(11) EP 3 971 078 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication: 23.03.2022 Bulletin 2022/12

(21) Application number: 20196563.9

(22) Date of filing: 17.09.2020

(51) International Patent Classification (IPC):

863C 9/23 (2006.01) 863B 23/62 (2006.01)

863B 25/00 (2006.01) 863B 27/28 (2006.01)

B63B 7/08 (2020.01)

(52) Cooperative Patent Classification (CPC): B63C 9/23; B63B 7/082; B63B 23/62; B63B 25/006; B63B 27/28; B63C 2009/042; B63C 2009/044

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated Extension States:

BA ME

Designated Validation States:

KH MA MD TN

(71) Applicant: Viking Life-Saving Equipment A/S 6710 Esbjerg V (DK)

(72) Inventors:

- NIELSEN, Jens 6710 Esbejrg V (DK)
- PEDERSEN, Anders Kruchov 6710 Esbjerg V (DK)
- (74) Representative: Hoffmann, Claus Aligned A/S Strandvejen 125 2900 Hellerup (DK)

(54) A MARITIME EVACUATION SYSTEM

(57) The present invention relates to a maritime evacuation system to be installed on a vessel or offshore facility, comprising a storage unit to be installed on the vessel or offshore facility, at least two survival crafts, each having a hull, predominantly made of non-rigid inflatable tubes and one or more shells, the survival crafts being configured to be stored in the storage unit in a deflated state, each survival craft comprises at least two engine powered propulsion means, the maritime evacuation

system further comprising a central control unit being operatively connected with each engine powered propulsion means, wherein the central control unit is configured to observe the condition of and test the readiness of each engine powered propulsion means at predetermined intervals so that it is continuously monitored if the maritime evacuation system meets the requirements for being ready for rescue.

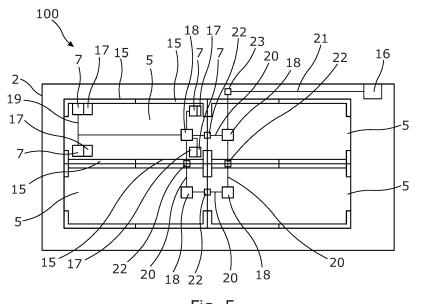


Fig. 5

EP 3 971 078 A1

ture.

[0001] The present invention relates to a maritime evacuation system to be installed on a vessel or offshore facility, comprising a storage unit to be installed on the vessel or offshore facility, at least two survival crafts, each having a hull, predominantly made of non-rigid inflatable

1

having a hull, predominantly made of non-rigid inflatable tubes and one or more shells, the survival crafts being configured to be stored in the storage unit in a deflated state, each survival craft comprises at least two engine powered propulsion means.

[0002] Inflatable survival craft having a high capacity in relation to persons have been introduced as maritime rescue and evacuation systems. The advantages of the inflatable survival crafts compared to normal rigid rescue boat are many. *Inter alia* the inflatable survival crafts do not occupy as much room on the vessel compared to the rigid rescue boats, when the inflatable survival crafts are stored in a deflated state on the vessel or offshore struc-

[0003] The deflated survival crafts are stored in a storage unit onboard the vessel or offshore structure for protecting the deflated structure of the survival crafts as well as other components of the survival craft, for instance the engine powered propulsion means, together with other equipment and components necessary for deployment of the survival crafts. Especially at sea the environment may have severe consequences on the evacuation system, due to humidity, saline content in the air, temperature alterations, wind for mention a few outside influences.

[0004] The engine powered propulsion means of the inflatable survival crafts are vital components since the survival craft has been fully loaded with passengers during a rescue operation, it is essential to the safety of the people on the survival craft that the survival craft can be sailed away, e.g. from a shipwreck, to avoid burning oil, suction forces from a sinking ship, tilting of the ship, etc. Hence all components of the maritime may function properly and as intended in the evacuation situation.

[0005] It is an object of the present invention to wholly or partly overcome the above disadvantages and drawbacks of the prior art. More specifically, it is an object to provide an improved maritime evacuation system with the aim of ensuring that the maritime evacuation system meets the requirements for being ready for rescue.

[0006] The above objects, together with numerous other objects, advantages and features, which will become evident from the below description, are accomplished by a solution in accordance with the present invention by a maritime evacuation system to be installed on a vessel or offshore facility, comprising a storage unit to be installed on the vessel or offshore facility, at least two survival crafts, each having a hull, predominantly made of non-rigid inflatable tubes and one or more shells, the survival crafts being configured to be stored in the storage unit in a deflated state, each survival craft comprises at least two engine powered propulsion means, the mari-

time evacuation system further comprising a central control unit being operatively connected with each engine powered propulsion means, wherein the central control unit is configured to observe the condition of and test the readiness of each engine powered propulsion means at predetermined intervals so that it is continuously monitored if the maritime evacuation system meets the requirements for being ready for rescue.

[0007] Furthermore, each engine powered propulsion means may be powered by electricity, one or more power supply(ies) may be arranged in the survival craft for providing electricity to the engine powered propulsion means, the central control unit is operatively connected with each power supply, and the control unit is configured to observe the condition of and test the readiness of each power supply at predetermined intervals so that it is continuously monitored if the maritime evacuation system meets the requirements for being ready for rescue.

[0008] In addition, one or more sensors, the sensor(s) may be arranged in the storage unit and/or in the survival crafts, the sensor(s) being configured to measure one or more parameters of the environment inside the storage unit and/or of one or more components arranged in the storage unit, the parameters may be temperature, humidity, pressure, gas content, pump running time/intervals, door open/closed time, actuator position and/or others in the storage unit, the control unit is operatively connected with the one or more sensors.

[0009] Moreover, each survival craft may be wirely connected with each other, the survival crafts being wirely connected with the central control unit.

[0010] Also, the survival crafts may be wirely connected with the central control unit with one wire or cable.

[0011] Furthermore, a craft cable break-away connector may be arranged between each survival craft for ensuring that the survival crafts can be separated and move independently in relation to each other after deployment.

