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

(11) **EP 4 247 704 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
28.08.2024 Bulletin 2024/35

(21) Application number: **21801574.1**

(22) Date of filing: **10.11.2021**

(51) International Patent Classification (IPC):
B63C 11/20 *(2006.01)* ***B63C 11/16*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
B63C 11/205; B63C 11/16

(86) International application number:
PCT/EP2021/081201

(87) International publication number:
WO 2022/106274 (27.05.2022 Gazette 2022/21)

(54) A SWIM MASK

SCHWIMMMASKE

MASQUE DE BAIN

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **19.11.2020 NL 2026926**
19.11.2020 DE 202020106638 U

(43) Date of publication of application:
27.09.2023 Bulletin 2023/39

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Description

[0001] The present invention relates to a swim mask.

[0002] A swim mask or diving mask may be used for underwater hiking, also referred to as snorkeling. This underwater hiking activity allows the snorkeler to observe underwater attractions, such as the seabed, while swimming on the surface of the water. The underwater hiker must therefore be able to keep his head underwater while breathing. For this purpose, the snorkeler may equip himself with a mask for vision, and a snorkel for breathing. The snorkel consists of a tube, the lower end of which is provided with a buccal portion which fits into the snorkeler's mouth, and an upper end allowing both the admission of fresh air and the exhaust of exhaled air.

[0003] One of the drawbacks of using such a snorkel is that breathing through the mouth may be perceived as unnatural as a result of which some people find it difficult to breathe orally using a snorkel. Another disadvantage is that it is not possible to speak underwater when you have a snorkel in your mouth.

[0004] Yet another drawback, linked to the use of the mask, is that the inner wall of the visor generally tends to be covered with fog, which is detrimental to good visibility, and which forces the user to regularly clean the swim mask. The appearance of fogging is due to the fact that the user's nose opens into the viewing chamber located between the visor and the user's eyes.

[0005] EP3140186 or DE 20 2017 105962 U1 both disclose a swim mask that may overcome the drawbacks mentioned previously. These swim masks may, however, be improved to provide a swim mask that is relative comfortable to the user while realising a relative good view of the underwater attractions.

[0006] The objective of the present invention is to provide a swim mask that is relatively comfortable to wear while realising a relative good viewing experience to a user of the swim mask.

[0007] The objective is achieved by the swim mask according to the present invention by, the swim mask comprising:

- a visor;
- a frame having an upper part and surrounding said visor;
- a flexible skirt mounted to said frame and arranged for realising, during use, a watertight seal between said swim mask and the face of said user;
- a partition delimiting an upper chamber for vision and a lower chamber for respiration, said partition being arranged to contact, during use, said face of said user such that the mouth and the nostrils of said user are positioned within said lower chamber for respiration and wherein the eyes of said user are positioned within said upper chamber for allowing said user to view through said visor, said partition comprising at least one passage arranged to allow air to enter said lower chamber from said upper chamber during an inhalation phase;
- an inlet conduit extending beyond said upper part of said frame, upwards in use, and comprising an inlet opening, at a free end of said inlet conduit facing away from said frame, arranged to allow ambient air to enter said upper chamber;
- an outlet conduit arranged for exhausting air, via an exhaust opening, from said lower chamber and said swim mask during an exhaling phase, wherein said outlet conduit is arranged such that, during use, said outlet conduit extends between said eyes of said user, and wherein said exhaust opening is provided in said upper part of said frame.

[0008] The present invention relies at least partly on the insight that providing a relative compact swim mask is beneficial for the comfort of the user. By providing the outlet conduit such that, during use, said outlet conduit extends between the eyes of the user, the thickness of side frame parts between the upper part of the frame and a lower part of the frame may be relatively small. The lower frame part is to be understood as being the frame part that, during use, is near the chin of the user. The side frame parts are positioned at opposite sides of the face of the user near the ears of the user. Since the outlet conduit of the swim mask according to the present disclosure is provided in a centre part of the swim mask, there is no longer a need for relative thick side frame parts between the upper part and the lower part of the frame for housing the outlet conduit therein. A relative low thickness of the side frame parts is beneficial for realising a swim mask having a relative low weight which is beneficial for realising a relative comfortable wearing experience to the user.

[0009] A further benefit of the relative low thickness of the side frame parts is that the view of the user, i.e. the field of view of the user, via the visor, near the sides of his face is no longer blocked, or at least blocked to a lesser extent, by the frame due to the relative small thickness of the frame at these locations. This is beneficial for realizing a relative good viewing experience to a user of the swim mask since the field of view to the user may be relatively large. The present disclosure yet further at least partly relies on the insight that an object that is provided in an area between the eyes and relatively close to the face does not, or only to a relative limited extent, block the field of view of the user. By providing the outlet conduit, during use, in an area between the eyes in front of the face, the field of view of the user is not blocked, or only to a relative little extent, by the outlet conduit.

[0010] Preferably, a lower part of said outlet conduit is in fluid communication with said lower chamber for exhausting said air, during said exhaling phase, from said lower chamber via said outlet conduit.

[0011] Preferably, said outlet conduit is provided with a one-way valve arranged for allowing air to be exhausted from said outlet conduit and blocking fluid to enter, via said one-way valve, said outlet conduit. This is beneficial

for avoiding liquid to enter the outlet conduit during swimming.

[0012] Preferably, said exhaust opening is provided with a one-way valve arranged for allowing air to be exhausted from said outlet conduit and blocking fluid to enter, via said one-way valve, said outlet conduit. This is beneficial for avoiding liquid to enter the outlet conduit during swimming.

[0013] Preferably, said exhaust opening is provided in an upper half of said upper part, preferably in an upper quarter of said upper part. This is beneficial for realising a relative comfortable exhaling for the user during the exhaling phase.

[0014] In an embodiment of the swim mask according to the present disclosure, said upper part of said frame comprises a plurality of said exhaust openings in fluid connection with said outlet conduit. A plurality of exhaust openings may be beneficial for reducing the flow resistance of exhaled air present in the outlet conduit. This is beneficial for realising a relative comfortable exhaling for the user during the exhaling phase.

