



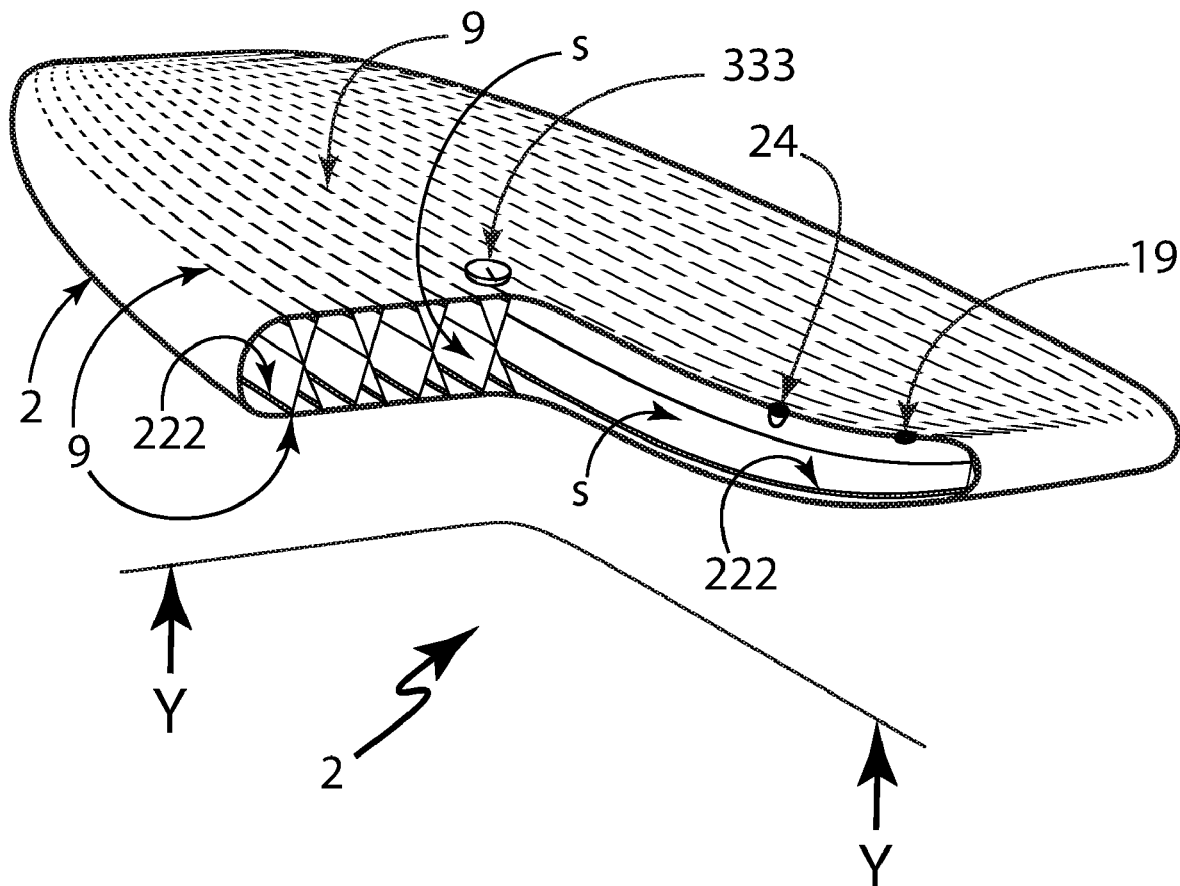
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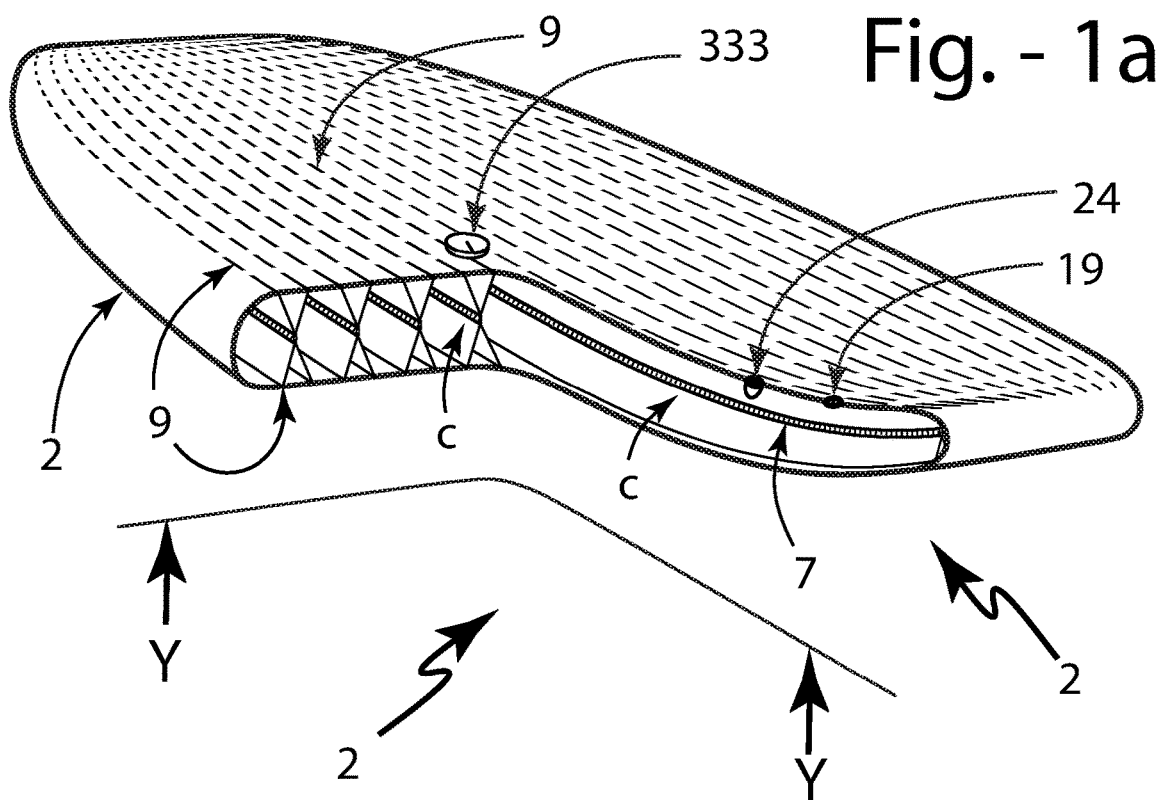
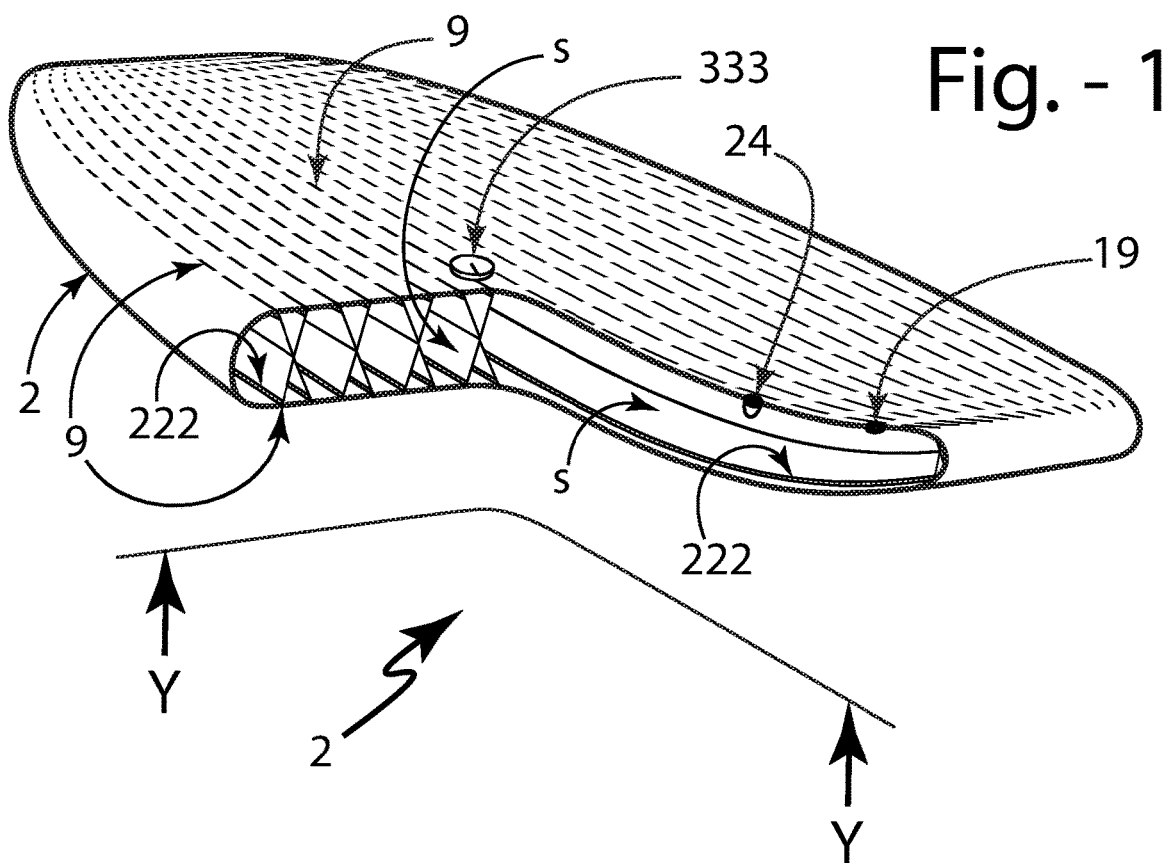
(19) **United States**(12) **Patent Application Publication**
Pouchkarev(10) **Pub. No.: US 2020/0031434 A1**(43) **Pub. Date: Jan. 30, 2020**(54) **FLEXIBLE INFLATABLE AND FLUID
FILLABLE CONTAINER**(52) **U.S. Cl.**CPC *B63B 35/7913* (2013.01); *B63B 7/082*
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7/085 (2013.01); *B63B 2221/12* (2013.01);
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MD (US)(21) Appl. No.: **16/194,121**(22) Filed: **Nov. 16, 2018****Related U.S. Application Data**(60) Provisional application No. 62/764,289, filed on Jul.
27, 2018.**Publication Classification**(51) **Int. Cl.***B63B 35/79* (2006.01)
B63B 7/08 (2006.01)

