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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIFE VAC, LLC,
Petitioner,

v.

DCSTAR INC.,
Patent Owner.

U.S. Patent No. US 11,478,575
Issued: October 25, 2022

**PETITION FOR POST-GRANT REVIEW
PURSUANT TO 35 U.S.C. §§ 321-329 AND 37 C.F.R. § 42.200 *et seq.***

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TABLE OF AUTHORITIES

Cases

<i>Cupp Computing AS v. Trend Micro Inc.</i> , 53 F.4th 1376, 1380 (Fed. Cir. 2022)..	19
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005) (<i>en banc</i>)	19
<i>Polaris Innovations Ltd. v. Brent</i> , 48 F.4th 1365, 1372 n.3 (Fed. Cir. 2022)	19
<i>Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.</i> , 381 F.3d 1111 (Fed. Cir. 2004)	19
<i>Markman v. Westview Instruments, Inc.</i> , 52 F.3d 967, 979 (Fed.Cir.1995) (en banc), <i>aff'd</i> , 517 U.S. 370 (1996)	19
<i>KSR Int'l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007)	22
<i>Graham v. John Deere Co.</i> , 383 U.S. 1 (1966)	22-23
<i>GPAC Inc.</i> , 57 F.3d 1573 (Fed. Cir. 1995)	23

<i>Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.</i> , 807 F.2d 955 (Fed. Cir. 1986)	23
<i>Intel Corp. v. PACT XPP Schweiz AG</i> , 61 F.4th 1373 (Fed. Cir. Mar. 13, 2023)..	23
<i>In re Robertson</i> , 169 F.3d 743 (Fed. Cir. 1999)	34
<i>Net MoneyIN, Inc. v. VeriSign, Inc.</i> , 545 F.3d 1359 (Fed. Cir. 2008)	34
<i>Cont'l Can Co. v. Monsanto Co.</i> , 948 F.2d 1264 (Fed. Cir. 1991)	34
<i>MEHL/Biophile Int'l Corp. v. Milgraum</i> , 192 F.3d 1362 (Fed. Cir. 1999).....	34-35
<i>In re Cruciferous Sprout Litig.</i> , 301 F.3d 1343 (Fed. Cir. 2002)	34-35
Statutes	
35 U.S.C. § 102	<i>passim</i>
35 U.S.C. § 103	<i>passim</i>
35 U.S.C. § 321	1, 18
83 Fed. Reg. 51340 (Oct. 11, 2018)	19
Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011)	3
Other Authorities	
37 C.F.R. § 42.8	2
37 C.F.R. § 42.15	3
37 C.F.R. § 42.22(a)	18
37 C.F.R. § 42.200 <i>et seq.</i>	1, 19
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37 C.F.R. §§ 42.203(a)	3

37 C.F.R. § 42.204 3, 18, 19

Merriam-Webster’s Online Dictionary,
available at www.merriam-webster.com/..... 19, 20

EXHIBIT LIST

Exhibit	Description
1001	He, Ligui, U.S. Patent No. 11,478,575, “Removal device for removing obstruction in respiratory tract and connector” issued October 25, 2022
1002	File History of U.S. Patent No. 11,478,575
1003	Expert Declaration of Carl Stamp
1004	Lih, Arthur, U.S. Patent No. 10,052,115, “Choking intervention device and method of use thereof” issued August 21, 2018
1005	da Costa, Harry, U.S. Patent No. 3,939,830, “Manually operable dechoking and resuscitating device” issued February 24, 1976
1006	Tarrats, Edward, U.S. Patent No. 4,971,053, “Suction Mask to Relieve Choking” issued November 20, 1990
1007	Koledin, Michael, U.S. Patent No. 8,783,251, “Enhanced manually actuated pressure controlled modulator technology”
1008	Rozinsky, Bernince, U.S. 7,351,245 B2, “Apparatus and method for dislodging object from throat” issued April 1, 2008
1009	Winiarski, Kevin, U.S. Patent App. Pub. No. 2009/0228018 A1, “Anti-choking device” published September 10, 2009
1010	DeLuca, James T., Patent No. US RE45,535 E, “Device for Removing a lodged mass” reissued June 2, 2015
1011	Brinkman, Sigrid, Patent No. DE 10 2017 115 283 A1, “Vorrichtung zum Entfernen von Partikeln aus Rachen und Atemwegen” issued January 10, 2019
1012	Takach, Stephan, Patent No. U.S. 5,609,149, “Anti-choke device” issued March 11, 1997
1013	Carver, Alan R., U.S. 2011/0152794 A1, “Throat obstruction dislodging device and method for its use” issued June 23, 2011
1014	Connor, Ryan, Patent App. Pub. No. US 2014/0276498 A1, “Vacuum cartridge with integrated valve” published September 18, 2014

1015	Culla, Ronald, Patent App. Pub. No. U.S. 2016/0174956 A1, “Medical retrieval systems and related methods” published June 23 ,2016
1016	Barbosa, Marcos, Patent App. Pub. No. U.S. 2011/0160683 A1, “Device for controlling and monitoring vacuum pressure in systems for the suction of biological secretions” published June 30, 2011
1017	Definition of “backing plate” – Marriam English dictionary
1018	Definition of “check valve” – Marriam English dictionary
1019	Tara Bryce, Vernay, “How to design the best check valve for your medical device” published August 10, 2021.
1020	Pay, Jr., U.S. Patent No. 7,533,696, “One-Way Medical Valve Aparatus” published May 19, 2009.
1021	Curriculum vitae of Carl Stamp

I. INTRODUCTION

Life Vac, LLC (“Petitioner”) respectfully requests institution of a post-grant review (“PGR”), pursuant to 35 U.S.C. §§ 321-329 and 37 C.F.R. § 42.200 *et seq.*, of Claims 1-17 of U.S. Patent No. 11,478,575 (“the ‘575 Patent”), Ex. 1001, which is assigned to DCSTAR, Inc. (“Patent Owner”). This Petition, supported by the accompanying Declaration of Carl Stamp, (“Stamp Declaration”), Ex. 1003, shows that, more likely than not, Claims 1-17 of the ‘575 Patent (“the Challenged Claims”) are unpatentable.

The ‘575 Patent relates to a removal device for removing an obstruction in a respiratory tract. *See* Ex. 1001, Technical Field. The ‘575 Patent issued on October 25, 2022, from U.S. patent application No. 17/393,249 (“the ’249 Application”), filed on August 3, 2021, and has an effective filing date for the Challenged Claims that is eligible for PGR.

The Challenged Claims are unpatentable for obviousness under 35 U.S.C. § 103 in view of Lih in view of Tarrats in further view of da Costa, and/or, anticipation under 35 U.S.C. § 102 in view of Lih. For the reasons set forth below, this Petition shows that, more likely than not, the Challenged Claims are anticipated by Lih and rendered obvious by Lih in view of Tarrats in further view of da Costa. Accordingly, Petitioner requests institution of a PGR and cancellation of Claims 1-17 of the ‘575 Patent.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(A)(1)

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

The real party-in-interest for this Petition is Life Vac, LLC, a limited liability corporation with its principal place of business at 120 Lake Ave S Suite 26, Nesconset, New York, 11767.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

Pursuant to 37 C.F.R. § 42.8(b)(2), Petitioner is unaware of any judicial or administrative matters that could be affected by a decision in this proceeding.

C. Lead and Back-up Counsel Under 37 C.F.R. § 42.8(b)(3)

Pursuant to 37 C.F.R. § 42.8(b)(3), lead counsel for this Petition is John van Loben Sels (Reg. No. 59,131), and back-up counsel for this Petition is Jeremy Hanika (Reg. No. 72,442), Petitioner has filed a power of attorney designating the above-identified counsel.

D. Service Information Under 37 C.F.R. § 42.8(b)(4)

Pursuant to 37 C.F.R. § 42.8(b)(4), service information for the Petition is as follows:

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III. ADDITIONAL REQUIREMENTS

A. Payment of Fees Under 37 C.F.R. § 42.15

Petitioner submits herewith the required fees in accordance with 37 C.F.R. §§ 42.203(a) and 42.15(b). Any additional fees required for this Petition may be deducted from deposit account 500373.

B. Timing Under 37 C.F.R. § 42.202

The ‘575 Patent issued on October 25, 2022. Pursuant to 37 C.F.R. § 42.202(a), a petition for PGR of a patent must be filed no later than nine months after the issue date of the patent. Accordingly, the deadline to file a petition for PGR of the ‘575 Patent is July 25, 2023; therefore, this Petition is timely.

C. Grounds for Standing Under 37 C.F.R. § 42.204(a)

Petitioner certifies that the ‘575 Patent is available for PGR. The ‘575 Patent issued on October 25, 2022, from an application filed on August 3, 2021. For the reasons discussed below, at least one claim of the ‘575 Patent has an effective filing date on or after March 16, 2013, making PGR available. *See* Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, §§ 3(n)(1)(A), 6(f)(2), 125 Stat. 284, 293, 311 (2011). Petitioner is not barred, nor estopped, from requesting post-grant review of any claims of the ‘575 Patent on the grounds identified herein.

IV. SUMMARY OF THE '575 PATENT

A. The '575 Patent Disclosure

The '575 Patent relates to a device for removing an obstruction from a respiratory tract. Ex. 1001, Technical Field. The '575 Patent describes in FIG. 1 below that the “removal device comprises a collapsible gasbag 3, a connector 2 and a face mask 1 which are sequentially connected.” Ex. 1001 at 6:3-7.

