Dec. 29, 1931. D. DI LEONARDO 1,838,300

AQUATIC AMUSEMENT APPARATUS

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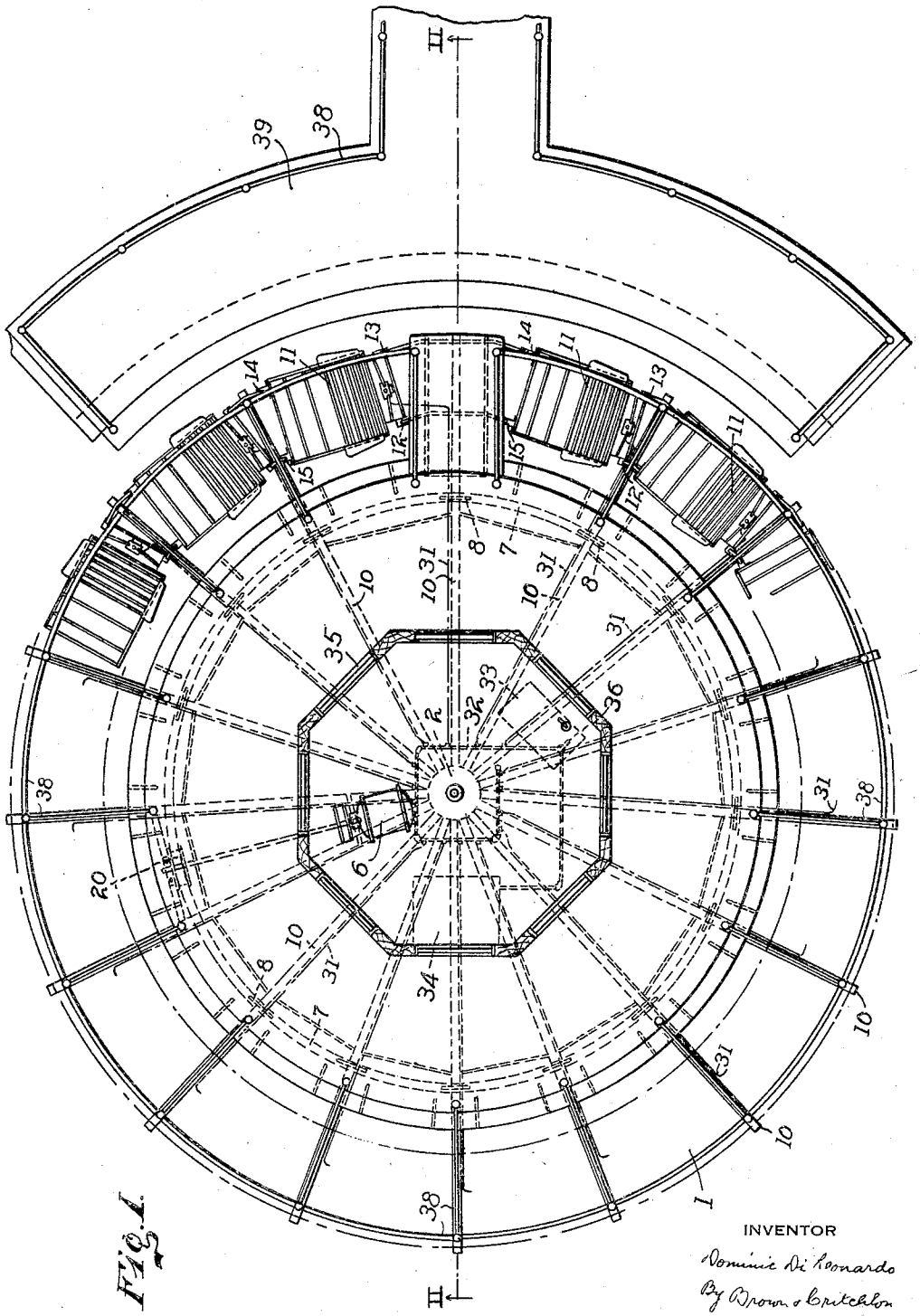

Fig. 1.

