(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 484 266 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
01.01.2025 Bulletin 2025/01

(21) Application number: **23215023.5**

(22) Date of filing: **07.12.2023**

(51) International Patent Classification (IPC):
B63B 7/08 *(2020.01)* ***B63B 13/00*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
B63B 13/00; B63B 7/08

(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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: **25.06.2023 CN 202321630533 U**

(71) Applicant: **Chengdu Drifting Island Outdoor Co., Ltd**
Chengdu City, Sichuan Province 610101 (CN)

(72) Inventor: **WANG, Dai**
Chengdu, 610101 (CN)

(74) Representative: **Bayramoglu et al.**
Mira Office
Kanuni Sultan Süleyman Boulevard 5387
Street Beytepe, floor 12, no:50
06800 Cankaya, Ankara (TR)

(54) SELF-BAILING BOAT

(57) The present disclosure provides a self-bailing boat, and belongs to the field of inflatable boats. The self-bailing boat includes a boat's side, a boat bottom, inflation valves, an inflation adjustable pedal, a scupper shielding plate, a floor cover plate, and a waterproof airtight zipper. There are a plurality of the inflation valves, the boat bottom is connected to the boat's side, and the boat's side and the boat bottom can form a hull of the self-bailing boat. With effective improvement on the structure of the hull, and based on an existing self-bailing work principle, the present disclosure greatly reduces accumulated water in the hull. Meanwhile, based on the structural improvement, the present disclosure effectively reduces contact of the accumulated water in the hull with a user, and provides a more comfortable environment for the user. The present disclosure has a skillful concept, a reasonable design, a simple structure, a low manufacturing cost and a good bailing effect, and possesses a high practical value and provides a notable progress.

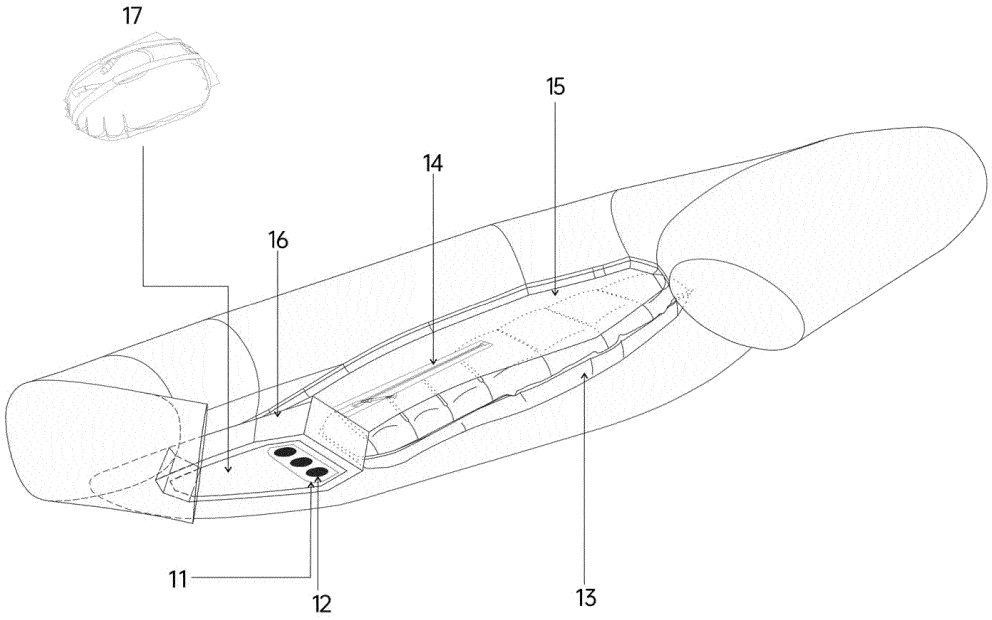

FIG. 1

EP 4 484 266 A1

Description

TECHNICAL FIELD

[0001] The present disclosure relates to the field of boats and boat devices, and in particular to a self-bailing boat. Compared with existing self-bailing boats, the self-bailing inflatable boat in the present disclosure has little accumulated water and a high bailing efficiency, and can provide a more comfortable environment for a user.

BACKGROUND

[0002] An inflatable boat is provided as an inflatable product. A hull of the inflatable boat is made of a waterproof airtight material. The hull includes a boat's side, a boat bottom, a seat, an inflation valve, a deflation valve, etc. The boat's side and the boat bottom are connected and inflated to form a certain shape of the inflatable boat. The inflatable boat has been widely applied to various water operations in tourism, drifting, athletic competition, military reconnaissance and exploration, fishing and hunting, and has achieved a desirable application effect.

[0003] Packraft as a portable inflatable boat has the advantages of having a compact structure and a light weight. It can be collapsed and stored in a small backpack, for ease of carriage and transportation. With a high stability and a large buoyancy force, the packraft can be used in natural environments such as a lake, a river and a coastline. At present, some commercially available inflatable boats use a self-bailing design to form the corresponding self-bailing boats.

[0004] The self-bailing boat can float in water and maintain stability. It does not sink even in case of ingress of water to a hull. The self-bailing boat is realized based on the following two reasons:

(1) The boat bottom has a thickness of 15 cm-30 cm, and a large width, such that the boat bails the water as much as possible in use.

(2) Upon ingress of the water to the hull, the self-bailing boat still has a quite large buoyancy force. Specifically, the side of the self-bailing inflatable boat is provided with an air chamber. The air chamber has a larger volume than a cockpit. Even though the cockpit is completely filled by the water, the boat can still float on the water through the buoyancy force of the air chamber.

[0005] Unlike a condition in which a hull sinks after a large amount of water enters a common metal or wooden boat, the side of the self-bailing packraft is made of a waterproof airtight material. Based on the buoyancy force of the air chamber, the self-bailing packraft does not sink due to ingress of the water.

[0006] At present, a plurality of scuppers for bailing water mainly based on a potential energy difference between on-board water and off-board water are annularly arranged around the bottom of the existing self-bailing inflatable boat.

