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(54) **SHIP'S HOLD FOR STORING AT LEAST ONE TENDER OR SIMILAR**

SCHIFFSLADERAUM ZUR LAGERUNG VON MINDESTENS EINEM TENDERBOOT ODER
ÄHNLICHEM

CALE DE NAVIRE POUR LE STOCKAGE D'AU MOINS UN BATEAU ANNEXE OU SIMILAIRE

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Description

[0001] The present invention relates to a ship's hold for storing at least one tender or similar.

[0002] A ship's hold for storing at least one tender or similar comprises a doorway, provided in a wall and at least partially closed by means of at least one hatch, and further comprises at least one part of a deck forming a ceiling of the hold.

[0003] There is known a ship's hold for storing a tender or similar provided with a horizontal translation system for moving the tender. This known system comprises hydraulic control means for moving the tender from the inside to the outside of the ship, and vice versa.

[0004] Moreover, this known translation system is separate from the control means for the operations to open and close the corresponding doorway.

[0005] To this end, there is provided a hatch, which is hinged with respect to the wall of the nave and which, when oscillated toward the outside of the hull, represents an obstacle for the correct performance of operations to store and launch of the tender.

[0006] However, in said known translation system, the hydraulic control means do not always guarantee a suitable hydraulic seal, resulting in possible environmental pollution caused by leakage of liquid.

[0007] Moreover, said hydraulic control means, which require a hydraulic control unit, are relatively complex, heavy and cumbersome, as well as being costly due to the hydraulic cables.

[0008] The document JP2016010997A discloses a ship's hold for storing at least one tender or similar according to the preamble of the main claim.

[0009] An object of the present invention is to provide a ship's hold for storing at least one tender or similar, wherein the space can be exploited optimally and possibly reduced, at least in height.

[0010] A further object of the present invention is to provide a ship's hold for storing at least one tender or similar, which does not comprise hydraulic control means for moving at least one tender from the inside to the outside of the ship, and vice versa, in order to prevent environmental pollution caused by hydraulic leaks and fires caused by pressurized oil spillage due to broken pipes or connections.

[0011] Another object of the present invention is to provide a ship's hold for storing at least one tender or similar, which has a simplified structure.

[0012] In view of these objects, the present invention provides a ship's hold for storing at least one tender or similar, the essential feature of which forms the subject matter of claim 1.

[0013] In particular, the present invention provides a ship's hold for storing at least one tender or similar, according to claim 1.

[0014] It will be noted that said first carriage means are within the transverse overall width, according to a vertical plane orthogonal to said vertical mid-plane, of said sup-

port and guide means; said second carriage means are within the transverse overall width, according to said vertical plane orthogonal to said vertical mid-plane, of said first carriage means, and said winding drum of said tackle means is within the transverse overall width, according to said vertical plane orthogonal to said vertical mid-plane, of said second carriage means.

[0015] Other features and advantages of the invention will be apparent from the following detailed description of an example of embodiment with reference to the accompanying drawing, which shows important details for the invention, and from the claims. The features illustrated herein should not necessarily be understood to be in scale and they are represented so that the peculiarities according to the invention are clearly highlighted. The different features can be obtained individually or in any combination with each other, as variants of the invention.

[0016] In the accompanying drawing:

- Figs. 1 to 3 are schematic perspective views, in vertical section, of a ship's hold for storing at least one tender or similar, according to an example of embodiment of the invention, wherein a translator-elevator device fixed to the ceiling of the hold is illustrated, respectively, in three different operational positions;
- Fig. 4 is a schematic perspective top view of said translator-elevator device in disassembled state and illustrated in the position corresponding to that of Fig. 1;
- Fig. 5 is a view similar to that of Fig. 4, but illustrating said translator-elevator device in disassembled state and illustrated in a position corresponding to that of Fig. 2 or of Fig. 3;
- Figs. 6 and 7 are sectional views, respectively along the lines VI-VI and VII-VII of Fig. 4, in a different scale;

[0017] With reference to the drawing, the reference numeral 10 indicates a ship's hold N (only partially illustrated) for storing at least one tender or similar (not illustrated).

[0018] Said ship's hold 10 comprises a doorway 11, provided in a wall M of the ship and at least partially closed by means of a hatch 12 (said doorway could also be closed by means of more than one hatch). Moreover, said hold 10 comprises an upper part of a deck forming a ceiling 13.

[0019] According to the present invention, said hold 10 comprises a translator-elevator device 10.1, suspended from said ceiling and configured to move in a vertical direction and translate in a horizontal direction said at least one tender.

[0020] Said translator-elevator device 10.1 comprises:

- support and guide means 14, fixed to said ceiling 13,
- first carriage means 15, directly supported movable with respect to said support and guide means 14 in a first horizontal direction parallel to a vertical mid-

plane of said doorway 11, and configured to support, at a first end 15.2, said at least one hatch 12 between a first operational position, wherein said first end 15.2 of first carriage means 15 is placed inside said hold 10 (Fig. 1) and said at least one hatch 12 at least partially closes said doorway 11, and a second operational position, wherein said first end 15.2 of said first carriage means 15 is extended through said doorway 11 to the outside of said hold 10 (Figs. 2, 3) and said doorway 11 is open, and

- second carriage means 18, directly supported movable with respect to said first carriage means 15, which are configured to support tackle means 19, provided with at least one winding drum 19.1 having an axis of rotation orthogonal to said vertical mid-plane, between a first operational position, wherein said tackle means 19 are placed distal to said first end 15.2 of said first carriage means 15, and a second operational position, wherein said tackle means 19 are placed close to said first end 15.2 of said first carriage means 15.

[0021] Moreover, with particular reference to Figs. 6 and 7, it will be noted that said first carriage means 15 are within the transverse overall width, according to a vertical plane orthogonal to said vertical mid-plane, of said support and guide means 14; said second carriage means 18 are within the transverse overall width, according to said vertical plane orthogonal to said vertical mid-plane, of said first carriage means 15, and said winding drum 19.1 of said tackle means 19 is within the transverse overall width, according to said vertical plane orthogonal to said vertical mid-plane, of said second carriage means 18.

[0022] In particular, according to the example of embodiment illustrated, it will be noted (Fig. 7) that:

- said support and guide means 14 have two vertical opposite wings, parallel to said vertical mid-plane of said doorway 11, and which comprise first stationary straight guide means 14.1 oriented in said first horizontal direction. In particular, in the example illustrated, said support and guide means 14 comprise an overturned U-shaped structure made of metal sheet or plate, wherein the intermediate branch of the U-shaped structure is fixed to said ceiling 13 and the lateral branches are substantially vertical and parallel with respect to said vertical mid-plane of said doorway 11. Said vertical branches have on the inner face a plurality of fixed shoes, C-shaped and with mirror image symmetry, which provide said first stationary guide means 14.1;
- said first carriage means 15 have two opposite sidewalls, parallel to said vertical mid-plane of said doorway 11, and which each comprise, on a respective first face, first movable straight guide means 15.1, corresponding and engaged for straight-line sliding with respect to said first stationary straight guide

means 14.1, and, on a respective second face opposite said first face, second stationary straight guide means 15.3, oriented parallel to said first direction. In particular, in the example illustrated, said first carriage means 15 comprise an overturned U-shaped structure made of metal sheet or plate, included at least partially in said support and guide means 14 and wherein the lateral branches are substantially vertical and parallel with respect to said vertical mid-plane of said doorway 11. Four guide profiles 15.1 in pairs opposite each other are fixed to the outer face of the vertical lateral branches of said first carriage means 15 and are coupled slidingly with respect to said corresponding stationary guide shoes of said first guide means 14.1;

- said second carriage means 18 have two opposite sidewalls, parallel to said vertical mid-plane of said doorway 11, and which each comprise, on a respective face, second movable straight guide means 18.1, corresponding and engaged for straight-line sliding with respect to said second stationary guide means 15.3. In particular, according to the example illustrated, said second carriage means 18 comprise an overturned U-shaped structure made of metal sheet or plate, included at least partially in said first carriage means 15 and wherein the lateral branches are substantially vertical and parallel with respect to said vertical mid-plane of said doorway 11. Said vertical branches of said second carriage means 18 have on their outer face guide shoes forming said first guide means 18.1, C-shaped and with mirror-image symmetry, which are coupled slidingly to said second stationary guide means 15.3, formed by means of corresponding guide profiles fixed on the inner face of the vertical branches of said first carriage means 15.