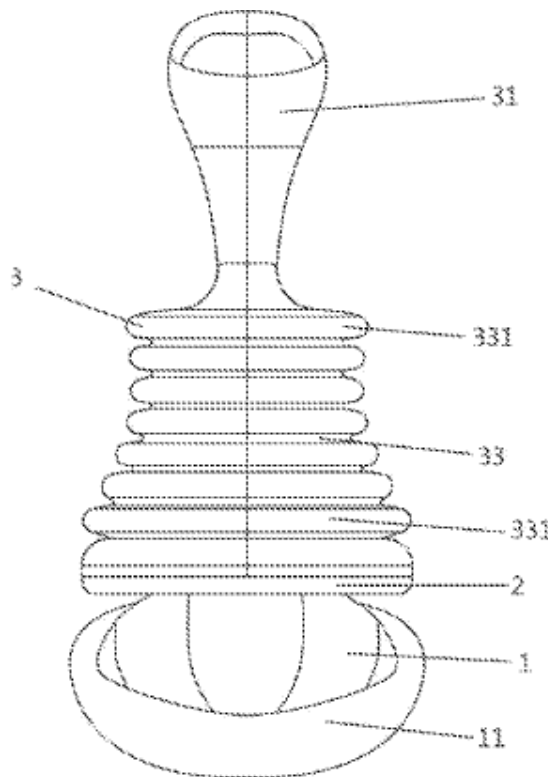


Fig. 1

The '575 Patent further includes FIG. 3 below and explains the functional features of the device, “that in the process of compressing the collapsible gasbag **3**, gas flows from the inside of the collapsible gasbag **3** to the outside of the collapsible gasbag **3** at the second check valve **22**, and the first check valve **21** is tightly closed, that is, gas in the gas storage cavity may be discharged to the outside through the second check valve **22**, but may not enter the respiratory tract of the patient through the first check valve **21**.” Ex. 1001 at 8:6-13.

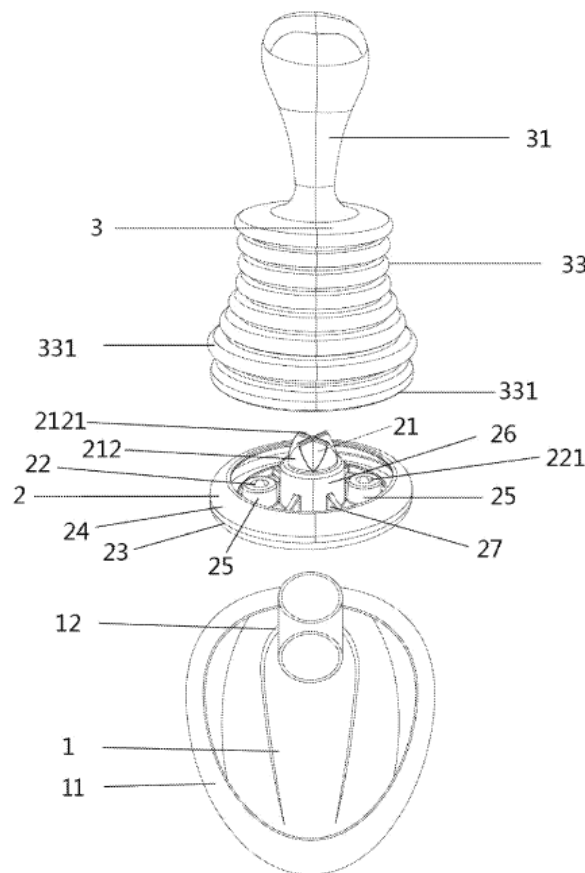


Fig. 3

B. The Challenged Claims of the ‘575 Patent

The ‘575 Patent contains seventeen claims, including three independent claims - Claims 1, 3, and 9. Petitioner challenges all claims of the ‘575 Patent. The recited elements of Claims 1-17 are enumerated and set forth in Tables 1-17 below.

Table 1: Elements of Claim 1	
<i>Ref. No.</i>	<i>Element</i>
1.1	A device comprising a collapsible gasbag;
1.2	a connector;
1.3	a facemask;
1.4	which are sequentially connected;
1.5	wherein the collapsible gasbag is internally provided with a gas storage cavity;
1.6	a top of the collapsible gasbag is sealed;
1.7	a bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity;
1.8	an upper side of the connector is hermetically connected to the opening;
1.9	the connector is provided with a first check valve;
1.10	the connector is provided with a second check valve;
1.11	a first gas outlet end of the first check valve is in communication with the gas storage cavity;

1.12	a second gas inlet end of the second check valve is in communication with the gas storage cavity;
1.13	an upper side of the face mask is hermetically connected to a first gas inlet end of the first check valve;
1.14	a lower side of the face mask is provided with a flexible annular pad configured to attach to a face;
1.15	the connector is provided with a bottom plate;
1.16	the first check valve and the second check valve are arranged on the bottom plate;
1.17	The first check valve and the second check valve allow gas flow to pass in opposite directions.

Table 2: Elements of Claim 2	
<i>Ref. No.</i>	<i>Element</i>
2.1	The device according to claim 1, wherein the connector is provided with a plurality of second check valves;
2.2	the plurality of second check valves encircling the first check valve.

Table 1: Elements of Claim 3	
<i>Ref. No.</i>	<i>Element</i>
3.1	A device comprising a collapsible gasbag;
3.2	a connector;
3.3	a facemask;
3.4	which are sequentially connected;

3.5	wherein the collapsible gasbag is internally provided with a gas storage cavity;
3.6	a top of the collapsible gasbag is sealed;
3.7	a bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity;
3.8	an upper side of the connector is hermetically connected to the opening;
3.9	the connector is provided with a first check valve;
3.10	the connector is provided with a second check valve;
3.11	a first gas outlet end of the first check valve is in communication with the gas storage cavity;
3.12	a second gas inlet end of the second check valve is in communication with the gas storage cavity;
3.13	an upper side of the face mask is hermetically connected to a first gas inlet end of the first check valve;
3.14	a lower side of the face mask is provided with a flexible annular pad configured to attach to a face;
3.15	the connector is provided with a bottom plate;
3.16	the bottom plate being provided with a central cylinder which is vertically through;
3.17	the first check valve is of a hollowed structure made from an elastic material, and comprises a deformed portion and a first base portion which are connected to each other;
3.18	the first gas outlet end is composed of at least three first slits provided at a top end of the deformed portion;
3.19	one end, extended toward the center, of the at least three first slits intersect at the same point, and the first gas inlet end is a first vent hole provided in the middle of the first base portion;

3.20	the first base portion extends into the central cylinder, and an outer side of the first base portion is hermetically connected to an inner side of the central cylinder;
3.21	a lower end of the central cylinder is hermetically connected to an upper side of the face mask;
3.22	the deformation portion is exposed out of the central cylinder and extends into the gas storage cavity;
3.23	when gas flows into the deformation portion through the first vent hole, pressure in the deformation portion gradually increases such that the deformation portion is deformed by expansion, so that the at least three first slits are opened, thereby allowing the gas on the side of the first vent hole to flow into the gas storage cavity;
3.24	and when the gas flowing into the deformation portion through the first vent hole is reduced or disappears, pressure in the deformation portion is reduced and even reduced to zero, and the deformation portion shrinks under its own elasticity such that the three first slits are closed, thereby preventing the gas in the gas storage cavity from flowing out of the first vent hole.

Table 4: Elements of Claim 4

<i>Ref. No.</i>	<i>Element</i>
4.1	The removal device for removing the obstruction in the respiratory tract according to claim 3, wherein the upper side of the face mask is provided with a connecting cylinder which is vertically through in the middle, the connecting cylinder being inserted into the inner side of the lower end of the central cylinder from bottom to top, and an outer side of the connecting cylinder being hermetically connected to the inner side of the central cylinder.

Table 5: Elements of Claim 5

<i>Ref. No.</i>	<i>Element</i>
5.1	The removal device for removing the obstruction in the respiratory tract according to claim 3, wherein an upper side of the bottom plate is provided with a first peripheral side wall encircling the central cylinder, an upper end of the first peripheral side wall shrinking inward to form a stop edge;
5.2	the collapsible gasbag is provided with a second peripheral side wall made from an elastic material, the second peripheral side wall being provided with a plurality of layers of outwardly convex folds;
5.3	and the first peripheral side wall covers the lowermost fold of the second peripheral side wall, and the stop edge covers an upper side of the lowermost fold.

Table 6: Elements of Claim 6

<i>Ref. No.</i>	<i>Element</i>
6.1	The removal device for removing the obstruction in the respiratory tract according to claim 5, wherein a plurality of reinforcement strips are arranged on the upper side of the bottom plate, two opposite ends of each reinforcement strip being separately connected the inner side of the first peripheral side wall and the outer side of the central cylinder.

Table 7: Elements of Claim 7

<i>Ref. No.</i>	<i>Element</i>
7.1	The removal device for removing the obstruction in the respiratory tract according to claim 1, wherein a top wall of the collapsible gasbag is connected to a handle for holding.

Table 8: Elements of Claim 8

<i>Ref. No.</i>	<i>Element</i>
8.1	The removal device for removing the obstruction in the respiratory tract according to claim 3, wherein four first slits are provided, the four first slits being in the shape of a cross.