[0007] However, there is evidence that, although the plurality of scuppers are annularly arranged around the bottom of the existing self-bailing inflatable boat, accumulated water is located at a low-lying place and is scattered, and a large amount of the accumulated water remains at a cockpit clearance of the self-bailing inflatable boat. This increases a draft of the boat and affects maneuverability of the boat.

[0008] In addition, the above problems have an impact on user experience to some extent. Particularly, in cold conditions, if a large amount of accumulated water remains in the self-bailing inflatable boat, users are more likely to contact the accumulated water and develop hypothermia. This is unwanted by the users, or even poses a threat to the safety of the users. Therefore, how to improve the existing self-bailing inflatable boat to reduce accumulated water and achieve a better user experience has become a technical problem to be solved urgently.

SUMMARY

[0009] In view of the above problems, an objective of the present disclosure is to provide a self-bailing boat. Further, the present disclosure provides a self-bailing inflatable boat. With effective improvement on a structure of the hull, and based on an existing self-bailing work principle, the present disclosure greatly reduces accumulated water in the hull. Meanwhile, based on the structural improvement, the present disclosure effectively reduces contact of the accumulated water in the hull with a user, and provides a more comfortable environment for the user. The present disclosure has a skillful concept, a reasonable design, a simple structure, a low manufacturing cost and a good bailing effect, and possesses a high practical value and provides a notable progress. The present disclosure is of great significance to development and advancement of a packraft, and, particularly, a self-bailing packraft. The present disclosure is worthy of large-scale promotion and application.

[0010] To achieve the above objective, the present disclosure adopts the following technical solutions:

A self-bailing boat includes a boat's side, a boat bottom, inflation valves, an inflation adjustable pedal, a scupper shielding plate, a floor cover plate, a waterproof airtight zipper, and a water retaining coaming, where there are a plurality of the inflation valves, the boat bottom is connected to the boat's side, and the boat's side and the boat bottom can form a hull of the self-bailing boat;

the boat's side and the boat bottom are made of a waterproof airtight material, the boat's side includes an air chamber, an inflation valve is provided on the air chamber, and the air chamber can be inflated or deflated through the inflation valve;

a bottom airbag is provided on the boat bottom, and the floor cover plate is located on the bottom airbag; an edge of the floor cover plate adjacent to a bow is connected to the water retaining coaming in a bailing space, a side edge of the floor cover plate is integrally connected to the boat's side, a bilge space for placing the bottom airbag is provided among the floor cover plate, the boat bottom and the boat's side, and the bottom airbag is located in the bilge space; and an inflation valve is provided on the bottom airbag, the bottom airbag is inflated or deflated through the inflation valve, the waterproof airtight zipper is provided on the floor cover plate, and the waterproof airtight zipper can be openable relative to the floor cover plate so as to open or close the bilge space;

the water retaining coaming is provided inside the boat's side, and a bottom end of the water retaining coaming is integrally connected to the boat bottom; a top edge of the water retaining coaming is connected to the boat's side, and a backward upper edge of the water retaining coaming is connected to a forward edge of the floor cover plate; a sidewall of the floor cover plate connected to the boat bottom is labeled as a bailing sidewall, and the bailing sidewall and the water retaining coaming collectively enclose the bailing space with an upward opening; and the boat bottom serves as a bottom of the bailing space, and the bottom of the bailing space is labeled as a bailing bottom wall;

the inflation adjustable pedal is provided in the bailing space and can be put down or taken out relative to the bailing space, a lower surface of the inflation adjustable pedal cooperates with a front surface of the water retaining coaming, and an upper surface of the inflation adjustable pedal and an upper surface of the bottom airbag respectively support a leg and a hip of a user;

along an advancement direction of the self-bailing boat, the bailing bottom wall is inclined, and a horizontal plane where a front end of the bailing bottom wall is located is located above a horizontal plane where a back end of the bailing bottom wall is located;

along a vertical direction, a plurality of scuppers are arranged on the bailing bottom wall; and along the advancement direction of the self-bailing boat, the scuppers are located at the back end of the bailing bottom wall; and

the scupper shielding plate is provided at a side of the boat bottom away from the inflation adjustable pedal, and the scupper shielding plate is provided on the scuppers and can shield the scuppers.

[0011] The boat's side and the boat bottom are made of a thermoplastic polyurethane (TPU) nylon composite material.

[0012] The boat's side and the boat bottom are split or integrated.

[0013] The scupper shielding plate is made of a flexible material.

[0014] The scupper shielding plate is made of a TPU nylon composite material.

[0015] The side of the boat bottom away from the inflation adjustable pedal is provided with a skeg mounting groove; and

along the advancement direction of the self-bailing boat, the skeg mounting groove is located in a back of the boat bottom.

[0016] The self-bailing boat further includes a skeg cooperating with the skeg mounting groove.

[0017] The self-bailing boat further includes one or more of a bow handheld grip, a cable pull ring, a backrest fixing seat, and a leg strap seat; and the bow handheld grip, the cable pull ring, the backrest fixing seat, and the leg strap seat are provided on the boat's side.

[0018] Along the advancement direction of the self-bailing boat, the scuppers are located at a recessed place of the back end of the bailing bottom wall.

[0019] There are three scuppers; and

with the advancement direction of the self-bailing boat as a first direction, the scuppers are uniformly distributed in a direction perpendicular to the first direction.

[0020] There are N bilge spaces and N bailing spaces, N being a natural number and N>1.

[0021] In the self-bailing boat (double), there are two bottom airbags and two bailing spaces; and

along the advancement direction of the self-bailing boat, the bailing space, the bilge space, the bailing space, and the bilge space are sequentially provided in the boat's side.

[0022] Three edges of the scupper shielding plate are fixedly connected to the boat bottom, and a remaining edge of the scupper shielding plate is capable of moving freely relative to the boat bottom;

a side of the scupper shielding plate fixedly connected to the boat bottom is labeled as a shielding fixed side, and a side of the scupper shielding plate capable of moving freely relative to the boat bottom is labeled as a shielding movable side; and

along the advancement direction of the self-bailing boat, the shielding fixed side is in front of the shielding movable side.

