

(19)



(11)

EP 3 109 148 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
23.01.2019 Bulletin 2019/04

(51) Int Cl.:
B63B 7/08 (2006.01) **B63B 27/30 (2006.01)**
B63C 9/00 (2006.01)

(21) Application number: **16162779.9**

(22) Date of filing: **30.03.2016**

(54) **LINING AND RESCUE FLOAT**

AUSKLEIDUNG UND RETTUNGSSCHWEBEKÖRPER

REVÊTEMENT ET FLOTTEUR DE SECOURS

(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**

(30) Priority: **26.06.2015 ES 201530923**

(43) Date of publication of application:
28.12.2016 Bulletin 2016/52

(73) Proprietor: **Industrias Ferri, S.A.
36316 Vincios, Pontevedra (ES)**

(72) Inventor: **RUPPEN CAÑÁS, Francisco José
36316 Vincios, Pontevedra (ES)**

(74) Representative: **Isern-Jara, Nuria
Avda. Diagonal 463 Bis 2°
08036 Barcelona (ES)**

(56) References cited:
**EP-A1- 2 772 425 WO-A1-2015/066451
FR-A1- 2 446 218 GB-A- 2 240 748
US-A- 4 989 691 US-A- 5 301 630**

EP 3 109 148 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

OBJECT OF THE INVENTION

[0001] The present invention falls within the technical field of vessel access devices.

[0002] More specifically, a lining and rescue float according to the preamble of independent claim 1 is described. Such a lining and rescue float is installed in a vessel and allows the safe movement of people to said vessel and the lining to a second vessel.

BACKGROUND OF THE INVENTION

[0003] Sea rescue operations are generally performed to rescue people who have fallen into the water from a vessel or for rescuing people who are in drifting vessels or in vessels such as canoes, dinghies, barges, rafts, etc.

[0004] In the state of the art, different devices for rescuing people in a body of water or for accessing a vessel from the body of water or from another drifting vessel are known.

[0005] For example, it is known a belt for rescuing shipwrecked people comprising an incorporated float that is inflated with CO₂. The float is disposed in a partitioned space of the belt and is inflated only in case of need when the person wearing it has fallen into the water. When inflated, the float remains below the shipwrecked person's upper limbs and is secured thereto by means of tapes sewn together around their circumference and, at the same time, sewn internally to the belt. It also comprises harnesses with folded tapes on its rear lower part for ensuring the proper use and safety function thereof. Therefore, it is a float for individual use and does not allow the rescue of various people at the same time.

[0006] In the same way, a waterproof and thermally insulated life jacket that comprises an incorporated floatation system to prevent the person wearing it from drowning is also known. This float, in addition to being for individual use, is designed for a person to wear it while performing certain activities, but must be wearing it when he or she falls overboard or when he or she is performing said activities at sea.

[0007] In order to perform rescue operations involving a plurality of people, for example, a float is known, especially intended for use in small vessels such as fishing boats, sailboats, motorboats, speedboats, etc., which comprises a net incorporating a rope that the shipwrecked person grips in order to climb aboard the vessel. A furled net is permanently disposed on the deck of the vessel so that whenever someone in the water or in another vessel must be rescued, he or she can climb up said net to the deck.

[0008] A major problem arising in the case of having to rescue people who are in other drifting vessels is that those people have often spent days exposed to the weather, without sleeping or eating, and are too weak to climb said net, even with the help of the rope.

[0009] Another technical problem of this solution is that it does not prevent collision between the vessels (rescue and rescued) during the ship-to-ship lining operation. In many cases, particularly in adverse weather conditions, the vessels collide with each other and may cause injuries or cause some people to fall into the body of water. Additionally, in this case, the weaker vessel may also become damaged and even sink.

[0010] In the state of the art it is known document WO2015066451 which discloses a ramp assembly with a buoyant support platform having a landing area for allowing swimmers to easily enter or exit the water. It is also known document US5301630 that describes a rescue ramp for use by a watercraft. The ramp is connected to tube members so that when the rescue ramp is inflated and attached to the watercraft, a person may traverse from the water to the watercraft or from the watercraft to the water. Also it is known document EP2772425 which discloses a marine evacuation system for rapid evacuation of persons from an evacuation area of a vessel. It comprises a plurality of inflatable liferafts, a plurality of evacuation chutes and a bowsing system adapted to position the inflatable liferafts in relation to the vessel.

DESCRIPTION OF THE INVENTION

[0011] The present invention proposes a lining and rescue float especially intended for facilitating the movement of people between two vessels on a flat and horizontal face which remains substantially parallel to the surface of the body of water wherein said vessels are located.

[0012] The float described is quickly assembled and facilitates and improves ship-to-ship lining to make it safer. It also facilitates access to people or the rescue of shipwrecked people who are in the body of water or in another vessel, solving the aforementioned problems of the state of the art.

[0013] The float extends from the side of the vessel wherein it is installed and is configured to remain in contact with the second vessel (that being rescued), facilitating the movement of people between the vessels. The upper side of the float is horizontal to allow the convenient movement of people. It preferably comprises inclined zones on the sides in the manner of a ramp, towards the body of water, to help the people who have fallen overboard to climb aboard the vessel.

[0014] The configuration of the float also makes it possible for weaker people to comfortably access the vessel. Additionally, the float, which essentially comprises an inflatable body, remains in contact with the hulls of the two vessels, thereby preventing collisions therebetween.

[0015] When the float is not being used, the inflatable body is empty, folded and stored so that it does not occupy space or obstruct the navigation of the vessel. When having to perform ship-to-ship lining or a rescue, the float is inflated and occupies its position, in contact with one of the sides of the vessel and with the upper side in a horizontal direction to allow the comfortable movement

of people between the vessels.

[0016] The lower part of the inflatable body extends underneath the body of water to guarantee that, despite the possible adverse weather conditions, the inflatable body never falls on top of the second vessel, no matter how small it is. Likewise, since it extends towards the interior of the body of water, the inflatable body is prevented from falling on top of a shipwrecked person thus causing death from drowning.

[0017] According to the invention, the front side, which is that destined to remain in contact with the second vessel, extends further towards the interior of the body of water than the rest of the inflatable cushion.

[0018] Additionally, in the case of rescuing shipwrecked people, it has been previously described that at least one part of the inflatable body may have an inclined configuration from the upper side of the inflatable body towards the body of water. This enables a person who has fallen overboard to climb up comfortably and secure a foothold with very little effort.

[0019] The float may additionally comprise a net on one of its sides or on all the sides wherethrough people can pass to facilitate their movement, providing them a firmer grip in case the surfaces are wet, in case the vessels are moving a lot, etc.

[0020] The float may have different dimensions in accordance with the size of the vessels and of the envisaged usage needs. The float may be used by a single person, for example a shipwrecked person who has fallen overboard or for ship-to-ship lining and allow the passage of various crew members between the vessels.

[0021] The float is joined to the vessel in which it is installed, and can be stored in a receptacle, for better maintenance thereof, and so that it does not bother the crew members or bother during navigation.

[0022] The float of the present invention can be used in both small vessels and in large vessels. A float having an inflatable body with sufficient height to reach the deck of the vessel in which it is installed may be used. A float having an inflatable body of the same size as in the case of small vessels may also be used, completing the side of the vessel (from the end of the inflatable body to the deck of the vessel) with a larger net that reaches up to the deck.

