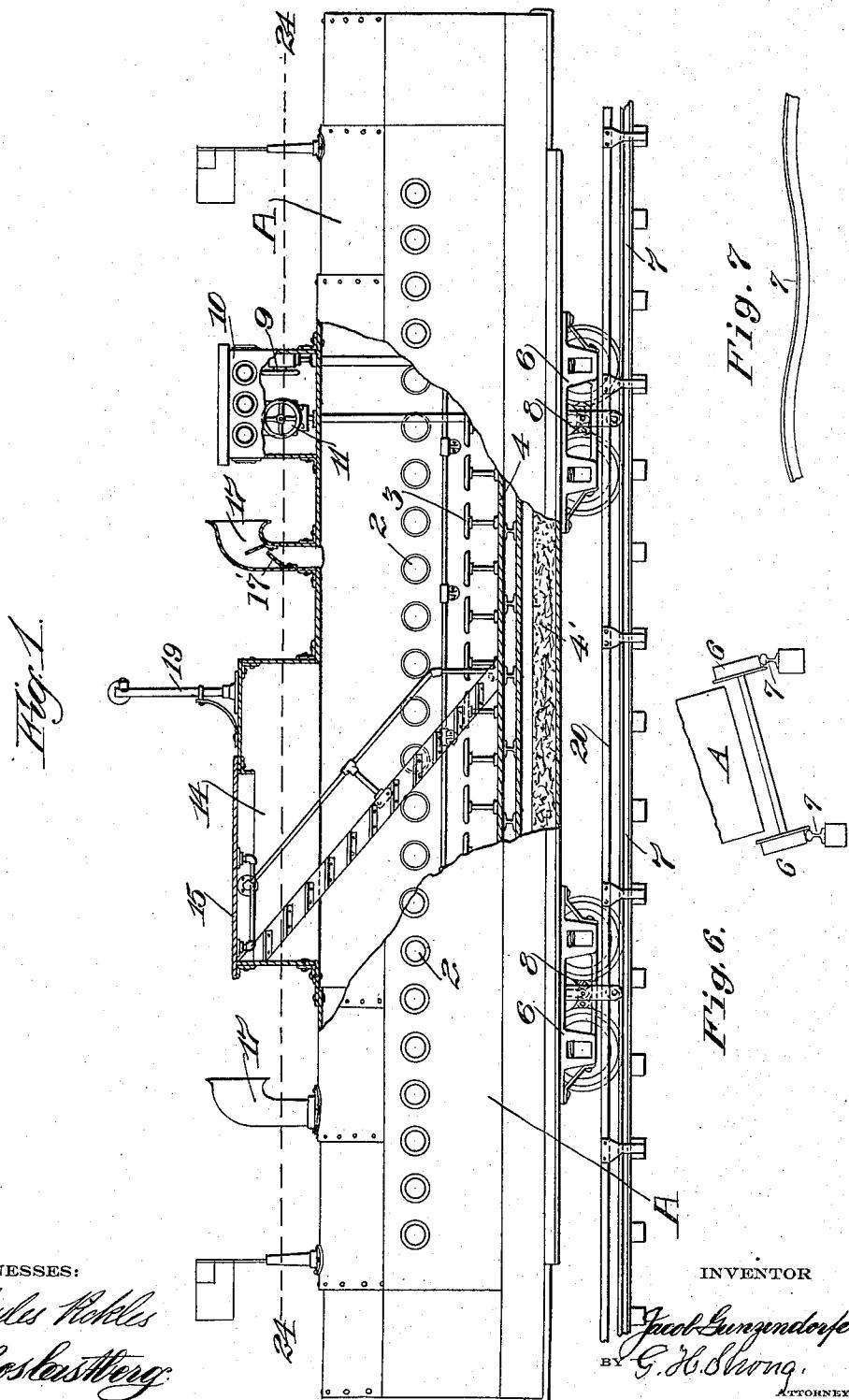


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J. GUNZENDORFER.  
AMUSEMENT APPARATUS.  
APPLICATION FILED APR. 7, 1915.

Patented Jan. 11, 1916.