[0023] Evidence shows that a plurality of scuppers are annularly arranged around a bottom of an existing self-bailing inflatable boat. In order to increase a bailing amount of a hull, there are two ways: 1) increase a number of the scuppers on the hull; and 2) using an auxiliary device for bailing.

[0024] Through testing, it has been found that the accumulated water in the cockpit cannot be effectively reduced by merely increasing the number of the scuppers on the hull. That is, there is no obvious corresponding relationship between the accumulated water in the cockpit and the number of the scuppers on the hull, and

the accumulated water in the cockpit cannot be further reduced by continuously increasing the number of the scuppers. If the auxiliary device, such as a bailing pump and a portable power source, is used for bailing, not only is the equipment cost increased, but also problems such as water prevention and placement of the devices need to be solved. Moreover, the scuppers on the self-bailing inflatable boat are to be removed (if the auxiliary device is used for bailing, the scuppers on the hull become water inlets). This violates an original intention of the self-bailing inflatable boat.

[0025] In view of this, through sufficient research and testing on the structure of the self-bailing inflatable boat, a novel self-bailing structure is provided to greatly improve a bailing efficiency of the hull. According to the present disclosure, a bilge space with the bottom airbag is used to seal most areas of the boat bottom, and the bottom airbag has a height of 15 cm to 18 dm (the covered region is sealed by an airtight zipper, and cannot accumulate water). The water is accumulated to the special bailing space for intensive bailing. The scuppers at a bottom of the bailing space greatly improve a bailing efficiency, and reduce accumulated water. Additionally, the number of the scuppers is further reduced, and the boat bottom has a better streamline. Meanwhile, to improve the streamline, the scupper shielding plate is provided under the scuppers. The scupper shielding plate can reduce a bailing amount to some extent, but can prevent backflow of the waterflow to improve the streamline of the boat bottom.

[0026] Compared with the conventional self-bailing packraft, the present disclosure has a better bailing effect, little accumulated water and a better streamline for the scuppers, and improves boating efficiency. Meanwhile, based on overall improvement, the present disclosure makes the user sit more comfortably, and achieves a better user experience. The self-bailing boat can be quickly adapted to different water surface conditions, and has better maneuverability and better safety. The self-bailing boat is used and maintained conveniently, and has better flexibility and better adaptability.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027]

FIG. 1 is an overall structural view of a self-bailing boat according to Embodiment 1;
FIG. 2 is a top view of FIG. 1;
FIG. 3 illustrates a working principle of a self-bailing boat according to the present disclosure;
FIG. 4 illustrates bailing of accumulated water in a self-bailing boat;
FIG. 5 illustrates a bailing principle of a boat bottom; and
FIG. 6 is a structural view according to Embodiment 2, where for convenience of viewing, an inflation adjustable pedal is not shown.

[0028] In the figures: 11: scupper shielding plate, 12: scupper, 13: bottom airbag, 14: waterproof airtight zipper, 15: floor cover plate, 16: water retaining coaming (at a periphery), and 17: inflation adjustable pedal.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0029] The present disclosure is further described below with reference to the accompanying drawings.

[0030] To make the objectives, technical solutions and the advantages of the present disclosure clearer, the present disclosure is described in further detail below with reference to the drawings and embodiments. Understandably, the described embodiments are merely intended to explain the present disclosure, rather than to limit the present disclosure.

Embodiment 1 single bottom airbag

[0031] As shown in figures, a self-bailing boat provided by the embodiment includes a boat's side, a boat bottom, inflation valves for inflation and deflation, an inflation adjustable pedal, a scupper shielding plate, a floor cover plate, a waterproof airtight zipper, and a water retaining coaming. As shown in figures, the boat bottom is connected to the boat's side. The boat's side and the boat bottom form a hull of the self-bailing boat. In the embodiment, the boat's side and the boat bottom are made of a waterproof airtight material. The boat's side and the boat bottom are integrated. That is, the boat's side and the boat bottom are manufactured by gluing and high-frequency heat sealing. In a specific example, the boat's side and the boat bottom may be made of a TPU nylon composite material, such that the hull has desirable airtightness and desirable wear resistance.

[0032] The boat's side includes an air chamber. An inflation valve is provided on the air chamber. As shown in figures, the self-bailing boat in the embodiment uses a single bottom airbag. The bottom airbag is provided on the boat bottom. The floor cover plate is located on the bottom airbag. An inflation valve is provided on the bottom airbag. There are a plurality of the inflation valves. Through the inflation valve, the air chamber or the bottom airbag can be inflated or deflated.

[0033] The bottom airbag is provided on the boat bottom. The floor cover plate is located on the bottom airbag. An edge of the floor cover plate adjacent to a bow is connected to the water retaining coaming in a bailing space. A side edge of the floor cover plate is integrally connected to the boat's side. A bilge space for placing the bottom airbag is provided among the floor cover plate, the boat bottom and the boat's side. The bottom airbag is located in the bilge space. The inflation valve is provided on the bottom airbag, and the bottom airbag can be inflated or deflated through the inflation valve. The waterproof airtight zipper is provided on the floor cover plate, and the waterproof airtight zipper can be openable relative to the floor cover plate so as to open or close the

bilge space.

[0034] The water retaining coaming is provided inside the boat's side, and a bottom end of the water retaining coaming is integrally connected to the boat bottom. A sidewall of the floor cover plate connected to the boat bottom is labeled as a bailing sidewall. A top edge of the water retaining coaming is connected to the boat's side, and a backward upper edge of the water retaining coaming is connected to a forward edge of the floor cover plate. The bailing sidewall and the water retaining coaming collectively enclose the bailing space with an upward opening. The boat bottom serves as a bottom of the bailing space. The bottom of the bailing space is labeled as a bailing bottom wall.

[0035] The inflation adjustable pedal is provided in the bailing space and can be put down or taken out relative to the bailing space. A lower surface of the inflation adjustable pedal cooperates with a surface of the water retaining coaming. An upper surface of the inflation adjustable pedal and an upper surface of the bottom airbag respectively support a leg and a hip of a user.