[0023] The inflatable body comprises an upper side that extends in a horizontal direction from the vessel in which it is installed, constituting a horizontal surface for people to pass between the vessels, a rear side that remains in contact with the vessel and which is partially submerged in the body of water, a front side destined for remaining in contact with the second vessel, and which is partially submerged in the body of water, a lower side that joins the rear side and the front side from below, and lateral sides.

[0024] The lower part of the inflatable body is disposed in the interior of the body of water when it is fully inflated. The lower side and lower part of the front side are submerged.

[0025] As described previously, this makes it possible to prevent part of the inflatable body from accidentally falling on top of the second vessel or on top of people in the body of water. Preferably, the front side is longer than the rear side or the float comprises front reinforcements that extend downwards from said front side to increase the surface of the front side. This guarantees that, even if the inflatable body moves, part of the front side will always be in contact with the second vessel so that the second vessel does not move underneath the float.

[0026] Additionally, the fact that the inflatable body extends to the interior of the body of water makes it possible to guarantee that the people in the body of water can easily climb onto the float without having to jump or make a great effort for which they may not be prepared.

[0027] As described previously, the float can comprise lateral reinforcements that extend from the lateral sides or are the lateral sides themselves of the inflatable body. These reinforcements make it possible to cover the entire lateral surface of the vessel hull in which the float is installed to prevent the vessels from colliding in the zones not covered by the inflatable body of the float. In this manner, the protection is extended.

[0028] Likewise, these lateral protections, in the event of having the previously described ramp configuration, act as part of the inflatable body to enable people accessing the vessel therethrough.

[0029] The inflatable body is preferably inflated using compressed air cylinders that may be installed, for example, inside the receptacle.

[0030] In order to keep the corresponding zones of the inflatable body submerged, ballast is used, as for example water, which is introduced in the interior of the inflatable body in the zone to be kept submerged.

[0031] In one example of embodiment, the float may comprise joining means for joining to the second vessel. This ensures that the float is properly joined to the two vessels and that possible separation problems with respect to the second vessel during the movement of people are avoided.

[0032] Likewise, the height of the float can be regulated by controlling, for example, the height of immersion of the lower part of the float. In this manner, the float can be submerged more or less so that the upper part thereof remains more or less close to the second vessel. This allows people to pass from the second vessel, or directly from the body of water, more comfortably to the first vessel.

DESCRIPTION OF THE DRAWINGS

[0033] In order to complement the description being made and with the object of helping to better understand the characteristics of the invention, in accordance with a preferred embodiment thereof, said description is accompanied, as an integral part thereof, by a set of drawings where, in an illustrative and non-limiting manner, the following has been represented:

Figure 1a shows a lateral view of the float in an embodiment in which it comprises cylindrical protectors on the sides of the inflatable body.

Figure 1b shows a perspective view of the embodiment of figure 1a wherein the lower part of the float can be observed.

Figure 1c shows a lateral side view of the embodiment of figure 1a.

Figure 2a shows a view from a side of the float in an embodiment wherein it comprises inclined protectors on the sides of the inflatable body.

Figure 2b shows a perspective view of the embodiment of figure 2a wherein the lower part of the float can be observed.

Figure 2c shows a lateral side view of the embodiment of figure 2a.

Figure 3a shows a view from a side of the float in an embodiment in which it comprises protectors with steps on the sides of the inflatable body.

Figure 3b shows a perspective view of the embodiment of figure 3a wherein the lower part of the float can be observed.

Figure 3c shows a lateral side view of the embodiment of figure 3a.

PREFERRED EMBODIMENT OF THE INVENTION

[0034] Following is a description, with the help of figures 1 to 3, of some examples of embodiment of the present invention.

[0035] The lining and rescue float of the present invention is installed in a vessel (2) which is located in a body of water and which enables people to access the vessel (2) from the body of water or from a second vessel (6).

[0036] The float comprises at least one inflatable body (1) and fixing means for fixing said inflatable body (1) to the vessel (2). These fixing means must guarantee the proper fixation between the float and the vessel (2), even in adverse weather conditions and/or heavy swell. The key of the float of the present invention is that it has at least one upper side (3) that extends in a horizontal direction from the vessel (2) wherein it is installed, constituting a horizontal surface for the passage of people in order to allow them to comfortably access the vessel. The preferred application of the invention will be the rescue of drifting vessels, canoes, etc., due to which the float is generally used as a passageway for people between a second vessel (6) and the vessel (2) wherein it is installed.

[0037] Likewise, the float comprises a rear side (4) that remains in contact with the vessel (2) and which is partially submerged in the body of water, a front side (5) destined for being in contact with the second vessel (6) and which is partially submerged in the body of water, a lower side (10) that joins the rear side (4) and the front side (5) underneath, and lateral sides (11).

[0038] That is, the configuration of the float is polygonal and, preferably, is a rectangular prism. Additionally, the

float may comprise joining means for joining to the second vessel such as, for example, ropes, shackles, etc.

[0039] In one embodiment, such as that shown in figures 1c, 2c and 3c, the float additionally comprises front reinforcements (7), also inflatable, that emerge from the inflatable body (1) in a vertical direction as an extension of the front side (5) in the interior of the body of water. The float may also comprise additional reinforcements (8) that emerge from the lower side (10) of the inflatable body (1) and extend up to the front reinforcements (7) configured to push said front reinforcements (7) and prevent them from folding.

[0040] The front reinforcements (7) are submerged in the body of the water to prevent the float from becoming separated from said body of water, due to heavy swell or strong wind, and falling on top of the second vessel or on top of people who have fallen into the body of water. When the additional reinforcements (8) are added, it is guaranteed that, additionally, the front reinforcements (7) will maintain their vertical orientation and will not fold.

[0041] The front reinforcements (7) may be a plurality of columns which are connected to the interior of the inflatable body (1) and the additional reinforcements (8) may also be connected to the interior of the inflatable body (1). Preferably, the inflatable body (1), front reinforcements (7) and additional reinforcements (8) are interconnected.

[0042] In another example of embodiment, the float does not comprise front reinforcements (7), but the inflatable body itself causes the aforementioned effect. To this end, the front side (5) has a greater length than the rear side (4) and the lower side (10) is inclined from the rear side (4) to the front side (5). In this manner, the front side (5) submerges further into the body of water and prevents it from falling out due to unwanted movements. Additionally, since the lower side (10) is inclined from the rear side (4) (which rests upon the vessel hull (2)), the inflatable body itself (1) against the vessel hull (2) acts as a reinforcement to maintain the proper position of the front side (5).

[0043] Likewise, the float may comprise a net (9), as can be observed in any of the figures, disposed at least on the upper side (3) and also preferably on the front side (5) and also on the front reinforcements (7) if any. The net (9) enables people who pass through the float to hold on if they need to in order to avoid slipping or falling, or simply for comfort.

[0044] The net (9) may comprise ballast weights (13), as can be observed, for example, in figures 1b, 2b and 3b, destined for remaining submerged in the body of water to ensure the position of the net (9) with respect to the inflatable body (1). In one example of embodiment, the float may also comprise ballast weights on the inflatable body to keep it partially submerged. Preferably, the ballast of the inflatable body is water that is introduced inside the inflatable body when wanting to control the height of immersion of the body and that can be removed afterwards when the float is not in use and is stored.

