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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF FLORIDA

FlyDive, Inc, a Delaware Corporation,)	Civil Action No. 1:17-cv-21317
)	
)	
)	
Plaintiff,)	FIRST AMENDED COMPLAINT
)	(Patent Infringement)
-V-)	
)	
Panameri Corp dba Atlantic Flyboard, a Florida)	
corporation; David E. Duprat, an individual;)	(Jury Trial Demanded)
PowerFly Products, Inc., a Florida corporation;)	
and Mark and Sabrina Baxter, husband and wife.)	
)	
Defendants.)	
)	
)	
)	

For its complaint against Defendants Panameri Corp., David E. Duprat, PowerFly Products, Inc., and Mark and Sabrina Baxter (collectively hereinafter "Defendants"), Plaintiff Flydive, Inc. alleges as follows:

1. Plaintiff, Flydive Inc. (hereinafter "Plaintiff"), is a Delaware corporation having a principle place of business address at 4630 Santa Fe St., San Diego, CA 92109.

2. Upon information and belief, Defendant Panameri Corp (hereinafter "Panameri") is a Florida corporation having a business address at 1385 SW 4th Terrace, Pompano Beach, FL, 33060.

3. Upon information and belief, Defendant David E. Duprat (hereinafter "Duprat") is the owner and corporate officer of Panameri and having a residence at 1385 4th Terrace, Pompano Beach, FL, 33060.

4. Upon information and belief, PowerFly Products, Inc. (hereinafter "PowerFly") is a Florida corporation having a business address at 127 Carmen Street, Melbourne Beach, FL, 32951.

5. Upon information and belief, Defendants Mark and Sabrina Baxter (hereinafter Mr. and Mrs. Baxter) are the owners and corporate officers of PowerFly and have a residence at 127 Carmen St., Melbourne Beach , FL, 32951.

6. This is an action arising under the Patent Laws of the United States, Title 35 of the United States Code. Original jurisdiction is predicated under 28 U.S.C. §§ 1332 and 1338. Venue in the Southern District of Florida is proper under 28 U.S.C. §§ 1391 and 1400.

GENERAL ALLEGATIONS

7. Plaintiff is the owner by assignment of U.S. Patent No. 9,555,863 titled EASY MAINTENANCE FLYING BOARD (the " '863 Patent"). The '863 Patent issued on January 31, 2017 from an application filed June 25, 2015 with U.S. provisional patent application No. 62/018,268 filed 6/27/2014 and 62/121,073 filed on 2/26/2015 as priority dates. A copy of the '863 Patent is attached hereto as Exhibit A.

8. Plaintiff is the owner by assignment of U.S. Patent No. 9,440,714 titled FORWARD PROPELLED HOVER BOARD (the “ ‘714 Patent”). The ‘714 Patent issued on September 13, 2016 from an application filed August 25, 2015 as a continuation of U.S. patent application no. 14/066,997 filed 10/30/2013 that claimed priority to U.S. provisional patent application No. 61/720,791 filed 10/31/2012 as a priority date. A copy of the ‘714 Patent is attached hereto as Exhibit B.

9. Defendant Panameri and Defendant Duprat are infringing the ‘863 Patent by using, importing, offering to sell, and/or selling in the United States products or processes that infringe at least claim 1 of the ‘863 Patent, including the Flyboard 2015 Pro Series, manufactured by Personal Water Craft Product, LeRove, France. Copies of the web pages advertising the Flyboard 2015 Pro Series on the Panameri website are attached hereto as Exhibit C.

10. Defendant Panameri and Defendant Duprat are infringing the ‘714 Patent by using, importing, offering to sell, and/or selling in the United States products or processes that infringe on at least claim one of the ‘714 Patent, including the Hoverboard. Copies of the web pages advertising the Hoverboard on the Panameri website are attached hereto as Exhibit D.

11. Defendant PowerFly and Defendants Mr. and Mrs. Baxter are infringing the ‘863 Patent by using, importing, offering to sell, and/or selling in the United States products or processes that infringe at least claim 1 of the ‘863 Patent, including the 2016/2017 Flyboard Pro Series and the 2015/2016 Flyboard Pro Series. Copies of the web pages advertising the 2016/2017 Flyboard Pro Series, the 2015/2016 Flyboard Pro Series on the PowerFly sales website are attached hereto as Exhibit E.

12. Defendant PowerFly and Defendants Mr. and Mrs. Baxter are infringing the ‘714 Patent by using, importing, offering to sell, and/or selling in the United States products or processes that infringe on at least claim one of the ‘714 Patent, including the Hoverboard. Copies of the web pages advertising the Hoverboard on the Powerfly sales website are attached hereto as Exhibit F.

13. Defendant Panameri and Defendant Duprat market and sell the above identified products directly to consumers through a website at www.atlanticflyboard.com.

14. Defendant PowerFly and Defendants Mr. and Mrs. Baxter market and sell the above identified products directly to consumers through a website at www.powerflyproducts.com.

15. Defendants have profited through their respective infringement of the '863 Patent and the '714 Patent. As a result of Defendants' unlawful infringing activities, Plaintiff has suffered and will continue to suffer damage. Plaintiff is entitled to recover from each of the Defendants the damages suffered by Plaintiff, including at least a reasonable royalty, as a result of each Defendant's unlawful acts.

CLAIMS FOR RELIEF

COUNT I

(PATENT INFRINGEMENT)

against Panameri and Duprat

16. Plaintiff incorporates by reference and re-alleges each of the allegations set forth in Paragraphs 1 through 15 as if set forth fully herein.

17. By manufacturing, using, importing, selling and/or offering products, including the Flyboard 2015 Pro Series for sale in the United States without authority from Plaintiff, Defendant Panameri and Defendant Duprat have infringed, and continue to infringe, one or more claims of the '863 Patent.

18. Plaintiff has suffered and will continue to suffer damages on account of Panameri's and Duprat's infringement and continuing infringement of the '863 Patent.

19. Plaintiff is entitled to damages adequate to compensate for Panameri's and Duprat's wrongful acts as provided by 35 U.S.C. § 284 including, but not limited to, a reasonable royalty from the sales of infringing products and parts therefore and for its lost profits.

20. Plaintiff is entitled to recover its costs as provided by 35 U.S.C. § 284.

21. Plaintiff is entitled to recover its attorneys' fees as provided by 35 U.S.C. §285.

COUNT II

(PATENT INFRINGEMENT)

against Panameri and Duprat

22. Plaintiff incorporates by reference and re-alleges each of the allegations set forth in Paragraphs 1 through 15 as if set forth fully herein.

23. By manufacturing, using, importing, selling and/or offering products, including the Hoverboard for sale in the United States without authority from Plaintiff, Defendant Panameri and Defendant Duprat have infringed, and continue to infringe, one or more claims of the '741 Patent.

24. Plaintiff has suffered and will continue to suffer damages on account of Panameri's and Duprat's infringement and continuing infringement of the '741 Patent.

25. Plaintiff is entitled to damages adequate to compensate for Panameri's and Duprat's wrongful acts as provided by 35 U.S.C. § 284 including, but not limited to, a reasonable royalty from the sales of infringing products and parts therefore and for its lost profits.

26. Plaintiff is entitled to recover its costs as provided by 35 U.S.C. § 284.

27. Plaintiff is entitled to recover its attorneys' fees as provided by 35 U.S.C. §285.

COUNT III

(PATENT INFRINGEMENT)

against PowerFly and Mark and Sabrina Baxter

28. Plaintiff incorporates by reference and re-alleges each of the allegations set forth in Paragraphs 1 through 15 as if set forth fully herein.

29. By manufacturing, using, importing, selling and/or offering products, including the 2016/2017 Flyboard Pro Series and the 2015/2016 Flyboard Pro Series for sale in the United States without authority from Plaintiff, Defendant PowerFly and Defendants Mr. and Mrs. Baxter have infringed, and continue to infringe, one or more claims of the '863 Patent.

30. Plaintiff has suffered and will continue to suffer damages on account of PowerFly's and Mr. and Mrs. Baxter's infringement and continuing infringement of the '863 Patent.

31. Plaintiff is entitled to damages adequate to compensate for PowerFly's and Mr. and Mrs. Baxter's wrongful acts as provided by 35 U.S.C. § 284 including, but not limited to, a reasonable royalty from the sales of infringing products and parts therefore and for its lost profits.

32. Plaintiff is entitled to recover its costs as provided by 35 U.S.C. § 284.

33. Plaintiff is entitled to recover its attorneys' fees as provided by 35 U.S.C. §285.

COUNT IV

(PATENT INFRINGEMENT)

against Powerfly and Mark and Sabrina Baxter

34. Plaintiff incorporates by reference and re-alleges each of the allegations set forth in Paragraphs 1 through 15 as if set forth fully herein.

35. By manufacturing, using, importing, selling and/or offering products, including the Hoverboard for sale in the United States without authority from Plaintiff, Defendant PowerFly and Defendants Mr. and Mrs. Baxter have infringed, and continue to infringe, one or more claims of the '741 Patent.

36. Plaintiff has suffered and will continue to suffer damages on account of PowerFly's and Mr. and Mrs. Baxter's infringement and continuing infringement of the '741 Patent.

37. Plaintiff is entitled to damages adequate to compensate for PowerFly's and Mr. and Mrs. Baxter's wrongful acts as provided by 35 U.S.C. § 284 including, but not limited to, a reasonable royalty from the sales of infringing products and parts therefore and for its lost profits.

38. Plaintiff is entitled to recover its costs as provided by 35 U.S.C. § 284.

39. Plaintiff is entitled to recover its attorneys' fees as provided by 35 U.S.C. §285.

DEMAND FOR JURY TRIAL

40. Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff respectfully requests a trial by jury of all issues properly triable by jury.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for relief as follows:

- A. For a judgment declaring that Defendant Panameri and Defendant Duprat have infringed the '863 and the '741 Patents;
- B. For a judgment awarding Plaintiff compensatory damages as a result of Panameri's and Duprat's infringement of the '863 and the '741 Patents, together with interest and costs, and in no event less than a reasonable royalty;
- C. For a judgment declaring that Panameri's and Duprat's infringement of the '863 and the '741 Patents has been willful and deliberate; since the date of service of this lawsuit;
- D. For a judgment awarding Plaintiff treble damages and pre-judgment interest under 35 U.S.C. § 284 as a result of Panameri's and Duprat's willful and deliberate infringement of the '863 and '741 Patents;
- E. For an injunction prohibiting Defendant Panameri and Defendant Duprat from further infringement of the '863 Patent and the '741 Patents;
- F. For a judgment declaring that Defendant PowerFly and Defendant's Mr. and Mrs. Baxter have infringed the '863 and the '741 Patents;

- G. For a judgment awarding Plaintiff compensatory damages as a result of PowerFly's and Mr. and Mrs. Baxter's infringement of the '863 and the '741 Patents, together with interest and costs, and in no event less than a reasonable royalty;
- H. For a judgment declaring that PowerFly's and Mr. and Mrs. Baxter's infringement of the '863 and the '741 Patents has been willful and deliberate; since the date of service of this lawsuit;
- I. For a judgment awarding Plaintiff treble damages and pre-judgment interest under 35 U.S.C. § 284 as a result of PowerFly's and Mr. and Mrs. Baxter's willful and deliberate infringement of the '863 and '741 Patents;
- J. For a judgment declaring that this case is exceptional and awarding Plaintiff its expenses, costs, and attorneys' fees in accordance with 35 U.S.C. §§ 284 and 285 and Rule 54(d) of the Federal Rules of Civil Procedure;
- K. For an injunction prohibiting Defendant PowerFly and Defendants Mr. and Mrs. Baxter from further infringement of the '863 Patent and the '741 Patents; and
- L. For such other and further relief as the Court deems just and proper.

DATED this 20th day of April, 2017.

By: /s/ David LaValle, Esq.

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Exhibit “A”



US009555863B2

(12) **United States Patent**
Robinson

(10) **Patent No.:** **US 9,555,863 B2**
(45) **Date of Patent:** **Jan. 31, 2017**

(54) **EASY MAINTENANCE FLYING BOARD**

(56) **References Cited**

(71) Applicant: **FlyDive, Inc.**, San Diego, CA (US)
(72) Inventor: **Brandon Robinson**, Fruitland Park, FL (US)
(73) Assignee: **FLYDIVE, INC.**, San Diego, CA (US)
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 35 days.

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(21) Appl. No.: **14/750,542**
(22) Filed: **Jun. 25, 2015**

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(65) **Prior Publication Data**
US 2015/0375833 A1 Dec. 31, 2015

OTHER PUBLICATIONS

<https://www.youtube.com/watch?v=udm7iVxzVOs> YouTube video of Sep. 27, 2012 showing Russian flying board with independently swiveling feet members and remote controlled operatable flying board (pdf with several views attached).

Related U.S. Application Data

Primary Examiner — Joseph W Sanderson
(74) *Attorney, Agent, or Firm* — Patent Law Offices of Rick Martin, P.C.

(60) Provisional application No. 62/018,268, filed on Jun. 27, 2014, provisional application No. 62/121,073, filed on Feb. 26, 2015.

(51) **Int. Cl.**
B63B 35/73 (2006.01)
B64C 39/02 (2006.01)
B63H 11/00 (2006.01)

(57) **ABSTRACT**

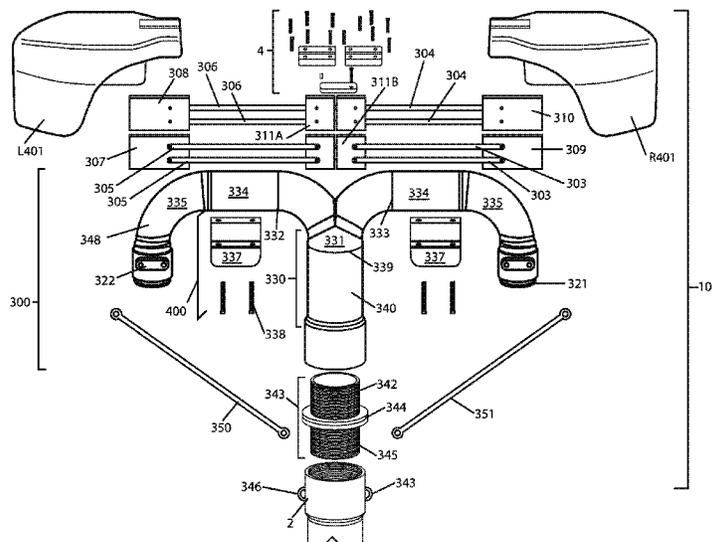
A water propelled flying board has a left and a right thrust nozzle. Each thrust nozzle has a knuckle joint attachment to a pressure water manifold. The thrust nozzles can be independently swiveled forward, backward, sideways or other directions relative to the rider. A left foot and a right foot platform are independently secured to the respective nozzle inlet to allow the rider to go toe up of toe down, they can rotate 360 degrees independently with each foot. This enables trick flying maneuvers including spinning like a top. The knuckle joint can be either a hose segment or a bearing. The left and right foot platforms or center blocks can be locked together and can have a spring return to neutral assembly.

(52) **U.S. Cl.**
CPC **B63B 35/73** (2013.01); **B63H 11/00** (2013.01); **B64C 39/026** (2013.01); **B63H 2011/006** (2013.01); **B63H 2011/008** (2013.01)

(58) **Field of Classification Search**
CPC ... B64C 39/026; B63B 35/731; B63H 11/107; B63H 11/113

See application file for complete search history.

9 Claims, 8 Drawing Sheets



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Fig. 1

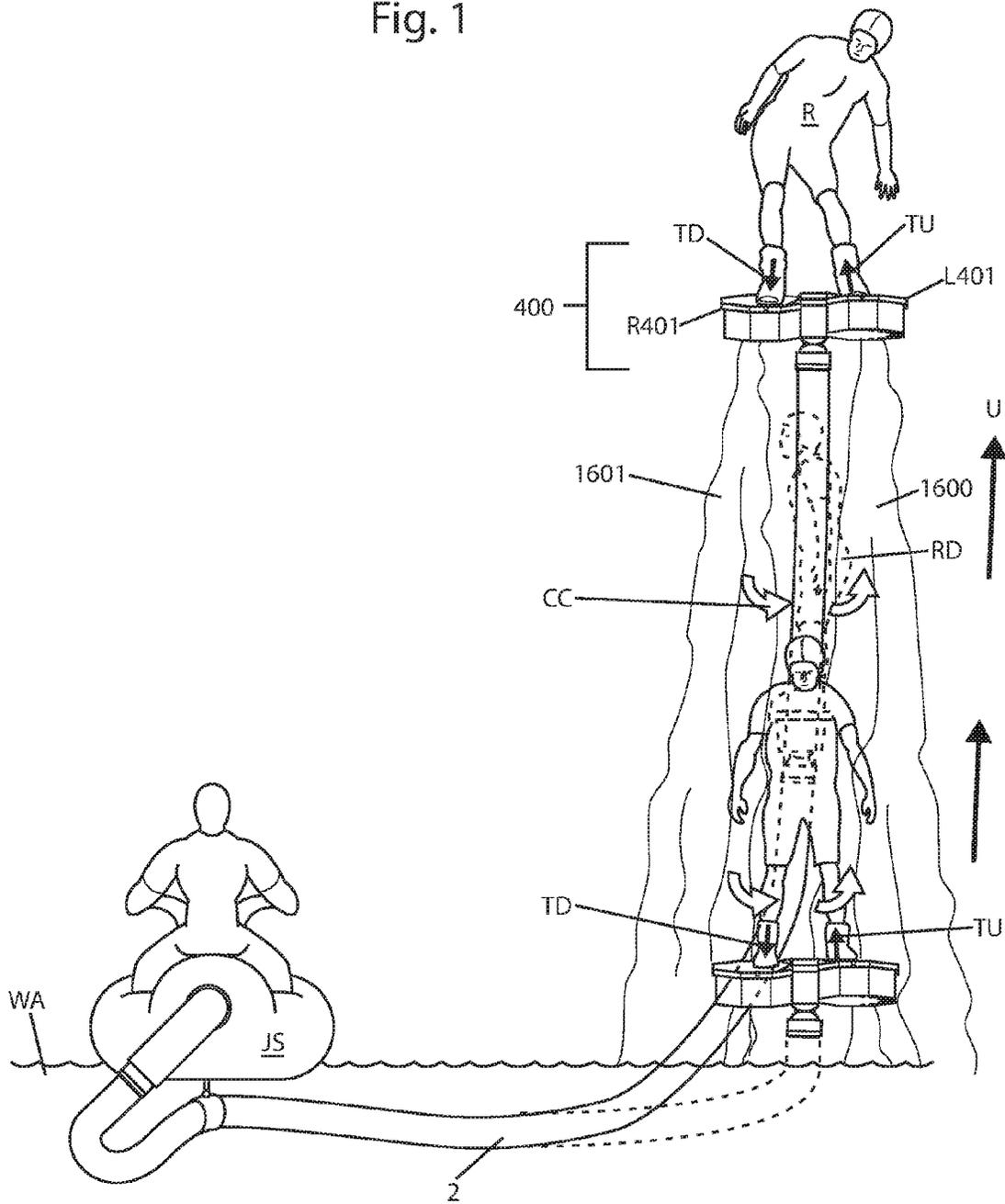
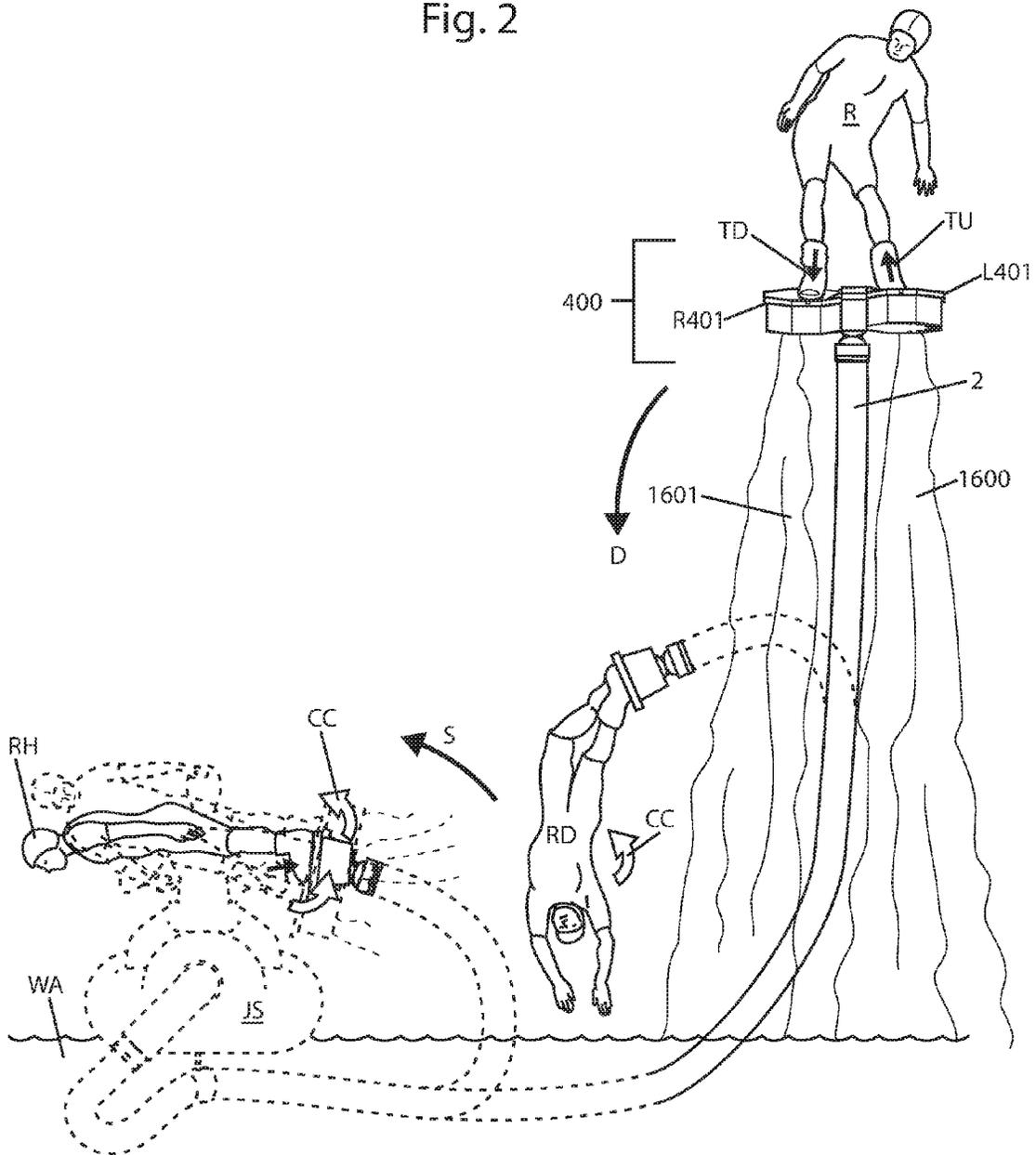


