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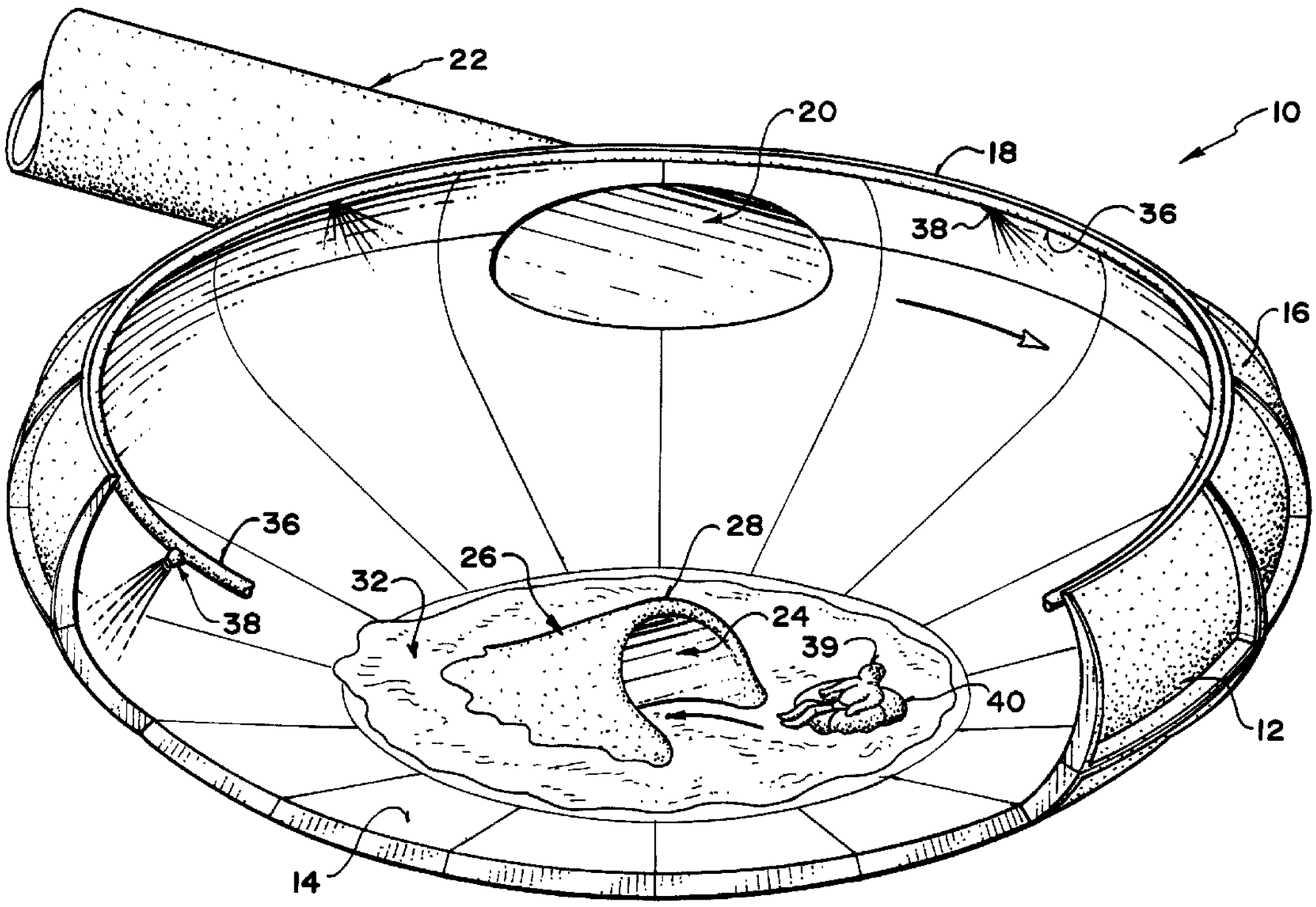
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(54) Titre : BASSIN DE GLISSOIRE D'EAU
(54) Title: WATERSLIDE BOWL



(57) Abrégé/Abstract:
A waterslide bowl element has a bottom wall configured to form a throat around a rider exit opening in the bottom of the bowl. The bowl holds an annular ring of water around the throat that slows down and conducts the rider to the exit opening and a flume in which the waterslide ride continues. The waterslide bowl may be used by riders on inner tubes.

Abstract of the Disclosure

A waterslide bowl element has a bottom wall configured to form a throat around a rider exit opening in the bottom of the bowl. The bowl holds an annular ring of water around the throat that slows down and conducts the rider to the exit opening and a flume in which the waterslide ride continues. The waterslide bowl may be used by riders on inner tubes.

WATERSLIDE BOWL

Technical Field

This invention pertains to waterslides, and, more particularly, to a waterslide with a bowl element having a rider exit structure that permits the rider to continue the waterslide ride.