[0012] Additionally, a unit cable break-away connector may be arranged between the survival crafts and the central control unit for ensuring that the survival crafts can be separated from the central control unit at deployment of the survival crafts.

[0013] Moreover, each of the craft cable break-away connector and the unit cable break-away connector may comprise a plug part and a receptable part, the plug part comprises a first plug end configured to be connected with a cable and a second plug end, the receptable part comprises a first receptable end configured to be connected with a cable and a second receptable end.

[0014] The second plug end may be configured to be connected with the second receptable end so that communication between the two cables is provided through the cable break-away connectors.

[0015] Also, the second plug end may be configured to be inserted into the second receptable end to provide a releasable connection between them.

[0016] The second plug end has one or more projections, the one or more projections is/are configured to

30

40

45

50

engage one or more recesses provided in the second receptable end for providing a releasable connection between the second plug end and the second receptable end ensuring that the releasable connection first is released at a predetermined force, i.e. the force it takes to pull the one or more projections out of engagement with the one or more recesses.

3

[0017] Furthermore, the second plug end and the second receptable end may be configured to be water-tight when disconnected.

[0018] Additionally, the maritime evacuation system may comprise indication means being configured to disclose whether the maritime evacuation system is ready for rescue.

[0019] The indication means may be part of a controller of the vessel or offshore facility.

[0020] Also, the indication means may be arranged at the storage unit so that it is visible for the crew members that the specific evacuation system is ready for rescue or not.

[0021] Moreover, a temperature sensor may be arranged at the power supply in the survival crafts for measuring a temperature at the power supply in the survival crafts and/or a temperature of the power supply, the temperature sensor being operatively connected with the central control unit.

[0022] Furthermore, at each power supply in each the survival craft a temperature sensor may be arranged for measuring the temperature at the power supply in the survival crafts and/or the temperature of the power supply, each temperature sensor being operatively connected with the central control unit.

[0023] In addition, the maritime evacuation system may comprise one or more temperature altering device(s).

[0024] The storage unit may comprise one or more fans or ventilators for circulating and/or blowing tempered air at designated positions in the storage unit.

[0025] Furthermore, a fan or ventilator may be configured to blowing tempered air in the vicinity of the power supplies in the survival crafts for controlling the temperature of the power supplies.

[0026] The survival crafts in deflated state may be arranged on a yoke inside the storage unit. The yoke is configured to be moved out of the storage unit during deployment and be lowered into the water with the deflated survival crafts.

[0027] Furthermore, the central control unit may be configured to maintain the power supply in the survival crafts at a predetermined temperature. This may be performed by measuring the temperature of the power supplies or at the power supplies and on basis of the measured temperatures controlling the one or more temperature altering device(s) for tempering an air to the necessary temperature (either cooling or heating depending on the temperature of the power supplies) and then blowing or ventilating the tempered air to or near the power supplies for altering the temperatures of the power supplies until it reaches the predetermined temperature.

[0028] The predetermined temperature may be between 0 to 35 degrees Celsius, preferably around 20 degrees Celsius.

[0029] Moreover, the wires and/or cables may be configured to transport data and/or electricity.

[0030] Also, the engine powered propulsion means may be arranged in a shell of the survival craft.

[0031] In an embodiment of the invention, the maritime evacuation system comprises four survival crafts being arranged in the storage unit in the deflated state.

[0032] Furthermore, the craft cable break-away connectors between the survival crafts may be configured to break during inflation of each survival craft and/or during separation of one survival craft from another when they sail away.

[0033] Moreover, the unit cable break-away connector or unit cable break-way connectors between the survival crafts and the central control unit may be configured to break when the survival crafts are being moved out of the storage unit during deployment of the survival crafts.

[0034] In addition, each survival craft may have a craft control unit, the craft control unit being configured to control the engine powered propulsion means of the survival craft.

[0035] One of the craft control units may be configured to be a master craft control unit which may control the other craft control units before the survival crafts are separated.

[0036] The present invention also relates to a vessel or offshore facility comprising a maritime evacuation system as described above.

[0037] The invention and its many advantages will be described in more detail below with reference to the accompanying schematic drawings, which for the purpose of illustration show some non-limiting embodiments and in which

Figs. 1-4 show a deployment sequence of survival crafts from a maritime evacuation system according to the invention.

Fig. 5 is a schematic view of an embodiment of the storage unit,

Fig. 6 is a schematic view of another embodiment of the storage unit,

Fig. 7 shows craft cable break-away connectors,

Fig. 8 shows an embodiment of a craft cable breakaway connector or a unit cable break-away connec-

Fig. 9 shows another schematic view of the storage unit,

Fig. 10 shows a part of the storage unit with deflated

40

survival crafts arranged on a yoke,

Figs. 11-13 show different views of the storage unit, and

Fig. 14 shows a part of the deflated survival craft.

[0038] All the figures are highly schematic and not necessarily to scale, and they show only those parts which are necessary in order to elucidate the invention, other parts being omitted or merely suggested.

[0039] Figs. 1 to 4 show a deployment sequence of survival crafts of a maritime evacuation system 100 according to the present invention.

[0040] Fig. 1 shows the maritime evacuation system 100 installed on a vessel 1. The maritime evacuation system 100 could as well be installed on an offshore facility (not shown).

[0041] The maritime evacuation system 100 comprises a storage unit 2 to be installed on the vessel 1. In Fig. 1 the storage unit 2 is installed on a deck 3 of the vessel 1. In other embodiments the storage unit may be installed between decks of the vessel. The storage unit 2 defines a substantially closed room 4 inside the storage unit 2. The storage unit 2 comprises at least two survival crafts 5, each survival craft 5 having a hull, predominantly made of non-rigid inflatable tubes and one or more shells. The survival crafts 5 being configured to be stored in the storage unit in a deflated state as seen in Fig.1. For allowing the deflated survival crafts 5 to be deployed from the storage unit 2 a port 6 is arranged at the side of the storage unit 2 facing the water side of the vessel 1. In the present embodiment the port 6 is hinged to the bottom of the storage unit 2 so that during deployment the port 6 may be moved to the open position by turning the port 6 around the hinges whereby the port 6 is turned approximately 180 degrees in relation to the closed position of the port 6. The open position is shown in Fig. 1. The storage unit 2 also comprises one or more doors for providing access for crew members to the inside of the storage unit 2. In addition, an area of the storage unit may be a technique room wherein different components of the maritime evacuation system 100 may be controlled and serviced.

