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(54) Cargo loading ship and method of performing the same

(57) A cargo loading ship including a plurality of side walls (120) being projected toward an upper side of a hull (110), a deck house (130) being located on the plurality of side walls and a cargo loading unit (140) being at least enclosed with a lower side of the deck house and opposing surfaces of the plurality of side walls and being opened along a longitudinal direction of the hull. The cargo loading ship includes a movable accommodation to maximize a number of a cargo being loaded in a ship.

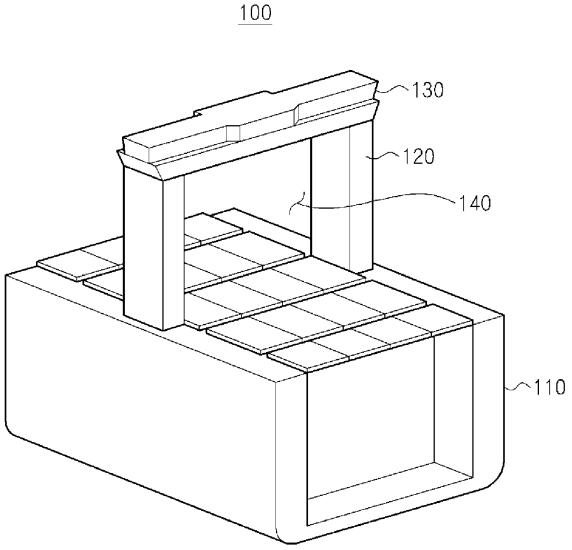

FIG. 1(a)

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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Pursuant to 35 U.S.C. § 119(a), this application claims the benefit of earlier filing date and right of priority to Korean Patent Application Nos. 10-2013-0153465 (December 10, 2013), 10-2014-0060018 (May 19, 2014), 10-2014-0066886 (June 02, 2014) and 10-2014-0152720 (November 05, 2014) the contents of which are hereby incorporated by reference herein in their entirety.

BACKGROUND OF THE INVENTION

Field of the Invention

[0002] The present invention relates to a cargo loading technology and more particularly to a cargo loading ship and a cargo loading method maximizing a cargo cavity of a ship.

Background of the Invention

[0003] In general, a ship accommodation is located on a upper side of an engine room (in a 1-Island type) or a upper side of a cargo hold (in a 2-Island type) being positioned on a center of a hull and is integrally contacted with the hull. Also, the ship accommodation includes various living facilities for sailors sailing during a long time.

[0004] The Korean Patent Publication No. 10-2010-0069982 relates to a container ship arranging an accommodation on a center thereof and having the accommodation space which is separated from an engine room section and a fuel oil tank which is located under the accommodation space. The container ship may improve a navigation bridge visibility on sailing, loading more containers than a container with a same size on upper side of a deck and doubly protecting a fuel oil tank. Also, the container ship may prevent a vibration and a noise transfer from the engine room to maintain a comfortable accommodation environment in comparison with a ship having an accommodation adjacent to the engine room section.

[0005] The Korean Patent Publication No. 10-2012-0105306 relates to a method and an apparatus for loading a container under an accommodation area of a container ship capable of arranging an accommodation area and a fuel tank in different area. The method may increase a design freedom for an optimal container ship to minimize the total number of loadable containers.

[0006] A fuel oil or other machineries (e.g., an electric wire) is arranged in an accommodation lower space and an available space exists in the accommodation lower space with a surrounding space of the accommodation so that a conventional ship is inefficient in view of a space application.

Summary of the Invention

[0007] Example embodiments of the present invention propose a cargo loading ship capable of maximizing a cargo capacity of a ship.

[0008] Example embodiments of the present invention propose a cargo loading ship capable of opening a lower side of a deck house toward a longitudinal direction of a ship to maximize a cargo capacity of a ship. For this, an embodiment of the present invention may move at least deck house toward the longitudinal direction of the ship.

[0009] Example embodiments of the present invention propose a cargo loading ship capable of including a deck house being floated for itself when an emergency situation is generated.

[0010] In some embodiments, a cargo loading ship includes a plurality of side walls being projected toward a upper side of a hull, a deck house being located on the plurality of side walls and a cargo loading unit being at least enclosed with a lower side of the deck house and opposing surfaces of the plurality of side walls and being opened along a longitudinal direction of the hull.

[0011] In one embodiment, the plurality of side walls may include movable side walls configured to be movable toward the longitudinal direction of the hull with the deck house and movable supporting units configured to be subsided under the hull or be projected from the hull to support a movement of the movable side walls.

[0012] The movable supporting units may be arranged on upper sides of the hull along a moving direction of the hull and may limit moving distances of the movable side walls. The movable supporting units may include stoppers for stopping a movement of the movable side walls at both sides thereof.

[0013] The deck house and the movable side walls may be integrally formed to be bended toward the movable supporting units. At least part of the movable side walls may include an accommodation. The deck house and the movable supporting units may support the movement through a driving wheel, a sliding rail or a rack pinion gear.

[0014] In one embodiment, the cargo loading ship may include an action detection sensor configured to provide a deviation of the movable side walls when the movable side walls move.

[0015] The plurality of side walls may include the movable supporting units configured to support a movement of the deck house along the longitudinal direction of the hull, the movable supporting units being formed at a lower side of the deck house.

[0016] In one embodiment, the deck house may at least include a watertight bulkhead being formed under both sides thereof. The deck house may be separated from the plurality of side walls when a certain level of buoyancy is applied to the watertight bulkhead. The cargo loading unit may be separated from a cargo hold through a hatch cover opening or closing the upper side of the hull.

[0017] In some embodiment, a method of loading a ship cargo includes moving a deck house from a first location to a second location along a longitudinal direction of a hull, the deck house being located on a upper side of a plurality of side walls, loading a cargo in a cargo loading space being at least enclosed with a lower side of the deck house and opposing surfaces of the plurality of side walls, the deck house being located on the first location and returning the deck house from the second location to the first location.

[0018] In one embodiment, moving the deck house from the first location to a second location may include moving movable side walls in the plurality of side walls combining the deck house.

[0019] Loading the cargo in the cargo loading space may include opening the upper side of the hull through a hatch cover to load the cargo in a cargo hold and closing the hatch cover to load the cargo on the upper side of the hull.

[0020] The cargo loading ship and related technologies according to an example embodiment may maximize a cargo capacity of a ship.

[0021] The cargo loading ship and related technologies according to an example embodiment may open a lower side of a deck house toward a longitudinal direction of a ship to maximize a cargo capacity of a ship. For this, an embodiment of the present invention may move at least deck house toward the longitudinal direction of the ship.

