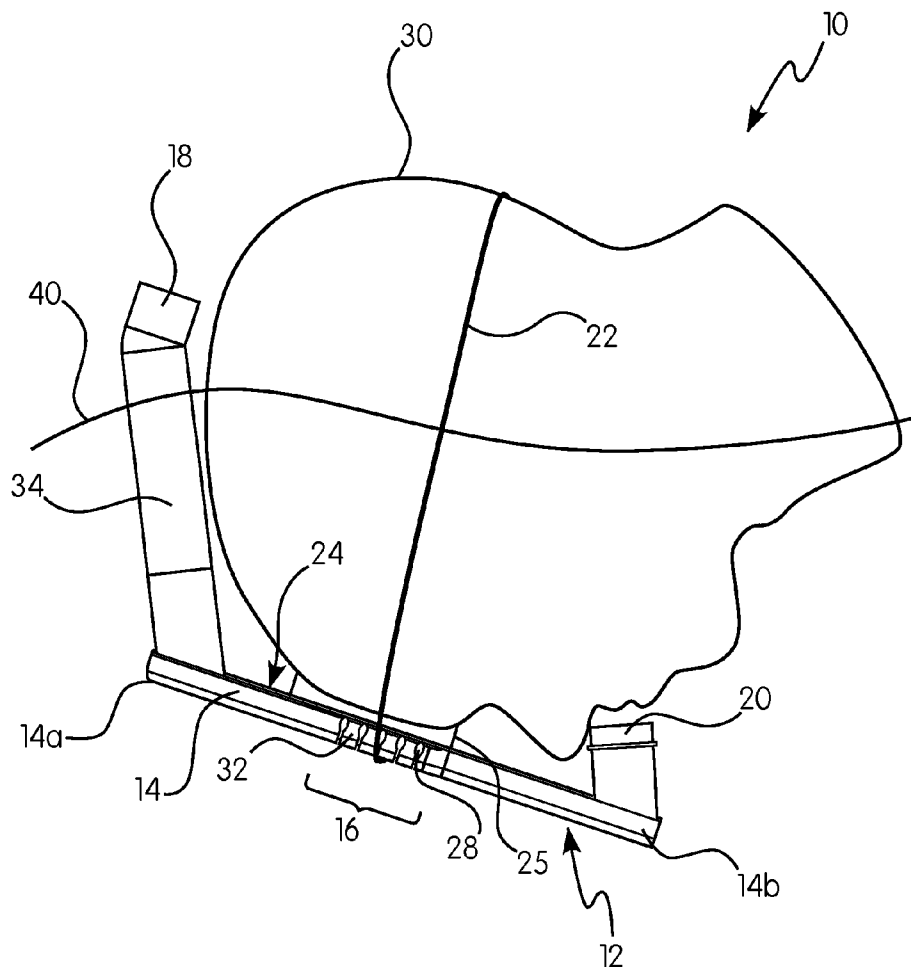




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Tilson et al.(10) **Pub. No.: US 2016/028889 A1**(43) **Pub. Date: Oct. 6, 2016**(54) **UNDERWATER BREATHING APPARATUS****Publication Classification**(71) Applicant: **Aquatic Research and Training
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B63C 11/20 (2006.01)(72) Inventors: **Bethany Christine Tilson**, Meansville,
GA (US); **Eric Jeffery Snell**,
Meansville, GA (US); **Warren Nicholas
Snell**, Meansville, GA (US); **Jackson
Lee Snell**, Meansville, GA (US)(52) **U.S. Cl.**
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Technology LLC**, Meansville, GA (US)(57) **ABSTRACT**(21) Appl. No.: **15/090,197**(22) Filed: **Apr. 4, 2016****Related U.S. Application Data**(60) Provisional application No. 62/142,046, filed on Apr.
2, 2015.

An underwater breathing apparatus including an elongated tube assembly and a fastener. The elongated tube assembly includes a central support having a first end and a second end opposite the first end, and a securing member. The elongated tube assembly further includes a first tube extending substantially transverse from the first end of the central support and a second tube extending substantially transverse from the second end of the central support. The central support is in fluid communication with the first and second tubes defining a continuous air passageway. The fastener is configured to engage the securing member and secure the elongated tube assembly to a user.



