



- (51) International Patent Classification: Not classified
- (21) International Application Number: PCT/IB2016/051431
- (22) International Filing Date: 13 March 2016 (13.03.2016)
- (25) Filing Language: Polish
- (26) Publication Language: English
- (30) Priority Data: P.411590 13 March 2015 (13.03.2015) PL
- (72) Inventors; and
- (71) Applicants : **FRYJEWICZ, Piotr** [PL/PL]; Droga do Walczaków 25 A, 34-500 Zakopane (PL). **FRYJEWICZ, Grzegorz** [—/PL]; Droga do Walczaków 25 A, 34-500 Zakopane (PL). **GALBARCZYK, Paweł** [—/PL]; Bronisława Pukowca 10 A, 41-400 Mysłowice (PL). **GIEWONT, Bartek** [—/PL]; Droga do Walczaków, 34-500 Zakopane (PL). **KOBIĄŁKA, Bartłomiej** [—/PL]; Włoska 8B/24, 30-638 Kraków (PL). **SEKUŁA, Marcin** [—/PL]; Honoraty 6/59, 43-100 Tychy (PL). **LIGOCKI, Wiesław** [—/PL]; Narcyzów 6/11, 05-509 Józefosław (PL).
- (74) Agent: **KORGA, Leokadia**; Bereniki 6/7, 44-117 Gliwice (PL).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report (Rule 48.2(g))

(54) Title: MODULAR FLOATING PLATFORM

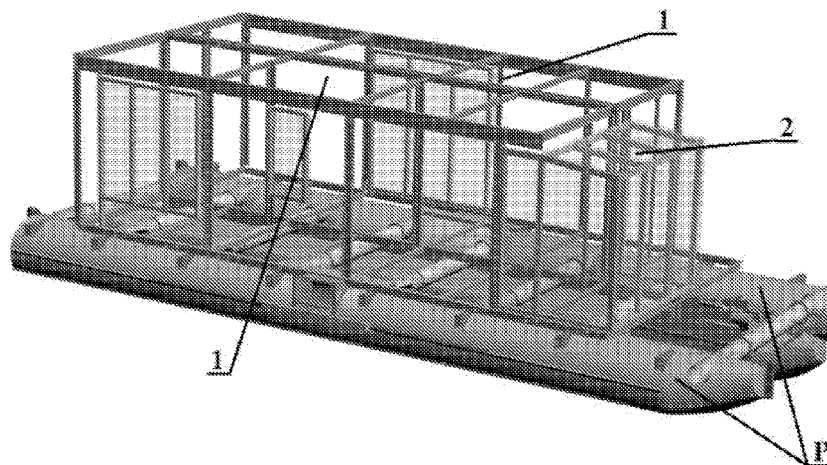


Fig 1

(57) Abstract: Modular floating platform especially for floating units of the catamaran type using beams and shaped profiles characterized in that the superstructure consists of modules, preferably two container modules (1), left and right, and preferably a front container module - the pilothouse (2), joined permanently but detachably preferably by means of screws and/or rivets and/or a system of joining modules, wherein modules (1) and (2) are set and permanently but detachably joined with pontoon hulls (P) preferably of the floating units of the catamaran type and/or a floating base and/or a floating platform.



Modular floating platform

The object of the invention is a modular floating platform for floating units of the catamaran type.

Constructions of the catamaran and trimaran type are widely used for maritime and inland navigation. Such constructions are recommended for boats intended for shallow waters navigation. Moreover, high level of lateral stability is a characteristic of units based on a construction with two pontoon hulls. A special type of a catamaran is a so called 'pontoonboot', where a pontoon hull construction is used. Units of this type are propelled by combustion engines.

The Polish patent no. 350804 provides a description of an take-down type cabin of a catamaran with a stiff roof and tent-like pliable walls, which is fixed to the deck of the catamaran, characterized in that it consists of a movable top cover, joined with hulls of an unmovable bottom platform, joined in the front by means of joints, which are boxes the side walls of which are polygons to the edges of which a tent-type material is fixed, which when unfolded becomes the walls with the entrance placed at the back.

