

No. 743,816.

PATENTED NOV. 10, 1903.

F. W. BRADY.

RECREATION SUBMARINE BOAT DEVICE.

APPLICATION FILED MAY 23, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

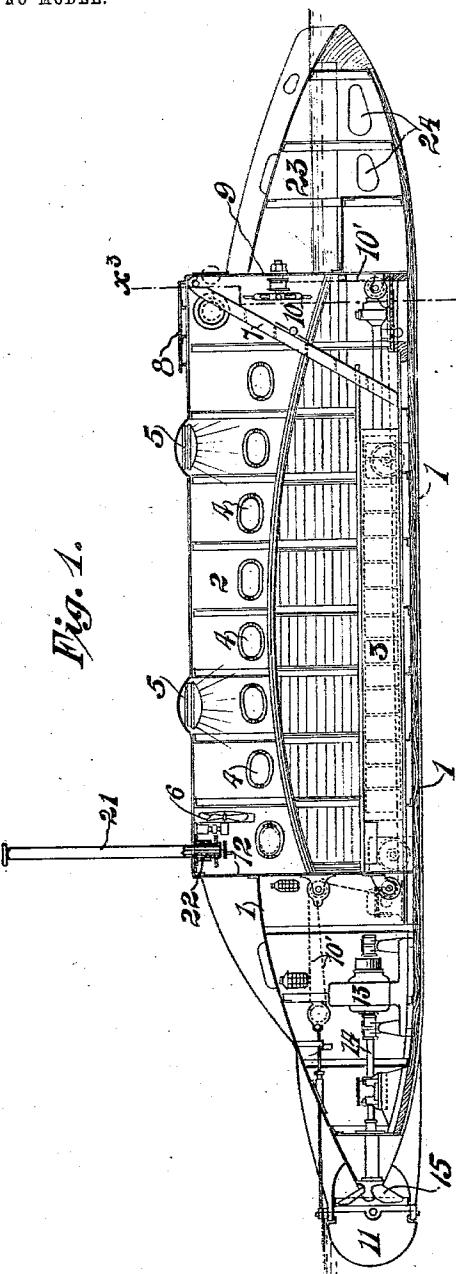
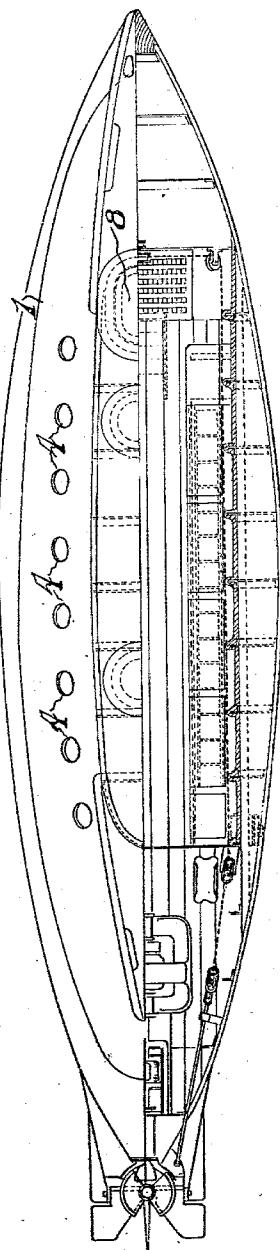


Fig. 1.

Fig. 2.



