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surface for transferring people between the vessels, a rear side (4) in contact with the vessel (2), and that 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 remains 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).

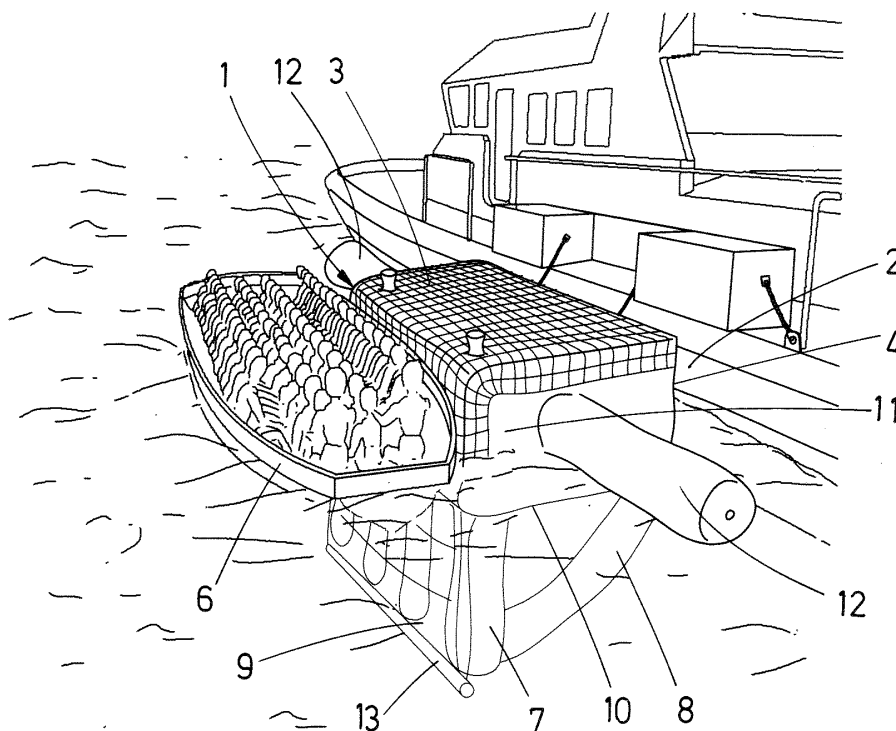


FIG.1b

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 is described that 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.

DESCRIPTION OF THE INVENTION

[0010] 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.

[0011] 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.

[0012] 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.

[0013] 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.

[0014] 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.

[0015] 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.

[0016] Precisely for this reason, 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.

[0017] 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.

[0018] 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.

[0019] 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.

[0020] 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.

[0021] 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.

[0022] 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.

[0023] 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.

[0024] 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.

[0025] 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.

[0026] 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.

[0027] 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.

[0028] The inflatable body is preferably inflated using compressed air cylinders that may be installed, for example, inside the receptacle.

[0029] 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.

[0030] 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.

[0031] 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

[0032] 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 1 a 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 1 a.

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 embodi-

ment 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

[0033] Following is a description, with the help of figures 1 to 3, of some examples of embodiment of the present invention.

[0034] 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).

[0035] 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.

[0036] 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).

[0037] 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.

[0038] 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.

[0039] 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.

[0040] 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.

[0041] 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).

[0042] 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.

[0043] 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.

[0044] 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.

[0045] 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.

[0046] 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.

[0047] 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.

[0048] 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.

[0049] 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), and is **characterised in that**:

- 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).

2. The lining and rescue float, according to claim 1, **characterised in that** it comprises 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, **characterised 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, **characterised 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, **characterised 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, **characterised 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, **characterised 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).
8. The lining and rescue float, according to claim 1, **characterised in that** it additionally comprises a net (9) disposed at least on top of the upper side (3).
9. The lining and rescue float, according to claim 8, **characterised in that** the net (9) is disposed on the upper side (3) and on the front side (5).
10. The lining and rescue float, according to claims 2

and 9, **characterised in that** the net (9) covers the front reinforcements (7).