The American patent no. WO 2012/148525 A1 provides a description of a catamaran, which may have a dinghy disposed underneath its foredeck between two hulls. The dinghy, which may rest in a cradle, may be moved up and down between a stowed position and a deployed position. The stern of the catamaran may have a retractable diving board or a retractable net for retrieving fish. A video camera may provide video images of an anchor chain relative to a hull as the anchor chain is deployed from and retracted by a windlass located generally amidships.

A monitor may display the video images. A microprocessor in communication with a depth sensor may calculate a length of anchor chain to be deployed and may control operation of the windlass.

Acoustic or optic sensors may indicate a position of the anchor chain relative to a hull. A yoke having a specially sized carabiner may be used to connect the anchor chain to a cleat.

The American patent no. WO 95/04675 provides a description of flexible fabric barges. The flexible fabric barges are connected together in a string for towing. The barges are interconnected by fabric sleeves which have zipper connections. A fabric towing cone is zipper connected to the lead barge

The French patent no. WO 2009/112876 A1 provides an invention which relates to a double- or triple-hull sea ship that comprises an assembly of photovoltaic cells sealed on a platform larger than the ship and covering the roof of the superstructure of the upper deck of the ship for powering the electric batteries of the boat that supply the electric energy to the propulsion diesel-electric hybrid engines.

The Finnish patent no. WO 2014/037612 A1 provides a description of a method for the installation of equipment aboard a ship, said method comprising constructing first a framework for a module for mounting thereon the machines and devices of an equipment unit, and said method comprising moving a prefabricated module aboard a ship into a space allocated for the module, whereby, as the prefabricated module is being delivered onto a ship, the module framework has its lowest section components dismantled for setting a lowermost equipment unit of the module in suspension from a remaining framework of the module.

The aim of the invention is to develop a new, solid superstructure which is easy to assemble and disassemble, and which when disassembled could be transported in standard sea containers.

Modular floating platform especially for floating units of the catamaran type using beams and shaped profiles characterized in that the superstructure consists of modules, preferably two container modules, left and right, and preferably a front container module – the pilothouse, joined permanently but detachably preferably by means of screws and/or rivets and/or a system of joining modules, wherein modules are set and permanently but detachably joined with pontoon hulls preferably of the floating units of the catamaran type and/or a floating base and/or a floating platform.

The superstructure consists of preferably two or four finished modules joined in the final stage of the boat manufacture.

The container module preferably is not bigger than the size of a high-cube 40 ft sea container for transport. The container module is built of elements – supporting shaped profiles which comprise the skeleton structure to which side walls, the floor and the ceiling are fixed.

The container module is additionally joined with another container module preferably from top and bottom by means of middle fasteners of shaped profiles with drills for clamping screws and/or rivets, and top and bottom fastening plates, wherein the whole joint is additionally blocked by means of guide plates.

The container module is additionally joined with another container module preferably from top and bottom by means of a middle stay-bolt of container modules, finished with spacer flat bars and fastened with screws.

Normalised cold rolled beams made of galvanized constructional steel with Z, C, L and Ω profiles and/or steel construction profiles with rectangular cross section are used as supporting/load-bearing elements. The system of joining modules consists of “locks” and elements fixing the positioning of modules, preferably by means of guide plates and guide plates fixing.

The shaped profiles of supporting elements are reinforced by means of at least one perpendicular fastener of a supporting shaped profile with a stabilizing insert, wherein the fastener preferably is welded and/or fixed with screws and/or rivets to the supporting profiles.

The shaped profiles of supporting elements are reinforced by means of at least one longitudinal fastener of a supporting shaped profile with a stabilizing insert, wherein the fastener preferably is welded and/or fixed with screws and/or rivets to the supporting profiles.

The shaped profiles of supporting elements are reinforced by means of at least one angle fastener of a supporting shaped profile with a stabilizing insert, wherein the fastener preferably is welded and/or fixed with screws and/or rivets to the supporting profiles.

The modules are equipped with walls or panels preferably walls filled with sandwich panels with a polyurethane core.