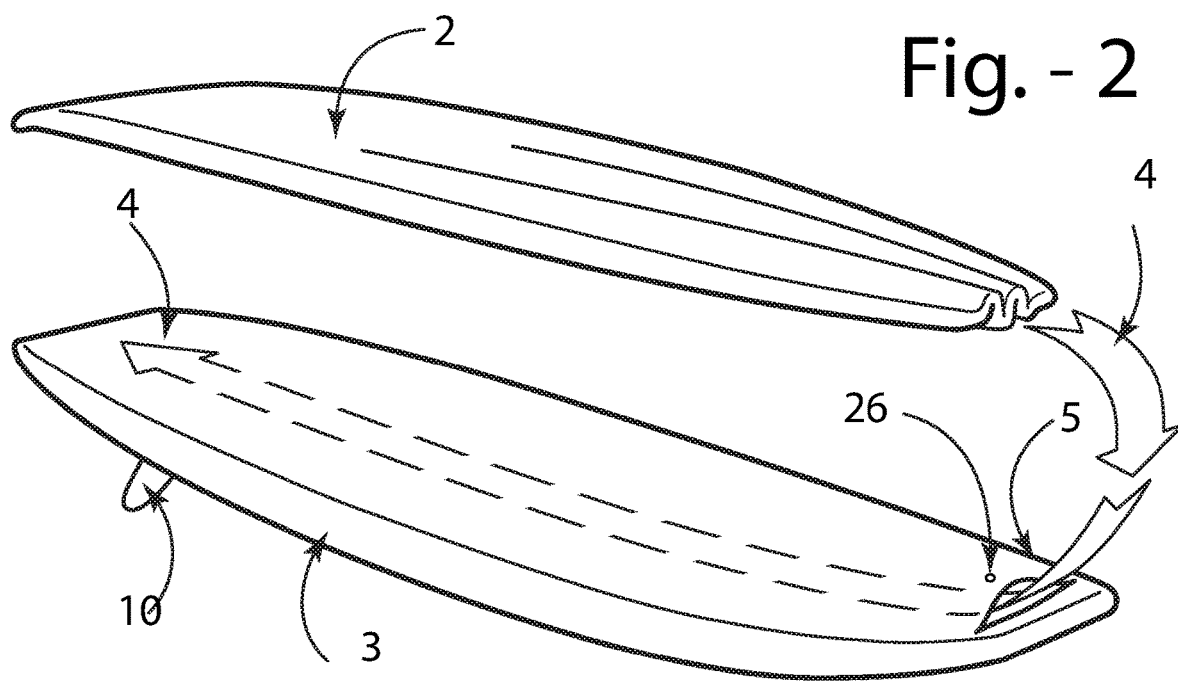
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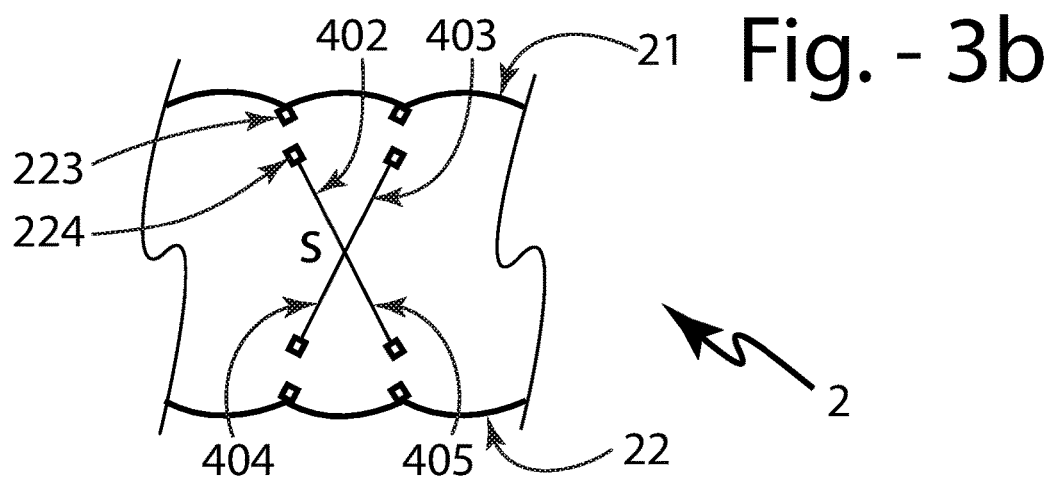
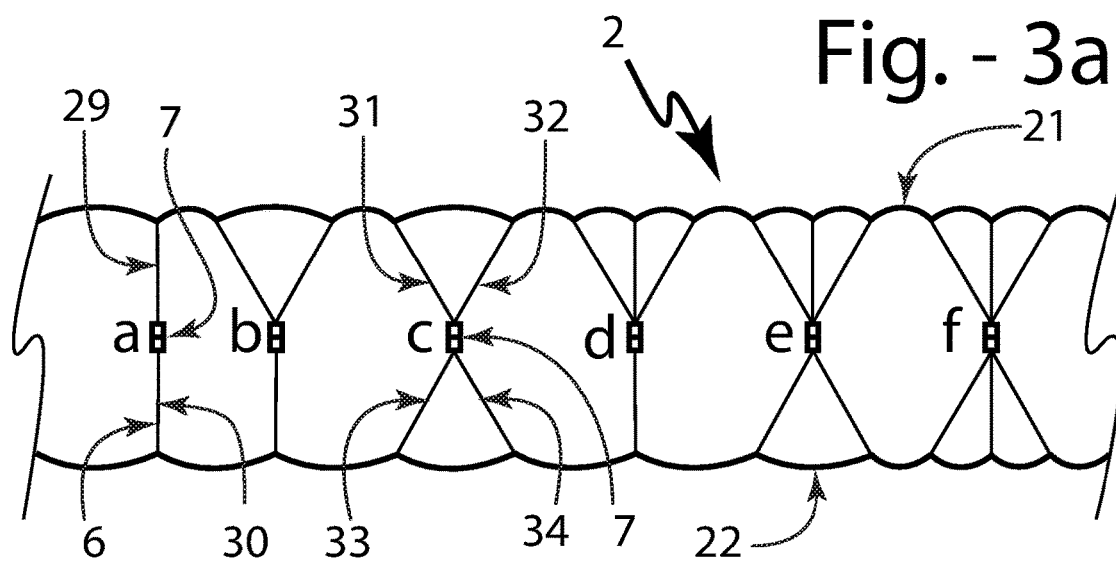
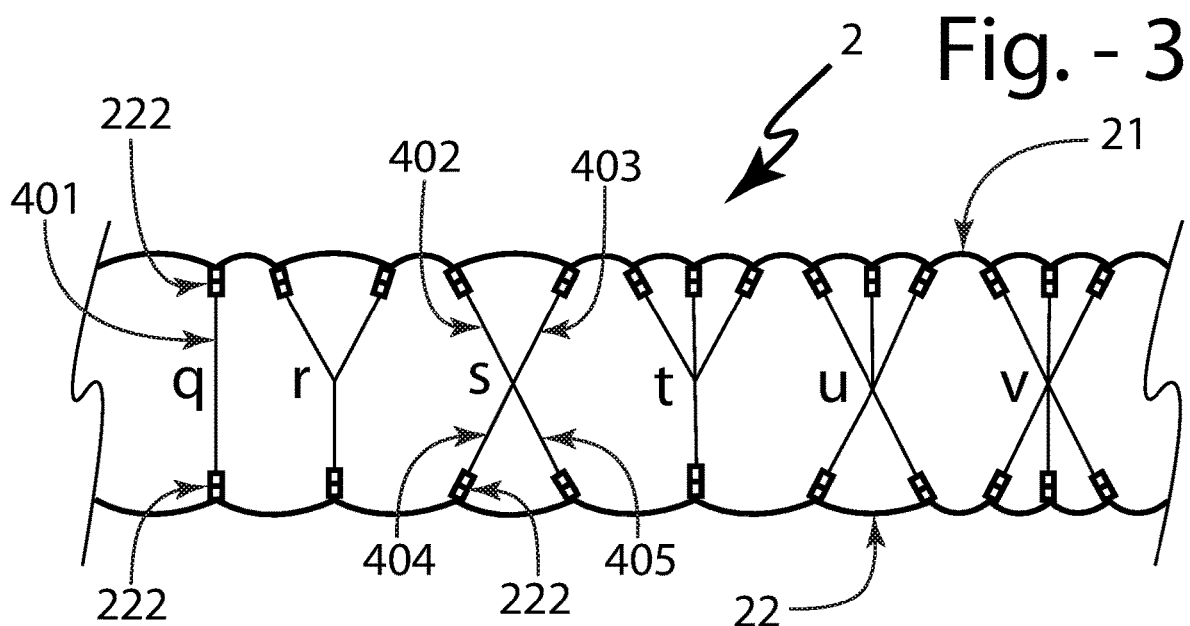
ABSTRACT