[0022] The cargo loading ship and related technologies according to an example embodiment may include a deck house being floated for itself when an emergency situation is generated.

Brief Description of the Drawings

[0023]

FIG. 1 is a diagram illustrating a cargo loading ship according to an example embodiment.

FIG. 2 is a diagram illustrating a cargo loading ship according to another example embodiment.

FIG. 3 is a diagram illustrating a cargo loading ship according to other example embodiment.

FIG. 4 is a cross-sectional diagram illustrating a cargo loading ship in FIG. 1.

FIG. 5 is a cross-sectional diagram illustrating a plurality of cartridges loaded in a cargo loading ship in FIG. 1.

FIG. 6 is a diagram illustrating a movable member supporting a movement of a deck house and movable supporting units of an example embodiment.

FIG. 7 is a diagram illustrating a floating function by a watertight bulkhead formed in a deck house.

FIG. 8 is a diagram illustrating a cargo loading procedure in a cargo loading ship in FIG. 2.

Detailed Description of the Embodiments

[0024] Explanation of the present invention is merely an embodiment for structural or functional explanation, so the scope of the present invention should not be construed to be limited to the embodiments explained in the embodiment. That is, since the embodiments may be implemented in several forms without departing from the characteristics thereof, it should also be understood that the described embodiments are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its scope as defined in the appended claims. Therefore, various changes and modifications that fall within the scope of the claims, or equivalents of such scope are therefore intended to be embraced by the appended claims.

[0025] The terms used in the present application are merely used to describe particular embodiments, and are not intended to limit the present invention. Unless otherwise defined, all terms used herein, including technical or scientific terms, have the same meanings as those generally understood by those with ordinary knowledge in the field of art to which the present invention belongs. Such terms as those defined in a generally used dictionary are to be interpreted to have the meanings equal to the contextual meanings in the relevant field of art, and are not to be interpreted to have ideal or excessively formal meanings unless clearly defined in the present application.

[0026] FIG. 1 is a diagram illustrating a cargo loading ship according to an example embodiment.

[0027] Referring to FIG. 1, a cargo loading ship 100 includes a hull 110, a plurality of side walls 120, a deck house 130 and a cargo loading unit 140.

[0028] The hull 110 includes a plurality of cargo holds loading a plurality of cargos 10 through an external crane installed on a dock or a harbor. In one embodiment, the plurality of cargo holds may be divided through a hull transverse bulkhead being installed in a transverse direction under a deck of the hull 110.

[0029] The hull 110 may arrange the plurality of side walls 120 at both sides of a upper side of the hull 110 (i.e., the deck). That is, the both sides of the deck in the hull 110 may support the plurality of side walls 120 and lengths of the both sides of the deck may be longer than widths of the plurality of side walls 120.

[0030] The plurality of side walls 120 is projected toward a upper side of the hull 110 to be arranged on each of both of the hull 110. The plurality of side walls 120 may be arranged on a position corresponding to each of both sides of the hull 110 (i. e., front and back of each of the both sides are arranged on a same extension) to support the deck house 130. The plurality of side walls 120 may be respectively connected to one side and another side of the deck house 130 to be integrally formed with the deck house 130. The plurality of side walls 120 may be formed with a different length and width according to at

least one of a type and size of the cargo loading ship 100.

[0031] In one embodiment, the plurality of side walls 120 may support a movement through a driving wheel, a sliding rail or a rack pinion gear. For example, the driving wheel is arranged under the plurality of side walls 120 so that the plurality of side walls 120 may move toward a longitudinal direction of the hull 110 along the sliding rail arranged on both of the hull 110.

[0032] The deck house 130 may be arranged on the plurality of side walls 120 to connect the plurality of side walls 120. The deck house 130 may include a space related with a ship operation and a living space of sailors. That is, the deck house 130 includes a wheel house and an accommodation. In one embodiment, the deck house 130 may be integrally formed with the plurality of side walls 120 to move toward the longitudinal direction of the hull 110 according to a movement of the plurality of side walls 120 with a bended shape opened in the longitudinal direction of the hull 110.

[0033] The cargo loading unit 140 is at least enclosed with a lower side of the deck house 130 and opposing surfaces of the plurality of side walls 120 and being opened along the longitudinal direction of the hull 110. The cargo loading unit 140 may be separated from the cargo hold in the hull 110 through a hatch cover 160 opening or closing the upper side of the hull 110. In one embodiment, the cargo loading unit 140 may not be opened in the longitudinal direction of the hull 110 and may be formed with a space closed in a stem or stern direction.

[0034] In one embodiment, the cargo loading ship 100 may further include an action detection sensor (not shown). The action detection sensor (not shown) may provide a deviation of the plurality of side walls 120 on a moving procedure of the plurality of side walls 120. The action detection sensor (not shown) may be controlled through a monitoring in the deck house 130 and may prevent a breakaway or a damage of the plurality of side walls 120. For example, the action detection sensor (not shown) may be implemented as a laser sensor. When a laser is transmitted to the plurality of side walls 120 and then a reflected laser is received from the plurality of side walls 120, the action detection sensor (not shown) may decide that the plurality of side walls 120 is not deviated and when the reflected laser are not received from the plurality of side walls 120, the action detection sensor (not shown) may decide that the plurality of side walls 120 are deviated.

[0035] FIG. 2 is a diagram illustrating a cargo loading ship according to another example embodiment.

[0036] Referring to FIG. 2, a cargo loading ship 200 includes the hull 110, movable side walls 220, movable supporting units 230, the deck house 130 and a cargo loading unit 240.

[0037] The hull 110 and the deck house 130 are omitted. This is because a description of the hull 110 and the deck house 130 in FIG. 2 are same with the hull 110 and the deck house 130 in FIG. 1.

[0038] The movable side walls 220 are included in the plurality of side walls 120 and may move toward the longitudinal direction of the hull 110 with the deck house 130. A movement of the movable side walls 220 may be supported by the movable supporting units 230. The movable side walls 220 may be integrally formed with the deck house 130 to be bended toward a direction of the movable supporting units 230. At least part of the movable side walls 220 may include an accommodation.

[0039] In one embodiment, the movable side walls 220 may support a movement through the driving wheel, the sliding rail or the rack pinion gear. For example, the driving wheel is arranged under the movable side walls 220 so that the movable side walls 220 may move toward the longitudinal direction of the hull 110 along the sliding rail arranged on both of the movable supporting units 230.