[0045] In another possible embodiment, on at least one lateral side (11) of the inflatable body (1) there is an inflatable protection (12) that extends from said lateral side (11) to prevent collisions between the vessels (2, 6). Preferably, there is an inflatable protection (12) on each lateral side (11) and are joined to the interior of the inflatable body (1) to be inflated at the same time as said body.

[0046] In one example of embodiment, as shown in figures 1a, 1b and 1c, the inflatable protections (12) are cylindrical and extend practically perpendicular to the lateral sides (11) to increase the surface area of the vessel hull (2), which is protected against possible collisions between it and the second vessel (6) to be lined.

[0047] In a preferred embodiment, such as that shown in figures 2a, 2b and 2c, the inflatable protection (12) has a ramp configuration that extends from the upper side (3) towards the body of water and remains at least partially submerged in said body of water. This embodiment is specially designed to facilitate access to the vessel (2) by people who are in the body of water, i.e. people who have fallen into the water or who, for some reason, have had to jump into the water. Due to that inclination, the people access directly from the water without having to climb up the front side (5). In this case the inflatable protections (12) may also be covered by the net (9) to facilitate the passage of people.

[0048] Figures 3a, 3b and 3c show another possible embodiment of the invention wherein the inflatable protections (12) are configured in the manner of a staircase having a plurality of inflatable steps. That is, the inflatable protection (12) has a staircase configuration that extends from the upper side (3) to the body of water and is at least partially submerged in said body of water. This embodiment enables shipwrecked people who are in the body of water or people who are in the vessels to be rescued to climb up the stairs comfortably and easily. It enables them to access the upper side (3) of the inflatable body (1) in a manner familiar to everyone.

[0049] Likewise, this embodiment enables people in the first vessel to climb down the stairs to approach the second vessel, in order to fix the position of the inflatable body by means of the joining means to the second vessel, etc. It also enables the people in the first vessel to comfortably reach the body of water in the event that it is necessary to pick up something that has fallen into the body of water or help the people who are in said body of water to climb on board the first vessel.

[0050] In said embodiment, the float also comprises tubular projections that extend from the sides of the inflatable protections. In this case, the tubular projections extend perpendicular to the stairs at the height of the body of water, towards the second vessel. These tubular projections (which could also have a cross-section whose geometry is different to that of the tubular geometry with which they have been defined) are grips aimed at helping the people who have fallen overboard in their attempt to pass from one vessel to the other to finally reach the rescue vessel.

Claims

1. A lining and rescue float which is installed in a vessel (2) located in a body of water and which enables people to access the vessel (2) from the body of water or from a second vessel (6) and which comprises at least one inflatable body (1) and fixing means for fixing said inflatable body (1) to the vessel (2), where:
 - the inflatable body (1) has a polygonal configuration with:
 - an upper side (3) that extends in a horizontal direction from the vessel (2) in which it is installed, constituting a horizontal surface for the passage of people between the vessels,
 - a rear side (4) that remains in contact with the vessel (2) and which is partially submerged in the body of water,
 - a front side (5) destined for remaining in contact with the second vessel (6) and which is partially submerged in the body of water,
 - a lower side (10) that joins the rear side (4) and the front side (5) underneath, and
 - lateral sides (11),
 and is **characterized in that** the front side (5) extends further towards the interior of the body of water than the rest of the inflatable body (1).
2. The lining and rescue float, according to claim 1, **characterized in that** the front side (5) extends further towards the interior of the body of water as front reinforcements (7), also inflatable, that extend from the inflatable body (1) in a vertical direction as an extension of the front side (5) submerged in the body of water.
3. The lining and rescue float, according to claim 2, **characterized in that** it comprises additional reinforcements (8) that emerge from the lower side (10) of the inflatable body (1) and extend up to the front reinforcements (7) configured to push said front reinforcements (7) and prevent them from folding.
4. The lining and rescue float, according to claim 2, **characterized in that** the front reinforcements (7) are a plurality of columns that are connected to the interior of the inflatable body (1).
5. The lining and rescue float, according to claim 3, **characterized in that** the additional reinforcements (8) are connected to the interior of the inflatable body (1).
6. The lining and rescue float, according to claim 3, **characterized in that** the inflatable body (1), the front reinforcements (7) and the additional reinforcements (8) are interconnected.

7. The lining and rescue float, according to claim 1, **characterized in that** the front side (5) has a length greater than the rear side (4) and the lower side (10) is inclined from the rear side (4) to the front side (5). 5
8. The lining and rescue float, according to claim 1, **characterized in that** it additionally comprises a net (9) disposed at least on top of the upper side (3). 10
9. The lining and rescue float, according to claim 8, **characterized in that** the net (9) is disposed on the upper side (3) and on the front side (5). 15
10. The lining and rescue float, according to claims 2 and 9, **characterized in that** the net (9) covers the front reinforcements (7). 20
11. The lining and rescue float, according to claim 8, **characterized in that** the net (9) comprises ballast weights (13) at the ends that secure the position of the net (9) on the inflatable body (1). 25
12. The lining and rescue float, according to claim 1, **characterized in that** there is an inflatable protection (12) on at least one lateral side (11) of the inflatable body (1) that extends from said lateral side and is configured to prevent collisions between the vessels (2, 6). 30
13. The lining and rescue float, according to claim 12, **characterized in that** it comprises an inflatable protection (12) on each lateral side (11). 35
14. The lining and rescue float, according to claim 12, **characterized in that** the inflatable protection (12) is internally joined to the interior of the inflatable body (1). 40
15. The lining and rescue float, according to claim 12, **characterized in that** the inflatable protection (12) has a ramp configuration that extends from the upper side (3) towards the body of water and is partially submerged in said body of water. 45
16. The lining and rescue float, according to claim 12, **characterized in that** the inflatable protection (12) has a staircase configuration that extends from the upper side (3) to the body of water and is at least partially submerged in said body of water. 50

Patentansprüche

1. Längsseitigvertauungs- und Rettungsschwimmer, der in einem in einer Wassermasse befindlichen Wasserfahrzeug (2) installiert ist und der es Personen ermöglicht, das Wasserfahrzeug (2) von der Wassermasse oder von einem zweiten Wasserfahr-

zeug (6) aus zu erreichen, und der mindestens einen aufblasbaren Körper (1) und Befestigungsmittel zur Befestigung des aufblasbaren Körpers (1) an dem Wasserfahrzeug (2) umfasst, wobei:

- der aufblasbare Körper (1) eine polygonale Konfiguration aufweist, mit:
- einer Oberseite (3), die sich in horizontaler Richtung von dem Wasserfahrzeug (2) aus, in dem sie installiert ist, erstreckt und eine horizontale Fläche für den Durchgang von Personen zwischen den Wasserfahrzeugen bildet,
- einer Rückseite (4), die mit dem Wasserfahrzeug (2) in Kontakt bleibt und die teilweise in der Wassermasse eingetaucht ist,
- einer Vorderseite (5), die dazu bestimmt ist, in Kontakt mit dem zweiten Wasserfahrzeug (6) zu bleiben, und die teilweise in der Wassermasse eingetaucht ist,
- einer Unterseite (10), die die Rückseite (4) und die Vorderseite (5) darunter verbindet, und
- Seitenwänden (11),

und **dadurch gekennzeichnet ist, dass** sich die Vorderseite (5) weiter in Richtung des Inneren der Wassermasse erstreckt als der Rest des aufblasbaren Körpers (1).

2. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 1, **dadurch gekennzeichnet, dass** sich die Vorderseite (5) weiter in Richtung des Inneren der Wassermasse erstreckt, als vordere, ebenfalls aufblasbare Verstärkungen (7), die sich vom aufblasbaren Körper (1) in vertikaler Richtung als Verlängerung der in der Wassermasse eingetauchten Vorderseite (5) erstrecken.
3. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 2, **dadurch gekennzeichnet, dass** er zusätzliche Verstärkungen (8) umfasst, die aus der Unterseite (10) des aufblasbaren Körpers (1) austreten und sich bis zu den vorderen Verstärkungen (7) erstrecken, die ausgebildet sind, um die vorderen Verstärkungen (7) zu schieben und deren Falten zu verhindern.
4. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 2, **dadurch gekennzeichnet, dass** die vorderen Verstärkungen (7) eine Vielzahl von Säulen sind, die mit dem Inneren des aufblasbaren Körpers (1) verbunden sind.
5. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 3, **dadurch gekennzeichnet, dass** die zusätzlichen Verstärkungen (8) mit dem Inneren des aufblasbaren Körpers (1) verbunden sind.
6. Längsseitigvertauungs- und Rettungsschwimmer

nach Anspruch 3, **dadurch gekennzeichnet, dass** der aufblasbare Körper (1), die vorderen Verstärkungen (7) und die zusätzlichen Verstärkungen (8) miteinander verbunden sind.

7. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 1, **dadurch gekennzeichnet, dass** die Vorderseite (5) länger als die Rückseite (4) ist und die Unterseite (10) von der Rückseite (4) zur Vorderseite (5) geneigt ist.
8. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 1, **dadurch gekennzeichnet, dass** er zusätzlich ein Netz (9) umfasst, das zumindest auf der Oberseite (3) angeordnet ist.
9. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 8, **dadurch gekennzeichnet, dass** das Netz (9) auf der Oberseite (3) und auf der Vorderseite (5) angeordnet ist.
10. Längsseitigvertauungs- und Rettungsschwimmer nach den Ansprüchen 2 und 9, **dadurch gekennzeichnet, dass** das Netz (9) die vorderen Verstärkungen (7) abdeckt.
11. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 8, **dadurch gekennzeichnet, dass** das Netz (9) Ballaste (13) an den Enden umfasst, die die Position des Netzes (9) auf dem aufblasbaren Körper (1) sichern.
12. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 1, **dadurch gekennzeichnet, dass** auf mindestens einer seitlichen Seite (11) des aufblasbaren Körpers (1) ein aufblasbarer Schutz (12) vorhanden ist, der sich von der seitlichen Seite erstreckt und ausgebildet ist, um Zusammenstöße zwischen den Wasserfahrzeugen (2, 6) zu verhindern.
13. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 12, **dadurch gekennzeichnet, dass** er einen aufblasbaren Schutz (12) auf jeder seitlichen Seite (11) umfasst.
14. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 12, **dadurch gekennzeichnet, dass** der aufblasbare Schutz (12) innen mit dem Inneren des aufblasbaren Körpers (1) verbunden ist.
15. Längsseitigvertauungs- und Rettungsschwimmer nach Anspruch 12, **dadurch gekennzeichnet, dass** der aufblasbare Schutz (12) eine Rampenkonfiguration aufweist, die sich von der Oberseite (3) zur Wassermasse hin erstreckt und teilweise in der Wassermasse eingetaucht ist.
16. Längsseitigvertauungs- und Rettungsschwimmer

nach Anspruch 12, **dadurch gekennzeichnet, dass** der aufblasbare Schutz (12) eine Treppenkonfiguration aufweist, die sich von der Oberseite (3) zur Wassermasse hin erstreckt und zumindest teilweise in der Wassermasse eingetaucht ist.

Revendications

1. Flotteur d'amarrage et de secours qui est installé dans un navire (2) situé dans une masse d'eau et qui permet aux personnes d'accéder au navire (2) depuis la masse d'eau ou depuis un deuxième navire (6) et qui comprend au moins un corps gonflable (1) et des moyens de fixation pour fixer ledit corps gonflable (1) au navire (2), où :
 - le corps gonflable (1) a une configuration polygonale avec :
 - un côté supérieur (3) qui s'étend dans un sens horizontal du navire (2) dans lequel il est installé, constituant une surface horizontale pour le passage de personnes entre les navires,
 - un côté arrière (4) qui reste en contact avec le navire (2) et qui est partiellement submergé dans la masse d'eau,
 - un côté avant (5) destiné à rester en contact avec le deuxième navire (6) et qui est partiellement submergé dans la masse d'eau,
 - un côté inférieur (10) qui relie le côté arrière (4) et le côté avant (5) en-dessous, et
 - des côtés latéraux (11),
 et qui est **caractérisé en ce que** le côté avant (5) s'étend davantage vers l'intérieur de la masse d'eau que le reste du corps gonflable (1).
2. Flotteur d'amarrage et de secours, selon la revendication 1, **caractérisé en ce que** le côté avant (5) s'étend davantage vers l'intérieur de la masse d'eau comme renforcements avant (7), également gonflables, qui s'étendent du corps gonflable (1) dans un sens vertical comme une extension du côté avant (5) submergé dans la masse d'eau.
3. Flotteur d'amarrage et de secours, selon la revendication 2, **caractérisé en ce qu'il** comprend des renforcements supplémentaires (8) qui émergent du côté inférieur (10) du corps gonflable (1) et s'étendent jusqu'aux renforcements avant (7) configurés pour pousser lesdits renforcements avant (7) et les empêcher de se plier.
4. Flotteur d'amarrage et de secours, selon la revendication 2, **caractérisé en ce que** les renforcements avant (7) sont une pluralité de colonnes qui sont raccordées à l'intérieur du corps gonflable (1).