Fig. 2



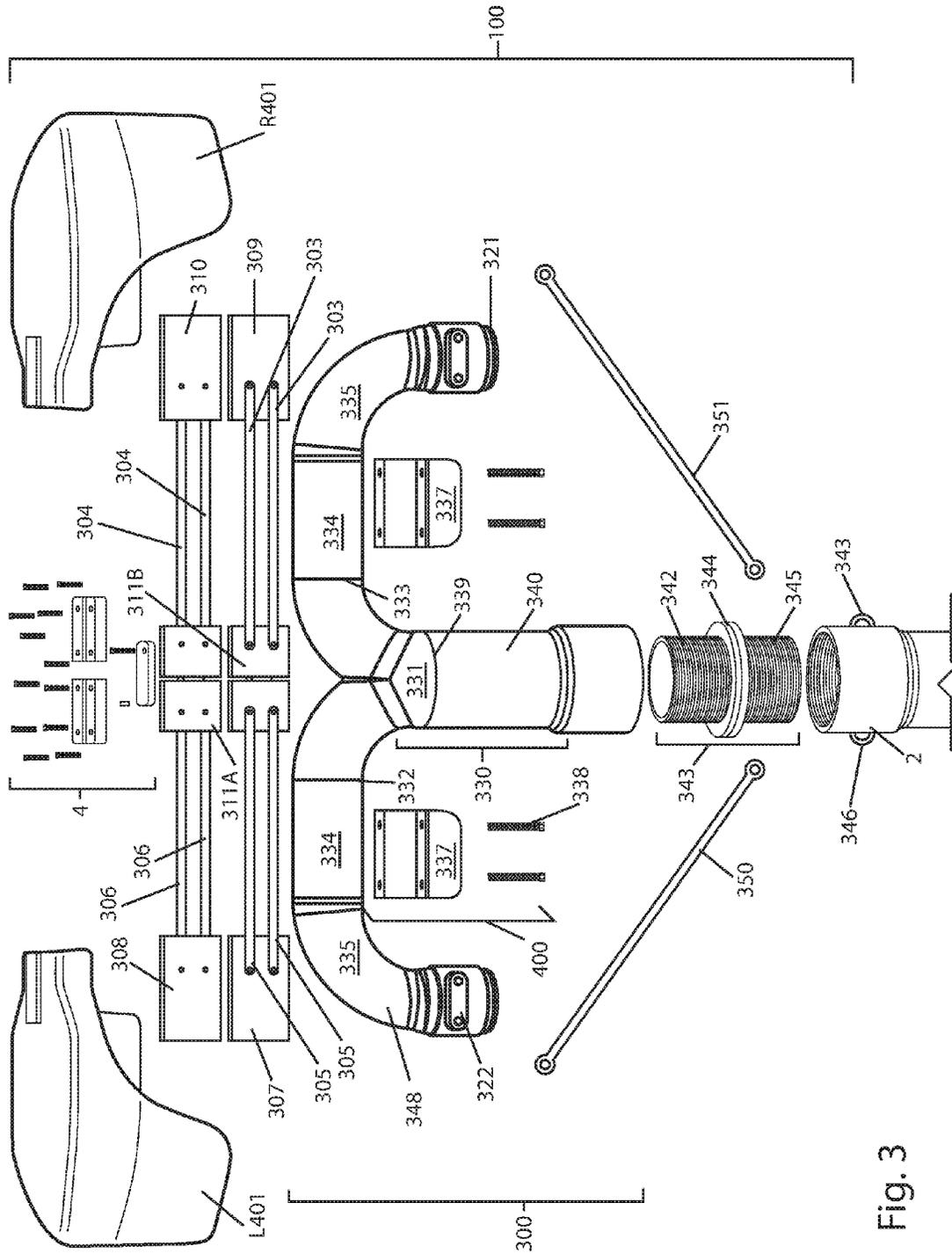


Fig. 3

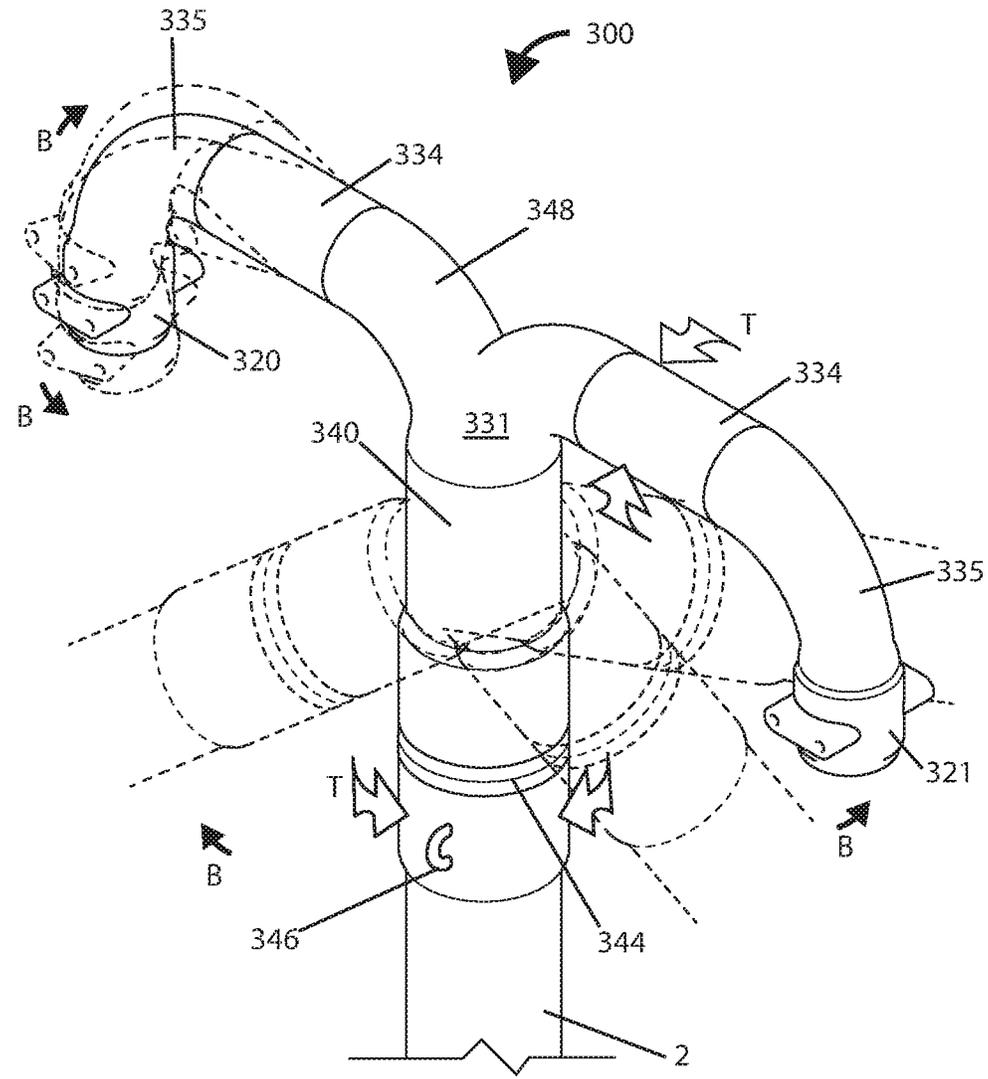


Fig. 4

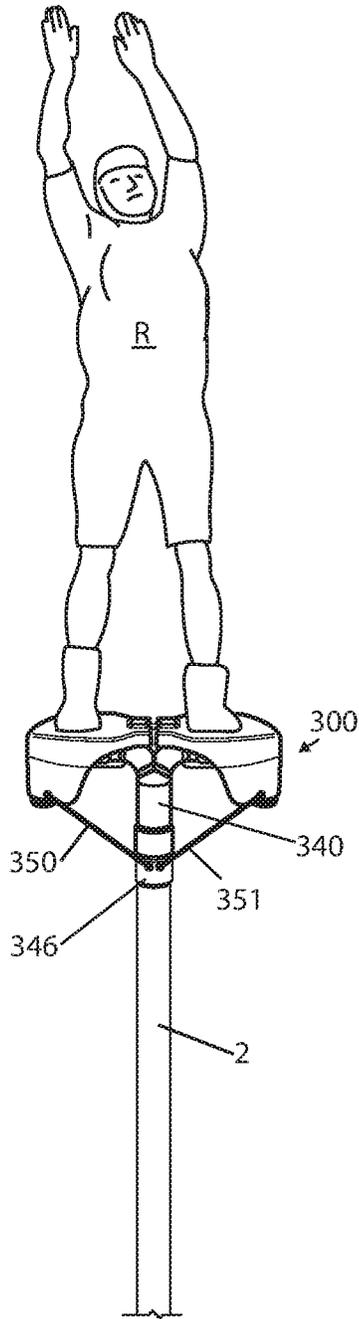


Fig. 5A

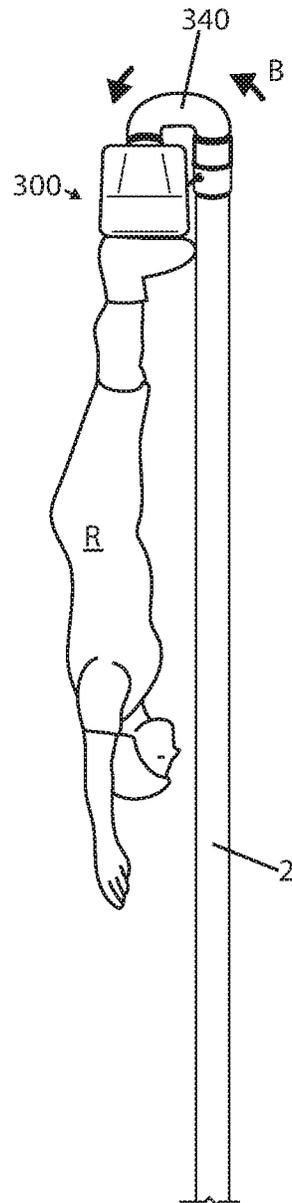


Fig. 5B

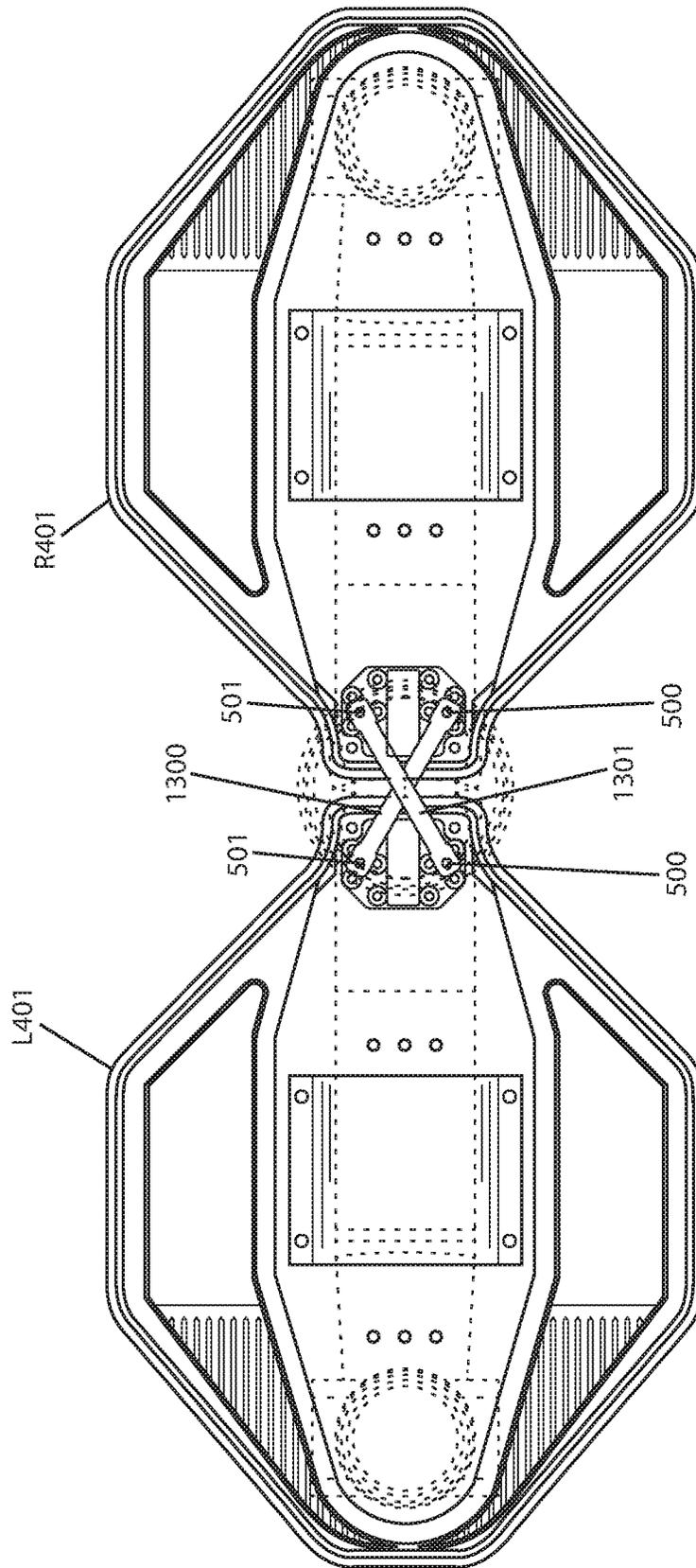


Fig. 6

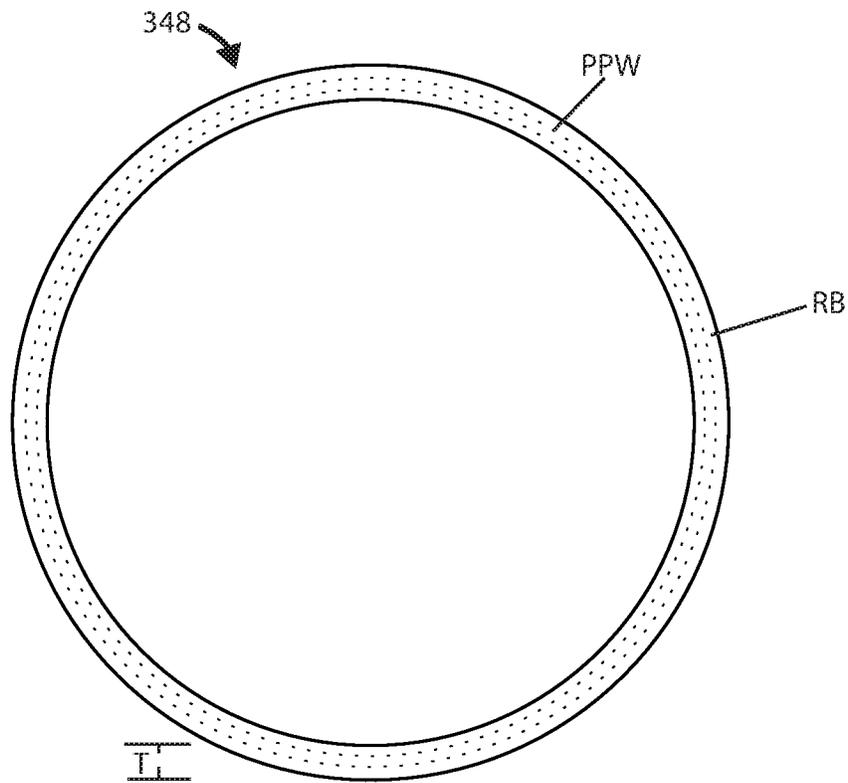


Fig. 7

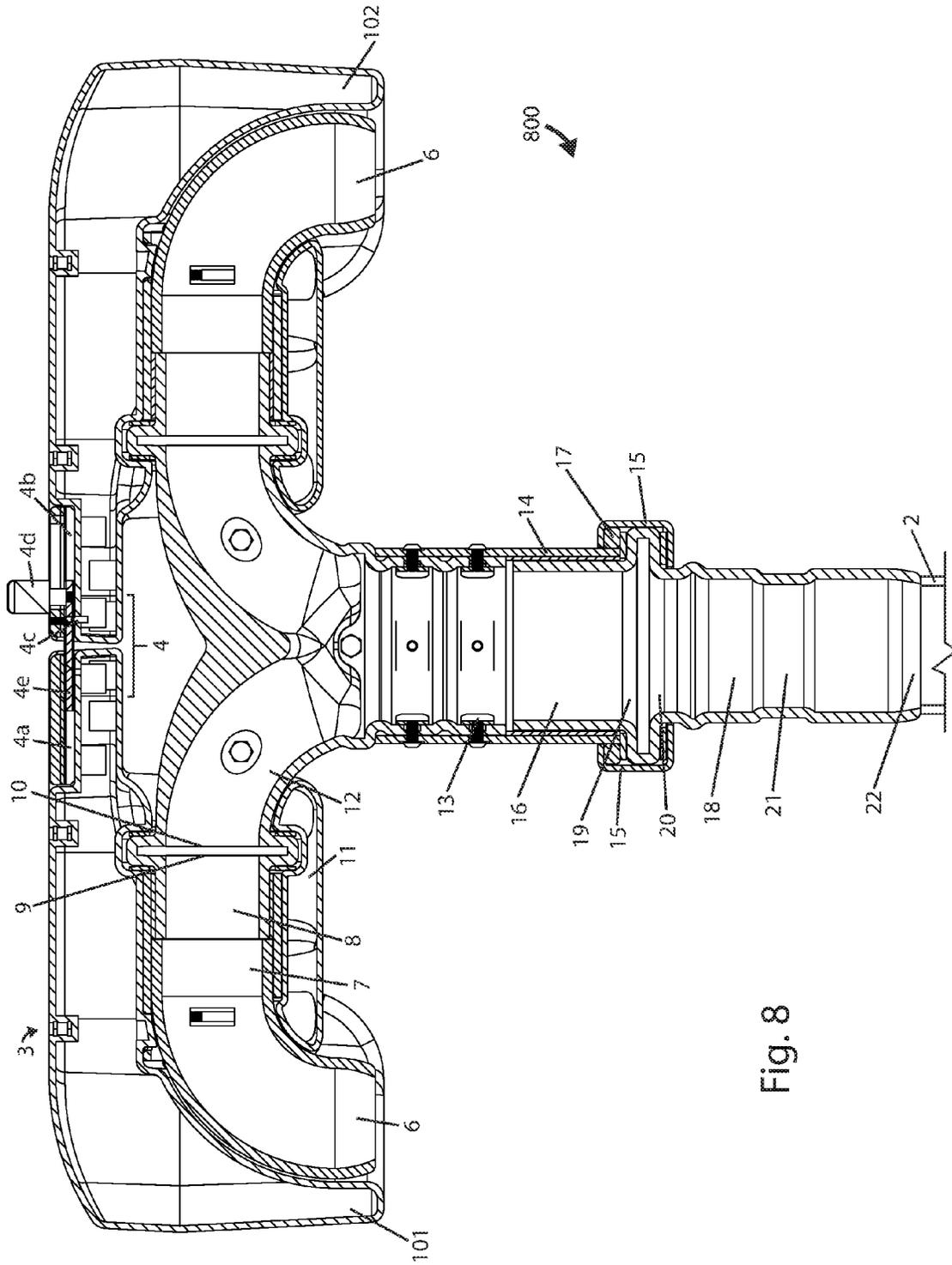


Fig. 8

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EASY MAINTENANCE FLYING BOARDCROSS-REFERENCES TO RELATED
APPLICATIONS

This is a non-provisional patent application claiming priority from provisional patent application no. 62/121,073 filed Feb. 26, 2015 and 62/018,268 filed Jun. 27, 2014 both of which are incorporated herein by reference in their entirety.

FIELD OF INVENTION

The present invention relates to an improved simple design for a water propelled flying board, wherein the basic design is described in U.S. patent application Ser. No. 14/066,997 issued as U.S. Pat. No. 9,145,206 on Sep. 29, 2015) and provisional application nos. 62/018,268 and 62/121,073, all of which are incorporated herein by reference in their entirety.

BACKGROUND OF THE INVENTION

The above referenced patent applications describe a flying board wherein the left and the right lift nozzles can be independently rotated forward and backward relative to the central Y housing that receives the high pressure water (from a jet ski). No prior art features of a spring return of the left and right platform segments or a locking of these segments exists.

SUMMARY OF THE INVENTION

The present design uses a new and twistable rubber hose or a bushing assembly that is easily replaced after wear and tear. There is also disclosed a least expensive method of plastic manufacturing to provide a complete system. Some parts are roto molded (rotational molding). Metal screws and bolts thread into brass inserts for all couplings.

A newly available competitor's model uses an expensive pair of watertight bearings to allow the powered nozzles to rotate. The present invention replaces those bearings with bendable rubber hoses. This greatly reduces the product cost and reduces maintenance issues with bearing replacements as sand always exists in the water. Thus, any bearing in a system like this will eventually wear out.

The present invention does have one main inlet bearing. But the two foot platforms, one on each arm of the Y tube, now rotate using a new, useful hose segment.

The present invention provides a spring return of the left and right platform segments and a locking of these segments.

The main aspect of the present invention is to provide water propelled flying board that has an independently rotatable nozzle under the left and the right foot platform with a spring return to a neutral position.

Another aspect of the present invention is to manually lock or unlock the foot platforms.

Another aspect of the present invention is to provide a low cost rubber hose bearing which is easily replaced to take the majority of the wear and tear of the rotational friction of the foot platforms under power.

Another aspect of the present invention is to use some roto molded parts with metal connectors.

Another aspect of the present invention is to provide a custom built hose to enable both a twisting and a bending motion.

