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(54) **WATER BALLOON SYSTEM**

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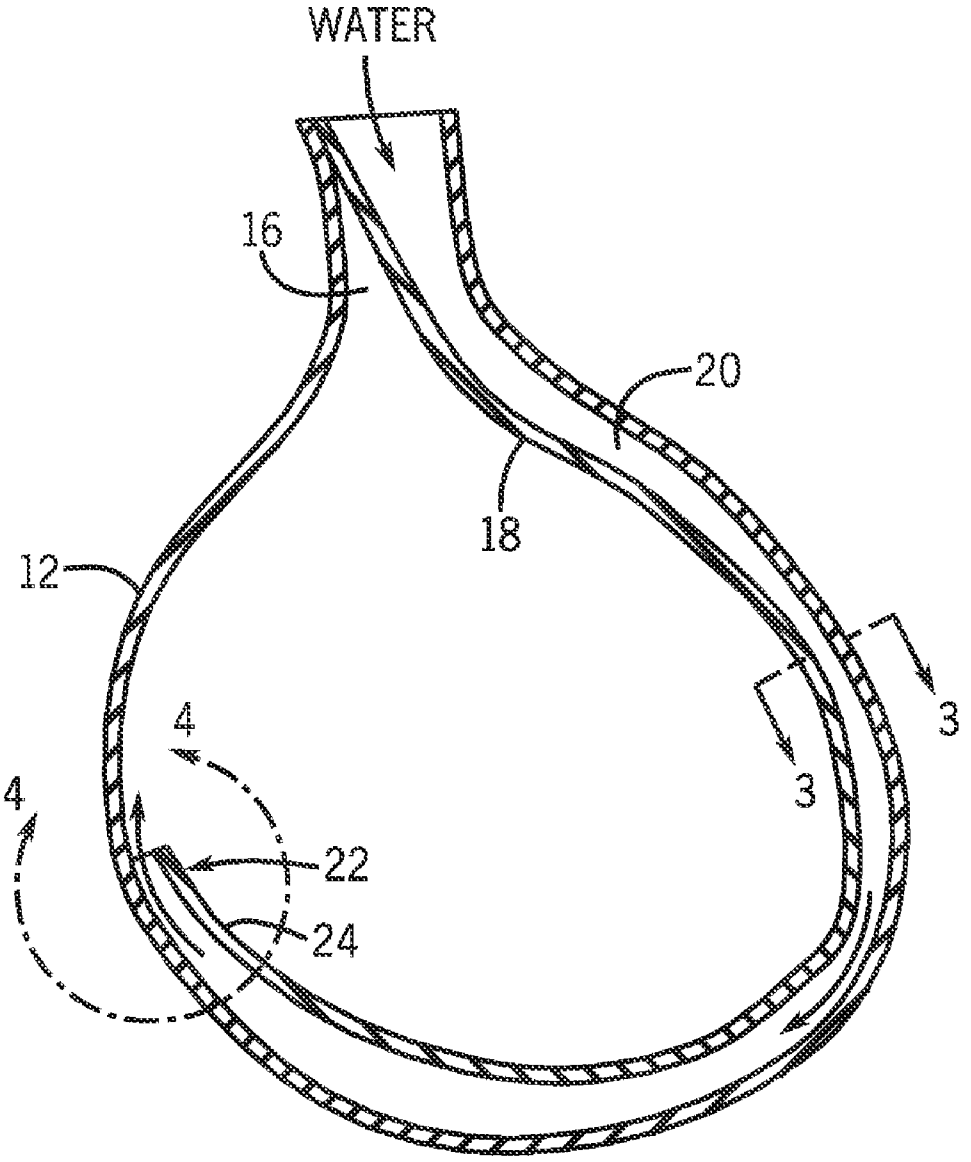
USPC **141/313**; 446/267

(57) **ABSTRACT**

A tie-less water balloon assembly includes an inner membrane for creating a one-way water flow channel. The channel includes a seal and a closure member. Water entering the balloon is directed into the flow channel and into the balloon. Once the water is inside the balloon, the water exerts pressure on the flow channel and prevents water from prematurely escaping the balloon.