[0042] Furthermore, each survival craft 5 comprises at least two engine powered propulsion means facilitating manoeuvrability of the survival craft 5 when inflated.

[0043] In Fig. 2 the survival crafts 5 are being deployed. The deflated survival crafts 5 are stored on a yoke 8, which also is stored inside the storage unit 2. The yoke 8 is configured to be moved out of the storage unit 2 during deployment and be lowered into the water with the deflated survival crafts 5. In Fig. 2 the yoke 8 and deflated survival crafts 5 are displaced out of the storage unit 2 by use of a deployment system 9.

[0044] In the present embodiment the evacuation system 100 comprises four survival crafts 5 which all is supported by the yoke 8. In other embodiments the maritime

evacuation system 100 may comprise two, three or even a higher number. Each survival craft may have a capacity of more than 150 persons, preferably higher such as more than 200 persons.

[0045] In addition, the storage unit 2 may also comprise evacuation chutes 10 so persons may be evacuated from the vessel to the inflated survival crafts 5 when deployed into the water.

[0046] In Fig. 3 the storage unit 2 is shown without the yoke and deflated survival crafts. In the opposite side in relation to the port 6 the storage unit may comprise doors 11 which provide access to chutes when the survival crafts have been deployed.

[0047] In Fig. 4 the four survival crafts have been inflated and is ready for receiving persons from the vessel 1. The survival crafts 5 are held in position in relation to the vessel 1 by means of a bowsing system 12.

[0048] In the present embodiment the four survival crafts 5 are mutual connected to each other so that they during deployment and evacuation may be positioned together.

[0049] Each survival craft 5 having a hull 13, predominantly made of non-rigid inflatable tubes 14 and one or more shells 15. In the present embodiment each survival craft 5 has four shells 15 arranged in each corner of the survival craft 5. In other not shown embodiments each survival craft may have a different number of shells. For instance, a survival craft may have only one shell functioning as a pod. The shells are preferably made of a rigid material, such as metal or a composite or any combination thereof.

[0050] In the present embodiment each shell comprises an engine powered propulsion means, a power supply and a propeller or a water jet. In the present embodiment each engine powered propulsion means is powered by electricity, one or more power supply(ies) is/are arranged in the survival craft, preferably in the shells, for providing electricity to the engine powered propulsion means, the central control unit is operatively connected with each power supply, and the control unit is configured to observe the condition of and test the readiness of each power supply at predetermined intervals so that it is continuously monitored if the maritime evacuation system meets the requirements for being ready for rescue.

[0051] Furthermore, the maritime evacuation system 100 further comprising a central control unit 16 being operatively connected with each engine powered propulsion means 7. The central control unit is shown in Fig. 3 and is in this embodiment arranged in storage unit 2. However, the central control unit may also be arranged outside the storage unit 2, for instance be operatively connected with a vessel's main controller or being integrated into the vessel's main controller.

[0052] The central control unit 16 is configured to observe the condition of and test the readiness of each engine powered propulsion means 7 at predetermined intervals so that it is continuously monitored if the maritime evacuation system 100 meets the requirements for being

ready for rescue. The requirements for being ready to rescue are *inter alia* different parameters of the different components, such as pressure in gas containers, communication, power supply status, motor functionality, etc. [0053] In addition, the central control unit may comprise a warning and alarm system is incorporated. A warning is a signal to flag something is wrong, that is not critical for the maritime evacuation system to be deployed. Alarm is a signal to flag a fault in the maritime evacuation system.

[0054] In the present embodiment the engine powered propulsion means 7 are each powered by electricity. The central control unit 16 is operatively connected with each power supply, and the control unit is configured to observe the condition of and test the readiness of each power supply at predetermined intervals so that it is continuously monitored if the maritime evacuation system 100 meets the requirements for being ready for rescue. Hereby it is ensured that the power supply is able to supply sufficient power so that the survival craft is able to manoeuvre and propel away from the vessel.

[0055] In Figs. 5 and 6 show two different embodiments of the maritime evacuation system according to the invention.

[0056] In Fig. 5 a first embodiment is shown. The embodiment is similar to one described in connection with Figs. 1-4. The storage unit 2 houses four deflated survival crafts 5. In the deflated state the survival crafts 5 are housed by the shells 15 as shown in Fig. 5. In each shell 15 the survival craft 5 has an engine powered propulsion means 7 and a power supply 17 to each engine powered propulsion means 7 is also arranged in each shell 15. The engine powered propulsion means 7 and the power supplies 17 are only shown schematic in one of the survival crafts 5, however, all survival crafts 5 are identical in the present embodiment meaning that all survival crafts 5 have the same design.

[0057] Furthermore, each survival craft 5 is wirely connected with each other, the survival crafts 5 being wirely connected with the central control unit 16. In Fig. 5 each survival craft 5 has a craft control unit 18, the craft control unit 18 being configured to control the engine powered propulsion means 7 of the survival craft 5. The craft control unit 18 may be wirely connected with each engine powered propulsion means 7 by a craft cable 19. The four craft control units 18 are wirely connected to each other by four unit cables 20. One of the craft control units 18 are wirely connected with the central control unit 16 by a control cable 21.

[0058] In an embodiment when the maritime evacuation system is stored in the storage unit, the survival craft controller is in charge, and control all motor units. When the maritime evacuation system is being deployed, the survival crafts are independently controlled. The engine powered propulsion means are all equal.