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Other aspects of this invention will appear from the following description and appended claims, reference being made to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevation view of a flyer maneuvering an easy maintenance swivel platform flying board.

FIG. 2 is a front elevation view of a flyer shown doing tricks on the easy maintenance swivel platform flying board.

FIG. 3 is an exploded view of a hose bearing embodiment.

FIG. 4 is a front elevation view of the hose Y pipe assembly.

FIG. 5A is a front elevation view of the hose Y pipe embodiment going straight up.

FIG. 5B is a front elevation view of the hose Y pipe embodiment going straight down.

FIG. 6 is a bottom plan view of the hose embodiment showing the tension straps 2, 3.

FIG. 7 is a cross sectional view of the hose.

FIG. 8 is a longitudinal sectional view of one embodiment assembled which uses a plastic bearing.

Before explaining the disclosed embodiment of the present invention in detail, it is to be understood that the invention is not limited in its application to the details of the particular arrangement shown, since the invention is capable of other embodiments. Also, the terminology used herein is for the purpose of description and not of limitation.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring first to FIGS. 1, 2 the jet ski JS floats on the water WA and powers the hose 2. In FIG. 1 the rider R has his left foot toe up TU and his right foot toe down TD. Thus, water thrust 1600 could force his left shoulder back while water thrust 1601 could force his right shoulder forward. The rider R spins in a counter clockwise CC pattern. The rider R depicted in dots RD shows him rotationally three fourths through his full 360° rotation while travelling up U.

In FIG. 2 the rider R starts high above the water WA. Then rider R dives down D while spinning counter clockwise CC as shown by rider RD. Then rider R surfaces S and proceeds horizontally as shown by rider RH. All this time he is rotating counter clockwise CC. He could reverse his rotation by changing his toe up/down positions.

In FIG. 3 the Y pipe hose 348 can be made completely from silicone and fiber or other synthetic rubber.

FIG. 6 shows how crisscrossed elastic bands 1300 (attaches at 501, 500), 1301 (attaches at 500, 501) urge the left and right foot platforms L401, R401 to be parallel. Thus, the rider must push harder and harder as he increases the angular opposition between the left and the right platforms. This feature also protects the rider from injury. The elastic bands 1300, 1301, could be mounted parallel. The tension bands can be replaced by elastic metal springs.

Referring next to FIGS. 3, 4 a flying board 100 has a left foot platform L401 which can bend and twist independently from a right foot platform R401. A lock assembly 4 can be attached to the platform or the center blocks, and it allows the rider to lock the left and right foot platforms together or the left and right center blocks 311A and 311B together. A stabilizing assembly 300 keeps the nozzles 320, 321 from flaring in or out or sideways, and it allows the nozzles to move 360 degrees. The center blocks 311A, 311B are supported by the Y pipe assembly 330 and are able to rotate.

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The (metal) arms **303**, **304**, **305**, **306** attach to the foot platforms via bolts (not shown) and anchors **307**, **308**, **309**, **310** respectively. Design choice could add more or less arms. Brackets **322** attach to the respective foot platforms.

The Y pipe assembly **330** comprises a (plastic or metal) stiff central base built into the silicone hose **331**. The left branch comprises a hose segment **334** connected to the port **332**. The Y pipe hose **348** can be a one piece silicone hose or it can be made from other synthetic rubber. The hose can have metal or plastic parts built into it. The arrows B show how hose segment **334** can bend. The arms of the Y pipe hose are one piece **335**, **334**, **333** and **332**, and they can twist or bend. Hollow arrows T show how hose segment **334** can twist. Hose segment **335** bends downward to support the nozzle **320**. Clamps **337** with bolts **338** form clasp **400** and secure the hose segment **334** to the respective foot platform.

A hose segment **340** attaches to the bottom port **339** of the central base **331**. This hose segment **340** can bend 180 degrees as shown in FIGS. **4**, **5B**. It can be about six inches long or longer. This bending allows the rider R to do back flips or move forward or backward or sideways.

A threaded mender **343** connects the base of the Y pipe hose **340** to top **342**, and the other end of the mender **345** connects to the fire hose **2**. The mender section **344** can spin 360 degrees. A spinning type bearing (can be made with or without ball bearings) **344** allows lower threaded pipe **345** to spin relative to top **342**. Support rods or cables **350**, **351**, can be stainless steel. They attach the respective boot platform to the collars **346**, **343**, thereby taking the (250 pound) weight of the hose **2** off the Y pipe assembly **330**. FIG. **5A** shows the rider R going straight up with hose segment **340** straight. FIG. **5A** shows the rider R going straight down with hose segment **340** bent 180 degrees.

The hoses are made preferably of silicone rubber and polyester plain woven, used as a reinforcement ply. Other choices of synthetic rubber are equivalents.

FIG. **7** shows hose segment **348** with a silicone rubber body RB reinforced by polyester plain woven fibers PPW.

Nominal thickness T ranges from 0.10 inches to 0.50 inches.

Referring next to FIG. **8** a plastic bearing flying board is numbered **800**. The parts are described below. The boards **400** and **800** perform the same.

The flying board **400** of FIG. **1** has a left foot platform **L401** and a right foot platform **R401**.

Part Number	Description
101	Right Platform (rider facing out)
102	Left Platform

- Platform—Binding (Boots) fasten on top of the platforms **101**, **102** to enable a person to stand and have his feet fasten on top of each platform. Each platform can rotate with the nozzle **6** to provide more maneuverability, more tricks and more spins than when the platforms **101**, **102** are locked together.
- Platform Indented Surface—This is where the latch assembly **4** fastens on to the platform segments **101**, **102** with inserted screw threads.
- Platform Mount is arrow **3**—Six inserted screw threads can be used to fasten bindings with screws to the platform segments **101**, **102**. There can be less or more screw threads removed or added.
- Latch Assembly **4** comprises parts **4a**, **4b**, **4c**, **4d** and **4e** described below. The latch assembly locks and unlocks

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the platforms **101**, **102**. This allows the person to have individual foot control or locks both platforms together. There can be one or more screws that fasten the latch assembly **4** on the platforms **101**, **102**.

- Latch Cover
 - Latch Receiver
 - Latch Adjustable Tension Screw
 - Latch Handle
 - Latch Plate
- Threaded Inserts—4 threaded brass screw inserts underneath the platform to allow platform clamps to be fastened on to the platform. There can be less or more screws removed or added. There are threaded screw inserts in the platform for all screws and bolts, which are preferably brass or SS.
 - Nozzle—The nozzles **6** is where the water releases and provides lift for the flying board **800**.
 - Tube Nozzle—The tube nozzle **7** holds the Y pipe **12** and the nozzle **6** together.
 - Upper Bearing is item **8**—It fits between the tube nozzle **7** and Y-pipe **12**. An inexpensive replaceable bearing that the Y-pipe **12** and tube nozzle **7** rotate on, so that it can prevent wear and adds life to both parts.
 - Upper Thrust Bearing is item **9**, it fits between the Y-pipe **12** and tube nozzle **7**. It is an inexpensive replaceable bearing that the Y-pipe **12** and tube nozzle **7** rotate against, so that it helps prevent wear and adds life to both parts.
 - Upper Thrust Bearing—This bearing is cut in half, the two halves fit between the Y-Pipe and Platform Clamp. It is an inexpensive replaceable bearing that the Y Pipe, Platform, and Platform Clamp rotate against, so that it helps prevent wear and adds life to all three parts.
 - Clamp Platform—Four bolts fastens each clamp platform **11** to hold the Y-pipe **12** and the nozzle **6** to the platform **101/102**, this provides easily removal and allows the parts to be put back together easily. It also provides easy cleaning to remove sand and debris or replacing inexpensive bearings and thrust bearings in minutes.
 - Y-Pipe—The Y-pipe **12** splits or channels the water to the two nozzles **6**. The Y-pipe can rotate 180 degrees.
 - Nut Plate Threaded and Screws **13** allow the tube bottom **14** to fasten to the bottom of the Y-pipe **12**.
 - Tube Bottom **14** fastens onto the bottom of the Y-pipe. Provides the clamp **15** to hold together the Y-pipe and hole adapter **18**.
 - Quick Release Clamp—A quick release clamp **15** holds or releases the tube bottom **14** and hose adapter **18**. This enables a user to quickly put together to operate or take apart for ease of portability.
 - Lower Bearing **16** fits between the tube bottom **14** and hose adapter **18**. An inexpensive replaceable bearing that is placed between the hose adapter **18** and tube bottom **14** to prevent wear and adds life to both parts. The hose adapter **8** rotates 360 degrees inside the clamp **15** and tube bottom **14**.
 - Quick Release Pin **17**—Two pins that quick releases or hold the clamp together.
 - Hose Adapter—The hose adapter **18** spins 360 degrees and is inserted into the tube bottom **14**, plus it is held together by the quick release clamp **15**. The hose **2** is fastened to the other end of the hose adapter **18**. The end of the hose adapter **18** where the hose **2** fits on has an indentation to allow a clamp or clamps to hold the hose **2** onto the hose adapter **18**.
 - Upper Thrust Bearing **19** fits between the tube bottom **14** and hose adapter **18**. It is an inexpensive replaceable

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bearing that the hose adapter **18** rotates against, so that it helps prevent wear and adds life.

20. Lower Thrust Bearing **20** fits between the hose adapter **18** and the quick release clamp **15**. it is an inexpensive replaceable bearing that the hose adapter **18** rotates against, so that it helps prevent wear and adds life.

21. Hose adapter recess is labeled **21**.

22. Tip of hose adapter is labeled **22**.

Rotational Molding (BrE molding also called roto molded) involves a heated hollow mold which is filled with a charge or shot weight of material. It is then slowly rotated (usually around two perpendicular axes) causing the softened material to disperse and stick to the walls of the mold. In order to maintain even thickness throughout the part, the mold continues to rotate at all times during the heating phase and to avoid sagging or deformation also during the cooling phase. The process was applied to plastics in the 1940s but in the early years was little used because it was a slow process restricted to a small number of plastics. Over the past two decades, improvements in process control and developments with plastic powders have resulted in a significant increase in usage.

Although the present invention has been described with reference to the disclosed embodiments, numerous modifications and variations can be made and still the result will come within the scope of the invention. No limitation with respect to the specific embodiments disclosed herein is intended or should be inferred. Each apparatus embodiment described herein has numerous equivalents.

I claim:

1. A flying water board comprising:

a central housing having a high pressure water inlet on a base pipe;

said central housing having a left and a right elbow stemming from the base pipe;

a swivel joint on each left and right elbow;

a thrust nozzle mounted to each swivel joint at distal end thereof;

a left foot platform having a mounting means functioning to secure the left foot platform to the left thrust nozzle where tilting the left foot platform swivels the left thrust nozzle;

a right foot platform having a mounting means functioning to secure the right foot platform to the right thrust nozzle where tilting the right foot platform swivels the right thrust nozzle independently from the left foot thrust nozzle;

said swivel joint comprising a bearing to twist while allowing high pressure water to flow therethrough; and

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a lock means functioning to lock the left foot platform to the right foot platform.

2. The flying water board of claim **1**, wherein the base pipe further comprises a bearing above the high pressure water inlet, thereby enabling the base pipe to rotate.

3. The flying water board of claim **1**, wherein the thrust nozzle further comprises a solid nozzle with a connection means functioning to removably connect to the foot platform.

4. The flying water board of claim **1** further comprising a spring means functioning to urge each of the left and right foot platforms to a neutral position, parallel to each other, above their respective swivel joints.

5. The flying water board of claim **4**, wherein the spring means further comprises a crisscrossed or parallel pair of elastic bands attached to an underside of the left and right foot platforms.

6. The flying water board of claim **4**, wherein the spring means further comprises a spring attached to an underside of the left and right foot platforms.

7. The flying platform of claim **1**, wherein the lock means further comprises a left foot platform mounting means comprising a left center block and the right foot platform mounting means further comprises a right center block; and an inter block lock means functioning to lock the left center block to the right center block.

8. A flying water board comprising:

a water hose inlet connected to a base of a Y housing;

a rotating bearing on the base of the Y housing mounted on top of the water hose inlet;

said Y housing having a left and right arm extending from the base of the Y housing;

a bearing connected to a distal end of each arm of the Y housing which is in turn connected to a thrust nozzle;

a left foot platform connected to the left bearing along with the left foot platform's respective thrust nozzle;

a right foot platform connected to the right bearing along with the right foot platform's respective thrust nozzle;

a manual latch locking and unlocking the left to the right foot platform; and

wherein a rider can point his left and his right toes up, down, or any direction and rotate the respective boot platform forward and backward and sideways and other directions.

9. The flying platform of claim **8** further comprising a spring means functioning to urge the left and the right foot platform to a neutral position on top of the platform's respective bearings.

* * * * *

Exhibit “B”



US009440714B2

(12) **United States Patent**
Robinson

(10) **Patent No.:** **US 9,440,714 B2**
(45) **Date of Patent:** **Sep. 13, 2016**

(54) **FORWARD PROPELLED HOVER BOARD**

(58) **Field of Classification Search**

(71) Applicant: **Brandon Robinson**, Fruitland Park, FL (US)

CPC B63B 35/73; B63B 35/731; B63B 9/00
See application file for complete search history.

(72) Inventor: **Brandon Robinson**, Fruitland Park, FL (US)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(22) Filed: **Aug. 25, 2015**

(65) **Prior Publication Data**

US 2015/0360755 A1 Dec. 17, 2015

Related U.S. Application Data

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(63) Continuation of application No. 14/066,997, filed on Oct. 30, 2013, now Pat. No. 9,145,206.

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FR	WO/2013/041787 A1	3/2013

(60) Provisional application No. 61/720,791, filed on Oct. 31, 2012.

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(51) **Int. Cl.**

B63B 35/73	(2006.01)
B64C 39/00	(2006.01)
B63B 9/00	(2006.01)
B63H 11/04	(2006.01)
B63H 21/22	(2006.01)
B63H 23/26	(2006.01)
B63H 11/107	(2006.01)
B63H 11/00	(2006.01)

Primary Examiner — Justin Benedick

(74) *Attorney, Agent, or Firm* — Patent Law Offices of Rick Martin, P.C.

(52) **U.S. Cl.**

CPC **B63B 35/73** (2013.01); **B63B 9/00** (2013.01); **B63B 35/731** (2013.01); **B63H 11/04** (2013.01); **B63H 11/107** (2013.01); **B63H 21/22** (2013.01); **B63H 23/26** (2013.01); **B64C 39/00** (2013.01); **B63H 2011/006** (2013.01); **B63H 2011/008** (2013.01)

(57) **ABSTRACT**

A forward water propelled hover board comprising a rigid board having greater length than width. The rigid board having a rear end with a high pressure water outlet nozzle and a central pipe connecting a water hose inlet, wherein the outlet nozzle when fed with a high pressure water source from the water hose inlet provides a forward thrust to the water propelled hover board.

16 Claims, 25 Drawing Sheets

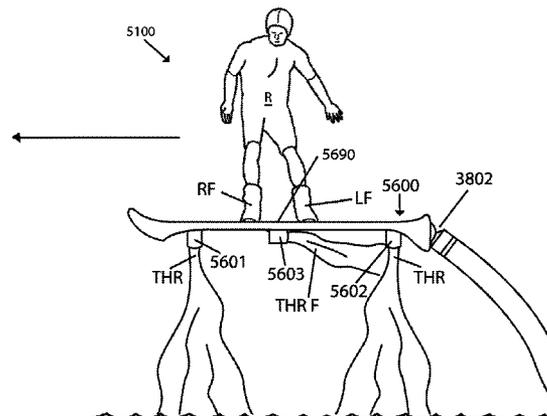
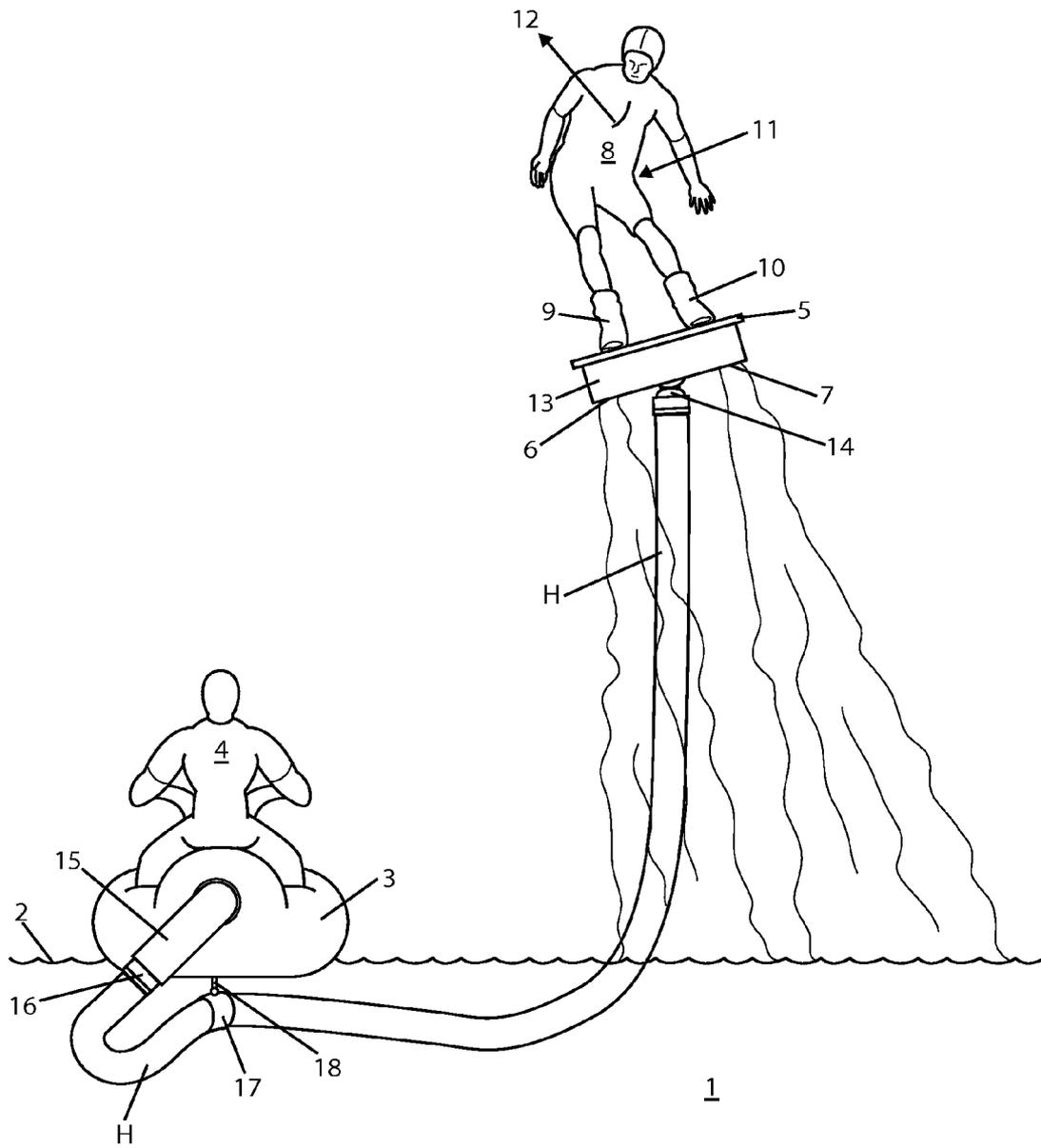
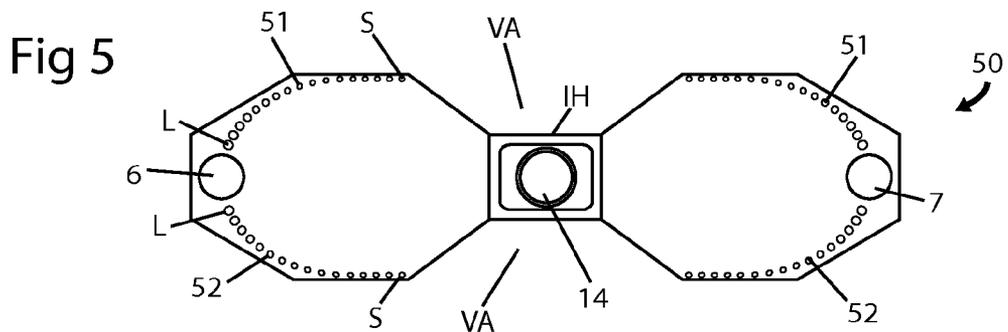
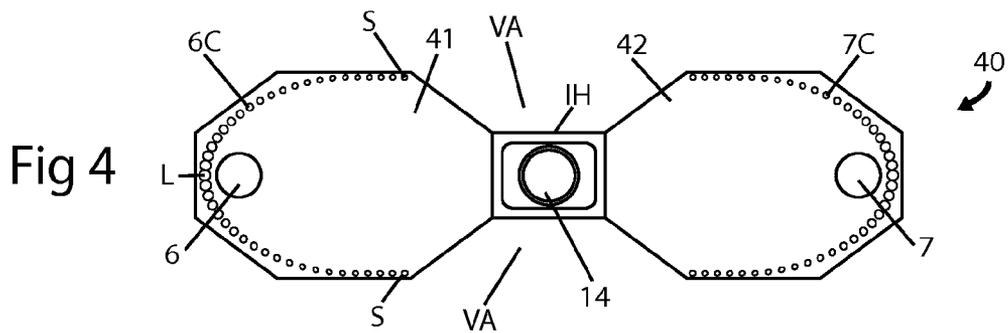
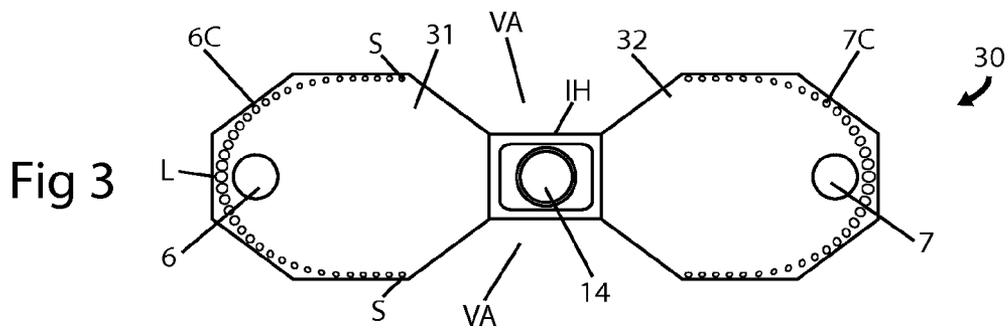
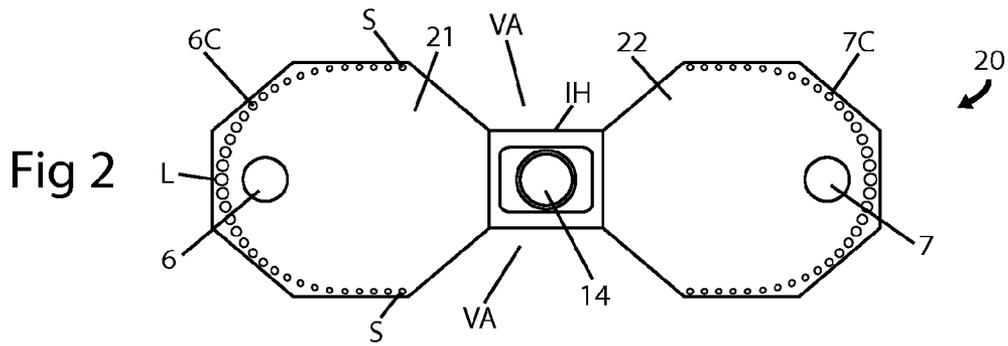
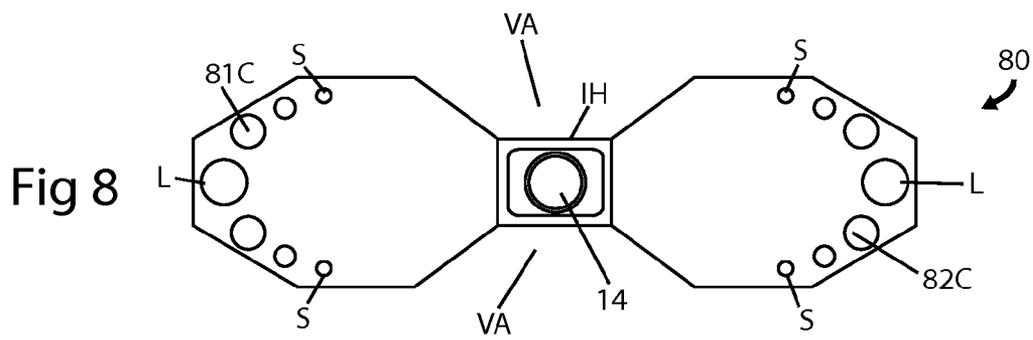
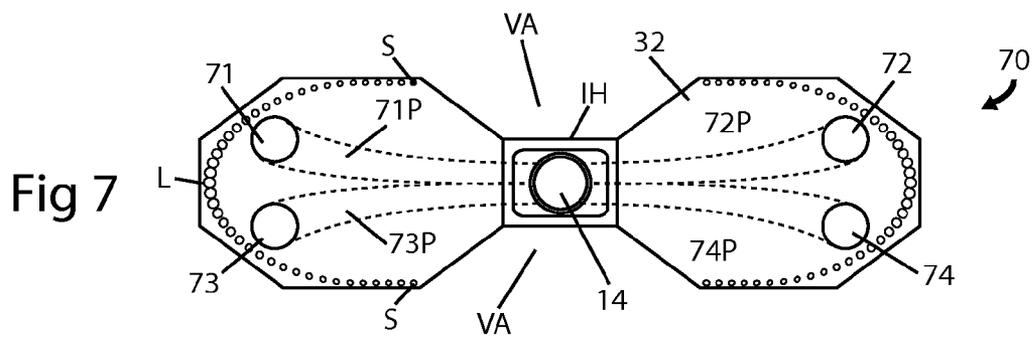
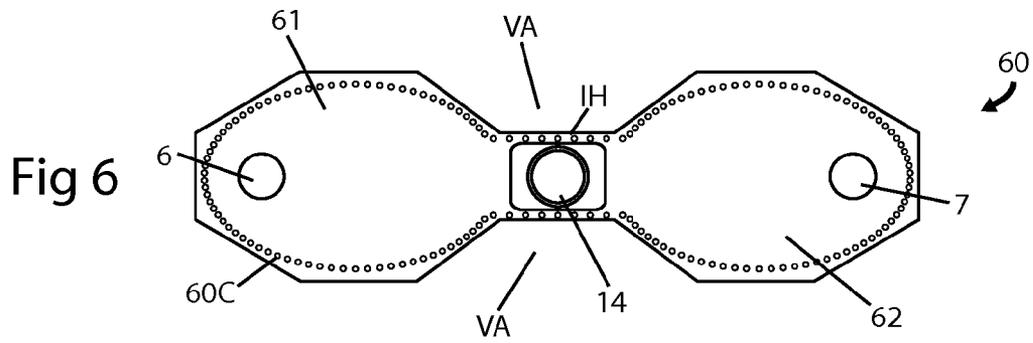