Table 1: Elements of Claim 9	
<i>Ref. No.</i>	<i>Element</i>
9.1	A device comprising a collapsible gasbag;
9.2	a connector;
9.3	a facemask;
9.4	which are sequentially connected;
9.5	wherein the collapsible gasbag is internally provided with a gas storage cavity;
9.6	a top of the collapsible gasbag is sealed;
9.7	a bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity;
9.8	an upper side of the connector is hermetically connected to the opening;
9.9	the connector is provided with a first check valve;
9.10	the connector is provided with a second check valve;
9.11	a first gas outlet end of the first check valve is in communication with the gas storage cavity;
9.12	a second gas inlet end of the second check valve is in communication with the gas storage cavity;

9.13	an upper side of the face mask is hermetically connected to a first gas inlet end of the first check valve;
9.14	a lower side of the face mask is provided with a flexible annular pad configures to attach to a face;
9.15	the connector is provided with a bottom plate;
9.16	the bottom plate being provided with a central cylinder which is vertically through;
9.17	the second check valve is a duckbill valve, the second check valve comprises a duckbill portion and a second base portion which are connected to each other, the second gas inlet end is a second vent hole provided in the middle of the second base portion, and the second gas outlet end is a second slit provided in the duckbill portion;
9.18	an outer side of the second base portion is hermetically connected to an inner side of the peripheral cylinder, and the second vent hole of the second base portion is in communication with the gas storage cavity;
9.19	the duckbill portion extends into the peripheral cylinder, and a lower end of the peripheral cylinder is in communication with the outside;
9.20	when gas flows into the duckbill portion through the second vent hole, pressure in the duckbill portion gradually increases such that the duckbill portion is deformed by expansion, so that the second slit is opened, thereby allowing gas in the gas storage cavity to be discharged to the outside;
9.21	and when gas flowing into the duckbill portion through the second vent hole, pressure in the deformation portion is reduced and even reduced to zero, and the duckbill portion shrinks under its own elasticity such that the second slit is closed, thereby preventing outside gas from flowing into the gas storage cavity through the second vent hole.

Table 9: Elements of Claim 10

<i>Ref. No.</i>	<i>Element</i>
10.1	The removal device for removing the obstruction in the respiratory tract according to claim 1, wherein the connector is an integrally formed member made from an elastic material.

Table 10: Elements of Claim 11

<i>Ref. No.</i>	<i>Element</i>
11.1	The removal device for removing the obstruction in the respiratory tract according to claim 1, wherein the face mask, the connector and the collapsible gasbag are integral.

Table 11: Elements of Claim 12

<i>Ref. No.</i>	<i>Element</i>
12.1	The removal device for removing the obstruction in the respiratory tract according to claim 1, wherein the collapsible gasbag is not provided with a vent hole which is in direct communication with the outside.

Table 12: Elements of Claim 13

<i>Ref. No.</i>	<i>Element</i>
13.1	A connector for a removal device, the connector comprising a bottom plate, and a first check valve and a second check valve which are arranged on the bottom plate, wherein the first check valve and the second check valve allow gas flow to pass in opposite directions; and the connector is an integrally formed member made from an elastic material.

Table 14: Elements of Claim 14

<i>Ref. No.</i>	<i>Element</i>
14.1	The connector according to claim 13, wherein the connector is provided with one first check valve and a plurality of second check valves, the plurality of second check valves encircling the first check valve.

Table 15: Elements of Claim 15

<i>Ref. No.</i>	<i>Element</i>
15.1	The connector according to claim 14, wherein the bottom plate is provided with a central cylinder which is vertically through; the first check valve is of a hollowed structure and comprises a deformed portion and a first base portion which are connected to each other, and a first gas outlet end and a second vent hole of the first check valve are provided in the deformed portion and the first base portion respectively;
15.2	the first gas outlet end is composed of at least three first slits provided at a top end of the deformed portion, one ends, extending toward the center, of the at least three first slits intersecting at the same point; and the first gas inlet end is a first vent hole provided in the middle of the first base portion.

Table 16: Elements of Claim 16

<i>Ref. No.</i>	<i>Element</i>
16.1	The connector according to claim 15, wherein the second check valve is a duckbill valve, the second check valve comprises a duckbill portion and a second base portion which are connected to each other, and a second gas outlet end and a second gas inlet end of the second check valve are provided in the duckbill portion and the second base portion respectively;
16.2	the second gas inlet end is a second vent hole provided in the middle of the second base portion, and the second gas outlet end is a second slit

	provided in the duckbill portion; and the duckbill portion and the deformed portion separately face two opposite sides of the bottom plate.
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Table 16: Elements of Claim 17	
<i>Ref. No.</i>	<i>Element</i>
17.1	The connector according to claim 15, wherein the removal device is configured to remove an obstruction in a respiratory tract, the removal device comprising a collapsible gasbag, the connector and a face mask which are sequentially connected,
17.2	wherein the collapsible gasbag is internally provided with a gas storage cavity, the top of the collapsible gasbag is sealed, and the bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity;
17.3	an upper side of the connector is hermetically connected to the opening; the first gas outlet end of the first check valve is in communication with the gas storage cavity, a second gas inlet end of the second check valve is in communication with the gas storage cavity, and a second gas outlet end of the second check valve is in communication with the outside;
17.4	an upper side of the face mask is hermetically connected to the first gas inlet end of the first check valve, and a lower side of the face mask is provided with a flexible annular pad configured to attach to a face.

C. Prosecution History of the ‘575 Patent:

Patent Owner filed the ‘249 Application on August 3, 2021. Ex. 1002 at P000001. The initial claims of the ‘249 application filed August 3, 2021, included one set of device claims (Claims 1-17) directed to a device for removing an obstruction in a respiratory tract. *Id.* at P000025-P0000030. On

the same day, Patent Owner amended Claim 17 to remove multiple dependencies. *Id.* at P000035-P0000041.

On March 2, 2022, the Examiner issued a non-final office action rejecting Claims 1-3, 5, and 7-17 under pre-AIA 35 U.S.C. § 102(e) as anticipated by IDEAR anti-choke device listed for sale on Amazon since April 28, 2021 (“IDEAR”); rejecting Claim 4 under pre-AIA 35 U.S.C. § 103(a) as being unpatentable in view of 2015/019,0158 (Lih); and rejecting Claim 6 under pre-AIA 35 U.S.C. § 103(a) as being unpatentable in view of 2011/019,7892 (Koledin). *Id.* at P000059-P000070. The Examiner cited ten references that did not include U.S. Patent No. 3,939,830 (da Costa). *Id.* at P000071.

On May 19, 2022, Patent Owner filed a response to the non-final office action of March 2, 2022, persuading the Examiner to disqualify IDEAR as prior art pursuant to AIA 35 U.S.C. § 102(a)(1) by filing a declaration disclosing that the IDEAR prior art reference was disclosed one year or less before the effective filing date by the inventor. *Id.* at P000080-P000088, P000091.

On June 8, 2022, the Examiner issued a non-final office action disqualifying the IDEAR reference and rejecting Claims 1, 7, and 10-12 under AIA 35 U.S.C. § 103(a) as being unpatentable over Lih in view of Patent No.

U.S. 4,971,053 (Tarrats); Claim 2 as being unpatentable over Lih in view of Tarrats as applied to Claim 1 above, and further in view of Patent No. U.S. 7,351,245, (Rozinsky). The Examiner allowed Claims 13-17, and objected to Claims 3-6 and 8-9 as being dependent upon a rejected base claim. *Id.* at P000092-P000098.

On July 20, 2022, the Patent Owner filed an amendment to Claim 1; rewrote Claims 3 and 9 in independent form to include the features of Claim 1; and argued that Lih in view of Tarrats and Rozinsky did not teach or suggest a connector having two check valves arranged on the bottom plate. *Id.* at P000117-P000126. Patent Owner filed an Information Disclosure Statement that included U.S. Patent No. 4,196,728 (Granite), U.S. Patent No. 9,932,936, (Klonis), and U.S. Patent No. 10,271,998 (LeVon), but again, did not cite da Costa. *Id.* at P000128-P000130, P000152.

On August 25, 2022, the Examiner issued a Notice of Allowability and agreed that Lih in view of Tarrats and Rozinsky did not disclose two check valves arranged on the bottom plate and issued a Notice of Allowance and proposed Examiner's Amendment to correct minor formality errors. *Id.* at P000140-P000144.

On September 23, 2022, the Examiner issued a Corrected Notice of Allowability. *Id.* at P000173-P000178.

On October 5, 2022, an Issue Notification was sent indicating that the ‘249 Application would be issued on October 25, 2022, as U.S. Patent No. 11,478,575. *Id.* at P000179.

V. STATEMENT OF THE RELIEF REQUESTED AND THE REASONS THEREFOR UNDER 37 C.F.R. § 42.22(A) AND 37 C.F.R. § 42.204(B)

Petitioner respectfully requests post-grant review, and cancellation, of Claims 1-17 of the ‘575 Patent under 35 U.S.C. § 321 based on the following unpatentability grounds:

Ground	Statute	Challenge	Claims
1	35 U.S.C. § 103	Obviousness by Lih in view of U.S. 4,971,053 (Tarrats) in further view of U.S. 3,939,830 (da Costa)	1-17
Ground	Statute	Challenge	Claims
2	35 U.S.C. § 102	Anticipation by U.S. 10,052,115 (“Lih”)	1-17

A. Person of Ordinary Skill in the Art (“POSA”)

A POSA would have: (1) a mechanical or biomedical engineer with at least 5 years of experience in designing or developing medical devices in general, or at least 2 years of experience in designing devices associated with maintaining or clearing the airway of humans, who would, where necessary or desired, work or consult with a medical clinician such as a respiratory therapist, emergency medical technician (EMT) or physician, to develop such medical

devices, or (2) a medical clinician such as a respiratory therapist, EMT or physician with experience designing or developing medical devices in the respiratory field, who would, where necessary or desired, work or consult with an engineer, to develop such medical devices. Ex. 1003 at 10.