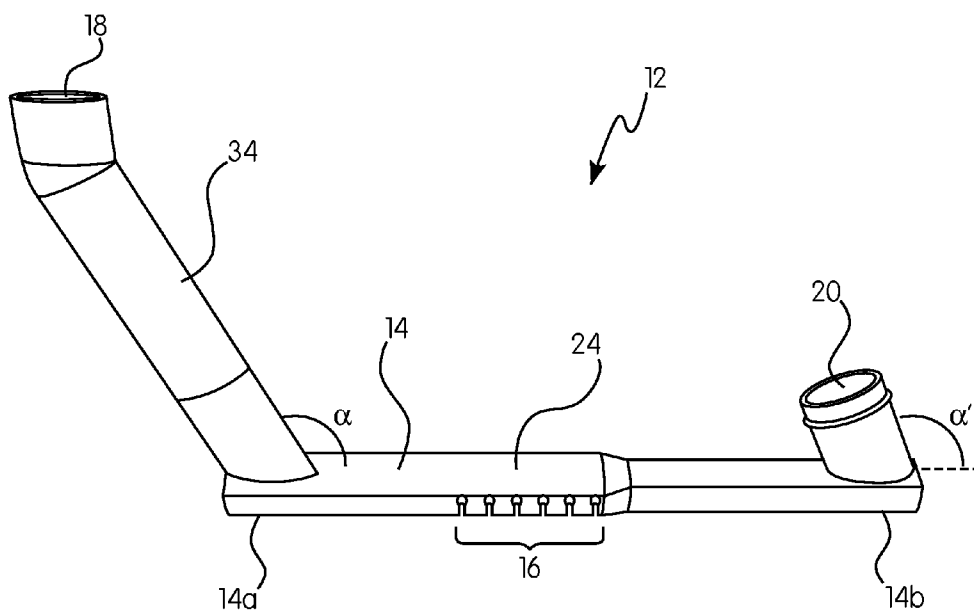


FIG. 1

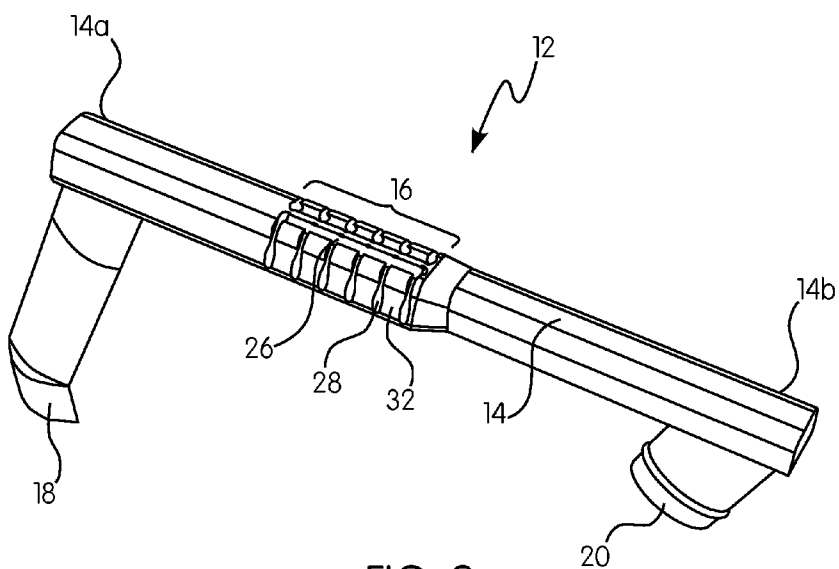
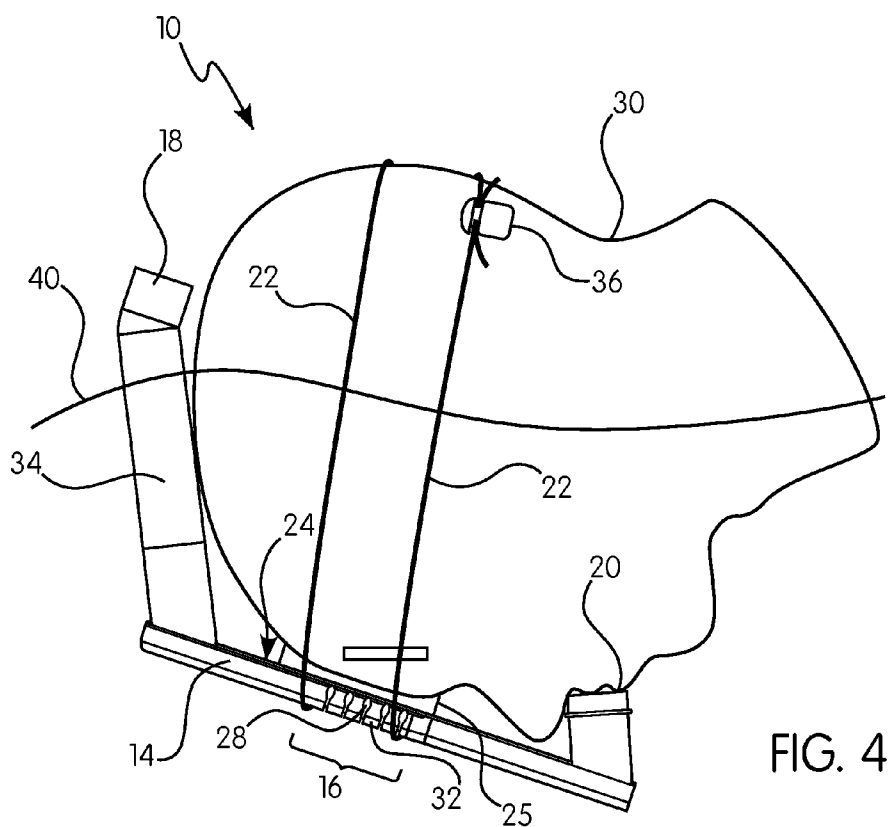
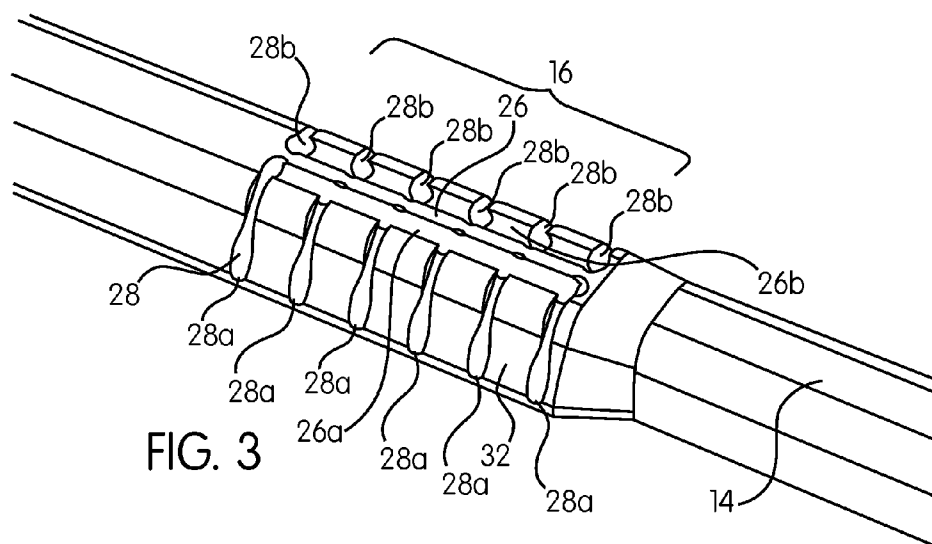