[0040] The movable supporting units 230 are included in the plurality of side walls 120 and may be subsided under the hull 110 or be projected from the hull 110 to support a movement of the movable side walls 220. The movable supporting units 230 may be arranged at sides of the hull 110 along a moving direction of the hull 110 and may limit moving distances of the movable side walls 220. In one embodiment, the movable supporting units 230 are formed with more length than the length of the movable side walls 220 (i.e., the length corresponding to the longitudinal direction of the hull 110) to support the movement of the movable side walls 220 toward the longitudinal direction of the hull 110.

[0041] The movable supporting units 230 may include stoppers for stopping the movement of the movable side walls 220 at both sides of the movable supporting units 230. The stoppers may stop the movement of the movable side walls 220 on a second position when the movable side walls 220 move from a first position to a second position.

[0042] The cargo loading unit 240 may at least enclosed with the lower side of the deck house 130 and opposing surfaces of the movable side walls 220 and the movable supporting units 230 and may be opened along the longitudinal direction of the hull 110.

[0043] In one embodiment, the cargo loading ship 200 may further include an action detection sensor (not shown). The action detection sensor (not shown) may provide a deviation of the movable side walls 220 on a moving procedure of the movable side walls 220. The action detection sensor (not shown) may be controlled through a monitoring in the deck house 130 and may prevent a breakaway or a damage of the movable side walls 220. For example, the action detection sensor (not shown) may be implemented as a laser sensor. When a laser is transmitted to the movable side walls 220 and then a reflected laser is received from the movable side walls 220, the action detection sensor (not shown) may decide that the movable side walls 220 are not deviated and when the reflected laser is not received from the movable side walls 220, the action detection sensor (not shown) may decide that the movable side walls 220 are

deviated.

[0044] FIG. 3 is a diagram illustrating a cargo loading ship according to other example embodiment.

[0045] Referring the FIG. 3, a cargo loading ship 300 includes the hull 110, a plurality of side walls 320, the deck house 130 and a cargo loading unit 340.

[0046] The hull 110 and the deck house 130 are omitted. This is because a description of the hull 110 and the deck house 130 in FIG. 3 are same with the hull 110 and the deck house 130 in FIG. 1.

[0047] The plurality of side walls 320 may include movable supporting units supporting the movement of the deck house 130 along the longitudinal direction of the hull 110 and the movable supporting units are formed under the deck house 130. The plurality of side walls 320 is formed with more length than the length of the deck house 130 (i.e., the length corresponding to the longitudinal direction of the hull 110) to support the movement of the deck house 130 toward the longitudinal direction of the hull 110. The plurality of side walls 320 may include stoppers for stopping a movement of the deck house 130 at both sides of the plurality of side walls 320.

[0048] In one embodiment, the plurality of side walls 320 may support the movement through the driving wheel, the sliding rail or the rack pinion gear. For example, the sliding rail is arranged on the plurality of side walls 320 so that the driving wheel arranged under both sides of the deck house 130 may move toward the longitudinal direction of the hull 110 along the sliding rail arranged on both of the deck house 130.

[0049] The cargo loading unit 340 is at least enclosed with the lower side of the deck house 130 and opposing surfaces of the plurality of side walls 320 and is opened along the longitudinal direction of the hull 110.

[0050] In one embodiment, the cargo loading ship 300 may further include an action detection sensor (not shown). The action detection sensor (not shown) may provide a deviation of the plurality of side walls 320 on a moving procedure of the plurality of side walls 320. The action detection sensor (not shown) may be controlled through a monitoring in the deck house 130 and may prevent a breakaway or a damage of the plurality of side walls 320. For example, the action detection sensor (not shown) may be implemented as a laser sensor. When a laser is transmitted to the plurality of side walls 320 and then a reflected laser is received from the plurality of side walls 320, the action detection sensor (not shown) may decide that the plurality of side walls 320 is not deviated and when the reflected laser is not received from the plurality of side walls 320, the action detection sensor (not shown) may decide that the plurality of side walls 320 is deviated.

[0051] Meanwhile, figurations of the hull 110, the plurality of side walls 120 and 320, the movable side walls 220, the movable supporting units 230 and the deck house 130 described in FIGS. 1,2 and 3 are used for convenience' sake to explain an example embodiment but should not be used to limit a scope of the present invention. Also, the hull 110, the plurality of side walls 120 and 320, the movable side walls 220, the movable supporting units 230 and the deck house 130 can modify a size or shape according to a design requirement of a ship.

[0052] FIG. 4 is a cross-sectional diagram illustrating a cargo loading ship in FIG. 1.

[0053] Referring to FIG. 4, the cargo loading ship 100 may include a hatch 150 and a hatch cover 160 or may not include the hatch 150 and the hatch cover 160. FIG. 4(a) is a cross-sectional diagram illustrating a cargo loading ship 100 that the hatch 150 and the hatch cover 160 are arranged in the cargo loading ship 100 and FIG. 4(b) is a cross-sectional diagram illustrating a cargo loading ship 100 that the hatch 150 and the hatch cover 160 are not arranged in the cargo loading ship 100.

[0054] The hatch 150 corresponds to an opening unit formed on the hull 110 (i.e., a top deck) for loading the plurality of cargos 10 in the cargo hold and the hatch cover 160 is arranged on the hatch 150.

[0055] The hatch cover 160 may be formed on the hatch 150 to separate the cargo loading unit 140 from the cargo hold. The hatch cover 160 is a device opening or closing the hatch 150 and may be manufactured with a steel material. In one embodiment, the hatch cover 160 may be manufactured with a sufficient strength for maintaining a safety from an external shock and an excellent watertight (herein, the watertight is a status that a water filled in any part of a machine or a device is not leaked out and is sealed).

[0056] The hatch cover 160 may be operated by a machine to be implemented for quickly opening and closing the hatch cover 160. For example, the hatch cover 160 may be implemented as one of a pontoon type, a single type, a folding type or a rolling type.

[0057] A procedure of loading the cargo may be similarly applied to a cargo loading ship 100 including the hatch 150 and the hatch cover 160 and a cargo loading ship 100 not including the hatch 150 and the hatch cover 160.

[0058] FIG. 5 is a cross-sectional diagram illustrating a plurality of cartridges loaded in a cargo loading ship in FIG. 1.