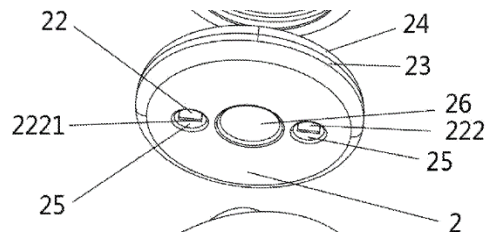
B. Claim Construction (37 C.F.R. § 42.204(b)(3))

Claims in PGR petitions filed after November 13, 2018, are construed using the same standard as in district court. *See* 83 Fed. Reg. 51340 (Oct. 11, 2018). *Cupp Computing AS v. Trend Micro Inc.*, 53 F.4th 1376, 1380 (Fed. Cir. 2022) citing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*); *Polaris Innovations Ltd. v. Brent*, 48 F.4th 1365, 1372 n.3 (Fed. Cir. 2022). A claim construction analysis begins and remains centered on the claim language itself. *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004). Claims are construed in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *Id.* at 1312-13; citing 37 C.F.R. § 42.200(b). Claim terms are generally given their “ordinary and customary meaning,” that is, “the meaning that the term would have to a [POSA] in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*). The person of ordinary skill in the art is deemed

to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification. *Id.* Therefore, claims “must be read in view of the specification, of which they are a part.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995) (en banc), *aff’d*, 517 U.S. 370 (1996). The specification may define claim terms by implication such that the meaning may be ascertained by reading the patent documents. *Phillips*, 415 F.3d at 1321. However, extrinsic evidence is generally considered less reliable than the patent and its prosecution history in determining how to read the claim terms. *Id.* at 1319. The specification is generally the single best guide to the meaning of a disputed term, and usually, it is dispositive. *Id.* at 1315. Petitioner submits that any claim terms not specifically discussed in this Section should be given their ordinary and customary meaning.

1. “**Bottom Plate**”

The term “bottom plate” as used in the Challenged Claims should be given its plain and ordinary meaning, and while a definition is not provided in the Patent Owner’s drawings, the general features are shown identified as **23** in Fig. 2 of the ‘575 Patent:



Taking the plain and ordinary meaning of the words bottom and plate, we take this to mean “a smooth flat thin piece of material” (plate) that is “the underside of something” (bottom). *See* Ex. 1017. This definition is consistent with the ordinary meaning of “plate” and “bottom” when used together. *See* Merriam-Webster’s Online Dictionary (“Bottom Plate: a smooth flat thin piece of material”; and “Bottom: the underside of something”.) (Accessible at www.merriam-webster.com/dictionary/plate and www.merriam-webster.com/dictionary/bottom).

2. **“Check Valve”**

The term “check valve” as used in the Challenged Claims should given its plain and ordinary meaning, as used in the ‘575 Patent to “allow gas flow”. Ex. 1001 at p. 2, ln 48; p. 3, ln. 51 56, p. 4, ln. 15, 54; p. 7, ln. 6-12, 40-45; p. 8, ln. 7, 20; p. 10, ln. 17; p. 11, ln. 3; 1p. 12, 1-17, 39. This is consistent with the plain and ordinary meaning to mean “a valve that permits flow in one direction only”. *See* Ex. 1018 at 1. This definition is consistent with the ordinary meaning of “check valve.” *See* Merriam-Webster’s Online Dictionary (“Check Valve: a valve that permits flow in one direction only.”) (Accessible at [www.merriam-webster.com/dictionary/check valve](http://www.merriam-webster.com/dictionary/check%20valve)).

VI. THE ‘575 PATENT IS PGR ELIGIBLE

If one or more claims of the ‘575 Patent is not entitled to an effective filing date earlier than March 16, 2013, then PGR is available. *See* AIA §§ 3(n)(1)(A), 6(f)(2), 125 Stat. at 293, 311. The ‘575 Patent was filed on August 3, 2021, after March 16, 2013—the effective date of the AIA; thus, the PGR provisions of the AIA apply to the subject application. *See* AIA, § 3(n)(1).

VII. THE CHALLENGED CLAIMS ARE UNPATENTABLE AND SHOULD BE CANCELLED

For the reasons detailed *infra*, Challenged Claims 1-17 are more likely than not unpatentable because they are rendered obvious by Lih in view of Tarrats in further view of da Costa, as well as anticipated by Lih wherein the described features of the Challenged Claims are functionally equivalent and inherent to the features disclosed of Lih.

A. The Challenged Claims Are Unpatentable as Anticipated Under 35 U.S.C. § 103 in view of Lih in view of Tarrats in view of da Costa

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations

including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). “[O]ne or more factors may predominate.” *Id.* “The motivation-to-combine analysis is a flexible one.” *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1377 (Fed. Cir. 2023). “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR*, 550 U.S. at 420. And “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 421. So, “in many cases[,] a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420. Similarly, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the

technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

A POSA also would find that the general knowledge of one skilled in the art suffices to bridge any gaps between Lih and the Challenged Claims. Ex. 1003 at 10-11. Accordingly, it is more likely than not that Claims 1-17 of the ‘575 Patent are unpatentable as obvious under 35 U.S.C. § 103 by Lih in view of Tarrats in view of da Costa.

During prosecution of the ‘575 patent, the Examiner rejected Challenged Claims 1, 7 and 10-12 as being obvious by Lih in view of Tarrats. Ex. 1002 at P000094-P000098. In response, the Patent Owner amended Claims 1, 3, and 9 by adding a bottom plate comprised of two check valves that permit air to flow in opposite directions. Ex. 1002 at P000117-P000126. The Examiner allowed the patent to issue stating in the Notice of Allowance that while Lih and Tarrats contain every element of Claims 1, 3, and 9 of the ‘575 patent, “Lih and Tarrats fail to disclose a bottom plate and the first check valve and the second check valve are arranged on the bottom plate.” Ex. 1002 at P000140-P000144. Albeit, the Patent Owner, nor the Examiner, failed to discovery or cite da Costa at any point during the prosecution, neither in the applicants IDS, nor in the references cited by the Examiner. Ex. 1002 at P000071, P000152.

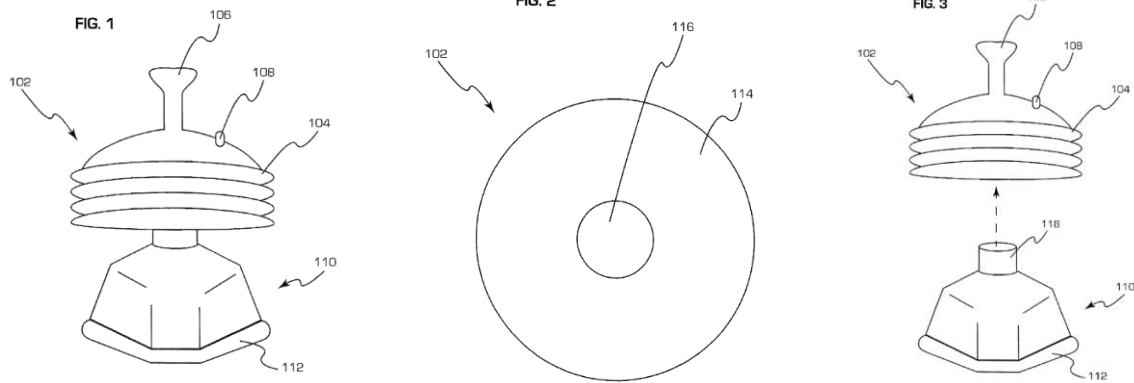
1. Prior Art Disclosure (Lih)

As stated above, and confirmed by the Examiner in the Notice of Allowability, Lih is the “closest prior art”, as stated below:

Lih discloses a removal device for removing an obstruction in a respiratory tract (Abstract, lines 1-2), the removal device comprising a collapsible gasbag (bellow; 102, fig 1) a connector (118, fig 3) and a face mask (110, fig 3) and a check valve (108, fig 3). Ex. 1002 at P000176.

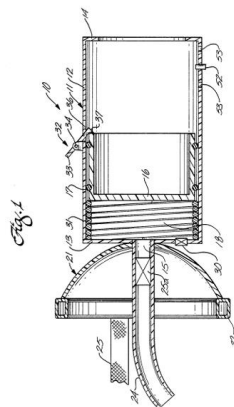
In the Office Action date March 2, 2022, the Examiner provides additional detail, as follows:

Lih discloses a removal device for removing an obstruction in a respiratory tract (Abstract, lines 1-2), the removal device comprising a collapsible gasbag (bellow; 102, fig 1) a connector (118, fig 3) and a face mask (110, fig 3) which are sequentially connected (see the device is one piece when all together), wherein the collapsible gasbag is internally provided with a gas storage cavity (inner space of bellow), the top of the collapsible gasbag is sealed (bag is closed with no openings on top), and the bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity (116, fig 2); an upper side of the connector is hermetically connected to the opening (see [0034], lines 1-6), and a check valve (108, fig 3); a gas inlet end of the second check valve (side of the valve attached to the bellow) is in communication with the gas storage cavity and a gas outlet end of the second check valve is in communication with the outside (see [0039], lines 3-6); and a lower side of the face mask is provided with a flexible annular pad (seal; 112, fig 3) attached to a face (see [0033], lines 1-5), but lacks a first check valve on the connector.”. Ex. 1002 at P000094-P000095.