5. Flotteur d'amarrage et de secours, selon la revendication 3, **caractérisé en ce que** les renforcements supplémentaires (8) sont raccordés à l'intérieur du corps gonflable (1). 5
6. Flotteur d'amarrage et de secours, selon la revendication 3, **caractérisé en ce que** le corps gonflable (1), les renforcements avant (7) et les renforcements supplémentaires (8) sont interconnectés. 10
7. Flotteur d'amarrage et de secours, selon la revendication 1, **caractérisé en ce que** le côté avant (5) a une longueur supérieure au côté arrière (4) et le côté inférieur (10) est incliné du côté arrière (4) au côté avant (5). 15
8. Flotteur d'amarrage et de secours, selon la revendication 1, **caractérisé en ce qu'il** comprend en outre un filet (9) disposé au moins au-dessus du côté supérieur (3). 20
9. Flotteur d'amarrage et de secours, selon la revendication 8, **caractérisé en ce que** le filet (9) est disposé sur le côté supérieur (3) et sur le côté avant (5). 25
10. Flotteur d'amarrage et de secours, selon les revendications 2 et 9, **caractérisé en ce que** le filet (9) recouvre les renforcements avant (7). 30
11. Flotteur d'amarrage et de secours, selon la revendication 8, **caractérisé en ce que** le filet (9) comprend des poids de lestage (13) aux extrémités qui maintiennent la position du filet (9) sur le corps gonflable (1). 35
12. Flotteur d'amarrage et de secours, selon la revendication 1, **caractérisé en ce qu'il** y a une protection gonflable (12) sur au moins un côté latéral (11) du corps gonflable (1) qui s'étend dudit côté latéral et est configurée pour empêcher les collisions entre les navires (2, 6). 40
13. Flotteur d'amarrage et de secours, selon la revendication 12, **caractérisé en ce qu'il** comprend une protection gonflable (12) sur chaque côté latéral (11). 45
14. Flotteur d'amarrage et de secours, selon la revendication 12, **caractérisé en ce que** la protection gonflable (12) est intérieurement reliée à l'intérieur du corps gonflable (1). 50
15. Flotteur d'amarrage et de secours, selon la revendication 12, **caractérisé en ce que** la protection gonflable (12) a une configuration en rampe qui s'étend du côté supérieur (3) vers la masse d'eau et est partiellement submergée dans ladite masse d'eau. 55
16. Flotteur d'amarrage et de secours, selon la revendication 12, **caractérisé en ce que** la protection gonflable (12) a une configuration en escalier qui s'étend du côté supérieur (3) à la masse d'eau et est au moins partiellement submergée dans ladite masse d'eau.

cation 12, **caractérisé en ce que** la protection gonflable (12) a une configuration en escalier qui s'étend du côté supérieur (3) à la masse d'eau et est au moins partiellement submergée dans ladite masse d'eau.

