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I. F. GORHUM ET AL
SUBMARINE AMUSEMENT DEVICE

Filed June 28, 1926

3 Sheets-Sheet 1

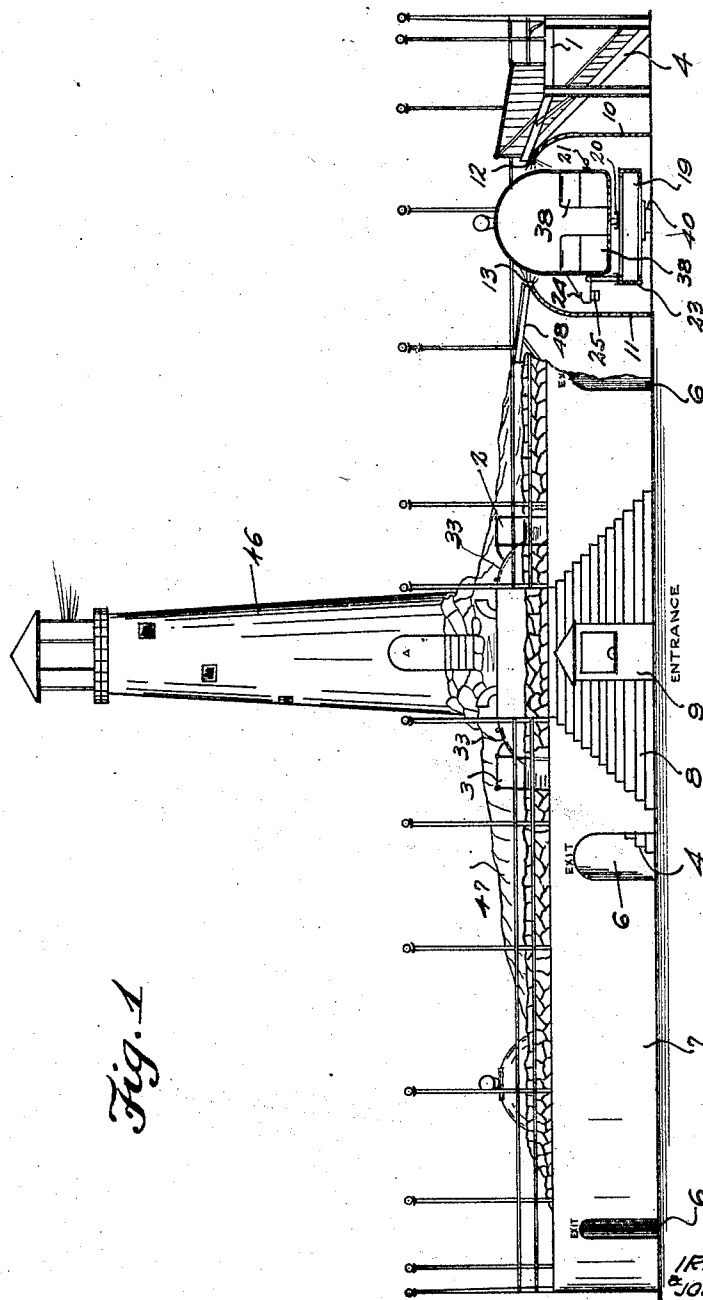