FIG. 2



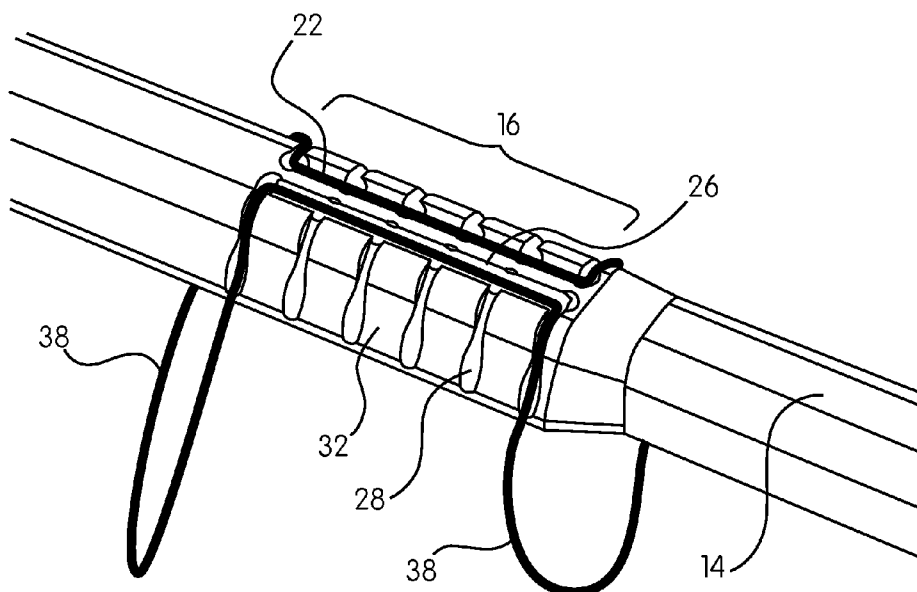


FIG. 5

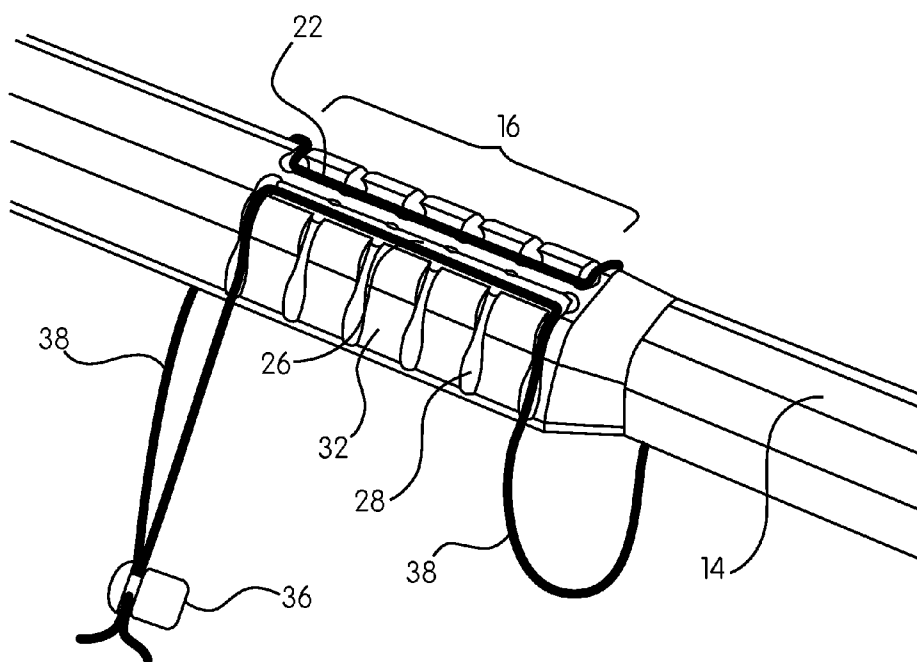


FIG. 6

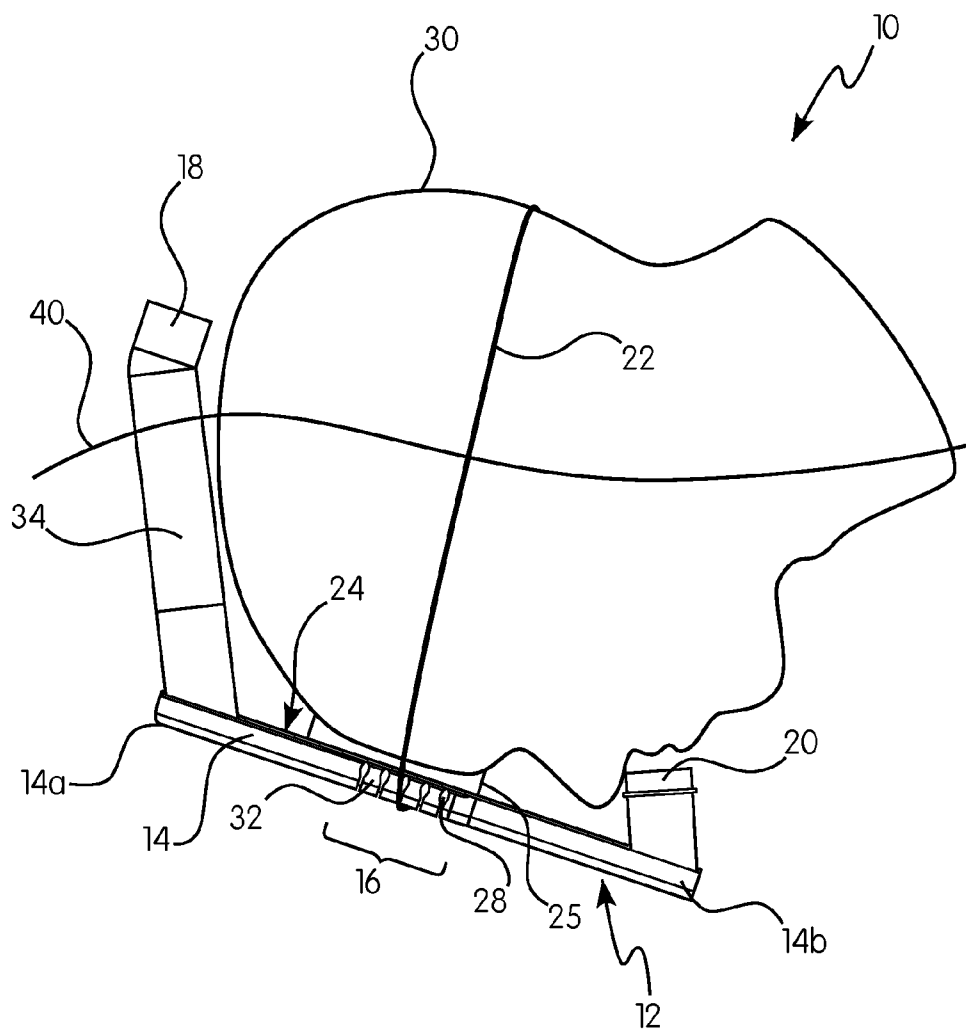


FIG. 7

UNDERWATER BREATHING APPARATUS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the benefit of U.S. Provisional Patent Application No. 62/142,046 filed Apr. 2, 2015 entitled "SNORKEL," the entire disclosure of which is hereby incorporated by reference herein for all purposes.

BACKGROUND OF THE INVENTION

[0002] The present invention relates to aquatic activities, including but not limited to exercise, competitive training, and recreational swimming. Specifically, the present invention is an underwater breathing apparatus, e.g., a snorkel that is attached directly to the user, acting as a breathing apparatus when the user's face is submerged in water.

[0003] In design, the snorkel is uniquely attached and connected to the user allowing the snorkel to be quickly adjusted and remain in place while the user engages in faster movement through water. Both of these qualities are needed for competitive training and are desirable in other aquatic activities.

[0004] Conventional breathing snorkels are attached to a form of a clip or bracket and then to the user using an elastic band without directly contacting the user. However, conventional breathing snorkels allow the snorkel to shift considerably when the user moves through water because the snorkel is not directly attached to the user and the snorkel can pivot on the clip relative to the user. Conventional snorkel designs provide an attachment means to adjust vertically along the snorkel shaft for users of different head sizes, but because the snorkel shaft is not directly attached and held relative to the user, the forces involved in aquatic activities can cause the entire snorkel to tilt dramatically to either side or vertically. The adjustability of the vertical position of the attachment means is necessary for fitting a wide range of individual head sizes, but the tilting force is an impediment for most aquatic activities.

[0005] An additional and common feature of modern snorkels is the use of a broad elastic band to secure the attachment means to the user. The broad nature of these bands is meant to provide stability for the entire snorkel, but because adjusting such broad bands usually involves an additional clipping mechanism, adjusting these bands can be time consuming. This is an additional detriment to snorkel use in many aquatic activities, particularly in competitive swim training.

[0006] Other snorkel designs attach the snorkel apparatus directly to the user's head through the use of a strap attached directly to the snorkel shaft, which excludes the need for an additional attachment means. Such a direct connection is more stable under stress and will remain upright in the desired snorkel position under higher forces than snorkels attached through secondary clips or brackets. Snorkels, such as disclosed above, that are attached directly lack the adjustability of snorkels that use clips. While the strap itself may be adjusted in length, its vertical position on the snorkel shaft is not adjustable. Even though the change in length of said strap accommodates for smaller head diameters, the lack of vertical adjustability fails to accommodate for different distances between the forehead, the most comfortable and practical position for the strap, and the mouth, the location of one end of the snorkel. Merely adjusting the

