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(54) **Balcony or the like**

Balkon oder ähnliches

Balcon ou similaire

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EP 1 477 400 B1

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Description

[0001] The present invention relates to a balcony or the like, which can be attached in a simple manner to an object that can be any structure, such as a building, a vessel, etc. By way of example, the following description deals with a balcony fastenable to a vessel but, as pointed out above, the invention is not limited solely to such an application.

[0002] Vessels are currently outfitted more and more often with balconies or other such outboard structures. Balconies are mounted on support girders jutting beyond the hull of a vessel, said girders being welded to the hull. In order to ensure sufficient stability and strength, the girders are located in coincidence with intra-hull bracing ribs, i.e. the balcony-supporting girders constitute a sort of "extension" to the internal bracing ribs. Retrofitting support girders by welding becomes more inconvenient as the locations of internal bracing ribs are not clearly apparent from outside the hull. In addition, the sizing of a balcony is restricted by the spacing between bracing ribs.

[0003] US-A-4660331 which constitutes the closest prior art discloses a concrete filled structural tube with cantilevers, particularly for balcony floors. In accordance with the invention, the cantilevers are provided at their fixing ends with a bracket or embedment in concrete having at least one member substantially at right angles to the cantilever. This member is inserted in an opening in the structural tube, the cantilever then being stabilized in its predetermined position. Concrete is then injected into the structural tube to fill it and simultaneously fix the previously mentioned member. However, this solution requires both measures affecting inside the supporting structures, and furthermore, the fixing is accomplished with concrete. This kind of arrangement is both time-consuming and does not offer possibility for simple and reproducible disassembly of the fixing.

[0004] It is an object of the present invention as disclosed by the features of independent claim 1 to simplify the mounting of a balcony to the side of a ship.

[0005] According to the invention, this is accomplished in such a way that the structure-mounted balcony comprises a prefabricated balcony unit, in which the end face towards a structure is provided with fastening profiles and the structure wall is at desired locations fitted with clamping elements complementary to said fastening profiles for fastening the prefabricated unit to the structure.

[0006] With a system of the invention, the prefabricated balcony unit is simply fastenable to a desired location, the mounting is not dependent on an internal bracing structure, nor does the spacing of internal braces restrict the sizing of a balcony. internal bracing structure, nor does the spacing of internal braces restrict the sizing of a balcony.

[0007] Other characterizing features of the invention will be apparent from the appended dependent claims.

[0008] The invention will now be described in more detail with reference to the accompanying drawings, in

which

Fig. 1 shows a prior known solution, and

5 Fig. 2 shows a preferred embodiment of the invention mountable on a vessel.

[0009] In the prior known traditional solution shown in fig. 1, to a ship's side 1 in coincidence with an internal bracing rib 2 is welded an outward tapering support girder 10, such that the support girder 10 provides for the internal beam 2 an extension jutting out of the ship's side 1.

[0010] In order to ensure sufficient stability and strength, the support girders or ribs 2 must be welded to the outer surface of the ship's side 1 in coincidence with the internal beam 2. In practice, the determination of this spot complicates mounting. In addition, the distance between the bracing ribs 2 and, hence the sizing of a balcony, are dependent on the spacing of the bracing ribs.

15 **[0011]** In a solution of the invention as shown in fig. 2, no outboard extending support girders are welded to a ship's side 1 in coincidence with a bracing rib 2. Instead, to the ship's side are welded steel profiles 3 and 4, which are spaced from each other and comprise U-section channels and are positioned in such a way that the upper profile opens upwards and the lower one 4 opens downwards. These steel profiles are intended to have a ready-to-use balcony unit 10 secured thereto.

[0012] The balcony unit 10 is constituted by support girders 8 tapering towards the outer end. The number of girders 8 can be two or more, as necessary. The girder is structurally light, e.g. provided with holes, trussed, a laminate or the like, and the manufacturing material can be anything suitable for the purpose, e.g. steel, aluminium, light metal, wood, fiber glass or plastics. To the support girder's 8 outer end is secured, with screws or the like, an end railing 9, an end wall, or the like. The support girder's 8 lengthwise side will be fitted with side railings, side walls, or partitions, as the case may be. Rainwater drains are also incorporated in the support girder and/or between such girders.