Each module is additionally joined in a permanent but detachable manner with pontoon hulls, preferably by means of a saddle construction installed on the pontoon hull.

The solution according to the invention is to use a unique detachable superstructure which allows for transportation by means of standard road transport as well as assembling the boat at a client's location. This aspect is particularly important as the

overall dimensions of a fully assembled HouseBoat (length: 12 m; width: 4.7 m; weight: ca 9000 kg).

In such a case the boat must be transported to a client by special means. Using prefabricated modules specially prepared for final assemblage with elements containing complete utility infrastructure and finish makes it possible to transport the whole superstructure with a set of pontoon hulls in three sets of heavy goods by means of sea containers if the transport were also to take place by sea. An additional advantage of using modular floating platforms is the assembly speed, which directly influences the time and cost saving in the case of assembling the boat at a client's location (overnight accommodation, food, labour cost).

A special light skeleton supporting structure was designed; it is made of two main modules, left and right, and an additional module – the pilothouse. The modular construction enables road transport to any location in the world – the whole superstructure fits into 2 closed 40' HC sea containers. Moreover, another advantage of the solution according to the invention is easy assemblage and disassemblage, as well as the precision with which the modules fit together. An additional advantage is reducing mass of the superstructure in order to attain as small displacement as possible for the catamaran and trimaran type of pontoon hulls. Moreover, the solution according to the invention enables keeping the maximum height of the boat on the 3m level while keeping the maximum possible distance between the floor and the ceiling in order to maximise users' comfort. Another advantage of the construction according to the solution is the reduced mass of the construction and increased durability.

The object of the invention is presented in the examples on the figures in which:

Fig.1 presents the modular construction according to the solution set permanently but detachably, joined with pontoon hulls of the Catamaran type .

Fig.2 presents container modules and the construction of the superstructure of the barge

Fig.3 presents the construction of the superstructure of the barge

Fig.4 presents the supporting profiles which comprise the bottom part of the frame of the superstructure of the barge

Fig.5 presents the supporting shaped profiles, which comprise the bottom part of the frame of the superstructure of the barge

Fig.6 presents the fasteners of the supporting shaped profiles.

Example

The superstructure consists of modules, two container modules (1), left and right, and preferably a front container module – the pilothouse (2), joined permanently but detachably preferably by means of screws and/or rivets and/or a system of joining modules, wherein modules (1) and (2) are set and permanently but detachably joined with pontoon hulls (P) of the floating units of the catamaran type and/or a floating base and/or a floating platform.

The container modules (1) and (2) are not bigger than the size of a high-cube 40 ft sea container for transport.

The container modules (1) and (2) is/are built of elements – supporting shaped profiles (3) which comprise the skeleton structure to which side walls, the floor and the ceiling are fixed.

The container module (1) is additionally joined with another container module (1) from top and bottom by means of middle fasteners of shaped profiles (8) with drills for clamping screws and/or rivets, and top and bottom fastening plates (11), wherein the whole joint is additionally blocked by means of guide plates.

The container module (1) is additionally joined with another container module (1) from top and bottom by means of a middle stay-bolt of container modules (9), finished with spacer flat bars (10) and fastened with screws.

Normalised cold rolled beams made of galvanized constructional steel with Z, C, L and Ω profiles and/or steel construction profiles with rectangular cross section are used as supporting/load-bearing elements (3).

The system of joining modules consists of “locks” and elements fixing the positioning of modules, preferably by means of guide plates and guide plates fixing (12).

The shaped profiles of supporting elements (3) are reinforced by means of at least one perpendicular fastener of a supporting shaped profile with a stabilizing insert (4), wherein the fastener (4) is welded and/or fixed with screws and/or rivets to the supporting profiles (3).

The shaped profiles of supporting elements (3) are reinforced by means of at least one longitudinal fastener of a supporting shaped profile with a stabilizing insert (5), wherein the fastener (5) is welded and/or fixed with screws and/or rivets to the supporting profiles (3).