DIBUJOS

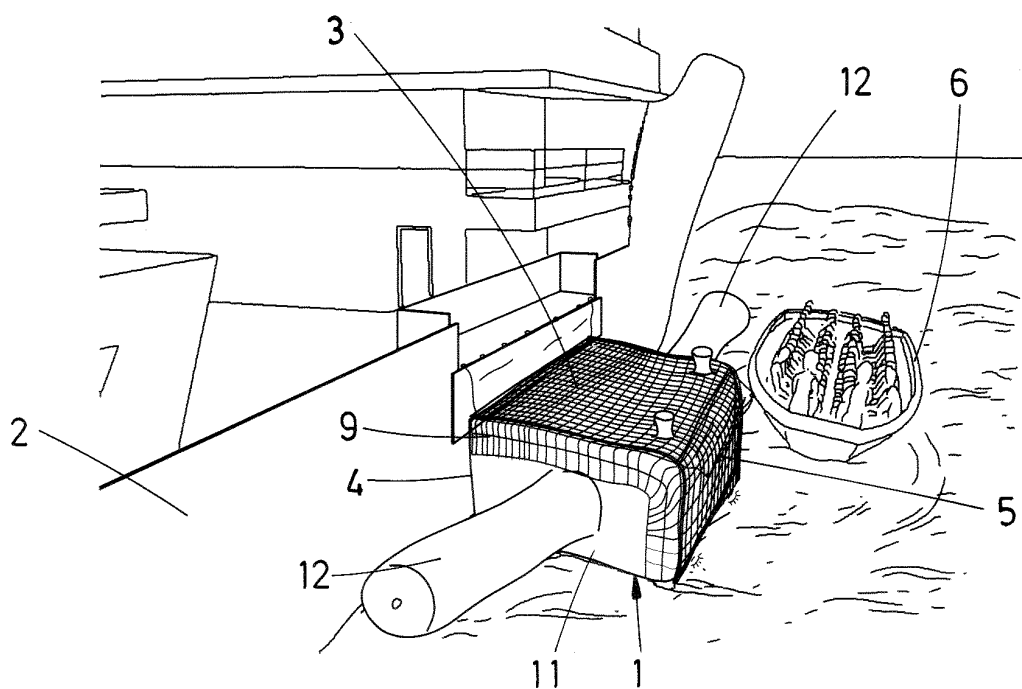


FIG.1a

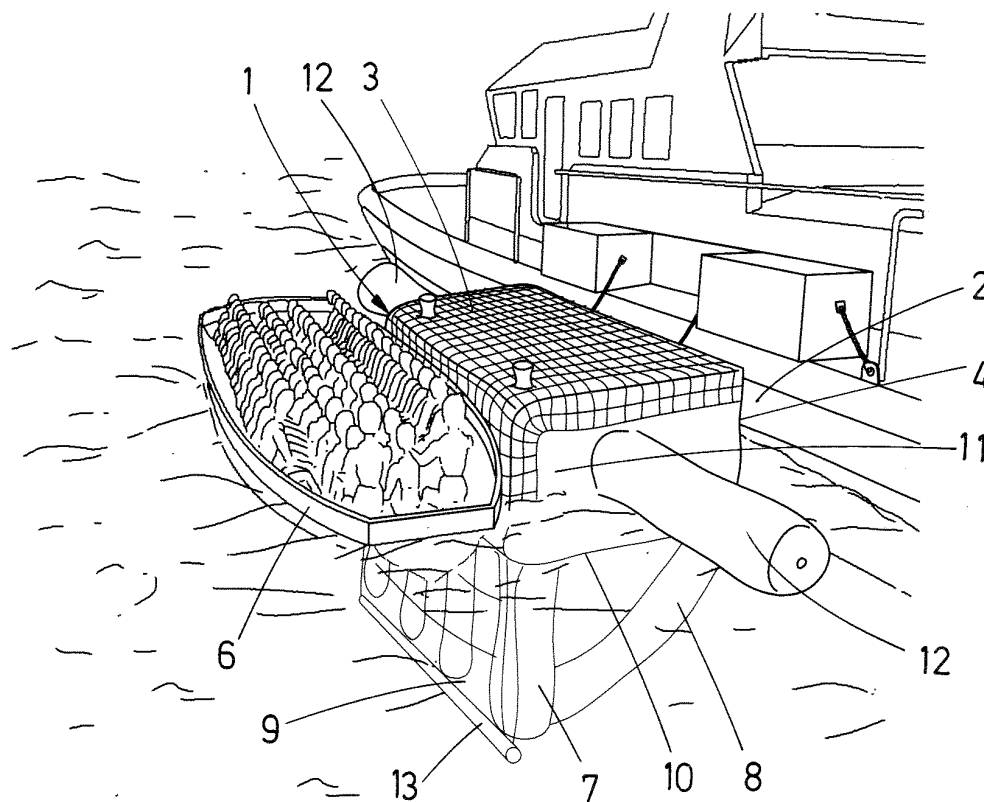


FIG.1b

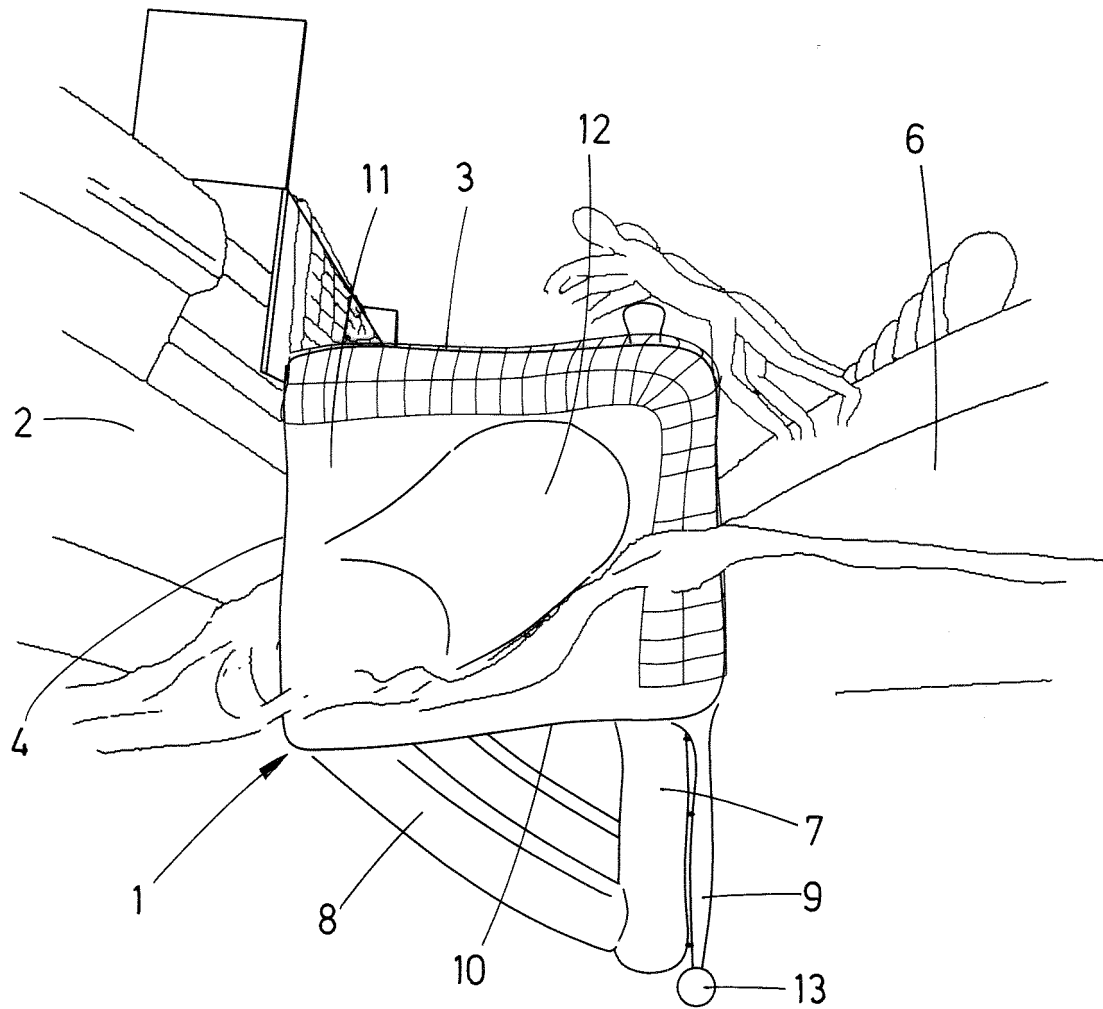


FIG.1c

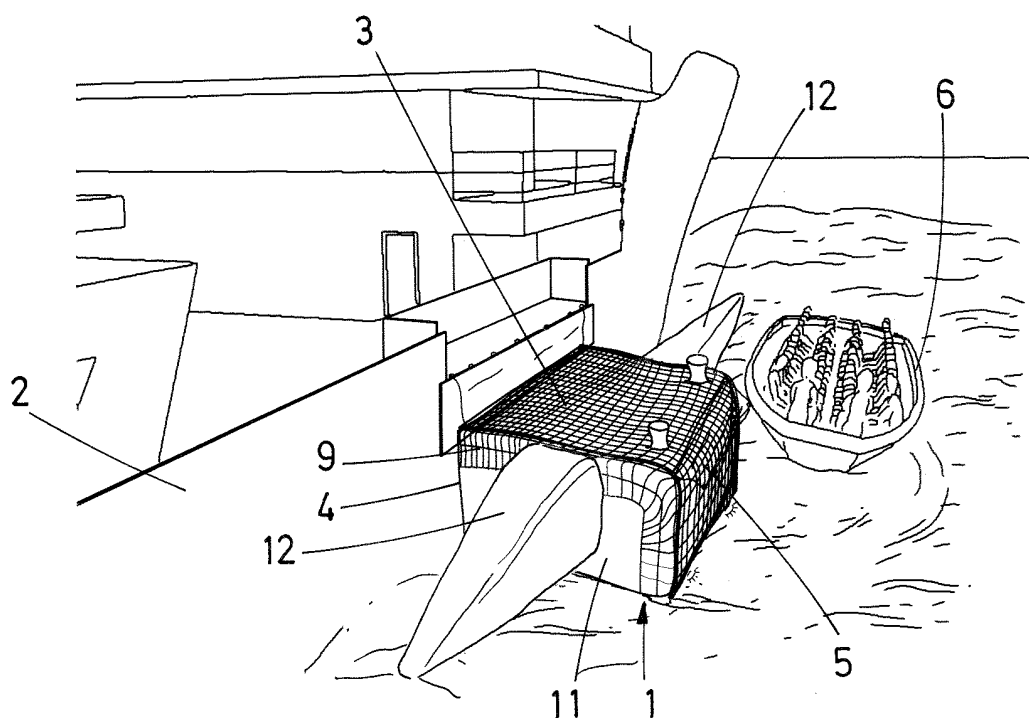