Fig 1







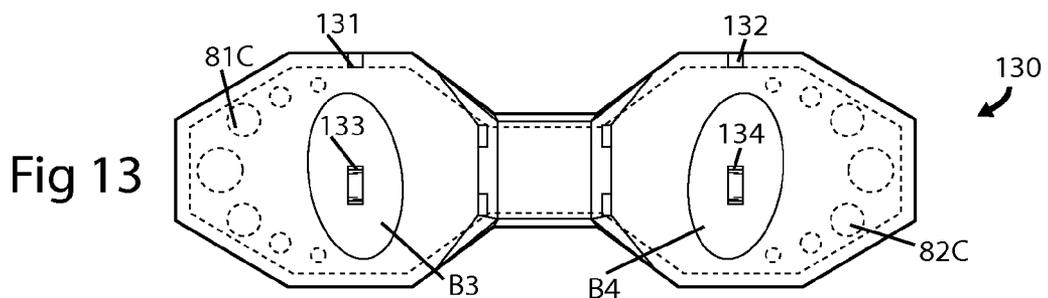
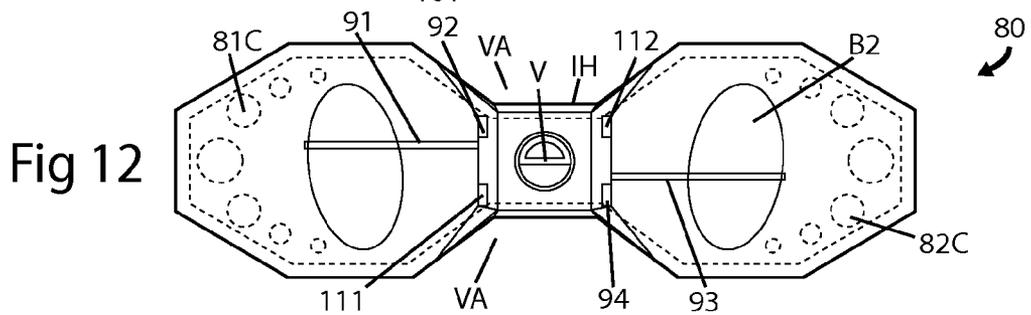
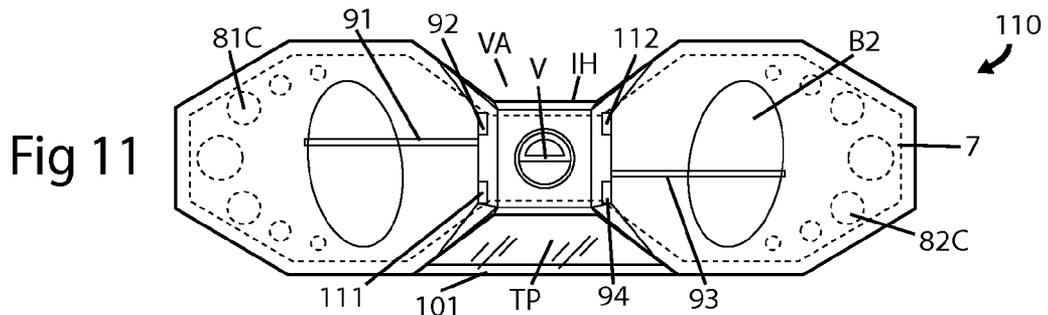
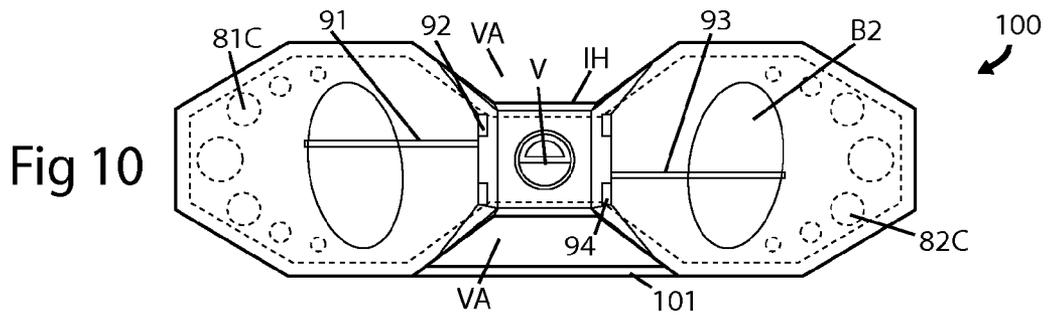
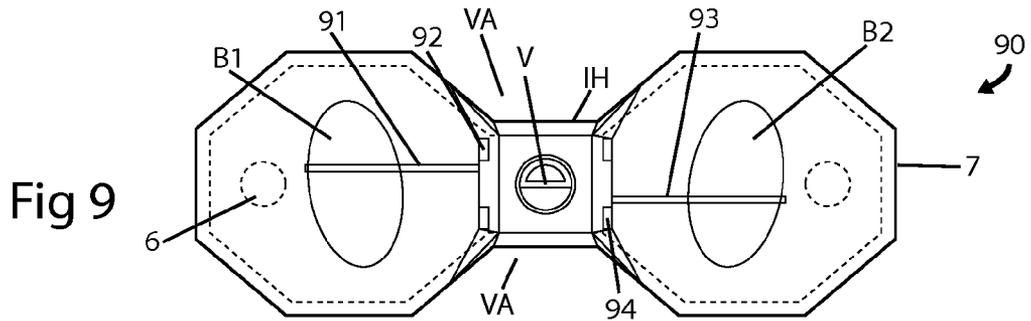


Fig 14

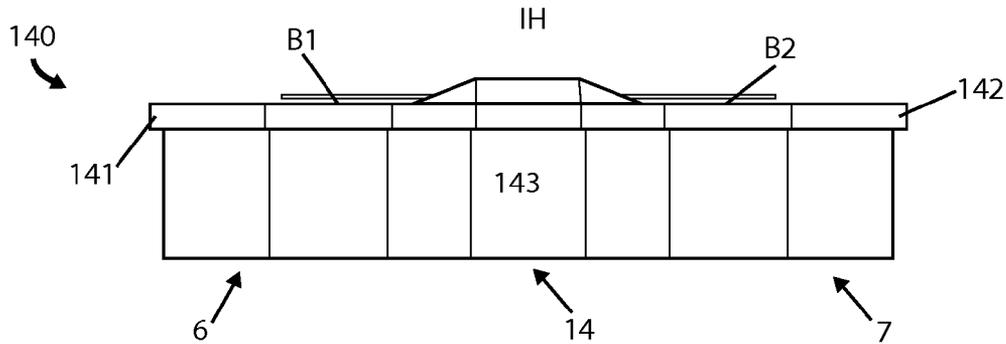


Fig 15

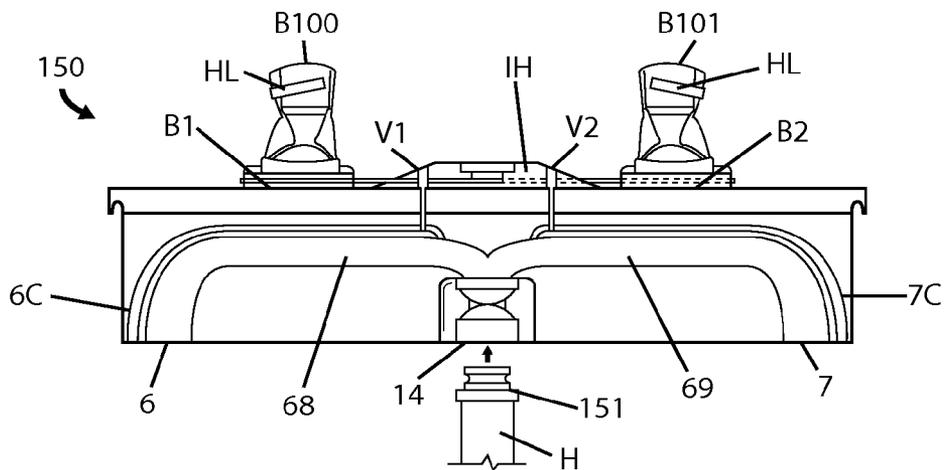
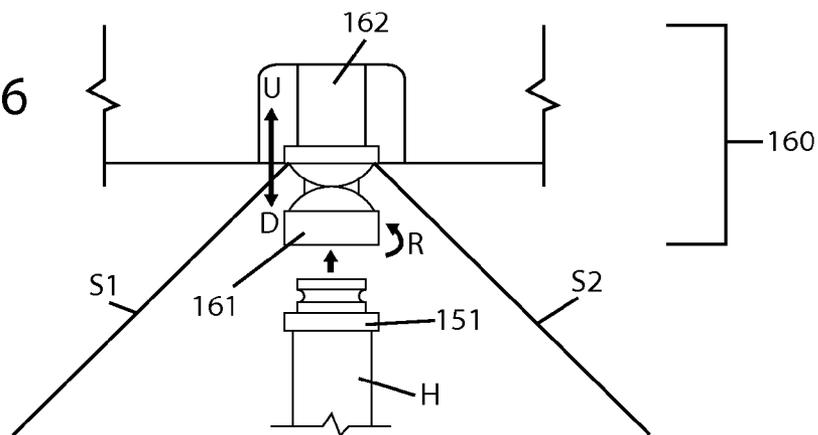
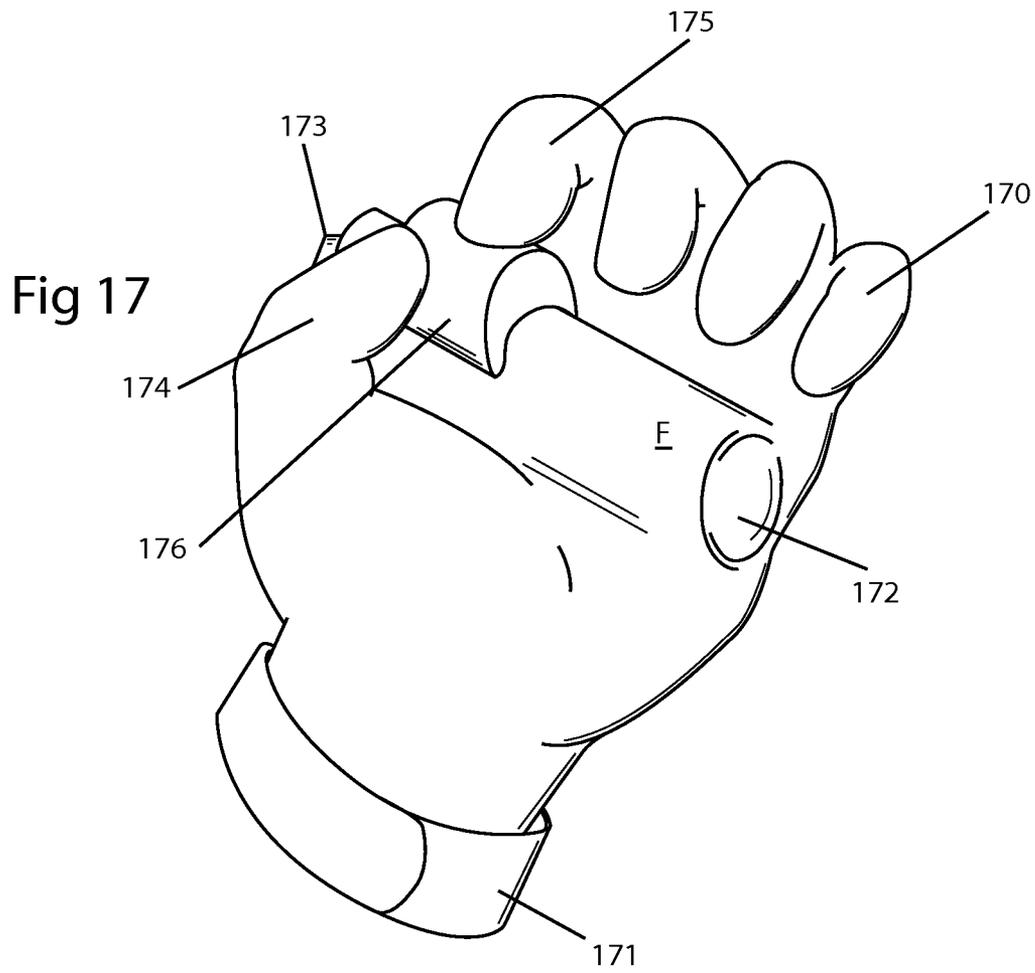