length of a strap with static vertical positioning fails to completely accommodate for users with different head sizes, as the vertical positioning of the strap attachment must also change to accommodate different users for optimal comfort and the most stable positioning.

[0007] Conventional breathing snorkels provide an underwater breathing apparatus for exercise, competitive training, and recreational swimming. However, such snorkels often shift considerably when the user moves through water and can be time consuming to adjust and secure to the user. As such, there is a need for a snorkel connected to the user that can be quickly adjusted and remain in place while the user engages in faster movements through water. Such a need is satisfied by the underwater breathing apparatus of the present invention.

BRIEF SUMMARY OF THE INVENTION

[0008] In accordance with a preferred embodiment, the present invention provides an underwater breathing apparatus that includes an elongated tube assembly and a fastener. The elongated tube assembly includes a central support having a first end and a second end opposite the first end, and a securing member. The elongated tube assembly further includes a first tube extending substantially transverse from the first end of the central support and a second tube extending substantially transverse from the second end of the central support. The central support is in fluid communication with the first and second tubes defining a continuous air passageway. The fastener is configured to engage the securing member and secure the elongated tube assembly to a user.

[0009] The central support includes an engaging surface for directly or indirectly contacting a forehead of the user. The underwater breathing apparatus further includes a padding positioned about the engaging surface. The securing member is positioned about a surface of the central support opposite the engaging surface. The securing member can be a plurality of grooves having grooves extending substantially parallel to a longitudinal axis of the central support and grooves extending substantially transverse to the longitudinal axis of the central support. Alternatively, the securing member includes first and second spaced apart elongated grooves extending substantially parallel to a longitudinal axis of the central support. The securing member also includes a first plurality of spaced apart grooves extending substantially transverse to the longitudinal axis of the central support along a first lateral side of the central support, wherein each of the first plurality of spaced apart grooves is in communication with the first elongated groove. The securing member further includes a second plurality of spaced apart grooves extending substantially transverse to the longitudinal axis of the central support along a second lateral side of the central support, wherein each of the second plurality of spaced apart grooves is in communication with the second elongated groove.

[0010] The elongated tube assembly may be a substantially U-shaped tube assembly including a central support having a generally rectangular shaped longitudinal cross-section, a first tube having a generally elliptical shaped longitudinal cross-section, and a second tube having a generally circular shaped longitudinal cross-section. The first tube has a longitudinal length greater than a longitudinal length of the second tube. Furthermore, the fastener may be one of a tether, a rope, an elastic cord, and a strap.