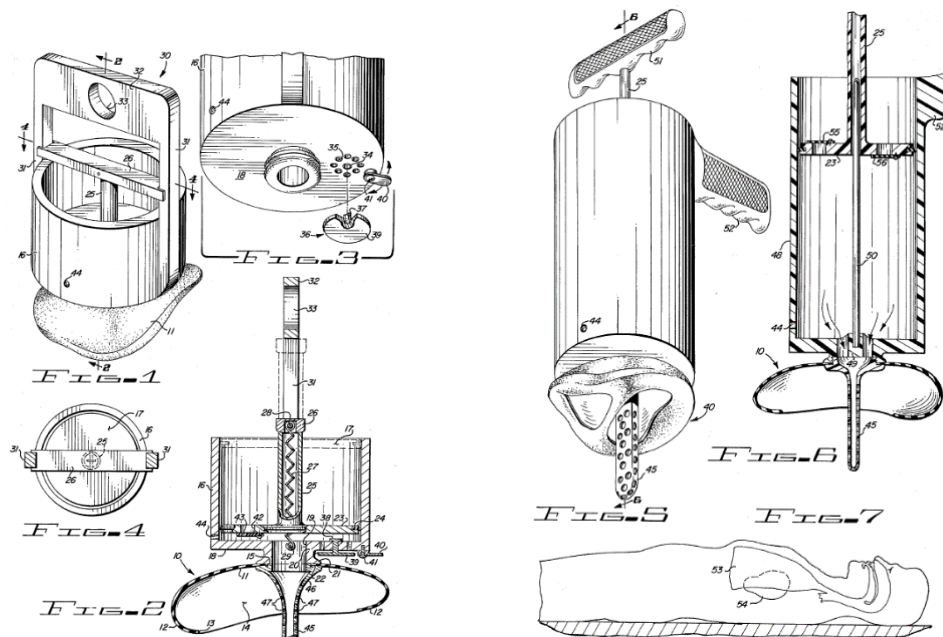
2. Prior Art Disclosure (Tarrats)

The Examiner also described Tarrats as teaching “an apparatus to remove an obstruction (10, fig I; Abstract lines 1-2) with a connector (15, fig 1) provided with a first check valve (25a, fig 1; see col. 3, lines 36-38) a first gas outlet end of the first check valve is in communication with the gas storage cavity and an upper side of the face mask is hermetically connected to a first gas inlet end of the first check valve (see location of the check valve in fig I; also note the valve prevents air into the victims mouth therefore the valve inlet is on the face mask side and the outlet is on the bellow side).” Ex. 1002 at P000142.



3. Prior Art Disclosure (da Costa)

The reference, da Costa, not cited by the Examiner, teaches a “manually operable dechoking and resuscitation device comprised of a piston in the form of a plate or disc is reciprocal in the cylinder provided with pressure and relief valves.” Ex. 1005 at FIG. 6:55,56.



Da Costa further teaches that the two valves allow for air to pass in opposite directions comprised of “a safety valve controlling the passage of air through said orifice which opens when a safe limit of suction is reached on an outstroke of said piston.” Ex. 1005 at 8:21-24.

Da Costa further teaches, “a one way check valve in said end wall offset from said central opening which when open permits passage of air from the interior of said cylinder to the exterior thereof and which when closed inhibits passage of

air through the end wall to the interior of said cylinder”. da Costa 1005 at 7:11-16.

Da Costa explains the reason for the safety and pressure check valves:

On the instroke or piston **23** lungs **53** are filled to the limit of their capacity by air under pressure. Thus the lungs are expanded against heart 54 to compress the latter. On the outstroke of piston **23** the lungs contract to relieve the pressure on the heart to permit it to expand to its normal condition. This alternate compression and expansion of heart 54 causes the latter to perform its pumping function to initiate blood circulation. Under many conditions the circulation will be sufficient to sustain life. Ex. 1005 at 7:43-53.

4. The Challenged Claims are Obvious by Lih in View of Tarrats in view of da Costa

Adopting the Examiners arguments, Petitioner adds a prior art reference that was not considered by the Examiner. Ex. 1005. The Examiner stated in the Notice of Allowance that while Lih in view of Tarrats was obvious as to Claims 1, 7, and 10-12, wherein each element was present in the obvious combination of Lih and Tarrats, “However, Lih and Tarrats fail to disclose a bottom plate and the first check valve and the second check valve are arranged on the bottom plate.” Ex. 1002 at P000177. The Examiner did not examine the ‘575 patent in view of da Costa while not citing da Costa in the Patent Owner’s Information Disclosure Statement and was not included as one of the Examiner’s references considered. *Id.* at P000071, P000152.

With respect to the Challenged Claims, Lih teaches a removal device for removing an obstruction in a respiratory tract comprising a sequentially connected collapsible gasbag, a connector, a face mask, and a check valve. *Id.* at P000176.

With respect to the Challenged Claims, Tarrats teaches an apparatus to remove an obstruction with a connector provided with a first check valve a first gas outlet end of the first check valve that prevents air into the victim's mouth with the valve inlet on the face mask side and the outlet on the bellow side in communication with the gas storage cavity location of the check valve. *Id.* at P000176-P000177.

With respect to Claim 1, da Costa teaches two check valves (for safety and pressure) that allow air to flow in opposite directions. Ex. 1005 at 6:31-32 ("Piston 23 of FIG. 6 is provided with pressure and relief valves 55 and 56."). These two check valves are located on a plate at the bottom of a piston that connects to an air chamber taught by da Costa. Additionally, da Costa is in the same field of art, a reference that would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention (so to avoid pushing the obstruction farther into the user's airway while in use and to initiate blood circulation). *Id.* Therefore, Claims 1, 7, and 10-12 should be cancelled as obvious by Lih in view of Tarrats in view of da Costa.

As stated by the Examiner, with respect to claim 7, the modified Lih shows a top wall of the collapsible gasbag connected to a handle for holding. Ex. 1002 at P000096.

As stated by the Examiner, with respect to claim 10, the modified Lih shows the connector is an integrally formed member made from an elastic material (collapsible bag making the device elastic). *Id.*

As stated by the Examiner, with respect to claim 11, the modified Lih shows the face mask, the connector and the collapsible gasbag are integral (see all pieces together in figure). *Id.*

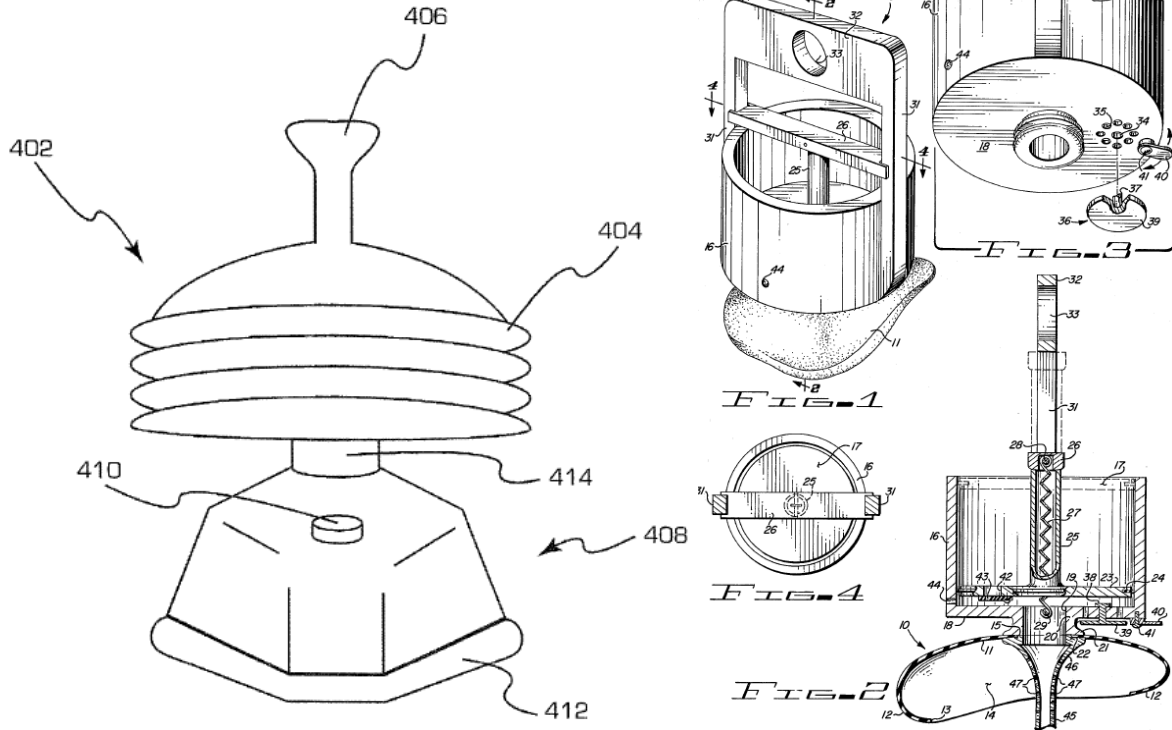
As stated by the Examiner, with respect to claim 12, the modified Lih shows the collapsible gasbag is not provided with a vent hole which is in direct communication with the outside; note the relief valve is the only communication the gasbag has with the outside. *Id.*

With respect to Claim 2, the modified Lih shows the connector is provided with a second check valve, but lacks a plurality of second check valves. However, da Costa teaches an apparatus for removing an obstruction with a plurality of check valves. Ex. 1004 at Fig. 3 and 6. Therefore, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to have modified the connector of the modified Lih to include multiple check valves in an encircling manner as taught by da Costa so as to evenly remove

air from the cavity when the bellow is depressed (and to stimulate blood circulation).

With respect to Claim 3-6, and 8, the '575 patent lists obvious features that are inherent to check valves and obvious to one of ordinary skill in the art before the effective filing date of the claimed invention. For example, check valves are known to be made from elastic material (3.17), contain numerous gas outlets, including outlets that have three slits (3.18), and reinforcement strips (6.1), with slits in the shape of a cross (8.1) that intersect at the base with a whole in the middle (3.19), and all the references are hermetically sealed (3.20) to a face mask (3.21) with a deformation portion exposed out of the central cylinder (3.22), and all the reference have central cylinders that all for gas to flow through at least three slits that permit the deformation portion expands to allow gas to flow into the gas cavity (3.23), through pressure changes (3.24), as that is how check valves inherently work.

We need to look no further than da Costa to see that a variety of check valves can be used in view of Lih's flexible bellows - an obvious combination to one of ordinary skill in the art at the time of the '249 Application.