Background of the Invention

Waterslides typically provide for a rider, i.e. a user, to descend a flume, which may be a tube or open channel, sliding on the wetted surface of the flume or supported, partly or wholly, on water flowing down the flume. The ride is achieved under the influence of gravity and ends in a pool of water, or other safe landing structure. The rider may ride the waterslide with or without a mat, plastic sheet, inner tube or the like which provides some protection and facilitates sliding.

It is known to provide a bowl element as part of a waterslide apparatus. Including a bowl in a waterslide adds interest and excitement to the ride. GB 2,224,948 (Stuart et al.), published May 23, 1990, discloses a waterslide bowl which a rider enters through a flume and exits by dropping through a hole in the bottom into a pool. However, since the rider drops out of the bowl into a pool of water, or onto another soft landing structure, the ride is ended at that point. The rider cannot ride on an inner tube on this type of slide, since he or she is not maintained in an upright position when falling out of the bowl and into the pool.

Summary of the Invention

It is an object of the invention to provide a bowl element for a waterslide ride which has a rider exit structure which permits the rider to exit in a controlled manner such that the water ride can continue, as in a flume leading down from the bowl.

It is a further object of the invention to provide a waterslide bowl having a ring of water at its bottom for slowing down riders.

It is a further object to provide a waterslide bowl in which a rider can ride either with or without an inner tube or other flotation device.

To accomplish these objects, the invention provides a waterslide bowl having a bottom wall portion that is configured to hold a ring of water around a rider exit opening. The bottom wall is shaped to form a throat structure around the rider exit opening which maintains a volume of water around the exit opening and is adapted to permit the rider, with or without an inner tube or other flotation device, to ride out of the bowl and into a flume which continues the water ride.

The waterslide bowl of the invention is one element in a waterslide ride apparatus. Such apparatus includes a flume leading into the bowl, a flume leading out of the bowl, and it may include other upstream and downstream elements, depending on the design choices made for a particular application.

These and other features of the invention will be apparent from the following description and drawings of the preferred embodiment.

Brief Description of the Drawings

Figure 1 is a perspective view, partly cutaway, of a waterslide bowl according to the invention.

Figure 2 is a top plan view thereof.

Figure 3 is a cross-sectional view on the line 3 - 3 of Figure 2.

Description of the Preferred Embodiment

In a preferred embodiment of the principles of the invention, waterslide bowl **10** is a bowl-shaped element which forms part of a waterslide ride apparatus having ride elements upstream, i.e. at a higher elevation, and downstream, i.e. at a lower elevation, than the bowl.

Bowl **10** has a bowl wall having side wall portion **12** and bottom wall portion **14**, though it will be understood that these form a continuous, curved wall structure with no clear point of demarcation between the side and bottom wall portions. Side wall portion **12** is relatively steep and curved and includes an inwardly turning portion **16** at its rim **18**. Bottom wall portion **14** is gently curved and has a shallower angle from the horizontal than the side wall portion **12**.

An entry hole **20** is provided in the side wall portion near rim **18**, through which a rider slides into bowl **10** from a flume **22** leading from a higher elevation.

A rider exit opening **24** is provided in the central part of the bottom wall portion **14** of the bowl. The bottom wall portion is shaped to extend upward relative to the surrounding part at the exit opening **24**, forming a throat **26**. The throat has a relatively higher part **28** and a relatively lower part **30**. When the apparatus is in use, a stream of water is continuously flowing into the bowl **10**, as described below, and it flows out of the bowl through the exit opening **24**, at the relatively lower part **30** of the throat **26**. A volume of water is held in the bottom of the bowl, forming annular ring **32** of flowing water around the throat.

Exit opening **24** is connected to exit flume **34**, which leads downward from bowl **10** and forms a continuation of the waterslide ride. Flume **34** can lead to other waterslide elements downstream of the bowl, if desired.

A water pipe **36** with a plurality of jets **38** placed below the rim **18** provides a continuous supply of water to the bowl to wet its sides, thus reducing friction between the rider and the walls of the bowl. Further, water is continuously flowing into the bowl through entry flume **22**, which reduces friction and facilitates the rider sliding through flume **22**. Both of these sources of water flowing into bowl **10** continually replenish the ring of water **32** in the bowl, as water flows out of the bowl through throat **26**.

The waterslide bowl **10** is intended particularly for use by a rider **39** on a flotation device, preferably a waterslide inner tube **40**, i.e. an inflated tube or any generally doughnut-shaped flotation device. Various forms of flotation devices can be used, such as a raft or sled-shaped flotation device. It will be understood that the bowl **10** of the invention can also be ridden by a user with no flotation device. In use, a rider on an inner tube starts the waterslide ride at a higher elevation than bowl **10**, rides through such other ride elements that the waterslide apparatus may have upstream of flume **22** and slides down flume **22**. The flow of water through flume **22** reduces friction and provides a cushion of water supporting the rider's inner tube. The rider enters bowl **10** through entry hole **20** travelling at sufficient speed to make one or more circuits of the bowl (travelling clockwise in the view of Figure 2) and descends gradually from the side wall portion **12** to the bottom wall portion **14** as his or her momentum decreases. The rider eventually slides into the ring of water **32**, is slowed down by the water and is carried by the flow of water in the ring, and by any residual

momentum, through the throat **26** and into exit flume **34**, still riding on the inner tube **40**. Flume **34** (and also flume **22**) can be a closed tube or an open channel. The waterslide ride accordingly continues, downward from bowl **10**, with flume **34** and such further downstream waterslide elements that may be provided in a particular waterslide apparatus.