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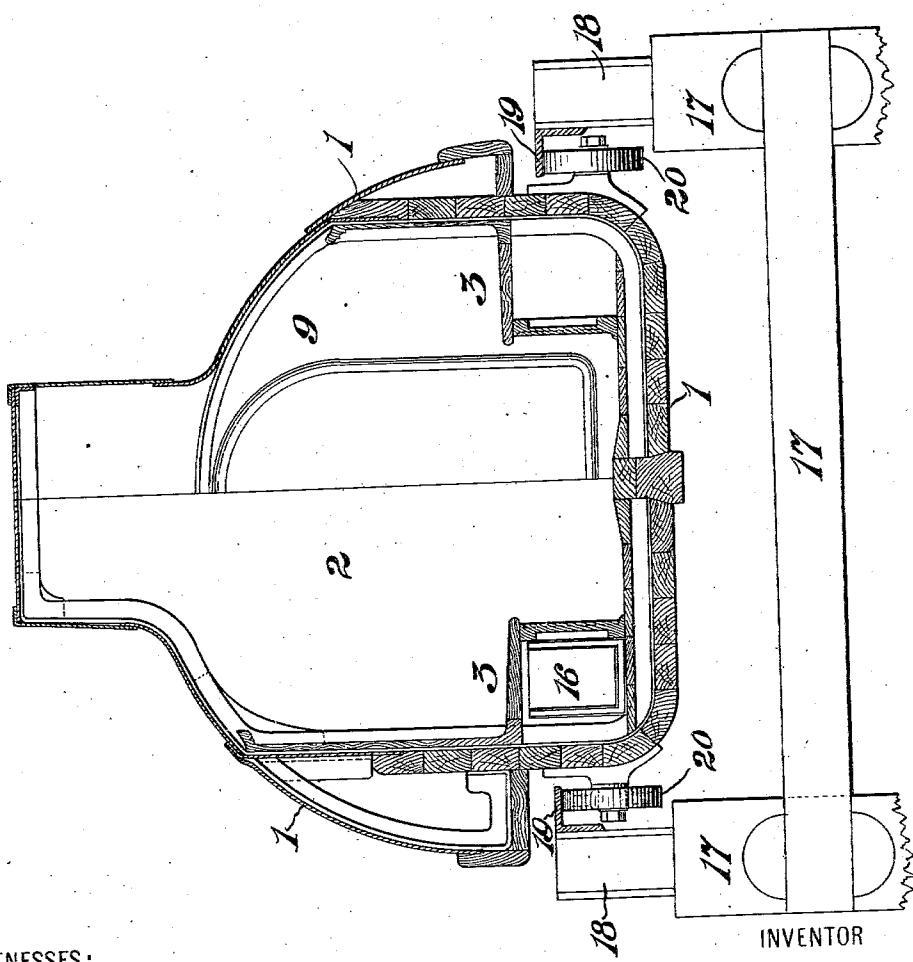
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3 SHEETS—SHEET 2.

NO MODEL.

Fig. 4.



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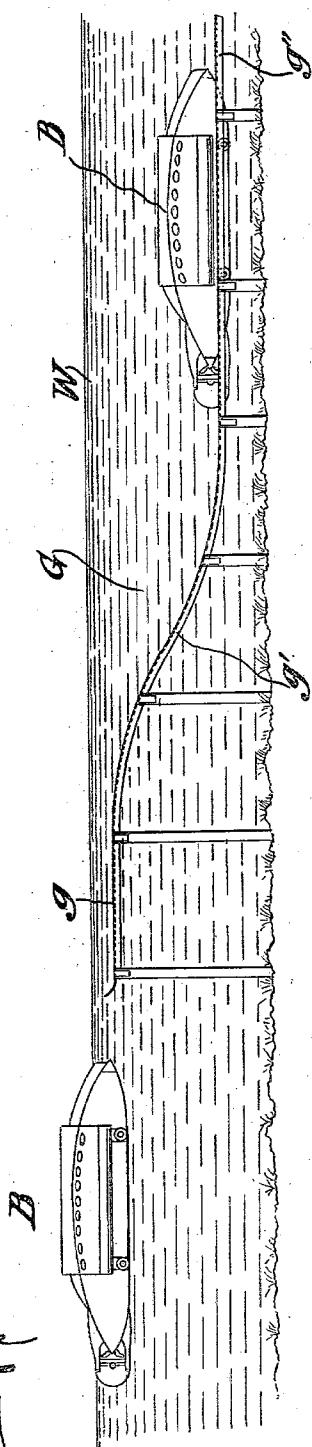
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3 SHEETS—SHEET 3.

