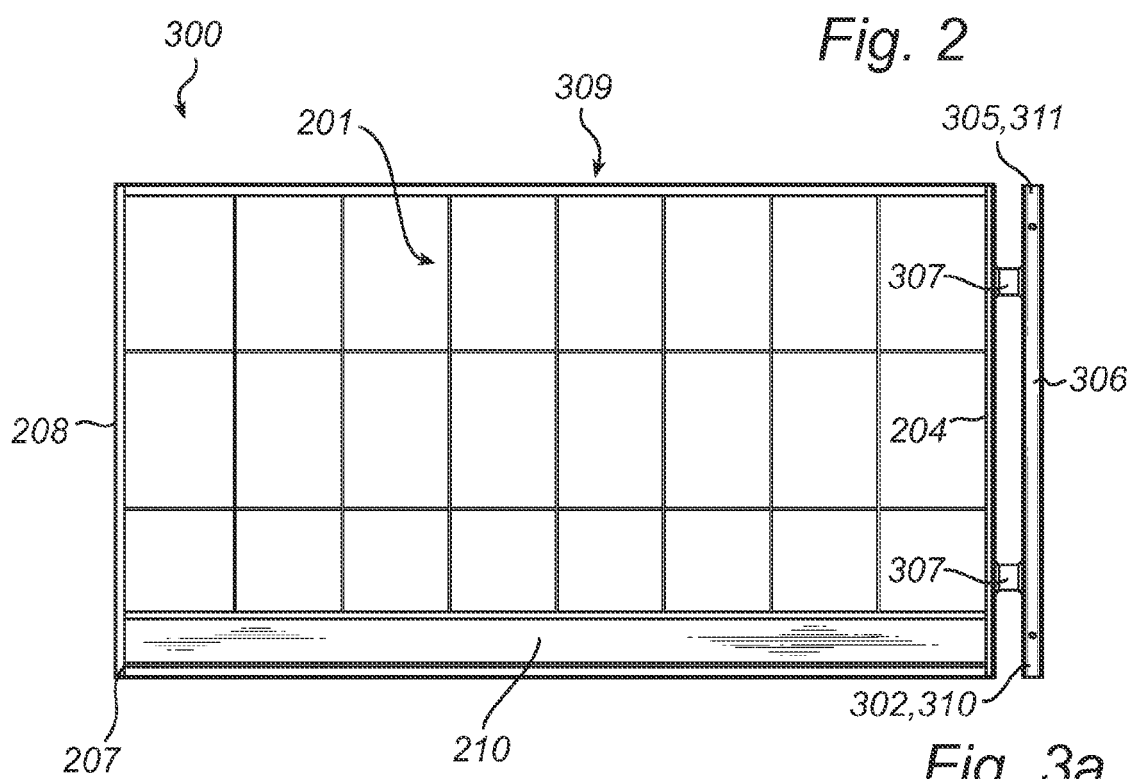


Fig. 3a

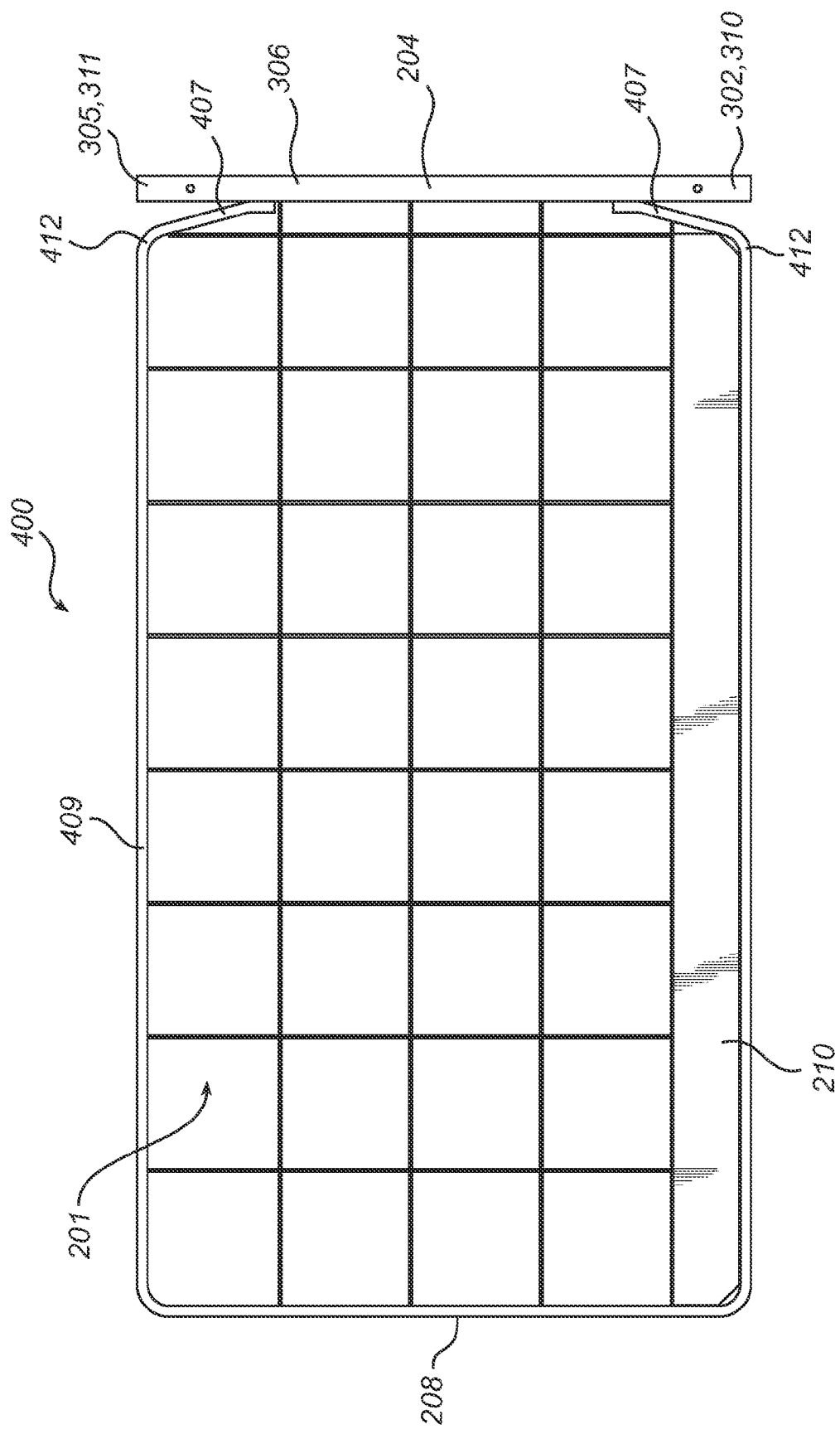


Fig. 3b

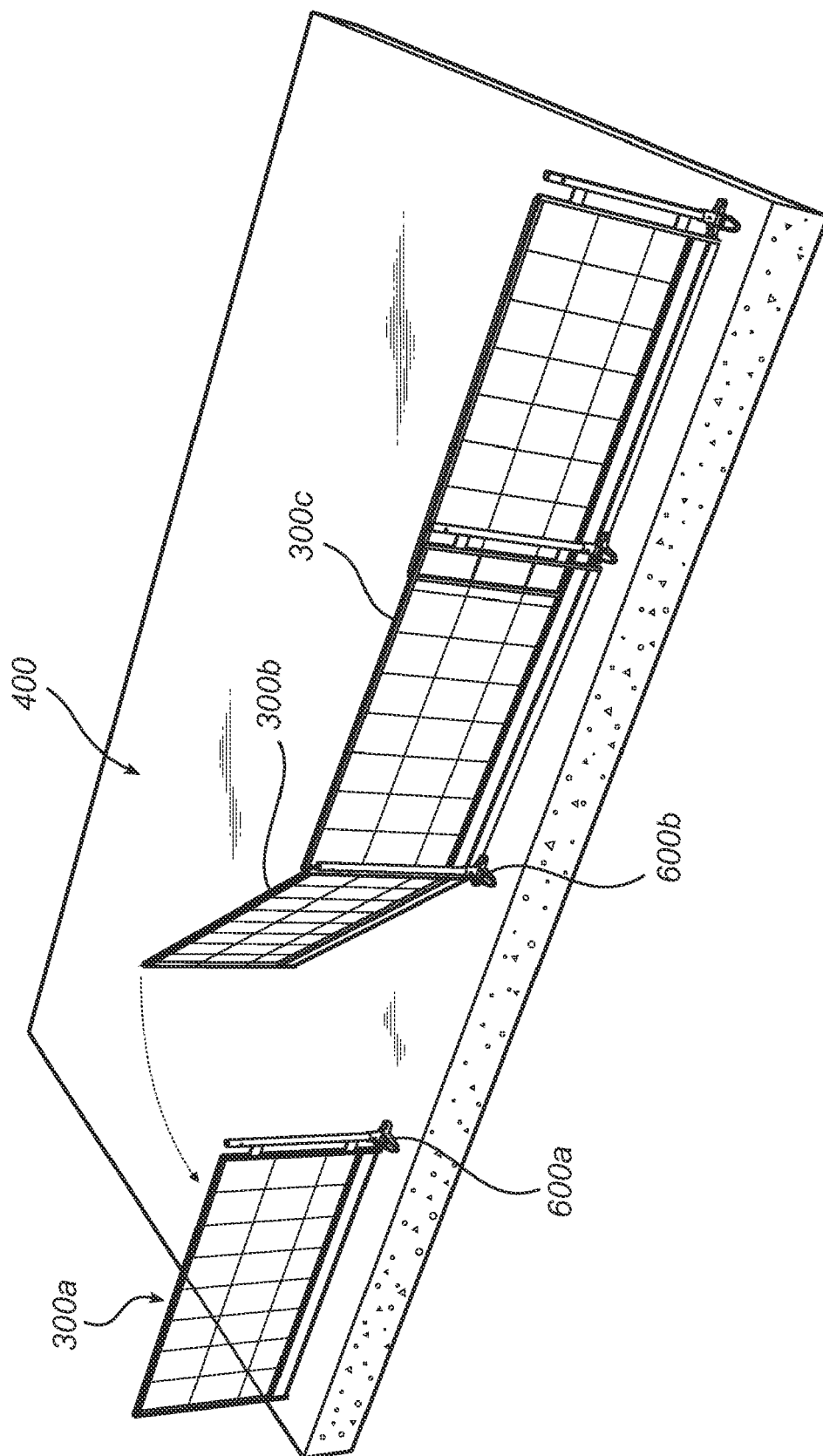