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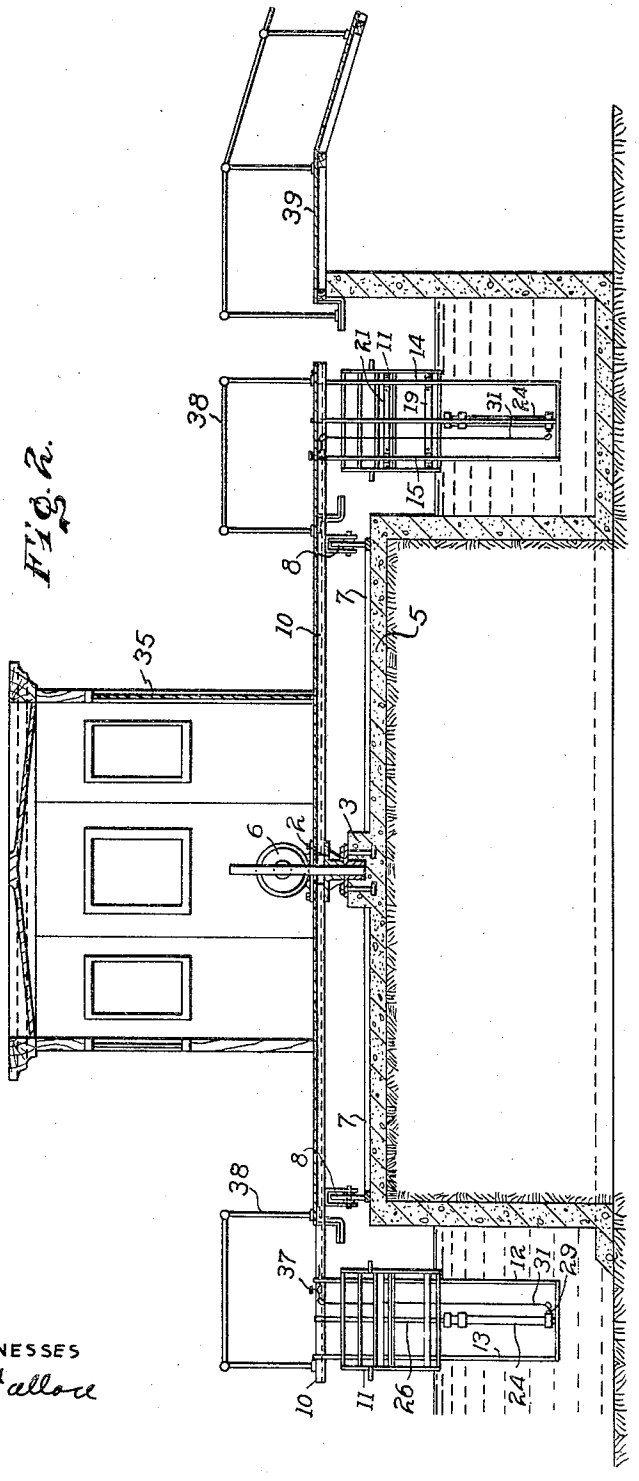
Fig. 2.



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AQUATIC AMUSEMENT APPARATUS

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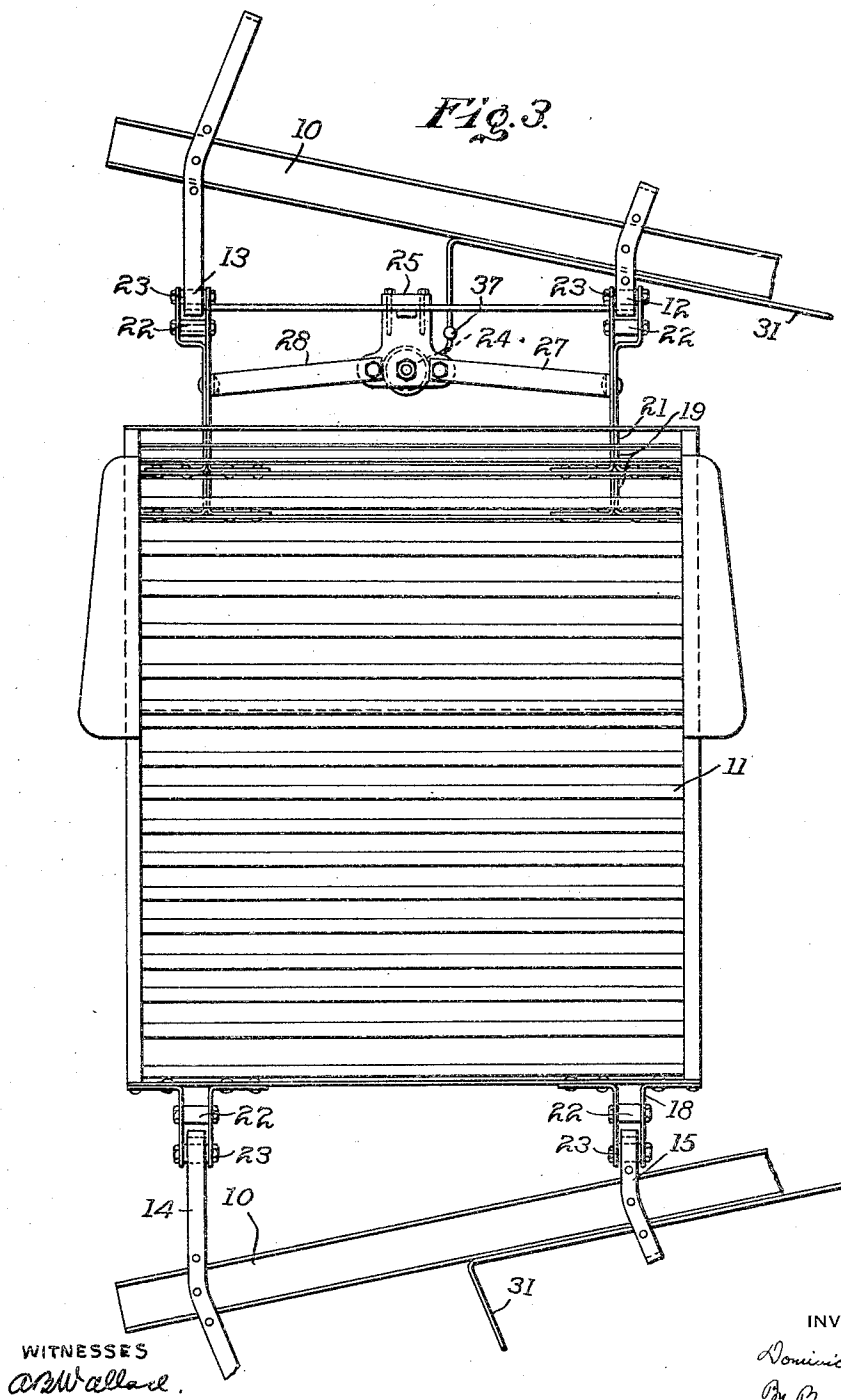
Fig. 3.