With respect to Claims 9 and 16, duckbill valves are one type of check valve that are commonly known to one of ordinary skill in the art, and the '575 Patent merely recites inherent features that are known to be inherent to duckbill valves. Ex. 1003 at 14, Ex. 1019, and Ex. 1020.

With respect to Claims 13, Lih teaches the use of a polymer to mold the connector. Ex. 1004 at 2:38-40.

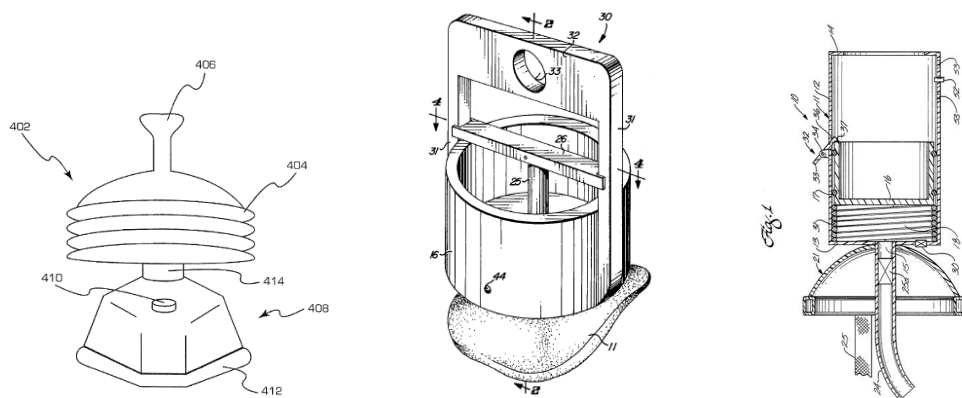
With respect to Claims 14, da Costa teaches a plurality of second check valves encircling the first check valve. Ex. 1005 at Fig. 3:34, 35. Furthermore, it would have been obvious to one of ordinary skill in the art to arrange a single check valve in the center of additional check valves.

With respect to Claims 15, Lih teaches deformed base portions connected to gas outlets and vent holds (15.1) and it would be obvious to a person of ordinary skill in the art to compose the gas outlet with at least three first slits at a top end of the deformed portion with a gas inlet in the middle of the base portion (15.2). Ex. 1004 at FIG. 2:116; see also FIG. 4:410. Da Costa also teaches a gas outlet with at least three first slits at a top end of the deformed portion with a gas inlet in the middle of the base portion. Ex. 1005 at FIG. 3:15; see also FIG. 5-6:45.

With respect to Claim 16, Lih teaches the use of a polymer to mold the connector. Ex. 1004 at 8:56-59.

With respect to Claim 17, Lih teaches an annular pad in the facemask. Ex. 1004 at FIG. 4:412. da Costa also teaches an annular pad in the face mask. Ex. 1005, FIG. 1-2, 11, see also FIG. 5-6. Furthermore, Tarrats also teaches an annular pad in the face mask, where it would have been obvious to a POSA to use a polymer to shape the annular pad. Ex. 1006, FIG. 1.

FIG. 4



B. The Challenged Claims Are Unpatentable as Anticipated Under 35 U.S.C. § 102 by Lih.

Anticipation requires that “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.’” *Id.* Moreover, to anticipate, a prior art reference must “disclose[] within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). Albeit, a prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference. *Cont’l Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991).

To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *Id.*

Additionally, under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.

MEHL/Biophile Int'l Corp. v. Milgraum, 192 F.3d 1362, 1365 (Fed. Cir. 1999)
(citation omitted); *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349–50 (Fed.
Cir. 2002).

1. Prior Art Disclosure (Lih)

Because the Challenged Claims of the '575 Patent are not entitled to an effective filing date earlier than August 3, 2021 (*see supra* Section VI. A-C), Lih is prior art under 35 U.S.C. § 102(a)(2).

Lih teaches “a removal device for removing an obstruction in a respiratory tract (Abstract, lines 1-2), the removal device comprising a collapsible gasbag (bellow; 102, fig 1) a connector (118, fig 3) and a face mask (110, fig 3) and at least one check valve.” Ex. 1003 a Fig 1: 102, Fig. 3: 110 and 118.

Lih further teaches “at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose.” Ex. 1002 at 53-57.

Lih does not limit the device to only one check valve disclosing in Claim 1, “wherein the at least one relief valve is disposed on at least one of the bellow assembly and the facemask.”. Ex. 1004 at 7, ln. 50-51.

2. The Challenged Claims Are Anticipated by Lih

The table below summarizes how each and every element of the Challenged Claims are disclosed expressly or inherently in Lih, which therefore anticipates Claims 1-17 of the '575 Patent.

Ref. No.	Claim 1 Element	Prior Art Disclosure (Lih) Ex. 1004
1.1	A removal device for removing an obstruction in a respiratory tract, the removal device comprising a collapsible gasbag;	A choking intervention device, comprising: a bellows assembly configured to clear an object obstructing a breathing passage of a choking victim comprising: a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
1.2	a connector;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
1.3	a facemask;	a facemask coupled to the base of the bellows and configured to enclose the choking victim's mouth and nose;
1.4	which are sequentially connected;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of

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		the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
1.5	wherein the collapsible gasbag is internally provided with a gas storage cavity;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
1.6	a top of the collapsible gasbag is sealed;	When the connector 414 is inserted and slidingly seated in the opening of the base of the bellows, a substantially airtight seal is formed between the connector 414 and the base 114 of the bellows, thereby sealingly unifying the bellows assembly 402 with the facemask 408.
1.7	a bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
1.8	an upper side of the connector is hermetically connected to the opening;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidingly insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
1.9	the connector is provided with a first check valve;	In one embodiment the relief valve 108 is positioned [] on a base 114 of the bellows 104 . In one example, the relief valve is positioned on the connector 414 .

1.10	the connector is provided with a second check valve;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded
1.11	a first gas outlet end of the first check valve is in communication with the gas storage cavity;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded
1.12	a second gas inlet end of the second check valve is in communication with the gas storage cavity;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded
1.13	an upper side of the face mask is hermetically connected to a first gas inlet end of the first check valve;	wherein the at least one relief valve is disposed on at least one of the bellows assembly, and the facemask.
1.14	a lower side of the face mask is provided with a flexible annular pad configured to attach to a face;	a facemask coupled to the base of the bellows and configured to enclose the choking victim's mouth and nose;
1.15	the connector is provided with a bottom plate;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly and dimensioned to be attached to a facemask via a facemask connector;

1.16	the first check valve and the second check valve are arranged on the bottom plate;	In various implementations, the relief valve 108 is positioned on [] a base 114 of the bellows 104 .
1.17	the first check valve and the second check valve allow gas flow to pass in opposite directions.	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded; [an inherent function of check valves is to permit gas to flow in one directions]

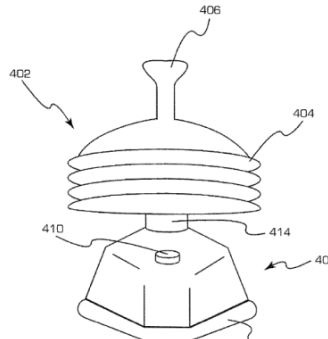
Ref. No.	Claim 2 Element	Prior Art Disclosure (Lih) Ex. 1004
2.1	The device according to claim 1, wherein the connector is provided with a plurality of second check valves;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded; [a plurality of check valves is functionally equivalent to one or more check valves]
2.2	the plurality of second check valves encircling the first check valve.	Thus the relief valve 108 may be positioned at any suitable location on the bellows assembly. [the arrangement of check valves is functionally equivalent to one or more check valves]

Ref. No.	Claim 3 Element	Prior Art Disclosure (Lih) Ex. 1004
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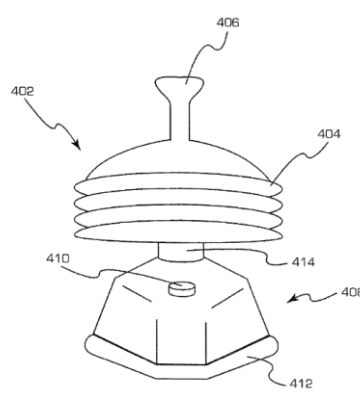
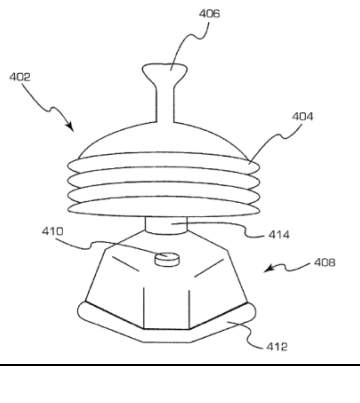
3.1	A removal device for removing an obstruction in a respiratory tract, the removal device comprising a collapsible gasbag;	A choking intervention device, comprising: a bellows assembly configured to clear an object obstructing a breathing passage of a choking victim comprising: a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
3.2	a connector;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
3.3	a facemask;	a facemask coupled to the base of the bellows and configured to enclose the choking victim's mouth and nose;
3.4	which are sequentially connected;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
3.5	wherein the collapsible gasbag is internally provided with a gas storage cavity;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
3.6	a top of the collapsible gasbag is sealed;	When the connector 414 is inserted and slidably seated in the opening of