3 SHEETS—SHEET 1.



**WITNESSES:**

Charles Hobbes  
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INVENTOR

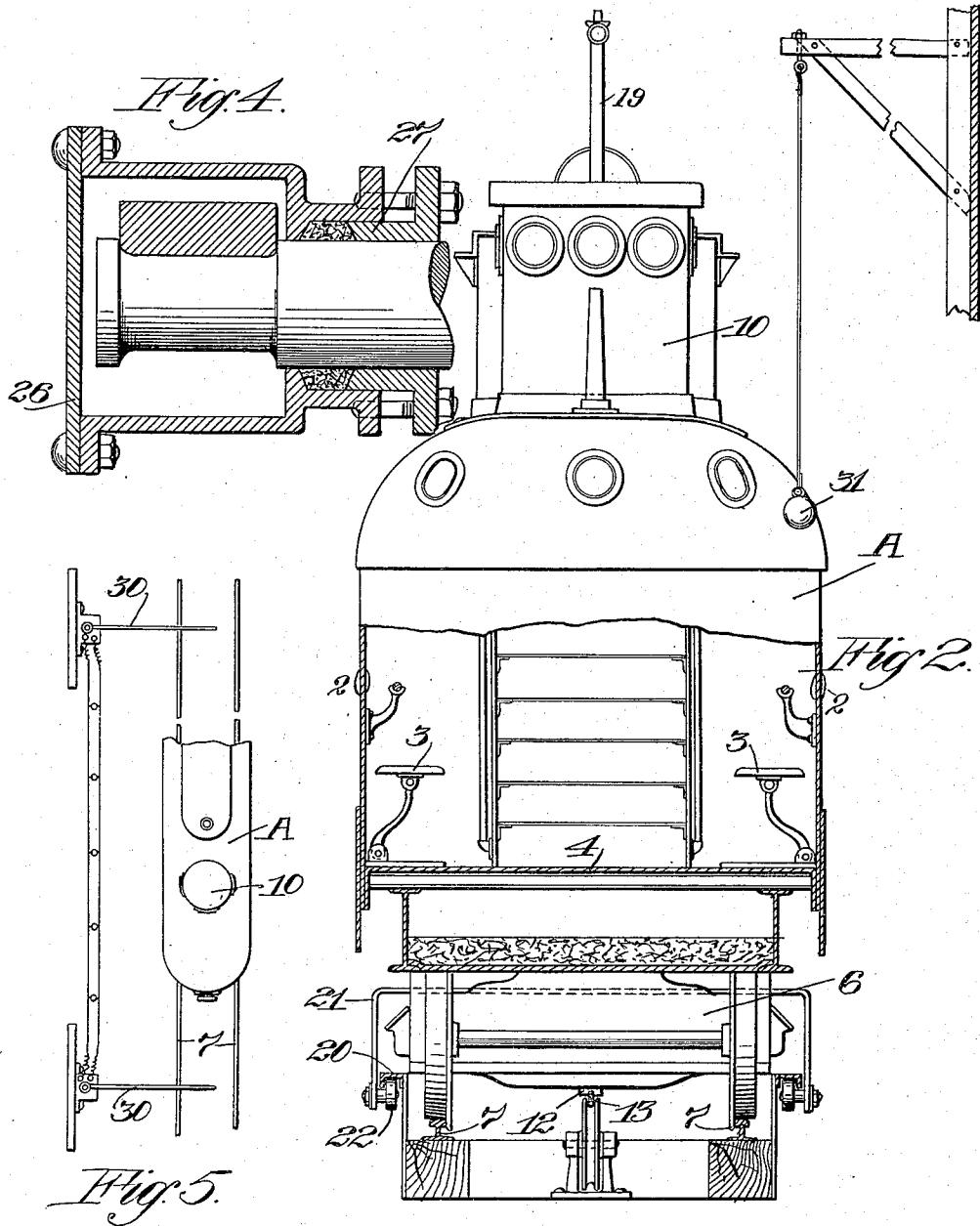
Jacob Gunzendorfer  
BY G. H. Strong.  
ATTORNEY

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3 SHEETS—SHEET 2.