Fig. 1

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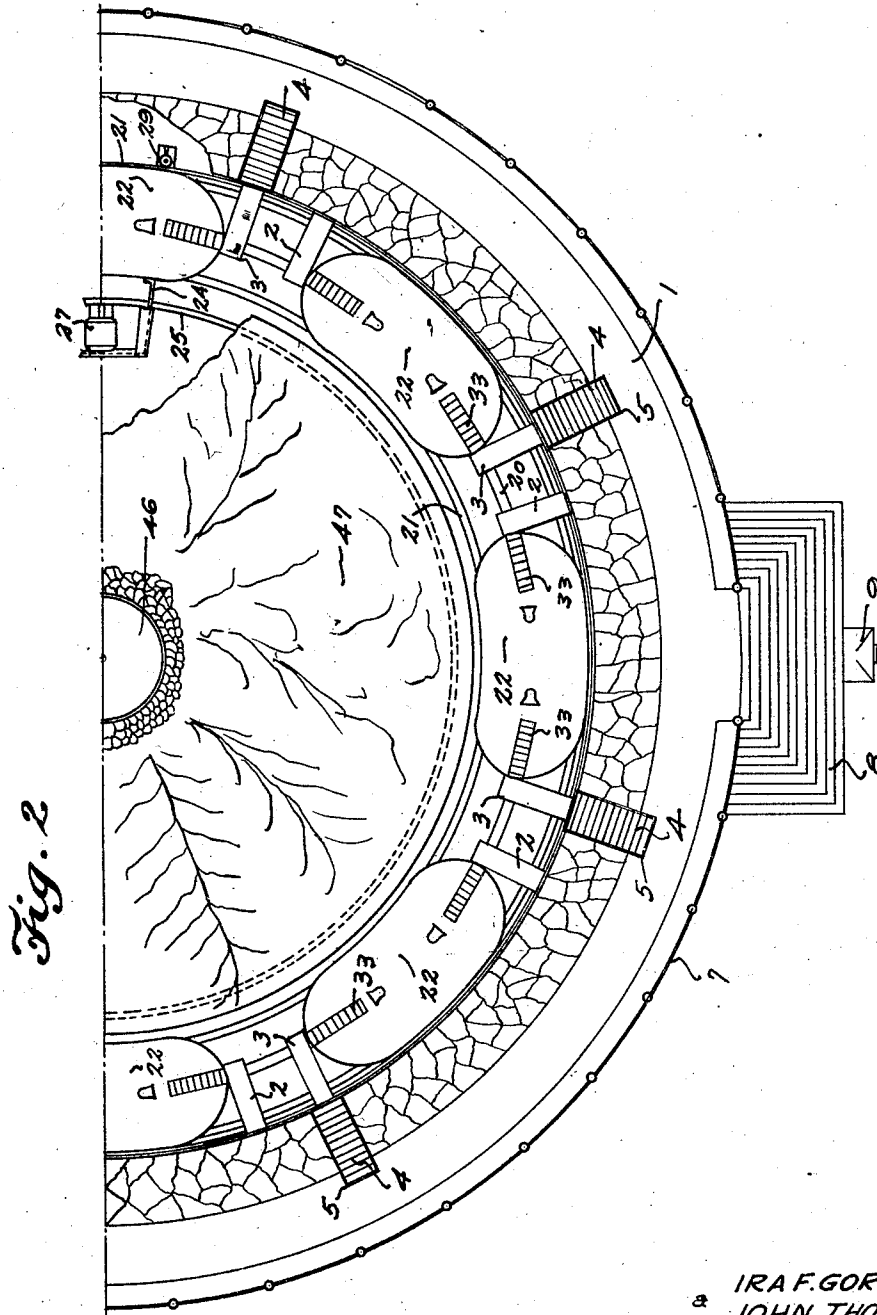
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3 Sheets-Sheet 2



