



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 477 400 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
17.11.2004 Bulletin 2004/47

(51) Int Cl.7: **B63B 29/02, E04B 1/00**

(21) Application number: **04397008.6**

(22) Date of filing: **11.05.2004**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**
Designated Extension States:
AL HR LT LV MK

(72) Inventors:
• **Flinckman, Markus**
21600 Parainen (FI)
• **Vairinen, Erkki**
21430 Yliskulma (FI)

(30) Priority: **15.05.2003 FI 20035067**

(74) Representative: **LEITZINGER OY**
Tammasaarekatu 1
00180 Helsinki (FI)

(71) Applicant: **Jukova OY**
21430 Yliskulma (FI)

(54) **Balcony or the like**

(57) The invention relates to a balcony or the like for various structures, such as vessels, buildings, and the like. The balcony comprises a prefabricated balcony unit (10), having its end face towards a structure (1) provided

with a fastening profile (5), and the structure (1) is at desired locations fitted with clamping profiles (3, 4) complementary to said fastening profile (5) for fastening the prefabricated unit (10) to the structure (1).

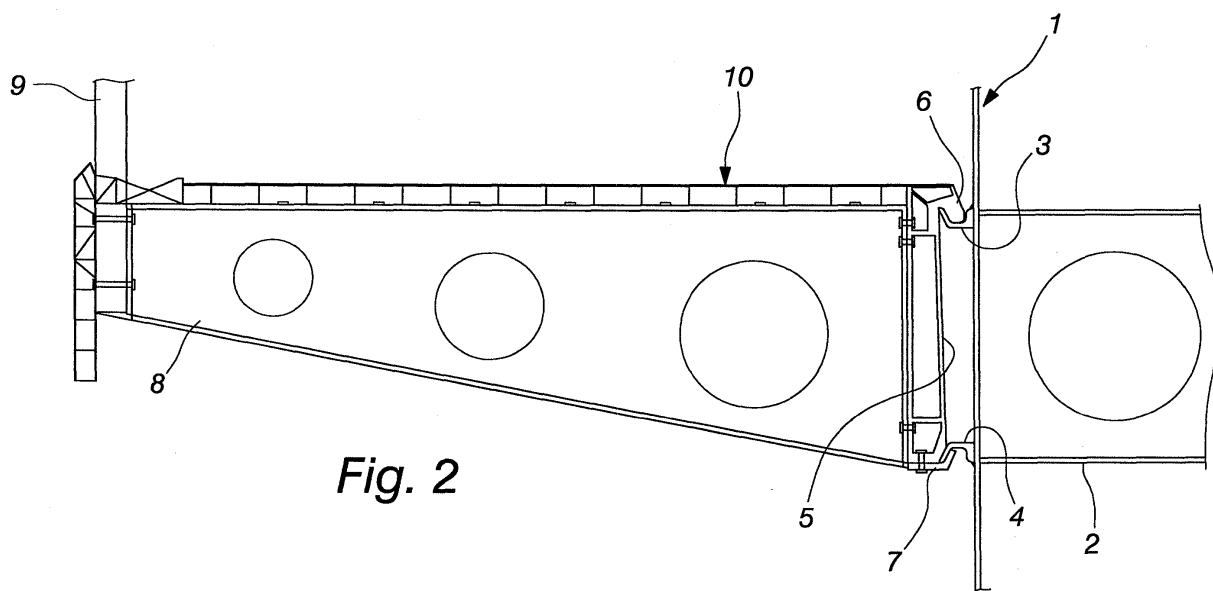


Fig. 2

EP 1 477 400 A1

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] It is an object of the present invention to simplify the mounting of a balcony to the side of a ship.

[0004] 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.

[0005] 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.

[0006] Other characterizing features of the invention will be apparent from the appended dependent claims.

[0007] 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

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

[0008] 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.

[0009] 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.

[0010] 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.

[0011] 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.

[0012] 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.

[0013] 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.

[0014] 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-rising claw-shaped member.

[0015] 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.

[0016] 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 pro-

files 3 and 4.

[0017] 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.

[0018] 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.

[0019] 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 prefabricated unit as early as in manufacturing.

Claims

1. A balcony or the like for a structure, such as a vessel, a building, etc., **characterized in that** it comprises a prefabricated balcony unit (10), having its end face towards a structure (1) provided with a fastening profile (5), and the structure (1) is at desired locations fitted with clamping profiles (3, 4) complementary to said fastening profile (5) for fastening the prefabricated unit (10) to the structure (1).

2. A structure 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 structure 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 structure as set forth in claim 3, **characterized in that** the bearing profile (6) constitutes an upper attachment and the clamping bar (7) a lower attachment.
5. A structure 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.