[0013] The prefabricated balcony unit 10 may consist of e.g. honeycomb panel and its surface may additionally be covered with a honeycomb-structured balcony slab or the like. The girder 8 may have its bottom face provided with a cover panel for thereby concealing fixtures and equipment incorporated inside the girder, e.g. prefitted water pipes, electric wires, and necessary accessories.

[0014] To the support girder's 8 wider end face, which lies towards a ship's side, is secured, with bolts or the like, a fastening profile 5 which is substantially consistent with the size of the girder. The fastening profile 5 has its upper edge designed as a downward-directed claw-shaped bearing member 6 to fit in the channel of the upper steel profile 3.

55 **[0015]** The fastening profile 5 has its bottom edge provided with a clamping bar 7, attachable with screws or similar fastening elements and including an upward-ris-

ing claw-shaped member.

[0016] When the balcony unit 10 is lifted to rest upon the upper steel profile 3 and the bearing member 6, the clamping bar 7 is attached to the unit fastening profile 5 and simultaneously behind the lower profile 4 for securing the unit 10 in place. Attachment of the clamping bar 7 is effected simply by means of a few screws or other similar fastening elements. Thus, the balcony unit 10 can be secured and mounted at a desired location in a simple manner. The installation work is simple.

[0017] The bearing member 6, as well as the clamping bar 7, may have lengths which are consistent with the width of an entire prefabricated balcony unit or may consist of several elements the same way as the steel profiles 3 and 4.

[0018] In a preferred embodiment, the fastening profile 5 may be a separate element which is attached to a balcony unit. In such a solution, the profile can be sized and shaped to always satisfy the special demands of a structure which the unit is intended for. If, for example, the mutual distance between the steel profiles 3, 4 in various parts of the structure cannot be maintained the same, then just the fastening profile 5 is re-positioned and no changes are required to the balcony unit. It is also possible to use the same balcony unit for various applications by just modifying the fastening profile appropriately.

[0019] The prefabricated balcony unit 10 can be a completely ready-to-use balcony with all its accessories and wiring systems, but of course it can also be a semi-finished product, as necessary.

[0020] Benefits of this prefabricated balcony over conventional technology include e.g. as follows:

- A prefabricated unit can be manufactured and finished entirely indoors. A traditional method of building is at the mercy of weather.
- Installation of a prefabricated unit is fast, thus relaxing the schedule of other operations.
- Installation of a prefabricated unit requires no scaffolding or guard rails consistent with industrial safety standards, since the unit has its own railing already in place.
- The length of a prefabricated unit is not dependent on the rib spacing of a ship, since the "hooked profile" provides support along the entire side.
- Precise welding of separate consoles has been difficult. The hooked solution eliminates tolerance problems.
- No fastening holes are needed in ship structures.
- If the bottom part of a prefabricated unit is fitted with a covering metal sheet, e.g. rainwater drains and electric wires can be "hidden" inside the prefabricat-

ed unit as early as in manufacturing.

Claims

1. A balcony for a structure, such as a vessel, a building, etc., said balcony unit comprising a prefabricated balcony unit (10), having its end face towards a structure (1), **characterized in that** the balcony unit (10) is provided with a fastening profile (5) along the side of the said end face, and the structure (1) is at desired locations fitted with an upper clamping profile (3) and a lower clamping profile (4) spaced from each other, said clamping profiles (3,4) being complementary to said fastening profile (5) for fastening the prefabricated unit (10) to the structure (1).
2. A balcony as set forth in claim 1, **characterized in that** the fastening profile (5) comprises a separate member fastenable to the prefabricated balcony unit (10).
3. A balcony as set forth in claim 1 or 2, **characterized in that** the fastening profile (5) comprises a claw-shaped bearing profile (6) and a clamping bar or bars (7) attachable to the fastening profile (5) by means of attachment elements.
4. A balcony as set forth in claim 3, **characterized in that** the bearing profile (6) constitutes an upper attachment for the upper clamping profile (3) and the clamping bar (7) constitutes a lower attachment for the lower clamping profile (4).
5. A balcony as set forth in any of the preceding claims, **characterized in that** the clamping profiles (3, 4) consist of profiles attached alongside the structures, such as one or more hooked bars or U-channels.