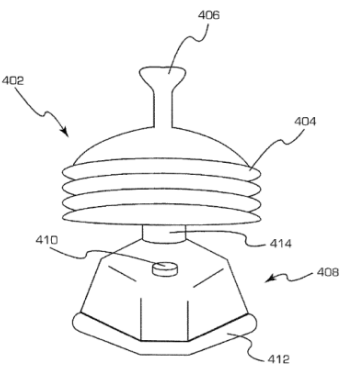
		the base of the bellows, a substantially airtight seal is formed between the connector 414 and the base 114 of the bellows, thereby sealingly unifying the bellows assembly 402 with the facemask 408.
3.7	a bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
3.8	an upper side of the connector is hermetically connected to the opening;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
3.9	the connector is provided with a first check valve;	In one embodiment the relief valve 108 is positioned [] on a base 114 of the bellows 104 . In one example, the relief valve is positioned on the connector 414 .
3.10	the connector is provided with a second check valve;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded
3.11	a first gas outlet end of the first check valve is in communication with the gas storage cavity;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from

		entering the bellows assembly when the bellows is expanded
3.12	a second gas inlet end of the second check valve is in communication with the gas storage cavity;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded
3.13	an upper side of the face mask is hermetically connected to a first gas inlet end of the first check valve;	wherein the at least one relief valve is disposed on at least one of the bellows assembly, and the facemask.
3.14	a lower side of the face mask is provided with a flexible annular pad configured to attach to a face;	a facemask coupled to the base of the bellows and configured to enclose the choking victim's mouth and nose;
3.15	the connector is provided with a bottom plate;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly and dimensioned to be attached to a facemask via a facemask connector;
3.16	the bottom plate being provided with a central cylinder which is vertically through;	In one embodiment, the facemask further comprises a connector configured to slidingly insert into the opening on the base of the bellows.
3.17	the first check valve is of a hollowed structure made from an elastic material, and comprises a deformed portion and a first base portion which are connected to each other;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded.

		Additionally, the facemask 408 has the relief valve 410 positioned thereon to allow air to escape from the facemask 408 when the bellows 404 is compressed. FIG. 4 
3.18	the first gas outlet end is composed of at least three first slits provided at a top end of the deformed portion;	In one embodiment, the facemask further comprises a connector configured to slidably insert into the opening on the base of the bellows. [three slits in the gas outlet is functionally equivalent to the gas outlet of Lih]
3.19	one end, extended toward the center, of the at least three first slits intersect at the same point, and the first gas inlet end is a first vent hole provided in the middle of the first base portion;	In one embodiment, the facemask further comprises a connector configured to slidably insert into the opening on the base of the bellows. [the intersection of the three slits at the same point is functionally equivalent to the gas outlet of Lih]
3.20	the first base portion extends into the central cylinder, and an outer side of the first base portion is hermetically connected to an inner side of the central cylinder;	The bellows assembly of claim 12, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide

		fluid communication between the interior volume of the bellows and the facemask. FIG. 4
3.21	a lower end of the central cylinder is hermetically connected to an upper side of the face mask;	The bellows assembly of claim 12, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask. FIG. 4
3.22	the deformation portion is exposed out of the central cylinder	The bellows assembly of claim 12, wherein the facemask further

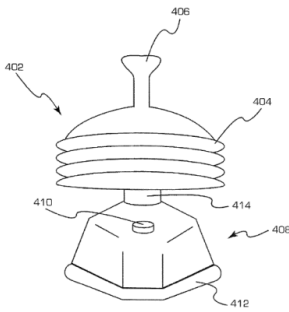
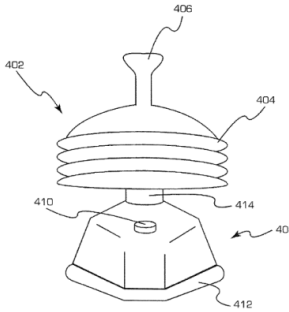
	and extends into the gas storage cavity;	comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask. FIG. 4 
3.23	when gas flows into the deformation portion through the first vent hole, pressure in the deformation portion gradually increases such that the deformation portion is deformed by expansion, so that the at least three first slits are opened, thereby allowing the gas on the side of the first vent hole to flow into the gas storage cavity;	The bellows assembly of claim 12, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask. FIG. 4 

3.24	and when the gas flowing into the deformation portion through the first vent hole is reduced or disappears, pressure in the deformation portion is reduced and even reduced to zero, and the deformation portion shrinks under its own elasticity such that the three first slits are closed, thereby preventing the gas in the gas storage cavity from flowing out of the first vent hole.	The bellows assembly of claim 12, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask. FIG. 4 
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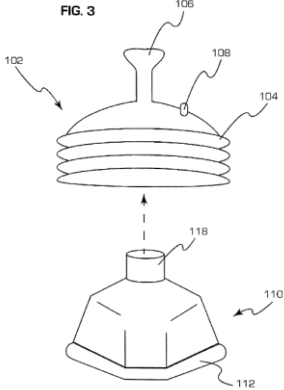
Ref. No.	Claim 4 Element	Prior Art Disclosure (Lih) Ex. 1004
4.1	The removal device for removing the obstruction in the respiratory tract according to claim 3, wherein the upper side of the face mask is provided with a connecting cylinder which is vertically through in the middle, the connecting cylinder being inserted into the inner side of the lower end of the central cylinder from bottom to top, and an outer side of the connecting cylinder being	The bellows assembly of claim 12, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.

	hermetically connected to the inner side of the central cylinder.	FIG. 4
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Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
5.1	The removal device for removing the obstruction in the respiratory tract according to claim 3, wherein an upper side of the bottom plate is provided with a first peripheral side wall encircling the central cylinder, an upper end of the first peripheral side wall shrinking inward to form a stop edge;	The handle 108 portion of the bellows assembly 102 may be ergonomically shaped in that its distal end is wider than its proximal end with respect to the bellows 104. FIG. 3

5.2	the collapsible gasbag is provided with a second peripheral side wall made from an elastic material, the second peripheral side wall being provided with a plurality of layers of outwardly convex folds;	FIG. 4 
5.3	and the first peripheral side wall covers the lowermost fold of the second peripheral side wall, and the stop edge covers an upper side of the lowermost fold.	FIG. 4 

Ref. No.	Claim 6 Element	Prior Art Disclosure (Lih) Ex. 1004
6.1	The removal device for removing the obstruction in the respiratory tract according to claim 5, wherein a plurality of reinforcement strips are arranged on the upper side of the bottom plate, two opposite ends of each reinforcement strip being separately connected the inner side of the first peripheral side wall and the outer side of the central cylinder.	When the facemask 110 joins the bellows assembly 102, connector 118 creates a tight seal around the opening 116 of the base of the bellows 114. To that end, the connector 118 of the facemask 110 is configured and dimensioned to insert into the opening 116 (shown in FIG. 2) formed through the base 114 of the bellows 104. When the connector 118 is inserted and properly seated in the (e.g., circular)

		opening 116, a substantially airtight seal is formed between the connector 118 and the base 114. In one embodiment, a (e.g., rubber gasket) on the perimeter of the opening 116 further facilitates the seal between the connector 118 and the base 114 
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Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
7.1	The removal device for removing the obstruction in the respiratory tract according to claim 1, wherein a top wall of the collapsible gasbag is connected to a handle for holding.	The bellows assembly 102 may have a plunger shape that includes a bellows 104 and a handle 106 disposed on a top portion of the bellows assembly 102 at a side opposite the base 114 .

Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
8.1	The removal device for removing the obstruction in the respiratory tract according to claim 3, wherein four first slits are provided, the	The bellows assembly of claim 12, wherein the facemask further comprises a connector configured to: slidably insert into the opening on

	four first slits being in the shape of a cross.	the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask. [four slits in the shape of a cross are functionally equivalent to the gas outlet of Lih].
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Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
9.1	A device comprising a collapsible gasbag;	A choking intervention device, comprising: a bellows assembly configured to clear an object obstructing a breathing passage of a choking victim comprising: a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
9.2	a connector;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
9.3	a facemask;	a facemask coupled to the base of the bellows and configured to enclose the choking victim's mouth and nose;
9.4	which are sequentially connected;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidably insert into the opening on the base of

		the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
9.5	wherein the collapsible gasbag is internally provided with a gas storage cavity;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
9.6	a top of the collapsible gasbag is sealed;	When the connector 414 is inserted and slidingly seated in the opening of the base of the bellows, a substantially airtight seal is formed between the connector 414 and the base 114 of the bellows, thereby sealingly unifying the bellows assembly 402 with the facemask 408.
9.7	a bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly;
9.8	an upper side of the connector is hermetically connected to the opening;	The device of claim 1, wherein the facemask further comprises a connector configured to: slidingly insert into the opening on the base of the bellows; and provide fluid communication between the interior volume of the bellows and the facemask.
9.9	the connector is provided with a first check valve;	In one embodiment the relief valve 108 is positioned between the handle 106 and the bellows 104, as illustrated in FIG. 1. In various implementations, the relief valve 108

		is positioned on the distal end of the handle 106 or on a base 114 of the bellows 104.
9.10	the connector is provided with a second check valve;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded
9.11	a first gas outlet end of the first check valve is in communication with the gas storage cavity;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded
9.12	a second gas inlet end of the second check valve is in communication with the gas storage cavity;	at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is compressed and prevent air from entering the bellows assembly when the bellows is expanded
9.13	an upper side of the face mask is hermetically connected to a first gas inlet end of the first check valve;	wherein the at least one relief valve is disposed on at least one of the bellows assembly, and the facemask.
9.14	a lower side of the face mask is provided with a flexible annular pad configured to attach to a face;	a facemask coupled to the base of the bellows and configured to enclose the choking victim's mouth and nose;
9.15	the connector is provided with a bottom plate;	a bellows having a base with an opening configured to provide an access to an interior volume of the bellows assembly and dimensioned

		to be attached to a facemask via a facemask connector;
9.16	the bottom plate being provided with a central cylinder which is vertically through;	When the connector 414 is inserted and slidingly seated in the opening of the base of the bellows, a substantially airtight seal is formed between the connector 414 and the base 114 of the bellows, thereby sealingly unifying the bellows assembly 402 with the facemask 408
9.17	the second check valve is a duckbill valve, the second check valve comprises a duckbill portion and a second base portion which are connected to each other, the second gas inlet end is a second vent hole provided in the middle of the second base portion, and the second gas outlet end is a second slit provided in the duckbill portion;	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose. [duckbill valves are functionally equivalent to the valve(s) of Lih]
9.18	an outer side of the second base portion is hermetically connected to an inner side of the peripheral cylinder, and the second vent hole of the second base portion is in communication with the gas storage cavity;	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose.