[0059] Referring to FIG. 5, at least one of the plurality of cargos 10 and a plurality of exchangeable cartridges may be loaded in the plurality of cargo holds. A fuel (e.g., LNG or oil) being used for sailing the ship is stored in the plurality of cartridges 20 and a bunkering procedure is omitted. Herein, the bunkering procedure corresponds that the fuel is loaded in the cargo holds formed under the deck house 130 to be supplied to the ship on a sea. In one embodiment, the plurality of cartridges 20 may be loaded and may be singly exchangeable.

[0060] FIG. 6 is a diagram illustrating a movable member supporting a movement of a deck house and movable supporting units of an example embodiment.

[0061] Referring to FIG. 6, a movable member may be implemented as the driving wheel, the sliding rail or the

rack pinion gear. Hereinafter, it is assumed that the movable member is implemented as the driving wheel and the sliding rail.

[0062] The sliding rail 610 may be projected with a certain height so that the H-shaped driving wheel 620 may move along a upper side of the sliding rail 610. The sliding rail 610 may be fixed on the hull 110, the movable supporting units 230 or the plurality of side walls 320 through a rail clamp.

[0063] The driving wheel 620 may be accommodated in a groove with a certain depth formed under each of both sides of the plurality of side walls 120, the movable side walls 220 or the deck house 130 to be connected with the plurality of side walls 120, the movable side walls 220 or the deck house 130 through a specific axis (not shown). The driving wheel 620 may be formed by the plural to smoothly move toward the longitudinal direction of the hull 110.

[0064] FIG. 7 is a diagram illustrating a floating function by a watertight bulkhead formed in a deck house.

[0065] Referring to FIG. 7, a watertight bulkhead 710 is at least formed under both of the deck house 130 so that the deck house 130 may be separated from the plurality of side walls 120. The watertight bulkhead 710 may be formed on a boundary surface of the deck house 130 and the plurality of side walls 120 to compart the deck house 130 and the plurality of side walls 120. When the certain level of buoyancy is applied to the watertight bulkhead 710 by waterlogging of the plurality of side walls 120, an assembly of the watertight bulkhead 710 and the plurality of side walls 120 may be disassembled to separate the deck house 130 from the plurality of side walls 120.

[0066] The deck house 130 is separated from the plurality of side walls 120 to be floated on seawater by the watertight bulkhead 710.

[0067] FIG. 8 is a diagram illustrating a cargo loading procedure in a cargo loading ship in FIG. 2.

[0068] Referring to FIG. 8, it is assumed that the cargo 10 is loaded all space excluding the cargo loading unit 240 and a lower cargo hold of the cargo loading unit 240, a procedure of loading the cargo 10 in the cargo loading ship 200 will be described in below.

[0069] The deck house 130 located on the plurality of side walls 120 moves from the first position to the second position along the longitudinal direction of the hull 110 (a).

[0070] The upper side of the hull 110 is opened through the hatch cover 160 and then the cargo 10 is loaded in at least the cargo hold under of the deck house 130 (b).

[0071] The hatch cover 160 is closed and then the cargo 10 is loaded in the cargo loading space being at least enclosed with the lower side of the deck house 130 and the opposing surfaces of the plurality of side walls 220 and 230 (c).

[0072] The deck house 130 is returned from the second position to the first position (d).

[0073] The upper side of the hull 110 is opened through the hatch cover 160 and then the cargo 10 is loaded at least the cargo hold under the deck house 130 at the second position (e).

[0074] The hatch cover 160 is closed and then the cargo 10 is loaded in the cargo loading space being at least enclosed with the lower side of the deck house 130 and the opposing surfaces of the plurality of side walls 220 and 230 (f).

[0075] In one embodiment, the cargo loading ship 200 may include an adequate mark or guide to load the cargo 10 by avoiding an interference of the deck house 130.

[0076] Although this document provides descriptions of preferred embodiments of the present invention, it would be understood by those skilled in the art that the present invention can be modified or changed in various ways without departing from the technical principles and scope defined by the appended claims.

Description of symbols

[0077]

100, 200, 300 : CARGO LOADING SHIP
110 : HULL
120, 320 : A PLURALITY OF SIDE WALLS
130 : DECK HOUSE
140, 240, 340 : CARGO LOADING UNIT
150 : HATCH 160 : HATCH COVER
220 : MOVABLE SIDE WALLS
230 : MOVABLE SUPPORTING UNITS
610, 620 : MOVABLE MEMBER
710 : WATERTIGHT BULKHEAD
10 : CARGO 20 : CARTRIDGE

Claims

1. A cargo loading ship comprising:

   a plurality of side walls being projected toward a upper side of a hull;
   a deck house being located on the plurality of side walls; and
   a cargo loading unit being at least enclosed with a lower side of the deck house and opposing surfaces of the plurality of side walls and being opened along a longitudinal direction of the hull.

2. The cargo loading ship of claim 1, wherein the plurality of side walls includes
   movable side walls configured to be movable toward the longitudinal direction of the hull with the deck house; and
   movable supporting units configured to be subsided under the hull or be projected from the hull to support a movement of the movable side walls.

3. The cargo loading ship of claim 2, wherein the movable supporting units are arranged on upper sides

of the hull along a moving direction of the hull and limit moving distances of the movable side walls.

4. The cargo loading ship of claim 3, wherein the movable supporting units include stoppers for stopping a movement of the movable side walls at both sides thereof.

5. The cargo loading ship of claim 2, wherein the deck house and the movable side walls are integrally formed to be bended toward the movable supporting units.

6. The cargo loading ship of one of claims 2 to 5, wherein at least part of the movable side walls includes an accommodation.

7. The cargo loading ship of one of claims 2 to 6, wherein the deck house and the movable supporting units support the movement through a driving wheel, a sliding rail or a rack pinion gear.

8. The cargo loading ship of one of claims 2 to 7, further comprising:

an action detection sensor configured to provide a deviation of the movable side walls when the movable side walls move.

9. The cargo loading ship of one of claims 1 to 8, wherein the plurality of side walls includes the movable supporting units configured to support a movement of the deck house along the longitudinal direction of the hull, the movable supporting units being formed at a lower side of the deck house.

10. The cargo loading ship of one of claims 1 to 9, wherein the deck house at least includes a watertight bulkhead being formed under both sides thereof.

11. The cargo loading ship of claim 10, wherein the deck house is separated from the plurality of side walls when a certain level of buoyancy is applied to the watertight bulkhead.

12. The cargo loading ship of one of claims 1 to 11, wherein the cargo loading unit is separated from a cargo hold through a hatch cover opening or closing the upper side of the hull.