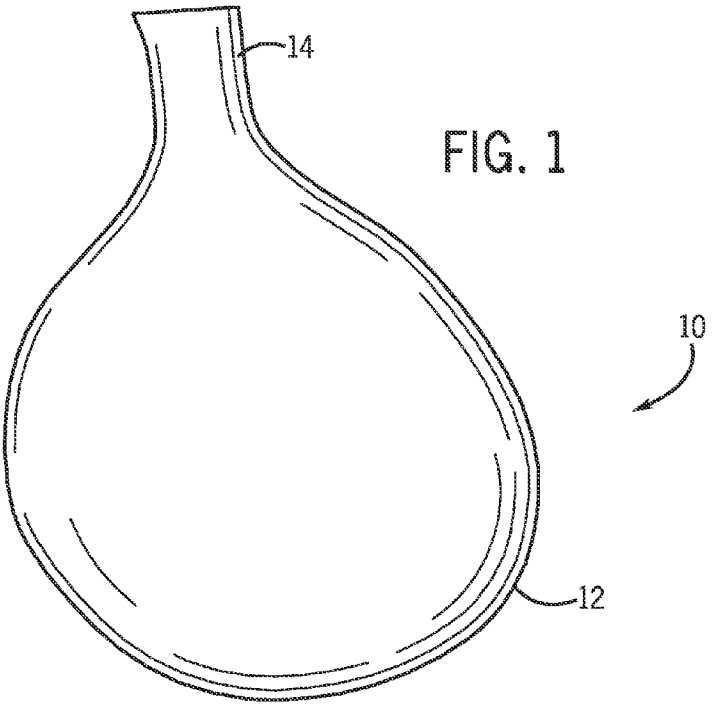


FIG. 1

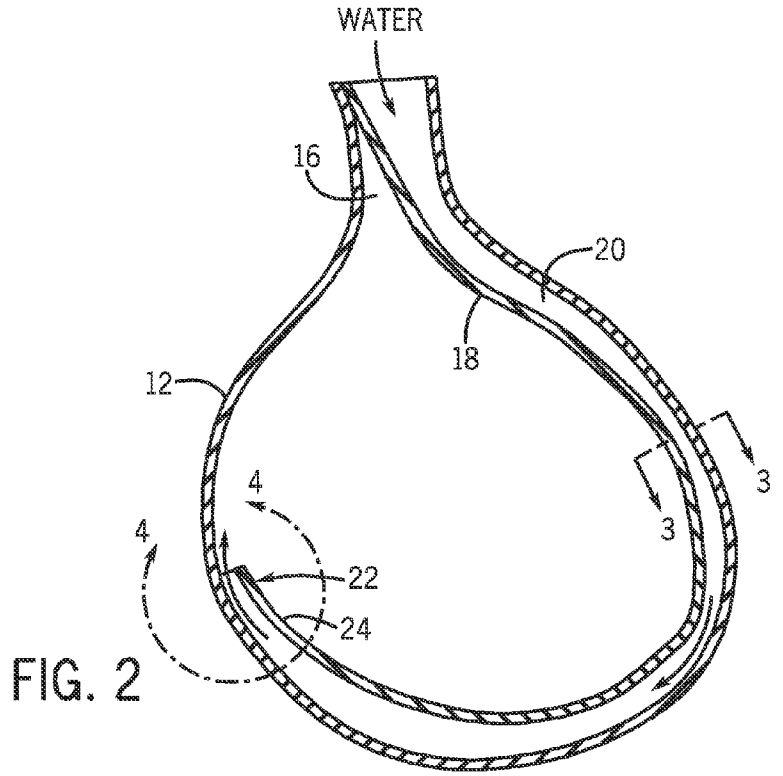


FIG. 2

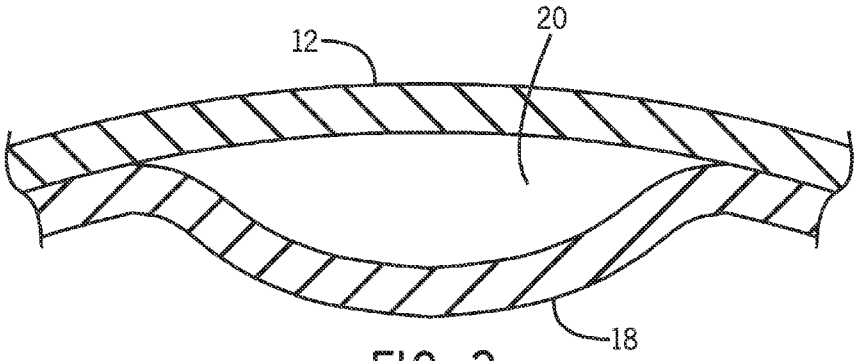


FIG. 3

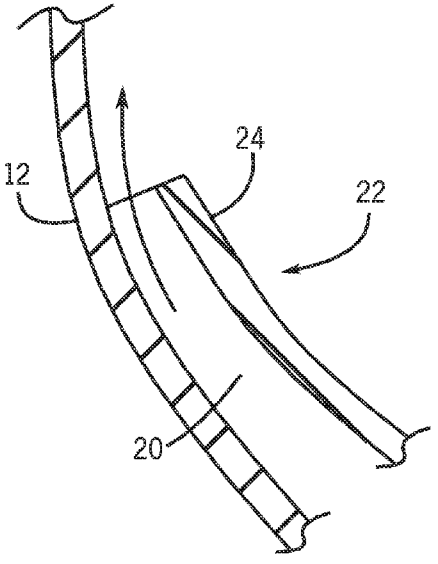


FIG. 4

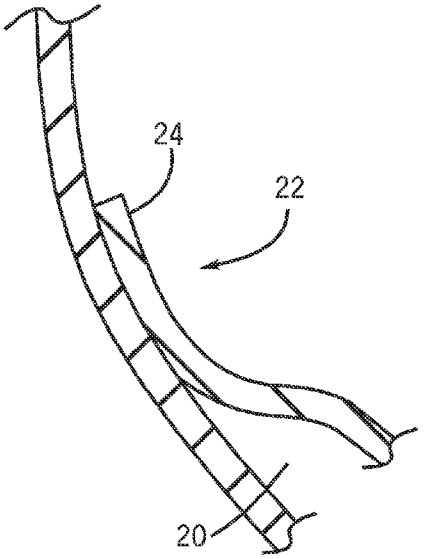


FIG. 6

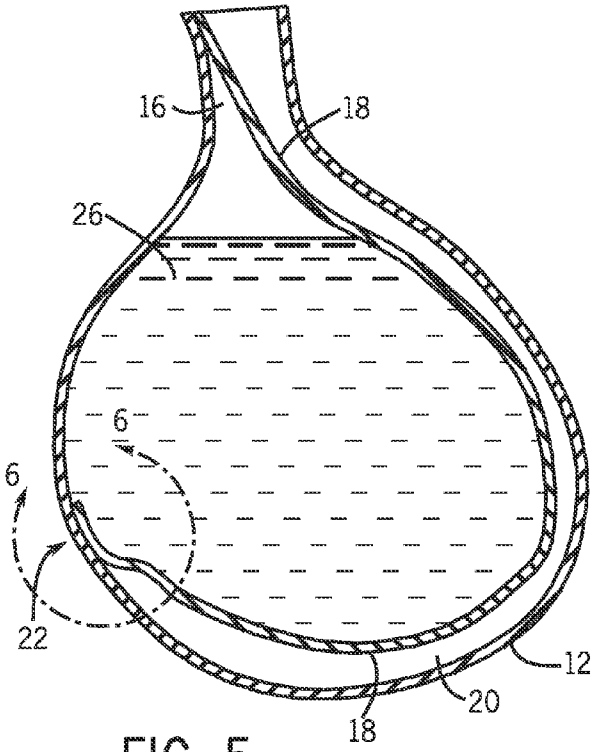


FIG. 5

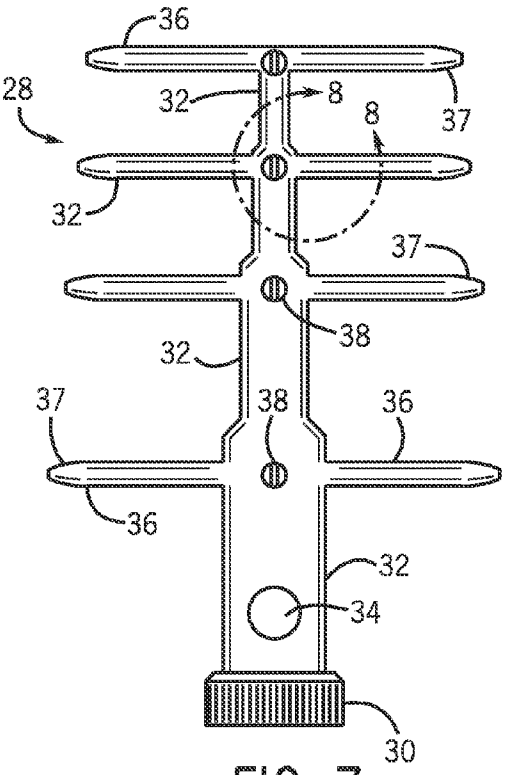


FIG. 7

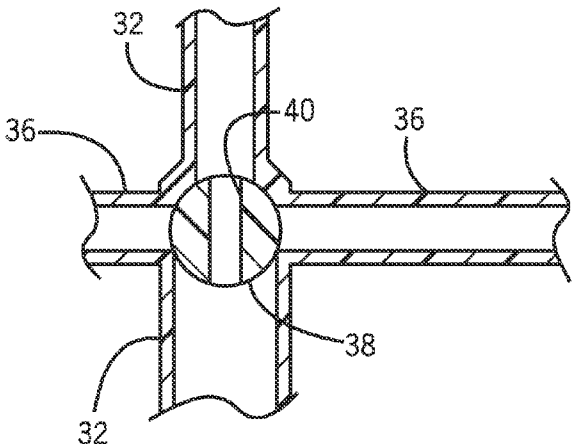


FIG. 8

WATER BALLOON SYSTEM

RELATED APPLICATION(S)

[0001] This application claims priority to provisional patent application No. 61/558,832, filed on Nov. 11, 2011, which is incorporated herein by reference.

FIELD OF INVENTION

[0002] The present invention relates to a water balloon system, including a water balloon assembly and a multi-balloon filling assembly. More specifically, the invention involves a tie-less or tie-free water balloon that may utilize a quick fill water balloon device in order to use the water balloons.

BACKGROUND OF THE INVENTION

[0003] The water balloon industry is filled with a multitude of shapes and sizes of balloons for use as water balloons. When preparing a water balloon, the balloon must be filled with water and then tied to prevent the water Thorn prematurely escaping the balloon due to gravity or the compression caused by the elasticity of the balloon. Thus, the use of multiple balloons requires constant tying of balloons in order to secure the balloons. The time and energy required to tie multiple water balloons is often significant and often interferes with producing a large number of filled water balloons.