The shaped profiles of supporting elements (3) are reinforced by means of at least one angle fastener of a supporting shaped profile with a stabilizing insert (6), wherein the fastener (6) is welded and/or fixed with screws and/or rivets to the supporting profiles (3).

The modules (1) and (2) are equipped with walls filled with sandwich panels with a polyurethane core.

Each module is additionally joined in a permanent but detachable manner with pontoon hulls by means of a saddle construction installed on the pontoon hull (P).

Claims

1. Modular floating platform using beams and shaped profiles **characterized in that** the superstructure consists of modules, preferably two container modules (1), left and right, and preferably a front container module – the pilothouse (2), joined permanently but detachably preferably by means of screws and/or rivets and/or a system of joining modules, wherein modules (1) and (2) are set and permanently but detachably joined with pontoon hulls (P) preferably of the floating units of the catamaran type and/or a floating base and/or a floating platform.
2. The modular floating platform according to claim 1, **characterized in that** the superstructure consists of preferably two or four finished modules (1) joined in the final stage of the boat manufacture.
3. The modular floating platform according to claim 1, **characterized in that** the container modules (1) and (2) preferably are not bigger than the size of a high-cube 40 ft sea container for transport.
4. The modular floating platform according to claim 1, **characterized in that** the container modules (1) and (2) are built of elements – supporting shaped profiles (3) which comprise the skeleton structure to which side walls, the floor and the ceiling are fixed.
5. The modular floating platform according to claim 1, **characterized in that** the container module (1) is additionally joined with another container module (1) preferably from top and bottom by means of middle fasteners of shaped profiles (8) with drills for clamping screws and/or rivets, and top and bottom fastening plates (11), wherein the whole joint is additionally blocked by means of guide plates.
6. The modular floating platform according to claim 1, **characterized in that** the container module (1) is additionally joined with another container module (1) preferably from top and bottom by means of a middle stay-bolt of container modules (9), finished with spacer flat bars (10) and fastened with screws.

7. The modular floating platform according to claims 1 and 4, **characterized in that** the shaped profiles of supporting elements (3) are reinforced by means of at least one perpendicular fastener of a supporting shaped profile with a stabilizing insert (4), wherein the fastener (4) preferably is welded and/or fixed with screws and/or rivets to the supporting profiles (3).
8. The modular floating platform according to claims 1 and 4, **characterized in that** the shaped profiles of supporting elements (3) are reinforced by means of at least one longitudinal fastener of a supporting shaped profile with a stabilizing insert (5), wherein the fastener (5) preferably is welded and/or fixed with screws and/or rivets to the supporting profiles (3).
9. The modular floating platform according to claims 1 and 4, **characterized in that** the modules (1) and (2) are equipped with walls or panels preferably walls filled with sandwich panels with a polyurethane core.
10. The modular floating platform according to claim 1, **characterized in that** each module is additionally joined in a permanent but detachable manner with pontoon hulls, preferably by means of a saddle construction installed on the pontoon hull (P).