Fig. 4

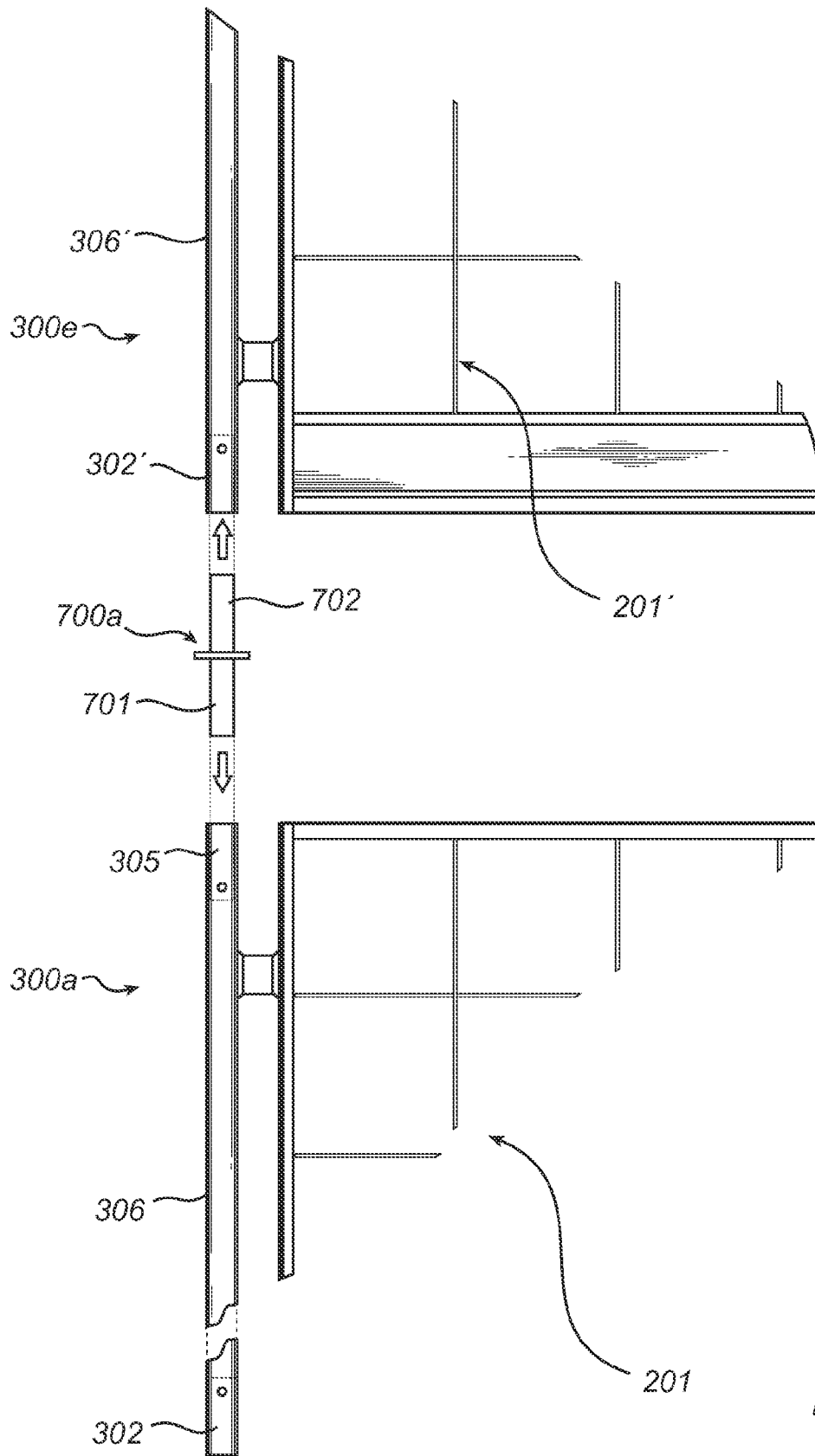


Fig. 5a

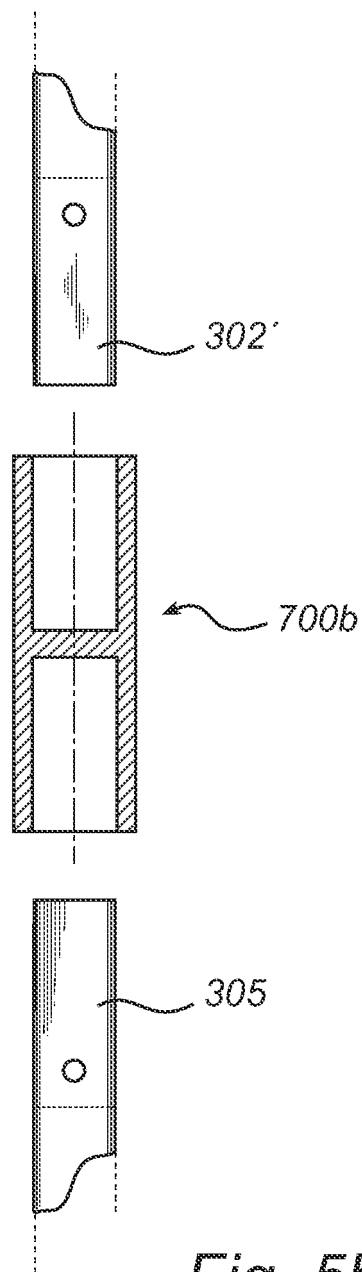
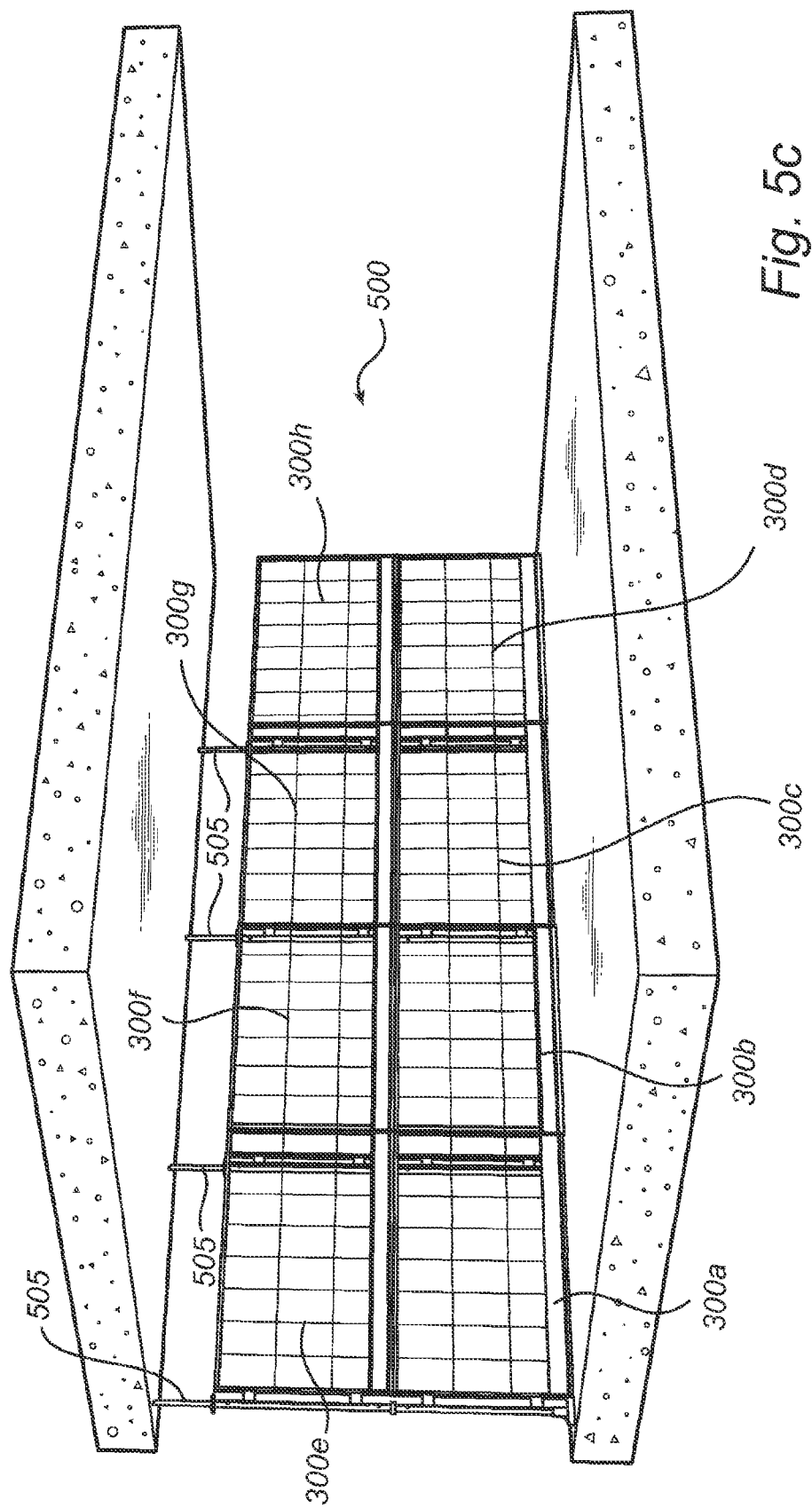