[0004] Thus, there is a need for a water balloon that does not require tying and a system/method of providing a plurality of water balloons relatively quickly.

SUMMARY OF THE INVENTION

[0005] In view of the deficiencies and drawbacks in the prior art, it is a primary feature of the present invention to provide a tie-less or tie-free water balloon.

[0006] Another feature of the present invention is to provide a system for filling the tie-less or tie-free water balloons that allows for a plurality of water balloons to be filled as quickly as possible.

[0007] In summary, there is provided in a preferred embodiment of the present invention, a tie-less water balloon and method of use. The tie-less water balloon preferably includes a one-way valve or channel inside the balloon that allows water to enter the balloon but not escape it. Once filled, the pressure of the water inside the balloon will dose off the valve when the balloon is removed from a hose.

BRIEF DESCRIPTIONS OF THE DRAWINGS

[0008] The above-described and other advantages and features of the present disclosure will be appreciated and understood by those skilled in the art from the following detailed description and drawings of which:

[0009] FIG. **1** is a front elevation view of a preferred embodiment of a water balloon of the present invention;

[0010] FIG. **2** is a cross-section view thereof;

[0011] FIG. **3** is a detail cross-sectional view thereof, taken on line **3-3** of FIG. **2**;

[0012] FIG. **4** is another detail cross-sectional view thereof taken along line **4-4** of FIG. **2**;

[0013] FIG. **5** is a cross-sectional view showing the water balloon of FIGS. **1-4** filled with water;

[0014] FIG. **6** is a detail cross-sectional view thereof, taken along line **6-6** of FIG. **5**;

[0015] FIG. **7** is a front elevation view of a multi-balloon filling assembly of a preferred embodiment of the present invention; and

[0016] FIG. **8** is a detail cross-sectional view thereof, taken along line **8-8** of FIG. **7**.

DETAILED DESCRIPTION OF THE INVENTION

[0017] With reference to FIGS. **1** through **8**, there is shown a preferred embodiment of a tie-less water balloon **10** and a multi-balloon filling assembly **28**. The water balloon **10** is made of elastic materials standard in balloon manufacture (e.g., rubber) and includes an outer wall **12** and an inner membrane **18**. The outer wall **12** and the inner membrane **18** together form a one-way channel **20**. In one example, the balloon **10** is formed by dipping the inner membrane **18** into a liquid latex solution.