FIG. 2a

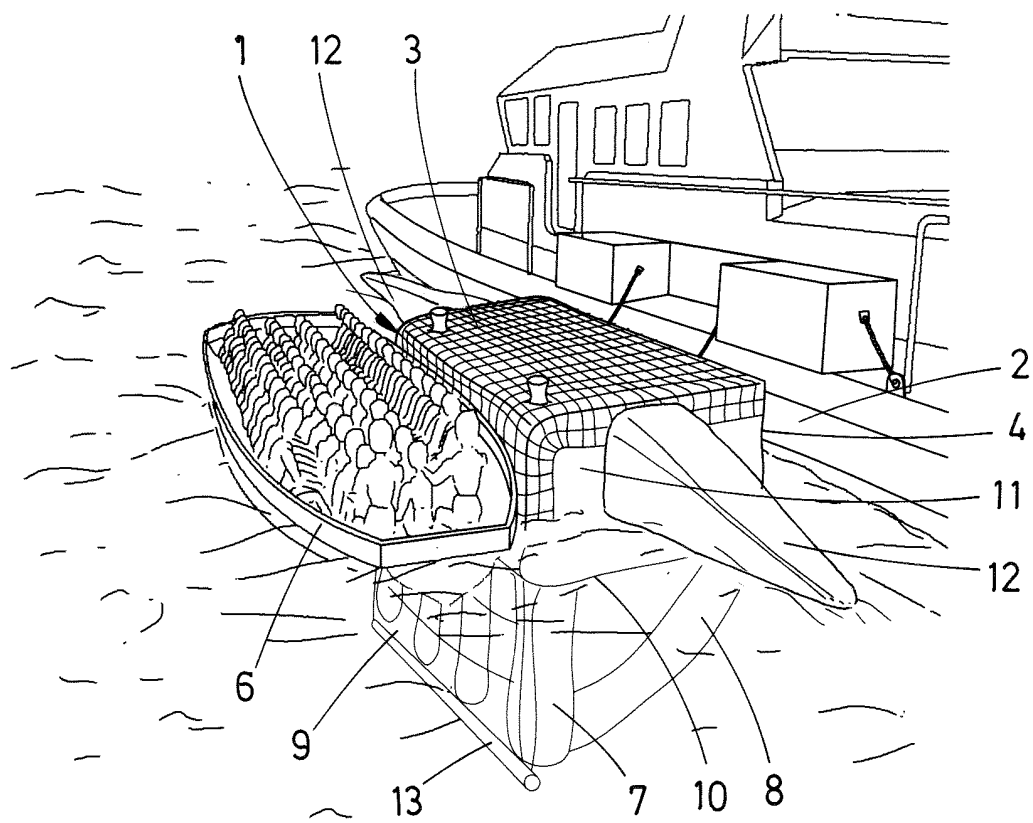


FIG. 2b

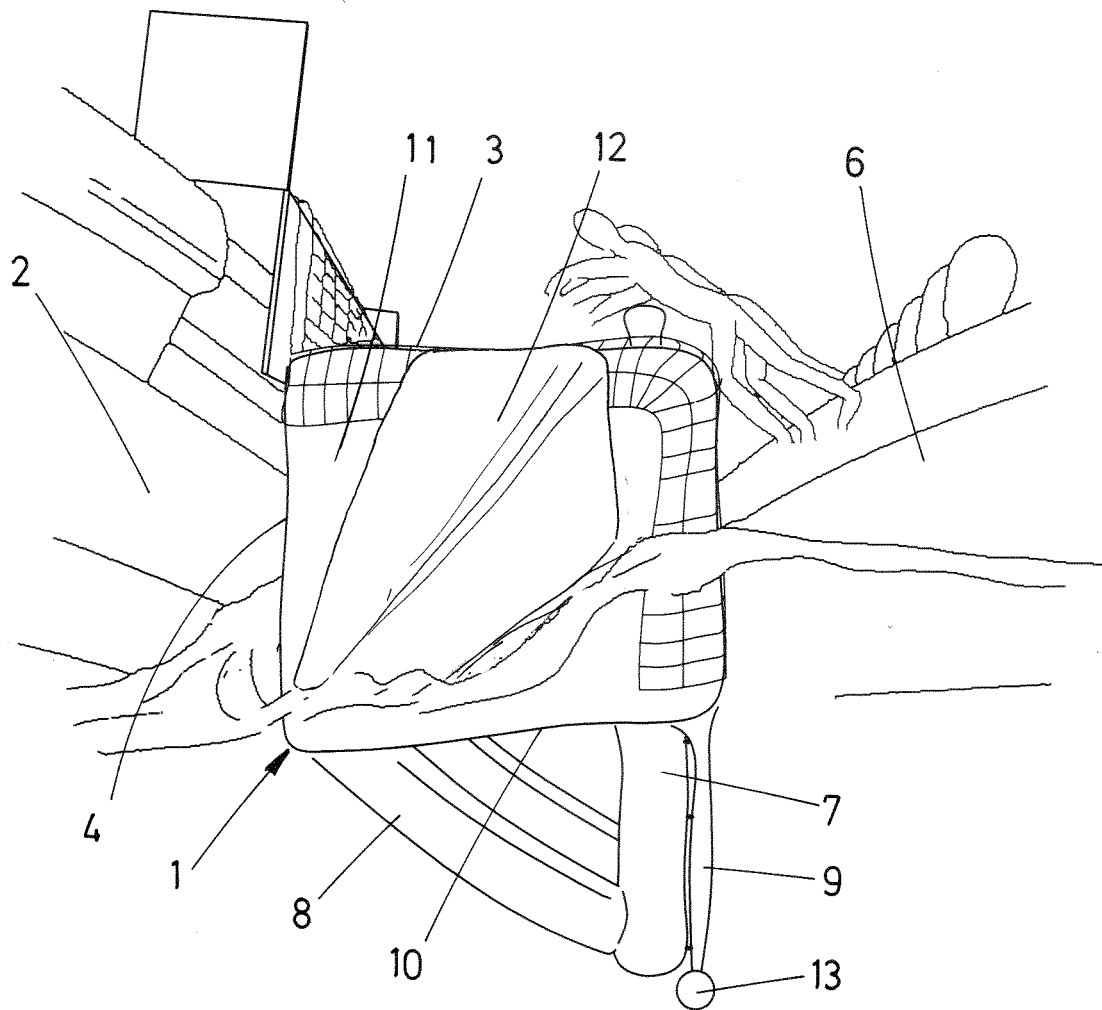
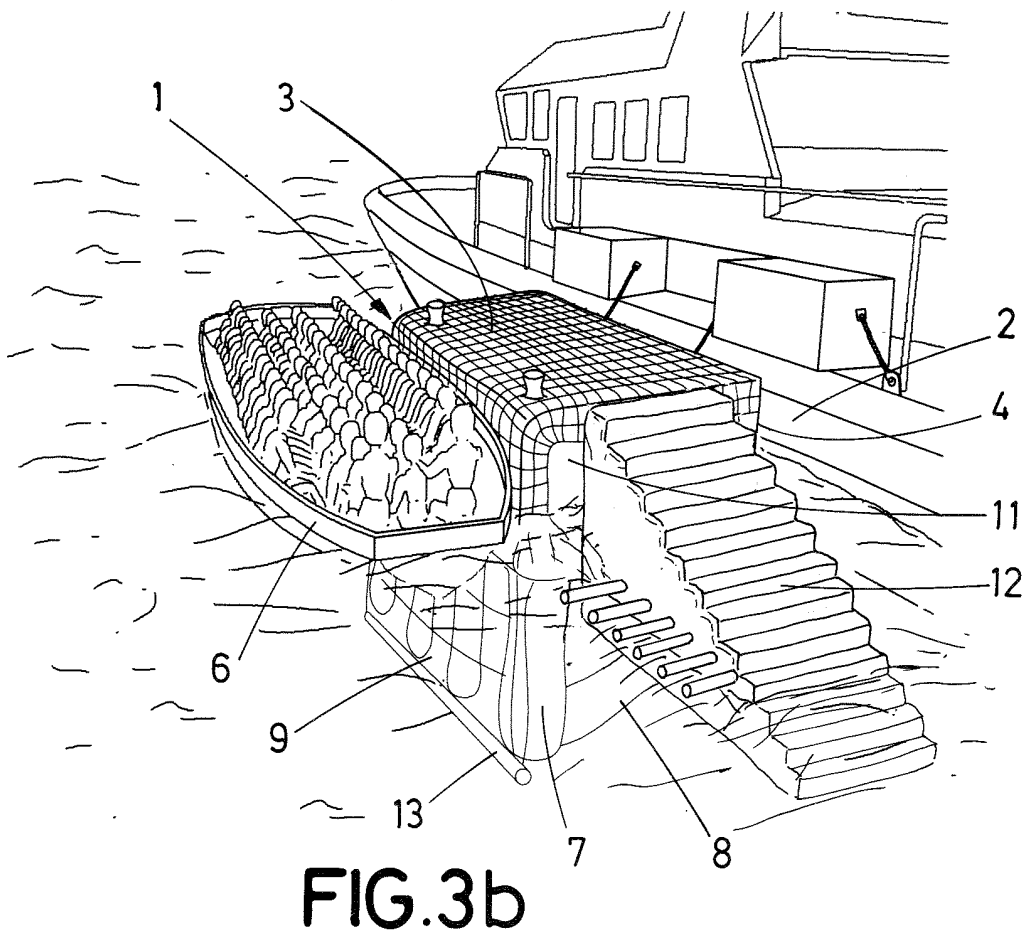
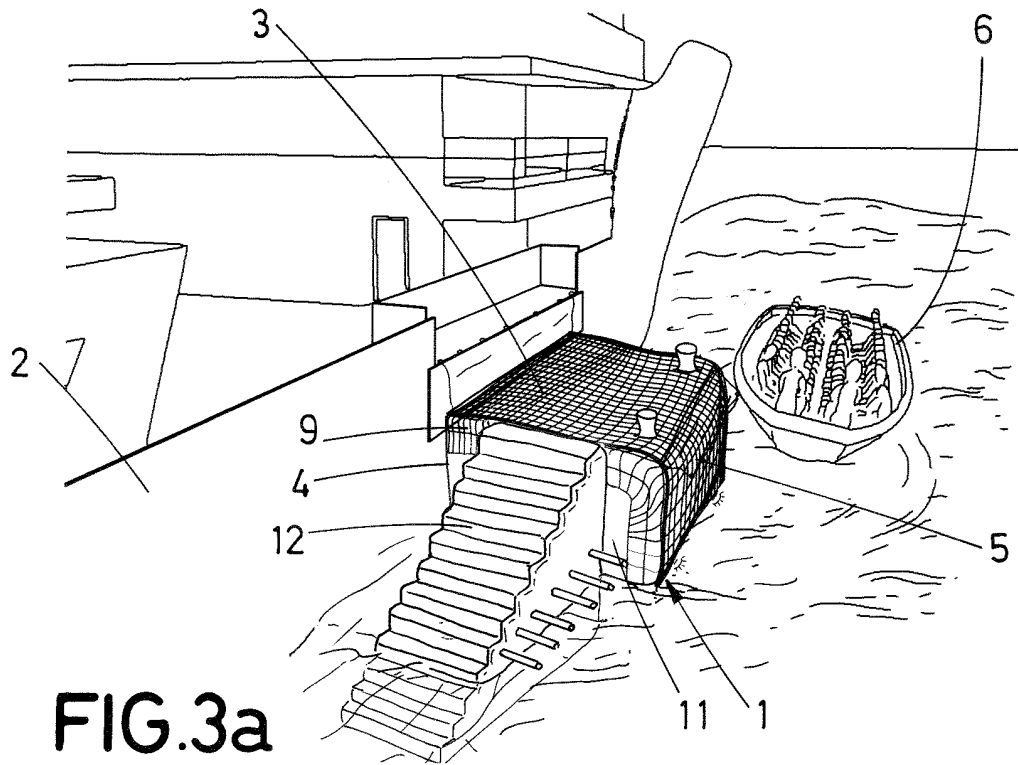