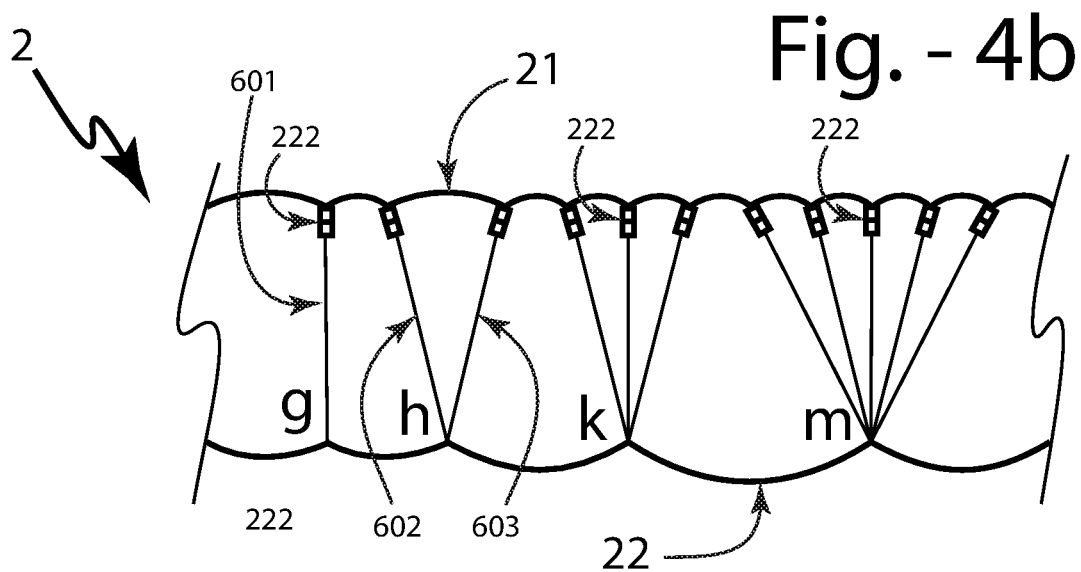
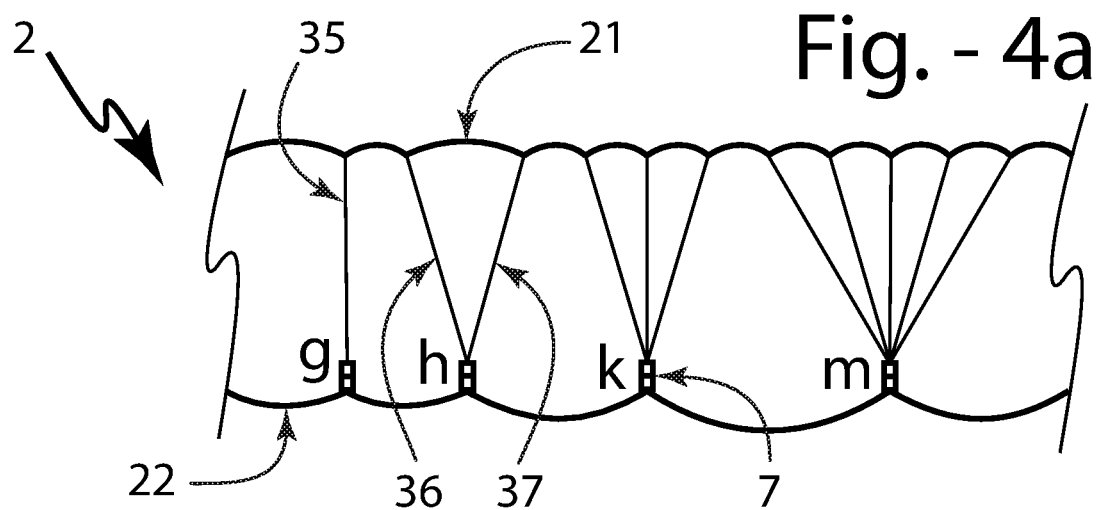
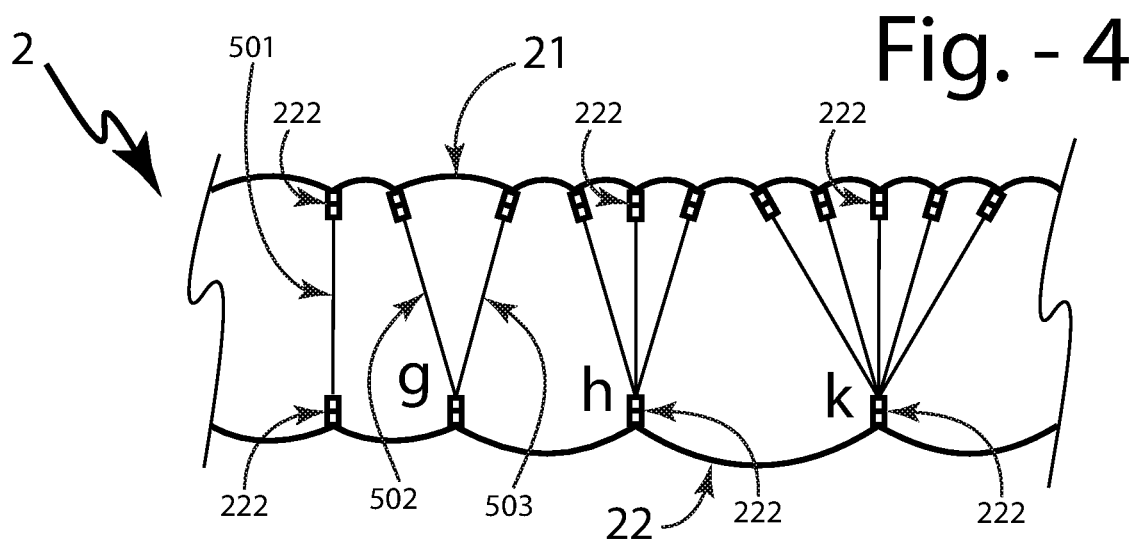
A flexible inflatable container that includes a flexible inflatable core having opposing first and second panel members, each with an interior side. A plurality of longitudinally oriented stringers is disposed on at least one interior side of one of the opposing first and second panel members. Each stringer has at least one edge. Zippers join stringers portions to one another or to the panel members or both. An inflation valve on one of the panel members is provided for introducing fluid into the flexible inflatable core. The core is covered by a flexible outer skin.