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AQUATIC AMUSEMENT APPARATUS

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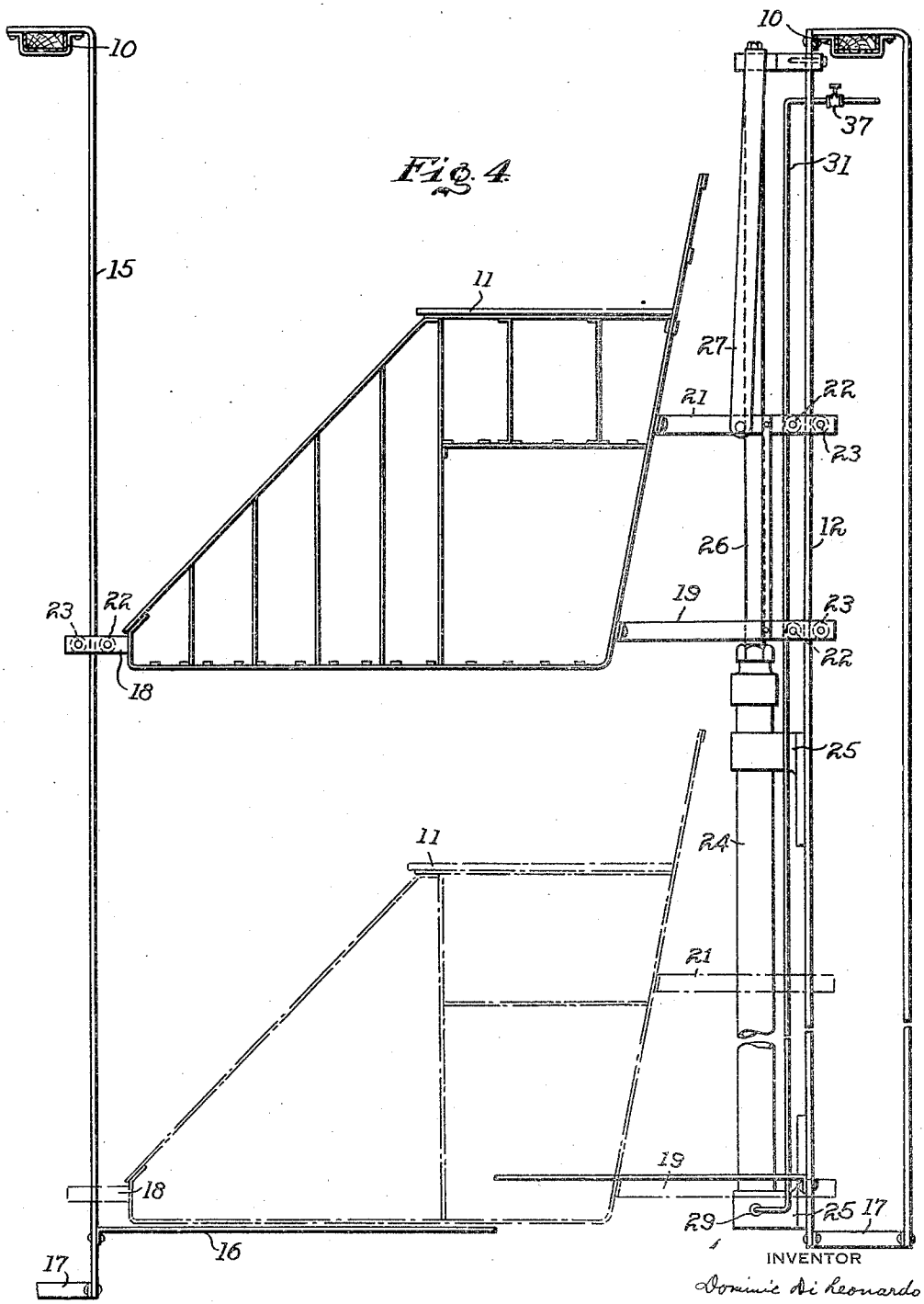
Fig. 4.