WITNESSES:

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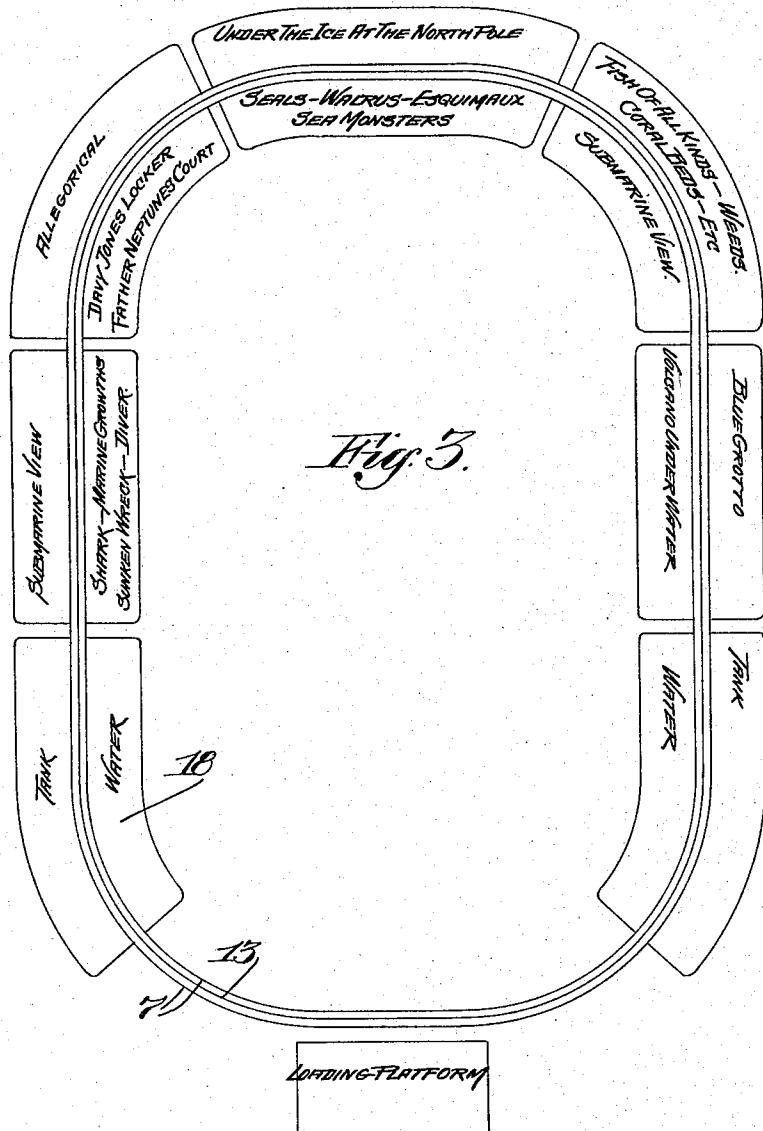
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3 SHEETS—SHEET 3.



WITNESSES:

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Jacob Gunzendorfer  
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ATTORNEY

# UNITED STATES PATENT OFFICE.

JACOB GUNZENDORFER, OF SAN FRANCISCO, CALIFORNIA.

## AMUSEMENT APPARATUS.

1,167,993.

Specification of Letters Patent. Patented Jan. 11, 1916.

Application filed April 7, 1915. Serial No. 19,703.

To all whom it may concern:

Be it known that I, JACOB GUNZENDORFER, a citizen of the United States, residing in the city and county of San Francisco and 5 State of California, have invented new and useful Improvements in Amusement Apparatus, of which the following is a specification.

This invention relates to an aquatic 10 amusement device and particularly pertains to a passenger carrying structure which is adapted to be submerged and propelled through a body of water in simulation of a submarine boat.

15 It is one of the objects of this invention to provide a submarine structure which is especially adapted for installation in pleasure gardens, recreation parks and similar places of amusement, and by means of which passengers may be conveyed beneath the surface of a body of water and which is so constructed and designed as to simulate the 20 actual sensations, scenes and experiences met in traveling in a submarine boat.

25 A further object is to provide a submarine amusement apparatus, which is stable and reliable which is not liable to get out of order, and from which egress may be had at all times, thus rendering it safe and free 30 from danger.

A further object of the invention is to provide switches operated and actuated by the passage of the submarine for throwing on or off lights and other electrically actuated devices controlling the scenes viewed 35 through the port-holes of the submarine.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and 40 claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section. Fig. 2 is a cross section. Fig. 3 is a plan view of the course over or through 45 which the submarine passes. Fig. 4 is a section of one of the journal boxes. Fig. 5 is a plan view of the switch operating arms. Fig. 6 is a section through the track and a 50 fragment of the vessel showing the transverse inclination of the tracks. Fig. 7 is a side elevation of the tracks showing their undulations and irregularities.