[0015] In this regard, it is beneficial if said plurality of said exhaust openings are provided in an upper half of said upper part, preferably in an upper quarter of said upper part. This is beneficial for realising a relative comfortable exhaling for the user during the exhaling phase.

[0016] It is noted that within the context of the present disclosure, the exhaust opening is provided in the frame and, in use, below the inlet conduit. This is beneficial for realising a relative short outlet conduit thereby realising a relative comfortable exhaling for the user during the exhaling phase while avoiding that exhaled air is hampering the viewing experience of the user through the visor.

[0017] Preferably, said outlet conduit is provided at least partly within said upper chamber and passes through a centre of said upper chamber, preferably in a centre part of the visor. This allows for providing the outlet conduit, during use, at a relative small distance from the face of the user at a location that does not, or only to a limited extent, hamper the viewing experience of the user. It is noted that by placing the outlet conduit relatively close to the face and in between the eyes, the user may view around the outlet conduit.

[0018] In this regard, the centre part of the upper chamber is such that the centre part of the upper chamber, during use, substantially corresponds to the shape of the nose of the user for allowing the user to view around the outlet conduit.

[0019] In an embodiment of the swim mask, said outlet conduit is provided within said upper chamber and passes through a centre of said upper chamber.

[0020] In an embodiment, said outlet conduit extends at least partly between said upper part of said frame and said partition, preferably between said upper part of said frame and an upper part of said partition. This allows for realising a relative short outlet conduit having a relative low flow resistance for the exhaled air. This is beneficial for realising a relative comfortable exhaling for the user during the exhaling phase.

[0021] In a further embodiment, said complete outlet conduit extends between said upper part of said frame and said partition, preferably between said upper part of said frame and an upper part of said partition.

[0022] Preferably, said partition is arranged for bearing upon at least a lower half, preferably upon at least a lower three-quarter, of the nose of the user. This is beneficial for providing a swim mask provided with a relative short outlet conduit thereby realising a relative comfortable exhaling for the user during the exhaling phase.

[0023] It is advantageous if said visor comprises two visor elements, wherein said two visor elements are connected to each other via said inlet conduit. This is beneficial for realising a relative cost effective swim mask while realising a relative good viewing experience to the user.

[0024] In this regard it is beneficial if said two visor elements are flat. This is beneficial for realising a relative good viewing experience to the user.

[0025] Preferably, a section of said visor that, in use, is in front of said eyes of said user is flat. This is beneficial for avoiding, or at least significantly reducing, optical distortion, by the visor thereby providing a relative good viewing experience to the user.

[0026] In this regard, it is beneficial if said two visor elements are identical. This is beneficial for realising a relative cost effective swim mask while realising a relative good viewing experience to the user.

[0027] Preferably, said flexible skirt comprises said partition.

[0028] In an embodiment, said frame and/or said visor is/are rigid.

[0029] Preferably, said inlet conduit comprises inlet conduit elements that are mutually telescopically arranged for allowing said user to set a length of said inlet conduit within a predetermined range.

[0030] It is beneficial if said passage is provided with a further one-way valve arranged for allowing air to exhaust from said upper chamber into said lower chamber and blocking air to enter said upper chamber, via said one-way valve, from said lower chamber. This is beneficial for avoiding, or at least significantly reducing the risk, of fogging of the visor thereby realising a relative good viewing experience to a user of the swim mask.

[0031] Preferably, said outlet conduit and/or said frame is/are transparent for visible light for allowing said user to view through said outlet conduit and/or said frame. This is beneficial for realising a relative good viewing experience to a user of the swim mask.

[0032] In a practical embodiment of the swim mask according to the present disclosure, said visor comprises an inner wall delimiting the upper chamber and an outer wall, during use, directed away from said user, wherein said outlet conduit is provided between said inner wall and said outer wall.

[0033] In a practical embodiment of the swim mask according to the present disclosure, said swim mask com-

prises a purge valve positioned in said lower chamber and arranged to evacuate liquid to outside said swim mask. This is beneficial for allowing a user to purge liquid from the lower chamber in a relative practical manner while wearing the swim mask.

[0034] Preferably, said outlet conduit is shorter than said inlet conduit, preferably, wherein said inlet conduit is in the range of 1.5 to 2 times longer than said outlet conduit. A relative short outlet conduit is beneficial for realising a relative comfortable exhaling for the user during the exhaling phase.

[0035] The swim mask according to the present invention will now be explained by means of a description of a preferred embodiment of the swim mask according to the present disclosure, in which reference is made to the following schematic figures, in which:

Fig. 1: a front view of a swim mask according to the present disclosure is shown;
Fig. 2: a side view of the swim mask from Fig. 1 is shown;
Fig. 3: a rear view of a swim mask from Fig. 1 is shown;
Fig. 4: an exploded view of elements of the swim mask from Fig. 1 is shown.

[0036] The swim mask 1 comprises a visor 3 and a frame 5. The visor 3 is made of a material that is at least transparent for wavelengths visible to the human eye for allowing a user of the swim mask 1 to view through the visor 3 while wearing the swim mask 1 during swimming. The frame 5 is mounted to and surrounding the visor 3. The frame 5 is provided with attachment organs 33 that are arranged for attaching a strap (not shown) to the swim mask 1 for pressing the swim mask 1 against the face of the user. The strap may for instance be an elastic strap and/or comprises an adjustment arrangement for adjusting a length of the strap for allowing the swim mask 1 to be used relatively comfortably by different users having different head sizes.