WITNESSES
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Dec. 29, 1931. D. DI LEONARDO 1,838,300

AQUATIC AMUSEMENT APPARATUS

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Fig. 5.

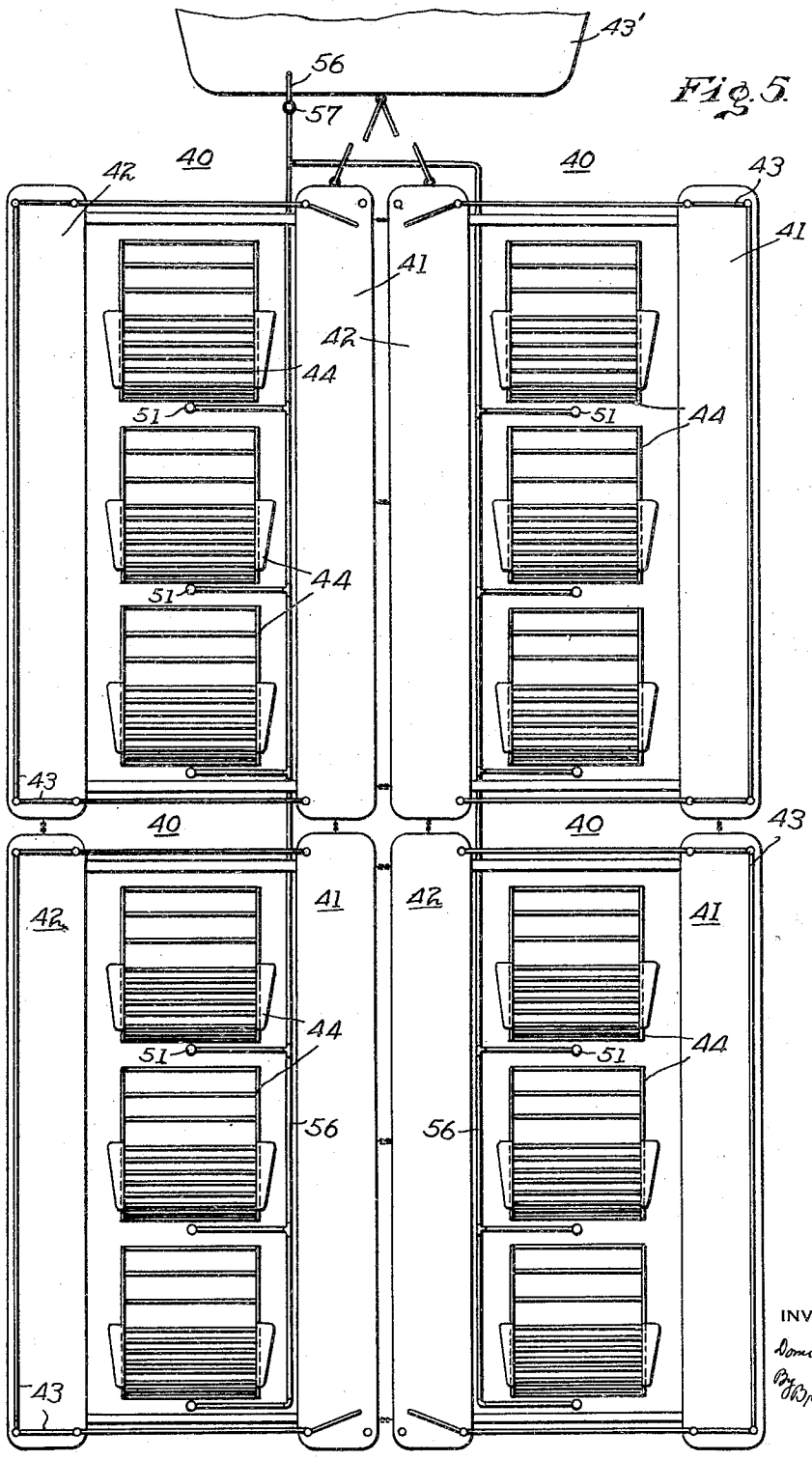

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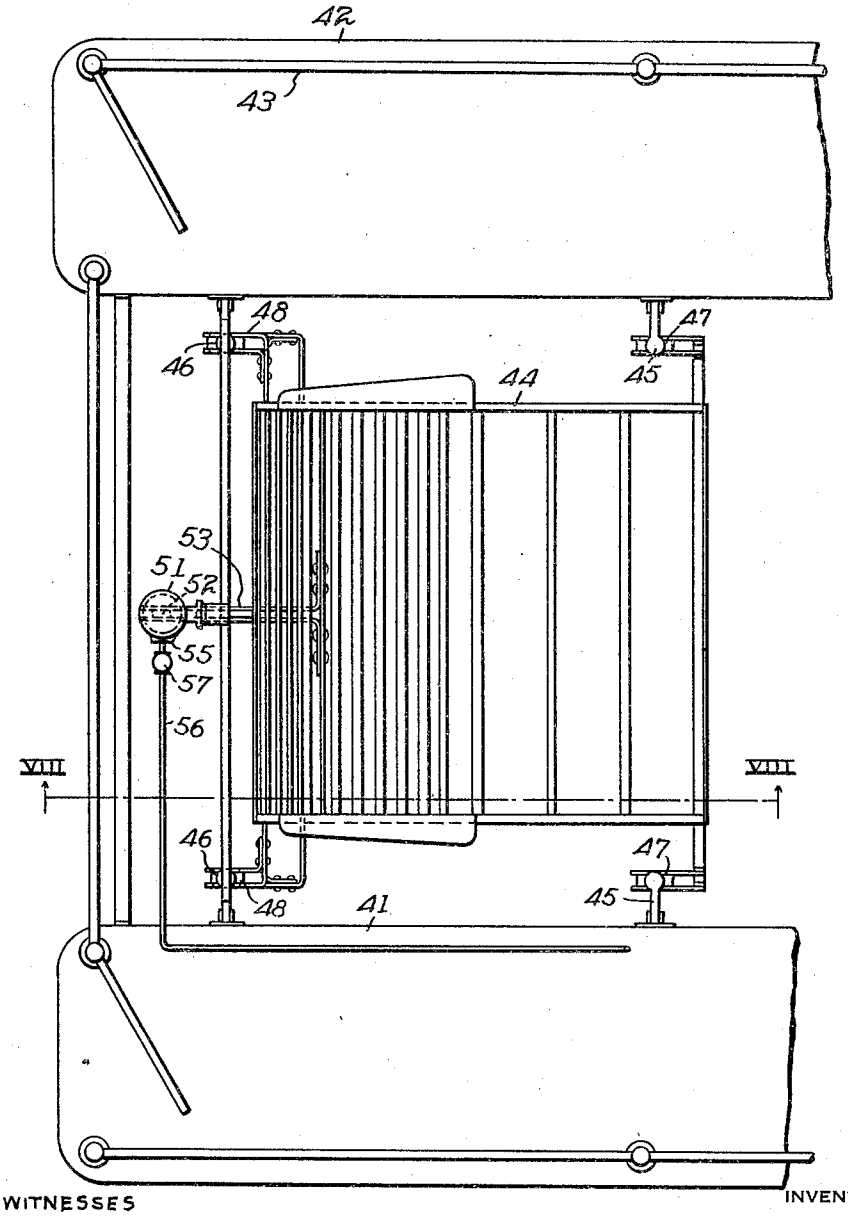
Fig. 6.