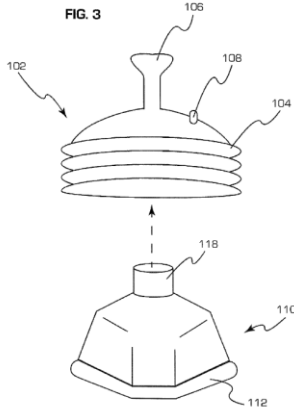
9.19	the duckbill portion extends into the peripheral cylinder, and a lower end of the peripheral cylinder is in communication with the outside;	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose. [duckbill valves are functionally equivalent to the valves of Lih]
9.20	when gas flows into the duckbill portion through the second vent hole, pressure in the duckbill portion gradually increases such that the duckbill portion is deformed by expansion, so that the second slit is opened, thereby allowing gas in the gas storage cavity to be discharged to the outside;	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose. [duckbill valves are functionally equivalent to the valves of Lih]
9.21	and when gas flowing into the duckbill portion through the second vent hole, pressure in the deformation portion is reduced and even reduced to zero, and the duckbill portion shrinks under its own elasticity such that the second slit is closed, thereby preventing outside gas from flowing into the	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the

	gas storage cavity through the second vent hole.	facemask is positioned over the victim's mouth and nose.
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Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
10.1	The removal device for removing the obstruction in the respiratory tract according to claim 1, wherein the connector is an integrally formed member made from an elastic material.	The device of claim 1, wherein the bellows assembly and the facemask are injection molded together using a single piece of polymer.

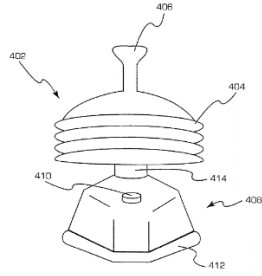
Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
11.1	The removal device for removing the obstruction in the respiratory tract according to claim 1, wherein the face mask, the connector and the collapsible gasbag are integral.	The device of claim 1, wherein the bellows assembly and the facemask are injection molded together using a single piece of polymer.

Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
12.1	The removal device for removing the obstruction in the respiratory tract according to claim 1, wherein the collapsible gasbag is not provided with a vent hole which is in direct communication with the outside.	FIG. 4

Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
13.1	A connector for a removal device, the connector comprising a bottom plate, and a first check valve and a second check valve which are arranged on the bottom plate, wherein the first check valve and the second check valve allow gas flow to pass in opposite directions; and the connector is an integrally formed member made from an elastic material.	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose. The device of claim 1, wherein the bellows assembly and the facemask are injection molded together using a single piece of polymer.  [multiple check valves inherently allow gas to flow in opposite directions]

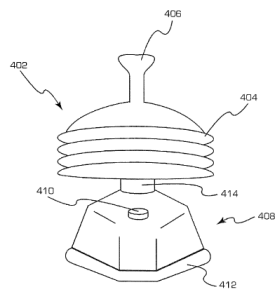
Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
14.1	The connector according to claim 13, wherein the connector is provided with one first check valve and a plurality of second check valves, the plurality of second check valves encircling the first check valve.	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose. Wherein the <u>at least one relief</u> valve is disposed on at least 50 one of the bellows assembly, and the facemask. wherein, as stated by the Examiner, “The above detailed description is only schematic, not limiting.” [Ex. 1002 at P000023.] [a plurality of check valves is functionally equivalent to one check valve that inherently allows gas to pass in opposite directions]

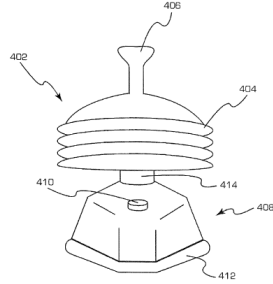
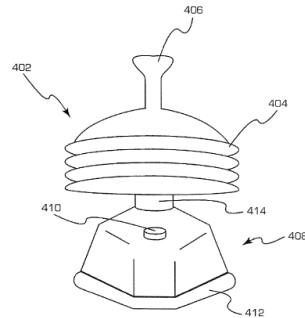
Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
15.1	The connector according to claim 14, wherein the bottom plate is provided with a central cylinder which is vertically through; the first check valve is of a hollowed structure and comprises a	When the connector 414 is inserted and slidingly seated in the opening of the base of the bellows, a substantially airtight seal is formed between the connector 414 and the base 114 of the bellows, thereby

	deformed portion and a first base portion which are connected to each other, and a first gas outlet end and a second vent hole of the first check valve are provided in the deformed portion and the first base portion respectively;	sealingly unifying the bellows assembly 402 with the facemask 408. FIG. 4 
15.2	the first gas outlet end is composed of at least three first slits provided at a top end of the deformed portion, one ends, extending toward the center, of the at least three first slits intersecting at the same point; and the first gas inlet end is a first vent hole provided in the middle of the first base portion.	When the connector 414 is inserted and slidingly seated in the opening of the base of the bellows, a substantially airtight seal is formed between the connector 414 and the base 114 of the bellows, thereby sealingly unifying the bellows assembly 402 with the facemask 408.

Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
16.1	The connector according to claim 15, wherein the second check valve is a duckbill valve, the second check valve comprises a duckbill portion and a second base portion which are connected to each other, and a second gas outlet end and a second gas inlet end of the second check valve are	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the

	provided in the duckbill portion and the second base portion respectively;	facemask is positioned over the victim's mouth and nose. [duckbill valves are functionally equivalent to the valves in Lih]
16.2	the second gas inlet end is a second vent hole provided in the middle of the second base portion, and the second gas outlet end is a second slit provided in the duckbill portion; and the duckbill portion and the deformed portion separately face two opposite sides of the bottom plate.	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose. [duckbill valves are functionally equivalent to the valves of Lih]

Ref. No.	Claim Element	Prior Art Disclosure (Lih) Ex. 1004
17.1	The connector according to claim 15, wherein the removal device is configured to remove an obstruction in a respiratory tract, the removal device comprising a collapsible gasbag, the connector and a face mask which are sequentially connected,	FIG. 4 

17.2	wherein the collapsible gasbag is internally provided with a gas storage cavity, the top of the collapsible gasbag is sealed, and the bottom of the collapsible gasbag is provided with an opening in communication with the gas storage cavity;	FIG. 4 
17.3	an upper side of the connector is hermetically connected to the opening; the first gas outlet end of the first check valve is in communication with the gas storage cavity, a second gas inlet end of the second check valve is in communication with the gas storage cavity, and a second gas outlet end of the second check valve is in communication with the outside;	In one embodiment, the choking intervention device further includes at least one relief valve configured to allow air to escape from inside the bellows assembly when the bellows is being compressed and prevent air from entering the bellows assembly when the bellows is being expanded, when the facemask is positioned over the victim's mouth and nose. FIG. 4 

As shown in the summary table above, each and every element of the ‘575 Patent claims is disclosed expressly or inherently in Lih in the same arrangement as the ‘575 Patent; wherein, the Patent Owner’s descriptions of features that are

inherent and functionally equivalent to the features disclosed in Lih are not patentable. The disclosure of “reinforcement strips” of Challenged Claims 3 and 6 is the functional equivalent to the reinforcement inherent to baffles that are connected to bottom plates, as disclosed in Lih; the “three slits” and “four slits” arranged in a “cross” in Challenged Claims 8 and 15 are functionally equivalent to the gas inlet and outlet that are disclosed in Lih wherein gas is allowed to flow in one direction, but not the other; and the “duckbill valves” in Claims 9 and 16 are functionally equivalent to the check valves disclosed in Lih, wherein, gas is allowed to flow in one direction, but not the other. Accordingly, it is more likely than not that Claims 1-17 of the ‘575 Patent are unpatentable as anticipated under 35 U.S.C. § 102 by Lih.

VIII. CONCLUSION

For all the foregoing reasons, it is more likely than not that Claims 1-17 of the ‘575 Patent are unpatentable. Accordingly, the Board should institute post-grant review of Claims 1-17 of the ‘575 Patent on all of the grounds presented herein.

Petition for Post-Grant Review
of U.S. Patent No. 11,478,575

Respectfully submitted,

/s/ John van Loben Sels

Dated: May 15, 2023

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**CERTIFICATE OF COMPLIANCE WITH TYPE VOLUME
LIMITATION**

Pursuant to 37 C.F.R. § 42.24(d), I hereby certify that this Petition complies with the type-volume limitation of 37 C.F.R. § 42.24(a)(1)(ii) because, based upon the word count of the word-processing system used to prepare this petition, the number of words in this petition is 16,017. Pursuant to 37 C.F.R. § 42.24(a), this word count does not include “a table of contents, a table of authorities, mandatory notices under § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing.”

By:

/s/ John van Loben Sels

Dated: May 15, 2023

John van Loben Sels

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing PETITION FOR POST-GRANT REVIEW OF U.S. PATENT NO. 11,478,575 was served on the following individuals today via Federal Express:

DCSTAR, INC.
228 PARK AVE S 30327
NEW YORK, NY 10003

Dated: May 15, 2023

/s/ John van Loben Sels

John van Loben Sels
Counsel for Petitioner