[0059] In another embodiment one of the craft control units 18 is configured to be a master craft control unit which may control the other craft control units before the

survival crafts 5 are separated so that all survival crafts 5 may be control by the master craft control unit, for instance during positioning of the survival crafts 5 along the vessel side.

[0060] Furthermore, a craft cable break-away connector 22 is arranged between each survival craft 5 for ensuring that the survival crafts 5 can be separated and move independently in relation to each other after deployment. The craft break-way cable connectors 22 between the survival crafts 5 are configured to break during inflation of each survival craft and/or during separation of one survival craft from another.

[0061] In addition, a unit cable break-away connector 23 is arranged between the survival crafts 5 and the central control unit 16 for ensuring that the survival crafts 5 can be separated from the central control unit 16 at deployment of the survival crafts 5. The unit break-way cable connector 23 between the survival crafts 5 and the central control unit 16 is configured to break when the survival crafts 5 are being moved out of the storage unit 2 during deployment of the survival crafts 5.

[0062] In another embodiment two unit cable break-away connectors 23 may be arranged between the survival crafts 5 and the central control unit 16 for a redundant constellation.

[0063] In Fig. 4 the craft control units 18 are shown schematically in each inflated and deployed survival craft 5. In Fig. 4 the craft control units 5 are still wirely connected to each other. In the shown embodiment the craft cable break-away connectors (not shown) will first break when the survival crafts 5 are separated from each other. [0064] In Fig. 6 another embodiment of the maritime evacuation system 100. In the present embodiment two deflated survival crafts 5 are arranged in the storage unit 2. The central control unit 16 is in this embodiment arranged outside the storage unit 2. Each survival craft 5 has a shell 15 shown as a dotted line in Fig. 6. In connection with each shell 15 two engine powered propulsion means 7 and power supplies 17 are arranged for propelling the survival crafts 5 after deployment and inflation. Each survival craft 5 has a craft control unit 18 which in the present embodiment are not connected with each other. Each craft control unit 18 is connected with the central control unit 16 by two separate control cables 21. Each control cable 21 has a unit cable break-away connector 23 being arranged between the survival craft 5 and the central control unit 16 for ensuring that the survival craft 5 can be separated from the central control unit 16 at deployment of the survival craft 5.

[0065] Preferably the power supply is a battery when the engine powered propulsion means runs on electricity. However, in another embodiment the engine powered propulsion means may be a combustion engine in which circumstance the power supply may be a fuel. However, presently electricity as power supply is preferred.

[0066] Fig. 7 shows an example of how the unit cable break-away connectors 22 are arranged inside the survival crafts 5.

35

40

[0067] In Fig. 8 an embodiment of the design of each of the craft cable break-away connector 22 and the unit cable break-away connector 23 are shown. Each cable break-away connector 22, 23 comprises a plug part 24 and a receptable part 25. The plug part 24 comprises a first plug end 26 configured to be connected with a cable 20,21 and a second plug end 27, the receptable part 25 comprises a first receptable end 28 configured to be connected with a cable 20, 21 and a second receptable end 29. The second plug end 27 is configured to be connected with the second receptable end 29 so that communication between the two cables 20, 21 is provided through the cable break-away connectors 22, 23. In the present embodiment the second plug end 27 is configured to be inserted into the second receptable end 29 to provide a releasable connection between them.

[0068] The second plug end 27 has one or more projections 30, the one or more projections 30 is/are configured to engage one or more recesses 31 provided in the second receptable end 29 for providing a releasable connection between the second plug end 27 and the second receptable end 29 ensuring that the releasable connection first is released at a predetermined force, i.e. the force it takes to pull the one or more projections 30 out of engagement with the one or more recesses 31. The projections 30 may be spring-loaded itself or be arranged on a member 32 which may be moved inwardly when the predetermined force is reached.

[0069] The cable break-away connectors 22, 23 are watertight when connected. However, the second plug end 27 and the second receptable end 29 are configured to be watertight when disconnected as well.

[0070] In Fig. 9 another schematic view of a storage unit 2 is shown. One or more sensors is/are arranged in the storage unit 2 and/or in the survival crafts 5, the sensor(s) being configured to measure one or more parameters of the environment inside the storage unit 2 and/or of one or more components arranged in the storage unit 2, the parameters may be temperature, humidity, pressure, gas content, pump running time/intervals, door open/closed time, actuator position and/or others in the storage unit 2, the central control unit 16 is operatively connected with the one or more sensors. Inside the storage unit a first sensor 33 may be arranged for measuring the temperature and/or the humidity of the inside of the storage unit 2. The first sensor is operatively connected with the central control unit 16, preferably by wire. A second sensor 34 may be arranged inside the storage unit 2 for measuring a pressure and/or a gas content of the inside of the storage unit 2. The second sensor is also operatively connected with the central control unit 16.

[0071] Furthermore, a temperature sensor 35 is arranged at the power supply 17 in the survival crafts 5 for measuring a temperature at the power supply 17 in the survival crafts 5 and/or a temperature of the power supply 17, the temperature sensor 35 being operatively connected with the central control unit 16. In addition, a pressure sensor (not shown) may also be arranged for measuring

the pressure.

[0072] The maritime evacuation system 100 may also comprise one or more temperature altering device(s) 36 arranged in the storage unit 2 or at the storage unit 2. The temperature altering devices may use the vessel's climate equipment or it may be part of the storage unit. The temperature altering devices 36 may be configured to alter the temperature of the inside of the storage unit 2 or an area of the inside of the storage unit 2. The temperature altering device may also be configured to function as climate device for altering the humidity of the inside and/or ventilating the inside of the storage unit 2. In addition, the maritime evacuation system 100 may comprise a second climate device to control the climate inside the storage unit. The second climate device may be a dehumidifier.

[0073] The central control unit 16 is configured to maintain the power supply 17 in the survival crafts 5 at a predetermined temperature. Furthermore, the central control unit is also configured to monitor the power level of each power supply 17 and to charge the power supply if it reaches a predetermined lower power level.