Fig 16





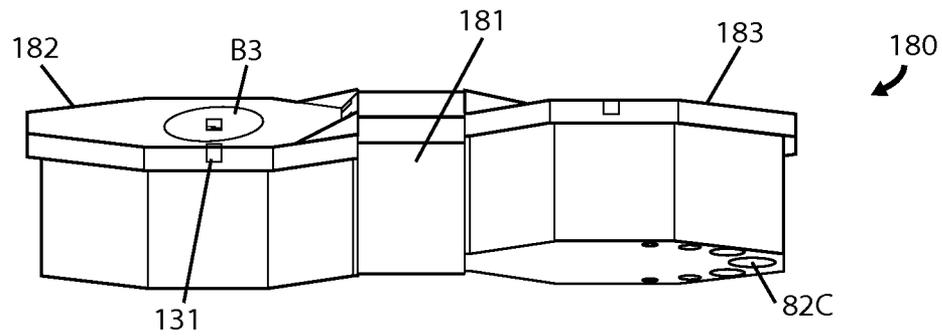


Fig 18

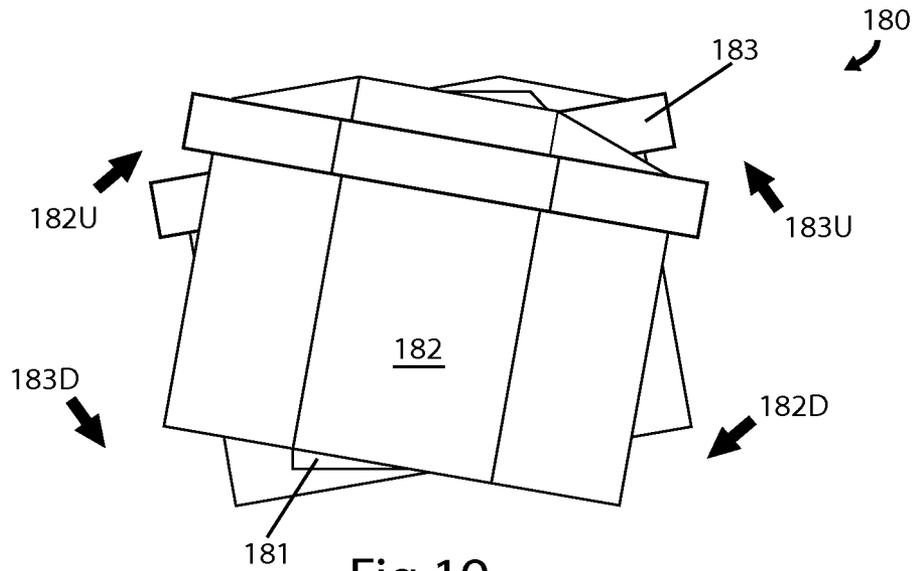
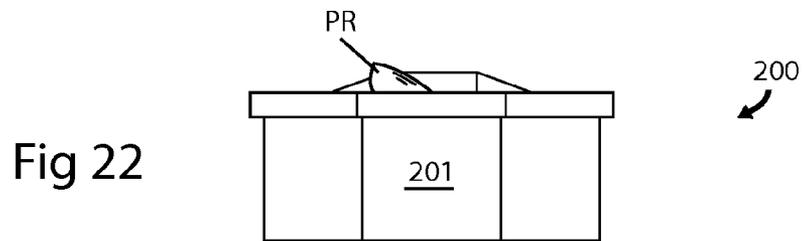
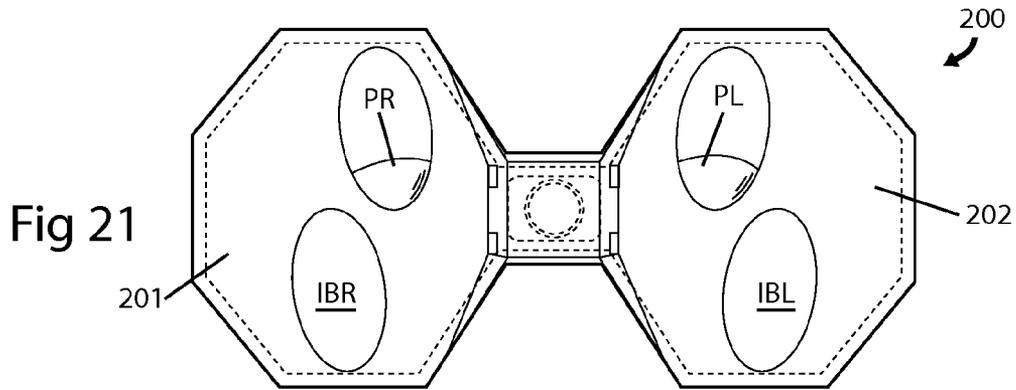
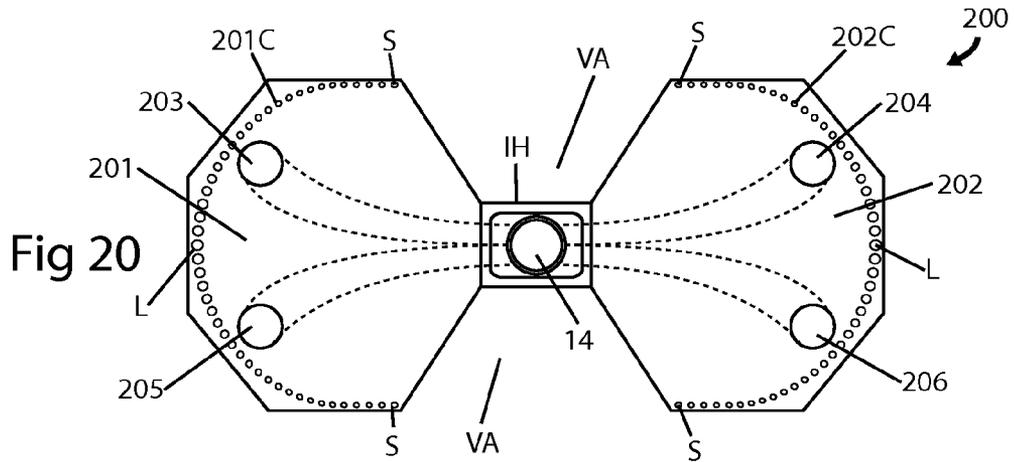
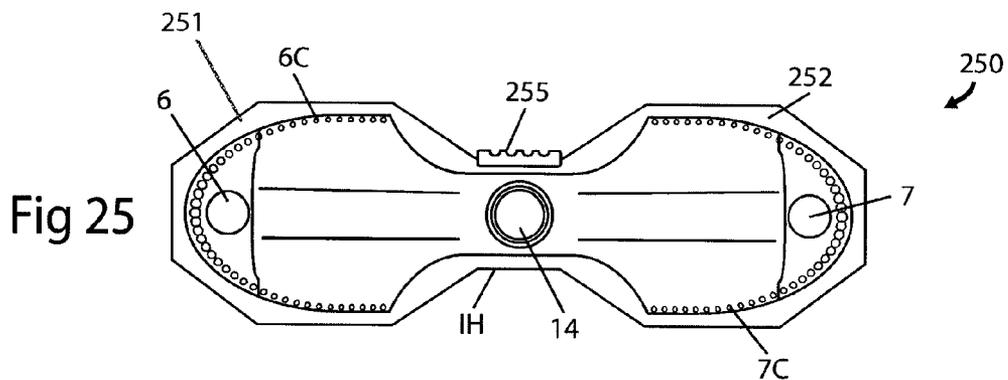
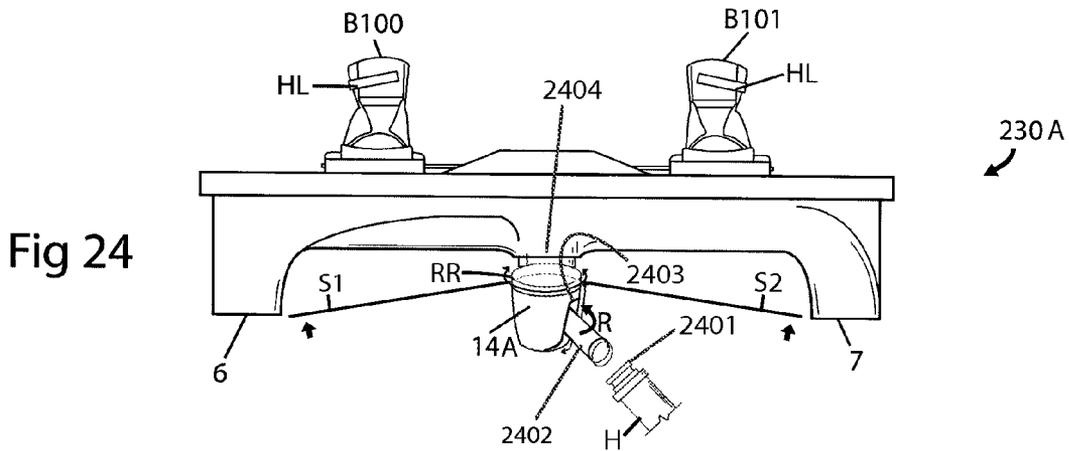
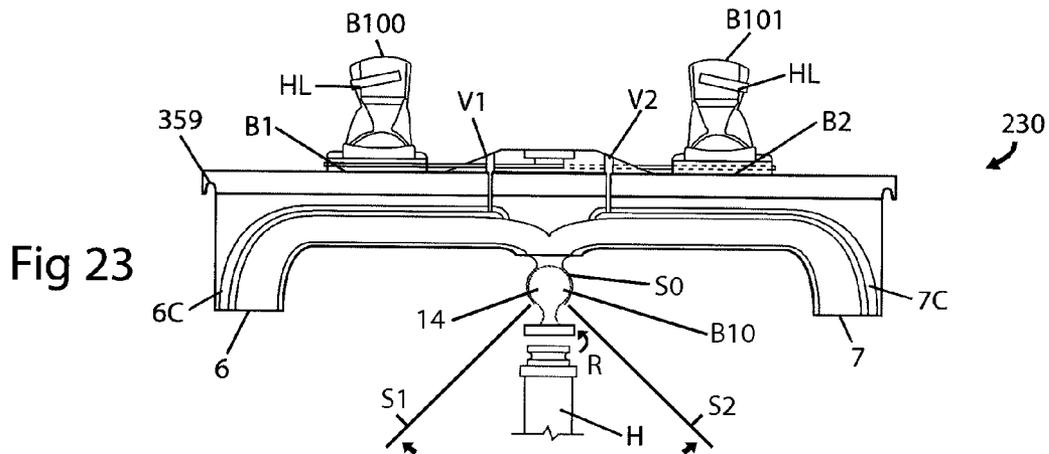
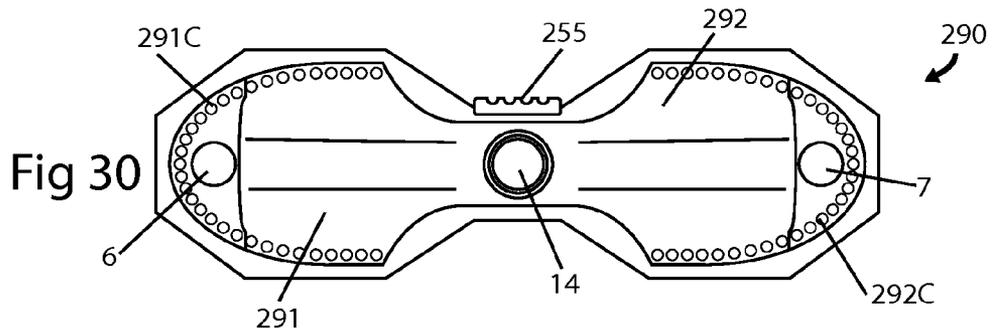
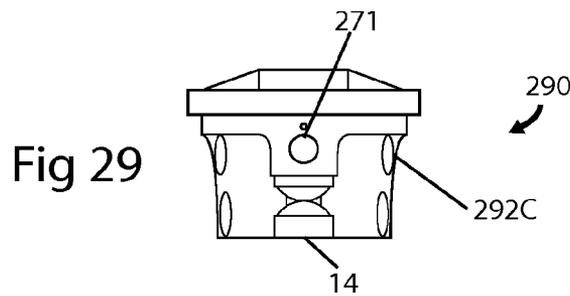
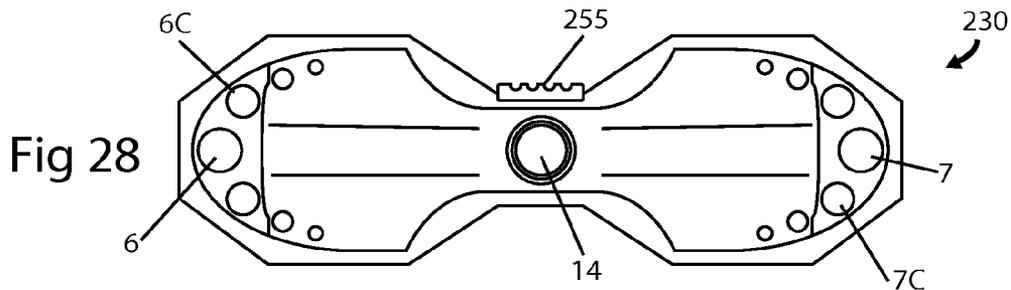
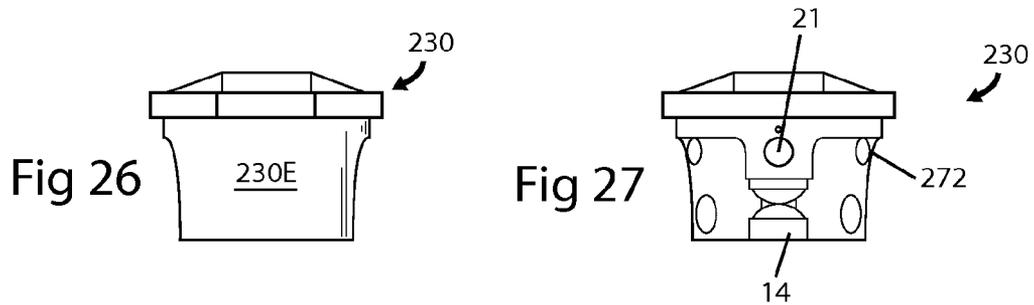


Fig 19







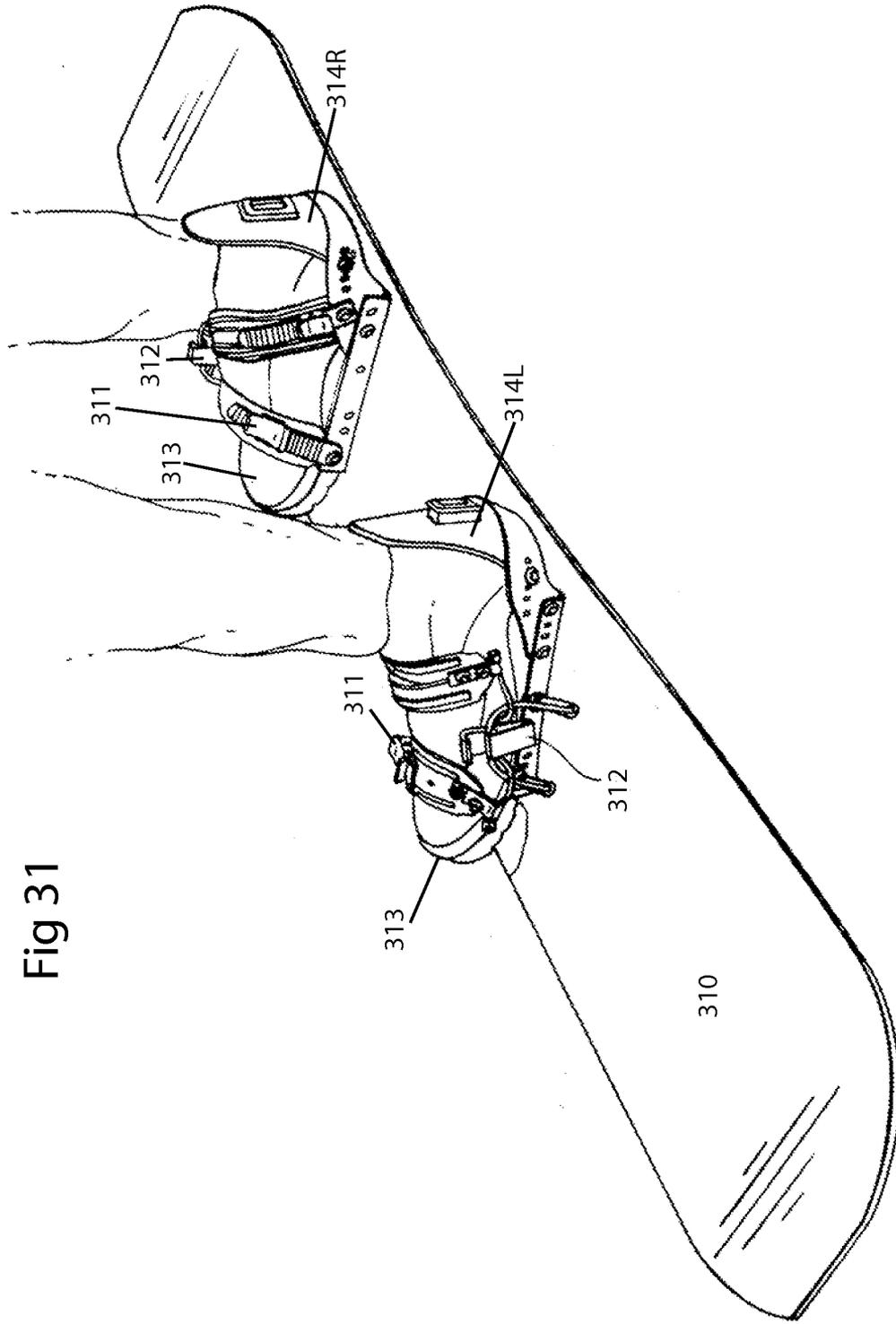


Fig 31

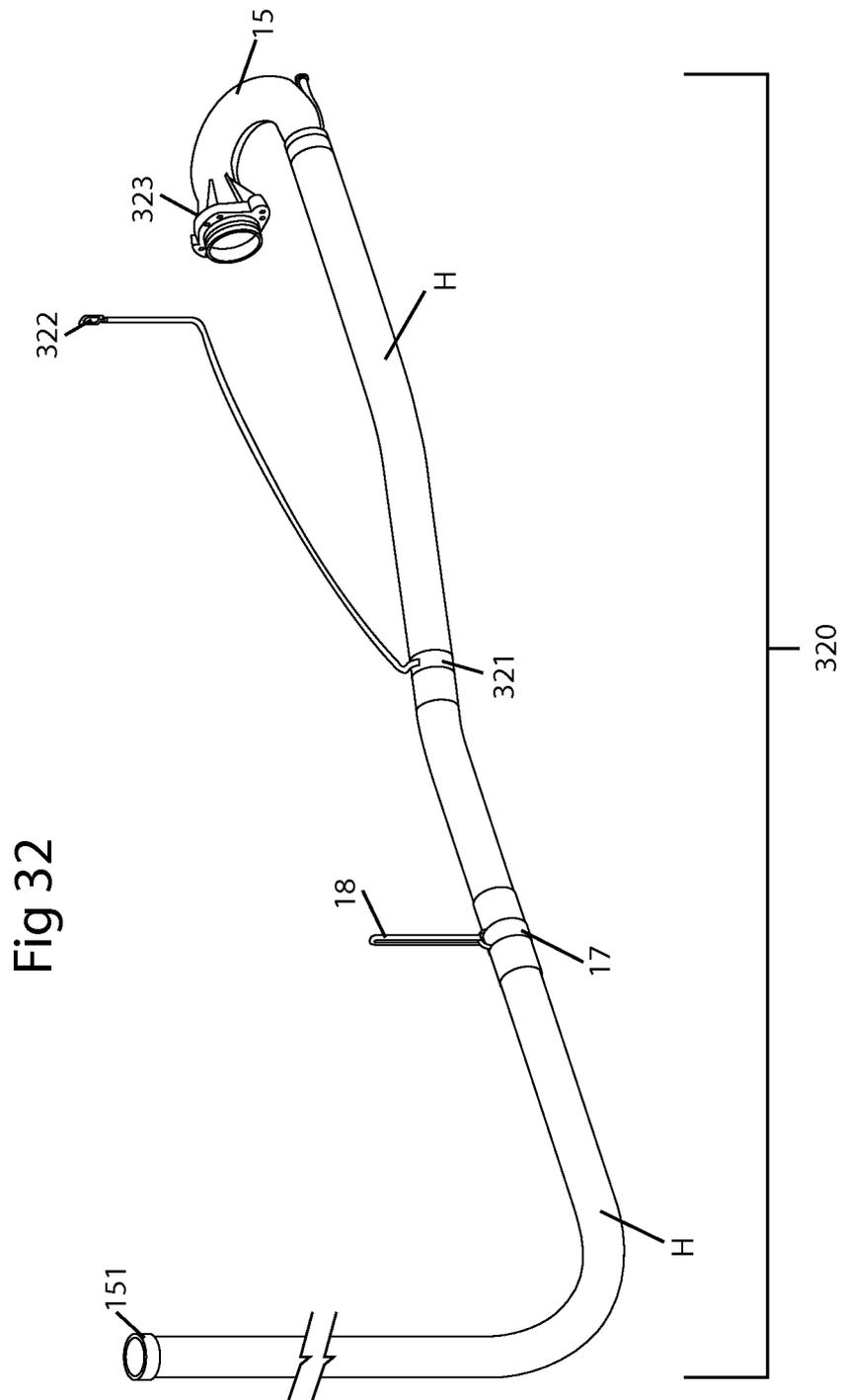


Fig 33

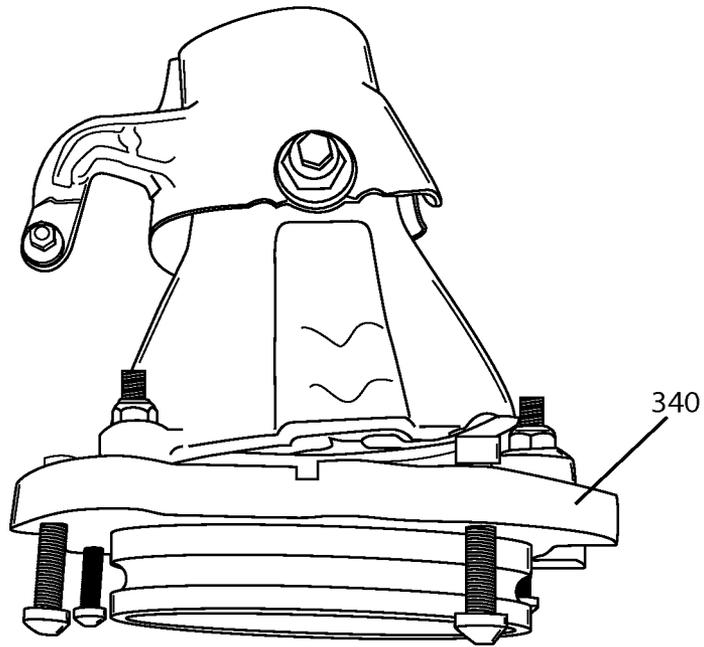
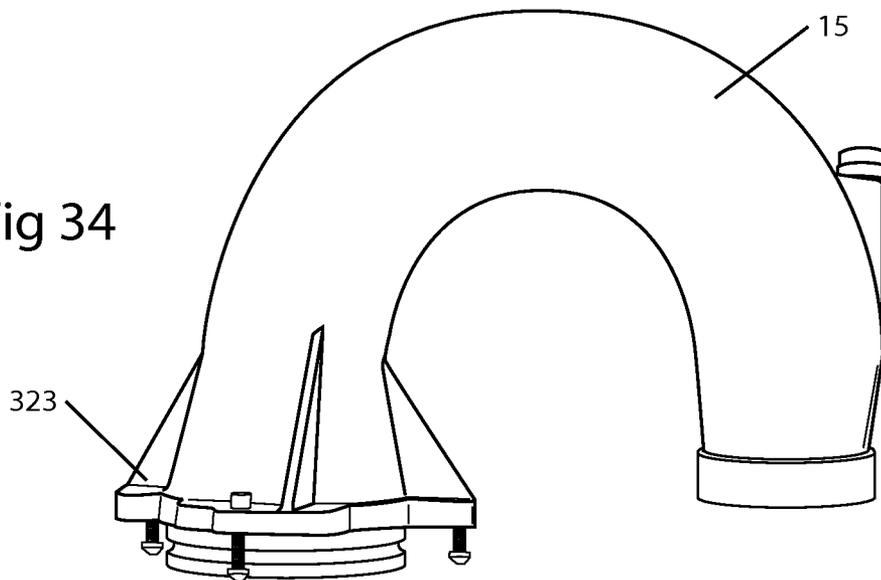