Bowl **10** is fabricated from a plurality of sections of a suitable and durable material, such as fibreglass, fastened together to form a strong, rigid structure. It is supported as part of a waterslide apparatus by suitable support members (not shown) extending to the ground or to other parts of the waterslide apparatus.

A liner may be applied to the inner surface to provide a continuous, smooth interior surface that will facilitate a rider's sliding movement.

The bowl preferably has a depth in the range of about 4 to 20 feet and a diameter in the range of about 20 to 60 feet. The inner diameter of flumes **22** and **34** is preferably in the range of about 2.5 to 6 feet.

The above-described preferred embodiment is intended to illustrate principles of the invention, but not to limit the scope of the invention. Various other embodiments and modifications may be made by those skilled in the art without departing from the scope of the following claims. For example, the rider entrance to the bowl can be configured in various ways, such as a cut-out at the rim of the bowl rather than a hole in the side wall; or it can be positioned lower down in the wall than has been shown in the drawings. The flumes leading into and out of the bowl can be configured in various ways, so long as they fulfil the function of safely conveying the rider into and out of the bowl.

The bowl can include a cover. The bowl can be made of concrete, wood, metal or other materials, with a plastic liner. The rider can use various types of raft or flotation device other than an inner tube. The shapes and gradient of the walls of the bowl can be altered to make the ride faster or slower. The bottom wall portion and throat **26** can be configured to hold a relatively larger or relatively smaller volume of water in the bowl, for example lower part **30** of throat **26** can be made only slightly higher than the lowest part of the bottom wall portion so the volume of water in ring **32** is small and the water quickly flows out of throat **26**. The throat can be a separate structure affixed to the waterslide bowl, rather than being formed integrally by shaping the bottom wall portion. Also, the throat **26** can have a variety of specific contours and can be, for example, more open at the upper side thereof than is illustrated in the drawings; this would be preferred where the exit flume **34** is an open channel (i.e. U-shaped) rather than a closed tube.

WHAT IS CLAIMED IS:

1. A bowl adapted for use as part of a waterslide apparatus, comprising:

(a) a bowl wall having side wall and bottom wall portions;

(b) a rider entrance opening in said side wall portion through which a rider slides into said bowl;

(c) a rider exit opening in said bottom wall portion;

(d) said bottom wall portion being shaped to hold a volume of water around said rider exit opening; and

(e) said bottom wall portion extending upward around said rider exit opening, said rider exit opening being adapted to receive a flow of water from said volume of water in said bowl and to convey a rider exiting said bowl to a flume, whereby said rider continues to ride said waterslide apparatus.

2. A bowl adapted for use in a waterslide apparatus, said bowl being capable of being ridden in by a rider with or without a flotation device, comprising:

(a) a bowl wall having side wall and bottom wall portions;

(b) a rider entrance opening in said side wall portion through which a rider slides into said bowl from a flume;

(c) a rider exit opening in said bottom wall portion;

(d) said bowl being adapted to hold a volume of water around said rider exit opening, said volume of water being capable of slowing down said rider; and

(e) said rider exit opening having a throat that extends upward above the intended level of said water held in said bowl, said rider exit opening

being adapted to receive a flow of water from said volume of water in said bowl and to convey a rider exiting said bowl to a flume, whereby said rider continues to ride said waterslide apparatus.

3. A bowl adapted for use in a waterslide apparatus, comprising:

(a) a bowl wall having side wall and bottom wall portions;

(b) a rider entrance in said side wall portion by which a rider slides into said bowl;

(c) a rider exit opening in said bottom wall portion; and

(d) said rider exit opening having a throat that extends upward above the level of the surrounding part of said bottom wall portion, said throat being adapted to convey a rider exiting said bowl to a further part of said waterslide apparatus.

4. A waterslide apparatus comprising a bowl adapted for use as part of said waterslide apparatus, wherein said bowl comprises a bowl wall having side wall and bottom wall portions, a rider entrance opening in said side wall portion through which a rider slides into said bowl, a rider exit opening in said bottom wall portion, said bottom wall portion being shaped to hold a volume of water around said rider exit opening, and said bottom wall portion extending upward around said rider exit opening, said rider exit opening being adapted to receive a flow of water from said volume of water in said bowl and to convey a rider exiting said bowl to a flume, whereby said rider continues to ride said waterslide apparatus.

5. A waterslide apparatus comprising a bowl adapted for use as part of said waterslide apparatus, said bowl being capable of being ridden in by a rider with or without a flotation device, wherein said bowl comprises a bowl wall having side wall and bottom wall portions, a rider entrance opening in said side wall portion through which a rider slides into said bowl from a flume, a rider exit opening in said bottom wall portion, said bowl being adapted to hold a volume of water around said rider exit opening, said volume of water being capable of slowing down said rider, and said rider exit opening having a throat that extends upward above the intended

level of said water held in said bowl, said rider exit opening being adapted to receive a flow of water from said volume of water in said bowl and to convey a rider exiting said bowl to a flume, whereby said rider continues to ride said waterslide apparatus.