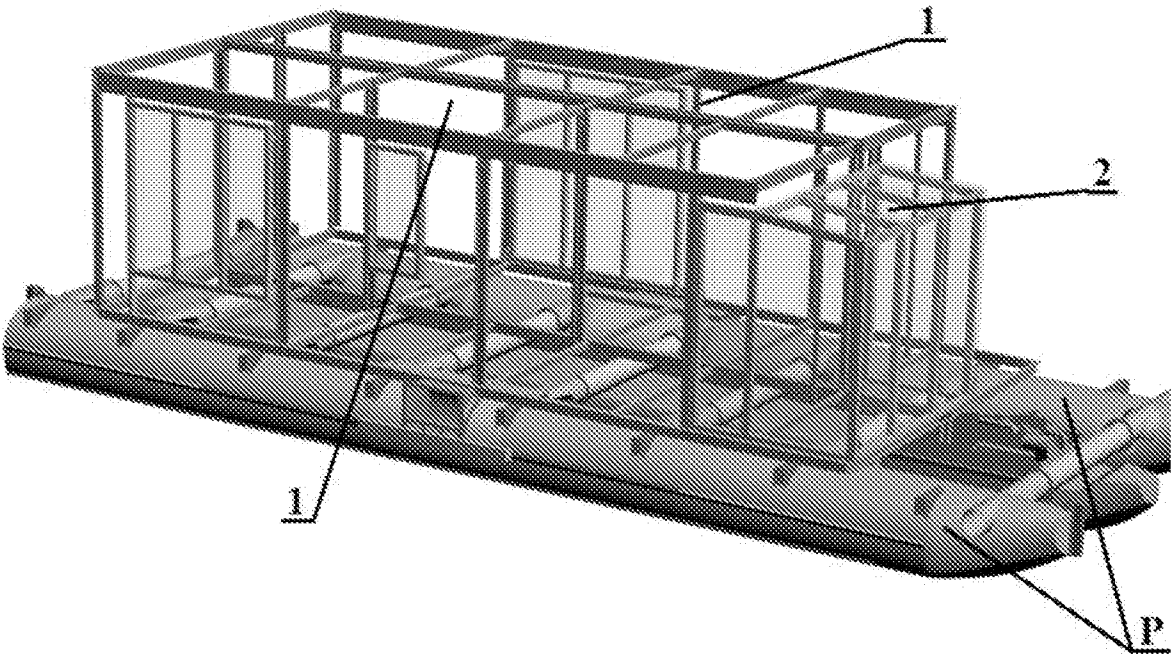


Fig 1

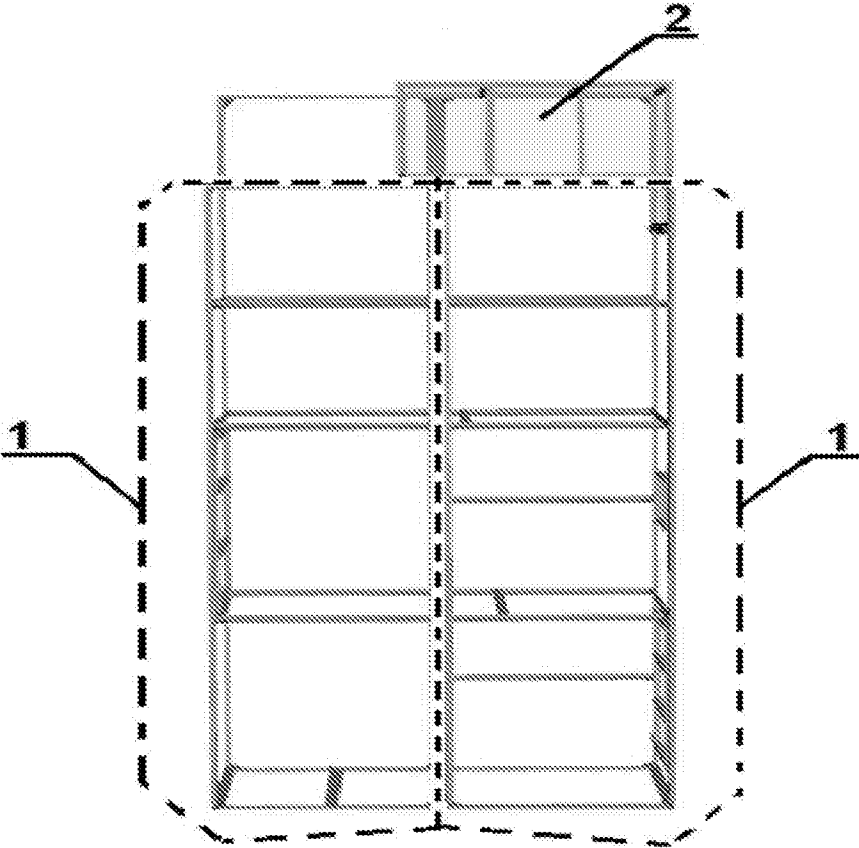