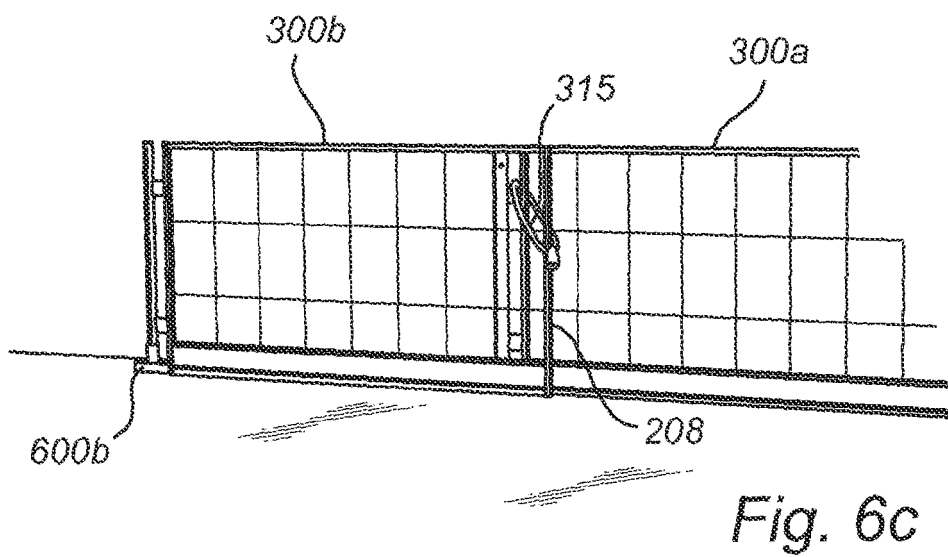
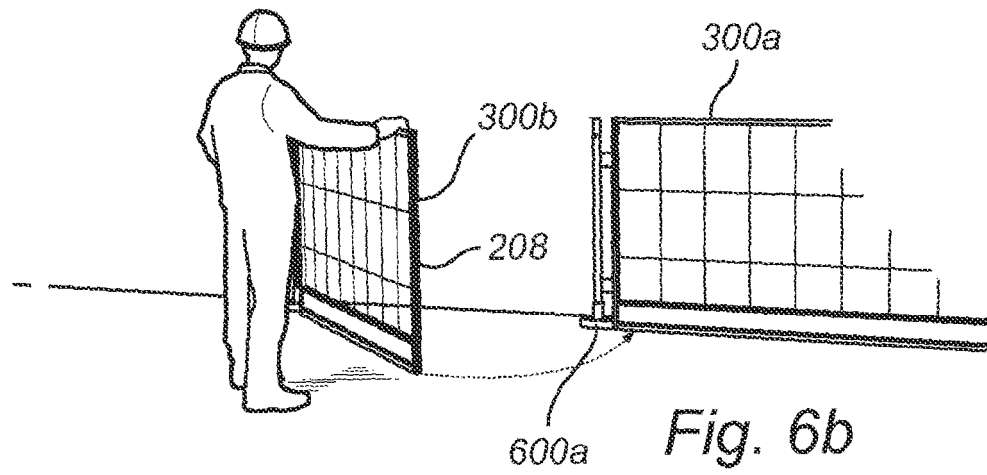
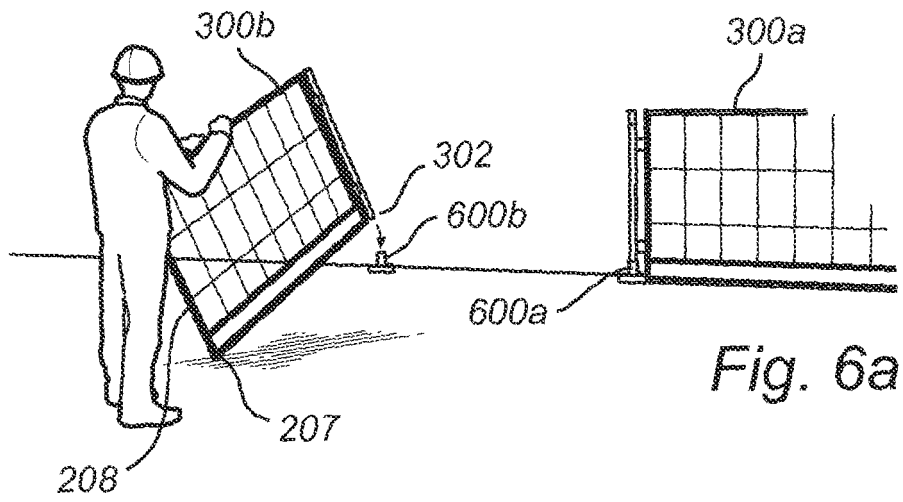


Fig. 5b







EUROPEAN SEARCH REPORT

Application Number
EP 09 15 6483

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Place of search Munich		Date of completion of the search 28 August 2009	Examiner Saretta, Guido
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The members are as contained in the European Patent Office EDP file on
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28-08-2009

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