11. The lining and rescue float, according to claim 8, **characterised 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). 5
12. The lining and rescue float, according to claim 1, **characterised 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). 10
13. The lining and rescue float, according to claim 12, **characterised in that** it comprises an inflatable protection (12) on each lateral side (11). 15
14. The lining and rescue float, according to claim 12, **characterised in that** the inflatable protection (12) is internally joined to the interior of the inflatable body (1). 20
15. The lining and rescue float, according to claim 12, **characterised 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. 25
16. The lining and rescue float, according to claim 12, **characterised 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. 30
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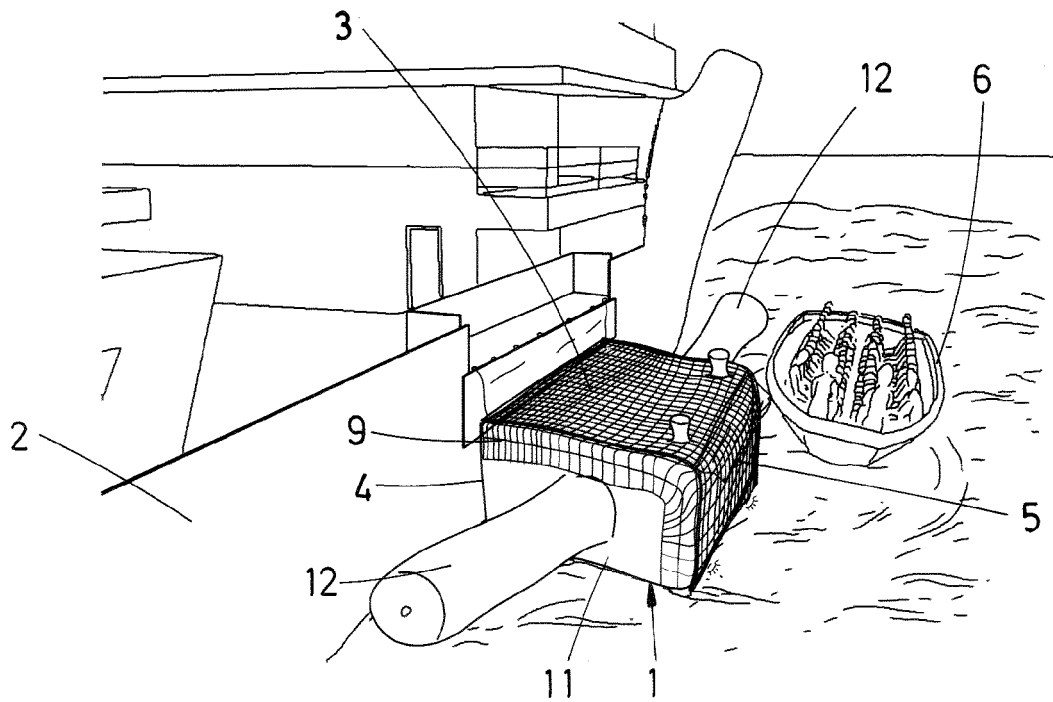