Fig. 2

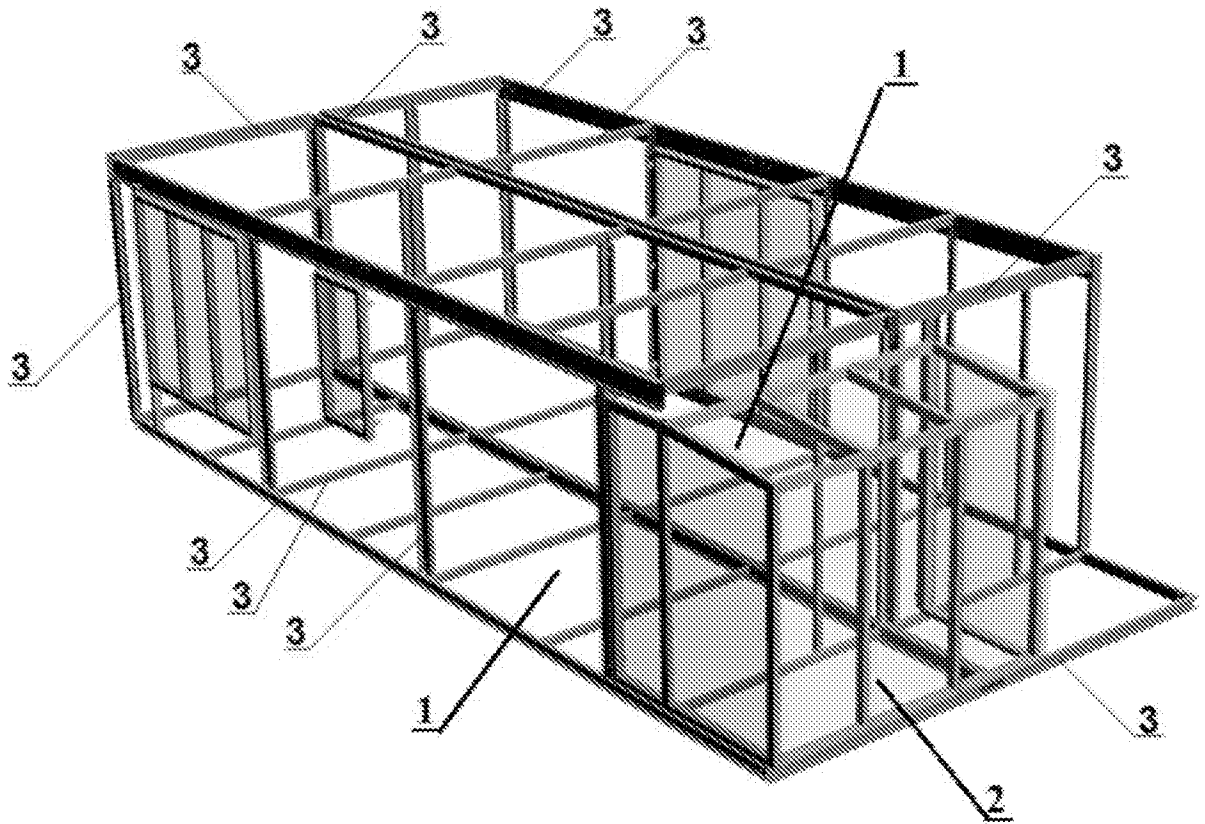


Fig. 3