[0037] A flexible skirt 9 is mounted to the frame 5 at a side of the frame 5 that in use is directed to the face of the user. The flexible skirt 9 comprises a resilient material and is arranged for realising a watertight seal between the swim mask 1 and the face of the user when being pressed against the face of the user. The flexible skirt 9 comprises a partition 11 that separates an upper chamber 13 of the swim mask 1 from a lower chamber 15 of the swim mask 1. The partition 11 is arranged such that, when the skirt 9 is pressed against the face for realising the watertight seal, is in contact with the face of the user such that the mouth and the nostrils of the user are positioned within the lower chamber 15 for respiration and wherein the eyes of the user are positioned within the upper chamber 13 for allowing the user to view through the visor 3. The partition 11 comprises two passages 17 that are each provided with a one-way valve 31. The one-way valves 31 are arranged for allowing air to exhaust from the upper chamber 13 into the lower chamber 15 and blocking air to enter the upper chamber 13, via the one-way valves 31, from said lower chamber 15.

[0038] The partition 11 is further provided with an outlet opening 35 that is in fluid connection with an outlet conduit 23. The outlet conduit 23 is arranged for exhausting air, via exhaust openings 25, from the lower chamber 15 during an exhaling phase of the user. The exhaust opening 25 are provided in an upper part 7 of the frame 5 and are in fluid communication with the outlet conduit 23 via a recess 37. The outlet conduit 23 is at least partly received in the recess 37. The outlet conduit 23 is provided inside the upper chamber 13 at a relative small distance, in use, from the face of the user such that the outlet conduit 23 extends in a flat virtual plane between the eyes of the user between the partition 11 and the upper part 7 of the frame 5. To avoid liquid to enter the outlet conduit 23 during swimming, the exhaust openings 25 are provided with one-way valves 27. The one-way valves 27 are arranged for allowing air to be exhausted from the lower chamber 15, via the outlet conduit 23, and blocking fluid to enter, via the one-way valves 27, the lower chamber 15 via the outlet conduit 23.

[0039] The swim mask 19 further comprises an inlet conduit 19. The inlet conduit 19 is provided at an upper side of the swim mask 1 such that during use, an inlet opening 21 of the inlet conduit 19 is provided outside the water for allowing the user to inhale air, during an inhaling phase, via the inlet conduit 19. The inlet conduit 19 is in fluid communication with the upper chamber 13 for allowing entry of ambient air in the upper chamber 13. The inlet conduit 19 comprises inlet conduit elements 29 that are mutually connected via sealing gaskets 45 and coupling organs 47 such that the inlet conduit elements 29 may be displaced relative to each other in a direction A for allowing the user to adapt a length of the inlet conduit 19. The sealing gaskets 45 are arranged for sealing the inlet conduit elements 29 relative to each other while allowing the inlet conduit elements 29 to move relative to each other in the direction A for avoiding water to enter the inlet conduit 19 in a space that may be available between the inlet conduit elements 29. The coupling organs 47 are arranged for cooperating with protrusions 57 provided at an outer side of the inlet conduit elements 29 for maintaining the sealing gaskets 45 between neighbouring inlet conduit elements 29 while avoiding that the neighbouring inlet conduit elements 29 are separated from each other when increasing the length of the inlet conduit 19. In other words, the coupling organs 47 together with the protrusions 57 avoid, or at least significantly reduce the risk, of separating the inlet conduit elements 29 from each other when maximising the length of the inlet conduit 19. Preferably, the protrusions 57 are formed as flanges. The swim mask 1 further comprises a connecting element 55 for connecting the assembly of inlet conduit elements 29 to the upper part 7 of the frame 5 and/or the visor 3 and/or the flexible skirt 9.

[0040] The inlet conduit 19 may be blocked by a flotation organ 49 that is arranged for floating on water. The

flotation organ 49 is movably received in a flotation housing 53 that is connected via a gasket 51 to one of the inlet conduit elements 29. When the inlet opening 21 is submerged, the flotation organ 49 moves away from the inlet opening 21 towards the gasket 51 due to an upward force, exerted by the water on the flotation organ 49, that is larger than the force of gravity, exerted on the flotation organ 49, thereby closing the inlet conduit 19. When the inlet opening 21 is above the water surface, the flotation organ 49 moves away from the gasket 51 due to the force of gravity exerted on the flotation organ 49 without the upward force of exerted by the water on the flotation organ 49.

[0041] At a side of the swim mask 1 facing away from the inlet conduit 19, i.e. at a side of the swim mask 1 that, during use, is near a chin of the user, the swim mask 1 is provided with a purge valve 39. The purge valve 39 is provided in a purge opening 41. The purge valve 39 is positioned in the lower chamber 15 and arranged to evacuate liquid to outside the swim mask 1. The purge valve 39 is covered by a cover element 43 that is attached at the outside of visor 3.

Claims

1. A swim mask (1) comprising:

- a visor (3);
- a frame (5) having an upper part (7) and surrounding said visor (3);
- a flexible skirt (9) mounted to said frame (5) and arranged for realising, during use, a watertight seal between said swim mask (1) and the face of a user;
- a partition (11) delimiting an upper chamber (13) for vision and a lower chamber (15) for respiration, said partition (11) being arranged to contact, during use, said face of said user such that the mouth and the nostrils of said user are positioned within said lower chamber (15) for respiration and wherein the eyes of said user are positioned within said upper chamber (13) for allowing said user to view through said visor (3), said partition (11) comprising at least one passage (17) arranged to allow air to enter said lower chamber (15) from said upper chamber (13) during an inhalation phase;
- an inlet conduit (19) extending beyond said upper part (7) of said frame (5), upwards in use, and comprising an inlet opening (21), at a free end of said inlet conduit (19) facing away from said frame (5), arranged to allow ambient air to enter said upper chamber (13);
- an outlet conduit (23) arranged for exhausting air, via an exhaust opening (25), from said lower chamber (15) and said swim mask (1) during an exhaling phase, the swim mask being **characterised in that**

said outlet conduit (23) is arranged such that, during use, said outlet conduit (23) extends between said eyes of said user, and wherein said exhaust opening (25) is provided in said upper part (7) of said frame (5).

2. The swim mask (1) according to claim 1, wherein said outlet conduit (23) is provided with a one-way valve (27) arranged for allowing air to be exhausted from said outlet conduit (23) and blocking fluid to enter, via said one-way valve (27), said outlet conduit (23).