[0023] Moreover, according to the present example of embodiment, said translator-elevator device 10.1 comprises (Fig. 6):

- first translation control means 17, configured to selectively move in translation said first carriage means 15, by means of sliding said first movable guide means 15.1 with respect to said first stationary guide means 14.1, between said first operational position and said second operational position, and vice-versa. In particular, according to the example illustrated, said first control means 17 comprise first rack means 17.1, in one piece with said first carriage means 15 and extending parallel to said first direction, first electric gear motor means 17.2 with reversible rotation, in one piece with said support and guide means 14, and first pinion means 17.3, rotating around an axis orthogonal to said vertical mid-plane, engaging with said first rack means 17.1 and controlled in rotation by means of said first electric gear motor means 17.2;
- second translation control means 20, configured to

selectively move in translation said second carriage means 18, by means of sliding said second movable guide means 18.1 with respect to said second stationary guide means 15.3, between said first operational position and said second operational position, and vice-versa. In particular, according to the example illustrated, said second control means 20 comprise second rack means 20.1, in one piece with said first carriage means 15 and extending parallel to said first direction, second electric gear motor means 20.2 with reversible rotation, in one piece with said second carriage means 18, and second pinion means 20.3, rotating around an axis orthogonal to said vertical mid-plane, engaging with said second rack means 20.1 and controlled in rotation by means of said second electric gear motor means 20.2.

[0024] Moreover, said first carriage means 15 support said at least one hatch 12 by means of connecting means 16 (Figs. 4, 5), including hinged articulation means 16.1, connecting said first end 15.2 of said first carriage means 15 and said at least one hatch 12 oscillating around an axis of articulation orthogonal to said vertical mid-plane, and actuation means, configured to selectively oscillate said at least one hatch 12 around said axis of articulation between a first operational position closed flush with said wall M (Fig. 1), when said first carriage means 15 are in said first operational position, and a second operational position open at a distance from said wall M (Figs. 2, 3), wherein said at least one hatch can be turned upwards, when said first carriage means 15 are in said second operational position. In particular, according to the example illustrated, said actuation means (known per se and not illustrated in the drawing) comprise electric gear motor means with reversible rotation, configured to control the rotation of a hinge axis in one piece with said hatch 12 with respect to bearing articulated connecting means fixed to said first end 15.2 of said first carriage means 15.

[0025] Said tackle means 19 with at least one winding drum 19.1 (Figs. 6, 7) are of conventional type, are controlled by means of electric gear motor means with reversible rotation, known per se and therefore not further illustrated and described.

[0026] It will be noted that said translator-elevator device 10.1 of said ship's hold advantageously comprises automatic control means of said first control means 17, of said second control means 20 and of said actuation means of said at least one hatch 12, configured to control the sequential action of said first control means 17, of said second control means 20 and of said actuation means to arrange said first carriage means 15, said second carriage means 18 and said at least one hatch 12 in the first operational positions, respectively in said second operational positions, sequentially. The tackle means 19 can be controlled independently.

[0027] In particular, said first control means 17, said second control means 20 and said actuation means can

be electrically connected to electric circuit means including a programmable logic controller that executes one or more operating sequences programmed to control the functions of putting at least one tender into and out of service, with respect to the hold 10, by means of said control means and of said actuation means.

[0028] Operation of the translator-elevator device 10.1 of the hold 10.

[0029] As is apparent from the above, said first carriage means 15 move linearly with respect to said support and guide means 14, while said second carriage means 18 move linearly with respect to said first carriage means 15, in said first direction. Said first carriage means 15 support, at said first end 15.2 thereof, said hatch 12 oscillating around an axis transverse to said first direction (hinged articulation 16.1).

[0030] Said first control means 17, when operated, cause the translation of said first carriage means 15 with respect to said support and guide means 14, between said first operational position, wherein said hatch 12 at least partially closes doorway 11, and said second operational position, wherein said hatch 12 is extended beyond the wall M and said doorway 11 is open, and vice-versa.

[0031] Said second control means 20 cause, when operated, the translation of said second carriage means 18, which support said tackle means 19, with respect to said first carriage means 15, between said first operational position, wherein said tackle means 19 are placed distal to said first end 15.2 of said first carriage means 15, and said second operational position, wherein said tackle means 19 are placed close to said first end 15.2 of said first carriage means 15. It will be noted that, by means of the translator-elevator device 10.1, a plurality of intermediate positions of said tackle means 19, between said first position and said second position of the same tackle means, can be obtained.

[0032] In this way, the first carriage means 15 can extend towards the outside of the hold 10 together with the hatch 12, opening the doorway 11 and providing a straight runway for moving the second carriage means 18 with the tackle means 19, from the inside of the hold 10 to the outside of the corresponding wall M of the ship N. Preliminarily, said tackle means 19, by means of said at least one winding drum 19.1, and an appropriate harness, lift said at least one tender or similar parked in the hold 10.

[0033] Said hatch 12, when placed outside the wall M, is made to oscillate around said transverse axis of the hinged articulation means 16.1, in a position raised from the surface of the sea, wherein it does not interfere with said at least one tender or similar lifted and transported by means of said tackle means 19, said first carriage means 15 and said second carriage means 18 from inside the hold 10 towards the surface of the sea.

[0034] With a sequence of operations in reverse order, a tender or similar is lifted from the surface of the sea outside the wall M, is returned to the hold 10, wherein it

is put out of service, while the hatch 12 at least partially closes the doorway 11. In the example illustrated, the hatch 12 totally closes and seals said doorway 11, by means of peripheral sealing means, known per se and not illustrated.

[0035] Although not illustrated, advantageously, for example in the case of a doorway and corresponding closing hatch of large size, the hold for storing at least one tender comprises a pair of translation-elevation devices 10.1 arranged in parallel and that co-act synchronously in tandem to perform the operations described above.

[0036] As is apparent from the above, the present invention provides a ship's hold for storing at least one tender or similar that allows the objects specified above to be achieved in a simple and effective manner.

[0037] In fact, the ship's hold according to the invention comprises a translation-elevation device that performs, in a coordinated manner, the functions of putting at least one tender or similar into and out of service and of opening and closing the corresponding doorway, having extremely limited overall dimensions with respect to the height of the ship's hold.

[0038] Moreover, the ship's hold according to the invention comprises a translation-elevation device of the type specified, including exclusively electromechanical control means, hence not subject to hydraulic leaks.

[0039] Moreover, the present invention provides a ship's hold for storing at least one tender or similar, which has a simplified structure.