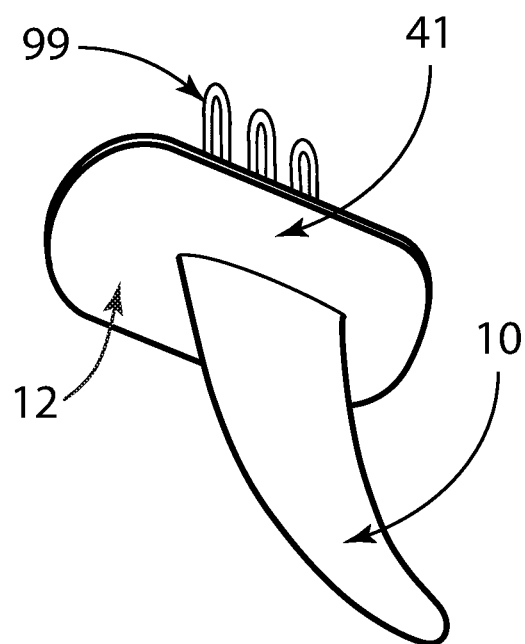


Fig. -5

Fig. -6

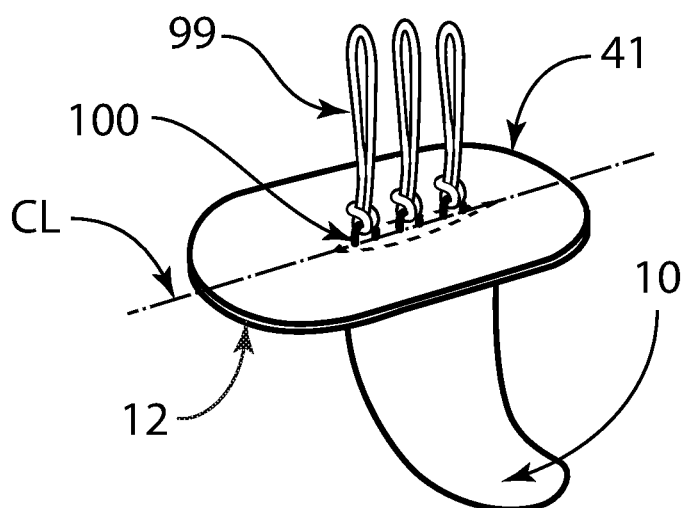


Fig. - 7

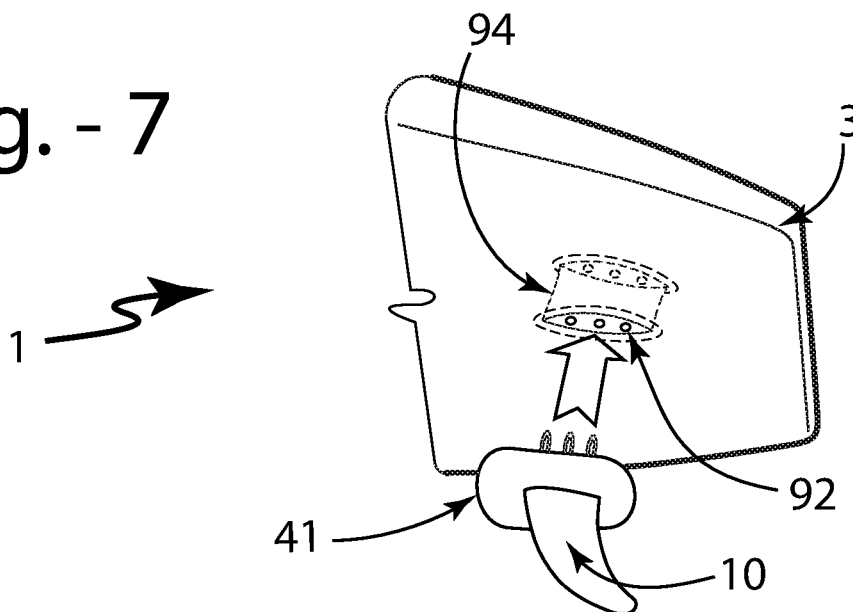


Fig. - 8

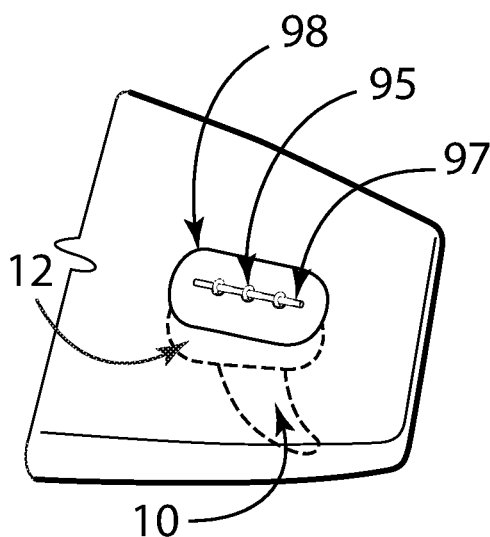
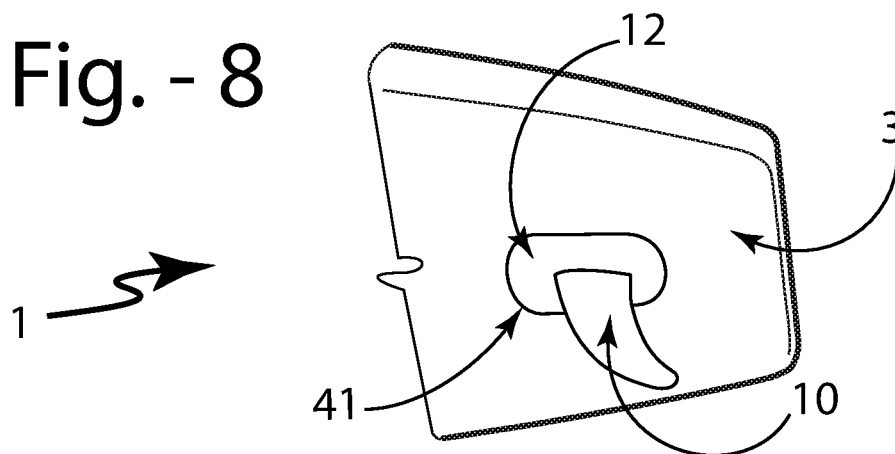


Fig. - 9

Fig. - 10

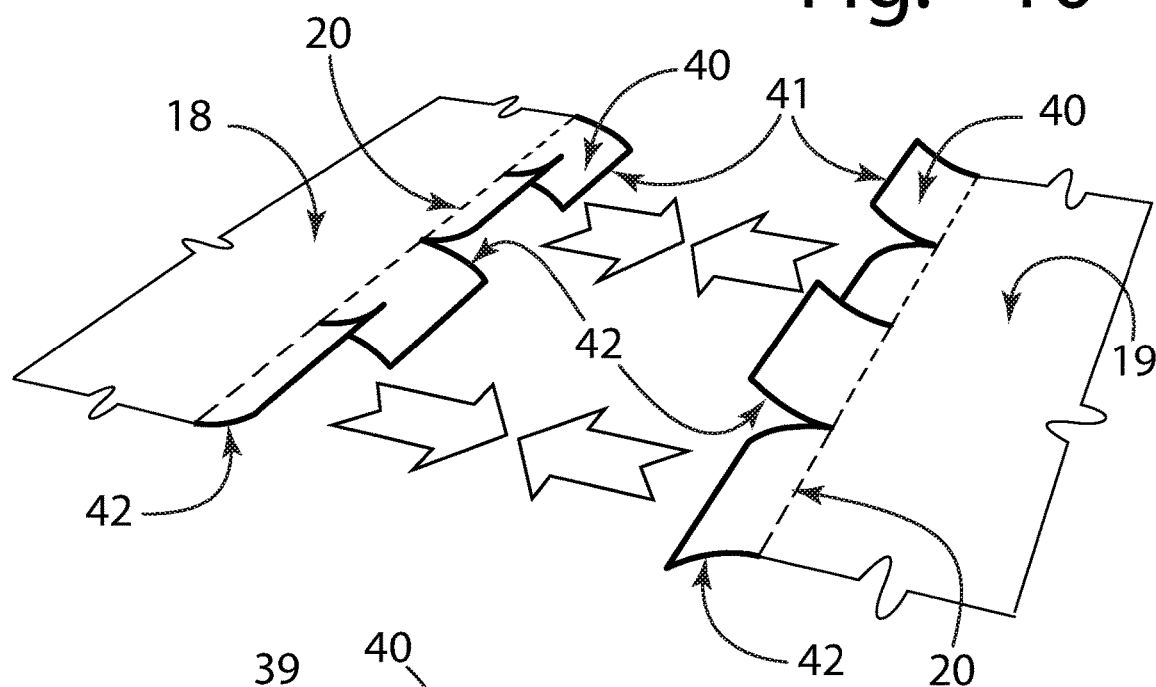
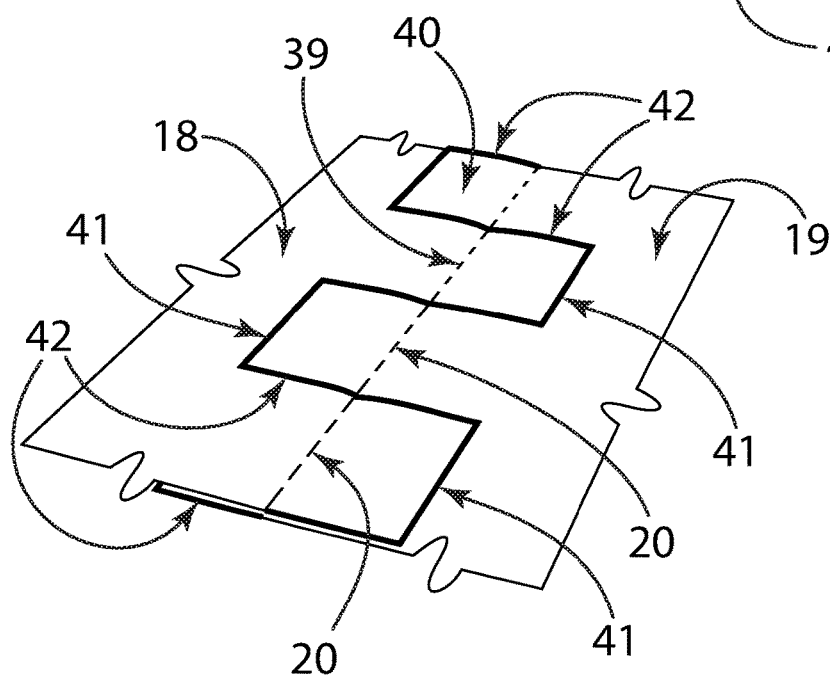


Fig. - 11



FLEXIBLE INFLATABLE AND FLUID FILLABLE CONTAINER

CROSS REFERENCES TO RELATED APPLICATIONS

[0001] The present application claims the benefit of U.S. Provisional Patent Application Ser. No. 62/764,289 filed Jul. 27, 2018 (Jul. 27, 2018).

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

THE NAMES OR PARTIES TO A JOINT RESEARCH AGREEMENT

[0003] Not applicable.

INCORPORATION BY REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC

[0004] Not applicable.

SEQUENCE LISTING

[0005] Not applicable.

BACKGROUND OF THE INVENTION

[0006] Field of the Invention: The present invention relates generally to methods of constructing flexible inflatable or fluid filled containers, and more particularly to a method of constructing a flexible inflatable container using an innovative inner stringer design. Principals of such stringer design are equally applicable for air inflated as well as liquid filled container applications. Description of the innovation noted below is an example. This exemplary design is an air inflatable flexible container intended to serve as stand-up paddle board ISUP.

BRIEF SUMMARY OF THE INVENTION

[0007] The present invention is a method of assembling a flexible inflatable container as well as the article made thereby. The method is directed to providing a flexible inflatable container having a novel internal structural design and layout with unique three dimensional properties. The article constructed using the inventive method is lightweight yet has considerable structural integrity as well as consistent and stable volumetric properties. The innovative adaptable design platform makes it possible to construct inflatable containers having an outside skin with complex compound curvature.

[0008] The invention described herein shows a unique structural layout particularly applicable for the creation of a large variety of flexible inflatable containers. Such containers may be configured to function as surf boards, kayaks, rafts, boats, flotation safety devices, tents, hangers, thermo-static chambers, inflatable base pads, wall dividers, inflatable wing structures, turbine rotors and the like.