6. A waterslide apparatus comprising a bowl adapted for use as part of said waterslide apparatus, wherein said bowl comprises a bowl wall having side wall and bottom wall portions, a rider entrance in said side wall portion by which a rider slides into said bowl, a rider exit opening in said bottom wall portion, said rider exit opening having a throat that extends upward above the level of the surrounding part of said bottom wall portion, said throat being adapted to convey a rider exiting said bowl to a further part of said waterslide apparatus.

7. A waterslide apparatus according to claim 6, further comprising means for providing water to said bowl wall.

8. A waterslide apparatus according to claim 7, wherein said means for providing water comprises water-dispensing openings positioned proximate an upper rim of said bowl.

9. A waterslide apparatus according to any one of claims 6-8, wherein water flows into said bowl through said rider entrance opening.

10. A waterslide apparatus according to any one of claims 6-9, wherein water flows out of said bowl through said rider exit opening.

11. A waterslide apparatus according to any one of claims 6-10, further comprising an annular ring of water around said throat.

12. A waterslide apparatus according to claim 11, wherein said ring of water comprises flowing water.

13. A waterslide apparatus according to claim 12, wherein said rider is carried by said flowing water out of said rider exit opening.

14. A waterslide apparatus according to any one of claims 6-11, wherein said throat is adapted to restrict a flow of water out of said rider exit opening.

15. A waterslide apparatus according to any one of claims 6-10, wherein said bowl is adapted to hold a volume of water around said rider exit opening.

16. A waterslide apparatus according to claim 15, wherein said volume of water is capable of slowing down said rider.

17. A waterslide apparatus according to claim 6, wherein said bowl wall is provided with a film of water and said rider slides on said film.

18. A waterslide apparatus according to any one of claims 6-17, wherein said side wall portion and said bottom wall portion form a continuous curved wall structure.

19. A waterslide apparatus according to any one of claims 6-18, wherein said side wall portion comprises an inwardly curved portion at an upper rim thereof.

20. A waterslide apparatus according to any one of claims 6-19, wherein said bottom wall portion is curved and has a shallower angle from the horizontal than said side wall portion.

21. A waterslide apparatus according to any one of claims 6-20, wherein said throat has a relatively higher portion and a relatively lower portion.

22. A waterslide apparatus according to claim 6, wherein said throat is formed integrally with said bottom wall portion by a shaping of said bottom wall portion.

23. A waterslide apparatus according to claim 6, wherein said throat is a separate structure from said bottom wall portion and is attached thereto.

24. A waterslide apparatus according to any one of claims 6-23, wherein said apparatus is adapted for use by a rider on a flotation device.

25. A waterslide apparatus according to claim 24, wherein said apparatus is adapted for said rider to exit through said rider exit opening while being mounted on said flotation device.

26. A waterslide apparatus according to any one of claims 6-25, wherein said apparatus is adapted to slide said rider into said bowl through said rider entrance opening with sufficient speed to complete at least one full revolution about said bowl before exiting said bowl through said rider exit opening.

27. A waterslide apparatus according to claim 6, wherein said further part of said waterslide apparatus is a flume.

28. A waterslide apparatus according to any one of claims 6-27, further comprising a flume leading into said rider entrance opening.

29. A waterslide apparatus comprising:

(a) a bowl comprising a curved bowl wall having side wall and bottom wall portions;

(b) a rider entrance in said side wall portion through which a rider slides into said bowl and through which water flows into said bowl;

(c) a flume connected to said rider entrance adapted to convey said rider and water to said rider entrance;

(d) a rider exit opening in said bottom wall portion through which said rider and water exit from said bowl;

(e) said rider exit opening having a throat that extends upward above the level of the surrounding part of said bottom wall portion, said throat being adapted to hold a volume of flowing water about said throat; and

(f) a flume in communication with said rider exit opening, adapted to convey said rider and water exiting said bowl through said rider exit opening away from said bowl.

30. A bowl adapted for use as a part of a waterslide apparatus, comprising:

(a) a bowl wall having a side wall portion and a bottom wall portion;

(b) a rider entrance in said side wall portion through which a rider slides into said bowl;

(c) a rider exit opening in said bottom wall portion;

(d) said bowl being configured to hold a volume of water around said rider exit opening; and

(e) said rider exit opening being configured to receive a flow of water from said volume of water in said bowl.

31. A waterslide comprising:

(a) a bowl having a side wall portion and a bottom wall portion, the side wall portion and the bottom wall portion forming a continuous, curved wall structure for conveying a rider on one or more circuits of the bowl, the side wall portion having a rider entrance, and the bottom wall portion having a rider exit opening, the bottom wall portion being configured for retaining a quantity of water adjacent to the rider exit opening;

(b) an inlet flume leading to the rider entrance from a higher elevation than the bowl for conveying a rider to the rider entrance for sliding of a rider into the bowl; and

(c) an exit flume leading away from the exit opening for conveying a rider away from the bowl.