3. The swim mask (1) according to claim 1 or 2, wherein said upper part (7) of said frame (5) comprises a plurality of said exhaust openings (25) in fluid connection with said outlet conduit (23).

4. The swim mask (1) according to claim 3, wherein said plurality of said exhaust openings (25) are provided in an upper half of said upper part (7), preferably in an upper quarter of said upper part (7).

5. The swim mask (1) according to any one of the preceding claims, wherein said outlet conduit (23) is provided at least partly within said upper chamber (13) and passes through a centre of the upper chamber (13).

6. The swim mask (1) according to any one of the preceding claims, wherein at least a part of said outlet conduit (23) extends between said upper part (7) of said frame (5) and said partition (11).

7. The swim mask according to any one of the preceding claims, wherein said visor comprises two visor elements, wherein said two visor elements are connected to each other via said inlet conduit (19) and/or wherein each of sais two visor elements are each flat.

8. The swim mask (1) according to any one of the preceding claims, wherein said flexible skirt (9) comprises said partition (11).

9. The swim mask (1) according to any one of the preceding claims, wherein said frame (5) and/or said visor (3) is/are rigid.

10. The swim mask (1) according to any one of the preceding claims, wherein said inlet conduit (19) comprises inlet conduit elements (29) that are mutually telescopically arranged for allowing said user to set a length of said inlet conduit (19) within a predetermined range.

11. The swim mask (1) according to any one of the pre-

ceding claims, wherein said passage (17) is provided with a further one-way valve (31) arranged for allowing air to exhaust from said upper chamber (13) into said lower chamber (15) and blocking air to enter said upper chamber (13), via said one-way valve (31), from said lower chamber (15).

12. The swim mask according to any one of the preceding claims, wherein said outlet conduit (23) and/or said frame (5) is transparent for visible light for allowing said user to view through said outlet conduit and/or said frame.

13. The swim mask according to any one of the preceding claims, wherein said visor comprises an inner wall delimiting the upper chamber and an outer wall, during use, directed away from said user, wherein said outlet conduit is provided between said inner wall and said outer wall.

14. The swim mask (1) according to any one of the preceding claims, wherein said swim mask (1) comprises a purge valve (39) positioned in said lower chamber (15) and arranged to evacuate liquid to outside said swim mask (1).

15. The swim mask (1) according to any one of the preceding claims, wherein said outlet conduit (23) is shorter than said inlet conduit (19), preferably, wherein said inlet conduit (19) is in the range of 1.5 to 2 times longer than said outlet conduit (23).

Patentansprüche

1. Schwimmmaske (1), umfassend:

- ein Visier (3);
- einen Rahmen (5) mit einem oberen Teil (7), der das Visier (3) umgibt;
- eine flexible Schürze (9), die an dem Rahmen (5) angebracht ist und dazu dient, während der Benutzung eine wasserdichte Abdichtung zwischen der Schwimmmaske (1) und dem Gesicht eines Benutzers zu schaffen;
- eine Trennwand (11), die eine obere Kammer (13) für die Sicht und eine untere Kammer (15) für die Atmung begrenzt, wobei die Trennwand (11) dazu angeordnet ist, während der Benutzung das Gesicht des Benutzers so zu berühren, dass der Mund und die Nasenlöcher des Benutzers innerhalb der unteren Kammer (15) für die Atmung positioniert sind, und wobei die Augen des Benutzers innerhalb der oberen Kammer (13) positioniert sind, um dem Benutzer zu ermöglichen, durch das Visier (3) zu sehen, wobei die Trennwand (11) mindestens einen Durchgang (17) umfasst, der so angeordnet ist, dass Luft während einer Einatmungsphase von der oberen Kammer (13) in die untere Kammer (15) eintreten kann;
- einen Einlasskanal (19), der sich während der Benutzung über den oberen Teil (7) des Rahmens (5) hinaus nach oben erstreckt, und eine Einlassöffnung (21) an einem freien Ende des Einlasskanal (19) umfasst, der von dem Rahmen (5) weg weist und so angeordnet ist, dass Umgebungsluft in die obere Kammer (13) eintreten kann;
- einen Auslasskanal (23), der dazu angeordnet ist, während einer Ausatmungsphase über eine Auslassöffnung (25) Luft aus der unteren Kammer (15) und der Schwimmmaske (1) auszustoßen, wobei die Schwimmmaske **dadurch gekennzeichnet ist, dass** der Auslasskanal (23) so angeordnet ist, dass sich der Auslasskanal (23) während der Benutzung zwischen den Augen des Benutzers erstreckt, und wobei die Auslassöffnung (25) im oberen Teil (7) des Rahmens (5) vorgesehen ist.

2. Schwimmmaske (1) nach Anspruch 1, wobei der Auslasskanal (23) mit einem Einwegventil (27) versehen ist, das so angeordnet ist, dass es das Ausströmen von Luft aus dem Auslasskanal (23) ermöglicht und den Eintritt von Flüssigkeit in den Auslasskanal (23) über das Einwegventil (27) verhindert.

3. Schwimmmaske (1) nach Anspruch 1 oder 2, wobei der obere Teil (7) des Rahmens (5) eine Vielzahl der Auslassöffnungen (25) in Fluidverbindung mit dem Auslasskanal (23) umfasst.

4. Schwimmmaske (1) nach Anspruch 3, wobei die Vielzahl der Auslassöffnungen (25) in einer oberen Hälfte des oberen Teils (7), vorzugsweise in einem oberen Viertel des oberen Teils (7), vorgesehen sind.

5. Schwimmmaske (1) nach einem der vorhergehenden Ansprüche, wobei der Auslasskanal (23) zumindest teilweise innerhalb der oberen Kammer (13) vorgesehen ist und durch eine Mitte der oberen Kammer (13) verläuft.

6. Schwimmmaske (1) nach einem der vorhergehenden Ansprüche, wobei sich zumindest ein Teil des Auslasskanals (23) zwischen dem oberen Teil (7) des Rahmens (5) und der Trennwand (11) erstreckt.