Claims

1. Ship's hold (10) for storing at least one tender or similar, comprising:

- a doorway (11), provided in a wall (M) and at least partially closed by means of at least one hatch (12), and
- at least one part of a deck forming a ceiling (13) of the hold,

wherein said ship's hold (10) further comprises at least one translator-elevator device (10.1), suspended from said ceiling and configured to move in a vertical direction and translate in a horizontal direction said at least one tender and including:

- support and guide means (14), fixed to said ceiling (13),
- first carriage means (15), directly supported movable with respect to said support and guide means (14), in a first horizontal direction parallel to a vertical mid-plane of said doorway (11), and configured to support, at a first end (15.2), said at least one hatch (12) between a first operational position, wherein said first end (15.2) of first carriage means (15) is placed inside said

hold (10) and said at least one hatch (12) closes said doorway (11) at least partially, and a second operational position, wherein said first end (15.2) of said first carriage means (15) is extended through said doorway (11) to the outside of said hold (10) and said doorway (11) is open, and

- second carriage means (18), directly supported movable with respect to said first carriage means (15), which are configured to support tackle means (19), provided with at least one winding drum (19.1) having an axis of rotation orthogonal to said vertical mid-plane, between a first operational position, wherein said tackle means (19) are placed distal to said first end (15.2) of said first carriage means (15), and a second operational position, wherein said tackle means (19) are placed close to said first end (15.2) of said first carriage means (15),

characterized in that said first carriage means (15) support said at least one hatch (12) by means of connecting means (16) including hinged articulation means (16.1), connecting said first end (15.2) of said first carriage means (15) and said at least one hatch (12) oscillating around an axis of articulation orthogonal to said vertical mid-plane, and actuation means, configured to selectively oscillate said at least one hatch (12) around said axis of articulation between a first operational position flush with said wall, when said first carriage means (15) are in said first operational position, and a second operational position at a distance from said wall (M), wherein said at least one hatch is turned upwards, when said first carriage means (15) are in said second operational position.

2. Ship's hold (10) for storing at least one tender or similar, according to claim 1, **characterized in that** said first carriage means (15) are within the transverse overall width, according to a vertical plane orthogonal to said vertical mid-plane, of said support and guide means (14); said second carriage means (18) are within the transverse overall width, according to said vertical plane orthogonal to said vertical mid-plane, of said first carriage means (15), and said winding drum (19.1) of said tackle means (19) are within the transverse overall width, according to said vertical plane orthogonal to said vertical mid-plane, of said second carriage means (18).

3. Ship's hold (10) for storing at least one tender or similar, according to claim 1 and/or 2, **characterized in that:**

- said support and guide means (14) have two vertical opposite wings, parallel to said vertical mid-plane of said doorway (11), and which comprise first stationary straight guide means (14.1)

oriented in said first horizontal direction;

- said first carriage means (15) have two opposite sidewalls, parallel to said vertical mid-plane of said doorway (11), and which each comprise, on a respective first face, first movable straight guide means (15.1), corresponding and engaged for straight-line sliding with respect to said first stationary straight guide means (14.1), and, on a respective second face opposite said first face, second stationary straight guide means (15.3), oriented parallel to said first direction;

- said second carriage means (18) have two opposite sidewalls, parallel to said vertical mid-plane of said doorway (11), and which each comprise, on a respective face, second movable straight guide means (18.1), corresponding and engaged for straight-line sliding with respect to said second stationary guide means (15.3);

and **in that** said translator-elevator device (10.1) comprises:

- first translation control means (17) for said first carriage means (15), configured to selectively move in translation said first carriage means (15), by means of sliding said first movable guide means (15.1) with respect to said first stationary guide means (14.1), between said first operational position and said second operational position, and vice-versa, and

- second translation control means (20), configured to selectively move in translation said second carriage means (18), by means of sliding said second movable guide means (18.1) with respect to said second stationary guide means (15.3), between said first operational position and said second operational position, and vice-versa.

4. Ship's hold (10) according to claim 3, **characterized in that** said first control means (17) comprise first rack means (17.1), in one piece with said first carriage means (15) and extending parallel to said first direction, first electric gear motor means (17.2) with reversible rotation, in one piece with said support and guide means (14), and first pinion means (17.3), rotating around an axis orthogonal to said vertical mid-plane, engaging with said first rack means (17.1) and controlled in rotation by means of said first electric gear motor means (17.2).

5. Ship's hold (10) according to claim 3, **characterized in that** said second control means (20) comprise second rack means (20.1), in one piece with said first carriage means (15) and extending parallel to said first direction, second electric gear motor means (20.2) with reversible rotation, in one piece with said second carriage means (18), second pinion means

(20.3), rotating around an axis orthogonal to said vertical mid-plane, engaging with said second rack means (20.1) and controlled in rotation by means of said second electric gear motor means (20.2).

6. Ship's hold (10) according to one or more of the previous claims, **characterized in that** it comprises a pair of translation-elevation devices (10.1) arranged in parallel and operating synchronously in tandem.

Patentansprüche

1. Schiffsladeraum (10) für die Lagerung von mindestens einem Tender oder Ähnlichem, umfassend:

- eine Lukenöffnung (11), die in einer Schiffswand (M) vorgesehen und zumindest teilweise durch mindestens eine Klappe (12) verschlossen ist, und

- mindestens einen Teil des Decks, der eine Decke (13) des Laderaums bildet,

wobei der besagte Schiffsladeraum (10) auch mindestens eine Schiebe-Hebe-Vorrichtung (10.1) umfasst, die an der besagten Decke aufgehängt und konfiguriert ist, um den besagten mindestens einen Tender in vertikaler Richtung zu bewegen und in horizontaler Richtung zu verschieben und umfassend:

- Trage- und Führungsmittel (14), die an der besagten Decke (13) befestigt sind,

- erste Wagenmittel (15), die in Bezug auf die besagten Trage- und Führungsmittel (14) direkt gemäß einer ersten horizontalen Richtung, die parallel in Bezug auf eine vertikale Mittelebene der besagten Lukenöffnung (11) verläuft, beweglich unterstützt und die konfiguriert sind, um in Übereinstimmung mit einem ersten Ende (15.2) die besagte mindestens eine Klappe (12) zu unterstützen zwischen einer ersten operativen Anordnung, bei der das besagte erste Ende (15.2) der besagten ersten Wagenmittel (15) im Inneren des besagten Laderaums (10) angeordnet ist und die besagte mindestens eine Klappe (12) zumindest teilweise die besagte Lukenöffnung (11) verschließt, und einer zweiten operativen Anordnung, bei der sich das besagte erste Ende (15.2) der besagten ersten Wagenmittel (15) durch die besagte Lukenöffnung (11) außerhalb des besagten Laderaums (10) erstreckt und besagte Lukenöffnung (11) offen ist, und

- zweite Wagenmittel (18), direkt beweglich unterstützt in Bezug auf die besagten ersten Wagenmittel (15), die konfiguriert sind, um Flaschenzugmittel (19), die mit mindestens einer Wickeltrommel (19.1) mit orthogonaler Drehachse in Bezug auf die besagte vertikale Mittelebene

lebene ausgestattet sind, zu unterstützen zwischen einer ersten operativen Anordnung, bei der die besagten Flaschenzugmittel (19) distal angeordnet sind in Bezug auf das besagte erste Ende (15.2) der besagten ersten Wagenmittel (15), und einer zweiten operativen Anordnung, bei der die besagten Flaschenzugmittel (19) proximal angeordnet sind in Bezug auf das besagte erste Ende (15.2) der besagten ersten Wagenmittel (15), **dadurch gekennzeichnet, dass** die besagten ersten Wagenmittel (15) die besagte mindestens eine Klappe (12) mittels Verbindungsmittel (16) unterstützen, umfassend Scharnierbewegungsmittel (16.1), die das besagte erste Ende (15.2) der besagten ersten Wagenmittel (15) und die besagte mindestens eine Klappe (12) oszillierend um eine in Bezug auf die besagte vertikale Mittelebene orthogonale Bewegungsachse miteinander verbinden, und Durchführungsmittel, konfiguriert, um die besagte mindestens eine Klappe (12) selektiv um die besagte Bewegungsachse schwingen zu lassen zwischen einer ersten operativen Anordnung, bündig mit der besagten Schiffswand, wenn sich die besagten ersten Wagenmittel (15) in der besagten ersten operativen Anordnung befinden, und einer zweiten operativen Anordnung, in einem Abstand in Bezug auf die besagte Schiffswand (M), wobei die besagte mindestens eine Klappe nach oben gedreht ist, wenn sich die besagten ersten Wagenmittel (15) in der besagten zweiten operativen Anordnung befinden.