32. A waterslide comprising:

(a) a bowl having a side wall portion and a bottom wall portion, the side wall portion and the bottom wall portion forming a continuous, curved wall structure with no clear point of demarcation between the side wall portion and the bottom wall portion for conveying a rider on one or more circuits of the bowl, the side wall portion having a rider entrance, and the bottom wall portion having a rider exit opening, the bottom wall portion being configured for retaining a quantity of water adjacent to the rider exit opening;

(b) an inlet flume leading to the rider entrance from a higher elevation than the bowl for conveying a rider to the rider entrance for sliding of a rider into the bowl; and

(c) an exit flume leading away from the exit opening for conveying a rider away from the bowl.

33. A waterslide comprising:

(a) a bowl having a side wall portion and a bottom wall portion, the side wall portion and the bottom wall portion forming a continuous, curved wall structure for conveying a rider on one or more circuits of the bowl, the side wall portion having a rider entrance, and the bottom wall portion having a rider exit opening, the bottom wall portion being

configured for retaining a quantity of water adjacent to the rider exit opening, the side wall portion being steep and the bottom wall portion being disposed at a shallower angle to horizontal than the side wall portion;

(b) an inlet flume leading to the rider entrance from a higher elevation than the bowl for conveying a rider to the rider entrance for sliding of a rider into the bowl; and

(c) an exit flume leading away from the exit opening for conveying a rider away from the bowl.

34. A waterslide comprising:

(a) a bowl having a side wall portion and a bottom wall portion, the side wall portion and the bottom wall portion forming a continuous, curved wall structure for conveying a rider on one or more circuits of the bowl, the side wall portion having a rider entrance, and the bottom wall portion having a rider exit opening, the bottom wall portion being configured for retaining an annular ring of water around the rider exit opening;

(b) an inlet flume leading to the rider entrance from a higher elevation than the bowl for conveying a rider to the rider entrance for sliding of a rider into the bowl; and

(c) an exit flume leading away from the exit opening for conveying a rider away from the bowl.

35. A waterslide comprising:

(a) a bowl having a side wall portion and a bottom wall portion, the side wall portion and the bottom wall portion forming a continuous, curved wall structure for conveying a rider on one or more circuits of the bowl, the side wall portion having a rider entrance, and the bottom wall portion having a rider exit opening, the bottom wall portion being configured for retaining a quantity of water adjacent to the rider exit opening, the bowl having a depth between four feet and twenty feet and a diameter between twenty feet and sixty feet;

(b) an inlet flume leading to the rider entrance from a higher elevation than the bowl for conveying a rider to the rider entrance for sliding of a rider into the bowl; and

(c) an exit flume leading away from the exit opening for conveying a rider away from the bowl.

36. A waterslide comprising:

(a) a bowl having a side wall portion and a bottom wall portion, the side wall portion and the bottom wall portion forming a continuous, curved wall structure for conveying a rider on one or more circuits of the bowl, the side wall portion having a rider entrance, and the bottom wall portion having a rider exit opening, the bottom wall portion being configured for retaining a quantity of water adjacent to the rider exit opening;

(b) an inlet flume leading to the rider entrance from a higher elevation than the bowl for conveying a stream of water and

a rider to the rider entrance for sliding of a rider into the bowl; and

(c) an exit flume leading away from the exit opening for conveying water and a rider away from the bowl.

37. A waterslide comprising:

(a) a bowl having a side wall portion and a bottom wall portion, the side wall portion and the bottom wall portion forming a continuous, curved wall structure with no clear point of demarcation between the side wall portion and the bottom wall portion for conveying a rider on one or more circuits of the bowl, the side wall portion having a rider entrance, and the bottom wall portion having a rider exit opening, the bottom wall portion being configured for retaining an annular ring of water around the rider exit opening, the side wall portion being steep and the bottom wall portion being disposed at a shallower angle to horizontal than the side wall portion, the bowl having a depth between four feet and twenty feet and a diameter between twenty feet and sixty feet;

(b) an inlet flume leading to the rider entrance from a higher elevation than the bowl for conveying a stream of water and a rider to the rider entrance for sliding of a rider into the bowl; and

(c) an exit flume leading away from the exit opening for conveying water and a rider away from the bowl.