13. A method of loading a ship cargo comprising:

moving a deck house from a first location to a second location along a longitudinal direction of a hull, the deck house being located on a upper side of a plurality of side walls;
loading a cargo in a cargo loading space being at least enclosed with a lower side of the deck house and opposing surfaces of the plurality of side walls, the deck house being located on the first location; and
returning the deck house from the second location to the first location.

14. The method of claim 13, wherein moving the deck house from the first location to a second location includes moving movable side walls in the plurality of side walls combining the deck house.

15. The method of claim 14, wherein loading the cargo in the cargo loading space includes
opening the upper side of the hull through a hatch cover to load the cargo in a cargo hold; and
closing the hatch cover to load the cargo on the upper side of the hull.

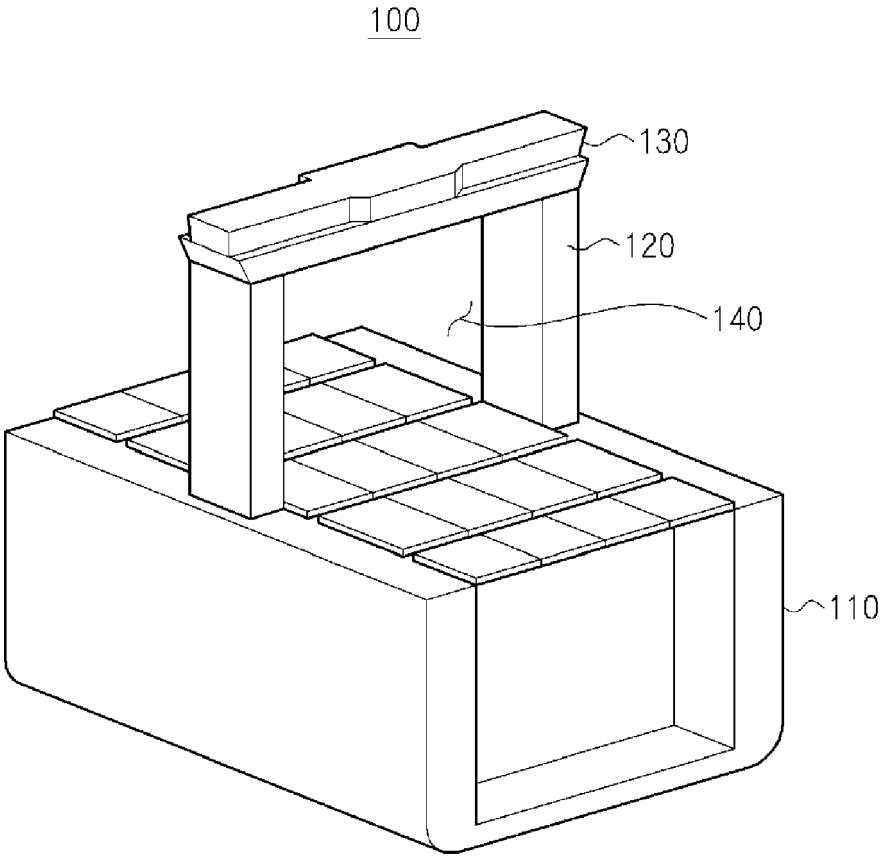

FIG. 1(a)

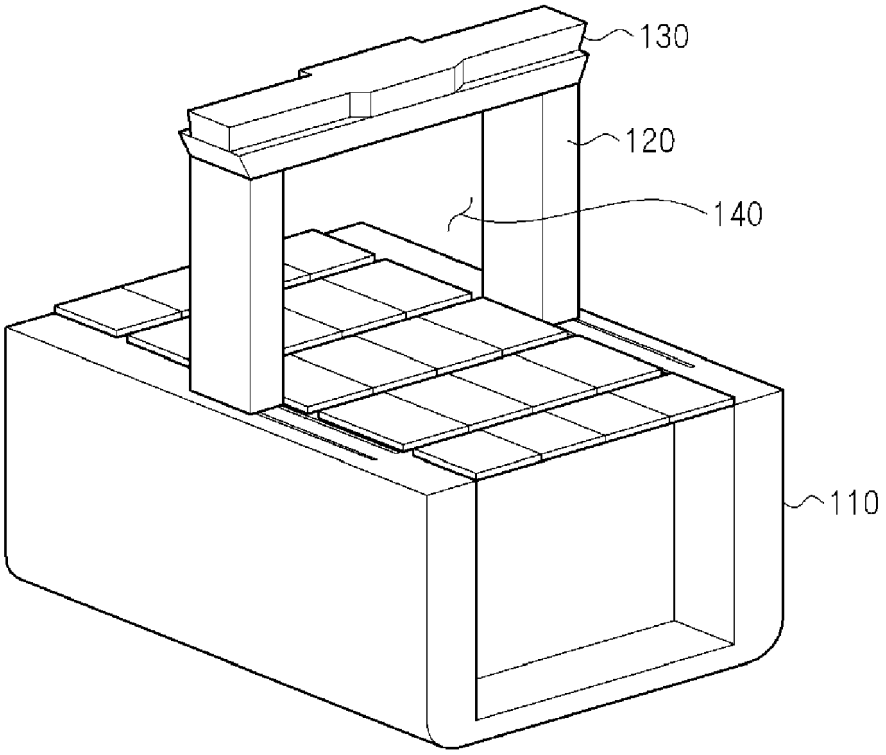

FIG. 1(b)

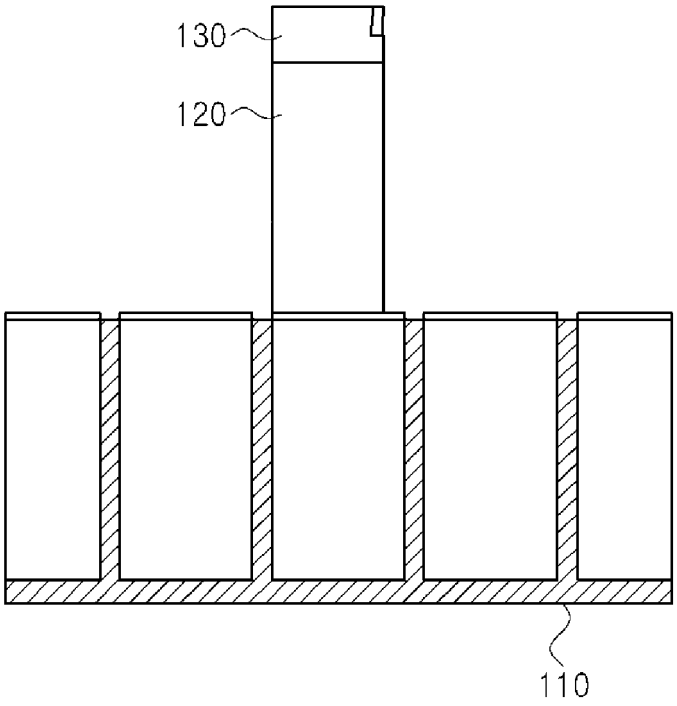

FIG. 1(c)