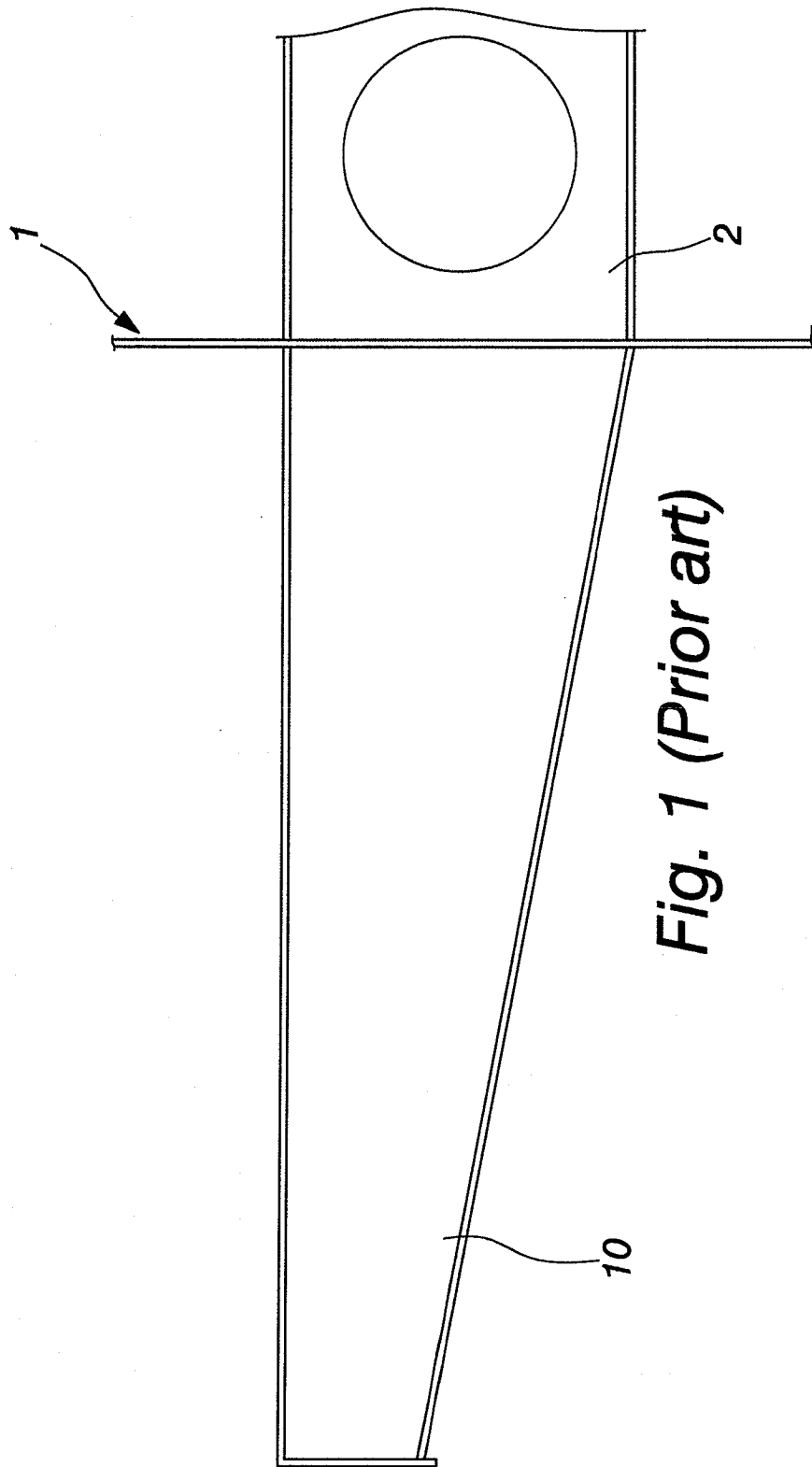
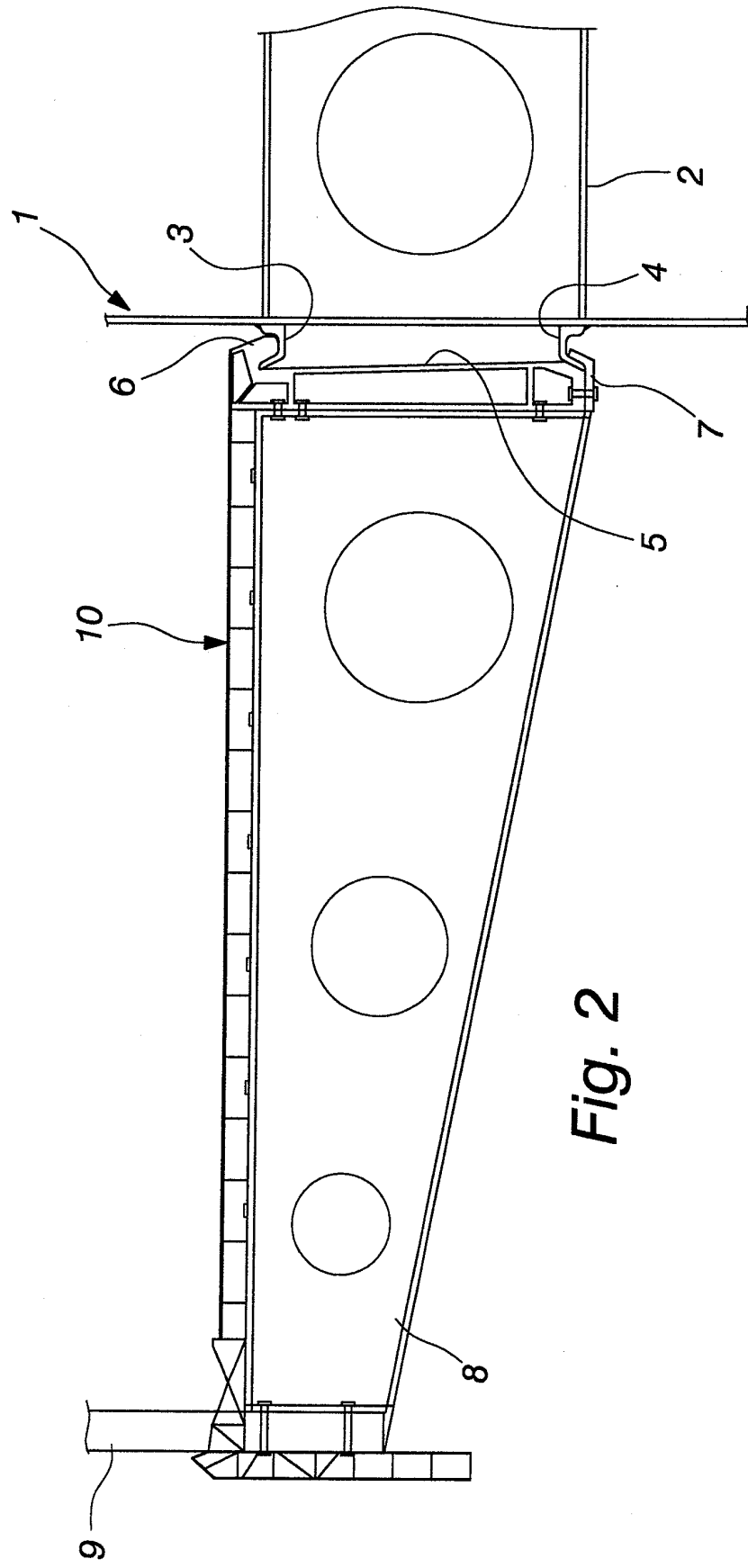