In the drawings, A represents a vessel or 55 submarine made of metal and cigar shaped. Said vessel constitutes the hull or passenger

conveyance of the apparatus. The vessel is provided with a suitable number of port-holes 2 for observation purposes and a chair 3 is provided in front of each port-hole for the convenience of the passengers. The 60 floor 4 or deck is constructed in the hull a suitable distance above the bottom thereof to form a bilge space 4' for the reception of ballasting material, such as concrete or any other suitable material. The hull as a whole 65 is supported upon trucks 6, said trucks being mounted upon tracks 7 and provided with brakes 8 of suitable construction operated by a hand wheel 9 mounted in the conning-tower 10. The conning-tower is also provided 70 with a cable grip control of suitable construction, such as indicated at 11, which actuates a grip 12 mounted below the body or carried by the forward truck; this grip being adapted to be thrown into or out of 75 engagement with an endless cable 13 mounted between or below the trackway in any suitable manner and driven from any suitable source of power, not here shown.

The vessel is entered through a hatchway 80 14 which is provided with inwardly folding doors 15, which are closed after the passengers have been admitted. It is, furthermore, provided with ventilators 17 and a dummy periscope 19. As against any accidental 85 ingress of water the ventilators are provided with self-closing valves 17'.

The trackway upon which the submarine travels is endless; that is, the course is circular. This trackway first passes into a tank 90 a little distance beyond the elevated loading platform indicated at 18; the tank being so constructed as to give the appearance of a lake or river so as to produce the actual sensations experienced in traveling in a submarine boat. The track, however, soon emerges from the tank and the rest of the course passes through inclosures, all above the water line, the interiors of which are decorated and illuminated to produce various effects. For instance, after the submarine emerges from the tank it may enter an inclosure which is entitled "Submarine view." Here will be seen sharks, divers, sunken wrecks, marine growths, etc. The next inclosure through which the submarine passes may be entitled "Under the ice at the North Pole." Here arctic and submarine views may be shown such as seals, walrus, Eskimos, etc. A plurality of iron balls 105 110 115

suspended within the inclosure in the path of the vessel produces by contact a grating or grinding sound as the vessel passes through this chamber, thus producing an imitation of icebergs striking the vessel. The course thus continues through several inclosures, all of which present different views such as tropical under water scenes, submarine caves, etc., until the starting point is again reached. The port-holes are in this instance provided with convex lenses which produce the desired illusion of distance, swirling motion, etc. The illumination of the different inclosures is controlled by the passage of the submarine therethrough. For instance, the periscope mast projecting from the submarine may engage with switch arms 30 which will open or close circuits in the various inclosures, thus throwing on or off lights or other electrically actuated devices contained therein. The trackway may, furthermore, be undulated or inclined laterally and longitudinally, Figs. 6—7, at various points to produce a rolling or wave-like effect, and means have been provided for safeguarding such movements in the following manner: Disposed on the sides of the main trackway 7 is a holding down or guide rail 20. A bracket 21 extending down from each truck and having a roller 22 mounted on its lower end and engageable with the guide rail prevents the submarine from tipping too far, thereby acting as a safety against accidents which might otherwise occur.

The depth of the lake or tank through which the submarine first passes is not sufficient to entirely submerge the vessel. The water line will at no time reach above the dotted line indicated at 24. Ingress to and egress from the hull A may thus be obtained through the hatchway or conning-tower at all times as these extend above the water line, thus rendering it safe and free from danger.

From the foregoing it will be seen that I have devised a novel, entertaining and instructive amusement apparatus which may be employed in demonstrating the science of submarine travels with the thrilling sensations attendant thereto.

The journal boxes employed on the trucks are in this instance entirely inclosed by an outside plate 26 and the inner ends of same are provided with stuffing boxes 27 through which the shaft extends. Leakage or admission of water to the journals proper is thus prevented while the vessel is submerged or partially so. The connections formed between the brake operating mechanism and the conning-tower and the grip also pass through stuffing boxes of suitable construction to prevent admission of water or leakage at these points.

One of the chief features of the invention

is that the passenger conveyance simulating the appearance and habits of a submarine is adapted to be propelled by mechanical means (to-wit, the cable 13) entirely outside of the vessel, and which means are controlled from within the vessel irrespective to whether the vessel is submerged or otherwise. That is to say, I have designed a practical device capable of traveling through the water under the action of a cable and grip, and yet at all times the progress of the vessel is entirely under the control of the operator inside the vessel. Even when submerged the cable may be released and the brakes applied thus aiding further in the production of illusions by stopping and starting and controlling speed.