FIG. 1a

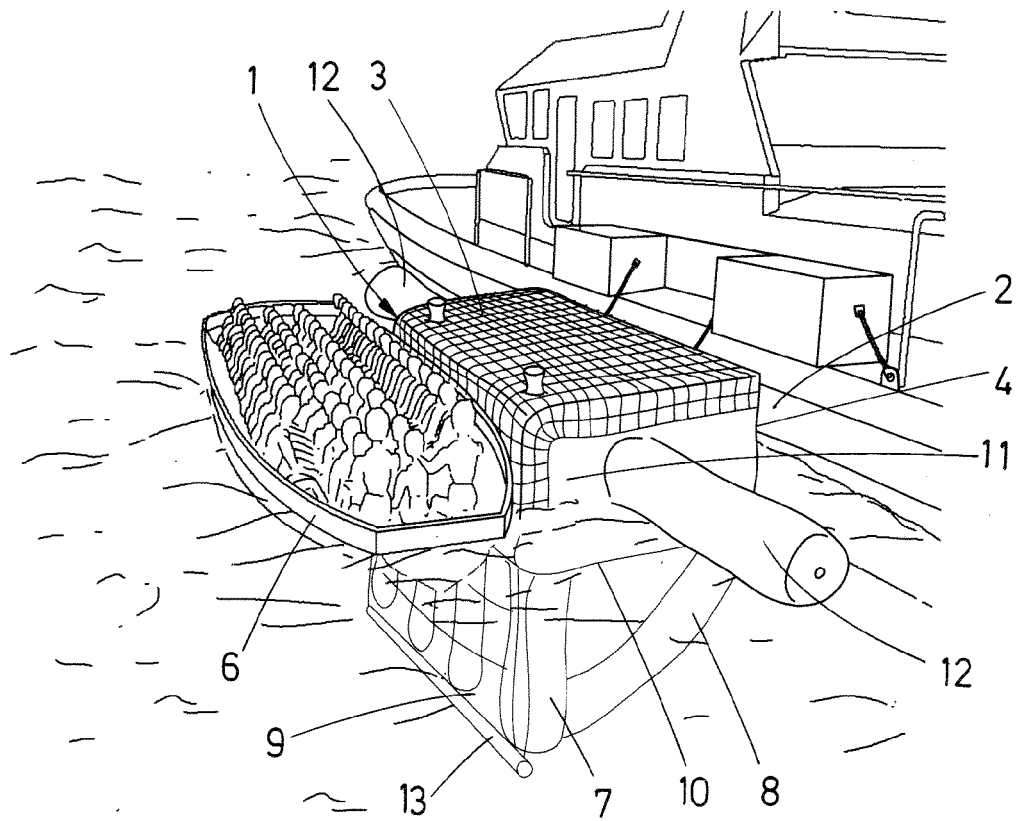


FIG. 1b

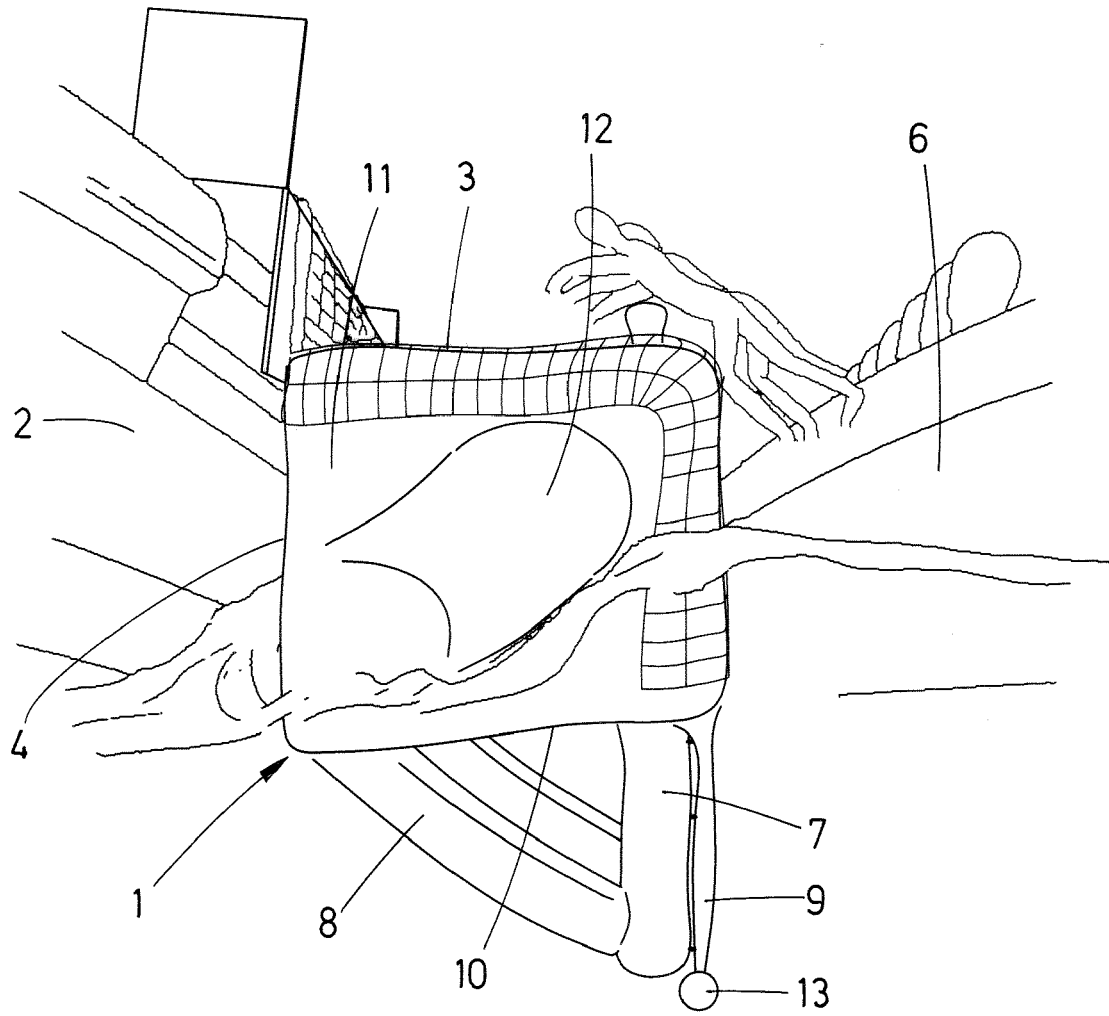