[0018] The balloon **10** further includes a neck **14** and a seal **16**. The neck **14** of the balloon **10** opens into the one-way channel **20** and allows water **26** to flow into the balloon **10**, (While water is preferred, balloon **10** may be filled with other liquids as desired by a user.) Once water **26** stops flowing into the balloon **10**, the seal **16** prevents the water **26** from escaping through the neck **14**.

[0019] As illustrated in FIGS. **2-6**, the balloon **10** is filled with water **26** through the neck **14** and channel **20**, The water **26** is then contained by seal **16**, When the balloon **10** is compressed or rotated, water **26** contacts the seal **16** causing pressure on the seal **16** and the entire inner membrane **18**. At the distal end of the inner membrane is a closure member **24**. The pressure caused by the compression or rotation of the balloon **10** forces the closure member **24** against the outer wall **12**. Accordingly, water **26** is prevented from escaping the balloon **10** and traveling out through the channel **20**.

[0020] In one example of a balloon assembly **10**, the width of the channel **20** ranges from about ¼ inch to about ¾ inch and most preferably, the width of the channel **20** is about 72 inch. In another example, the one-way channel **20** may comprise a tube built into the balloon **10** such that the channel **20** and balloon **10** are made all as one unit with the channel **20** on the inside of the balloon. In another example, the inner membrane **18** travels a range of ¼ to ¾ around the inside of the balloon. In third un-illustrated example, the interior membrane **28** may be a "V" type valve that requires water **26** entering the balloon **10** to travel in multiple directions in order to pass through the channel **20**. The "V" type valve will limit the amount of water that exits the balloon due to compression or rotation while still allowing the balloon to be filled by a hose having sufficient pressure.

[0021] This inner membrane **18** may be thinner in thickness than the outer balloon wall **12** to allow the pressure of the water in the balloon to force the inner membrane **18** closed when the balloon **10** is removed from a water supply. In particular, the inner membrane may be thickest at the neck **14** and thinnest at the closure member **24**. The gradation of thickness will allow the closure member **24** to better seal against escaping water. The neck **14** of balloon **10** should be approximately 1-2 inches longer than the neck of a standard balloon. The lengthened neck **14** prevents the backup of water out the neck **14** and prevents damage to the channel **20** while the balloon **10** is being attached to a water source.

[0022] A further element of the present invention is a multi-balloon filling assembly **28**. One example of the multi-balloon filling assembly **28** is shown in FIGS. **7** and **8**. The multi-balloon filling assembly includes a water supply fitting

30, a main conduit 32, lateral conduits 36, a plurality of conduit tips 37, stop valves 38, and a quick-fill switch 34.

[0023] The water supply fitting 30 is adapted to connect to a hose and facilitate the flow of liquid through the filling assembly 28. The main conduit 32 connects to the water supply fitting 30 at its proximate end and terminates in the lateral conduits 36. Further, the main conduit is separated into a plurality of sections, where the sections narrow in diameter moving away from the water supply fitting 30. The narrowing of the main conduit 32 maintains a consistent level of pressure across the plurality of sections. The lateral conduits 36 branch out from the main conduit 32 and terminate in the plurality of tips 37. The lateral conduits 36 are shown in FIG. 7 as perpendicular to the main conduit 32, however the lateral conduits may extend at a number of varying angles.

[0024] Tips 37 at the ends of the lateral conduits 36 are adapted to engaged the neck 14 of a balloon 10. Once engaged, water flowing in the water supply fitting 30 will travel through the main conduit and the lateral conduit and into the balloon 10. This setup may be repeated for each of the plurality of Ups 37 to fill a large number of balloons 10 simultaneously.

[0025] A further element of the multi-balloon filling assembly 28 is stop valve 38. Stop valve 38 is rotatable and includes a bore 40. The stop valve 38 alternatively opens and doses the main conduit 32 to the lateral conduits 36. In one example, the bore 40 provides a pathway for flowing water that opens and doses when the bore 40 is rotated. Accordingly, some of tips 37 may be used while others are dosed off. In the example illustrated in FIG. 7, each section of the main conduit 32 includes separate stop valves 32.

[0026] An additional element of the multi-balloon filling assembly 28 is a quick-fill on/off button 34. The quick-fill on/off button 34 is preferably positioned near the water supply fitting 30. The quick-fill on/off button 34 opens and doses the flow of water at the fitting 30. When the quick-fill on/off button 34 is engaged, it will allow water to flow through the main conduit 32; when the quick-fill on/off button 34 is disengaged, water will be cut off from the main conduit 32.