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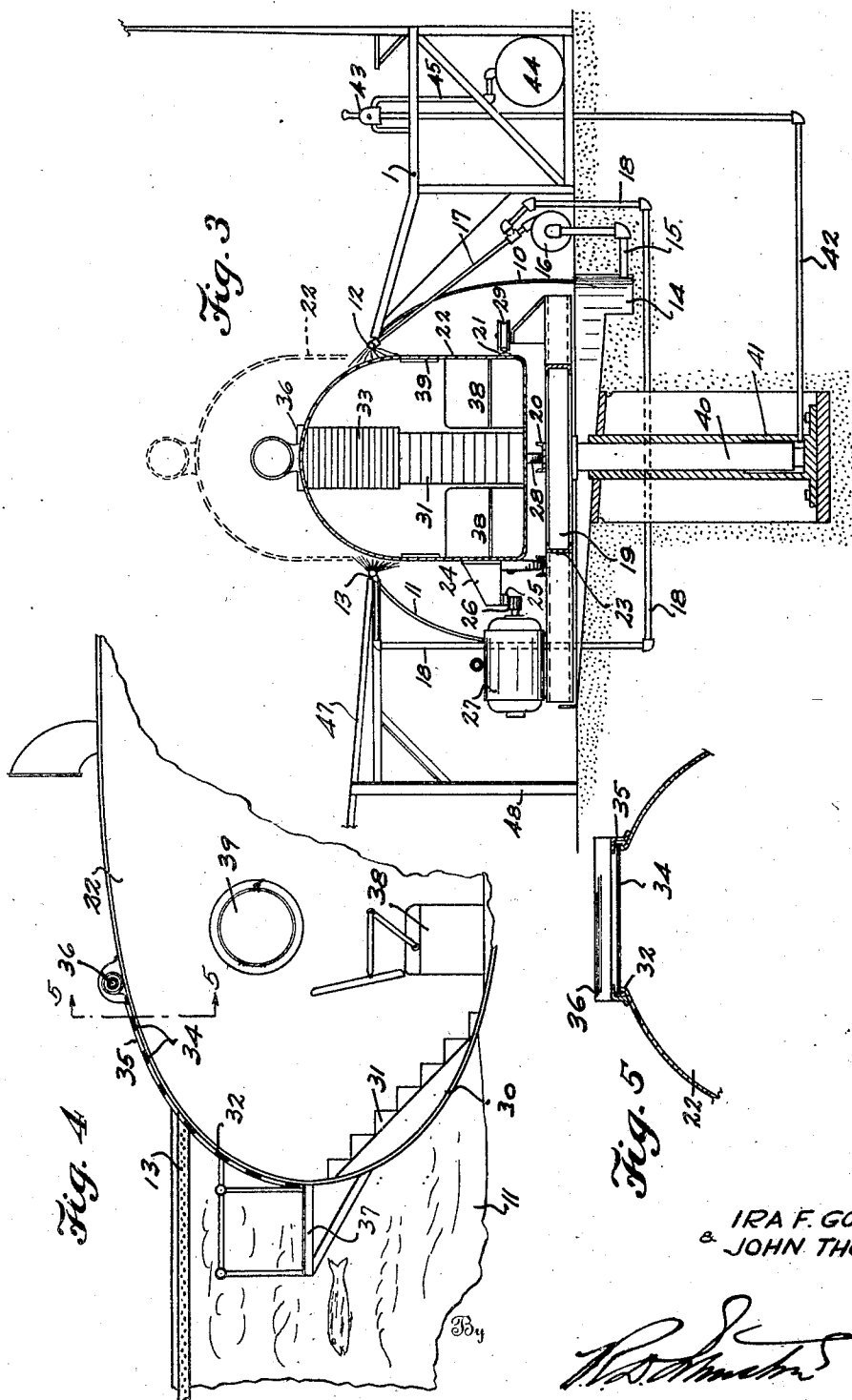
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SUBMARINE AMUSEMENT DEVICE

Filed June 28, 1926

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

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SUBMARINE AMUSEMENT DEVICE.

Application filed June 28, 1926. Serial No. 119,254.

Our invention relates to an amusement device in which a series of boats having the general appearance of submarines are arranged for travel on tracks or suitable supports through an annular runway having overhead water sprays that play on the boats while in operation and give the passengers the impression that they are submerged.

As a preferred means for raising and lowering the boats in their runway and for causing them to move along an undulating path simulating under sea travel, we utilize an annular track for the boats which is supported free for vertical oscillations responsive to a controlled source of power. By such an arrangement the operator can raise the boats to loading position, can lower them into their runway for operation, and can oscillate them up and down as they run.

Our invention further contemplates the connecting of the several boats to an annular rack driven by a motor mounted on the movable track as a preferred means for continuously propelling boats while they are being oscillated.

Our invention further comprises the novel details in the construction of the runway for the boats; in the arrangement of annular sprays about said runway and water collecting and recirculating means; in the arrangement of loading and unloading piers in connection with convenient means for keeping separate the passengers unloaded from those about to enter the boats; and in the hatch closures for the boats.