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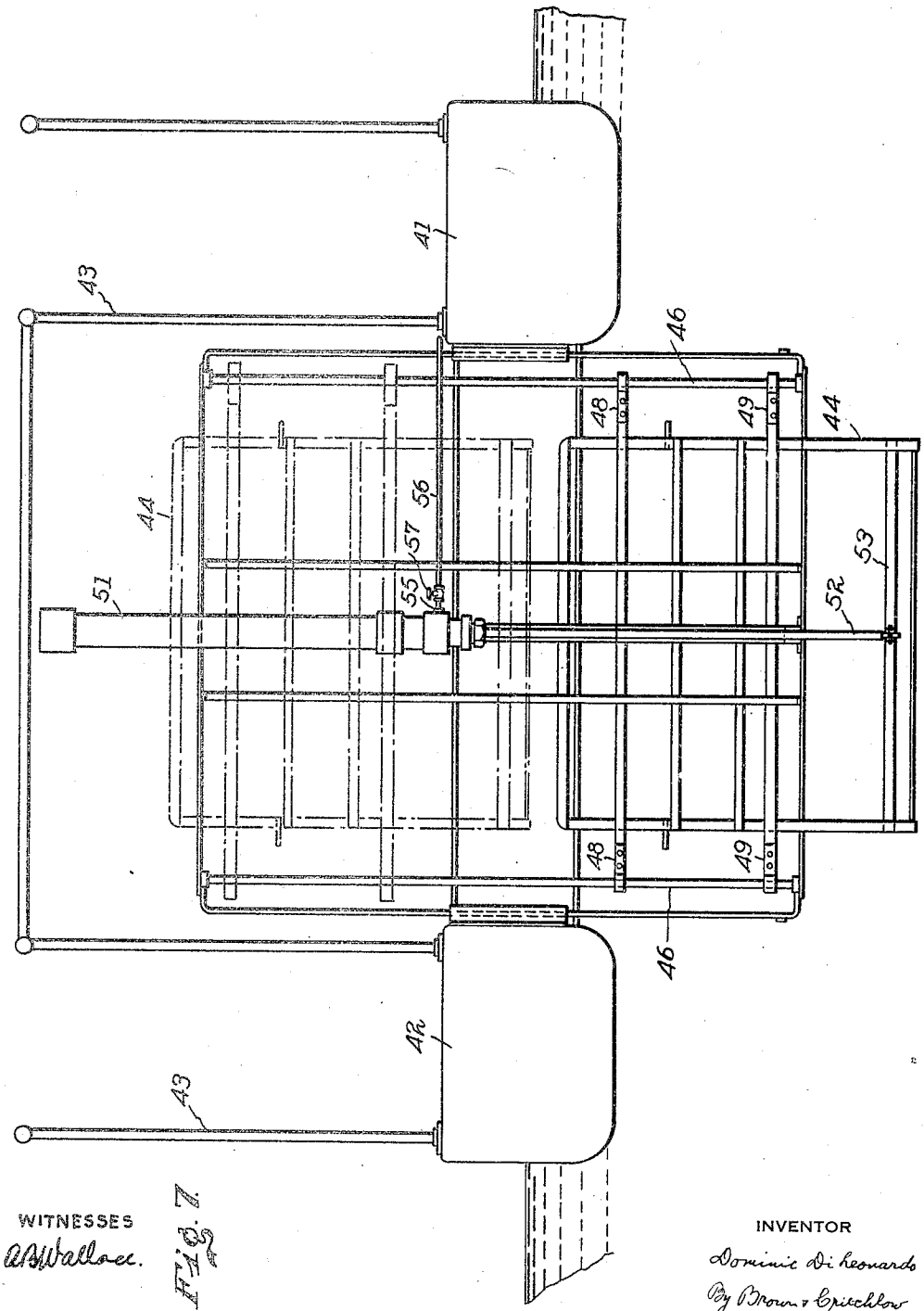

Fig. 7

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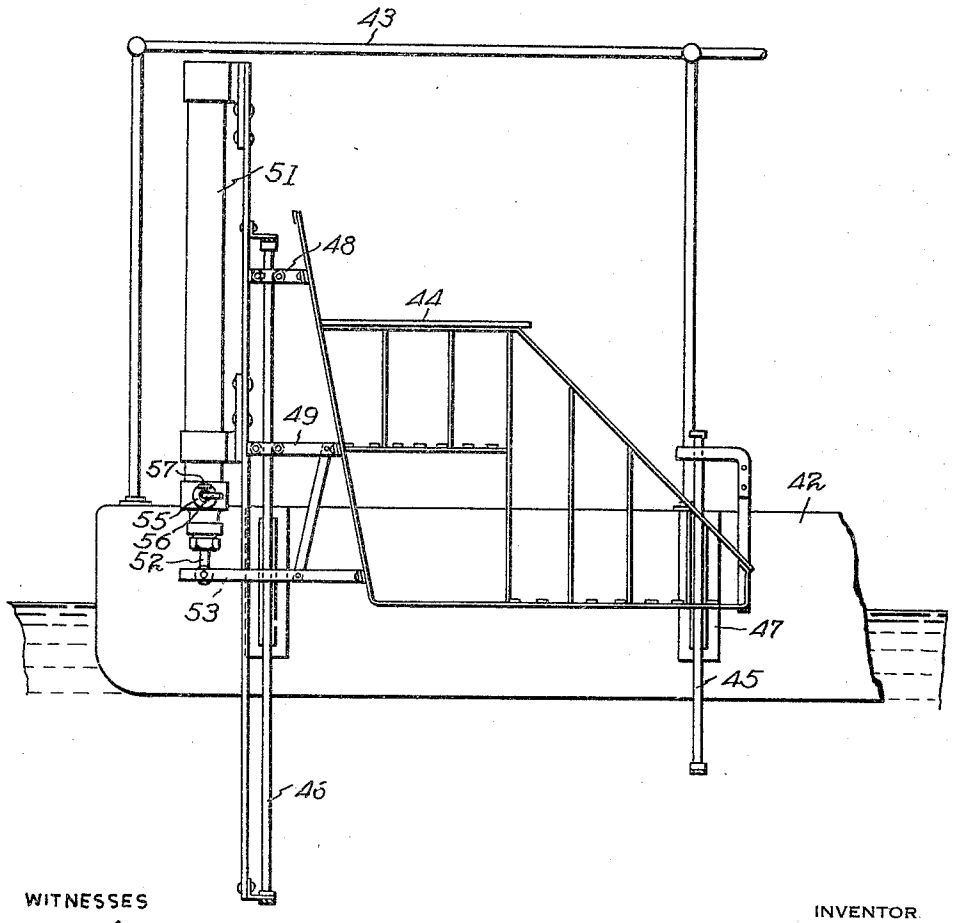
Fig. 8.