2. Schiffsladeraum (10) für die Lagerung von mindestens einem Tender oder Ähnlichem, gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die besagten ersten Wagenmittel (15) in den Querplatzbedarf gemäß einer vertikalen Ebene, orthogonal zu der besagten vertikalen Mittelebene, der besagten Trage- und Führungsmittel (14) fallen; die besagten zweiten Wagenmittel (18) fallen in den Querplatzbedarf gemäß der besagten vertikalen Mittelebene, orthogonal zu der besagten vertikalen Mittelebene, der besagten ersten Wagenmittel (15), und die besagte Wickeltrommel (19.1) der besagten Flaschenzugmittel (19) fallen in den Querplatzbedarf, gemäß der besagten vertikalen Mittelebene, orthogonal zu der besagten vertikalen Mittelebene, der besagten zweiten Wagenmittel (18).
3. Schiffsladeraum (10) für die Lagerung von mindestens einem Tender oder Ähnlichem, gemäß Anspruch 1 und/oder 2, **dadurch gekennzeichnet, dass:**

- die besagten Trage- und Führungsmittel (14) zwei gegenüberliegende vertikale Flügel auf-

weisen, die parallel in Bezug auf die besagte vertikale Mittelebene der besagten Lukenöffnung (11) verlaufen, und die erste geradlinige stationäre Führungsmittel (14.1) umfassen, die gemäß der besagten ersten horizontalen Richtung ausgerichtet sind;

- die besagten ersten Wagenmittel (15) zwei gegenüberliegende Seiten aufweisen, die parallel in Bezug auf die besagte vertikale Mittelebene der besagten Lukenöffnung (11) verlaufen, und die jeweils umfassen, auf einer diesbezüglichen ersten Seite, erste geradlinige bewegliche Führungsmittel (15.1), die den besagten ersten geradlinigen stationären Führungsmitteln (14.1) entsprechen und in Bezug auf die besagten in geradlinigem Gleitkontakt stehen, und, auf einer diesbezüglichen zweiten Seite, die der besagten ersten Seite gegenüberliegt, zweite geradlinige stationäre Führungsmittel (15.3), die parallel zu der besagten ersten Richtung verlaufen;
- die besagten zweiten Wagenmittel (18) zwei gegenüberliegende Seiten aufweisen, die parallel in Bezug auf die besagte vertikale Mittelebene der besagten Lukenöffnung (11) verlaufen, und die jeweils umfassen, auf einer diesbezüglichen Seite, zweite geradlinige bewegliche Führungsmittel (18.1), die den besagten zweiten stationären Führungsmitteln (15.3) entsprechen und in Bezug auf die besagten in geradlinigem Gleitkontakt stehen;

und **dadurch gekennzeichnet, dass** die besagte Schiebe-Hebe-Vorrichtung (10.1) Folgendes umfasst:

- erste Steuermittel in Verschiebung (17) der besagten ersten Wagenmittel (15), konfiguriert, um die besagten ersten Wagenmittel (15) durch Gleiten der besagten ersten beweglichen Führungsmittel (15.1) in Bezug auf die besagten ersten stationären Führungsmittel (14.1) zwischen der besagten ersten operativen Anordnung und der besagten zweiten operativen Anordnung, und umgekehrt, selektiv in Verschiebung zu bewegen, und
- zweite Steuermittel in Verschiebung (20), konfiguriert, um die besagten zweiten Wagenmittel (18), durch Gleiten der besagten zweiten beweglichen Führungsmittel (18.1) in Bezug auf die besagten zweiten stationären Führungsmittel (15.3) zwischen der besagten ersten operativen Anordnung und der besagten zweiten operativen Anordnung, und umgekehrt, selektiv in Verschiebung zu bewegen.

4. Schiffsladeraum (10) gemäß Anspruch 3, **dadurch gekennzeichnet, dass** die besagten ersten Steuermittel (17) erste Zahnstangenmittel (17.1), die in Be-

zug auf die besagten ersten Wagenmittel (15) fest verbunden sind und sich parallel zu der besagten ersten Richtung erstrecken, erste elektrische Getriebemotormittel (17.2) mit umkehrbarer Drehung, die In Bezug auf die besagten Trage- und Führungsmittel (14) fest verbunden sind, und erste Ritzelmittel (17.3) umfassen, die sich um eine Achse, orthogonal in Bezug auf die besagte vertikale Mittelebene, drehen, die verzahnt sind in Bezug auf die besagten ersten Zahnstangenmittel (17.1) und durch die besagten ersten elektrischen Getriebemotormittel (17.2) Drehung versetzt werden.

5. Schiffsladeraum (10) gemäß Anspruch 3, **dadurch gekennzeichnet, dass** die besagten zweiten Steuermittel (20) zweite Zahnstangenmittel (20.1), die Bezug auf die besagten ersten Wagenmittel (15) fest verbunden sind und sich parallel zu der besagten ersten Richtung erstrecken, zweite elektrische Getriebemotormittel (20.2) mit umkehrbarer Drehung, die in Bezug auf die besagten zweiten Wagenmittel (18) fest verbunden sind, und zweite Ritzelmittel (20.3) umfassen, die sich um eine Achse, orthogonal In Bezug auf die besagte vertikale Mittelebene, drehen, die verzahnt sind in Bezug auf die besagten zweiten Zahnstangenmittel (20.1) und durch die besagten zweiten elektrischen Getriebemotormittel (20.2) in Drehung versetzt werden.
6. Schiffsladeraum (10) gemäß einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** er ein Paar Schlebe-HebeVorrichtungen (10.1) umfasst, die parallel angeordnet sind und synchron in Tandem arbeiten.