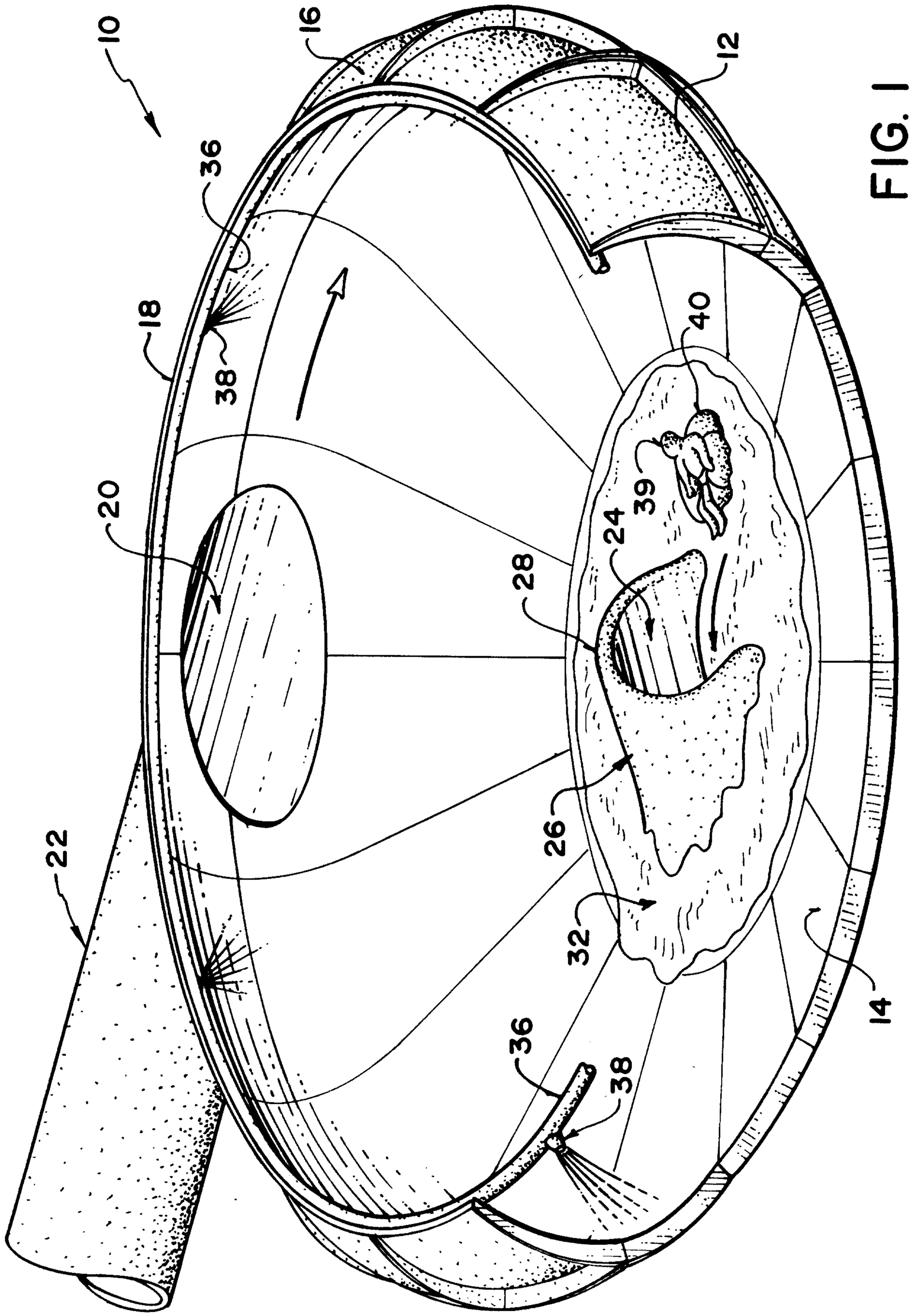


FIG. 1

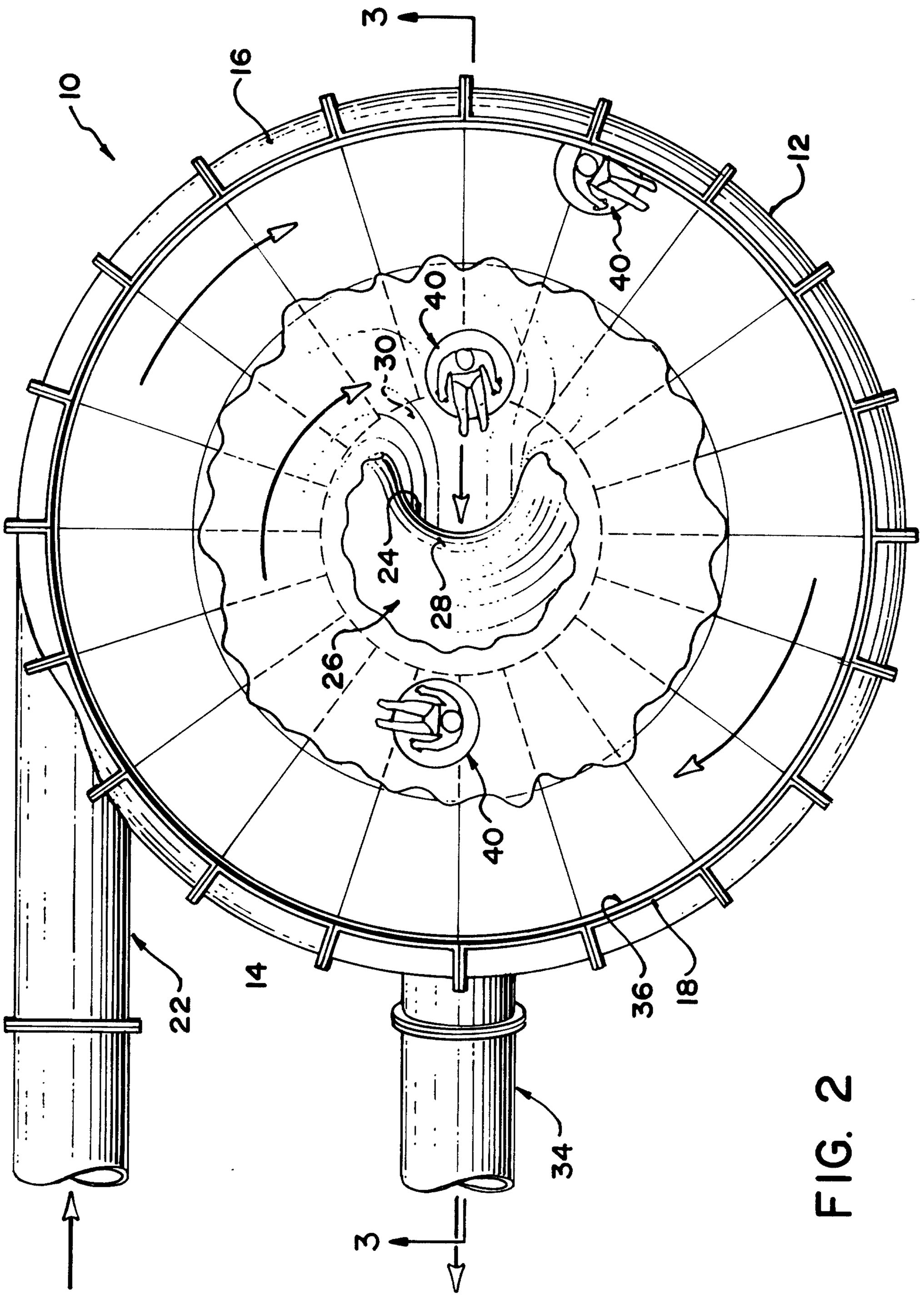


FIG. 2