FIG.1c

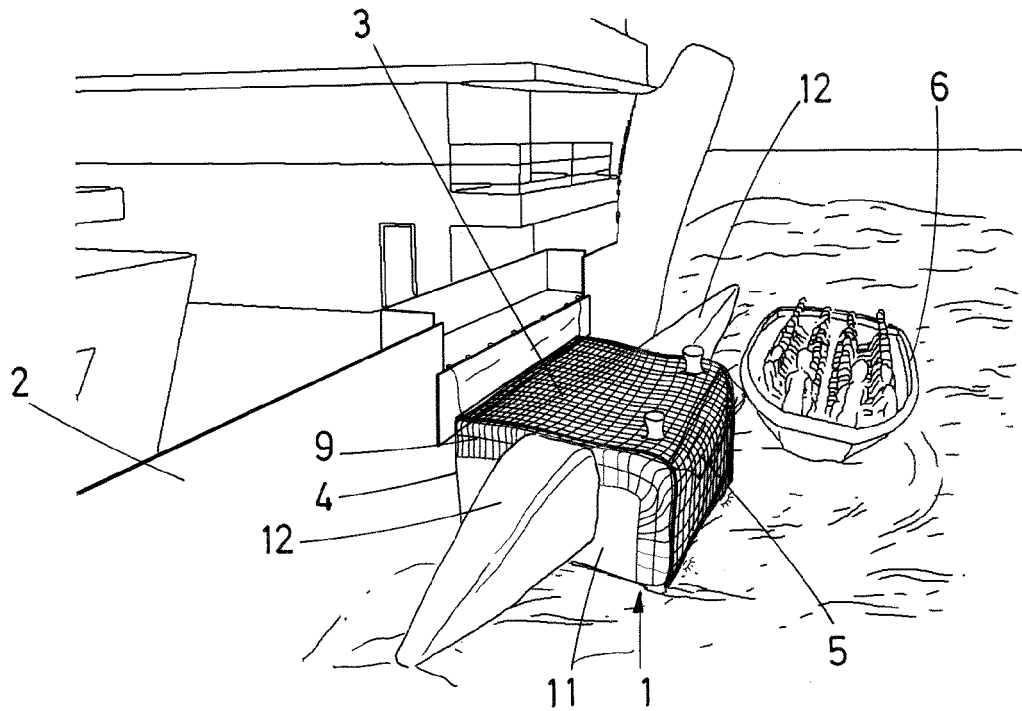


FIG. 2a

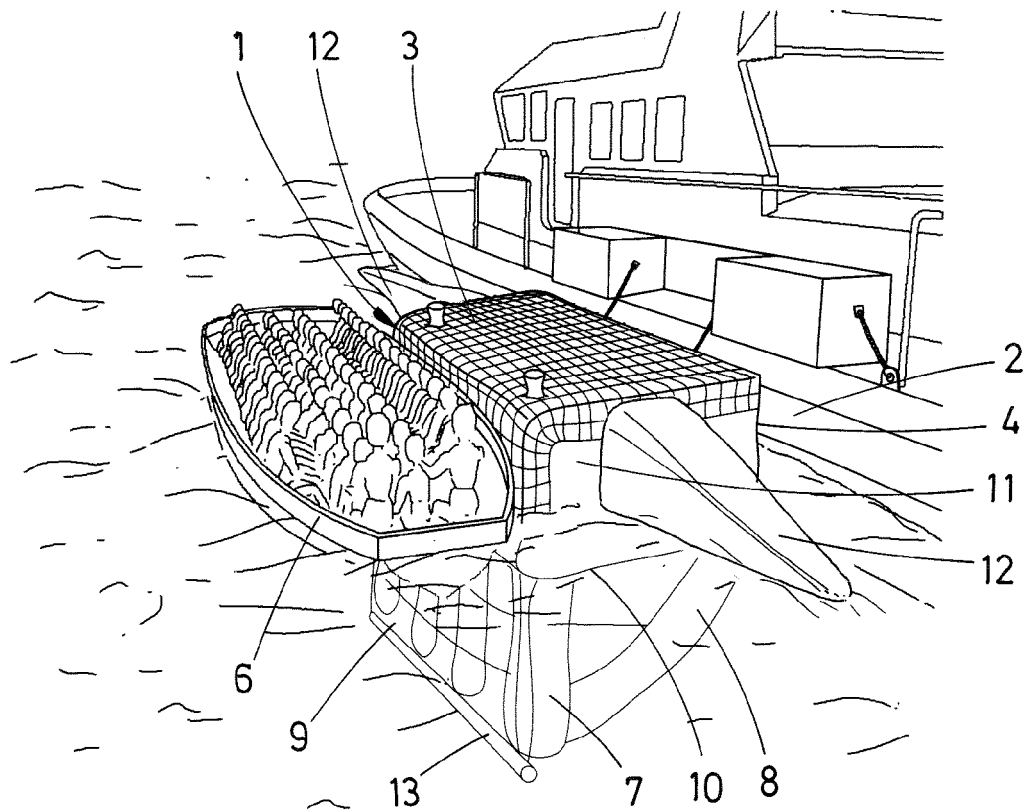