Fig 34



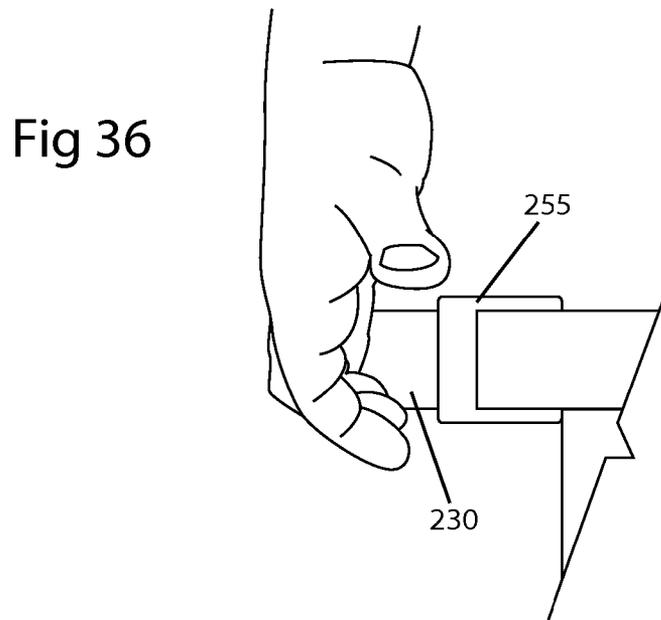
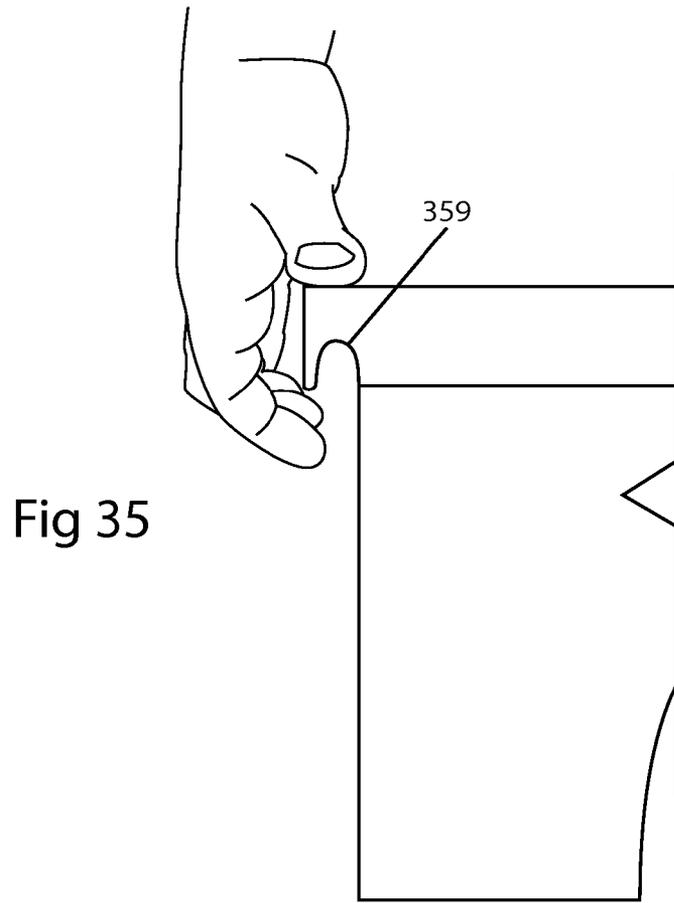
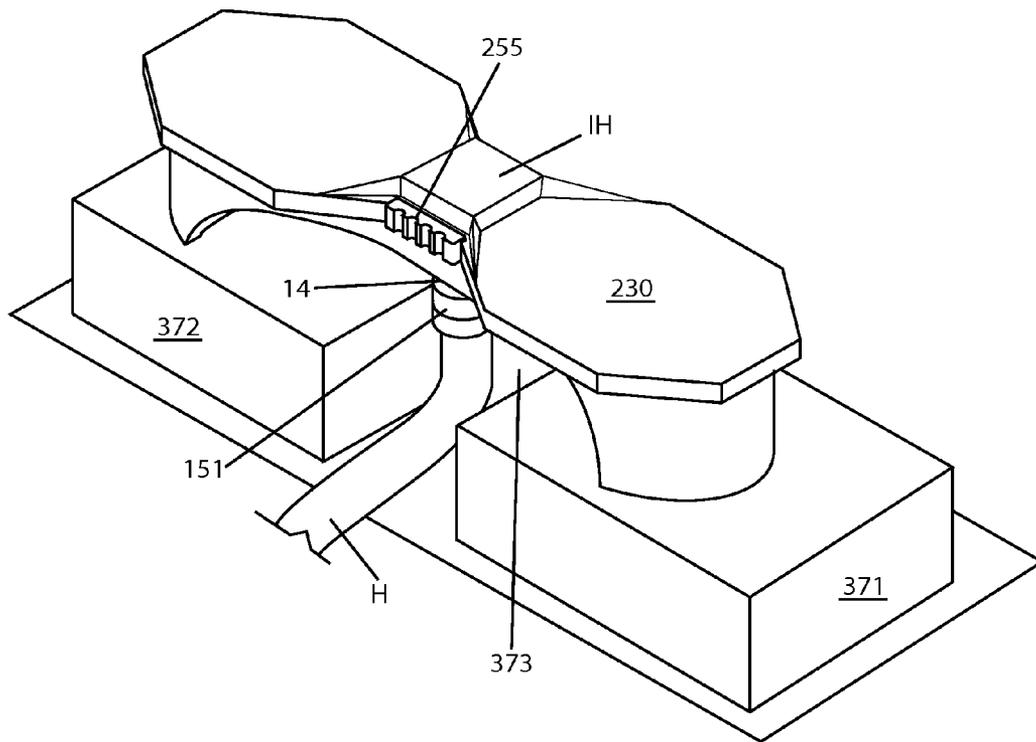


Fig 37



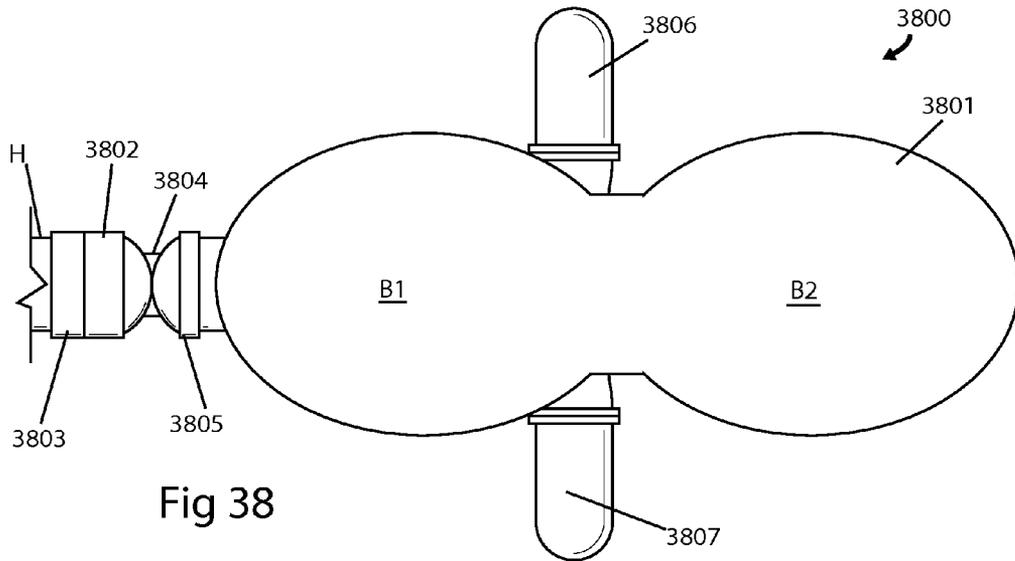


Fig 38

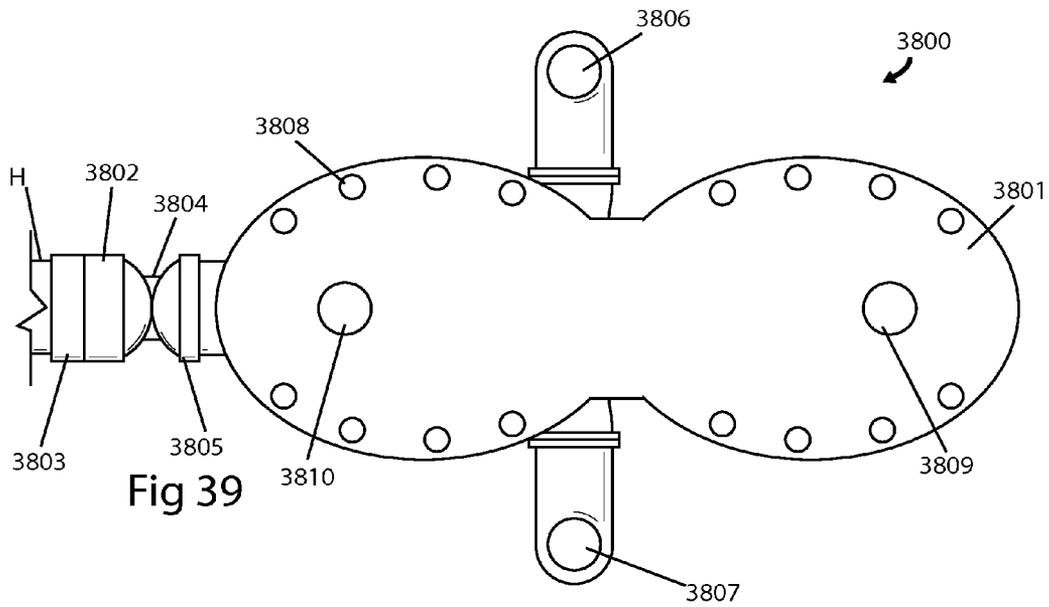
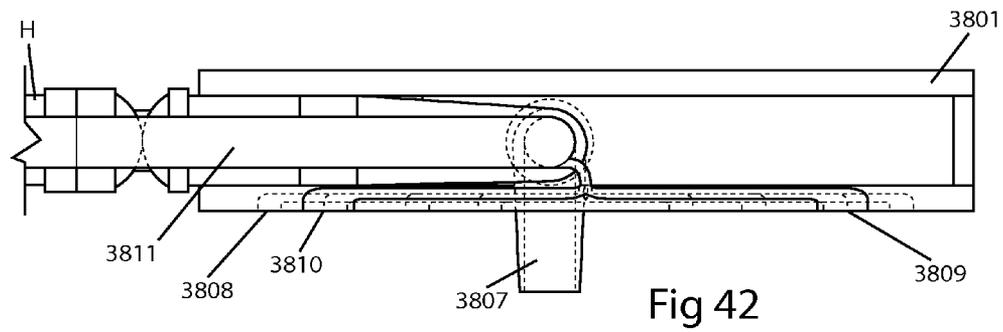
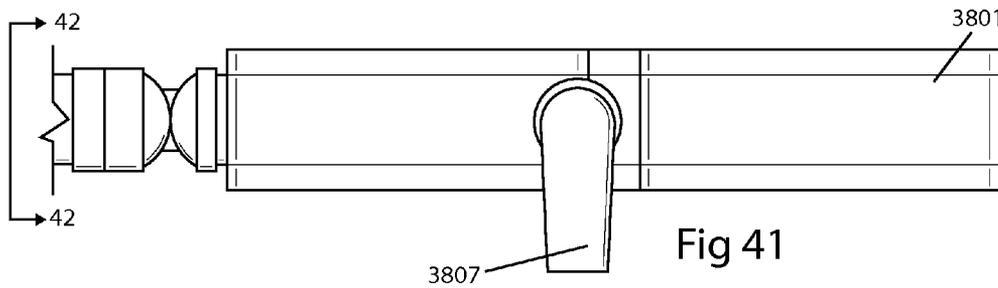
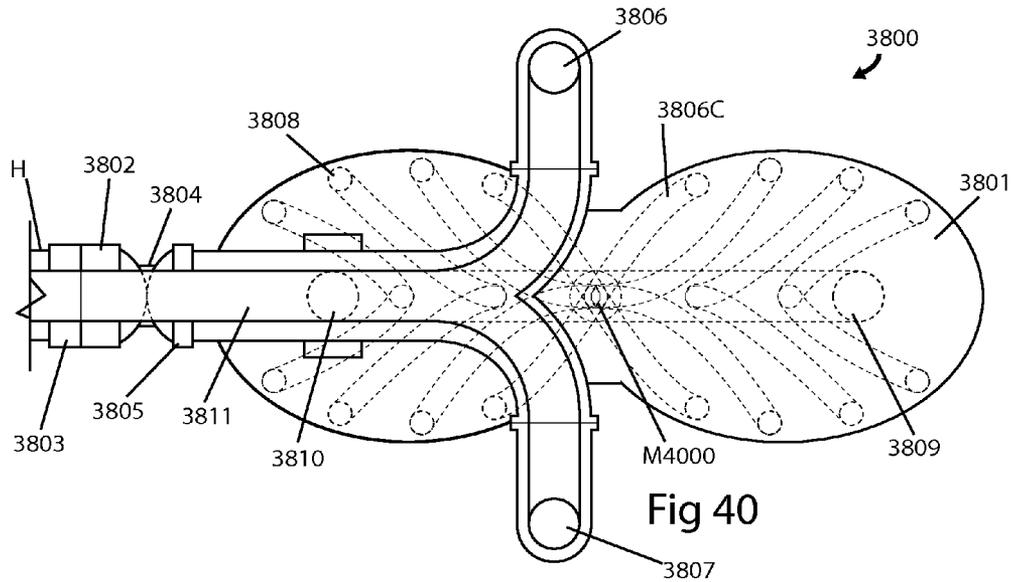


Fig 39



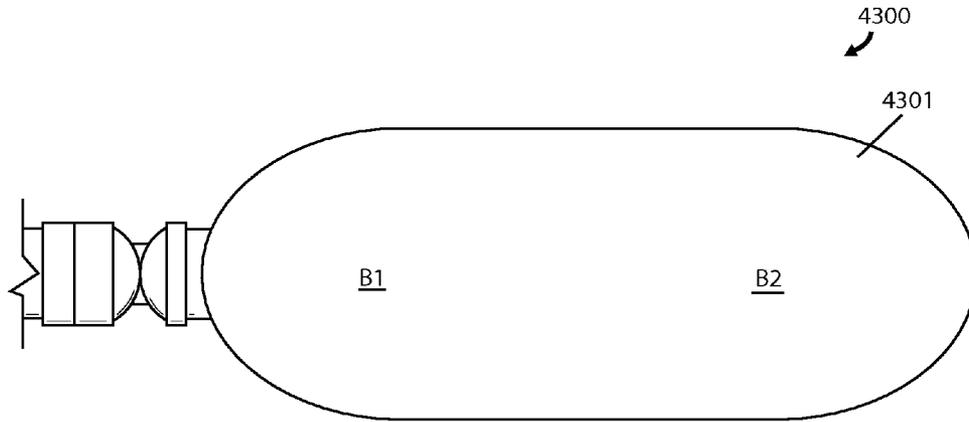


Fig 43

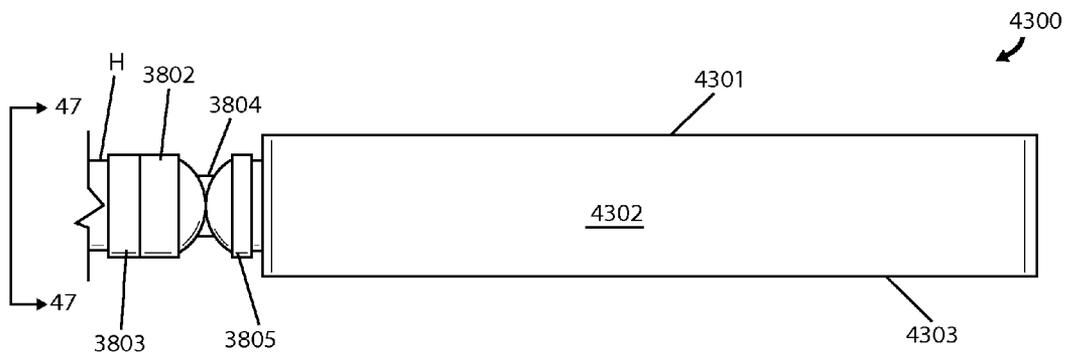


Fig 44

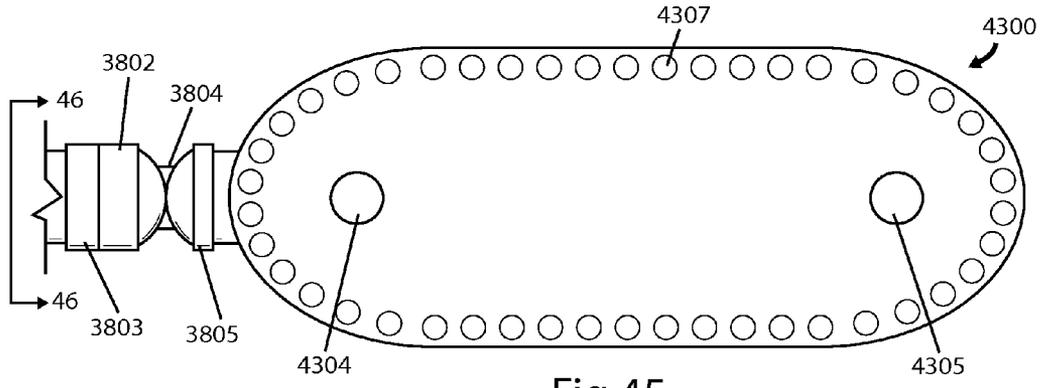


Fig 45

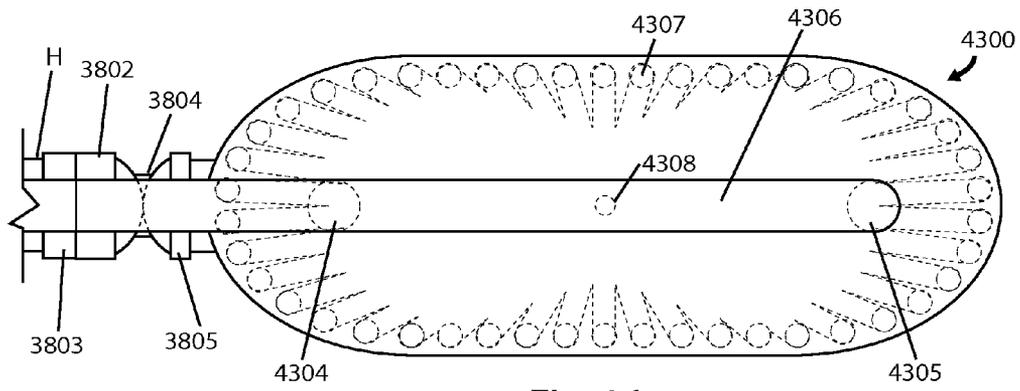


Fig 46

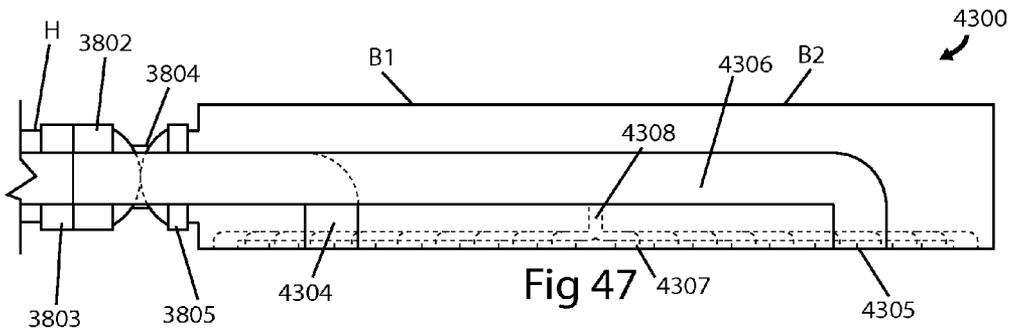


Fig 47

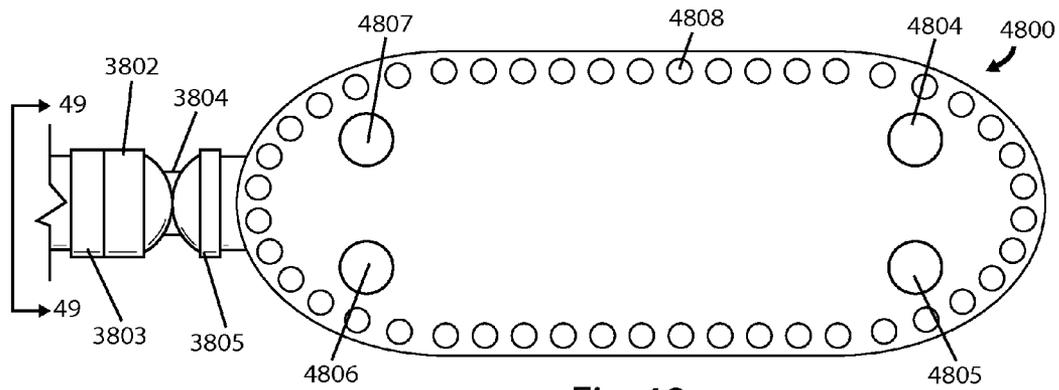


Fig 48

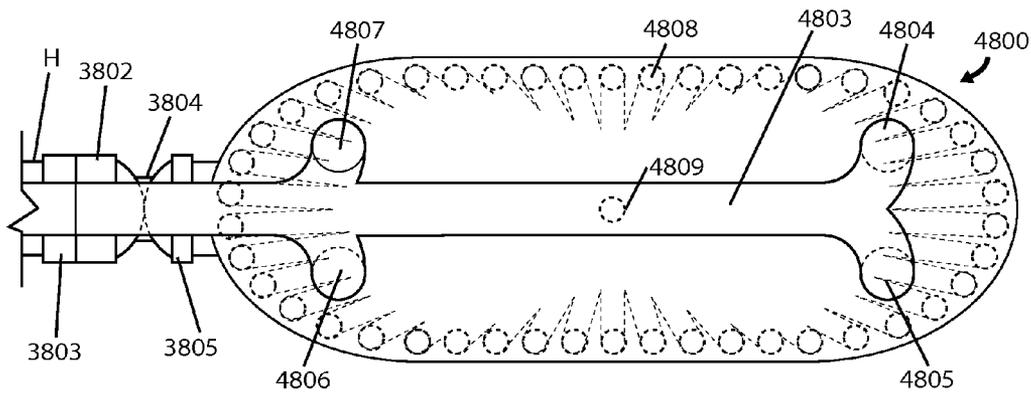


Fig 49

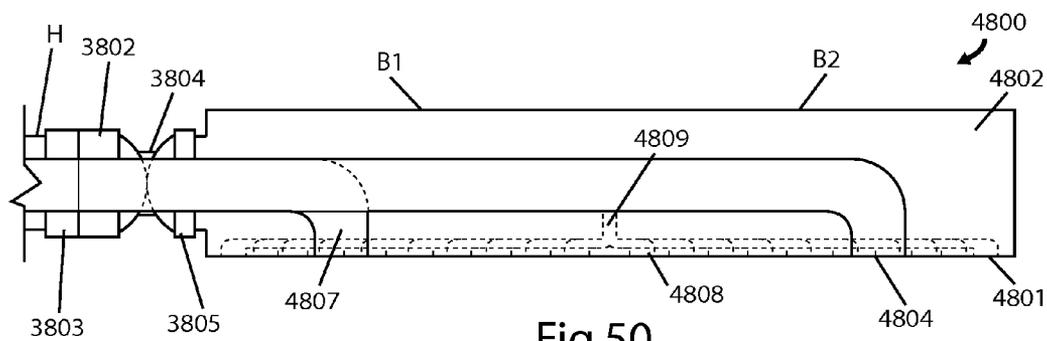
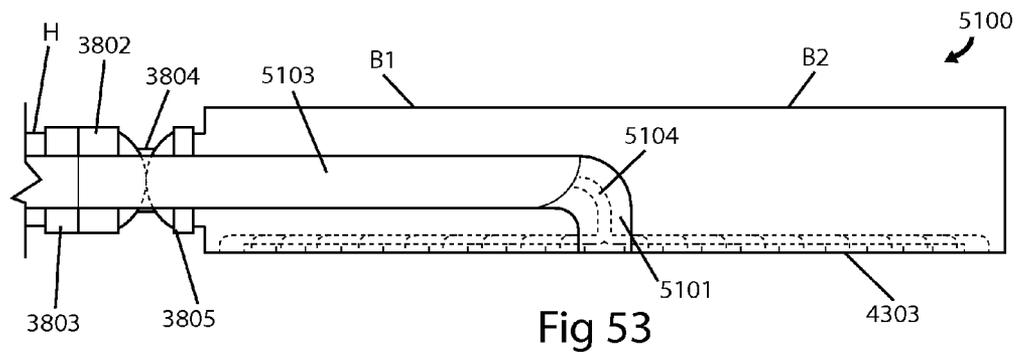
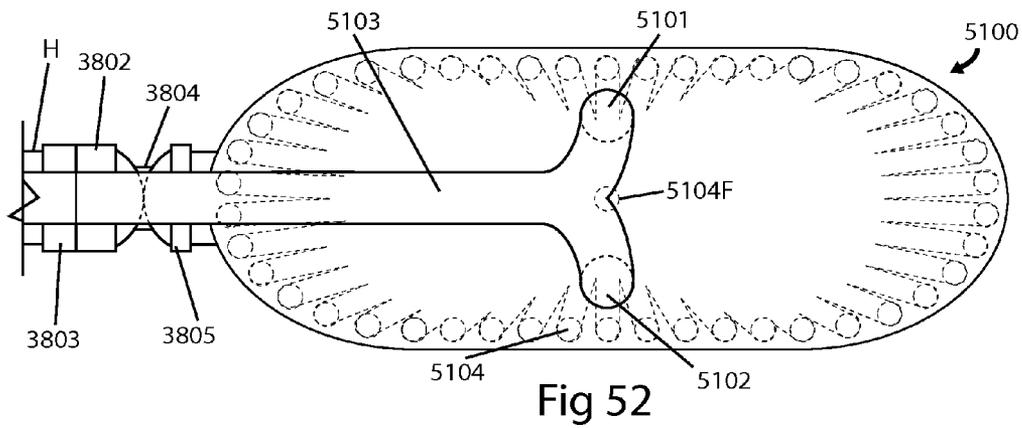
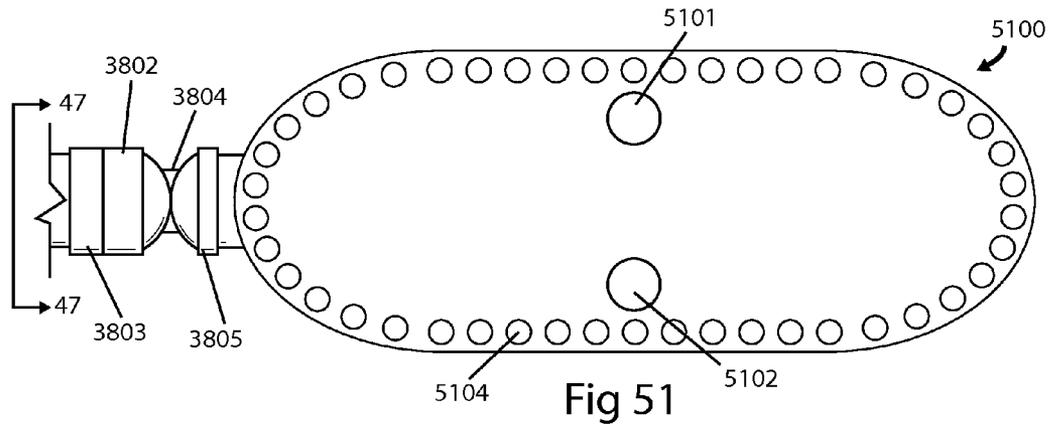