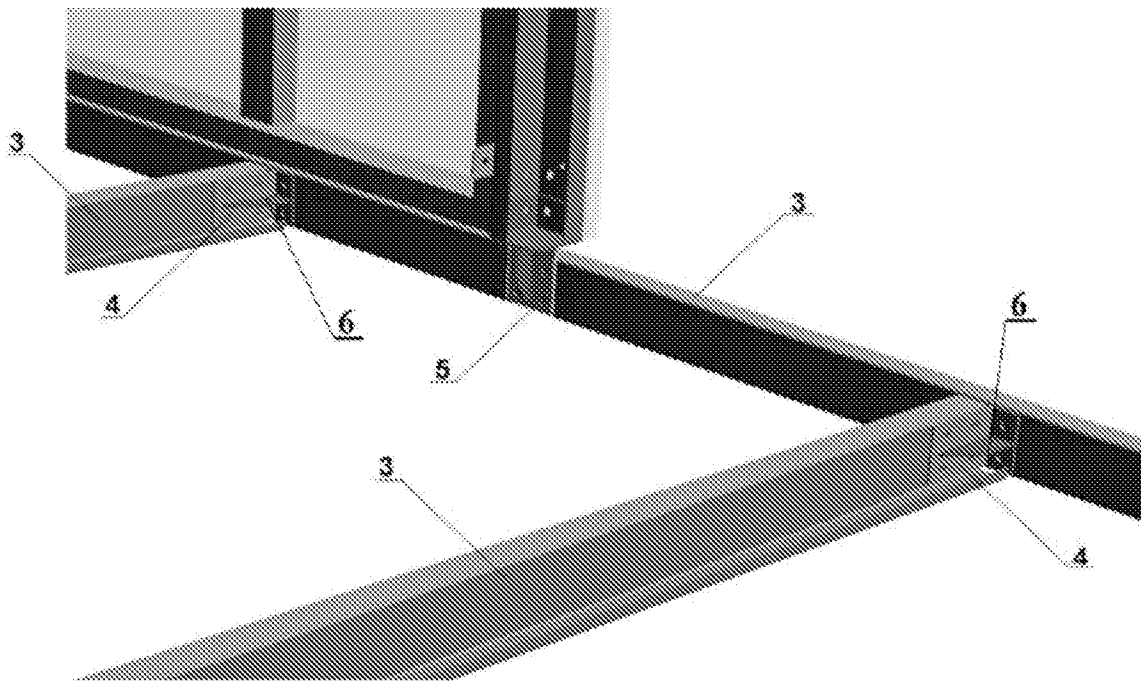


Fig. 4

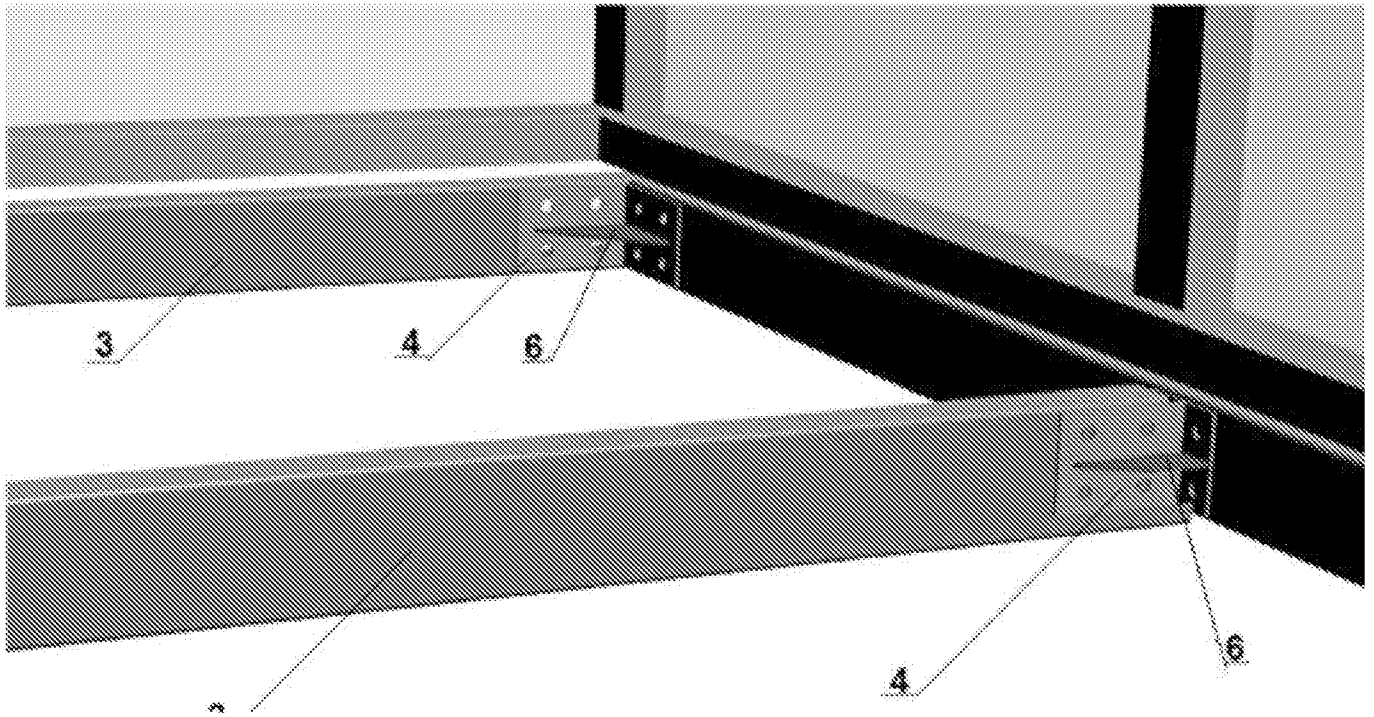