Fig. 1 (Prior art)





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 39 7008

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 4 660 331 A (RYBERG NILS A ET AL) 28 April 1987 (1987-04-28) * figures 1-3 *	1-3,5	B63B29/02 E04B1/00
A	FR 2 830 514 A (ALSTOM) 11 April 2003 (2003-04-11) * figures 1,2 *	1	
A	EP 1 101 693 A (KVAERNER MASA YARDS OY) 23 May 2001 (2001-05-23) * figures 1-5 *	1	
A	DE 297 10 086 U (FOERSTER NORBERT) 14 August 1997 (1997-08-14) * figures *	1	
A	DE 196 54 537 A (KREUSEL ULRICH) 2 July 1998 (1998-07-02) * figures *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B63B E04B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		31 August 2004	van Rooij, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 39 7008

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

31-08-2004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4660331	A	28-04-1987	SE 436142 B	12-11-1984
			AT 22477 T	15-10-1986
			AU 2820784 A	07-11-1984
			DE 3460803 D1	30-10-1986
			DK 578884 A	05-12-1984
			EP 0140937 A1	15-05-1985
			FI 844805 A ,B,	05-12-1984
			JP 60501015 T	04-07-1985
			NO 844888 A ,B,	06-12-1984
			WO 8404124 A1	25-10-1984
FR 2830514	A	11-04-2003	FR 2830514 A1	11-04-2003
			EP 1302397 A1	16-04-2003
			JP 2003137170 A	14-05-2003
EP 1101693	A	23-05-2001	FI 992482 A	23-05-2001
			EP 1101693 A2	23-05-2001
			JP 2001180578 A	03-07-2001
			NO 20005892 A	23-05-2001
			US 6457431 B1	01-10-2002
DE 29710086	U	14-08-1997	DE 29710086 U1	14-08-1997
DE 19654537	A	02-07-1998	DE 19654537 A1	02-07-1998