[0009] In the inflated state, the flexible inflatable container of the present invention takes its intended shape and form with remarkable mechanical and physical properties, including compression, tensile and torsional integrity, volumetric stability, repetitive dimensional recovery, lightweight, flex-

ibility and dynamic shock dampening, and durability in harsh conditions and environments. These characteristics in combination make the flexible inflatable container of the present invention useful, unique, and favorable comparable to the same structures made of various solid materials.

[0010] The flexible inflatable container comprises two primary components: an outside skin and inner inflatable core. It should be noted, however, that for some applications the flexible inflatable container may be designed and constructed for use without protective outer skin at all.

[0011] The outside skin is a snug-fitting bag or cover constructed to fit over the inflated core, providing a smooth finished outer surface that also functions as a structural exoskeleton or shell. This shell also provides an abrasion resistant housing, protecting the inflatable core from puncture, wear and tear. The outer skin is made to be easily repairable or replaceable, which greatly prolongs the life expectancy of the inflatable core and the entire container generally.

[0012] The mechanical and tensile properties of the outer skin, along with the material "skin" of the core and internal stringers, are carefully matched to ensure that they will safely and reliably contain the pressures intended for use with the container.

[0013] The inflatable core of the flexible inflatable container is designed for frequent rapid inflation and deflation cycles and may include at least one safety pressure release valve set to a predetermined safe pressure value and manometer by the manufacturer, and therefore in most instances not intended for alteration by a user.

[0014] The outer skin of the container may have pockets, reinforcement patches, belts, buckles, rivets, bolts, snap-on mechanisms and various attachment means used for externally mountable parts and components. Such components can be made of solid or flexible materials. Depending on the design and the utility of the flexible inflatable container, the external attachments can be removable or permanently affixed on the outer skin. In some cases external attachments may be attached or mounted on the inflatable core itself.

[0015] The instant application contains a detailed description of the invention based on an exemplary design of a flexible inflatable containers configured and built as a stand-up paddle board ISUP. Such a container can be equipped with a fin or multiple fins, cord and rope eyelets, cargo mounting brackets, straps, pads, and the like. It is to be understood that key principals of the design described below in any way meant to be limited by or used for stand up paddle board only. Rather, the same principles of construction and design can be directly adapted for other inflatable products made in any of a number of shapes and sizes for a wide variety of intended uses.

[0016] The foregoing summary broadly sets out the more important features of the present invention so that the detailed description that follows may be better understood, and so that the present contributions to the art may be better appreciated. There are additional features of the invention that will be described in the detailed description of the preferred embodiments of the invention which will form the subject matter of the claims appended hereto.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

[0017] The invention will be better understood and objects other than those set forth above will become apparent when

consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

[0018] FIG. 1 is upper right front partial cross-sectional perspective view of the flexible inflatable container of the present invention;

[0019] FIG. 1a is the same view, showing the flexible internal container stringer design with medial zippers connecting upper and lower stringer groups and including an integral manometer (pressure gauge);

[0020] FIG. 2 is an upper front right side perspective view showing the placement of a deflated flexible core in a flexible outside skin cover;

[0021] FIG. 3 is a partial cross-sectional end view in elevation of an inflatable core segment showing details of variable designs of the internal stringer construction, with connecting zippers shown between the stringers and the container outer skin;

[0022] FIG. 3a shows an alternative connection regime, with medial zippers connecting upper and lower stringers;

[0023] FIG. 3b is a partial cross-sectional end view in elevation showing an internal "X"-shaped stringer configuration before zippers are fastened at the upper and lower panel portions of the flexible inner core;

[0024] FIG. 4 is a cross-sectional end view in elevation of an inflatable core having an alternative stringer configuration with connecting zippers at the container outer skin;

[0025] FIG. 4a is a cross-sectional end view in elevation showing the same stringer pattern as FIG. 4, but with connecting zippers only at the lower end of stringers and affixed to the lower panel of the container outer skin;

[0026] FIG. 4b is the same view showing stringer zippers configured for connection to the top panel of the container outer skin;

[0027] FIG. 5 is a lower left perspective view showing the design of a replaceable fin;

[0028] FIG. 6 is an upper left perspective view thereof;

[0029] FIG. 7 is a lower left rear perspective view showing the replaceable fin of FIGS. 5-6 poised for locked-in placement onto the flat tail portion of the container outer skin;

[0030] FIG. 8 is the same view showing the fin installed on the container;

[0031] FIG. 9 is an upper left perspective view showing thereof;

[0032] FIG. 10 is a partial sectional upper perspective view showing two flexible inner core panels positioned for coupling in a staggered overlapping seam configuration to ensure accurate connection of the panels as well as proper alignment of the stringers in relation to the longitudinal axis of the inflatable structure;

[0033] FIG. 11 is the same view showing the panels connected in the overlapping configuration; and

[0034] FIG. 12 is an upper right front side perspective view showing the attachment of a flexible removable foot traction pad on the inflatable flexible container.

DETAILED DESCRIPTION OF THE INVENTION

[0035] Referring to FIGS. 1 through 12 wherein like reference numerals refer to like components in the various views, there is illustrated therein a new and improved flexible container, generally denominated 1 herein.

[0036] Referring first to FIG. 1, there is shown an upper front partial cross-sectional perspective view of the inven-

tive flexible inflatable container 1 designed and configured to function as an inflatable stand-up paddle board (ISUP). In this embodiment, the inventive flexible container includes a flexible inflatable core 2 and a flexible outer skin 3. The inflatable core 2 has an inflation valve 19, a safety pressure release valve 24, and a manometer 333.

[0037] FIG. 1a also shows the internal design of the flexible inflatable core 2. Section line Y-Y is used as the reference for a front quarter section through the core. Dashed lines 9 represent the precise placement of internal stringers c and attachment lines along which stringers c are connected to the inside surfaces of the core skin. Zipper 7 divides stringers c approximately in half along a main axis of the stringer. Internal stringers C run along the main axis of the core. Stringers are made of strong flexible lightweight fabrics.

[0038] It will be understood that the zippers described herein include complementary teeth disposed on opposing and mating edges of the mating flexible materials, and each described zipper is agnostic, having a retainer box, slider and pull tab on either of the mating edges, with matable teeth and an insertion pin on the complementary edge. Accordingly, when a zipper is referenced (in the singular), it will be understood that

[0039] FIG. 1 illustrates the same structure, in this, again in its most essential aspect including a flexible inflatable core 2 and flexible outer skin 3. The flexible inflatable container has at least one inflation valve 19, a safety pressure release valve 24, and a manometer 333, pressure gauge. The pressure gauge is mounted on the upper surface of the upper panel of the ISUP. [Cut line Y-Y is again used to reference the front quarter cross cut through the core. Dashed lines 9 represent the precise placement of internal stringers S and attachment lines along which stringers S are connected to the inside surfaces of the flexible inflatable core. Zippers 222 serve as attachment structure to form accurate, strong and flexible connection of stringers S to the flexible core 2. The design and configuration of stringers S shown in FIG. 1 differs significantly from the design shown in FIG. 1a, described below.

[0040] Each stringer S is constructed and performs as an independent and separate structural member of the compound flexible core 2. Internal stringers S are placed symmetrically along the main axis of the core and are made of a strong, flexible lightweight fabric.

[0041] In an embodiment, zippers 222 enable easy replacement or demounting of any stringer member and thus enable multiple open/close cycles of the zipper. In other embodiments, the stringers are paired in complementary upper and lower portions and may be welded or otherwise affixed to interior side of one of the panel members of the flexible inner core, and the zippers enable easy connection and disconnection to the mated pair. Every embodiment provides a way to disengaged a stringer member and exclude it from performing as a structural member. Thus, stringers are not permanently attached structural members of the core 2.