[0027] Though a number of different materials may be used, the multi-balloon filling assembly 28 is preferably constructed of plastic or a plastic substitute. In one example, the multi-balloon filling assembly 28 is from about 6 inches to about 12 inches in length, with the lateral conduits being about ¼ inches in diameter. Other measurements may be produced to allow for increased or decreased water flow rates.

[0028] The accompanying drawings only illustrate several examples of a water balloon assembly, a mufti-balloon filling assembly, and their respective constituent parts, however, other types and styles are possible, and the drawings are not intended to be limiting in that regard. Thus, although the description above and accompanying drawings contains much specificity, the details provided should not be construed as limiting the scope of the embodiments but merely as providing illustrations of some of the presently preferred embodiments. The drawings and the description are not to be taken as restrictive on the scope of the embodiments and are understood as broad and general teachings in accordance with the present invention. While the present embodiments of the invention have been described using specific terms, such description is for present illustrative purposes only, and it is to be understood that modifications and variations to such embodiments, including but not limited to the substitutions of equivalent features, materials, or parts, and the reversal of various features thereof, may be practiced by those of ordinary skill in the art without departing from the spirit and scope of the invention.

1. A balloon assembly having an interior for containing a liquid comprising:
- an elastic outer wall;
- an inner membrane partially affixed to the elastic outer wall, wherein the inner membrane and the outer wall form a channel; and
- a neck having an opening leading to the channel, where the channel connects the opening to the interior of the balloon assembly;
- wherein the channel is adapted to prevent the outflow of a liquid from the interior once the balloon assembly is filled with the liquid.

2. The balloon assembly of claim 1, wherein the channel is V shaped.

3. The balloon assembly of claim 1, wherein the channel extends between one quarter and three quarters around the circumference of the balloon assembly.

4. The balloon assembly of claim 1, wherein the inner membrane is thinner than the elastic outer wall.

5. The balloon assembly of claim 1, wherein:
- the channel includes a first end near the neck and a second end in the interior of the balloon assembly; and
- the channel is widest at the first end and narrowest at the second end.

6. The balloon assembly of claim 1, wherein the elastic outer wall is formed around the inner membrane.

7. The balloon assembly of claim 1, further comprising a closure member positioned at the distal end of the channel.

8. The balloon assembly of claim 1, further comprising a neck, wherein the channel forms a seal positioned adjacent to the neck, the seal being adapted to direct the flow of a liquid into the channel.

9. The balloon assembly of claim 8, wherein the neck is elongated.

10. The balloon assembly of claim 1, wherein the assembly is constructed of rubber.

11. A multi-balloon filling assembly comprising:
- a main conduit having a proximate end and a distal end;
- a water supply fitting at the proximate end of the main conduit, the water supply fitting adapted to connect to a hose and facilitate the flow of liquid through the multi-balloon filling assembly;
- a plurality of minor conduits extending from the main conduit, each minor conduit including an opening for ejecting liquid from the multi-balloon filling assembly.

12. The multi-balloon filling assembly of claim 11, further comprising a valve, the valve adapted to control the flow of liquid.

13. The multi-balloon filling assembly of claim 11, further comprising a quick fill button.

14. The multi-balloon filling assembly of claim 11, wherein the main conduit includes a plurality of sections, each section being adjacent to a matching pair of minor conduits, wherein each section is associated with a single valve.

15. The multi-balloon filling assembly of claim 11, wherein the main conduit is widest at the proximate end and narrowest at the distal end.

16. A balloon filling system comprising:
a plurality of balloons, each balloon including:
an elastic outer wall;
an inner membrane partially affixed to the elastic outer wall, wherein the inner membrane and the outer wall form a channel; and
a neck having an opening leading to the channel, where the channel connects the opening to the interior of the balloon assembly;
wherein the channel is adapted to prevent the outflow of a liquid from the interior once the balloon assembly is filled with the liquid; and
a balloon filling assembly, the balloon filling assembly including:
a main conduit having a proximate end and a distal end;
a water supply fitting at the proximate end of the main conduit, the water supply fitting adapted to connect to a hose and facilitate the flow of liquid through the multi-balloon filling assembly; and
a plurality of minor conduits extending from the main conduit, each minor conduit including an opening for ejecting liquid from the multi-balloon filling assembly.

17. The balloon filling system of claim **16**, wherein the neck is elongated by 1-2 inches.

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