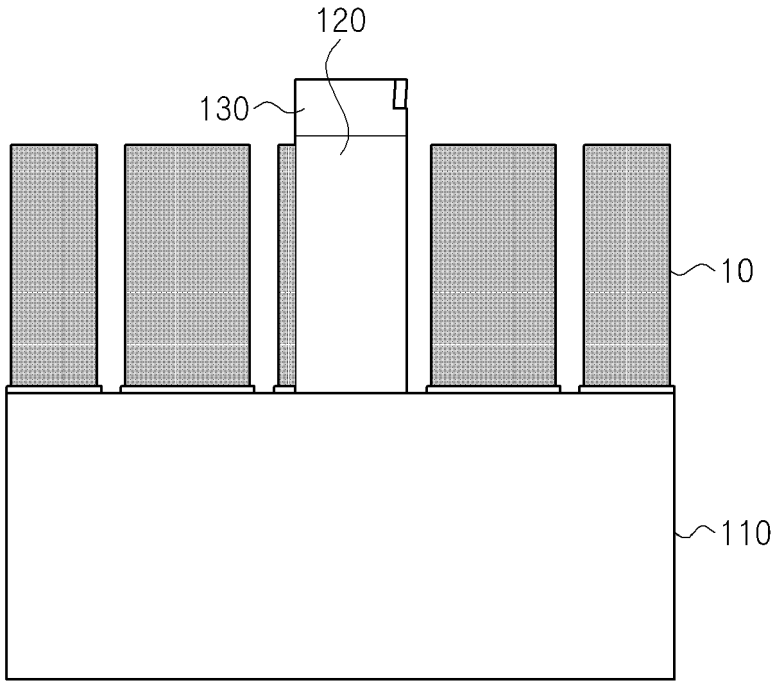

FIG. 1(d)