[0042] FIG. 2 is an upper front right side perspective view showing the placement of a deflated flexible core 2 in a flexible outside skin cover 3. The outer skin 3 is watertight but not airtight. The outer skin has an opening 5, which may be placed in any part of outer skin. The preferable placement for the opening 5 is on the upper side of the outer skin near the nose of ISUP.

[0043] Once the core is placed inside of the outer skin, opening 5 is closed and sealed. The placement assembly path is described by arrows 4. Inflation valve 19 is pushed through small round hole 26 disposed, accordingly, near the nose of the SUP. The inflation valve is secured over the outside skin.

[0044] FIG. 3 is a cross-sectional end view in elevation of an inflatable core 2 segment particularly illustrating the variable designs and configurations of the internal stringer construction. Stringers q through v work as tensional constraints connecting oppositely oriented skin surfaces 21, 22 (e.g., upper and lower panel portions) of the inflatable core 2. Stringer q may be characterized as an I-beam configuration when viewed on end (as in this view); stringer r as a Y-beam; stringer s as an X-beam; stringer t as a bifurcated Y-beam; stringer u as a semi-bifurcated X-beam; and stringer v as a bifurcated X-beam.

[0045] Upper and lower zippers 222 are an essential component of every internal stringer described in this innovation, and it is to be understood that each of the zippers have two parting/interconnecting sides, referred to herein after as first and second side, accordingly.

[0046] FIG. 3a is the same view showing the same general stringer configuration, but having medial zippers 7, rather than upper and lower zippers, as in FIG. 3. Stringers a through f again act tensional constraints connecting the opposing core surfaces, upper and lower panel portions 21, 22. Stringer a comprises a single membrane 6 merged/divided by zipper 7 in two subgroups. For stringer a such subgroups contain one membrane component only. Thus components referred as 29, 30. Stringer c includes four membranes 31, 32, 33, 34. Stringer c is merged/divided by zipper 7 into two membrane subgroups.

[0047] Membranes 31 and 32 comprise a first subgroup. Stringer c is also shown in FIG. 1a. Along one edge membranes are attached to the interior side of the upper panel portion 21 of the core and along the other edge the same membranes are bundled together and then connected to a first side of zipper 7. Membranes 33 and 34 comprise a second membrane subgroup.

[0048] Thus, membranes are attached to the interior side of the lower panel portion 22 of the core and bundled and connected to a second side of zipper 7. Therefore, opposing membrane groups may be assembled separately and then combined into one complex stringer, thereby forming an “x” cross-like membrane configuration.

[0049] Longitudinally placed stringer c also works as a torsional constraint, and this salient feature is critical to the inflatable core design. Indeed, the “zipper-cross” string c and S are the most important components in this innovative design.

[0050] Complex stringers b, d, e, and f are made of multiple membranes and are simply design derivative of stringers a, c, q and s, based on the same design concept and principles.

[0051] FIG. 3b is a partial cross-sectional end view illustrating detail of the X-shaped stringer S of FIG. 3, the stringer including stringer segments 402, 403, 404, 405, integrated into a unified stringer s, with an X-beam configuration. Here the stringer is shown prior to connection of its zipper edges to the upper and lower panel portions 21, 22 of the flexible inner core, using zippers 223 (connected to the core panels) and 224 (running along the edges of the stringer).

[0052] FIGS. 4-4b are cross-sectional end views in elevation of an inflatable core 2 with alternative, yet similar stringer designs. In these alternative design solutions, stringer membrane or membranes are not parted in half by medial zipper 7 as shown in FIG. 3a. Such stringer construction has one membrane subgroup only.

[0053] In FIG. 4, stringer g includes a double membrane 502, 503, which attaches to the upper and lower panel portions 21, 22 of the core 2 with upper and lower zippers 222. Stringer h includes three membranes, and stringer k includes four membranes, all attached in like fashion.

[0054] In FIG. 4a, stringer g is made of a single membrane 35. The upper edge of stringer g is attached to the interior side of the core upper panel portion 21, and the lower edge is attached to the lower internal side with a zipper 7. The second side of zipper 7 is attached to the interior skin surface 22.

[0055] Stringers h, k, m, . . . are made of single or multiple membranes, such as membranes 36 and 37. Such membranes individually attach to the interior side of the upper panel portion 21 along one edge and are bundled together and connected to zipper 7 along the other edge. In this configuration, the first side of zipper 7 is connected to bundled membranes and the second side of zipper 7 is attached to the interior side of the lower panel portion 22 of the core.

[0056] FIG. 4b shows an alternative configuration in which stringers g, h, k, m are attached on a lower edge to the interior side of panel 22 and with a zipper 222 to the interior side of the upper panel portion 21.

[0057] FIGS. 5 and 6 are lower and upper perspective views, respectively, showing the design of a replaceable fin 41, comprising a fin blade 10 and flat base 12. Fin blade 10 is normal to the surface of base 12. Base 12 has attachment means 99, which form part of a lock-in placement mechanism which aligns to firmly affix fin 41 to the lower surface of the outer skin 3.

[0058] FIGS. 7, 8 and 9 are each lower perspective views showing a locked-in placement of replaceable fin 41 onto flat tail portion located on the lower surface of outer skin 3.

[0059] In an embodiment, an ISUP is equipped with at least one fin located on the lower surface of outer skin 3 at the tail portion of the board. Replaceable fin 41 is constructed of a solid plastic, composite, or other strong, yet lightweight material.

[0060] Flat base 12 fits snugly and tightly onto the lower surface of the tail portion of the ISUP. Fin base 12 and upper support plate 98 are oppositely-oriented ridged surfaces having tensional connectors that may be described as cord loops 99. Loops 99 are pulled through core passages 92 and exit through holes of the support plate 98. Lock pin 97 is placed through exiting loop tips 95. Sleeve 94 is affixed in an airtight connection with the skin of the core 2.

[0061] When the inflatable core is pressurized, the outer skin of the ISUP becomes tightly stretched over the core. The surfaces of the outer skin thereby act as an external shell or exoskeleton. The resultant skin tension locks fin 41 firmly into the tail portion of the ISUP. The tightly stretched loops 99 prevent index pins 97 from disengagement with loop tips 95.

[0062] It should be noted that fin placement and replacement may be performed after complete deflation of core 2.

[0063] FIGS. 10 and 11 are partial sectional upper perspective views showing a staggered overlapping seam con-

struction for panels **18** and **19**. The panels have seam reference lines **20** and seam allowances **40**. The depth of symmetrical cuts **42** over corresponding overlapping seam allowances are critical requirements for the overlapping seam construction, inasmuch as the edges of the seam allowances **41** must align precisely with the seam reference lines when the panels are joined. Once the panels are joined and seam allowances are properly overlapped, in a staged pattern, true mark reference lines **20** merge to form a seam line **39**. Dimensional precision of the staggered overlapped seam assembly is also critical and cannot be compromised for proper construction of the inflatable core and outside skin. Later, seam allowances may be radio frequency (RF) welded, hot air welded, glued, bonded, stitched, ultrasonically welded, or affixed using any of a number of well-known flexible fabric panel bonding techniques to provide a strong permanent connection of the adjacent membrane surfaces. It will be appreciated, moreover, that complex and curved panels may be joined in precisely the same way, with bonded staggered overlapping seam allowances having edges that align with a seam reference line. FIGS. **10-11** are shown with an essentially straight joint for illustrative purposes only.