FIG. 2b

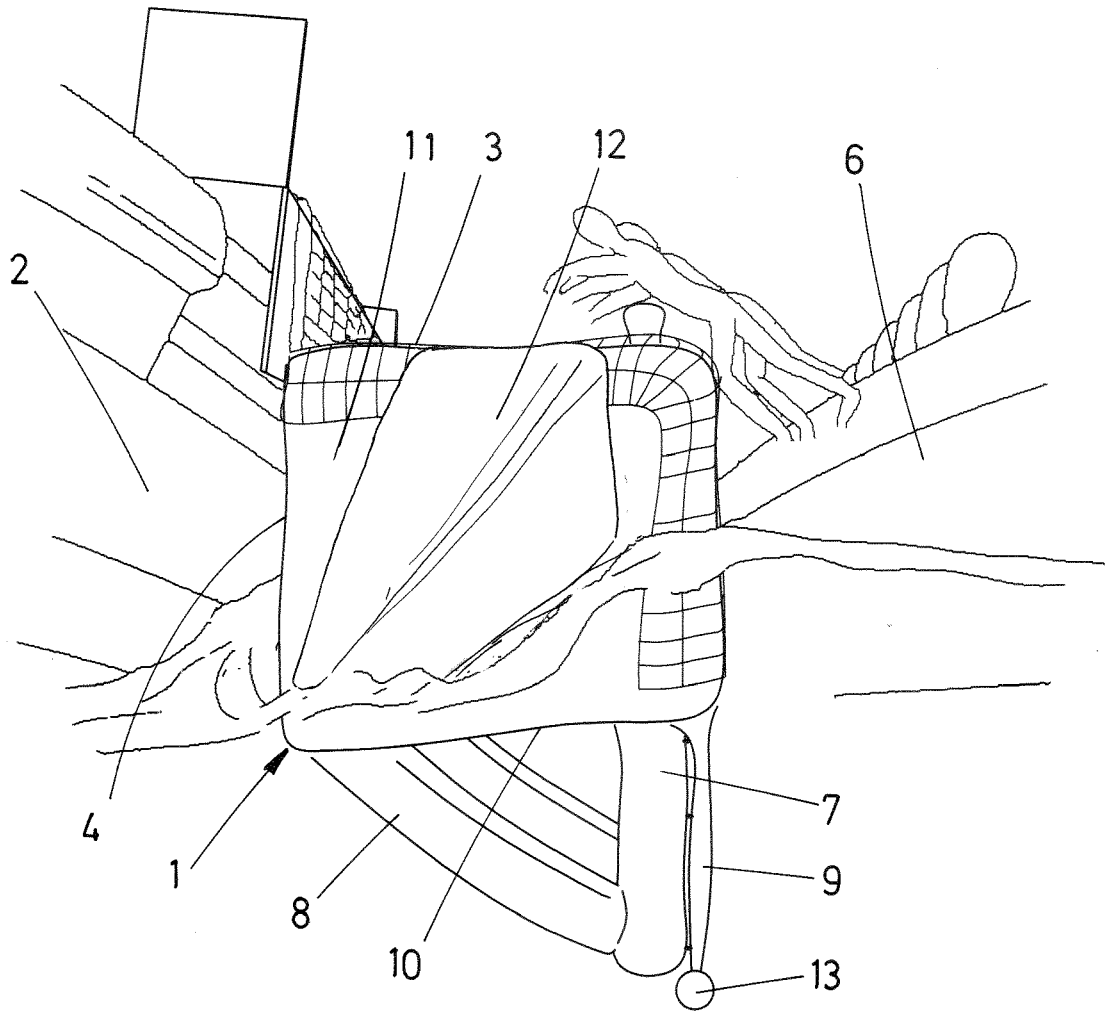


FIG.2c

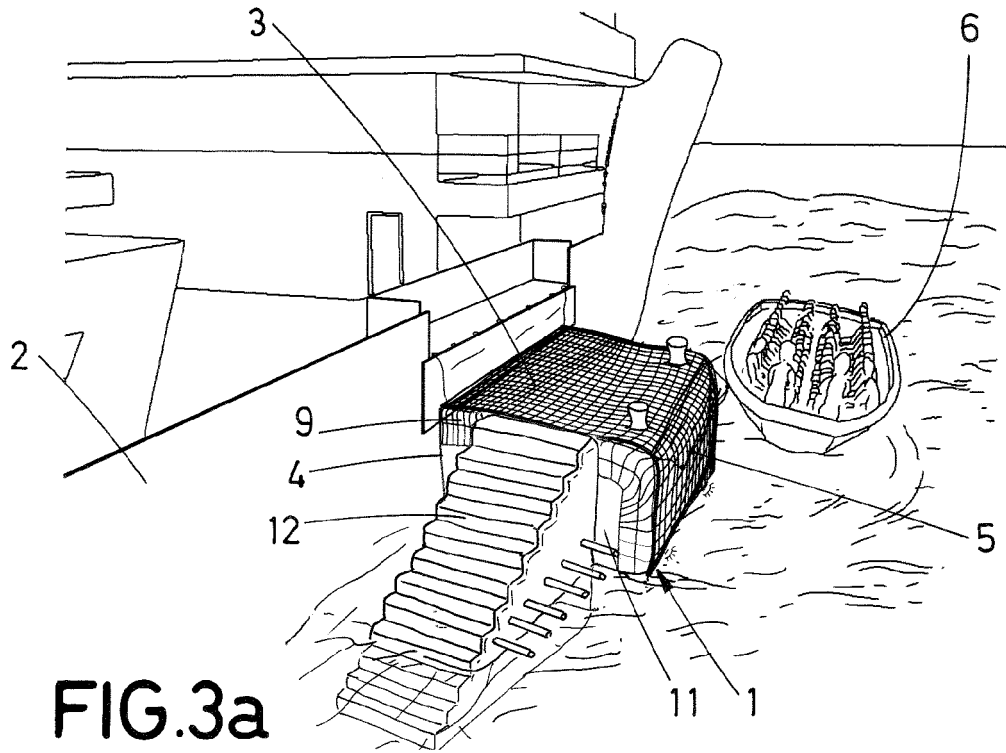