Fig 50



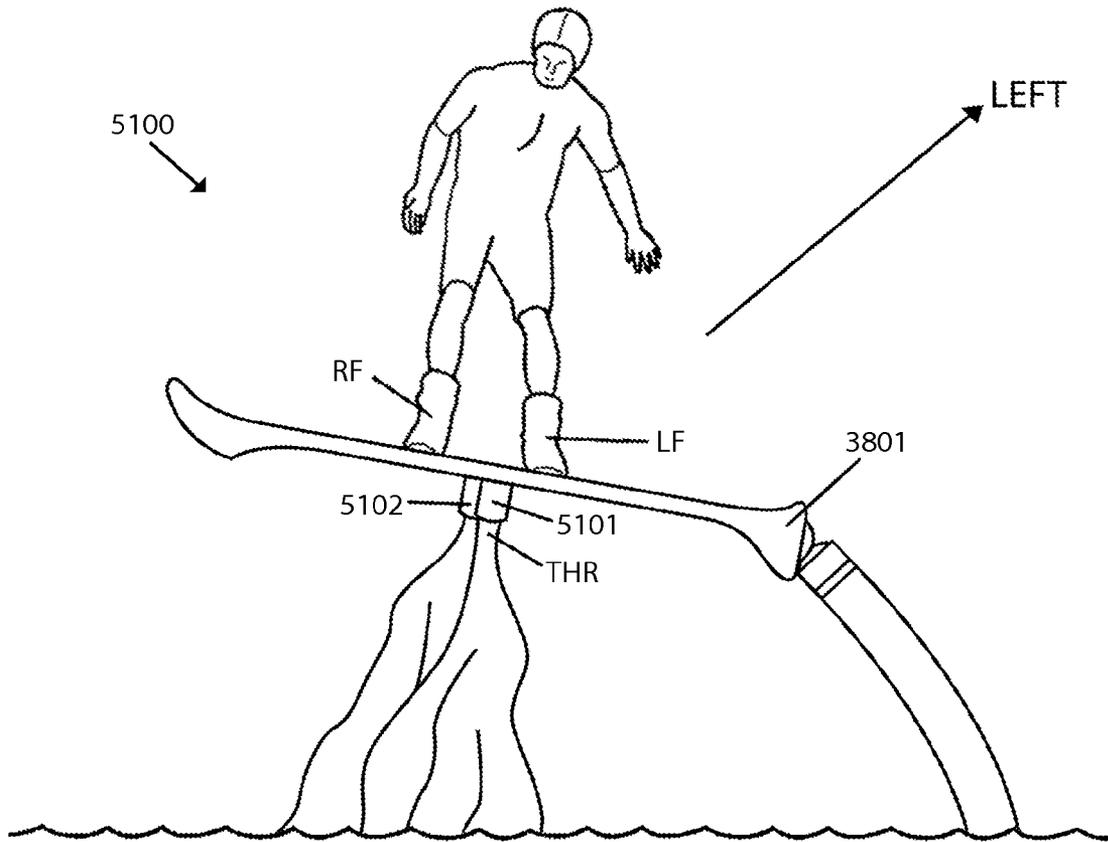


FIG. 54

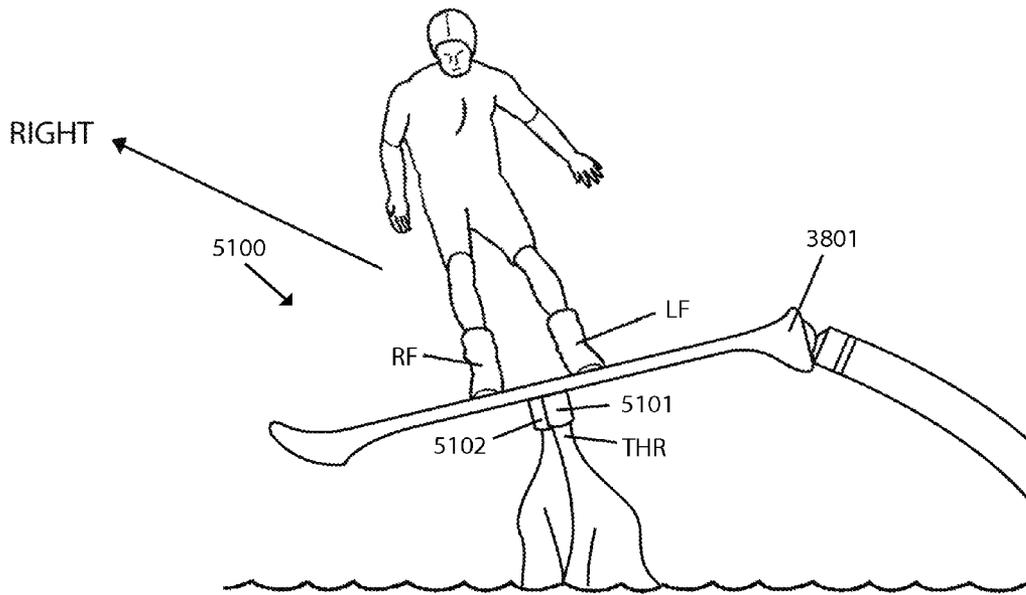


FIG. 55

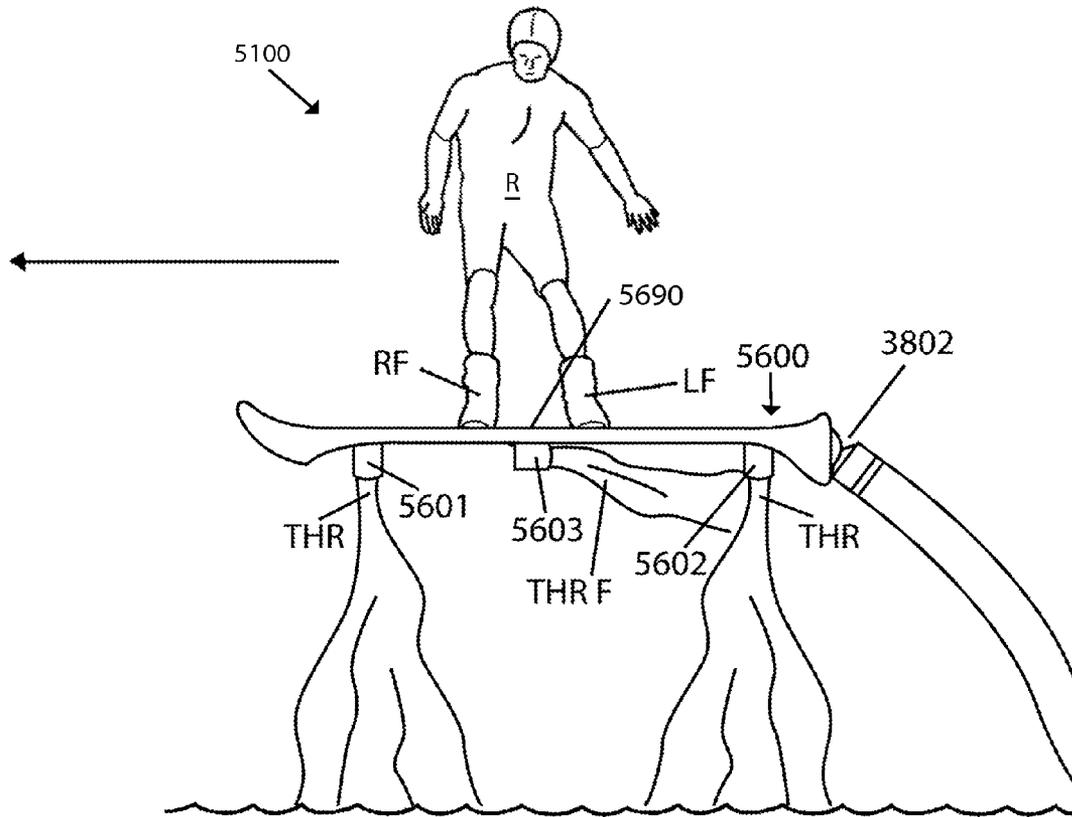


FIG. 56

FIG. 57(a)

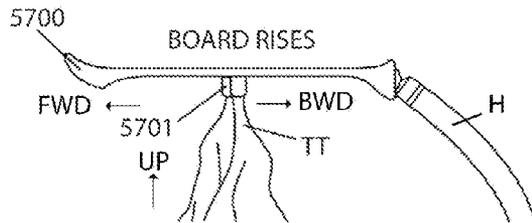


FIG. 57(b)

BOARD GOES FORWARD AND DOWN

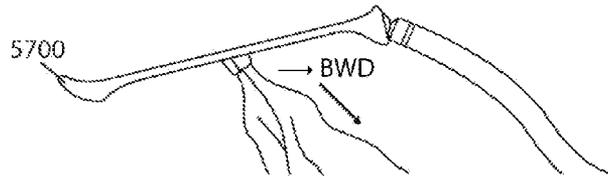


FIG. 57(c)

BOARD GOES BACKWARD AND DOWN

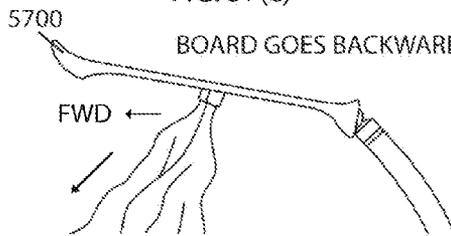


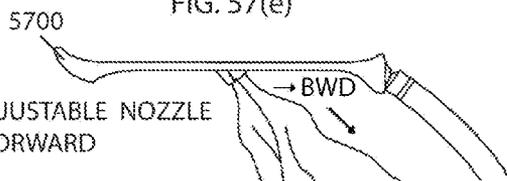
FIG. 57(d)

BOARD ADJUSTABLE NOZZLE
WILL GO FORWARD AND UP



FIG. 57(e)

BOARD ADJUSTABLE NOZZLE
WILL GO FORWARD



FORWARD PROPELLED HOVER BOARD

This application is a non-provisional application which is a continuation of the co-pending U.S. patent application Ser. No. 14/066,997 filed Oct. 30, 2013 of common inventorship. This application also claims priority to U.S. Provisional application No. 61/720,791 filed Oct. 31, 2013 of common inventorship. The present invention relates to a sports amusement device comprising a board that supports a flyer standing on the board, wherein the board is lifted in the air by water powered nozzles fed by a high pressure water hose connected to a quick connect pivoting ball joint assembly on the bottom of the board.

FIELD OF INVENTION

Background of the Invention

Water powered personal propulsion devices date back to at least 1966. See U.S. Pat. No. 3,277,858 to Athey. Athey uses a floating internal combustion engine which powers a pump. A hose runs from the pump to a pair of hip mounted nozzles on a diver. The '858 patent only shows a diver being propelled through the water. However, a jet ski powering the '858 device shown in FIG. 1 has been demonstrated to fly a rider several feet above the water.

A personal propulsion device trademarked as the Flyboard™ uses a jet ski with a diverter hose to power two nozzles on a metal Y shaped pipe mounted to the bottom of a plastic board. The flyer mounts his boots to the top of the board. A companion on the jet ski can control the throttle to lift the flyer as high as forty feet above the water. Forearm mounted control nozzles are also powered from a portion of the high pressure water stream. The flyer can perform dolphin type maneuvers in and out of the water as well as back flips and spinning maneuvers. The Y shaped metal diverter has a pair of ball bearings that mount on the plastic board bottom. This allows the hose to remain vertical as the board tilts toes down or toes up in relation to a horizontal orientation. An optional throttle cable can be controlled by the flyer. It runs down the center of the hose. This is the closet known prior art.

Three U.S. patents describe a shoulder mounted pair of nozzles powered by a jet ski. They are U.S. Pat. Nos. 7,258,301, 7,735,772 and 7,900,867. This personal propulsion device mounts a pair of nozzles above the flyer's center of gravity. Lift and descent are controlled by a cross arm in front of the rider that controls the tilt angle of the pivotable nozzles. These nozzles are strapped at shoulder level to the rider's back.

What is needed in the art is a lightweight, plastic board assembly that floats. Quick disconnect boots and a quick disconnect hose are needed. Curtain nozzle patterns are needed to eliminate hand control nozzles. The present invention meets all these needs.

SUMMARY OF THE INVENTION

The main aspect of the present invention is to provide a snowboard type board with a built in pivotable nozzle on the bottom, wherein the nozzle receives high pressure water, nominally from a jet ski, and diverts this water to two thrust nozzles under the board.

Another aspect of the present invention is to provide a built in land platform for the board to allow the rider to stand with the hose resting on the land and stretched out from the board to the pump source.

Another aspect of the present invention is to provide a quick disconnect mount for the rider boots.

Another aspect of the present invention is to provide a curtain nozzle at each end of the board to help stabilize the board in flight.

Another aspect of the present invention is to provide a quick disconnect for the hose on the pivotable nozzle.

Another aspect of the present invention is to build the entire board assembly from light weight materials including injection molded plastic and flotation foam.

Another aspect of the present invention is to provide an electronic glove controller to control the throttle and emergency shut off on the jet ski.

Another aspect of the present invention is to provide a boot tilt option on the board to allow the nozzles to be independently tilted with their left and right board sections.

Another aspect of the present invention is to provide a two rider board.

Another aspect of the present invention is to provide a barefoot quick disconnect mount for the board.

Another aspect of the present invention is to provide a multi-purpose mounting flange for a jet ski to allow normal use and quickly change to a hose connection.

Another aspect of the present invention is to provide a rider hand grip under the board.

Another aspect of the present invention is to provide a launch stand for the board.

Another aspect of the present invention is to provide a quick boot disconnect assembly powered by the high pressure water.

This flying board may be powered by a land based pump at an arena at a pool. Already the jet ski powered board is gaining attention worldwide. Double back flips from forty feet in the air are being done on the prior art Flyboard™.

The present invention has a unibody construction with a Y shaped high pressure water diverter and a left and a right nozzle built in. Each nozzle has a diverter valve to adjust the flow to a secondary nozzle shaped like a C. This C shaped end nozzle, also called a curtain nozzle, provides platform stability, wherein beginners may divert most all of the water to the C shaped nozzle. Experts may execute their flips with full diversion to the main thrust nozzles.

Safety is improved with several versions of quick disconnect boots or a barefoot binding. A wireless glove mounted electronic trigger can divert the high pressure water to release the bindings.

In summary the present invention improves control with the C shaped nozzles, reduces costs and weight with a unibody design, and increases safety with less weight, elimination of hand nozzles, and a quick release boot system.

Other aspects of this invention will appear from the following description and appended claims, reference being made to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the flying board powered by a conventional jet ski.

FIG. 2 is a bottom plan view of a shorter width board with one main thrust nozzle and curtain nozzles.

FIG. 3 is a bottom plan view of a middle width board with one main thrust nozzle and curtain nozzles.

FIG. 4 is a bottom plan view of a wide width board with one main thrust nozzle and curtain nozzles.

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FIG. 5 is a bottom plan view of a board having the main thrust nozzle integrated with the curtain nozzle.

FIG. 6 is a bottom plan view of a board with curtain nozzles extending all around the board.

FIG. 7 is a bottom plan view of a board having four main thrust nozzles and curtain nozzles.

FIG. 8 is a bottom plan view of a board with enlarged curtain nozzles and no main thrust nozzles.

FIG. 9 is a top plan view of a board with two main thrust nozzles and a central flow valve.

FIG. 10 is a top plan view of a board with only enlarged curtain nozzles and a hand grasp bar.

FIG. 11 is top plan view of a board as shown in FIG. 10 with a transparent window.

FIG. 12 is a top plan view of the board shown in FIG. 8.

FIG. 13 is a tip plan view of a board with no central flow valve and quick disconnect boots.

FIG. 14 is a front elevation view of a one piece flying board.

FIG. 15 is a rear cutaway view of a board similar to that shown in FIG. 14.

FIG. 16 is a rear elevation view of the quick disconnect hose.

FIG. 17 is a front perspective view of the glove mounted controller.

FIG. 18 is a front elevation view of a tilt board embodiment.

FIG. 19 is an end elevation view of the embodiment shown in FIG. 18.

FIG. 20 is a bottom plan view of a two rider board.

FIG. 21 is a top plan view of the embodiment shown in FIG. 20.

FIG. 22 is an end elevation view of a two rider board with rear slip in foot compartments.

FIG. 23 is a cutaway view of another embodiment of a single rider board.

FIG. 24 is a rear elevation view of the embodiment shown in FIG. 23.

FIG. 25 is a bottom plan view of a hand hold embodiment.

FIG. 26 is an end elevation view of the embodiment shown in FIG. 23.

FIG. 27 is a sectional elevation view of the embodiment shown in FIG. 23 representing the nozzle configuration shown in FIG. 28.

FIG. 28 is a bottom plan view of the embodiment shown in FIG. 23.

FIG. 29 is a sectional elevation view of the embodiment shown in FIG. 23 representing the nozzle configuration shown in FIG. 30.

FIG. 30 is bottom plan another view of the embodiment shown in FIG. 23.

FIG. 31 is a rear perspective view of a barefoot binding embodiment.

FIG. 32 is a perspective view of the entire hose assembly including quick connects and hose safety and control attachment.

FIG. 33 is a side perspective view of a jet ski nozzle adapter.

FIG. 34 is a side elevation view of a jet ski diverter coupling.

FIG. 35 is a close up view of a board hand hold.

FIG. 36 is a close up view of the centrally located cushioned hand hold shown in FIG. 28 and FIG. 29

FIG. 37 is a top perspective view of a launch stand.

FIG. 38 is a top plan view of a side to side nozzle embodiment.

FIG. 39 is a bottom plan view of the FIG. 38 embodiment.

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FIG. 40 is a cross sectional view of the FIG. 39 embodiment.

FIG. 41 is a left side elevation view of the FIG. 38 embodiment.

FIG. 42 is a cross sectional view taken along line 42-42 of FIG. 41.

FIG. 43 is a top plan view of another embodiment having front and rear thrust nozzles.

FIG. 44 is a left side elevation view of the FIG. 43 embodiment.

FIG. 45 is a bottom plan view of the FIG. 43 embodiment.

FIG. 46 is a cross sectional view taken along line 46-46 of FIG. 45.

FIG. 47 is a cross sectional view taken along line 47-47 of FIG. 44.

FIG. 48 is a bottom plan view of a four nozzles embodiment.

FIG. 49 is a cross sectional view taken along line 49-49 of FIG. 48.

FIG. 50 is a cross sectional view of the FIG. 48 embodiment.

FIG. 51 is a bottom plan view of another side to side nozzle board.

FIG. 52 is a cross sectional view taken along line 52-52 of FIG. 51.

FIG. 53 is a cross sectional view of the FIG. 51 embodiment.

FIG. 54 is a side perspective view of a side to side nozzle steering vector right.

FIG. 55 is a side perspective view of a side to side nozzle steering vector left.

FIG. 56 is a side perspective view of a pivotable nozzle surf and fly embodiment.

FIG. 57 a thru 57e show an adjustable nozzle board in various angles of flight.