[0036] Along an advancement direction of the self-bailing boat, the bailing bottom wall is inclined. A horizontal plane where a front end of the bailing bottom wall is located is located above a horizontal plane where a back end of the bailing bottom wall is located. Along a vertical direction, a plurality of scuppers are arranged on the bailing bottom wall. Along the advancement direction of the self-bailing boat, the scuppers are located at the back end of the bailing bottom wall. The scupper shielding plate is provided at a side of the boat bottom away from the inflation adjustable pedal. The scupper shielding plate is provided on the scuppers and can shield the scuppers. In the embodiment, the scupper shielding plate is made of a flexible material. Further, the scupper shielding plate is made of a TPU nylon composite material.

[0037] In the embodiment, one side of the scupper shielding plate is fixedly connected to the boat bottom, and the other side of the scupper shielding plate is capable of moving freely relative to the boat bottom. The side of the scupper shielding plate fixedly connected to the boat bottom is labeled as a shielding fixed side, and the side of the scupper shielding plate capable of moving freely relative to the boat bottom is labeled as a shielding movable side. Along the advancement direction of the self-bailing boat, the shielding fixed side is in front of the shielding movable side.

[0038] In the embodiment, the inflation adjustable pedal cooperates with a foot of the user. The hip of the user is located on the floor cover plate of the bilge space. That is, the inflation adjustable pedal is located on the front side of the advancement direction of the self-bailing boat (referred to as a front side of the advancement), while the bilge space is located on the back side of the advancement direction of the self-bailing boat (referred to as a back side of the advancement). The horizontal plane where the front end of the bailing bottom wall is located is located above the horizontal plane where the back end of the bailing bottom wall is located. That is, the bailing bottom wall of the bailing space is inclined from back to front. Further, along the advancement direction of the self-bailing boat, the scuppers are located at a recessed place of the back end of the bailing bottom wall. In an example, as shown in figures, there are three scuppers. With the advancement direction of the self-bailing boat as a first direction, the scuppers are uniformly distributed in a direction perpendicular to the first direction.

[0039] Meanwhile, the scupper shielding plate is located on a bottom wall of the boat bottom, and includes an end on the front side of the advancement fixedly connected to the boat bottom (namely the shielding fixed side), and an end on the back side of the advancement not connected to the boat bottom (the end can swing freely relative to the boat bottom, namely the shielding movable side).

[0040] In the embodiment, the side of the boat bottom away from the inflation adjustable pedal is provided with a skeg mounting groove. Along the advancement direction of the self-bailing boat, the skeg mounting groove is located in a back of the boat bottom. Further, the self-bailing boat further includes a skeg cooperating with the skeg mounting groove. In the present disclosure, the skeg can take a guiding effect, and serves as a stabilizing plate on a stern. It can stabilize the stern, prevent transverse movement of the stern to stabilize a course, and enhance tracking. Either the big skeg or the small skeg can be used according to different actual needs. The big skeg can make the boat bottom more stable in the transverse movement, while causing more extra resistance. It is suitable for more intense boating, and greatly improves a boating efficiency. The small skeg can make the boat bottom more flexible. It is suitable for various water areas, can withstand an impact from white water, and maintains maneuverability, without increasing a large turning radius.

[0041] The self-bailing boat further includes one or more of a bow handheld grip, a cable pull ring, a backrest fixing seat, and a leg strap seat. The bow handheld grip, the cable pull ring, the backrest fixing seat, and the leg strap seat are provided on the boat's side.

[0042] In the embodiment, the self-bailing boat is not inflated when not used, and the whole self-bailing boat can be collapsed for storage. When the self-bailing boat is used, the air chamber or the bottom airbag is inflated through the inflation valve. When collapsed after use, the self-bailing inflatable boat is deflated through the inflation valve, and can be put into a backpack (the self-bailing boat in the embodiment is referred as a packraft).

[0043] When the self-bailing boat is inflated, there is a certain height difference between the upper surface of the bottom airbag and the bailing bottom wall. Meanwhile, the inflation adjustable pedal is located in the bailing space, with the upper surface cooperating with the upper surface of the bottom airbag. While supporting the leg of the user, the inflation adjustable pedal can take a position in the bailing space to keep accumulated water

relatively high. In case of a certain volume of the accumulated water, the higher the accumulated water, the larger the potential energy difference between the on-board water and the off-board water. According to the existing design, a plurality of scuppers are annularly arranged around the boat bottom. With multipoint arrangement, there is a small potential energy difference between the on-board water and the off-board water. The accumulated water is located at a low-lying place and is scattered, and a large amount of the accumulated water remains at a cockpit clearance of the boat. This increases a draft of the boat and affects maneuverability of the boat.

[0044] According to the present disclosure, the bilge space with the bottom airbag is used to seal most areas of the boat bottom, and the bottom airbag has a height of 15 cm to 18 dm (the covered region is sealed by the airtight zipper, and cannot accumulate water). The water is accumulated to the special bailing space for intensive bailing. The scuppers at a bottom of the bailing space greatly improve a bailing efficiency, and reduce accumulated water. Additionally, the number of the scuppers is further reduced, and the boat bottom has a better streamline. Meanwhile, to improve the streamline, the scupper shielding plate is provided under the scuppers. The scupper shielding plate can reduce a bailing flow to some extent, but can prevent backflow of the waterflow to improve the streamline of the boat bottom. With the technical solutions of the present disclosure, the accumulated water in the boat is greatly reduced, and the comfort of the user is greatly improved.

[0045] Further, the bailing bottom wall of the bailing space is inclined from front to back, which is beneficial for the water to accumulate toward the scuppers, and improves the bailing efficiency. The scupper shielding plate depends on a working state of the self-bailing boat. When the boat bottom slides forward, due to a high flow velocity under the boat bottom, and a relatively static state of accumulated water on the boat bottom, there is a pressure difference between two ends of the scupper shielding plate. When the accumulated water on the boat bottom reaches a certain amount, the shielding movable side of the scupper shielding plate swings downward, and the accumulated water in the boat can be bailed from the boat bottom through the scuppers and the scupper shielding plate. When the accumulated water on the boat bottom is bailed to a certain extent, and there is no pressure difference between the two ends of the scupper shielding plate, the scupper shielding plate can be automatically attached to the bottom wall of the boat bottom to stop bailing.