Revendications

1. Cale (10) d'un navire pour stocker au moins un tender ou similaire, comprenant :
- une porte (11), prévu dans une paroi latérale (M) et fermé au moins partiellement par au moins un volet (12), et
 - au moins une partie de pont formant le plafond (13) de la cale,
- où ladite cale (10) d'un navire comprend également au moins un appareil translateur-élévateur (10.1), suspendu audit plafond et configuré pour déplacer dans la direction verticale et translater dans une direction horizontale ledit au moins un tender et incluant :
- des moyens de support et de guidage (14), fixes par rapport audit plafond (13),
 - des premiers moyens à chariot (15), directement supportés de manière mobile par rapport

auxdits moyens de support et de guidage (14) selon une première direction horizontale parallèle à un plan médian vertical de ladite porte (11), et configurés pour supporter, au niveau d'une première extrémité (15.2), ledit au moins un volet (12), entre une première disposition opérationnelle, dans lequel ladite première extrémité (15.2) desdits premiers moyens à chariot (15) est disposée à l'intérieur de ladite cale (10) et ledit au moins un volet (12) ferme au moins partiellement ladite porte (11), et une seconde disposition opérationnelle, dans laquelle ladite première extrémité (15.2) desdits premiers moyens à chariot (15) s'étend à travers ladite porte (11) vers l'extérieur de ladite cale (10) et ladite porte (11) est ouverte, et

- des seconds moyens à chariot (18), directement supportés de manière mobile par rapport auxdits premiers moyens à chariot (15), qui sont configurés pour supporter des moyens à palan (19), dotés d'au moins un tambour d'enroulement (19.1) ayant un axe de rotation orthogonal par rapport audit plan médian vertical, entre une première disposition opérationnelle, où lesdits moyens à palan (19) sont disposés de manière distale par rapport à ladite première extrémité (15.2) desdits premiers moyens à chariot (15), et une seconde disposition opérationnelle, où lesdits moyens à palan (19) sont disposés de manière proximale par rapport à ladite première extrémité (15.2) desdits premiers moyens à chariot (15), **caractérisée par le fait que** lesdits premiers moyens à chariot (15) supportent ledit au moins un volet (12) à l'aide des moyens de raccordement (16) incluant des moyens d'articulation à charnière (16.1), qui raccordent ladite première extrémité (15.2) desdits premiers moyens à chariot (15) et ledit au moins un volet (12) de manière oscillante autour d'un axe d'articulation orthogonale par rapport audit plan médian vertical, et des moyens d'actionnement, configurés pour faire osciller sélectivement ledit au moins un volet (12) autour dudit axe d'articulation entre une première disposition opérationnelles au ras de ladite paroi latérale, lorsque lesdits premiers moyens à chariot (15) sont dans ladite première disposition opérationnelle, et une seconde disposition opérationnelle à distance par rapport à ladite paroi latérale (M), où ledit au moins un volet et pivoté vers le haut, lorsque lesdits premiers moyens à chariot (15) sont dans ladite seconde disposition opérationnelle.

2. Cale (10) d'un navire pour stocker au moins un tender ou similaire, selon la revendication 1, **caractérisée par le fait que** lesdits premiers moyens à chariot (15) rentrent dans la dimension d'encombrement

transversal, selon un plan vertical orthogonal audit plan médian vertical, desdits moyens de support et de guidage (14) ; lesdits seconds moyens à chariot (18) rentrent dans la dimension d'encombrement transversal, selon ledit plan vertical orthogonal audit plan médian vertical, desdits premiers moyens à chariot (15), et ledit tambour d'enroulement (19.1) desdits moyens à palan (19) rentre dans la dimension d'encombrement transversal, selon ledit plan vertical orthogonal audit plan médian vertical, desdits seconds moyens à chariot (18).

3. Cale (10) d'un navire pour stocker au moins un tender ou similaire, selon la revendication 1 et/ou 2, **caractérisée par le fait que** :

- lesdits moyens de support et de guidage (14) possèdent deux ailes verticales opposées, parallèles par rapport audit plan médian vertical de ladite porte (11), et qui comprennent des premiers moyens de guidage rectilignes fixes (14.1), orientés selon ladite première direction horizontale ;
- lesdits premiers moyens à chariot (15) possèdent deux flancs opposés, parallèles par rapport audit plan vertical médial de ladite porte (11), et qui comprennent chacun, sur une première face respective, des premiers moyens de guidage rectilignes mobiles (15.1), correspondants et engagés par coulisement rectiligne par rapport auxdits premiers moyens de guidage rectilignes fixes (14.1), et, sur une respective seconde face opposée à ladite première face, des seconds moyens de guidage rectilignes fixes (15.3), orientés parallèlement à ladite première direction ;
- lesdits seconds moyens à chariot (18) possèdent deux flancs opposés, parallèles par rapport audit plan médian vertical de ladite porte (11), et qui comprennent chacun, sur une face respective, des seconds moyens de guidage rectilignes mobiles (18.1), correspondants et engagés par coulisement rectiligne par rapport auxdits seconds moyens de guidage fixes (15.3) ;

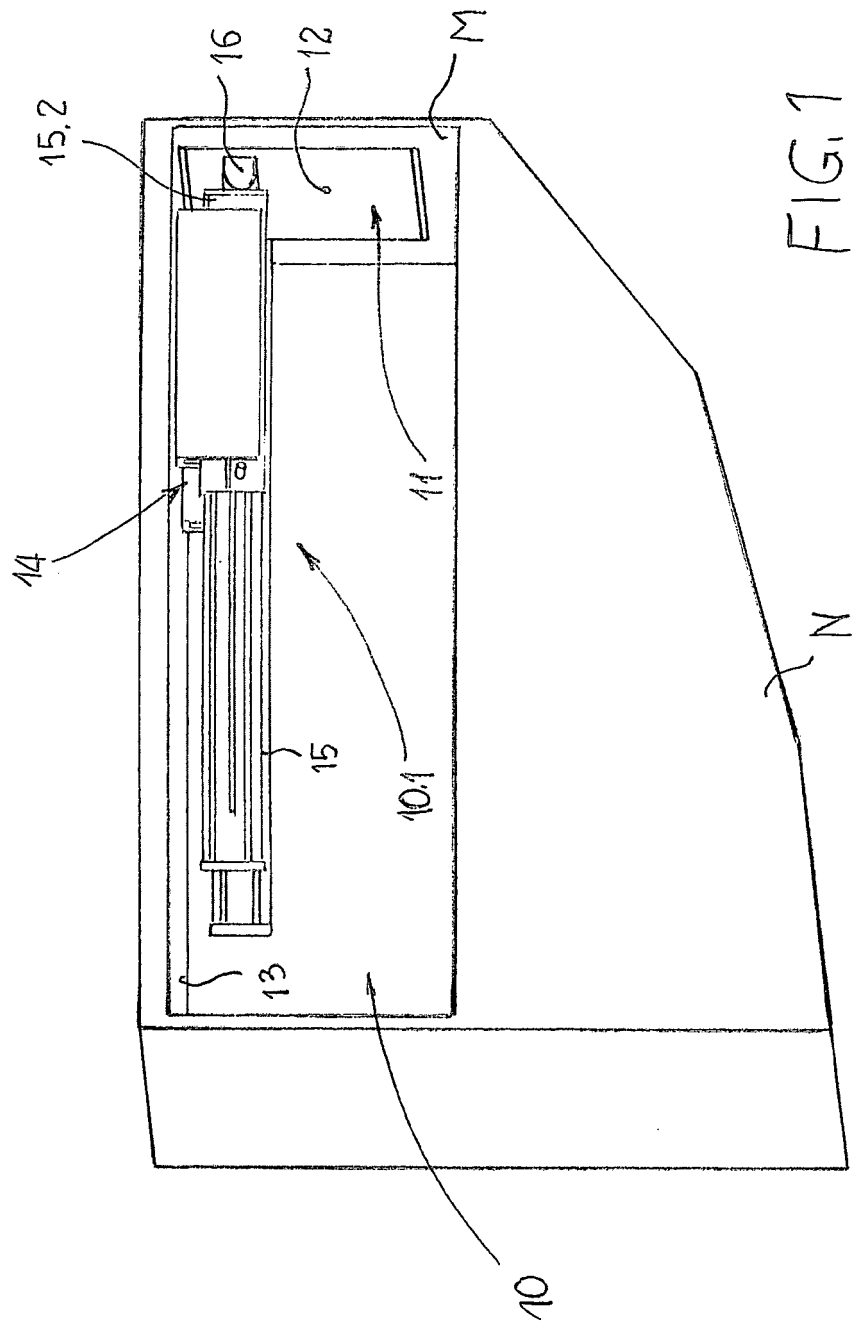
et par le fait que ledit appareil translateur-élévateur (10.1) comprend :