FIG.2c



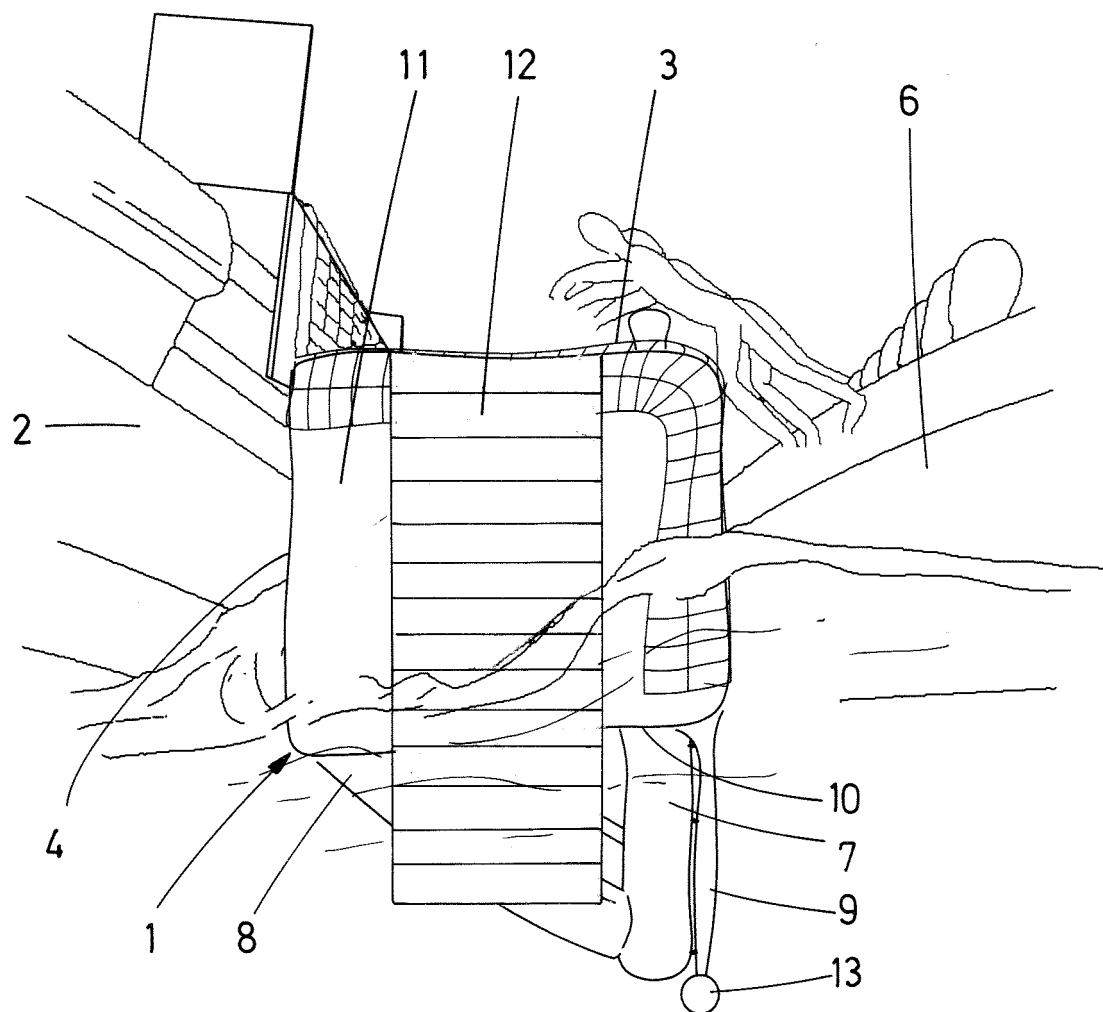


FIG.3c

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2015066451 A [0010]
- US 5301630 A [0010]
- EP 2772425 A [0010]