[0046] The present disclosure has the following features over the prior art: 1) The overall boat bottom is inclined for the inclined bailing bottom wall. 2) By providing the bailing space, improving the scuppers, and sealing most areas, the present disclosure greatly improves a water accumulation efficiency and a water bailing efficiency. 3) The scupper shielding plate is a flexible water retaining plate under the scuppers, so the water can be leaked, but cannot be back flowed. This achieves a better streamline at the scuppers, and makes the user more comfortable. 4) With the inflation adjustable pedal, the foot of the user can be placed onto the inflation adjustable pedal to adjust a sitting posture.

[0047] In conclusion, compared with the existing self-bailing packraft, the present disclosure has little accumulated water, and bails the water more completely. Meanwhile, the scuppers have a better streamline. Furthermore, based on the overall structural improvement, the present disclosure makes the user sit more comfortably, and improves the user experience.

Embodiment 2 double bottom airbags

[0048] In the embodiment, the self-bailing boat includes two bilge spaces, two bailing spaces, two floor cover plates, and two inflation adjustable pedals. As shown in figures, along the advancement direction of the self-bailing boat, the bailing space, the bilge space, the bailing space, and the bilge space are sequentially provided in the boat's side. According to the structure, a first bailing space is formed between the floor cover plate adjacent to the bow and the boat's side. A second bailing space is formed among the floor cover plate adjacent to the stern, the boat's side, and the floor cover plate adjacent to the bow. The two inflation adjustable pedals are correspondingly provided in the bailing spaces.

[0049] Other contents are the same as Embodiment 1.

[0050] The above description is merely directed to preferred embodiments of the present disclosure, and is not intended to limit the present disclosure. Any modification, equivalent substitute and improvement without departing from the spirit and principle of the present disclosure shall be included within the protection scope of the present disclosure.

Claims

1. A self-bailing boat, **characterized by** comprising a boat's side, a boat bottom, inflation valves, an inflation adjustable pedal (17), a scupper shielding plate (11), a floor cover plate (15), a waterproof airtight zipper (14), and a water retaining coaming (16), wherein there are a plurality of the inflation valves, the boat bottom is connected to the boat's side, and the boat's side and the boat bottom form a hull of the self-bailing boat;

   the boat's side and the boat bottom are made of a waterproof airtight material, the boat's side comprises an air chamber, an inflation valve is provided on the air chamber, and the air chamber is inflated or deflated through the inflation valve;

   a bottom airbag (13) is provided on the boat bottom, and the floor cover plate (15) is located

on the bottom airbag (13); an edge of the floor cover plate (15) adjacent to a bow is connected to the water retaining coaming (16) in a bailing space, a side edge of the floor cover plate (15) is integrally connected to the boat's side, a bilge space for placing the bottom airbag (13) is provided among the floor cover plate (15), the boat bottom and the boat's side, and the bottom airbag (13) is located in the bilge space; and an inflation valve is provided on the bottom airbag (13), the bottom airbag (13) is inflated or deflated through the inflation valve, the waterproof airtight zipper (14) is provided on the floor cover plate (15), and the waterproof airtight zipper (14) is openable relative to the floor cover plate (15) so as to open or close the bilge space;

the water retaining coaming (16) is provided inside the boat's side, and a bottom end of the water retaining coaming (16) is integrally connected to the boat bottom; a sidewall of the floor cover plate (15) connected to the boat bottom is labeled as a bailing sidewall; a top edge of the water retaining coaming (16) is connected to the boat's side, and a backward upper edge of the water retaining coaming (16) is connected to a forward edge of the floor cover plate (15); the bailing sidewall and the water retaining coaming (16) collectively enclose the bailing space with an upward opening; and the boat bottom serves as a bottom of the bailing space, and the bottom of the bailing space is labeled as a bailing bottom wall;

the inflation adjustable pedal (17) is provided in the bailing space and is allowed to be put down or taken out relative to the bailing space, a lower surface of the inflation adjustable pedal (17) cooperates with a front surface of the water retaining coaming (16), and an upper surface of the inflation adjustable pedal (17) and an upper surface of the bottom airbag (13) respectively support a leg and a hip of a user;

along an advancement direction of the self-bailing boat, the bailing bottom wall is inclined, and a horizontal plane where a front end of the bailing bottom wall is located is located above a horizontal plane where a back end of the bailing bottom wall is located;

along a vertical direction, a plurality of scuppers (12) are arranged on the bailing bottom wall; and along the advancement direction of the self-bailing boat, the scuppers (12) are located at the back end of the bailing bottom wall; and

the scupper shielding plate (11) is provided at a side of the boat bottom away from the inflation adjustable pedal (17), and the scupper shielding plate (11) is provided on the scuppers (12) and configured to shield the scuppers (12) to achieve unidirectional bailing.

2. The self-bailing boat according to claim 1, **characterized in that** the scupper shielding plate (11) is made of a flexible material.

3. The self-bailing boat according to claim 1, **characterized in that** the side of the boat bottom away from the inflation adjustable pedal (17) is provided with a skeg mounting groove; and

along the advancement direction of the self-bailing boat, the skeg mounting groove is located in a back of the boat bottom.

4. The self-bailing boat according to claim 3, **characterized by** further comprising a skeg cooperating with the skeg mounting groove.

5. The self-bailing boat according to claim 1, **characterized by** further comprising one or more of a bow handheld grip, a cable pull ring, a backrest fixing seat, and a leg strap seat, wherein the bow handheld grip, the cable pull ring, the backrest fixing seat, and the leg strap seat are provided on the boat's side.

6. The self-bailing boat according to claim 1, **characterized in that** along the advancement direction of the self-bailing boat, the scuppers (12) are located at a recessed place of the back end of the bailing bottom wall.