Fig. 5.



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FRANCIS W. BRADY, OF ENGLEWOOD, NEW JERSEY, ASSIGNOR TO ELECTRIC BOAT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

RECREATION SUBMARINE-BOAT DEVICE.

SPECIFICATION forming part of Letters Patent No. 743,816, dated November 10, 1903.

Application filed May 23, 1902. Serial No. 108,617. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS W. BRADY, a citizen of the United States, residing in Englewood, in the county of Bergen and State of New Jersey, have invented certain Improvements in Recreation Submarine-Boat Devices, of which the following is a specification.

This invention relates to the class of recreation devices, and has for its object a boat, with propelling and steering means, which is adapted to run on the surface of the water in a waterway and which is also adapted to dive or be drawn under the water and run submerged for a predetermined distance in order 15 to give to the passengers the experience of making an excursion on a submarine boat.

The construction comprises a water-tight boat adapted to float in the manner of an ordinary boat and to be submerged without 20 taking in water, and a fixed submerged guideway adapted to draw the boat down and under as it advances and to hold it submerged for a time. When the boat shall have traversed the length of the guideway and is free, 25 its buoyancy will again bring it to the surface.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a longitudinal vertical axial section of the boat. Fig. 2 is a sectional plan, the upper 30 half being a plan of the superstructure and the lower half a horizontal section showing the deck in plan. Fig. 3 is a transverse section at line x^3 in Fig. 1. Fig. 4 is a transverse section of the boat on a larger scale than the 35 principal views and showing the stud-wheels at the sides of the boat in engagement with the diving-guideways. The left-hand side is a midship section, and the right-hand side is a section taken at the aft bulkhead. Fig. 5 40 is a general view showing the boat in the water and a part of the fixed diving-guideway.

Respecting the boat itself, 1 designates the hull, which has somewhat the form of the well-known submarine boat, but is constructed flatter on the bottom than in the real submarine type in order to reduce the natural buoyancy.

2 is the central portion or saloon, provided with seats 3, windows 4 at the sides, and elec-

tric lights 5. It may also have an electric 50 ventilating-fan 6. Within the saloon is the ladder or steps 7, leading up to the hermetically-closable hatch 8 for entrance and exit. At the forward bulkhead 9 is the steering-wheel 10, connected by tiller ropes or chains 55 10' with the rudder 11. Back of the aft bulkhead 12, which forms the limit of the extension of the saloon aft, is the engine-room, containing the electric motor 13 for driving the propeller-shaft 14, carrying the propeller 60 15. The motor is supplied from storage batteries 16 under the seats or stowed in any convenient place.

Figs. 1 and 5 show the preferred degree of submergence or draft of the boat in surface 65 running.

Figs. 4 and 5 show the waterway W and guideway G, and in Fig. 5 the boat as a whole is designated by B.

The guideway may be framed of timbers or 70 metal in any suitable manner. It is submerged, and as herein shown there is a strong wooden framework 17, provided with suitable wooden stringers 18, placed at the proper distance apart, as indicated in Fig. 4. On the 75 inner faces of the stringers 18 are secured metal angle-irons forming the guides 19 of the way. The boat has at its sides stud-wheels 20, which when the boat is to dive take under the guides 19, as clearly shown in 80 Fig. 4.

The stringers and guides on the guideway have a suitable reverse curvature. (Indicated clearly in Fig. 5.)

The operation of the recreation device is as 85 follows: The boat B takes on its passengers, closes the hatch 8 hermetically, and starts on its trip or cruise, running on the surface, as seen at the left in Fig. 5. In due time it approaches the elevated end g of the guideway 90 G, where the guides 19 of the latter will be found sufficiently elevated to allow the stud-wheels 20 on the boat to pass freely under them. As the boat continues to move ahead and the downwardly-curved portion g' of the 95 guides is reached the boat will begin to dive, its nose dipping under the water from the inclination of the guides. The wheels 20 by

engaging the guides draw the boat down, as will be readily understood. The depressed horizontal portion g'' of the guideway may be of any desired length. After passing the guideway the boat rises to the surface, and the guideway may have at both ends a like reversely-curved construction. The waterway may have any desired form, and the guideways may be either straight or horizontally curved, as desired.