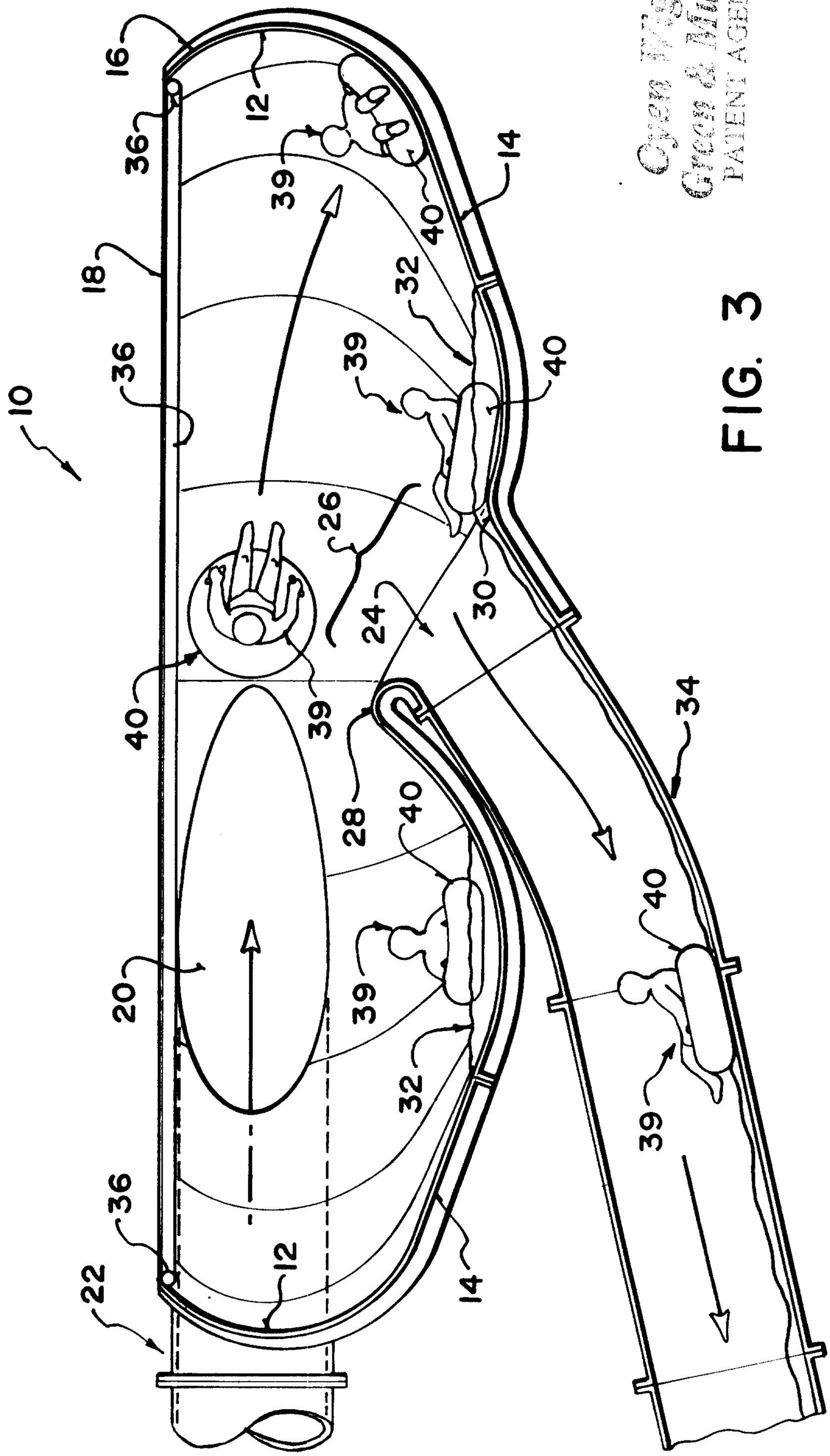
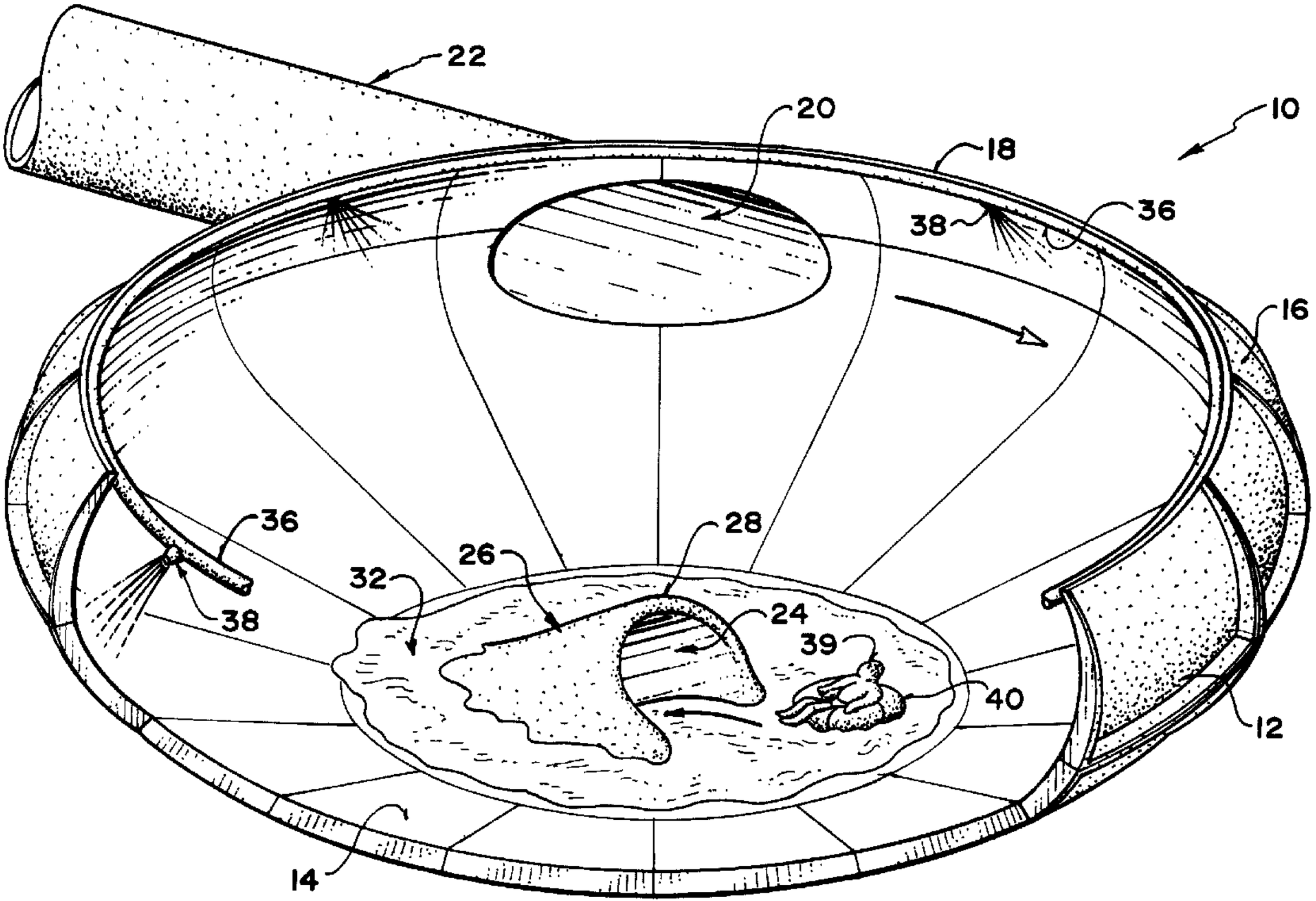


FIG. 3

Ogilvy Renault
Gowling & Ogilvy
PATENT AGENTS


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