7. Schwimmmaske nach einem der vorhergehenden Ansprüche, wobei das Visier zwei Visierelemente umfasst, wobei die zwei Visierelemente über den Einlasskanal (19) miteinander verbunden sind und/oder wobei jedes der zwei Visierelemente eben ist.

8. Schwimmmaske (1) nach einem der vorhergehenden Ansprüche, wobei die flexible Schürze (9) die Trennwand (11) umfasst.

9. Schwimmmaske (1) nach einem der vorhergehenden Ansprüche, wobei der Rahmen (5) und/oder das Visier (3) starr ist/sind.

10. Schwimmmaske (1) nach einem der vorhergehenden Ansprüche, wobei der Einlasskanal (19) Einlasskanalelemente (29) umfasst, die gegenseitig teleskopisch angeordnet sind, um es dem Benutzer zu ermöglichen, eine Länge des Einlasskanals (19) innerhalb eines vorgegebenen Bereichs einzustellen.

11. Schwimmmaske (1) nach einem der vorhergehenden Ansprüche, wobei der Durchgang (17) mit einem weiteren Einwegventil (31) versehen ist, das so angeordnet ist, dass es Luft aus der oberen Kammer (13) in die untere Kammer (15) entweichen lässt und den Eintritt von Luft aus der unteren Kammer (15) in die obere Kammer (13) über das Einwegventil (31) blockiert.

12. Schwimmmaske nach einem der vorhergehenden Ansprüche, wobei der Auslasskanal (23) und/oder der Rahmen (5) für sichtbares Licht durchlässig ist, damit der Benutzer durch den Auslasskanal und/oder den Rahmen sehen kann.

13. Schwimmmaske nach einem der vorhergehenden Ansprüche, wobei das Visier eine innere Wand, die die obere Kammer begrenzt, und eine äußere Wand umfasst, die während der Benutzung von dem Benutzer weg gerichtet ist, wobei der Auslasskanal zwischen der inneren Wand und der äußeren Wand vorgesehen ist.

14. Schwimmmaske (1) nach einem der vorhergehenden Ansprüche, wobei die Schwimmmaske (1) ein Ablassventil (39) umfasst, das in der unteren Kammer (15) positioniert und dazu angeordnet ist, Flüssigkeit nach außerhalb der Schwimmmaske (1) abzulassen.

15. Schwimmmaske (1) nach einem der vorhergehenden Ansprüche, wobei der Auslasskanal (23) kürzer als der Einlasskanal (19) ist, vorzugsweise, wobei der Einlasskanal (19) im Bereich des 1,5- bis 2-fachen der Länge des Auslasskanals (23) liegt.

Revendications

1. Masque de natation (1) comprenant :

- une visière (3) ;
- un cadre (5) ayant une partie supérieure (7) et entourant ladite visière (3) ;
- une jupe souple (9) montée sur ledit cadre (5) et agencée pour réaliser, lors de l'utilisation, un joint étanche entre ledit masque de natation (1) et le visage d'un utilisateur ;
- une cloison (11) délimitant une chambre supérieure (13) pour la vision et une chambre inférieure (15) pour la respiration, ladite cloison (11) étant agencée pour entrer en contact, lors de l'utilisation, avec ledit visage dudit utilisateur de sorte que la bouche et les narines dudit utilisateur soient positionnées à l'intérieur de ladite chambre inférieure (15) pour la respiration et où les yeux dudit utilisateur sont positionnés à l'intérieur de ladite chambre supérieure (13) pour permettre audit utilisateur de voir à travers ladite visière (3), ladite cloison (11) comprenant au moins un passage (17) agencé pour permettre à l'air d'entrer dans ladite chambre inférieure (15) depuis ladite chambre supérieure (13) pendant une phase d'inhalation ;
- un conduit d'entrée (19) s'étendant au-delà de ladite partie supérieure (7) dudit cadre (5), vers le haut en cours d'utilisation, et comprenant une ouverture d'entrée (21), au niveau d'une extrémité libre dudit conduit d'entrée (19) opposée audit cadre (5), agencé pour permettre à l'air ambiant d'entrer dans ladite chambre supérieure (13) ;
- un conduit de sortie (23) agencé pour évacuer l'air, via une ouverture d'évacuation (25), de ladite chambre inférieure (15) et dudit masque de natation (1) pendant une phase d'expiration, le masque de natation étant **caractérisé en ce que**

ledit conduit de sortie (23) est agencé de sorte que, lors de l'utilisation, ledit conduit de sortie (23) s'étende entre lesdits yeux dudit utilisateur, et où ladite ouverture d'évacuation (25) est prévue dans ladite partie supérieure (7) dudit cadre (5).

2. Masque de natation (1) selon la revendication 1, dans lequel ledit conduit de sortie (23) est muni d'une soupape de non-retour (27) agencée pour permettre à l'air d'être évacué dudit conduit de sortie (23) et bloquer l'entrée du fluide, via ladite soupape de non-retour (27), dans ledit conduit de sortie (23).

3. Masque de natation (1) selon la revendication 1 ou 2, dans lequel ladite partie supérieure (7) dudit cadre (5) comprend une pluralité desdites ouvertures d'évacuation (25) en communication fluidique avec ledit conduit de sortie (23).

4. Masque de natation (1) selon la revendication 3, dans lequel ladite pluralité desdites ouvertures

d'évacuation (25) est prévue dans une moitié supérieure de ladite partie supérieure (7), de préférence dans un quart supérieur de ladite partie supérieure (7).

5. Masque de natation (1) selon l'une quelconque des revendications précédentes, dans lequel ledit conduit de sortie (23) est prévu au moins en partie à l'intérieur de ladite chambre supérieure (13) et passe à travers un centre de la chambre supérieure (13).

6. Masque de natation (1) selon l'une quelconque des revendications précédentes, dans lequel au moins une partie dudit conduit de sortie (23) s'étend entre ladite partie supérieure (7) dudit cadre (5) et ladite cloison (11).