Near the fan 6 there will be a telescopic ventilator 21. (Seen protruded upward in Fig. 1.) This ventilator is in the nature of a tube and passes out of the boat at a packed gland 22. The ventilator may be protruded upward above the surface of the water when the boat is submerged.

The chamber 23 at the bow of the boat forward of the bulkhead 9 is open to the water 20 of flotation through an aperture or apertures 24, the object being to provide a ballast for the bow of the boat to facilitate diving. When running on the surface, this bow-chamber will be filled with water up to the level 25 of the water of flotation.

The stud-wheels 20 are merely convenient forms of laterally-projecting parts on the boat adapted to engage the diving-guides 19, and their particular form, arrangement, and construction are not essential to this invention. The guides 19 will have an elevated portion, as g , a depressed portion, as g'' , and an intermediate inclined portion, as g' , and it is preferred to make this intermediate portion in 35 the form of an ogee or reverse curve; but the particular form of this portion is not essential to the invention.

Being the first, as I believe, to construct a recreation device comprising a floatable and 40 submersible boat provided with suitable laterally-projecting parts to facilitate diving and to combine with this boat a fixed diving guideway wholly submerged in the waterway and adapted to engage the lateral projections 45 on the boat and cause the latter to dive as it advances, I claim this combination, broadly, as I am not aware that any one has ever contemplated the submergence of the entrance end of the guideway as well as the main portion, so that the boat may sail about the waterway and on reaching the submerged entrance thereof enter the guideway and dive. This greatly enhances the attraction, as the 50 entire guideway is concealed and out of the view of spectators.

Having thus described my invention, I claim—

1. The combination, with a submersible boat, provided with means for closing it 60 against the ingress of water to its inhabited

part, with means for steering and propelling it, and with laterally-projecting parts to facilitate diving, of a guideway wholly submerged, having guides adapted to engage and take over the said laterally-projecting parts 65 on the boat and draw the latter, as it advances, down under the water, said guideway thus having its entrance below the surface so as to be invisible to spectators.

2. The combination with a submersible 70 boat, provided with means for steering and propulsion, with means for closing it against the ingress of water to its inhabited part, with a ballast-chamber at its bow open normally to the water of flotation, and with laterally-projecting parts to aid in its submersion, of a fixed and submerged guideway, provided 75 with guides adapted to take over said laterally-projecting parts on the boat and draw the latter, as it advances, down under water, 80 said guides having elevated portions, depressed portions, and intermediate inclined portions.

3. The combination, with a boat provided with means for closing it against the ingress 85 of water to its inhabited portion, and with stud-wheels 20 at its sides below the normal water-level, of the guideway, fixed and submerged and having guides 19, said guides having their elevated portions above the normal level of said wheels, and having depressed portions connected with the said elevated portions by portions having a reverse curvature.

4. The combination with a submersible 95 boat, provided with means for closing it against the ingress of water to its inhabited part, with means for steering and propelling it, with wheels at its sides, and with a ballast-chamber at the bow open normally to the water of flotation, of a submerged and fixed 100 guideway having guides adapted to engage and take over the said wheels on the boat and draw the latter, as it advances, down under the water.

5. The combination with a submersible boat, provided with means for closing it against ingress of water to its inhabited part, with means for steering and propelling it, and with a water-ballast chamber at its bow normally open to the water of flotation, of fixed, 110 submerged means, in a waterway, for drawing said boat under water as it advances.

In witness whereof I have hereunto signed my name, this 21st day of May, 1902, in the presence of two subscribing witnesses.

FRANCIS W. BRADY.

Witnesses:

CHAS. D. STANTON,
L. E. BURTON.