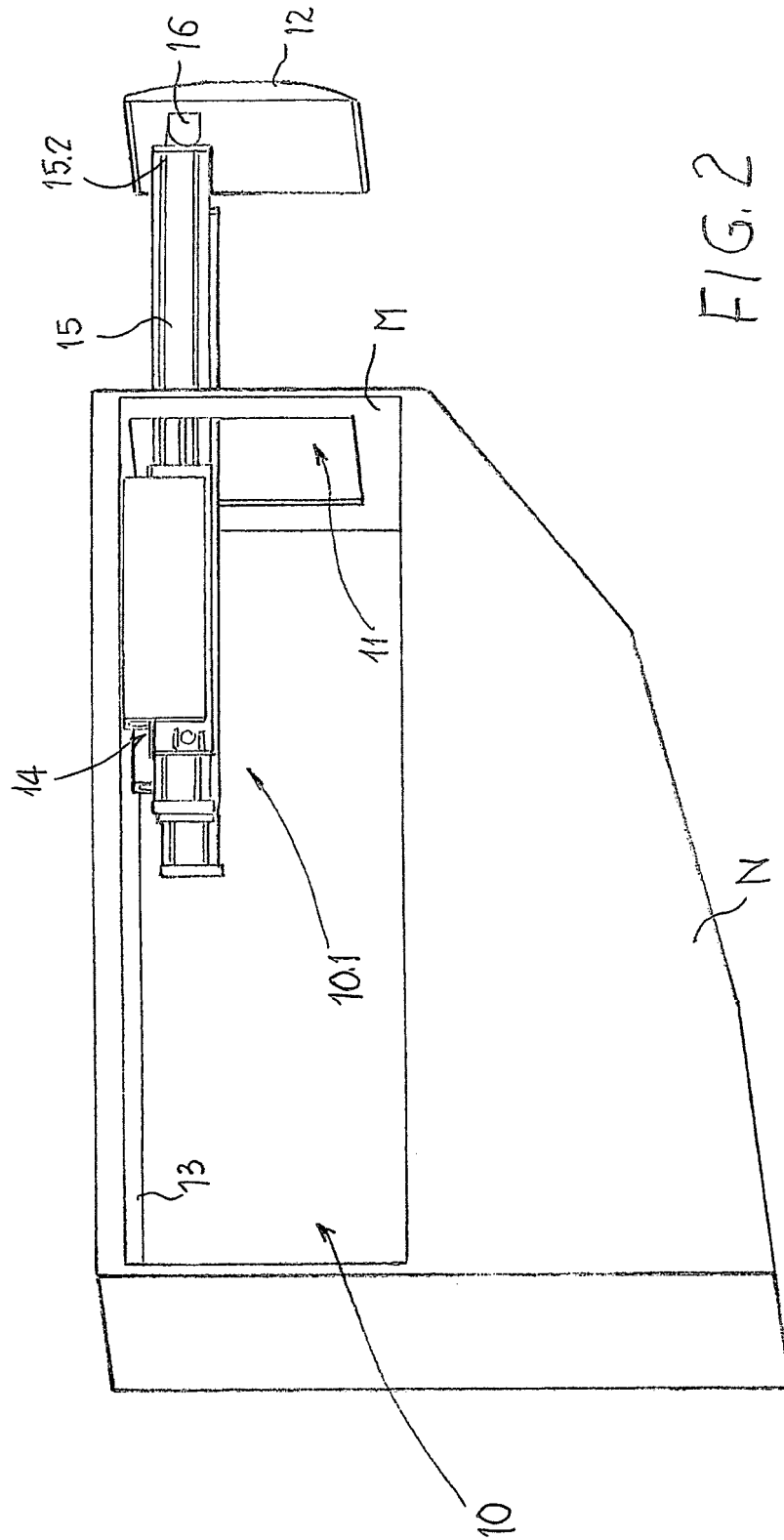
- des premiers moyens de commande en translation (17) desdits premiers moyens à chariot (15), configurés pour déplacer sélectivement en translation lesdits moyens à chariot (15), par coulisement desdits premiers moyens de guidage mobiles (15.1) par rapport auxdits premiers moyens de guidage fixes (14.1), entre ladite première disposition opérationnelle et ladite seconde disposition opérationnelle, et inverse-

ment, et

- des seconds moyens de commande en translation (20), configurés pour déplacer sélectivement en translation lesdits seconds moyens à chariot (18), par coulisement desdits seconds moyens de guidage mobiles (18.1) par rapport auxdits seconds moyens de guidage fixes (15.3), entre ladite première disposition opérationnelle et ladite seconde disposition opérationnelle, et Inversement.

4. Cale (10) d'un navire selon la revendication 3, **caractérisée par le fait que** lesdits premiers moyens de commande (17) comprennent des premiers moyens à crémaillère (17.1), solidaires par rapport auxdits premiers moyens à chariot (15) et étendus parallèlement à ladite première direction, des premiers moyens à motoréducteur électrique (17.2) à rotation réversible, solidaires par rapport auxdits moyens de support et de guidage (14), et des premiers moyens à pignon (17.3), pivotant autour d'un axe orthogonal par rapport audit plan médian vertical, engrenés par rapport auxdits premiers moyens à crémaillère (17.1) et commandés en rotation par lesdits premiers moyens à motoréducteur électrique (17.2).
5. Cale (10) d'un navire selon la revendication 3, **caractérisée par le fait que** lesdits seconds moyens de commande (20) comprennent des seconds moyens à crémaillère (20.1), solidaires par rapport auxdits premiers moyens à chariot (15) et étendus parallèlement à ladite première direction, des seconds moyens à motoréducteur électrique (20.2) à rotation réversible, solidaires par rapport auxdits seconds moyens à chariot (18), et des seconds moyens à pignon (20.3), pivotant autour d'un axe orthogonal par rapport audit plan médian vertical, engrenés par rapport auxdits seconds moyens à crémaillère (20.1) et commandés en rotation par lesdits seconds moyens à motoréducteur électrique (20.2).
6. Cale (10) d'un navire selon une ou plusieurs des revendications précédentes, **caractérisée par le fait qu'elle** comprend une paire d'appareils translateurs-élévateurs (10.1) disposés en parallèle et qui opèrent en tandem de manière synchrone.