7. The self-bailing boat according to claim 1, **characterized in that** there are 3-5 scuppers (12); and

with the advancement direction of the self-bailing boat as a first direction, the scuppers (12) are uniformly distributed in a direction perpendicular to the first direction.

8. The self-bailing boat according to claim 1, **characterized in that** there are N bilge spaces and N bailing spaces, N being a natural number and $N \geq 1$.

9. The self-bailing boat according to claim 8, **characterized in that** there are two bottom airbags (13) and two bailing spaces; and

along the advancement direction of the self-bailing boat, the bailing space, the bilge space, the bailing space, and the bilge space are sequentially provided in the boat's side.

10. The self-bailing boat according to any one of claims 1 to 9, **characterized in that** three edges of the scupper shielding plate (11) are fixedly connected to the boat bottom, and a remaining edge of the scupper shielding plate (11) is configured to move freely relative to the boat bottom;

a side of the scupper shielding plate (11) fixedly connected to the boat bottom is labeled as a shielding fixed side, and a side of the scupper

shielding plate (11) configured to move freely relative to the boat bottom is labeled as a shielding movable side; and

along the advancement direction of the self-bailing boat, the shielding fixed side is in front of the shielding movable side.

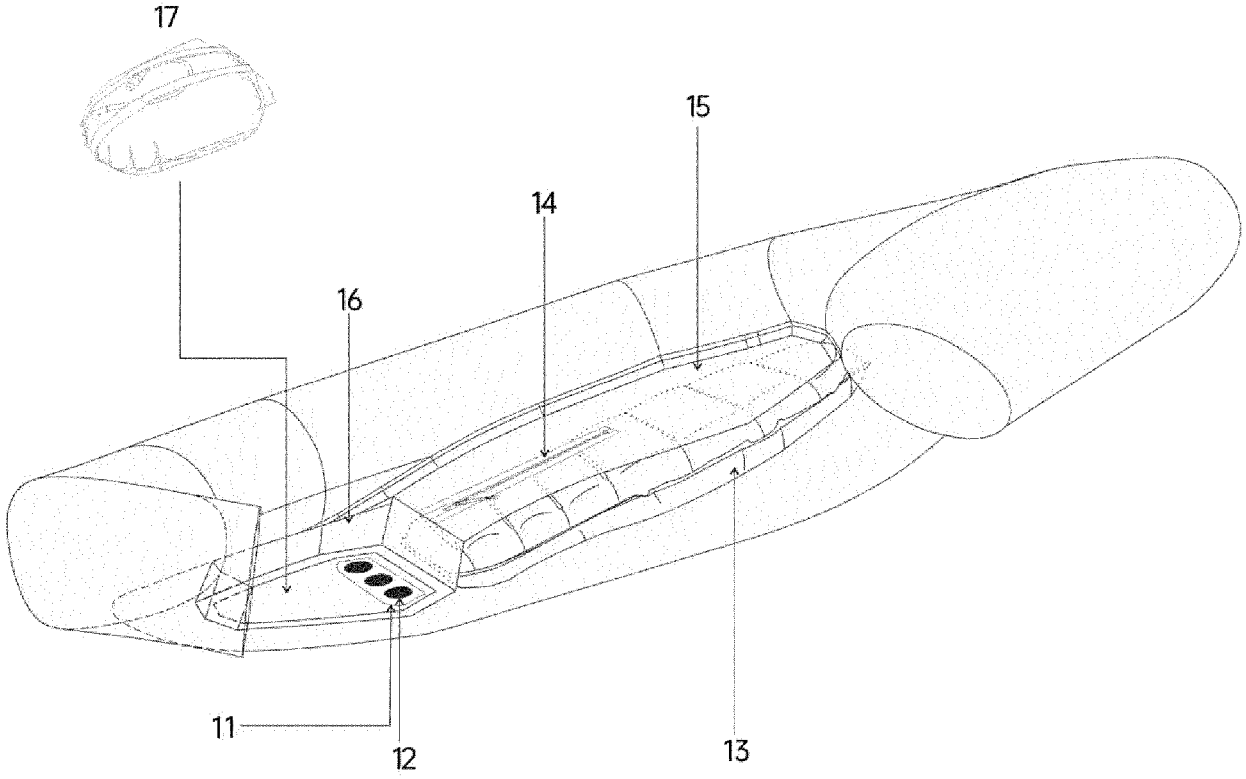

FIG. 1

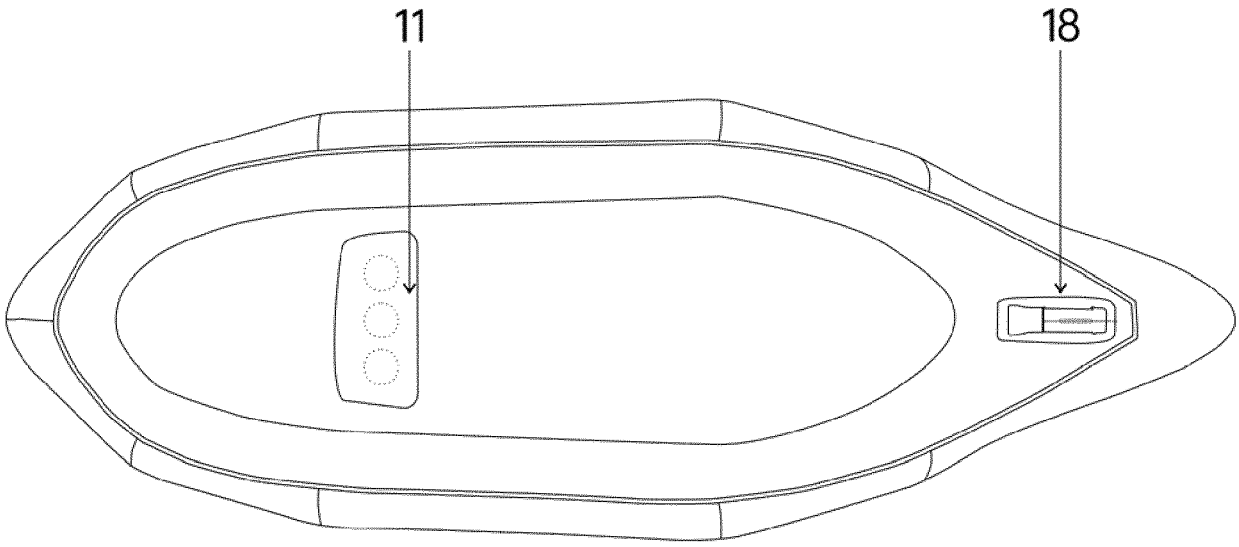

FIG. 2

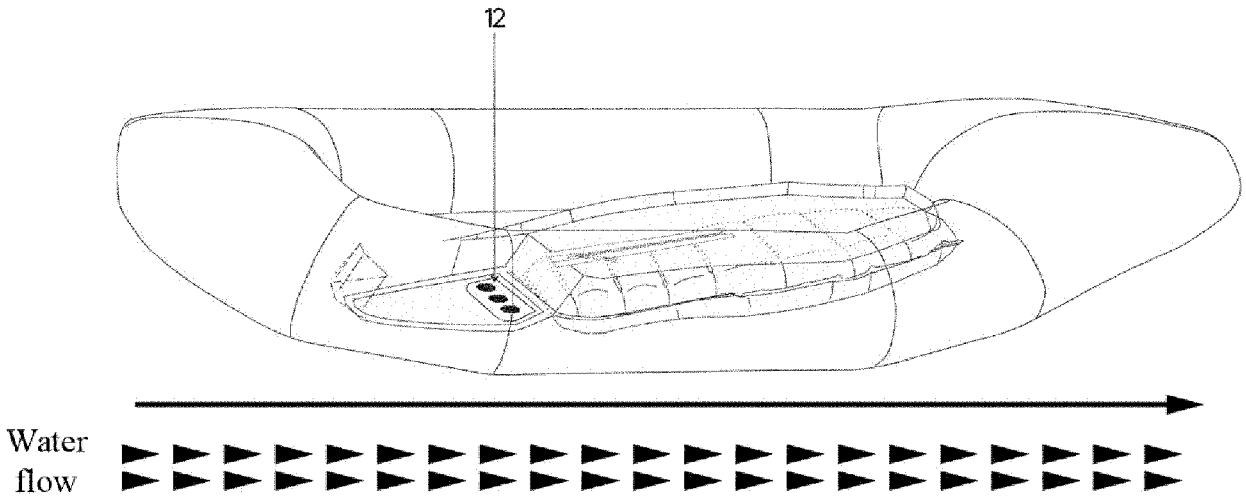

FIG. 3

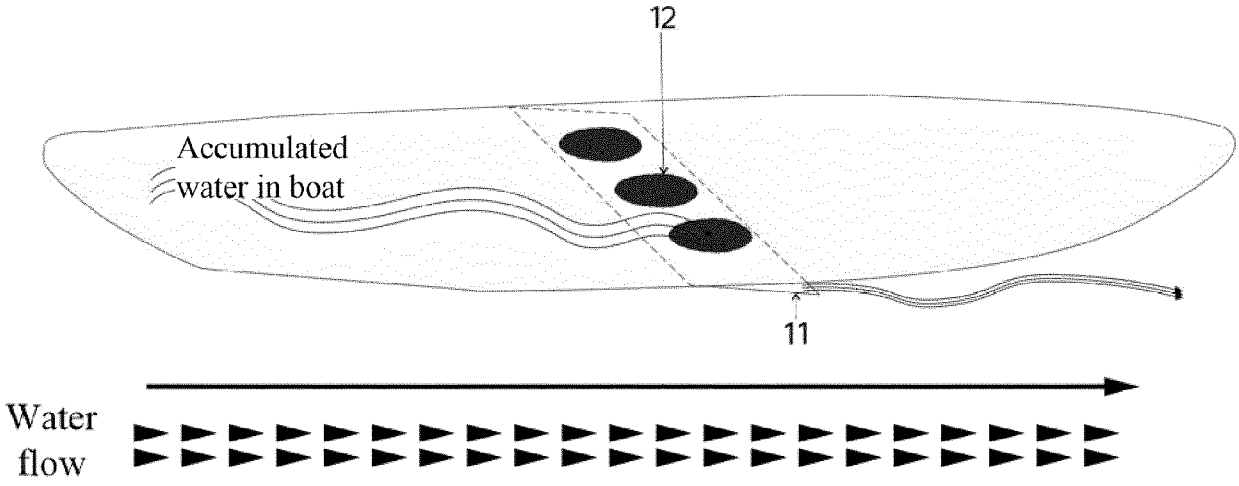
12
Accumulated
water in boat
11
Water
flow