The undulating and apparently wobbly track produces a pitching and rolling of the vessel quite natural to the original counterpart.

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

1. In an aquatic amusement device, the combination with a trackway, of a vessel mounted on trucks and adapted to travel over said trackway, said trackway being inclined longitudinally and laterally at different points to transmit a wave-like motion to the vessel, a guide rail mounted on each side of the trackway, brackets secured on the trucks, rollers on said brackets engageable with the guide tracks to limit lateral movement of the vessel, a plurality of inclosures through which the trackway passes, electrically operated means within said inclosures, switches controlling the flow of current through said electrically operated means, and means controlled by the passage of the vessel through the inclosures for opening or closing said switches.

2. In an aquatic amusement device, the combination with a trackway, of a vessel mounted on trucks and adapted to travel over said trackway, said trackway having means arranged at different points to transmit a wave-like motion to the vessel, a guide rail mounted on each side of the trackway, brackets secured on the trucks, rollers on said brackets engageable with the guide tracks to limit lateral movement of the vessel, a plurality of inclosures through which the trackway passes, electrically operated means within said inclosures, switches controlling the flow of current through said electrically operated means, means controlled by the passage of the vessel through the inclosures for opening or closing said switches, a tank through which the trackway passes, and a ballast chamber in the vessel to submerge the vessel while passing through the tank.

3. In an aquatic amusement device, the combination with a trackway, of a vessel

mounted on trucks and adapted to travel over said trackway, said trackway having means arranged at different points to transmit a wave-like motion to the vessel, a plurality of inclosures through which the trackway passes, and a plurality of suspended weights in one of said inclosures in the path of the vessel to produce a grating or grinding sound on the vessel to imitate traveling through icebergs.

4. In an aquatic amusement device, the combination with a trackway, of a vessel mounted on trucks and adapted to travel over said trackway, said trackway being inclined longitudinally and laterally at different points to transmit a wave-like motion to the vessel, a plurality of inclosures through which the trackway passes, scenic displays in said inclosures, port-holes formed in the sides of the vessel through which the scenic displays are viewed, and convex lenses in said port-holes to produce optical illusion and distance.

5. In an aquatic amusement device, the combination with a trackway, of a vessel mounted on trucks and adapted to travel over said trackway, a plurality of inclosures through which the trackway passes, and a plurality of suspended weights in one of said inclosures in the path of the vessel to produce a grating or grinding sound on the vessel to imitate traveling through icebergs.

6. In an amusement submarine, in combination with a water tank and a passenger conveyance, a track for the conveyance, said track having a relatively short part of the complete length thereof making a dip in the tank directly at the starting point of the device, and substantially its remainder disposed exteriorly of the tank and supported on the normal surface of the ground, and complete inclosures for the top and sides of the said remainder of the track, said inclosures having scenery simulating submarine views associated therewith so as to uninter-

ruptedly and continuously continue in an imitative manner the sensation of submarine travel without the use of water following the actual sensation with use of water produced by the initial dipping of the conveyance in the tank throughout the entire travel of the conveyance.

7. In an amusement submarine, in combination with a water tank and a passenger conveyance, a track for the conveyance, said track having a relatively short part of the complete length thereof making a dip in the tank directly at the starting point of the device and substantially its remainder disposed exteriorly of the tank and supported on the normal surface of the ground, and complete inclosures for the top and sides of the said remainder of the track, said inclosures having scenery simulating submarine views associated therewith so as to uninterruptedly and continuously continue in an imitative manner the sensation of submarine travel without the use of water following the actual sensation with use of water produced by the initial dipping of the conveyance in the tank throughout the entire travel of the conveyance, and a second tank disposed adjacent the track terminal into which the track dips to effect repetition of the initial sensation.

8. In an amusement device, a track and a conveyance thereon, an inclosure for a part of the track, and means associated with the inclosure and arranged in the path of travel of the vessel to produce a grating sound by contact with the vessel to imitate travel of the vessel through icebergs.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JACOB GUNZENDORFER.

Witnesses:

JOHN H. HERRING,  
FRANCES V. COLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."