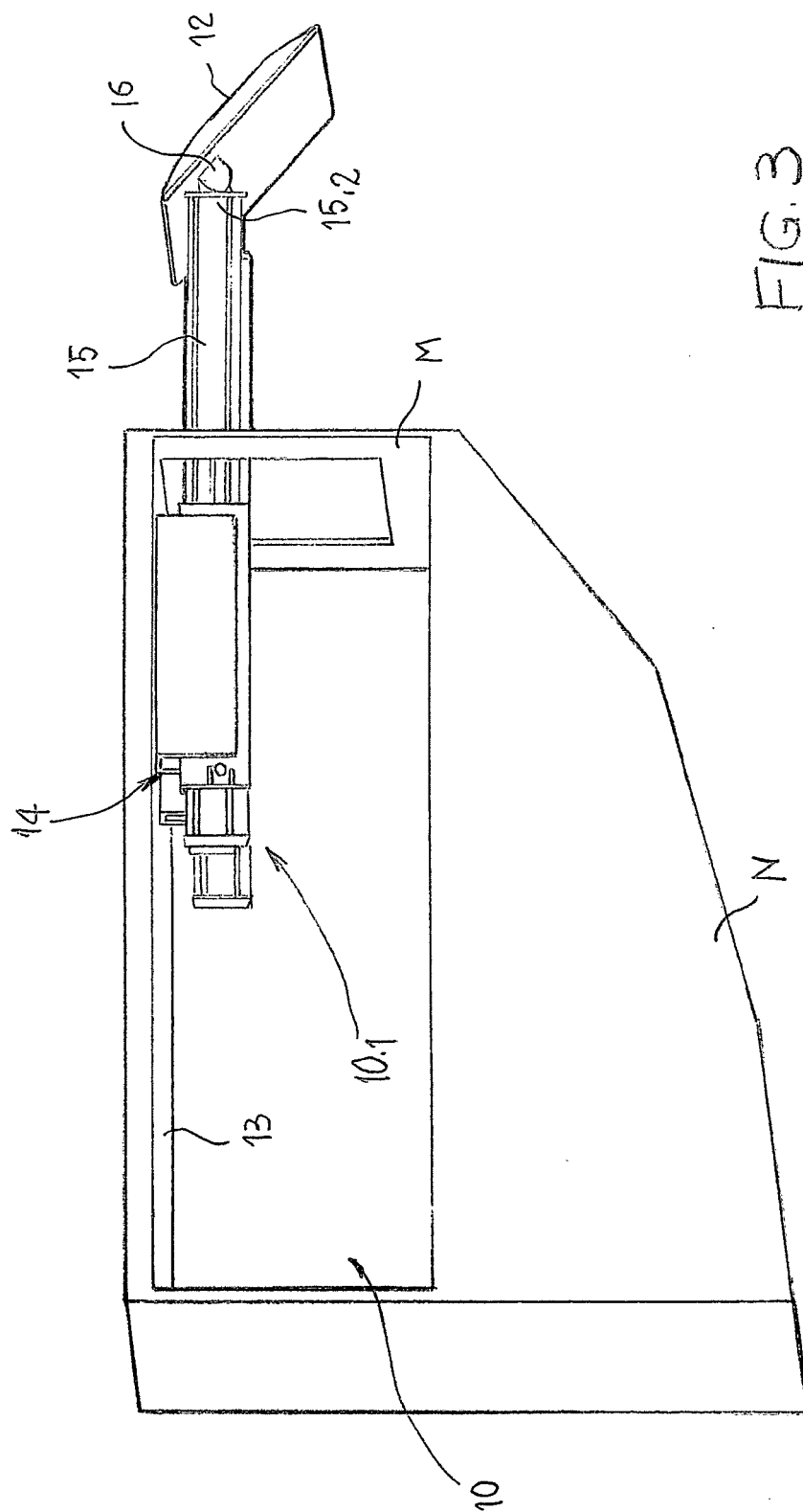
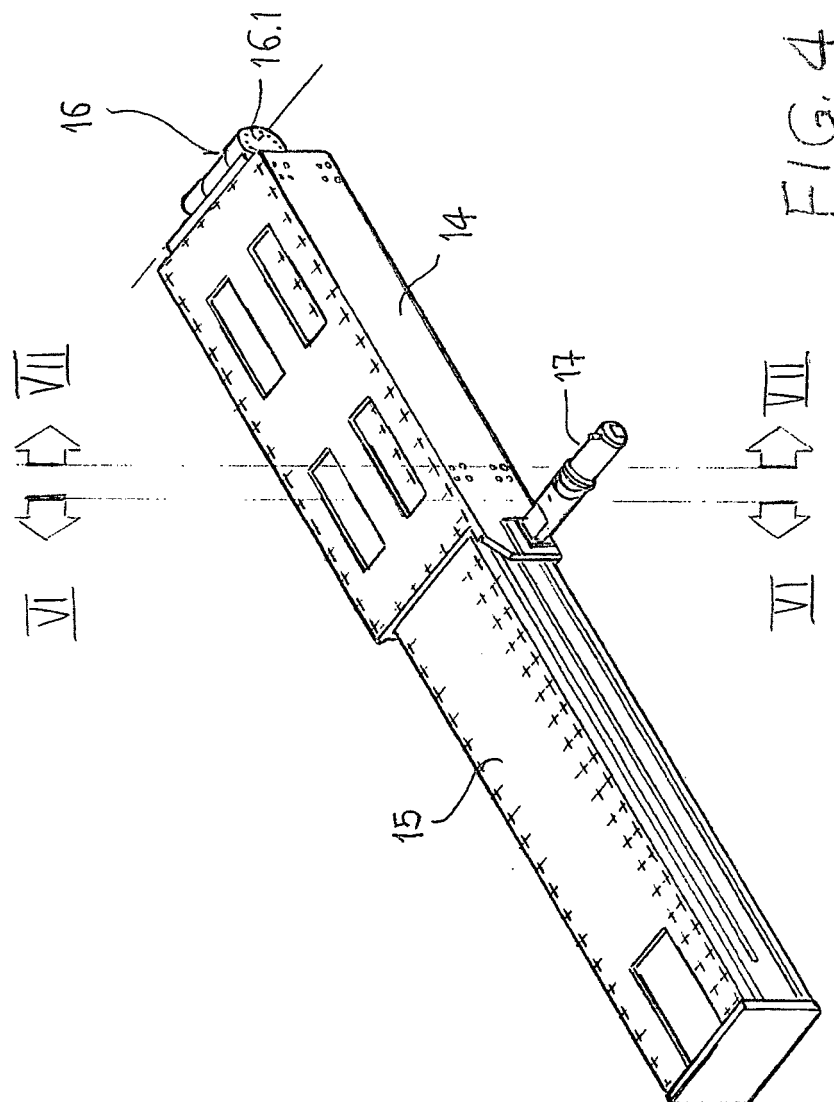
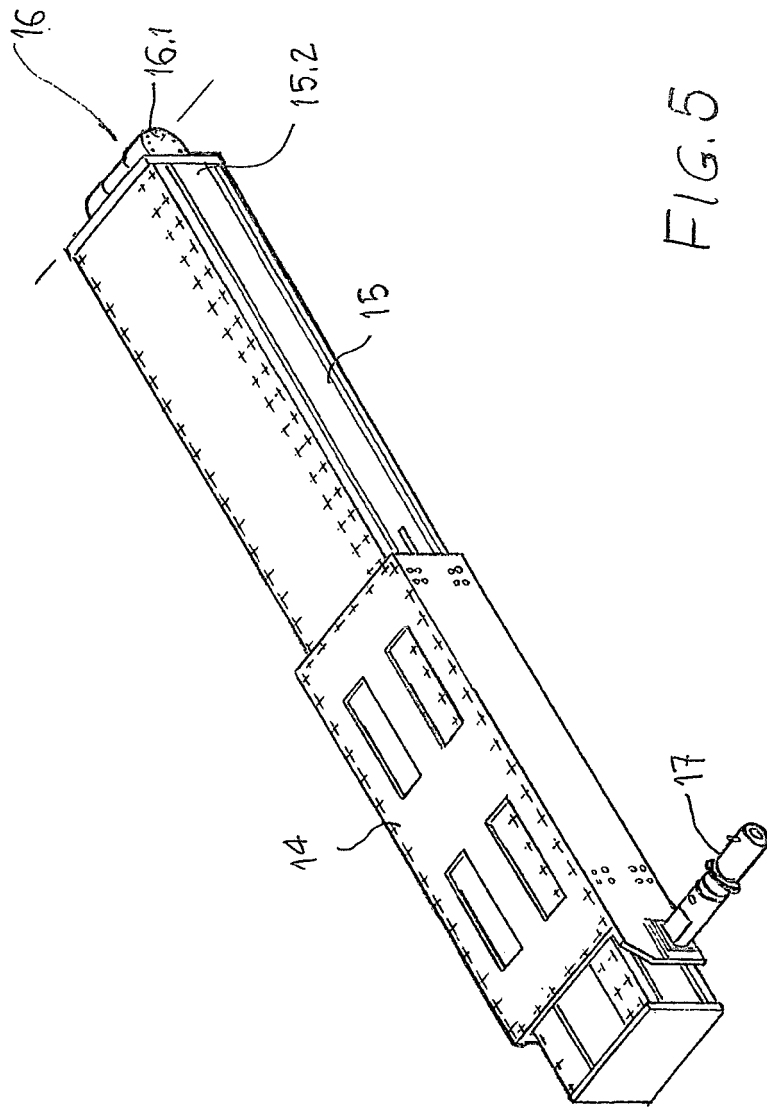
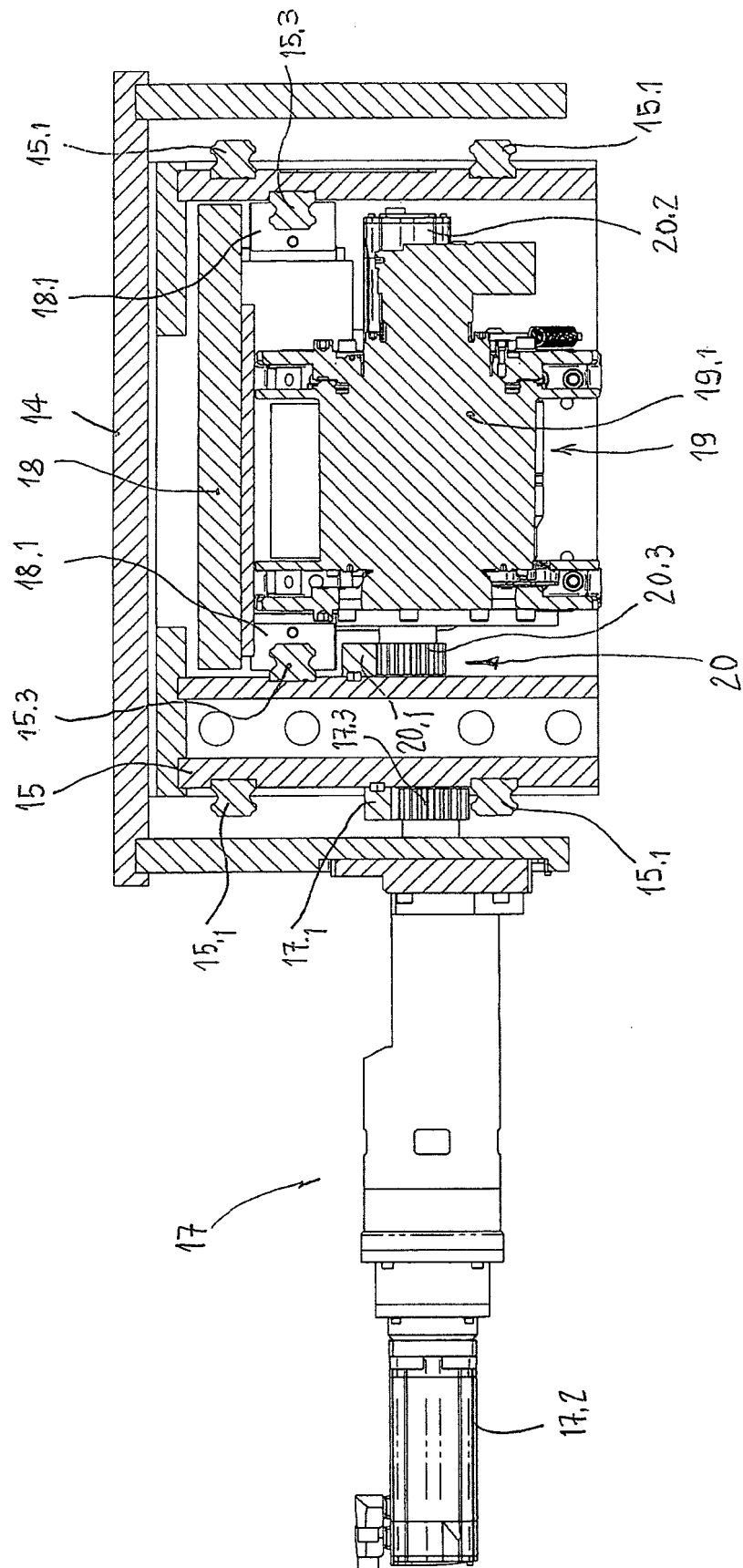