7. Masque de natation selon l'une quelconque des revendications précédentes, dans lequel ladite visière comprend deux éléments de visière, lesdits deux éléments de visière étant reliés l'un à l'autre via ledit conduit d'entrée (19) et/ou chacun desdits deux éléments de visière étant plat.

8. Masque de natation (1) selon l'une quelconque des revendications précédentes, dans lequel ladite jupe souple (9) comprend ladite cloison (11).

9. Masque de natation (1) selon l'une quelconque des revendications précédentes, dans lequel ledit cadre (5) et/ou ladite visière (3) est/sont rigide(s).

10. Masque de natation (1) selon l'une quelconque des revendications précédentes, dans lequel ledit conduit d'entrée (19) comprend des éléments de conduit d'entrée (29) qui sont mutuellement agencés de manière télescopique pour permettre audit utilisateur de régler une longueur dudit conduit d'entrée (19) dans une plage prédéterminée.

11. Masque de natation (1) selon l'une quelconque des revendications précédentes, dans lequel ledit passage (17) est muni d'une soupape de non-retour supplémentaire (31) agencée pour permettre l'évacuation de l'air depuis ladite chambre supérieure (13) dans ladite chambre inférieure (15) et bloquer l'entrée de l'air dans ladite chambre supérieure (13), via ladite soupape de non-retour (31), depuis ladite chambre inférieure (15).

12. Masque de natation selon l'une quelconque des revendications précédentes, dans lequel ledit conduit de sortie (23) et/ou ledit cadre (5) est/sont transparent(s) pour la lumière visible pour permettre audit utilisateur de voir à travers ledit conduit de sortie et/ou ledit cadre.

13. Masque de natation selon l'une quelconque des revendications précédentes, dans lequel ladite visière comprend une paroi interne délimitant la chambre supérieure et une paroi externe, lors de l'utilisation, dirigée loin dudit utilisateur, où ledit conduit de sortie est prévu entre ladite paroi interne et ladite paroi externe.

14. Masque de natation (1) selon l'une quelconque des revendications précédentes, dans lequel ledit masque de natation (1) comprend une soupape de purge (39) positionnée dans ladite chambre inférieure (15) et agencée pour évacuer le liquide vers l'extérieur dudit masque de natation (1).

15. Masque de natation (1) selon l'une quelconque des revendications précédentes, dans lequel ledit conduit de sortie (23) est plus court que ledit conduit d'entrée (19), de préférence, dans lequel ledit conduit d'entrée (19) se trouve dans la plage de 1,5 à 2 fois plus long que ledit conduit de sortie (23).