Before explaining the disclosed embodiment of the present invention in detail, it is to be understood that the invention is not limited in its application to the details of the particular arrangement shown, since the invention is capable of other embodiments. Also, the terminology used herein is for the purpose of description and not of limitation.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring first to FIG. 1 a body of water 1 has a surface 2, wherein a standard jet ski 3 floats on the surface 2. A jet ski driver 4 controls the throttle of the jet ski which in turn controls the thrust from the flying board 5 thrust nozzles 6, 7. The rider 8 controls the flying board 5 using his feet which are mounted in boots 9, 10 for tilting toe down, toe up. He uses the side to side angulation of his body indicated by arrow 11, and he uses the forward/backward lean of his body indicated by arrow 12. It is with these combined movements that flying, diving and doing a dolphin type diving are accomplished.

The flyboard board 5 has a unibody construction 13 preferably from an injection molding process. At the center of the unibody housing 13 is an inlet port 14 which is both a quick disconnect joint and a swivel joint. As seen this swivel joint 14 allows the hose H to remain about vertical as the flying board 5 tilts. The jet ski 3 has had its thrust nozzle replaced with a diverter conduit 15. A quick connect coupling connects the hose H to the diverter conduit 15.

A flexible collar 17 (preferably made of rubber) helps prevent pinching of the hose H. The collar 17 has an attachment 18 to the jet ski 3.

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Referring next to FIGS. 2, 3, 4 a flying board 20 has a shorter end to end footprint than the long flying board 40 shown in FIG. 4. The flying board 20 has a larger side to side width than the middle sized flying board 30 shown in FIG. 3. Otherwise all features of flying boards 20, 30, 40 are identical.

Opposing ends 21, 22 and 31, 32 and 41, 42 are shaped as octagons. Separating each set of opposing ends is an inlet housing IH. The inlet housing IH has a smaller width than the opposing ends so as to create a rider viewing area VA between the rider's feet. Thus, the rider can look down at the water as he flies above the water.

The thrust nozzles 6, 7 are powered with the high pressure water coming into inlet port 14. The curtain nozzles 6C, 7C assist the rider to balance the flying board. Before flying the rider manually sets the divergence of water between the thrust nozzles 6, 7 and curtain nozzles 6c, 7c in any range of split from 0 to 100%.

The curtain nozzles 6C, 7C form a separate thrust pattern in roughly a semi-circular pattern around the thrust nozzles 6, 7. Each hole may be the same size. One option is to enlarge the hole sizes from smallest S to largest L in the center to smallest S at the opposite end of the pattern.

Referring next to FIG. 5 a flying board 50 has the curtain nozzles pattern 51, 52 interrupted by the thrust nozzles 6, 7. Once again the hole sizes could be all the same or get larger from a smallest S to a largest L at the end position.

Referring next to FIG. 6 a flying board 60 has a pattern of curtain nozzles 60C that totally encircle the periphery of the flying board 60. They pass around opposing ends 61, 62 and the inlet housing IH.

Referring next to FIG. 7 a one rider flying board to has two sets of nozzles, 71, 72, 73, 74 which are fed by respective feeder pipes 71P, 72P, 73P, 74P. Fire departments could use high power four nozzle systems to lift a fireman and his own hose.

Referring next to FIG. 8 a flying board 80 does not have thrust nozzles at all. Instead the curtain nozzles 81C and 82C are oversized.

In FIG. 9 a flying board 90 shown in a top plan view has no curtain nozzles. A control valve v can limit the flow to thrust nozzles 6, 7. Boot mounting pods B1, B2 have a quick release feature 91, 93 which is activated by buttons 92, 94.

In FIG. 10 a flying board 100 has the curtain nozzle pattern shown in FIG. 8. A rider hand grasp bar 101 is used by experienced riders for acrobatic maneuvers.

In FIG. 11 a flying board 110 has a transparent panel TP attached to the hand grasp bar 101. Additional flow control valves 111, 112 can provide the rider additional tuning of his thrust.

In FIG. 12 the flying board 80 is shown in a top plan view.

In FIG. 13 the flying board 130 uses a center boot latch 133, 134 for boot mounting pods 3, B3, B4. A button 131, 132 is depressed to release the respective latch 133, 134. U.S. Pat. Nos. 7,104,564, 6,769,711 and 6,659,494 are incorporated herein by reference to provide quick dismount boot options. Water pressure could be used as a stored energy source to release the boots.

Referring next to FIG. 14 a flying board 140 has a wrap around vertical wall 143 supporting the opposite ends 141, 142 and the inlet housing IH. On land the wall 143 would rest on an unfilled hose (not shown) during the staging process.

Referring next to FIG. 15 a flying board 150 uses the thrust nozzles 6, 7 as support columns when staging on land. The inlet port 14 is slightly recessed to allow an empty hose to extend outward from the flying board 150 on land. A quick

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disconnect fitting 151 snaps into inlet port 14. The boots B100 and B101 have a hook and loop ankle release HL. Valves V1, V2 provide adjustment for flow diversion from the thrust nozzles pipes 68, 69 to the curtain nozzles 6C, 7C.

Referring next to FIG. 16 a telescoping inlet nozzle 160 has a sliding fixture 161 moving up and down on a fixed pipe 162. The concept is to connect the quick disconnect fitting 151 while the sliding fixture 161 is up shown by arrow U. Then when water pressure builds in hose H, the sliding fixture 161 pops out shown by arrow D. Then the swivel feature of inlet nozzle 160 allows a conical pattern of hose H movement shown between lines S1, S2. The sliding fixture 161 also rotates 360° as shown by arrow R. This swivel feature is shown in FIG. 1, wherein the rider does not have to fight the weight of a water filled hose H being lifted horizontally.

Referring next to FIG. 17 a control glove 170 has a wrist strap 171 containing a battery and a wireless transmitter and a control circuit. A cylindrical rail 172 has a kill switch 173 for the thumb 174. The forefinger 175 moves the throttle bar 176 from idle as shown to wide open at F. This control glove 170 is used when a rider-less jet ski is equipped with a wireless controller for throttle and kill switch.

Referring next to FIGS. 18, 19 a trick flying board 180 has a central inlet housing 181. A left foot platform 182 swivels independently from a right foot platform 183, arrows 182U and 182D show the left foot platform moving in relation to right foot platform arrows 183U, 183D.

Referring next to FIGS. 20, 21, 22 a two rider flying board 200 is shown. Left platform 202 has thrust nozzles 204, 206 and curtain nozzles 202C. Right platform 201 has thrust nozzles 203, 205 and curtain nozzles 201C.

The instructor has instructor boot left pod IBL and instructor boot right pod IBR. The passenger holds onto the instructor and places his feet into passenger binding left PL and passenger binding right PR. This device could be used at fairgrounds, water parks and amusement parks to give people a real flying experience with no training.

Referring next to FIG. 23, a flying board 230 is rectangular in shape. The inlet port 14 has a swivel design (as in a ball B10 and socket S10) to let the hose H move in the conical area between S1, S2. It also rotates per arrow R. The thrust nozzles 6, 7 provide support columns on land.

In FIG. 24 a flying board 230A shows the hose H having a quick connect fitting 2401 to a receiving pipe 2402. Receiving pipe 2402 can swivel up and down in the inlet housing 14A as shown by arrow R. The inlet housing 14A has a slot 2403 in which the receiving pipe 2402 swivels up and down thru a 90° arc. The inlet housing 14A rotates 360° in a base socket 2404 as shown by arrows RR. Thus, the hose H can move in the conical area S1, S2.

In FIG. 25 a flying board 250 has opposing ends 251, 252. A front hand grip 255 is designed into the inlet housing IH.

Referring next to FIGS. 26, 27, 28 the flying board of FIG. 23 is shown in further views. Each end 230E is a wall as seen in FIG. 26. FIG. 27 shows the thrust nozzles built in pipe 270 and curtain nozzles 272.

Referring next to FIGS. 29, 30 a flying board 290 looks like flying board 230 but has a peripheral curtain wall 291C, 292C for each end 291, 292.

In FIG. 31 a rider wears rubber booties 313. The heel supports 314L, 314R prevent backward movement on the flying board 310. The lower parts of the flying board are not shown. A simple toe strap assembly 311 holds the toes down. An upper arch strap assembly 312 holds the foot against the heel supports 314L, 314R. This is essentially a barefoot embodiment with the booties merely protecting skin abra-

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sion. The rider can be completely barefoot when the straps are cushioned to protect the feet.

Referring next to FIGS. 32, 33, 34 the jet ski attachment assembly 320 is shown. First the jet ski rear thrust nozzles is removed. Then a universal adapter 340 is installed on the jet ski. This enables the diverter conduit 15 to be installed. The universal adapter also allows the original jet ski nozzles to be quickly reinstalled on the universal adapter 340. The hose H has an anchor collar 321 that secures a rear tether 322 for attachment to the jet ski.

The hose H has a rubber anti-crimp collar 17 that affixes to the front of the jet ski with tether 18. This tether 18 pulls the jet ski along if the rider controls his flying board to do so.

In FIG. 35 an end hand grasp 359 is built into the flying board as shown in FIG. 23.

In FIG. 36 a front of inlet housing hand grasp 255 is shown as in FIG. 28.

In FIG. 37 a stand 370 has pair of blocks 371, 372 with a separation area 373. This allows the hose H to be pressurized and lift the rider right off a land base.

Referring next to FIGS. 38-42 a dual side to side nozzle board 3800 is shown. The board has a rear hose inlet port 3802 shown with a quick connect collar 3803 of hose H inserted therein. A swivel joint 3804 allows the hose H to move in a cone pattern. A rotatable bearing 3805 allows the hose to orient 360° relative to the board 3801.

Boot mounts B1, B2 allows either a left or right foot forward orientation as exists for snowboarders. Side thrust nozzles 3806, 3807 are the primary lift nozzles, a curtain nozzle pattern for control is formed by peripheral nozzles 3808. Optional central forward nozzle 3809 and rear nozzle 3810 feed from internal built in pipe 3811. The curtain nozzles 3808 are powered by built in pipes C3808. All piping is built into the board 3801 preferably in a one piece injection molded housing.

Controlling this board 3800 is shown in FIGS. 54, 55. The rider R is facing into the paper with the back of his head facing the reader. Just like in snowboarding the rider in FIG. 55 weights his right foot RF and turns to his right shown by arrow RIGHT because the thrust THR is being moved under him to his left.

FIG. 54 shows the opposite turn control with the rider R weighting his left foot LF and turning left shown by arrow LEFT. In this orientation he will drag the jet ski (not shown) along with him.

In FIG. 40 an optional microcontroller M4000 is battery powered. A gyroscope is built into the microcontroller M4000. Control valves (not shown) are controlled by the microcontroller M4000 to divert water from side to side in curtain nozzles 3808 to maintain a level board 3801 and from nozzles 3809 and 3810 to maintain a level board 3801. This advanced self balancing system can help rental shops to quickly train new riders.

Referring next to FIGS. 43-47 a front to rear board 4300 is shown. Boot mounting pods B1, B2 are on the board top 4301. The bottom 4303 of the one piece housing 4302 is flat, making staging on land easier.

The front thrust nozzle 4305 and the rear thrust nozzle 4304 are powered by the built in pipe 4306. The curtain nozzles 4307 are also powered by the pipe 4306 via feeder pipes 4308.

Referring next to FIGS. 48-50 a board 4800 also has a flat bottom 4801 and a one piece housing 4802. A central pipe 4803 powers the front two thrust nozzles 4804, 4805 and the rear two thrust nozzles 4806, 4807. The curtain nozzles 4808

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are also powered by central pipe 4803 via feeder pipes 4809. This board 4800 could be a one or two person board.

Referring next to FIGS. 51-53 a board 5100 will fly and control as shown in FIGS. 54, 55 due to its side to side thrust nozzles 5101, 5102. The housing 5104 contains a central pipe 5103 to power nozzles 5101, 5102 and curtain nozzles 5104 which are fed by feeder pipes 5104F.

Referring next to FIG. 56 a surf and fly board 5600 has optional fixed flight nozzles 5601, 5602 which provide lift thrust THR. A side to side nozzle pair 5603, 5604 are configured similar to the board 3800 shown in FIG. 38. However, the rider R can rotate this nozzle pair manually using tiller 5690 so as to face the nozzles 5603, 5604 rearward as shown. In this position the nozzles 5603, 5604 provide a forward thrust THRF. The rider R can now perform powered surfing on the surface of the water without flying.

The tiller 5690 may be a hand controlled pivotable rod as shown. Another embodiment (not shown) can use a small handle adjacent the boots to fix the rotating nozzles from a flying to a surfing orientation.

All embodiments could have a motorized jet ski throttle controller on the handle. This would be a wireless controller receiving signals from a rider's transmitter. A kill switch would be integral to this flying rider controlled jet ski embodiment.

In FIG. 57(a) thru (e) a flying board 5700 has the side to side nozzle pair as in FIG. 38, but the thrust nozzle pair 5701 are controllably angled backward, see arrow BWD. A second controller (not shown) similar to FIG. 17, perhaps on a glove on the opposite hand, controls the nozzle angle. FIG. 57(a) shows the nozzle 5701 angled straight down, forcing the flying board 5700 straight up, per arrow UP with thrust TT. 57(b) shows nozzle 5701 backward resulting in board going forward and down. 57(c) shows nozzle 5701 forward FWD and board going backward and down. 57(d) shows nozzle 5701 backward and board forward and up. 57(e) shows nozzle 5701 backward and board going flat and forward.

Although the present invention has been described with reference to the disclosed embodiments, numerous modifications and variations can be made and still the result will come within the scope of the invention. No limitation with respect to the specific embodiments disclosed herein is intended or should be inferred. Each apparatus embodiment described herein has numerous equivalents.

I claim:

1. A water propelled flying board comprising:
 - a rigid board having a length greater than a width;
 - said rigid board having a top surface upon which a rider can ride;
 - said rigid board having a rear end with a high pressure water hose inlet connection;
 - said rigid board having at least one rearward facing high pressure water outlet nozzle;
 - a central pipe connecting the water hose inlet connection to the outlet nozzle; and
 - wherein the outlet nozzle, when fed with a high pressure water source from the water hose inlet connection, provides a forward thrust to the water propelled flying board.

2. The water propelled flying board of claim 1, wherein an angled position of the water outlet nozzle provides a lift thrust in addition to a forward thrust.

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3. The water propelled flying board of claim 2, wherein the outlet nozzle further comprises an angle adjustment means functioning to adjust the angled position of the water outlet nozzle.

4. The water propelled flying board of claim 3, wherein the angle adjustment means further comprises a handle.

5. The water propelled flying board of claim 1, wherein the at least one rearward facing high pressure water outlet nozzle further comprises two rearward facing high pressure water outlet nozzles.

6. The water propelled flying board of claim 1 further comprising a tiller means functioning to adjust a rearward tilt angle of the rearward facing high pressure water outlet nozzle.

7. The water propelled flying board of claim 1, wherein the central pipe is located centrally along a longitudinal axis of the water propelled flying board.

8. The water propelled flying board of claim 1 further comprising a wireless controller for the rider to control a jet ski which powers the high pressure water.

9. The water propelled flying board of claim 6, wherein a wireless controller controls the tiller means to adjust the rearward tilt angle.

10. The water propelled flying board of claim 1, wherein the high pressure water hose inlet connection further comprises a rotatable bearing allowing the flying board to orient 360° relative to a hose connected to the high pressure water hose inlet.

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11. The water propelled flying board of claim 1, wherein the top surface further comprises a mounting means for a rider's feet functioning to hold the rider's feet onto the flying board.

12. The water propelled flying board of claim 2, wherein the high pressure water hose inlet further comprises a quick disconnect fitting.

13. The water propelled flying board of claim 10, wherein the high pressure water hose inlet further comprises a quick disconnect fitting.

14. The water propelled flying board of claim 2 further comprising a source of a high pressure water comprising a jet ski and a high pressure hose connected to the high pressure water hose inlet connection at an outlet end of the hose with a quick disconnect fitting and a rotatable bearing, and an input end of the hose connects to a universal adapter which is attached to a high pressure water outlet port located at a rear of the jet ski.

15. The water propelled flying board of claim 14, wherein the universal adapter further comprises a diverter conduit which then connects to the input end of the hose.

16. The water propelled flying board of claim 15, wherein the universal adapter further comprises a mounting means functioning to provide a removable connection to a standard jet ski nozzle and a removable connection to the diverter conduit, one at a time, to an exit port of the universal adapter.

* * * * *

Exhibit “C”

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HOVERBOARD by ZR DECK

Franky Zapata and his Zapata Racing team have done it again. Today they released a teaser video of their new Hoverboard by...

\$2,675.00

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Hoverboard by ZR

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PWC of Choice?

- Seadoo
- Yamaha
- Kawasaki

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PWC of Choice?

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Yamaha

Kawasaki

VOTE



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Shop PowerFly / 2016/2017 Flyboard Pro Series Kit by Zapata Racing



New Products | Zapata Racing

Select your Binding Size *Required

Select Below:

Select Your Flyboard Adapter Kit *Required

Choose Your Adapter Below:

Upgrade to 2016 Double Swivel U-Pipe

Select Below:

Upgrade to the PowerFly DXP Pro Hose to go with your Kit OR a Longer X-Armor Hose

Choose your DXP Pro Hose Opti

Add the PowerFly Shock System PRO

Select Below to Add:



Quantity

Price:

\$5,612.00

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The New Flyboard Pro Series is now available from PowerFly Products. This is the complete kit with X-Armor 18 meter hose. Add upgrades and different variations to your Flyboard Kit here.

Flyboard® Pro Series is the evolution of the Flyboard® Legend. Besides from its appearance, Flyboard® Pro Series offers many new features and innovations. Among them is the Secure Twist system allowing the board to rotate on its axis from 10 to 20° with the force of the riders legs. This innovation is equipped with a return spring, allowing the rider to return to a neutral position, as well as stops to lock and limit the spin angle. This new board also has an ultra-resistant, transparent nozzle pipe made with plastic. (For those who purchase now with a black nozzle system, a transparent nozzle system will be shipped directly to you once available.) Zapata Racing's design team performed all tests and measurements of force and torque with advanced software comparable to those used in the design of Formula 1 vehicles. You are required to select an adapter kit in order to adapt the Flyboard to your personal watercraft.

The Flyboard® Pro Series kit:

- 1 pair of bindings
- 1 rotation system equipped with specific bearings
- 1 X-Armor Hose (18 meters)
- 1 U pipe which reverses the PWC water outlet (**You can upgrade to the 2016 Double Swivel U-Pipe from the menu above - click here for additional details**)
- 1 quick clip for an easy uncoupling between the Flyboard® and the PWC

** If you already own a 2014 Complete Flyboard Kit and you just want to upgrade your board, you can purchase the stand alone board only - click here.

** If you already own a 2014 Complete Flyboard Kit and you just want to upgrade your board, you can purchase the stand alone board only - click here.

INNOVATIONS

- ▶ Hydrodynamic efficiency improved by 32%
- ▶ 35% lighter than previous Flyboard® models
- ▶ Rotating on its axis (from 10 to 20 degrees)
- ▶ Index pin to lock the spin function and adapt to the users level
- ▶ Adjustable Nozzles: Change the diameter, orientation and angle; forward or backwards to optimize the use and compatibility with your PWC power
- ▶ Larger and more stable foot plate
- ▶ Futuristic design with a transparent hydraulic system allowing users to see the water flow
- ▶ Turbine interface equipped with a Venturi effect (system allowing an evacuation of the water while using the Flyboard®)
- ▶ U pipe equipped with a PWC propulsion system.
- ▶ A rotation system compatible with the entire range of Zapata Racing® products

▶ U pipe equipped with a PWC propulsion system.

▶ A rotation system compatible with the entire range of Zapata Racing® products

▶ Shoes strengthened in the front and in the back

← Flyboard Bundle Package Options

Flyboard Sport Kit 2016 by Zapata Racing →

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From our Customers

August 23, 2016: Excellent customer service. Definitely the most knowledgeable people I've ever talked to on all Flyboard equipment. Not to mention their prices were about 20% less than are there dealers that I talk to. Thanks so much power fly products best toy I've ever had.

— Aaron Hacker, Crown Point, Indiana

Contact PowerFly!

PowerFly Products, Inc.
268 North Wickham Road
Melbourne, FL 32935

Local: 321-914-4948

International: 001-321-914-4948

Email: mark@powerflyproducts.com



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Hoverboard Kit Complete by Zapata Racing



Zapata Racing:

Select your Adapter Kit for your PWC *Required

Select Below:

Upgrade to 2016 Double Swivel U-Pipe

Select Below:

Add PowerFly DXP Pro Hose or 23m X-Armor

Select Below:

Add the PowerFly Shock System PRO

Select Below:

Quantity

Price:

1

Price:
\$5,382.00

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The Hoverboard by ZR® is a hydro-propelled board, which allows the user to ride and surf in total freedom above the water. The Hoverboard connects to your PWC pump by a hose, the user can manage the board with ease and can reach up to 8 meters above the sea, to an average speed of 40 km/h. Many customers who have surf or wakeboard, love this new product. Spectators have compared this to the Hoverboard in the movie Back to the future™ and the Fantastic Four's famous Silver surfer™. You are required to select an adapter kit in order to adapt the Hoverboard to your personal watercraft.

The Hoverboard by ZR® kit includes:

- Carbon fiber board equipped with foot straps and pads
- A propulsion system; an 'oval' made of foundry aluminium
- 1 X-Armor Hose at 18m (you can select different types/lengths of hoses here)
- A U pipe, allowing to invert the water exiting the PWC (**You can upgrade to the 2016 Double Swivel U-Pipe from the menu above - click here for additional details**)
- A fast clip interface allowing a rapid change between the Flyboard® and the PWC

If you already own a 2014-2015 Flyboard Kit, the connecting hardware is the same, therefore, you can purchase the individual Hoverboard and do not need to purchase the complete kit - click here.

INNOVATIONS

▶ Molded board reinforced with Carbon Fiber, resistant to forces superior to 11 tons per m²

▶ One Oval, founded from one piece of aluminum to decrease loss of pressure and power whilst also redirecting the water in the right direction

▶ Change from goofy to regular mode without tools

← Stand Alone 2016/2017 Flyboard Sport by Zapata Racing

Hoverboard by Zapata Racing – Stand Alone Board Only →

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