Our invention further comprises the novel details of construction and arrangements of parts, which in their preferred embodiment only are illustrated in the accompanying drawings which form a part of this specification, and in which:—

Fig. 1 is a front elevation of our improved amusement device showing the boats in lowered position in their runway with one portion of the latter broken away to show a cross-section of the runway and an elevation of the motor drive for the boats.

Fig. 2 is a plan view of the front half of the amusement device.

Fig. 3 is an enlarged cross-sectional view through the runway and sump, showing one of the boats in cross-section with its hatch closed.

Fig. 4 is a detail cross-sectional view of the hatch.

Fig. 5 is a cross-sectional view on the line 5—5 of Fig. 4.

Similar reference numerals refer to similar parts throughout the drawings.

In the improved embodiment of our invention illustrated we show the amusement device comprising an annular walkway 1 from which at suitable intervals, corresponding to the spacing of the boats, we arrange pairs of inwardly projecting piers 2 and 3, the piers 2 being the loading piers and the piers 3 being the unloading piers for the boats. The unloading piers deliver the passengers to stairs 4 which are separated by railings 5 from the walkway so that the passengers as unloaded cannot regain access to the walkway and thus re-enter a boat without paying the customary fare. The passengers as unloaded pass down the stairs and out through door ways 6 in the outer marginal stationary wall 7 which surrounds the device. The passengers about to use the device go up the steps 8 past the ticket station 9 and about the annular walkway to a loading pier. Spaced inwardly from the annular walkway we arrange what we term an annular runway for the boats, this runway being formed by an outer annular marginal plate or wall 10 and an inner annular wall 11, both walls having their upper ends arched over and spaced apart. Both walls extend down sufficiently to catch all water discharged from the annular sprays 12 and 13 which surround the runway, being disposed just under the overhung top edges of the walls 10 and 11. The water caught by the walls 10 and 11 falls into an annular trough or sump 14 which returns the water to the inlet 15 of a centrifugal pump 16 which returns it by mains 17 and 18, respectively, to the annular spray pipes 12 and 13. The walls 10 and 11 are preferably colored green and white to give an under water outlook to passengers in the boats.

Around the bottom of the runway we provide an annular structural metal support 19 upon which we mount annular tracks 20 and 21 for the boats 22. The track 20 is formed of a channel set under the center line of the boats and the track 21 is formed by an upturned annular channel mounted on vertical supports 23 on the framework. The several boats are connected by out riggers 24 with an annular rack 25 having downturned teeth adapted to be

engaged by a pinion 26 driven by a motor 27 mounted fast on the track supports and thus adapted to cause the boats to travel on the tracks by means of centrally disposed wheels 28 at each end of a boat which ride in the track 20 and horizontally disposed wheels 29 which engage the side track 21. These wheels 28 are received in housings 30 which project up into the boat at either end, being disposed under and concealed by the end steps 31 which give access to end hatch ways 32 that are normally covered over by a sliding curtain hatch 33. This hatch has cross guide bars 34 traveling in curved guides 35 along each side of the hatch, the curtain hatch being wound at its upper end about a spring roller 36 which will retract it when it is desired to open the hatch way. The steps at each end of the boat give access to the platforms 37 which lead outwardly at right angles to register with a pair of loading and unloading piers 2 and 3.

Within each boat we arrange seats 38 and opposite the seats are port holes 39 which are disposed so that in running position they will be below the water sprays and opposite the colored walls 10 and 11. As a result the spray water running over the glazed port holes and down over the walls 10 and 11 will create the impression in a passenger of being under water.

The annular support 19 for the boat track is supported at intervals on the piston rods 40 of air cylinders 41 suitably mounted in the concrete trough or sump and each motor connected by a manifold pipe 42 to a three way control valve 43 on the operator's platform. Compressed air from a tank 44 is delivered by a supply pipe 45 to this valve and by throwing it into one position the compressed air will be transmitted simultaneously to all motors to raise the track and the boats thereon; in a second position the air will be exhausted to lower the track and the boats; and in a third position the air in the cylinders will be trapped to hold the motor and the boats in any desired level. The means described is the equivalent of any available motor controlled means for effecting the raising and lowering of the track supports and the boats. In the center of the amusement device we arrange a light house tower 46 and a cover 47 extending from the inner runway wall 11 to the light house tower may be decorated with rocks or sand, or other device to increase the realism of the amusement device, taken longitudinally through one end of the boat. This cover 47 is supported by any suitable framework 48 which is covered or concealed thereby. The marginal walls 10 and 11 of the runway are extended down only sufficiently to catch the sprays from the boats and to shut off from the view of passengers the space under the cover 47. The wall 11 is

set out to clear the out-riggers and outer track rail in all positions of the track and the inner wall is notched to permit the motor shaft to move up and down with the track.