[0011] In accordance with another preferred embodiment, the present invention provides an underwater breathing device that includes an elongated tube assembly. The elongated tube assembly includes a central support having a retaining assembly configured to receive a fastener, a first tube connected about a first end of the central support, and a second tube connected about a second end of the central support. The underwater breathing device further includes a fastener for adjustably securing the elongated tube assembly to a user. The central support includes an engaging surface for directly or indirectly contacting a forehead of the user and the retaining assembly is positioned about a surface of the central support opposite the engaging surface. The underwater breathing device can include a padding positioned about the engaging surface. The retaining assembly further includes a plurality of spaced apart retaining members extending along the central support, wherein each retaining member is a hook.

[0012] In accordance with yet another preferred embodiment, the present invention provides an underwater breathing apparatus that includes a substantially U-shaped elongated tube assembly and a fastener. The substantially U-shaped elongated tube assembly includes a central support having a first end and a second end opposite the first end, an engaging surface for directly or indirectly contacting a forehead of the user, and a plurality of grooves having grooves extending substantially parallel to a longitudinal axis of the central support and grooves extending substantially transverse to the longitudinal axis of the central support. The substantially U-shaped elongated tube assembly further includes a first tube extending substantially transverse from the first end of the central support and a second tube extending substantially transverse from the second end of the central support. The central support is in fluid communication with the first and second tubes defining a continuous air passageway. The fastener is configured to engage the plurality of grooves and secure the elongated tube assembly to the user.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0013] The foregoing summary, as well as the following detailed description of the invention, will be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there are shown in the drawings embodiments which are presently preferred. It should be understood, however, that the invention is not limited to the precise arrangements and instrumentalities shown.

[0014] In the drawings:

[0015] FIG. 1 is a side perspective view of an underwater breathing apparatus in accordance with a preferred embodiment of the present invention;

[0016] FIG. 2 is a bottom perspective view of the underwater breathing apparatus of FIG. 1;

[0017] FIG. 3 is an enlarged partial perspective view of a securing member of the underwater breathing apparatus of FIG. 1;

[0018] FIG. 4 is a side view of the underwater breathing apparatus of FIG. 1 attached to a user;

[0019] FIG. 5 is an enlarged partial perspective view of a fastener engaging a securing member of the underwater breathing apparatus of FIG. 1;

[0020] FIG. 6 is an enlarged partial perspective view of a fastener engaging a securing member of the underwater breathing apparatus of FIG. 1 in accordance with another aspect of the present embodiment; and

[0021] FIG. 7 is a side view of the underwater breathing apparatus of FIG. 1 attached to a user in accordance with another aspect of the present embodiment.

DETAILED DESCRIPTION OF THE INVENTION

[0022] Reference will now be made in detail to the preferred embodiments of the invention illustrated in the accompanying drawings. Wherever possible, the same or like reference numbers will be used throughout the drawings to refer to the same or like features. It should be noted that the drawings are in simplified form and are not drawn to precise scale. In reference to the disclosure herein, for purposes of convenience and clarity only, directional terms such as top, bottom, above, below and diagonal, are used with respect to the accompanying drawings. The term “proximal” shall mean towards the center of an object. The term “distal” shall mean away from the center of an object. The term “proximal” shall mean towards the center of an object. Such directional terms used in conjunction with the following description of the drawings should not be construed to limit the scope of the invention in any manner not explicitly set forth.

[0023] Certain terminology is used in the following description for convenience only and is not limiting. The words “right,” “left,” “lower” and “upper” designate directions in the drawings to which reference is made. The words “inwardly” and “outwardly” refer to directions toward and away from, respectively, the geometric center of the identified element and designated parts thereof. Additionally, the term “a,” as used in the specification, means “at least one.” The terminology includes the words noted above, derivatives thereof and words of similar import.

[0024] “About” as used herein when referring to a measurable value such as an amount, a temporal duration, and the like, is meant to encompass variations of $\pm 20\%$, $\pm 10\%$, $\pm 5\%$, $\pm 1\%$, and $\pm 0.1\%$ from the specified value, as such variations are appropriate.

[0025] Throughout the disclosure, various aspects of the invention can be presented in a range format. It should be understood that the description in range format is merely for convenience and brevity and should not be construed as an inflexible limitation on the scope of the invention. Accordingly, the description of a range should be considered to have specifically disclosed all the possible subranges as well as individual numerical values within that range. For example, description of a range such as from 1 to 6 should be considered to have specifically disclosed subranges such as from 1 to 3, from 1 to 4, from 1 to 5, from 1 to 6, from 2 to 6, from 3 to 6 etc., as well as individual numbers within that range, for example, 1, 2, 2.7, 3, 4, 5, 5.3, and 6. This applies regardless of the breadth of the range.

[0026] Furthermore, the described features, advantages and characteristics of the embodiments of the invention may be combined in any suitable manner in one or more embodiments. One skilled in the relevant art will recognize, in light of the description herein, that the invention can be practiced without one or more of the specific features or advantages of a particular embodiment. In other instances, additional fea-

tures and advantages may be recognized in certain embodiments that may not be present in all embodiments of the invention.

[0027] In accordance with preferred embodiments, the present invention provides an underwater breathing apparatus 10, as shown in FIGS. 1-7. The underwater breathing apparatus 10 (FIG. 4) is attached directly to a user and acts as a breathing apparatus when a user's face is submerged in water. Specifically, the underwater breathing apparatus 10 is designed to allow quick adjustment by a user and to remain in place while the user engages in faster movements through water. Such qualities are needed for competitive trainings and are desirable in other aquatic activities such as exercise and recreational swimming. Such aquatic activities include exercise, competitive training, and recreational swimming.

[0028] The underwater breathing apparatus 10 includes an elongated tube assembly 12 and a fastener 22. The elongated tube assembly 12 includes a central support 14 having a first end 14a and a second end 14b opposite the first end 14a, and a securing member 16. The elongated tube assembly 12 further includes a first tube 18 extending substantially transverse from the first end 14a of the central support 14 and a second tube 20 extending substantially transverse from the second end 14b of the central support 14. The central support 14 is in fluid communication with the first and second tubes 18, 20 defining a continuous air passageway. The fastener 22 is configured to engage the securing member 16 and secure the elongated tube assembly 12 to a user 30.