[0074] The predetermined temperature is between 0 to 35 degrees Celcius, preferably around 20 degrees Celsius.

[0075] Furthermore, the maritime evacuation system 100 may also comprise indication means 37 being configured to disclose whether the maritime evacuation system 100 is ready for rescue. In Fig. 9 the indication means 37 is arranged at the storage unit 2 so that it is easily detectable for the crewmembers. However, the indication means may also be part of a controller of the vessel.

[0076] Fig. 10 shows a part of the storage unit 2 with deflated survival crafts 5 arranged on the yoke. The shells 15 are configured to encompass the deflated structure of the survival crafts 5. Furthermore, the shells 15 are also configured to comprise the engine powered propulsion means (not shown) and the propellers 38. Furthermore, the yoke 8 ensures that a space between the bottom of the storage unit 2 and the survival crafts 5 is created so that air may be circulated below the survival crafts

[0077] Figs. 11-13 show different views of the storage unit 2. The walls of the storage unit 2 have been omitted. Figs. 11-12 are views of the storage unit seen from below. In the present embodiment air channels 39 have been arranged below the storage unit for enabling air flow to designated areas of the storage unit 2 and enabling return air. Fig. 13 shows a side view of the storage unit 2 wherein the temperature altering device 36 is arranged. The temperature altering device may have a fan or ventilator for circulating the air in the air channels. The temperature altering device 36 may be configured to cool or heat the air before it is circulated. Hence the air may be tempered and conditioned air.

[0078] In Fig. 14 a part of the inside of a shell 15 is shown. Inside the shell 15 the power supplies 17 are shown in the form of battery packs. As shown by the

15

20

25

30

35

40

45

50

55

arrows tempered air may circulated beneath the power supplies by introducing is trough inlets 41 and out through outlet 41. Hereby it is possible to keeping the temperature at the power supply at the predetermined temperatures by circulating tempered air in the vicinity of the power supplies.

[0079] Although the invention has been described in the above in connection with preferred embodiments of the invention, it will be evident for a person skilled in the art that several modifications are conceivable without departing from the invention as defined by the following claims.

Claims

1. A maritime evacuation system (100) to be installed on a vessel (1) or offshore facility, comprising a storage unit (2) to be installed on the vessel or offshore facility,

at least two survival crafts (5), each having a hull (13), predominantly made of non-rigid inflatable tubes (14) and one or more shells (15), the survival crafts (5) being configured to be stored in the storage unit in a deflated state,

each survival craft (5) comprises at least two engine powered propulsion means (7),

the maritime evacuation system further comprising a central control unit (16) being operatively connected with each engine powered propulsion means, wherein the central control unit (16) is configured to observe the condition of and test the readiness of each engine powered propulsion means (7) at predetermined intervals so that it is continuously monitored if the maritime evacuation system meets the requirements for being ready for rescue.

- 2. A maritime evacuation system (100) according to claim 1, wherein each engine powered propulsion means (7) is powered by electricity, one or more power supply(ies) (17) is/are arranged in the survival craft for providing electricity to the engine powered propulsion means, the central control unit (16) is operatively connected with each power supply (17), and the control unit (16) is configured to observe the condition of and test the readiness of each power supply (17) at predetermined intervals so that it is continuously monitored if the maritime evacuation system meets the requirements for being ready for rescue.
- 3. A maritime evacuation system (100) according to claim 1 or 2 further comprising one or more sensors (33, 34, 35), the sensor(s) is/are arranged in the storage unit (2) and/or in the survival crafts (5), the sensor(s) being configured to measure one or more parameters of the environment inside the storage unit (2) and/or of one or more components arranged in

the storage unit, the parameters may be temperature, humidity, pressure, gas content, pump running time/intervals, door open/closed time, actuator position and/or others in the storage unit and/or in the survival craft, the control unit (16) is operatively connected with the one or more sensors.

- **3.** A maritime evacuation system (100) according to any of the preceding claims, wherein each survival craft is wirely connected with each other, the survival crafts being wirely connected with the central control unit (16).
- **4.** A maritime evacuation system (100) according to claim 3, wherein the survival crafts (5) are wirely connected with the central control unit (16) with one wire or cable (21).
- **5.** A maritime evacuation system (100) according to claim 3 and/or 4, wherein a craft cable break-away connector (22) is arranged between each survival craft for ensuring that the survival crafts can be separated and move independently in relation to each other after deployment.
- **6.** A maritime evacuation system (100) according to any of the claims 3 to 5, wherein at least one unit cable break-away connector (23) is arranged between the survival crafts (5) and the central control unit (16) for ensuring that the survival crafts (5) can be separated from the central control unit (16) at deployment of the survival crafts.
- 7. A maritime evacuation system (100) according to any of the preceding claims, further comprising indication means (37) being configured to disclose whether the maritime evacuation system is ready for rescue.
- **8.** A maritime evacuation system (100) according to any of the preceding claims, wherein a temperature sensor (35) is arranged at the power supply (17) in the survival crafts (5) for measuring a temperature at the power supply in the survival crafts and/or a temperature of the power supply, the temperature sensor (17) being operatively connected with the central control unit (16).
- **9.** A maritime evacuation system (100) according to claim 8, wherein the central control unit (16) is configured to maintain the power supply (17) in the survival crafts at a predetermined temperature.
- **10.** A maritime evacuation system (100) according to claim 9, wherein the predetermined temperature is between 0 to 35 degrees Celsius, preferably around 20 degrees Celsius.