FIG. 3a

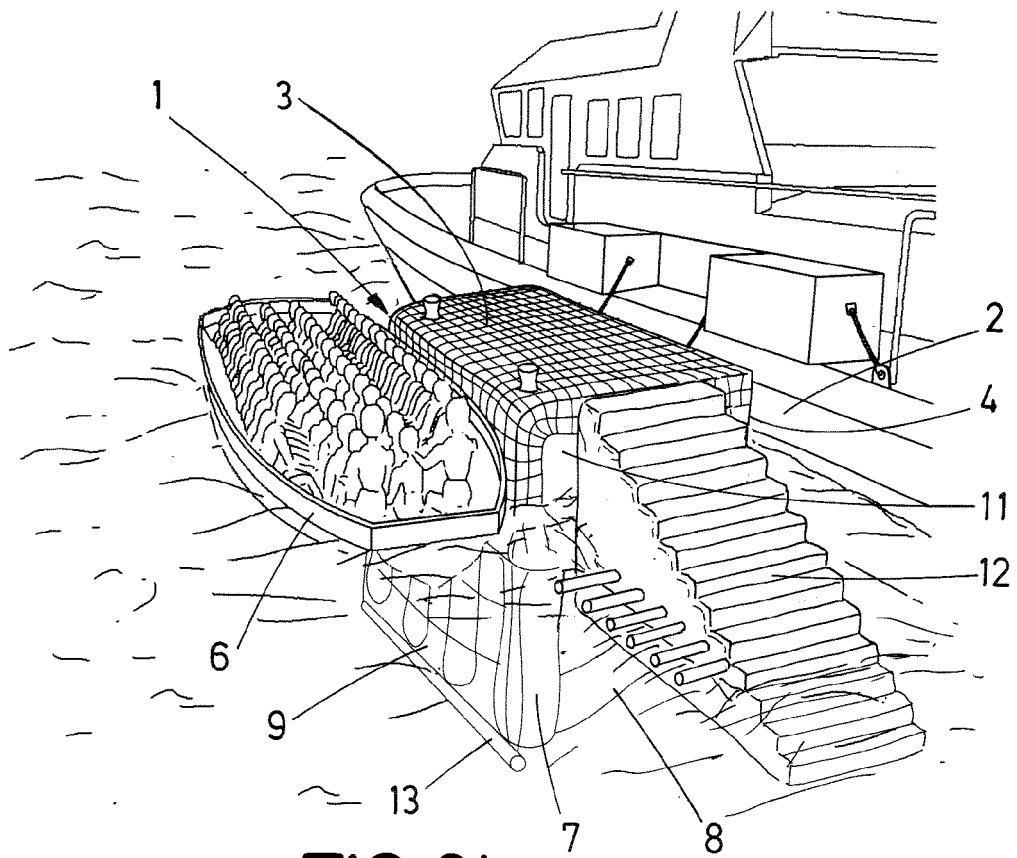


FIG. 3b

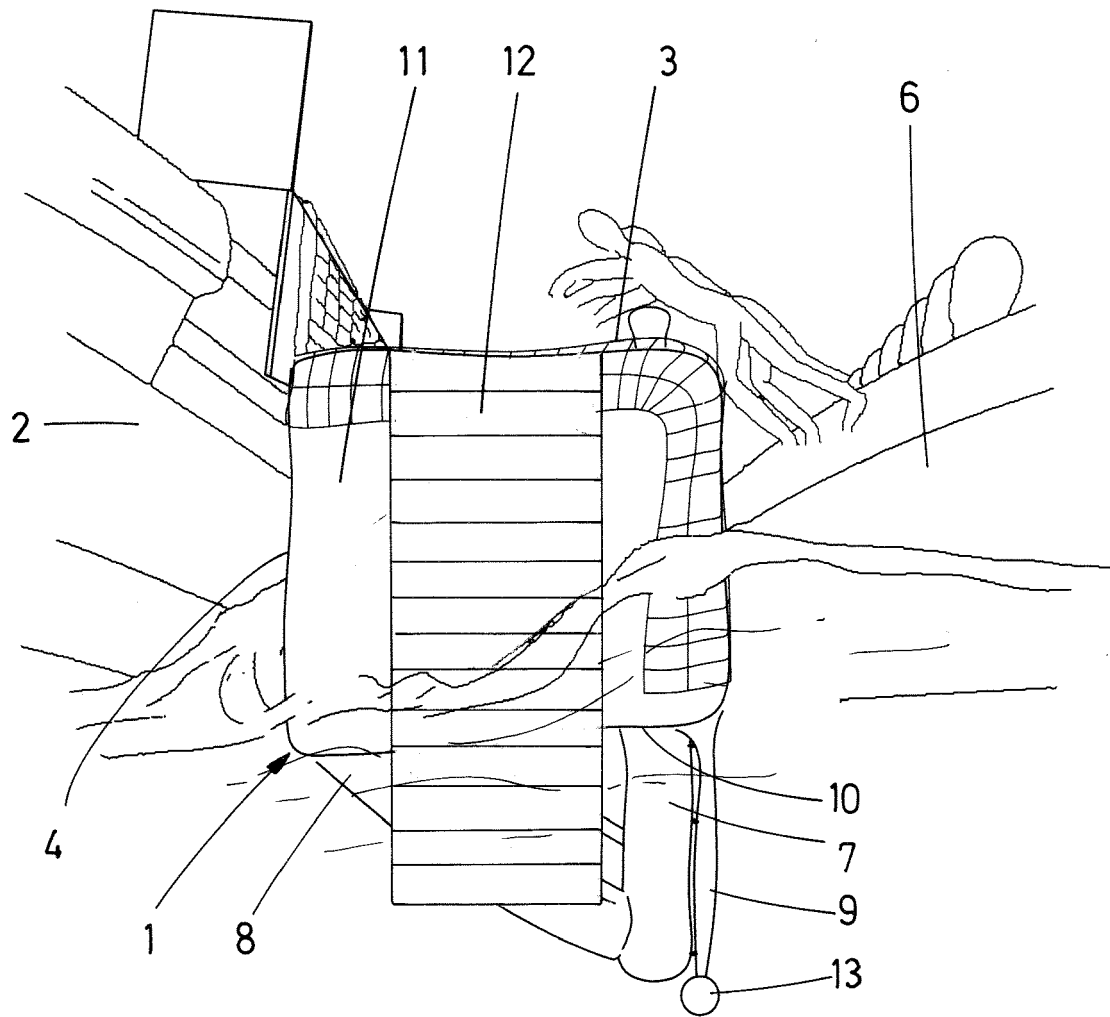


FIG.3c



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Application Number
EP 16 16 2779

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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