[0029] As best shown in FIGS. 1-3, the elongated tube assembly 12 includes the central support 14, the first tube 18, and the second tube 20, forming a substantially U-shaped tube assembly. The central support 14 includes one or more surfaces i.e., an engaging surface 24 for directly or indirectly contacting a forehead of the user. In accordance with an aspect, the engaging surface 24 can be configured as a planar or non-planar surface for engaging the forehead of the user. The engaging surface 24 is positioned about a dorsal face of the central support 14 and may be configured to be flat, concave, or conforming to add greater stability when contacting a user's forehead.

[0030] The central support 14 can alternatively include a padding 25 positioned between the engaging surface 24 and the forehead of the user 30 to provide added comfort (see e.g., FIGS. 4 and 7). The padding 25 can be formed from any soft durable material such as foam, cellulose fibers, synthetic fabrics and the like. The padding 25 may be configured to be flat, concave, or conforming to add greater comfort and stability when engaging the forehead of the user. The padding 25 provides additional stability when the user 30 is swimming through water 40.

[0031] In one aspect, the central support 14 is configured to have a generally rectangular shaped longitudinal cross-section, but can alternatively have a longitudinal cross-section configured in other suitable shapes, e.g., square, round, oval, octagon and the like. As further discussed below, the central support 14 includes the securing member 16 positioned about a ventral surface of the central support 14 opposite the engaging surface 24.

[0032] The elongated tube assembly 12 further includes the first tube 18 extending substantially transverse from the first end 14a of the central support and the second tube 20 extending substantially transverse from the second end 14b of the central support 14. Although the first tube 18 is preferably configured to have a generally elliptical shaped

longitudinal cross-section and the second tube 20 is preferably configured to have a generally circular shaped longitudinal cross-section, the first and second tubes 18, 20 can alternatively have a longitudinal cross-section configured in other suitable shapes, e.g., square, triangle, oval, octagon and the like. In each configuration, the central support 14 is in fluid communication with the first and second tubes 18, 20 defining a continuous air passageway. As such, the central support 14, first tube 18 and second tube 20 have a substantially hollow configuration to allow for the passage of air. Alternatively, the first tube 18 and second tube 20 can be formed from a flexible material to allow for further adjustability.

[0033] Referring back to FIG. 1, the first tube 18 has a longitudinal length greater than a longitudinal length of the second tube 20. As best shown in FIGS. 4 and 7, air enters and exits the elongated tube assembly 12 through first tube 18 and the user may breathe through second tube 20. The first tube 18 is designed to extend above a water surface 40 to allow the user 30 to breathe fresh air and exhale spent air. The second tube 20 can be fitted with a conventional mouthpiece (not shown) and is adapted to extend into a mouth of the user for breathing.

[0034] In accordance with an aspect of the present invention, the first tube 18 has two distinct designs to emphasize a least-resistance design. Specifically, an upper section 34 of the first tube 18, which may not necessarily be configured to be as distinctly different from the rest of the first tube 18 or the elongated tube assembly 12, receives a significant amount of resistance when the user 30 is facing downward and moving forward in an orientation portrayed in FIG. 1, as common in many aquatic activities. Therefore, the upper section 34 of the first tube 18 may be designed to minimize drag. In one aspect, the upper section 34 can be configured to have an increased thickness to provide additional stability. The upper section 34 can alternatively have a generally triangular shaped longitudinal cross-section with a corner of the triangular shaped longitudinal cross-section facing a forward direction to direct water away from the first tube 18 as a user 30 is facing downward and moving forward during aquatic activities. Such a design would reduce drag forces and allow the user to efficiently move through the water.

[0035] As best shown in FIG. 1, the first tube 18 extends from the first end 14a of the central support 14 at an obtuse angle α of about 100, 105, 110, 115, 120, 125 and 130 degrees relative to the central support 14. The second tube 20 extends from the second end 14b of the central support 14 at an equivalent obtuse angle α' of about 100, 105, 110, 115, 120, 125 and 130 degrees relative to the central support 14.

[0036] FIGS. 2 and 3 illustrate an opposite side of the elongated tube assembly 12. As mentioned above, the central support 14 includes the securing member 16 positioned about a ventral surface of the central support 14 opposite engaging surface 24. The securing member 16 is preferably configured as a plurality of grooves having vertical grooves 26, i.e., grooves extending substantially parallel to a longitudinal axis of the central support 14, and horizontal grooves 28, i.e., grooves extending substantially transverse to the longitudinal axis of the central support 14.

[0037] FIG. 3 is an enlarged view of the vertical grooves 26 and horizontal grooves 28 of the plurality of grooves 16. The horizontal grooves 28 are used for securing the elongated tube assembly to the user 30 to position a fastener

around both the user's forehead and the elongated tube assembly 12 at multiple positions. Additionally, the vertical grooves 26 can allow a single strap to be threaded through multiple grooves, e.g., vertical grooves 26 and horizontal grooves 28, to create a multiple point attachment (see e.g., FIGS. 5 and 6).

[0038] As best shown in FIG. 3, the securing member 16, e.g. plurality of grooves, is positioned about a surface of the central support 14 opposite the engaging surface 24. As discussed above, the securing member 16 includes a plurality of vertical grooves 26 and horizontal grooves 28 to create multiple points of attachment for the fastener 22. In an aspect of the present embodiment, the vertical grooves 26 include first and second spaced apart elongated grooves 26a, 26b extending substantially parallel to a longitudinal axis of the central support. The first and second spaced apart elongated grooves 26a, 26b are shown as spaced apart, but can alternatively be in communication to allow for additional points of attachment for the fastener. In another aspect, the plurality of vertical grooves 26 can include additional sets of spaced apart elongated grooves, such as three or four vertical grooves.