[0064] FIG. **12** is an upper right front side perspective view showing the attachment of a flexible, removable foot traction pad on the inflatable flexible container. The traction pad is an optional item, not at all mandatory to the construction or design. The following elements are featured in this view: flexible inflatable container **1**; outer skin (a flexible bag over inflatable core) **3**; open/close portal **5** used to insert inflatable core **2** inside the outer skin **3**; removable fin **10**; zipper sliders **15**; zipper line (first and second halves) **16**, **17**; removable flexible foot traction pad **23**; inflation valve **27**; and zipper close/open motion path **28**.

[0065] The flexible foot traction pad **23** is designed as a replaceable component on the ISUP. It is attached to the upper surface of outer skin **3** with one or more zippers extending circumferentially along the perimeter edge of the pad. Flexible foot traction pad **23** may be permanently glued to the upper surface of the outer skin, in which case zippers are not needed.

[0066] It is understood that a zipper used to attach the foot traction pad on an ISUP is a detachable zipper. Therefore, a first side of the zipper is attached to upper surface of the outer skin and a second side of the zipper is attached along the perimeter of the foot traction pad accordingly.

[0067] The removable nature of the foot traction pad enables a user to customize the ISUP for his or her particular needs. At the same time, it is much easier to roll a deflated ISUP into a tight bundle without the traction pad. Therefore, the traction pad may be used as an external wrap over the deflated and rolled ISUP. Such packaging techniques also protect the ISUP in the stored state and thus help to reduce the chance of skin puncture as well as to reduce the size of the package.

[0068] From the foregoing, it will be appreciated that in its most essential aspect, the present invention includes an internal stringer comprising at least one stringer membrane internally connecting opposing skin surfaces of a flexible inflatable container. Such a stringer membrane has at least one zipper permanently placed and affixed to the stringer membrane along its longitudinal vector line. The stringer membrane is attached to the skin of the container, which attachment is placed on the inside surface of the container's

skin. The attachment is linear and positioned over predetermined reference lines precisely drawn on the internal surface of the core's skin.

[0069] Multiple techniques may be used to achieve reliable permanent attachment, including conventional stitching, radio frequency or ultrasonic welding, gluing, and the like.

[0070] Bearing in mind that the stringer membranes have zipper lines built into their edges, it will be appreciated that the stringer membranes may be separated into two temporarily independent parts for assembly in the middle phase of the core's skin. Near completion of the core construction, all stringer membranes previously separated are reconnected to their respective original mates. Therefore, the zipper lines become permanently closed—that is, they are not intended to be reopened ever again, unless internal core repair is required.

[0071] The zipper connection forms an internally positioned stringer that works as a tensile member internally placed, oriented, and sized according to an original three dimensional model. The zipper-connected stringer constrains opposing surfaces of the skin when the container is inflated and compressed air forces the container to expand and enlarge. The internally affixed tensile stringers dictate the shape and compound curvature of the inflated flexible container.

[0072] The above disclosure is sufficient to enable one of ordinary skill in the art to practice the invention, and provides the best mode of practicing the invention presently contemplated by the inventor. While there is provided herein a full and complete disclosure of the preferred embodiments of this invention, it is not desired to limit the invention to the exact construction, dimensional relationships, and operation shown and described. Various modifications, alternative constructions, changes and equivalents will readily occur to those skilled in the art and may be employed, as suitable, without departing from the true spirit and scope of the invention. Such changes might involve alternative materials, components, structural arrangements, sizes, shapes, forms, functions, operational features or the like.

[0073] Therefore, the above description and illustrations should not be construed as limiting the scope of the invention, which is defined by the appended claims.

What is claimed as invention is:

1. A flexible inflatable container, comprising:

- a flexible inflatable core having opposing first and second panel members, each with an interior side;
- a plurality of longitudinally oriented stringers disposed on at least one interior side of one of said opposing first and second panel members, each of said stringers having at least one edge;
- a plurality of first zipper members, one each disposed on said at least one edge of each of said stringers;
- a plurality of second zipper members, complementary to each of said first zipper members, and disposed either on an interior side of one of said opposing panel members or on an edge of a stringer attached to one of said opposing panel member, said second zipper member;
- an inflation valve disposed on one of said opposing first and second panel members for introducing fluid into said flexible inflatable core; and

a flexible outer skin having a selectively closeable opening for insertion of said flexible inflatable core to tightly cover said core.

2. The flexible inflatable container of claim 1, wherein said plurality of stringers include at least one stringer having an I-beam configuration when viewed on end.

3. The flexible inflatable container of claim 1, wherein said plurality of stringers include at least one stringer having a Y-beam configuration when viewed on end.

4. The flexible inflatable container of claim 1, wherein said plurality of stringers include at least one stringer having an X-beam configuration when viewed on end.

5. The flexible inflatable container of claim 1, wherein said plurality of stringers include at least one stringer having a bifurcated Y-beam configuration when viewed on end.

6. The flexible inflatable container of claim 1, wherein said plurality of stringers include at least one stringer having a semi-bifurcated X-beam configuration when viewed on end.

7. The flexible inflatable container of claim 1, wherein said plurality of stringers include at least one stringer having a bifurcated X-beam configuration when viewed on end.

8. The flexible inflatable container of claim 1, wherein each stringer of said plurality of stringers is permanently connected to one of said interior sides of one of said opposing first and second panel members and an edge having a zipper member aligned for mating with a complementary zipper member affixed to the other of said interior sides of said opposing first and second panel members.

9. The flexible inflatable container of claim 1, wherein each stringer includes a first half permanently connected to said interior side of said first panel member and a second half permanently connected to said interior side of said second panel member, said first half and said second half each including zipper members complementary to one another and which form a unified stringer when zipped together.

10. The flexible inflatable container of claim 9, wherein each of said first and second half of said stringers is symmetrical with its complementary half.

11. The flexible inflatable container of claim 1, wherein each stringer of said plurality of stringers includes first and second edges, each having zipper members on first and second edges, each zipper member configured to align and zip together with a zipper member affixed to an interior side of one of said first and second panel members.

12. The flexible inflatable container of claim 1, further including a pressure release valve.

13. The flexible inflatable container of claim 1, further including a manometer.

14. The flexible inflatable container of claim 1, wherein said outer skin is watertight.

15. The flexible inflatable container of claim 1, wherein said first and second panel members are permanently coupled to one another with a staggered overlapping seam configuration.

16. The flexible inflatable container of claim 1, further including attachment structure for connecting auxiliary articles on an exterior surface of at least one of said first and second panel members.

17. The flexible inflatable container of claim 16, wherein said auxiliary article is a foot traction pad having a zipper member on a circumferential edge and said attachment structure is a zipper member complementary to said zipper member on said foot traction pad.

18. The flexible inflatable container of claim 16, wherein said auxiliary article is a replaceable fin, and said attachment structure is a lock-in placement mechanism that includes cord passages through said flexible inflatable core, and said fin includes a base having a plurality of cords formed in loops that pass through said cord passages, and further including a pin to lock said cords in said cord passages.

19. The flexible inflatable container of claim 1, wherein said flexible inflatable container is configured as an article selected from the group consisting of surf boards, kite boards, sail boards, wake boards, boats, flotation safety devices, tents, hangers, thermostatic chambers, inflatable base pads, wall dividers, inflatable wing structures, and turbine rotors.

20. A structural container defining an interior volume, comprising: a plurality of flexible fabric panels joined edge-to-edge in a staggered overlapping configuration, wherein each of said panels includes a seam reference line and said staggered overlapping configuration includes a plurality of lateral cuts defining a plurality of seam allowance flaps having an edge, each of said seam allowance flaps overlapping and bonded to a complementary seam allowance flap on an adjoining panel such that the edges of said seam allowance flaps align precisely with said seam reference line on the adjoining panel.

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