FIG. 3







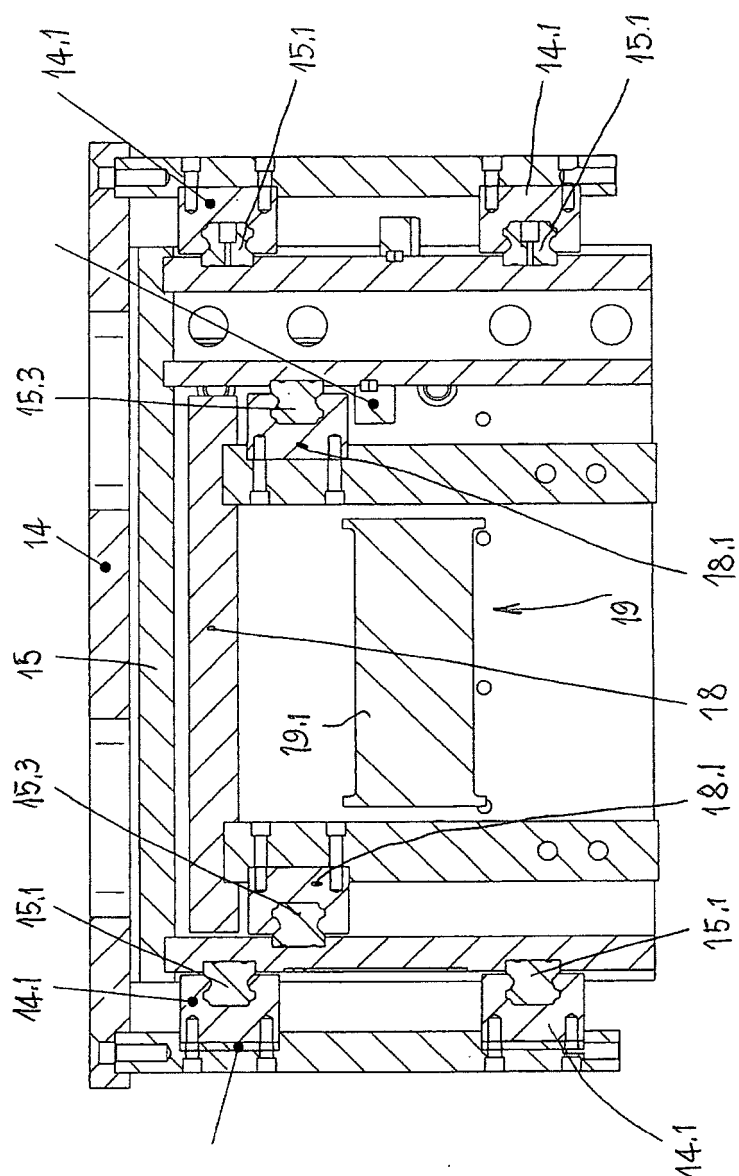


FIG. 7

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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