In operation, the track is raised to its highest position which lifts the boats so that their end platforms are at or near the level of the loading and unloading piers, and the motor is operated to move the boats until their platforms come into line with the piers, in which position the passengers leaving the boat pass down stairs 4 and under the walkway 1 and out, while the passengers enter the boats from the walkway over the loading piers 2 and when seated, the hatches are drawn down and the operator lowers the track, bringing the boat port holes into position between the runway walls below the sprays. The motor is thereupon started up and as the boats begin to move, air is admitted to, and exhausted from, the cylinders slowly, causing the track to rise and fall, giving the boats an undulating line of travel as they move through the runway. At the conclusion of the trip the track is raised and the boats are again stopped with their platforms opposite the piers and the operation is repeated. I prefer the cylinders as the best means for imparting to the boats an undulating travel, but it is obvious that this may be accomplished in other ways.

Though I have described with great particularity the details of the embodiment of the invention herein shown, it is not to be construed that I am limited thereto, as changes in arrangement and substitution of equivalents may be made by those skilled in the art without departing from the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. An amusement device of the character described, comprising a runway, a track therefor, boats movable through the runway on said track and provided with glazed port holes, and means to discharge water sprays on the boats above the port holes while the boats are in operation.

2. An amusement device according to claim 1, in which the runway has spaced marginal side walls which are decorated to simulate an under water scene.

3. An amusement device of the character described, comprising a runway, a track therefor, boats movable through the runway on said track and provided with glazed port holes, means to cause the boats to rise and fall as they travel, and means to discharge water sprays on the boats above the port holes while the boats are in operation.

4. An amusement device comprising an annular runway having a track in its bot-

tom, a series of boats simulating submarines and having side glazed port holes and end hatches, said boats being adapted to travel on said track, means to drive the boats along said track, means to give the boats a rising and falling motion as they travel, overhead annular sprays playing on the boats, and separate passageways for the incoming and outgoing passengers.

5 5. An amusement device according to claim 4, in which the passageways comprise piers leading to the top opening of the runway, and the means for raising and lowering the boats which are adapted to present them with their hatches opposite and accessible to said piers.

10 6. An amusement device comprising an annular runway having overhead spaced marginal walls with annular sprays, a track supporting structure movably supported in the lower portion of the runway, boat tracks on said structure, a plurality of boats, an annular rack to which said boats are connected, a motor gear drive for said rack to rotate the boats, power control means for raising and lowering the track supports, and passageways for the admission of passengers to and their discharge from the boats.

20 7. An amusement device according to claim 6, in which the motor drive for the boats is mounted on and movable with the track supporting structure.

30 8. An amusement device according to

claim 6, in which the means for raising and lowering the track supporting structure comprises a plurality of upright fluid pressure motors with a manifold valve control for the admission and discharge of fluid pressure thereto.

9. An amusement device, comprising an annular walkway having at intervals pairs of spaced piers, a runway partly overhung by said piers and formed by spaced overhanging marginal walls, annular sprays overhung by said walls, a boat track in said runways, boats movable along said track through the runway, said boats having end hatches spaced to register with each pair of piers, means to drive the boats, and means to raise the boats to present their hatches above the runway when loading and unloading passengers, substantially as described.

10. An amusement device comprising a runway having a track along its bottom, boats which have glazed port holes and are adapted to travel on said track through the runway, means to cause water to fall between the port holes of the boats and the sides of the runway so as to give passengers an under water outlook, means to collect the falling water and recirculate it through the runways, as and for the purposes described.

In testimony whereof we affix our signatures.

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