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UNITED STATES PATENT OFFICE

DOMINIC DI LEONARDO, OF PITTSBURGH, PENNSYLVANIA

AQUATIC AMUSEMENT APPARATUS

Application filed August 11, 1928. Serial No. 298,937.

This invention relates to aquatic amusement apparatus and more particularly to a type of apparatus in which passengers are carried in seats attached to a supporting structure which are adapted to be lowered into or raised out of the water while the supporting structure is in motion, to produce an exciting or exhilarating sensation upon the occupants of the seats.

The object of the invention generally stated is to provide an amusement apparatus which may be installed in an artificial pool or in an open body of water to convey passengers continually or intermittently through the water in such a way as to provide them with a sensation similar to that enjoyed when swimming or riding on a surf board or the like.

Other objects of the invention will become apparent when the following detailed description is read in conjunction with the accompanying drawings in which Fig. 1 illustrates a plan view of a merry-go-round type of structure embodying the invention; Fig. 2 a cross sectional view taken on the line II—II of Fig. 1; Fig. 3 a top plan view of one of the passenger seats carried by the supporting structure shown in Figs. 1 and 2; Fig. 4 a side elevational view of the seat in its upper and lower positions; Fig. 5 illustrates another modification of the invention, in which the passenger carrying seats are supported on floats and are propelled through the water by a motor boat or some other similar device; Fig. 6 a fragmentary plan view of one of the floats shown in Fig. 5 illustrating a passenger carrying seat adjustably attached to the pontoons, forming the float; Fig. 7 an end view of the float shown in Fig. 6 showing the seat in its raised and submerged positions; and Fig. 8 a sectional view taken on the line VIII—VIII of Fig. 6.

In accordance with the invention an amusement apparatus of the above described character is provided with a seat supporting structure adapted to be moved relative to a body of water. This may take various forms such as a merry-go-round type of structure rotatably mounted on a fixed pier attached to the bottom of a pool or upon a suitably anchored floating pier, or it may take the form of a raft or float. The passenger seats are adjustably mounted so that they may be lowered into or raised out of the water while they are in motion. They are also adapted to be adjusted at either the instance of the operator or at the will of the passengers riding in the seats. They are constructed in such a manner that water will readily course through them and around the occupants carried therein. Hence a passenger may be submerged in the water while riding in this apparatus to any desired depths within the limits of the apparatus itself and accordingly enjoy the exhilarating sensation of being drawn through the water or of being lowered into it or raised out of the water while moving through it.

Referring to Figs. 1, 2, 3 and 4 of the drawings, the invention is illustrated as embodied in a merry-go-round type of structure comprising a spider-like seat supporting wheel 1 provided at its center with a hub or center bearing 2 which is rotatably mounted upon a bearing support 3 disposed upon a pier 5 or some suitable spider supporting structure which may be secured to the bottom of a pool or disposed on a float anchored in a deep body of water. To effect the movement of spider 1 an electric motor 6 or some suitable driving mechanism may be suitably geared to the spider or adapted to drive a drive wheel 20. The movement of the spider is facilitated and its proper balance maintained by mounting a plurality of wheels 8 on its underside near its outer periphery in such a way that they will ride on a continuous track 7 located on the top of pier 5.

Spider 1 is preferably constructed with radiating seat supporting members 10 between which the passenger carrying seats 11 are mounted. These seats are preferably constructed in a lattice-work fashion as illustrated so that when they are moved, the water will freely circulate about the passengers riding in them.

In order to permit seats 11 to be vertically adjusted with respect to the supporting structure, they are slidably mounted in a frame comprising vertical supporting members 12,

13, 14 and 15 which have their upper ends attached to adjoining radiating supporting members 10 of the spider. They are made rigid at their bottoms by cross member 16 and separator 17 disposed between vertical supporting members of adjacent frames. Bifurcated hanger arms 18, 19 and 21 are suitably attached to the front and back respectively of each seat for mounting them in their respective supporting frames. At the outer ends of each of these hanger arms there are provided rollers 22 and 23 which travel along the supporting members and reduce the effort necessary to move the seats up and down.

A fluid pressure actuated cylinder 24 is attached to each seat-supporting frame near its bottom and at the back of each seat by means of brackets 25. Each cylinder is provided with a piston and piston rod 26, connected to hanger arms 21 on the back of each seat by means of rods 27 and 28, whereby the seat will be moved in accordance with the movement of piston rod 26.

Fluid pressure, such as compressed air, is introduced into the bottom of cylinder 24 at 29 through a pipe 31 which may be connected to a pressure main 32 located on the spider and which in turn is connected to a pressure reservoir 33 in which the proper pressure is maintained by a compressor 34.