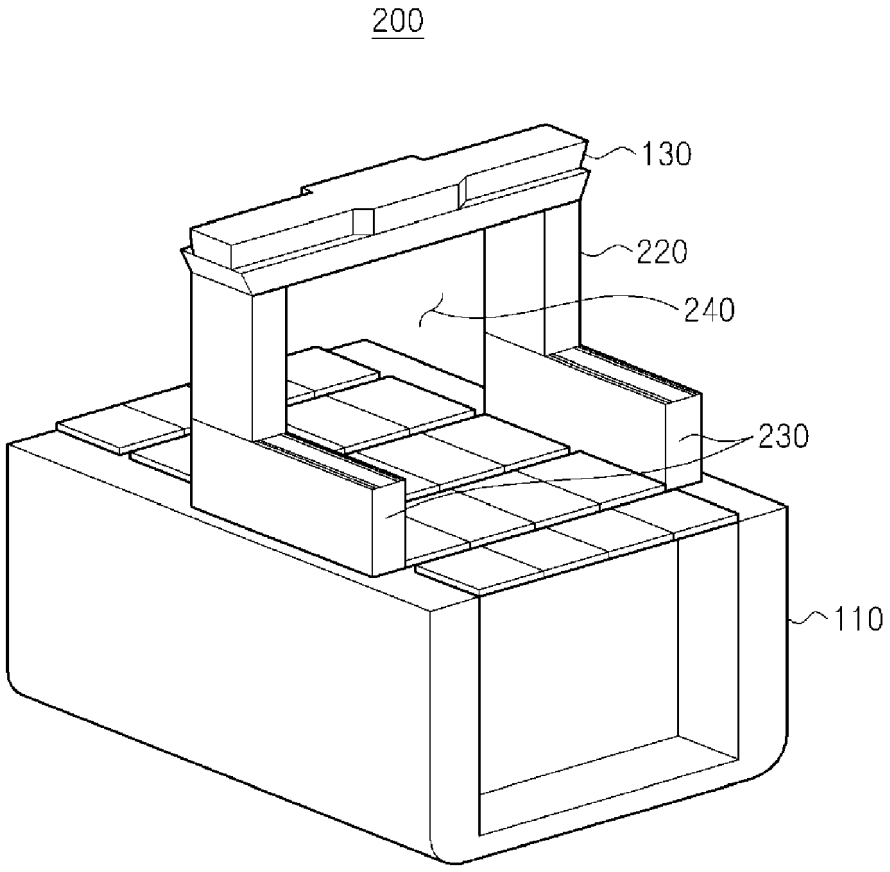

FIG. 2

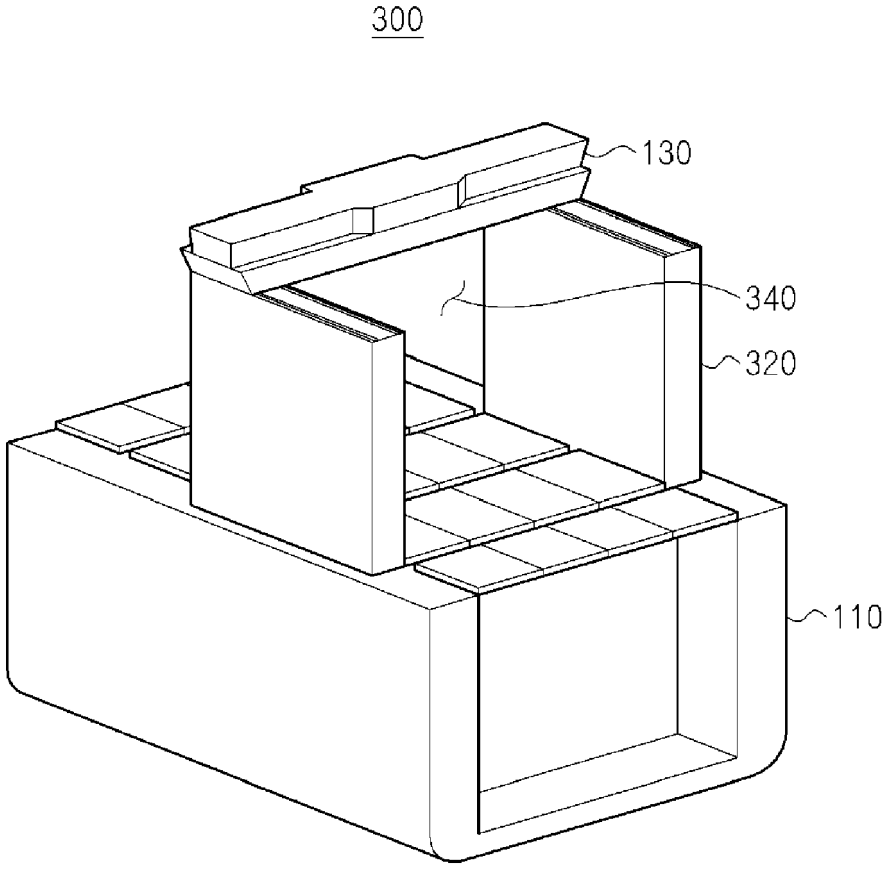

FIG. 3

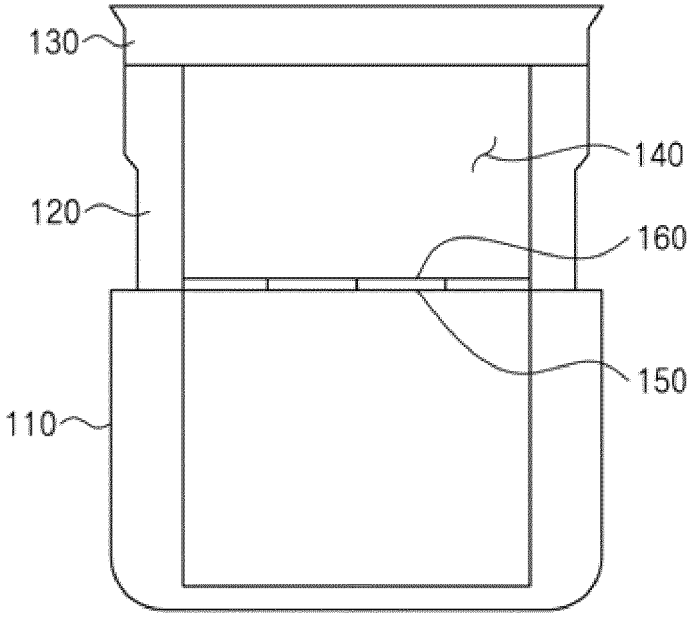

FIG. 4(a)

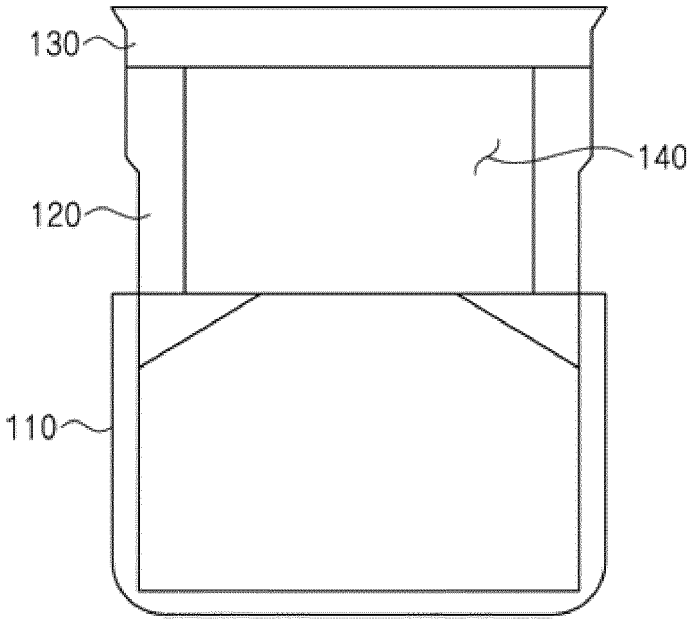

FIG. 4(b)

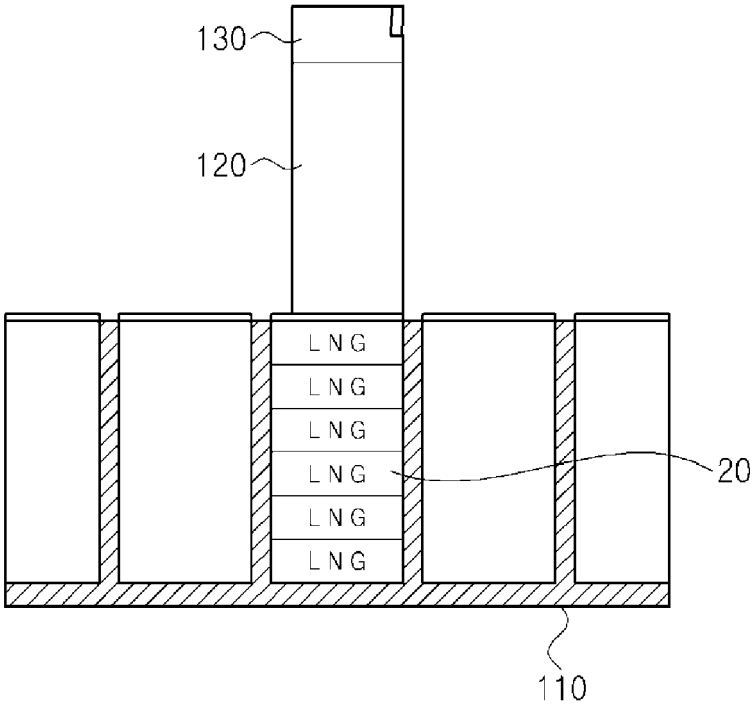

FIG. 5

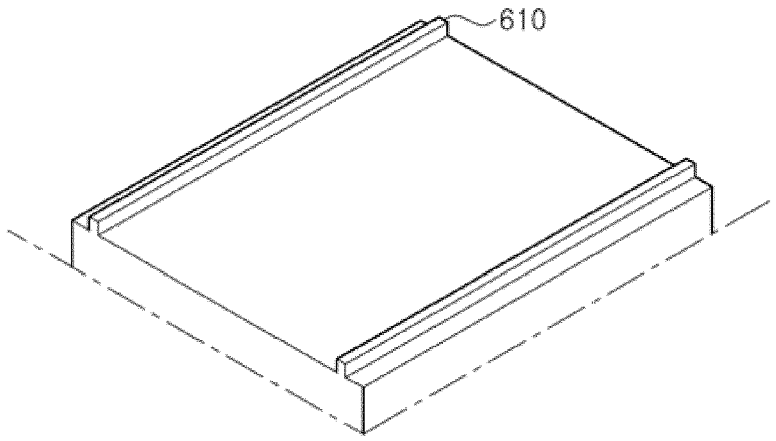

FIG. 6(a)