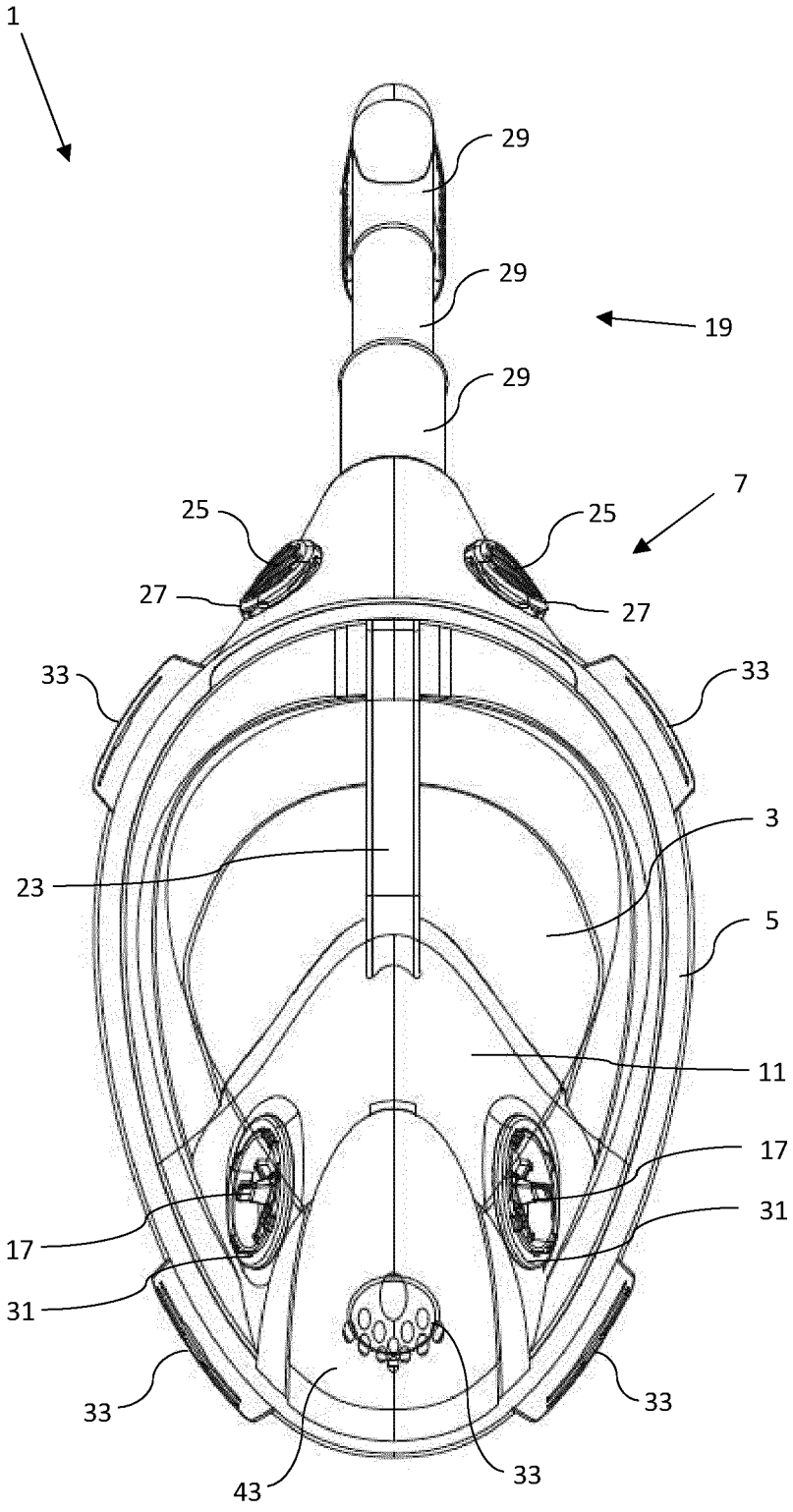

Fig. 1

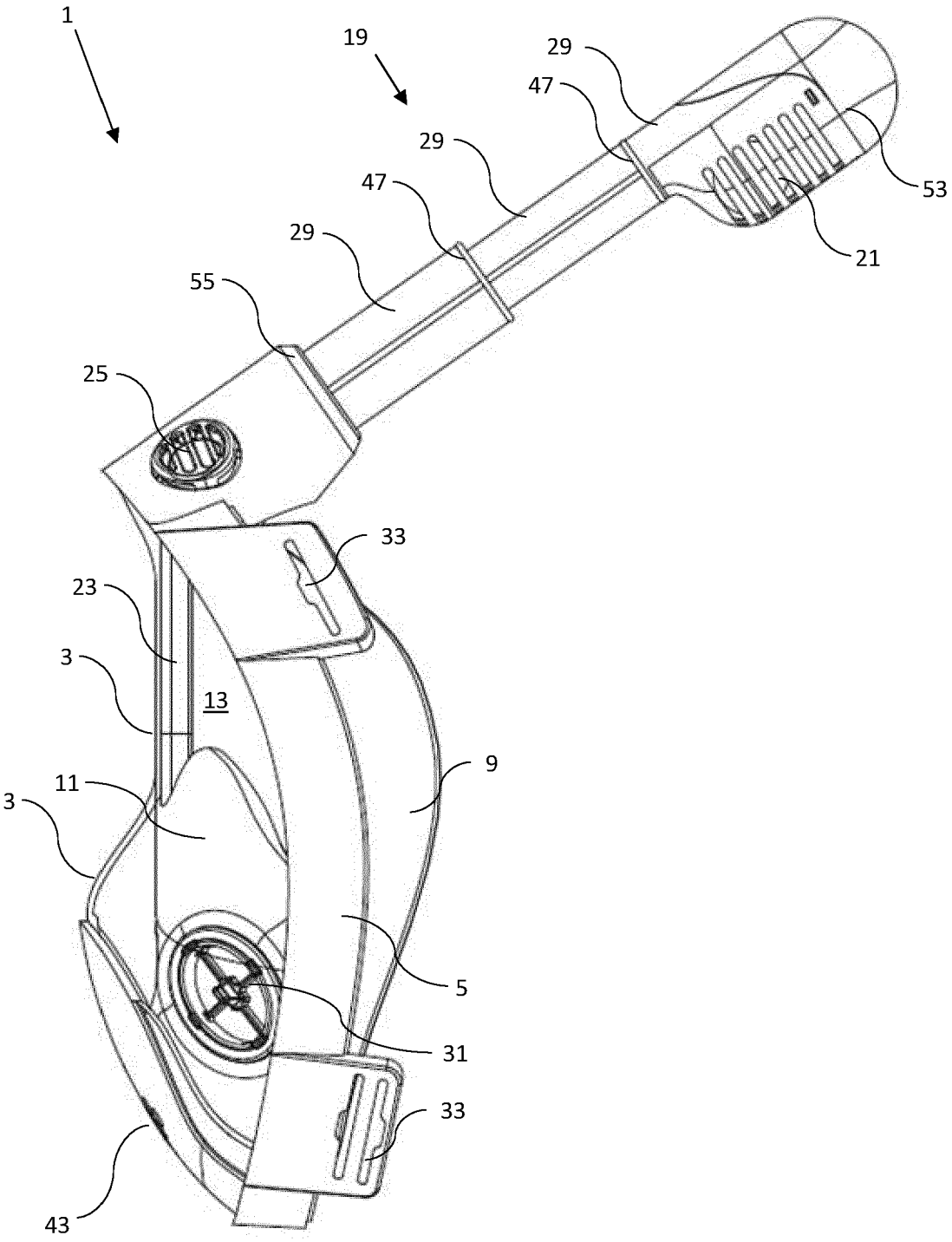

Fig. 2

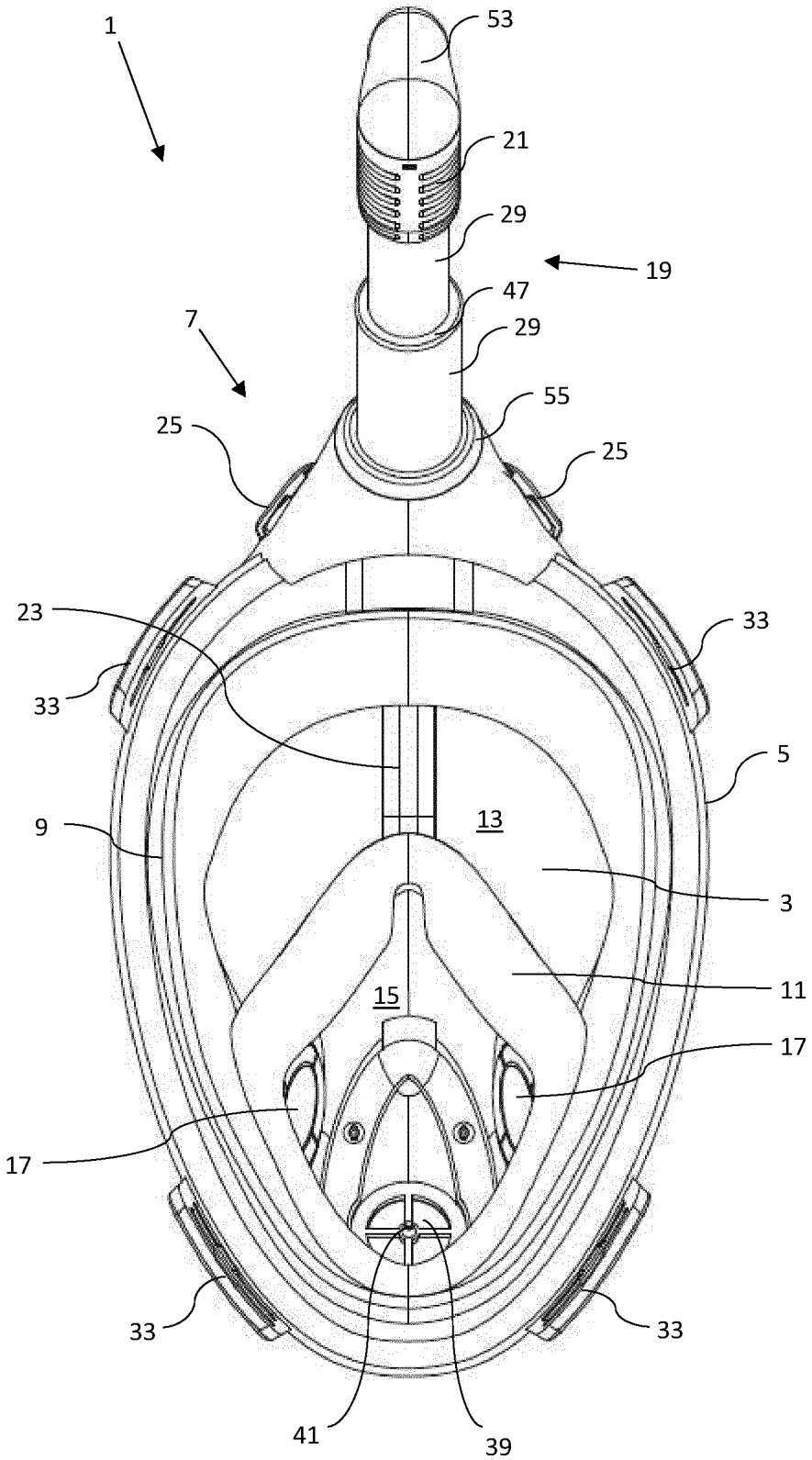

Fig. 3

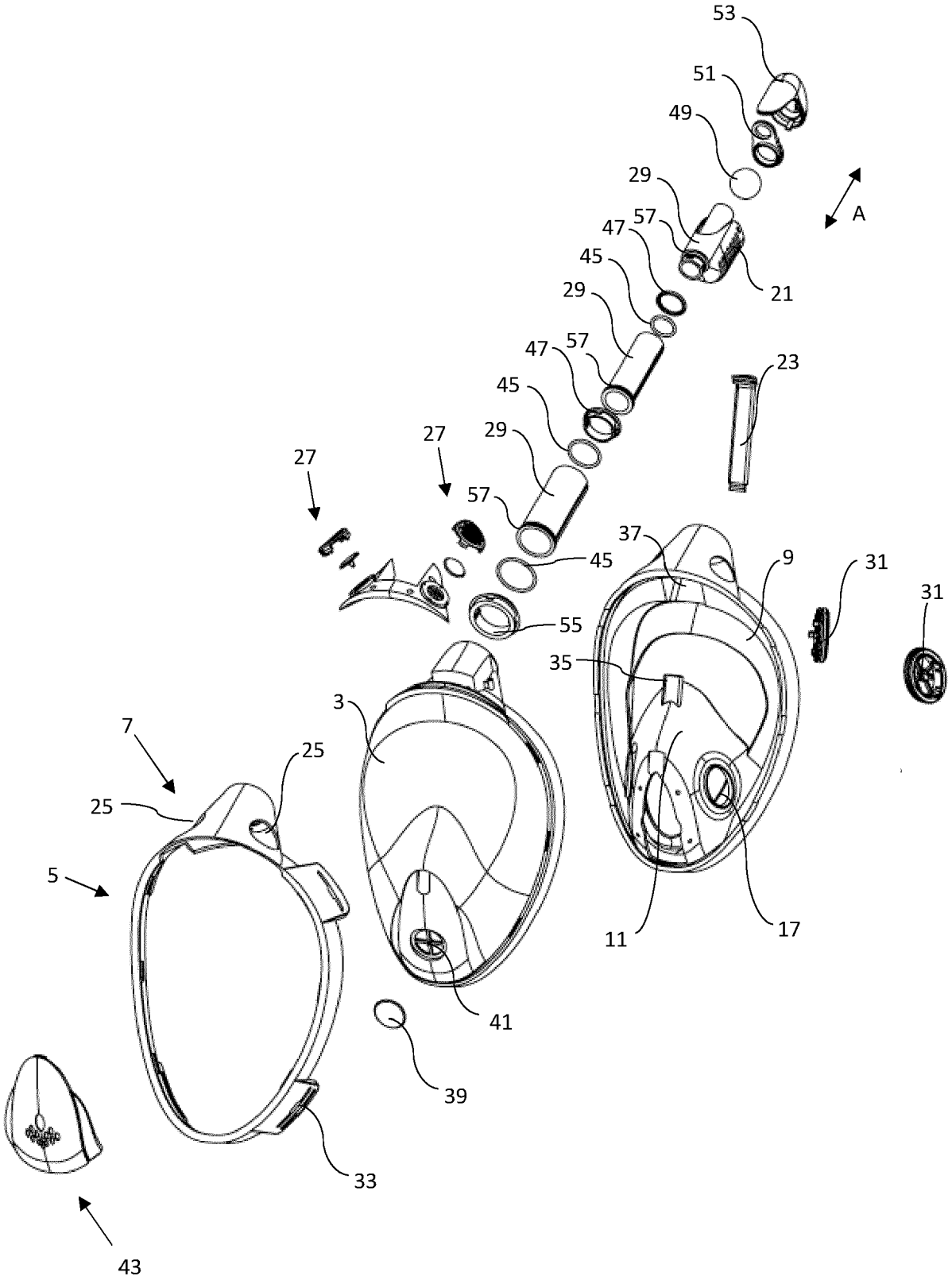
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Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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