In order that the seats 11 may be raised and lowered at the will of the operator, who will preferably be located in pilot house 35 disposed in the center of the seat supporting spider, a master control valve such as valve 36 may be provided in the main supply fluid pressure line. Also in order that the seats may be adjusted by the occupants riding in them, an auxiliary valve 37 may be suitably interposed in the pressure line adjacent to each seat near the top of the cylinder as illustrated in Fig. 4.

For the purpose of aiding the passengers in gettting into and out of the seats and also insuring their safety while doing so, a guard rail 38 is mounted around the outer periphery of spider 1. A passenger platform 39 may also be suitably located adjacent to the spider as indicated in Figs. 1 and 2.

As referred to hereinbefore, the apparatus may be mounted on a concrete base in an artificial pool or shallow body of water, or it may be mounted on a floating base anchored in deep water.

Referring now to Figs. 5, 6, 7 and 8, another embodiment of the invention is illustrated and comprises a plurality of raft-like seat supporting floats 40 each of which is a separate unit in itself consisting of two pontoons 41 and 42 suitably braced together to effect a supporting structure for the seats. Around the outer edge of the pontoons on each of the units is provided a guide rail to aid the passengers in getting into and out of the seats. These seats may take the same form as the ones described hereinbefore. They are mounted for vertical adjustment by being supported in a frame consisting of supporting rods 45 and 46 positioned on each end of each seat at its front and back respectively and attached to the sides of the pontoons. Hanger arms 47, 48 and 49 are attached to the front and back of each seat respectively and slidably mounted on rods 45 and 46. As described in the previous type of apparatus a fluid pressure actuated cylinder 51 and piston 52 are attached to the front and bottom of the seat respectively for effecting its adjustment, but in this case the cylinder is inverted and mounted at the upper end of the seat supporting frame, the piston being attached to the bottom of the seat by arm 53. The compressed air for actuating piston 52 is introduced into cylinder 51 by means of pipe 56 which may be supplied from a source of compressed air located upon the towing apparatus 40. Valve 57 may be interposed in the pressure line adjacent to each cylinder so that a passenger may regulate the pressure in the cylinder to adjust the seat in the water as he desires. Also a master valve may be disposed in the pressure line on the towing apparatus so that the operator of the apparatus can adjust the seats in the same manner as previously described. Consequently the seats in this case may also be regulated or adjusted at the will of either the operator or the passengers carried in the seats.

While the later modification of the invention is shown as being propelled by a power driven boat, it may be otherwise propelled through the water, and while shown with a number of units connected together in a particular way, any number or combination of units may be used to make up the train.

According to the provisions of the patent statutes, I have explained the principle and mode of operation of my invention and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that, within the scope of the appended claims the invention may be practiced otherwise than as specifically shown and described.

I claim:

1. An aquatic amusement apparatus, comprising a seat supporting structure adapted for movement relative to a body of water, a seat for carrying passengers adjustably attached to said supporting structure, fluid pressure means attached to said supporting structure and said seat for lowering and raising said seat into and out of the water, a source of fluid pressure for said fluid pressure means, and means for controlling said pressure.

2. An aquatic amusement apparatus comprising a seat supporting structure adapted for movement relative to a body of water, a

seat for carrying passengers adjustably attached to said supporting structure, a cylinder and piston cooperatively connected to said structure and said seat, a source of fluid pressure, means for introducing said pressure into said cylinder for lowering or raising said seat into or out of the water, and means for moving the supporting structure relative to the water.

3. An aquatic amusement apparatus comprising a seat supporting structure adapted for movement relative to a body of water, a seat for carrying passengers adjustably attached to said structure, said seat being constructed in a manner to permit water to readily flow through it, fluid pressure actuated means for lowering or raising said seat into or out of the water, means adapted to be operated by the operator of the apparatus for effecting the lowering or raising of the seats into and out of the water, and also means adapted to be operated by a passenger in the seat for accomplishing the same result.

4. An aquatic amusement apparatus comprising a seat supporting structure adapted for movement relative to a body of water, a seat for carrying passengers adjustably attached to said structure, fluid pressure means cooperating with said structure and said supporting structure for lowering or raising the seat into or out of the water, a source of fluid pressure, means for communicating said pressure to said pressure actuated means, and means for controlling said pressure.

5. An aquatic amusement apparatus, comprising a seat supporting structure adapted to be moved relative to the surface of a body of water, an open work seat adjustably attached to said supporting structure for vertical movement, means for guiding the vertical movement of the seat and means controllable at the will of the occupant of the seat for raising and lowering the seat.

6. An aquatic amusement apparatus, comprising a seat-supporting structure adapted to be moved relative to the surface of a body of water, an open-work seat adjustably attached to said supporting structure for vertical movement, means for raising and lowering said seat in said supporting structure, means for guiding the vertical movement of the seat, and means controllable at the will of the operator for setting said seat raising and lowering means in operation.

In testimony whereof, I sign my name.

DOMINIC DI LEONARDO.