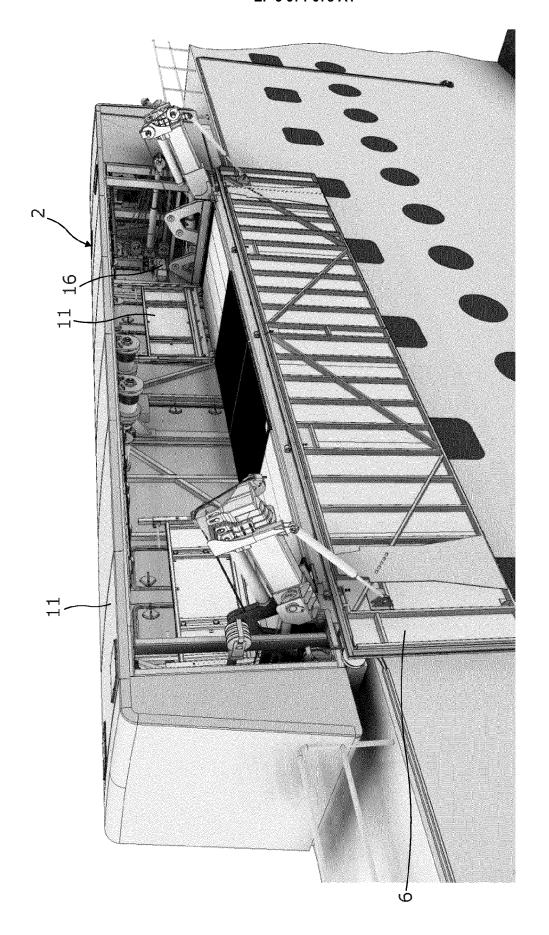
11. A maritime evacuation system (100) according to any of the claims 5-6, wherein the craft cable break-way connectors (22) between the survival crafts (5) are configured to break during inflation of each survival craft and/or during separation of one survival craft (5) from another.

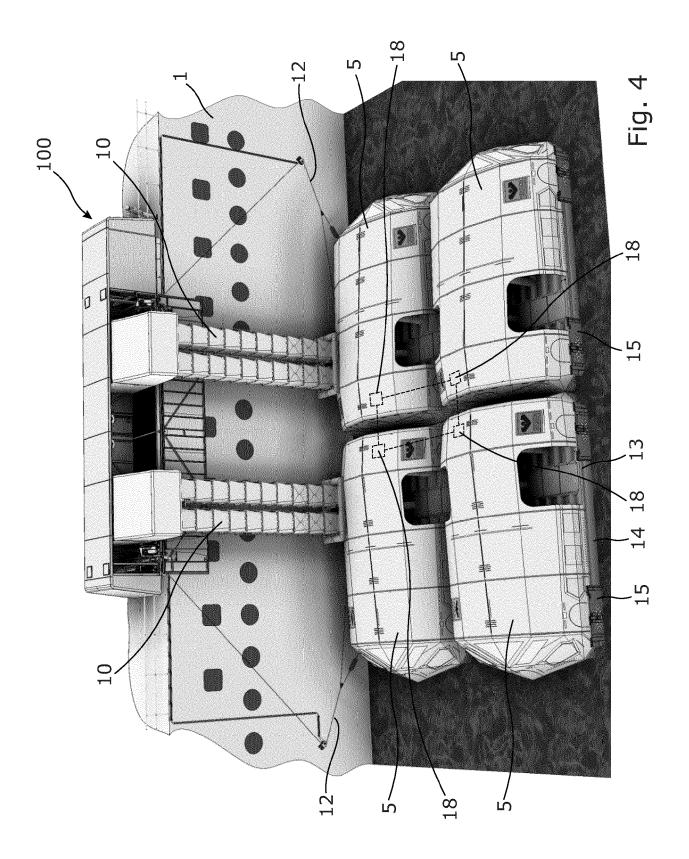
12. A maritime evacuation system (100) according to any of the claims 5-6 and/or claim 11, wherein the unit cable break-way connector (23) between the survival crafts (5) and the central control unit (16) is configured to break when the survival crafts are being moved out of the storage unit (2) during deployment of the survival crafts.

13. A maritime evacuation system (100) according to any of the preceding claims, wherein each survival craft (5) has a craft control unit (18), the craft control unit being configured to control the engine powered propulsion means (7) of the survival craft.

14. A maritime evacuation system (100) according to any of the preceding claims, wherein the wires and/or cables are configured to transport data and/or electricity.

15. A vessel (1) or offshore facility comprising a maritime evacuation system (100) according to any of the preceding claims.





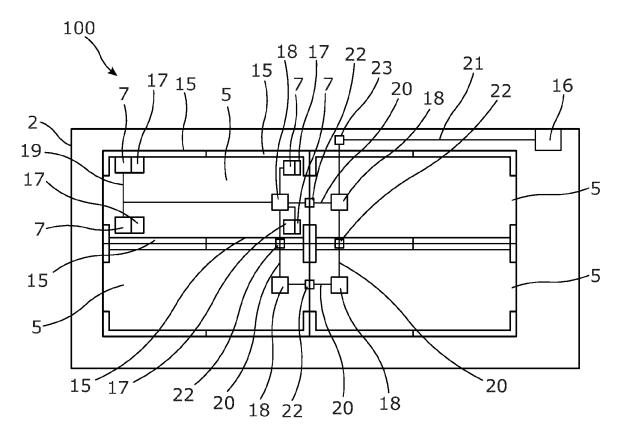
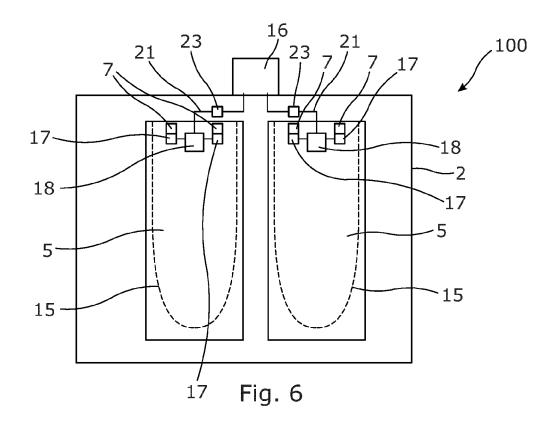
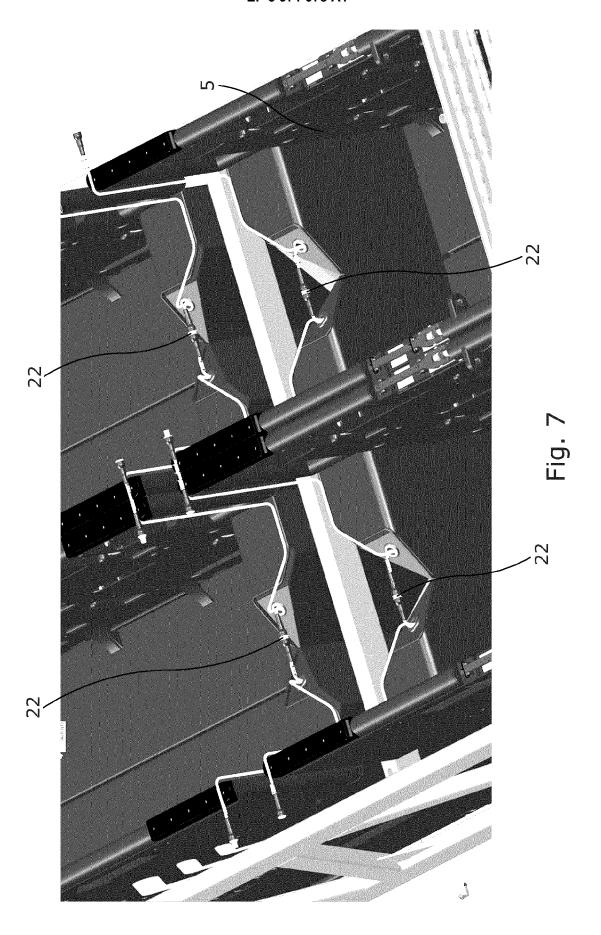