[0039] As shown and configured in FIG. 3, the horizontal grooves 28 include a first plurality of spaced apart grooves 28a extending substantially transverse to the longitudinal axis of the central support 14 along a first lateral side of the central support 14. Similarly, the horizontal grooves 28 include a second plurality of spaced apart grooves 28b extending substantially transverse to the longitudinal axis of the central support 14 along a second lateral side of the central support 14 opposite the first lateral side. The first and second plurality of spaced apart grooves 28a, 28b are configured as multiple spaced apart grooves, but can alternatively be in communication to allow for additional points of attachment for the fastener. Alternatively, the first and second plurality of spaced apart grooves 28a, 28b can include additional intermediate or transverse grooves to allow for further flexibility and provide additional points of attachment for the fastener.

[0040] Preferably, each of the first plurality of spaced apart grooves 28a is in communication with the first elongated groove 26a. Each of the second plurality of spaced apart grooves 28b is in communication with the second elongated groove 26b. In the configuration shown in FIG. 3, the second elongated groove 26b is a mirror image of the first elongated groove 26a. Similarly, the second plurality of spaced apart grooves 28b are mirror images of the first plurality of spaced apart grooves 28a.

[0041] The fastener 22 is configured to engage the securing member 16 and secure the elongated tube assembly 12 to the user 30. The fastener 22 may be a tether, a rope, an elastic cord, a strap or combination thereof. The fastener 22 may further include a drawstring stopper 36 allowing for additional adjustability. Referring to FIG. 4, there is shown an underwater breathing apparatus 10 in use with one possible configuration of fasteners 22, e.g., multiple elastic straps, engaged with the securing member 16. The elastic straps 22 are positioned vertically along the central support 14 of the elongated tube assembly 12 at two particular positions of the securing member 16. Additional elastic straps may be used and positioned at different positions on the securing member 16 to accommodate for various head sizes. Alternatively, as shown in FIG. 7, a single elastic strap

22 can be used to engage the securing member 16 and secure the elongated tube assembly 12 to the user 30.

[0042] Referring to FIG. 5, in accordance with another aspect, a single strap 22 can be used for securing the elongated tube assembly 12 to the user 30. The single strap 22 is secured by both the vertical grooves 26 and horizontal grooves 28 in such a configuration to allow two individual loops 38 to attach the elongated tube assembly 12 to the user's head. As shown in FIG. 6, the single strap 22 can further include the drawstring stopper 36 allowing for additional adjustability.

[0043] As discussed above, the underwater breathing apparatus may include two or more adjustable fasteners 22, e.g., straps, or a single fastener threaded to create two or more loops 38 for attachment. The strap(s) 22 fit into the securing member 16 to go around or attach to an exterior of the elongated tube assembly 12 and additionally fit around the head of the user 30 to secure the underwater breathing apparatus 10 to the user 30. Alternatively, a single strap 22 may be threaded through varying portions of the securing member 16 in such a manner as to create two or more loops 38 for fitting around the user's head. The strap 22 may be fitted with a drawstring stopper 36 to allow easy adjustment of the strap 22. The adjustable length of the strap(s) 22 and the adjustable positioning of the strap(s) 22 with the plurality of grooves 16 along the central support 14 allow the underwater breathing apparatus 10 to be adjusted for any individual head size as well as provide stability using a direct connection to the user's head, which prevents major rotation and/or shifting. Specifically, the plurality of vertical grooves 26 and horizontal grooves 28 can provide multiple points of attachment for the fastener to further secure the underwater breathing apparatus to the user. The single or multiple fasteners can engage the plurality of grooves at different positions to accommodate users with varying head sizes.

[0044] To most effectively employ the securing member 16 and a direct connection to the user's head, a substantially cylindrical-like fastener 22, e.g., elastic cording, is used to attach the underwater breathing apparatus 10 to the user 30. The elastic cording 22 can be quickly adjusted using various methods, particularly drawstring stoppers 36, while still retaining stability to properly secure the underwater breathing apparatus 10, e.g., snorkel, to the user 30 with minimum pivoting of the snorkel. The connection to the user's head may also be indirect through the use of padding 25 to increase the user's comfort while providing the stability of direct attachment. For manufacturing purposes, the securing member 16 may alternatively be a bracket or other securing member affixed to the snorkel, but the snorkel will still contact the user's forehead directly or indirectly through padding.

[0045] Alternatively expressed, the present invention provides a preferred embodiment of an underwater breathing device as configured and shown in FIGS. 1-7. The underwater breathing device 10 includes an elongated tube assembly 12 and a fastener 22 for adjustably securing the elongated tube assembly 12 to the user 30. The elongated tube assembly 12 includes a central support 14, a first tube 18 connected about a first end 14a of the central support 14, and a second tube 20 connected about a second end 14b of the central support 14. The central support 14 further includes a retaining assembly 16 configured to receive the fastener 22. Specifically, the retaining assembly 16 is positioned about a

surface of the central support **14** opposite the engaging surface **24** for directly or indirectly contacting the forehead of the user **30**. As best shown in FIGS. **2**, **3**, **5** and **6**, the retaining assembly **16** further includes a plurality of spaced apart retaining members **32** extending along the central support **14**. In an aspect of the preferred embodiment, each retaining member **32** is configured as a hook for receiving the fastener **22**. The fastener **22** can be looped around the hook **32** to secure the underwater breathing apparatus to the user. The fastener **22** may be a tether, a rope, an elastic cord, a strap or combination thereof.

[0046] The underwater breathing apparatus, e.g., snorkel, can optionally be fitted with a conventional mouthpiece attached to a tube of sufficient length to allow breathing while the user's face is submerged and attached directly to the user with a fastener, e.g., adjustable straps, at an adjustable position on the elongated tube assembly. Using at least one elastic strap, the snorkel is attached to the user using the strap(s) and a securing member in and/or on the elongated tube assembly. The securing member holds the strap in place vertically on the elongated tube assembly and the plurality of grooves of the securing member allow for vertical adjustment of the strap along multiple possible positions. The securing member in conjunction with the strap(s) attach the snorkel directly to the user without the use of an intermediate attachment clip or other means. Unlike conventional snorkels involving direct attachment, the securing member can accommodate various head sizes of users by allowing vertical adjustment of the strap.