Patentansprüche

1. Balkon für eine Struktur, wie ein Schiff, ein Gebäude, etc., wobei der genannte Balkon eine vorgefertigte Balkoneinheit (10) aufweist, deren Endfläche einer Struktur (1) zugewandt ist, **dadurch gekennzeichnet, dass** die Balkoneinheit (10) an der Seite der genannten Endfläche mit einem Befestigungsprofil (5) ausgestattet ist, und dass die Struktur (1) an gewünschten Stellen mit einem oberen Klemmprofil (3) und einem unteren Klemmprofil (4) versehen ist, welche im Abstand voneinander liegen, wobei die genannten Klemmprofile (3, 4) komplementär zu dem Befestigungsprofil (5) zum Befestigen der vorgefertigten Einheit (10) an der Struktur (1) sind.
2. Balkon nach Anspruch 1, **dadurch gekennzeichnet, dass** das Befestigungsprofil (5) ein separates

Glied enthält, welches an der vorgefertigten Balkoneinheit (10) befestigbar ist.

des structures, tels qu'une ou plusieurs barres à crochet ou canaux en forme de U.

3. Balkon nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das Befestigungsprofil (5) ein klauenförmiges Tragprofil (6) und einen Klemmstab oder Klemmstäbe (7) aufweist, welcher/welche mittels Anbringungselementen an dem Befestigungsprofil (5) befestigbar ist/sind. 5
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4. Balkon nach Anspruch 3, **dadurch gekennzeichnet, dass** das Tragprofil (6) eine obere Anbringung für das obere Klemmprofil (3) und der Klemmstab (7) eine untere Anbringung für das untere Klemmprofil (4) darstellen. 15
5. Balkon nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Klemmprofile (3, 4) aus Profilen bestehen, wie z. B. einem oder mehreren hakenförmigen Stäben oder U-Kanälen, welche längs der Strukturen angebracht sind. 20

Revendications

1. Balcon pour une structure, telle qu'un bateau, un bâtiment, etc., ladite unité de balcon comprenant une unité de balcon préfabriquée (10), ayant sa face d'extrémité vers une structure (1), **caractérisé en ce que** l'unité de balcon (10) est prévue avec un profil de fixation (5) le long du côté de ladite face d'extrémité, et la structure (1) est équipée, aux emplacements souhaités, avec un profil de serrage supérieur (3) et un profil de serrage inférieur (4) espacés l'un de l'autre, lesdits profils de serrage (3, 4) étant complémentaires dudit profil de fixation (5) pour fixer l'unité préfabriquée (10) à la structure (1). 25
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2. Balcon selon la revendication 1, **caractérisé en ce que** le profil de fixation (5) comprend un élément séparé pouvant être fixé à l'unité de balcon préfabriquée (10). 40
3. Balcon selon la revendication 1 ou 2, **caractérisé en ce que** le profil de fixation (5) comprend un profil d'appui en forme de griffe (6) et une barre ou des barres de serrage (7) pouvant être fixées au profil de fixation (5) au moyen d'éléments de fixation. 45
4. Balcon selon la revendication 3, **caractérisé en ce que** le profil d'appui (6) constitue une fixation supérieure pour le profil de serrage supérieur (3) et la barre de serrage (7) constitue une fixation inférieure pour le profil de serrage inférieur (4). 50
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5. Balcon selon l'une quelconque des revendications précédentes, **caractérisé en ce que** les profils de serrage (3, 4) se composent de profils fixés le long