Fig. 5





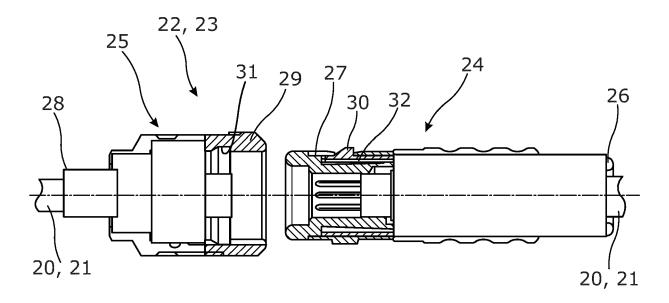


Fig. 8

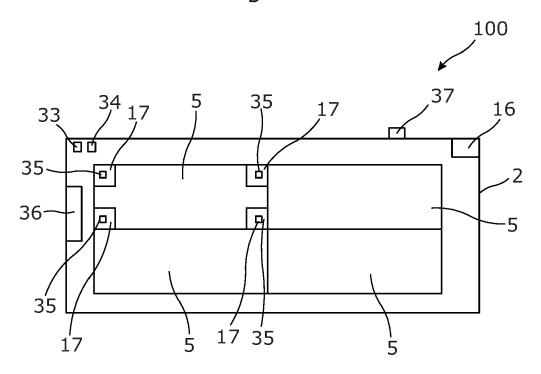
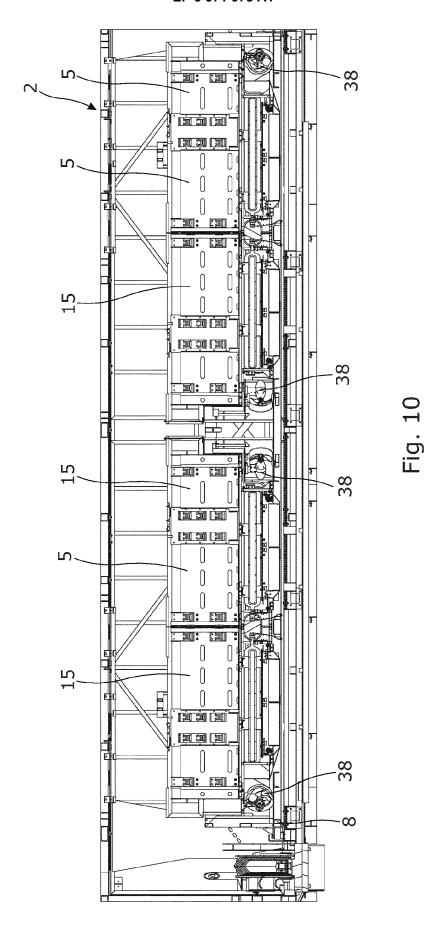
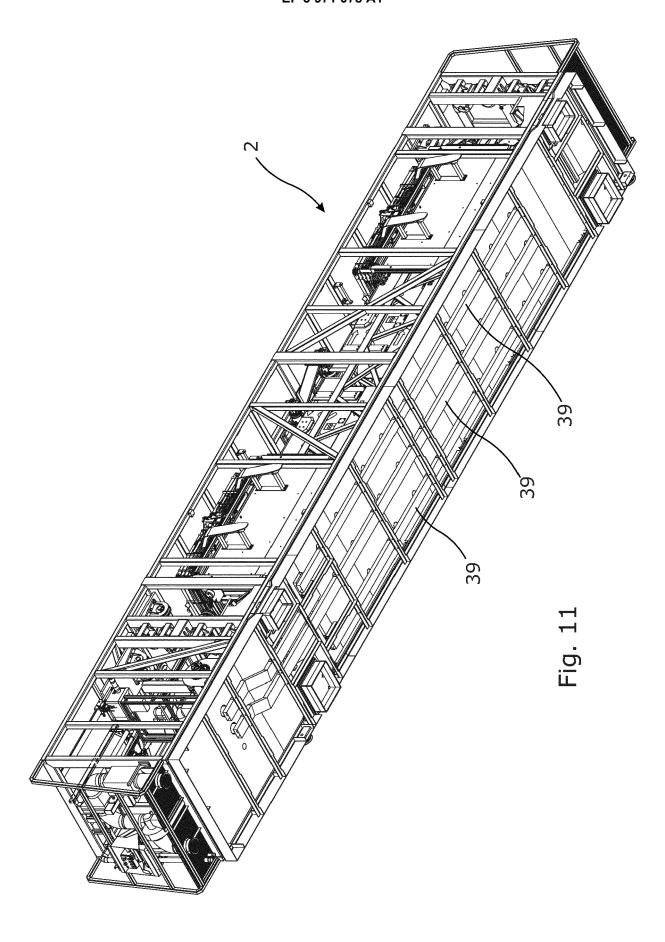
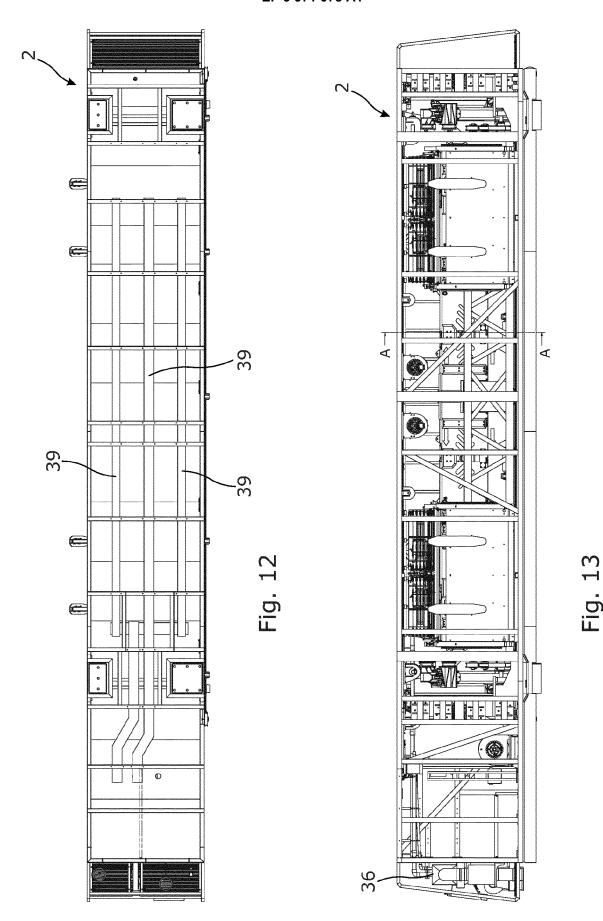
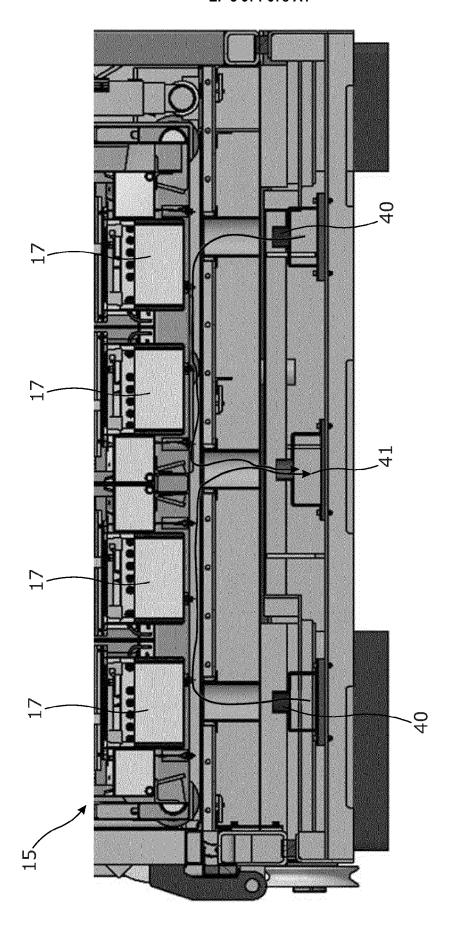


Fig. 9











EUROPEAN SEARCH REPORT

Application Number EP 20 19 6563

5

3						
	DOCUMENTS CONSIDERED TO BE RELEVANT					
	Category	Citation of document with ir of relevant passa	ndication, where appropriate, ages		Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
10	X Y A	US 2016/107730 A1 (AL) 21 April 2016 (* figures 1-19b * * paragraphs [0127]	2016-04-21)		1-3,8, 14,16 9-11 4-7,12, 13,15	INV. B63C9/23 B63B23/62 B63B25/00 B63B27/28
15	Y	US 2019/329852 A1 (AL) 31 October 2019 * figures 1-9 * * paragraphs [0085]	(2019-10-31)	FR] ET	9-11	B63B7/08
20						
25						TECHNICAL FIELDS
30						B63C B63B
35						
40						
45		The present search report has I	peen drawn up for all claims			
1		Place of search	Date of completion of the	e search		Examiner
50 Î		The Hague	9 March 202		Fre	ire Gomez, Jon
(P040	CATEGORY OF CITED DOCUMENTS			T: theory or principle underlying the in		<u>-</u>
PPO FORM 1503 00.82 (P04C01)	X : parl Y : parl doc A : tecl O : nor	icularly relevant if taken alone icularly relevant if tombined with anoth incularly relevant if combined with anoth import of the same category inclogical backgroundwritten disclosure rmediate document	E : earlier after th ner D : docun L : docum	r patent docu ne filing date ment cited in t nent cited for per of the sam	ment, but publis the application other reasons	shed on, or

EP 3 971 078 A1

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

EP 20 19 6563

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

09-03-2021

	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
	US 2016107730 A	1 21-04-2016	CN 103648904 A EP 2720939 A1 US 2014283729 A1 US 2016107730 A1 WO 2012172083 A1	19-03-2014 23-04-2014 25-09-2014 21-04-2016 20-12-2012
	US 2019329852 A	1 31-10-2019	AU 2017373391 A1 CA 3046143 A1 CN 110234567 A EP 3551529 A1 GB 2557326 A US 2019329852 A1 WO 2018104005 A1	27-06-2019 14-06-2018 13-09-2019 16-10-2019 20-06-2018 31-10-2019 14-06-2018
ø				
RM P0459				

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82