Fig. 5

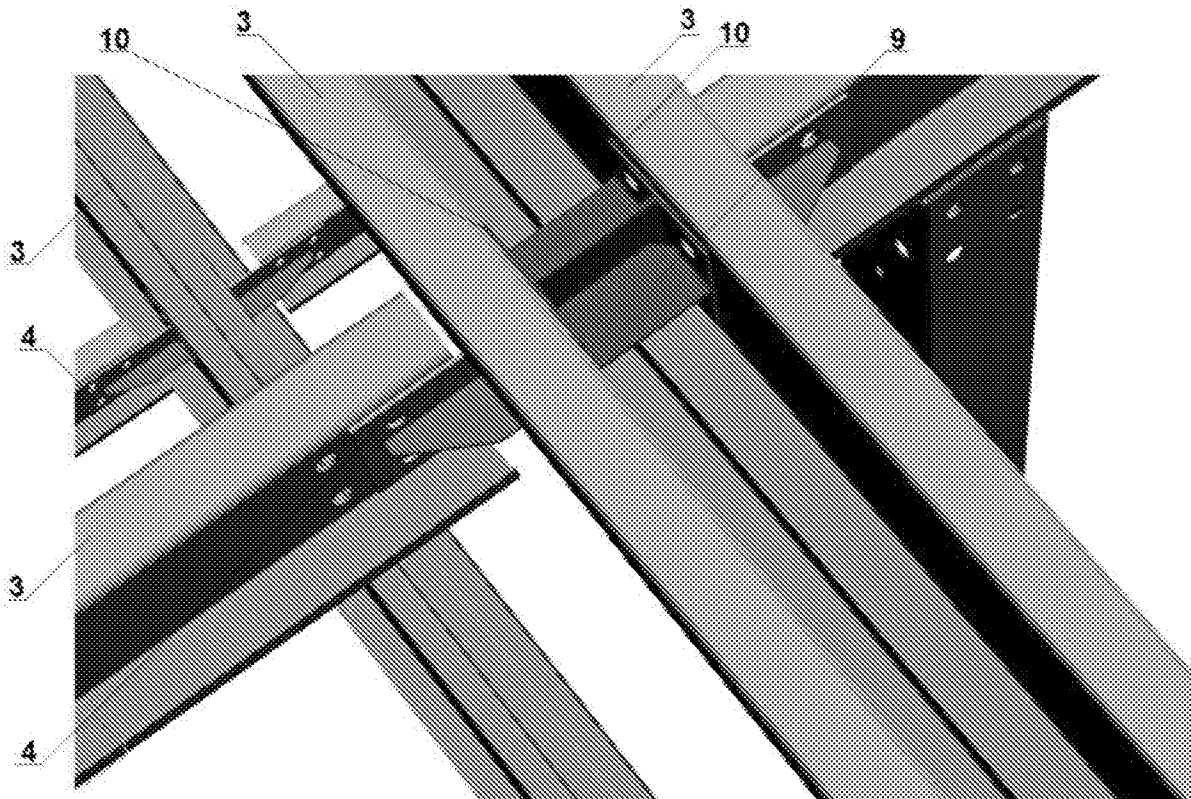


Fig. 6