FIG. 4

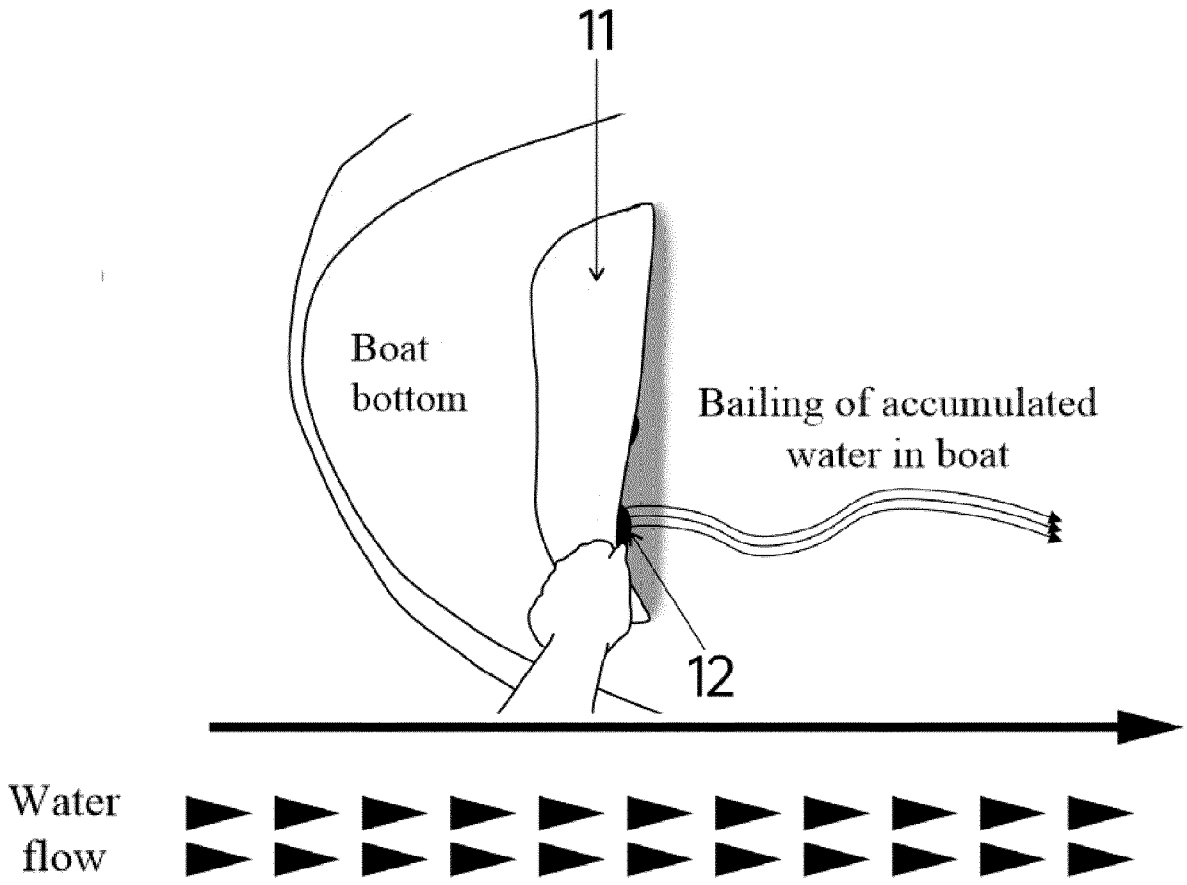
11
Boat
bottom
Bailing of accumulated
water in boat
12
Water
flow

FIG. 5

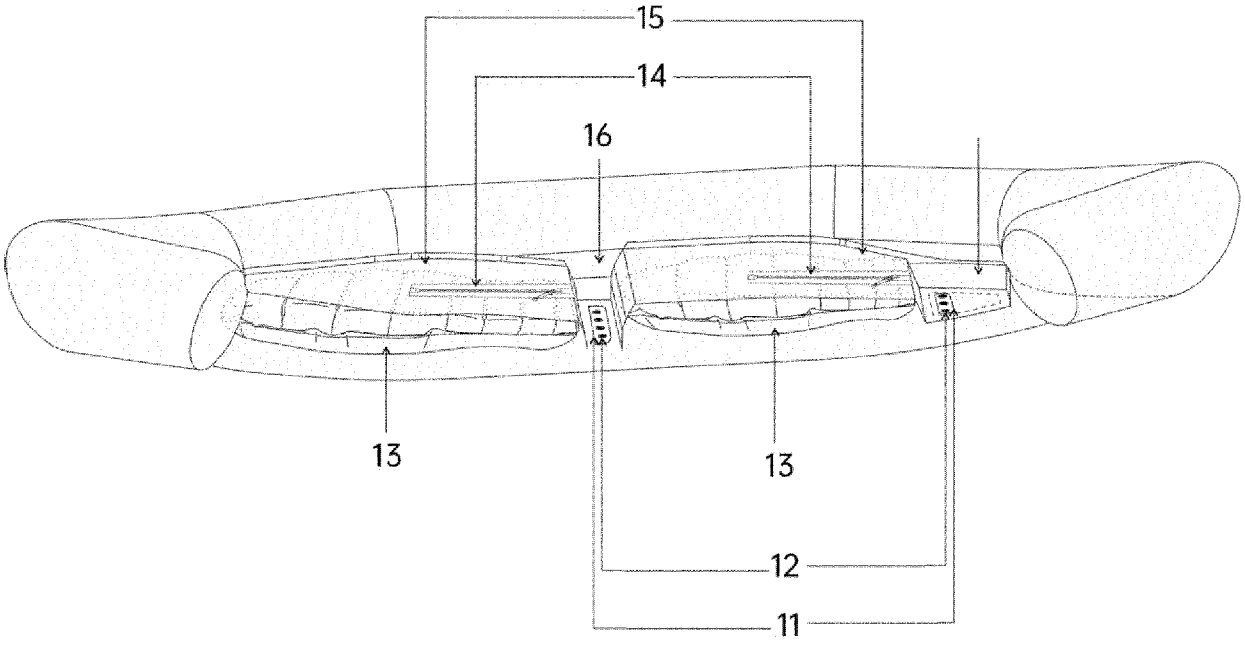

FIG. 6

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 23 21 5023

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	JP S62 36895 U (UNKNOWN) 4 March 1987 (1987-03-04) * the whole document *	1-10	INV. B63B7/08 B63B13/00
A	US 11 325 684 B2 (JIANGSU JILONG SPORT AND LEISURE PRODUCTS CO LTD [CN]) 10 May 2022 (2022-05-10) * the whole document *	1-10	
A	CN 205 872 366 U (ZHEJIANG ANJI HUAYU BOAT DEV CO LTD) 11 January 2017 (2017-01-11) * the whole document *	1-10	

TECHNICAL FIELDS SEARCHED (IPC)

B63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	8 May 2024	Freire Gomez, Jon

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 23 21 5023

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.

08-05-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP S6236895 U	04-03-1987	JP H0229035 Y2	03-08-1990
		JP S6236895 U	04-03-1987
US 11325684 B2	10-05-2022	CN 111547195 A	18-08-2020
		DE 202020107350 U1	18-01-2021
		EP 3922543 A1	15-12-2021
		US 2021387700 A1	16-12-2021
CN 205872366 U	11-01-2017	NONE	

EPO FORM P0459

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