[0047] Combinations of the above mentioned securing member, retaining assembly and fasteners, e.g., plurality of grooves **16**, retaining members **32**, strap **22**, drawstring stopper **36**, and other associated members, can be utilized to create multiple points of attachment to further secure the snorkel to the user. As discussed above, a single fastener or multiple fasteners can be used to secure the elongated tube assembly **12** to the user. The single or multiple fasteners can engage the plurality of grooves at multiple positions to create multiple points of attachment. Further, the fastener can include a drawstring stopper **36** for additional adjustability. The above described embodiments can also be employed across different experience levels of individual swimmers for exercise, competitive training, and recreational swimming.

[0048] Many of the industry's current snorkel designs also show instability while in use; namely, the snorkels often shift considerably when the user moves through water and can be time consuming to adjust and secure to the user. Specifically, the snorkels are attached to the user through secondary clips or brackets. Other designs directly secured to the user lack adjustability to accommodate varying head sizes of users. For example, the strap or fastener may be adjusted in length, but its vertical position on the snorkel is not adjustable. As such, even though the change in length of the strap accommodates for smaller head diameters, the lack of vertical adjustability fails to accommodate for different distances between the forehead, the most comfortable and practical position for the strap, and the mouth. The present invention provides an underwater breathing apparatus connected to the user that can be quickly adjusted, positioned in an orientation and configuration e.g., single or double loop, and remain in place while the user engages in faster or high speed movements through the water.

[0049] It will be appreciated by those skilled in the art that changes could be made to the embodiments described above without departing from the broad inventive concept thereof. It is to be understood, therefore, that the present invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

What is claimed is:

1. An underwater breathing apparatus comprising: an elongated tube assembly including:
 - a central support having a first end and a second end opposite the first end, and a securing member,
 - a first tube extending substantially transverse from the first end of the central support, and
 - a second tube extending substantially transverse from the second end of the central support,
 - wherein the central support is in fluid communication with the first and second tubes defining a continuous air passageway; and
 - a fastener for engaging the securing member and securing the elongated tube assembly to a user.
2. The underwater breathing apparatus of claim 1, wherein the central support includes an engaging surface for directly or indirectly contacting a forehead of the user.
3. The underwater breathing apparatus of claim 2, further comprising a padding positioned about the engaging surface.
4. The underwater breathing apparatus of claim 2, wherein the securing member is positioned about a surface of the central support opposite the engaging surface.
5. The underwater breathing apparatus of claim 1, wherein the first tube has a longitudinal length greater than a longitudinal length of the second tube.
6. The underwater breathing apparatus of claim 1, wherein the fastener is at least one of a tether, a rope, an elastic cord, and a strap.
7. The underwater breathing apparatus of claim 1, wherein the securing member comprises a plurality of grooves.
8. The underwater breathing apparatus of claim 7, wherein the plurality of grooves includes:
 - grooves extending substantially parallel to a longitudinal axis of the central support, and
 - grooves extending substantially transverse to the longitudinal axis of the central support.
9. The underwater breathing apparatus of claim 1, wherein the first tube has a generally elliptical shaped longitudinal cross-section, the second tube has a generally circular shaped longitudinal cross-section, and the central support has a generally rectangular shaped longitudinal cross-section.
10. The underwater breathing apparatus of claim 1, wherein the elongated tube assembly is a substantially U-shaped tube assembly.
11. The underwater breathing apparatus of claim 1, wherein the securing member is positioned about a surface of the central support opposite an engaging surface, the securing member comprising:
 - first and second spaced apart elongated grooves extending substantially parallel to a longitudinal axis of the central support,
 - a first plurality of spaced apart grooves extending substantially transverse to the longitudinal axis of the central support along a first lateral side of the central

support, wherein each of the first plurality of spaced apart grooves is in communication with the first elongated groove, and

- a second plurality of spaced apart grooves extending substantially transverse to the longitudinal axis of the central support along a second lateral side of the central support, wherein each of the second plurality of spaced apart grooves is in communication with the second elongated groove.

12. An underwater breathing device comprising:
an elongated tube assembly including:

- a central support having a retaining assembly configured to receive a fastener,
- a first tube connected about a first end of the central support, and
- a second tube connected about a second end of the central support.

13. The underwater breathing device of claim **12**, further comprising a fastener for adjustably securing the elongated tube assembly to a user.

14. The underwater breathing device of claim **12**, wherein the central support includes an engaging surface for directly or indirectly contacting a forehead of the user.

15. The underwater breathing device of claim **14**, further comprising a padding positioned about the engaging surface.

16. The underwater breathing device of claim **14**, wherein the retaining assembly is positioned about a surface of the central support opposite the engaging surface.

17. The underwater breathing device of claim **12**, wherein the first tube has a longitudinal length greater than a longitudinal length of the second tube.

18. The underwater breathing device of claim **13**, wherein the fastener is at least one of a tether, a rope, an elastic cord, and a strap.

19. The underwater breathing device of claim **12**, wherein the retaining assembly includes a plurality of spaced apart retaining members extending along the central support.

20. The underwater breathing device of claim **19**, wherein each retaining member is a hook.

21. An underwater breathing apparatus comprising:

- a substantially U-shaped elongated tube assembly including:

- a central support having:

- a first end and a second end opposite the first end,
- an engaging surface for directly or indirectly contacting a forehead of a user, and

- a plurality of grooves including:

- grooves extending substantially parallel to a longitudinal axis of the central support, and
- grooves extending substantially transverse to the longitudinal axis of the central support,

- a first tube extending substantially transverse from the first end of the central support, and

- a second tube extending substantially transverse from the second end of the central support,

- wherein the central support is in fluid communication with the first and second tubes defining a continuous air passageway; and

- a fastener for engaging the plurality of grooves and securing the elongated tube assembly to the user.

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