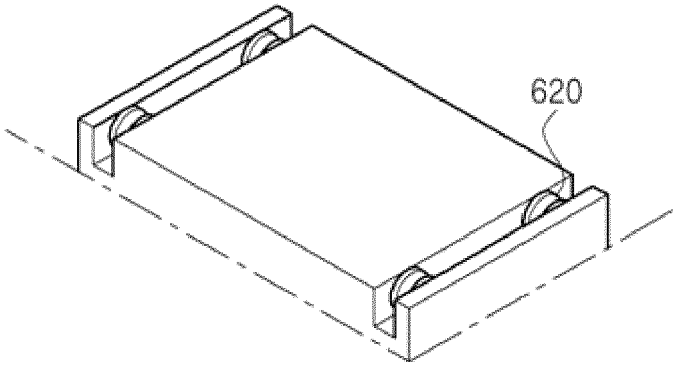

FIG. 6(b)

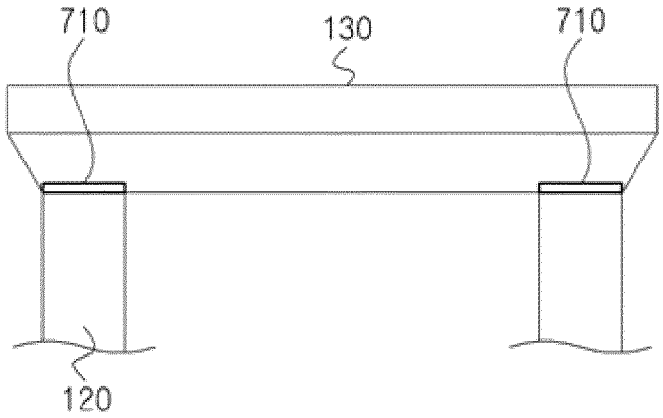

FIG. 7(a)

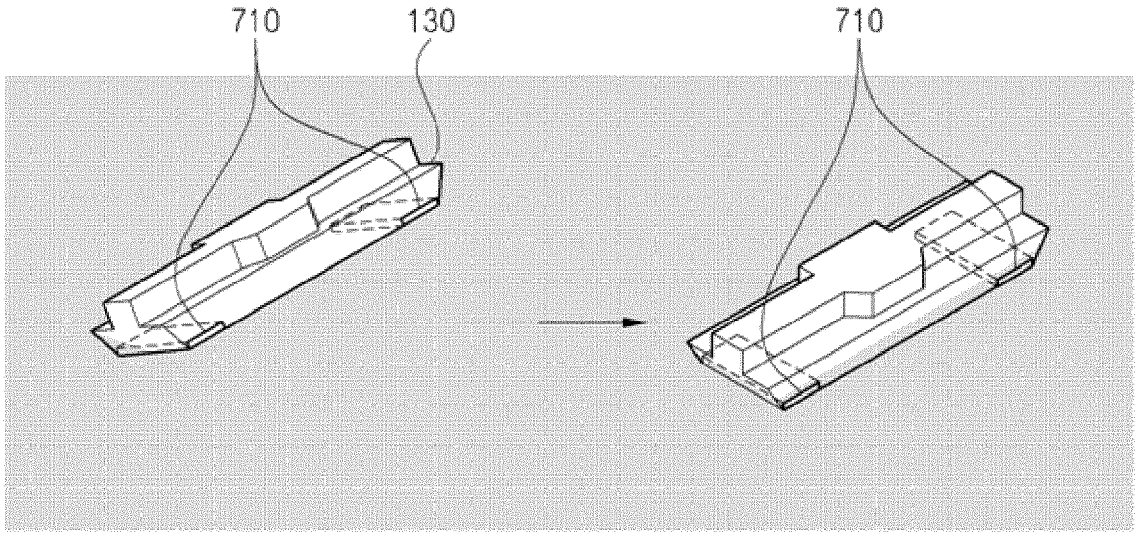

FIG. 7(b)

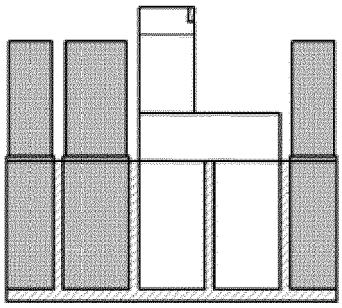

FIG. 8(a)

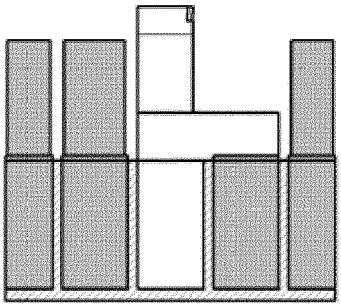

FIG. 8(b)

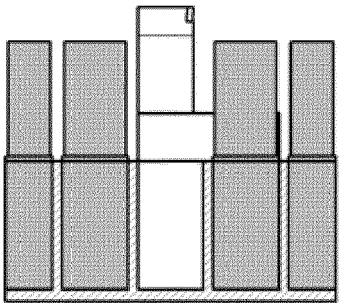

FIG. 8(c)

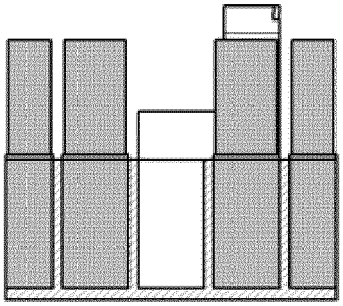

FIG. 8(d)

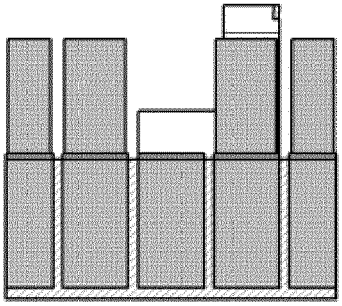

FIG. 8(e)

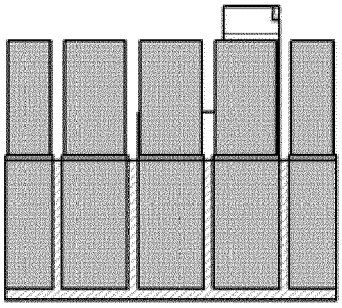

FIG. 8(f)

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Application Number
EP 14 19 5681

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B63B
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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
The Hague	8 July 2015	Székely, Zsolt

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