No. 724,040. PATENTED MAR. 31, 1903.

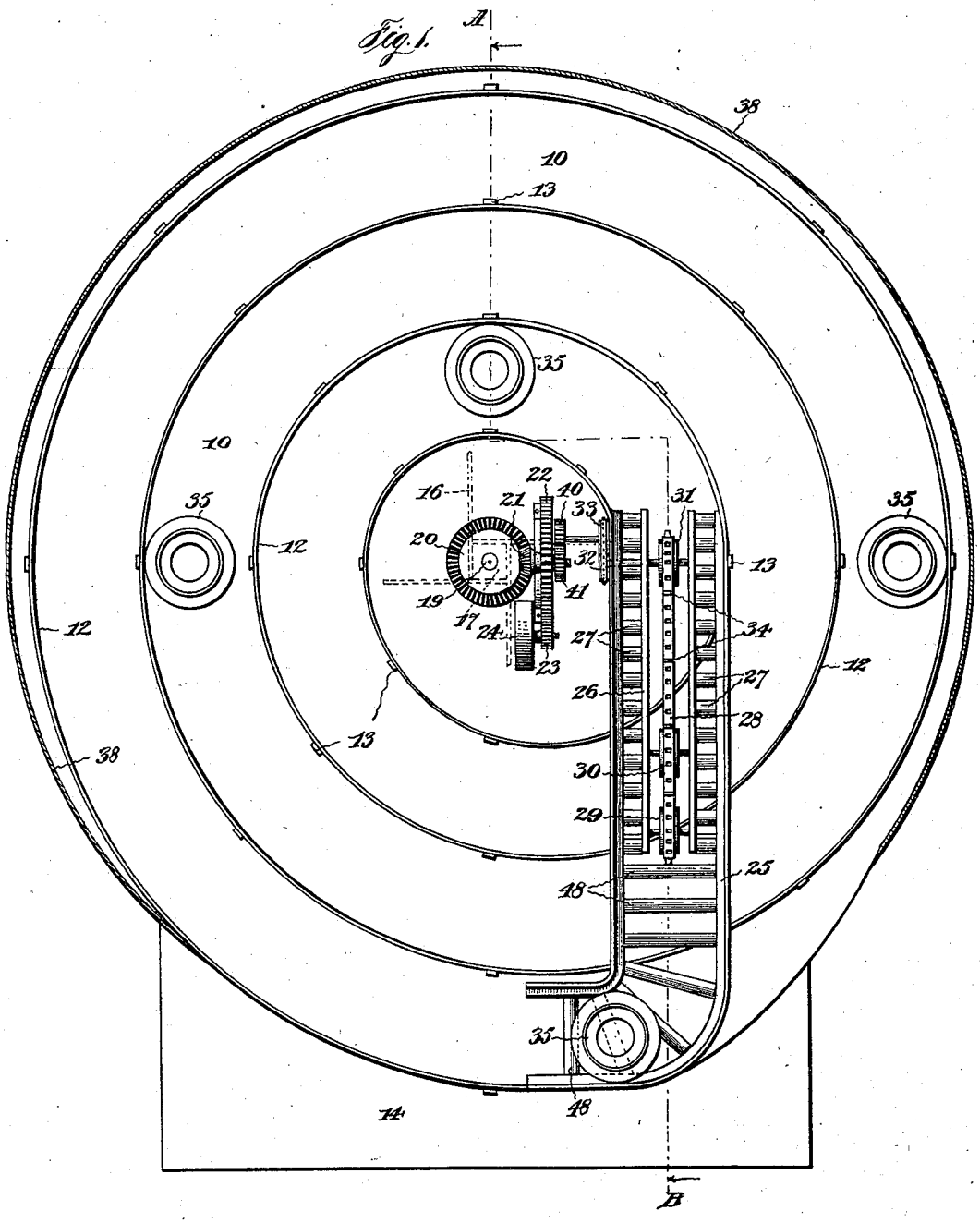
A. PUSTERLA.

PLEASURE WATERWAY.

APPLICATION FILED AUG. 12, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
C. A. Ober.
B. F. Sommers

Inventor:
Attilio Pusterla.
By Munn & Co
Attys.

No. 724,040. PATENTED MAR. 31, 1903.

A. PUSTERLA.

PLEASURE WATERWAY.

APPLICATION FILED AUG. 12, 1902.

NO MODEL. 3 SHEETS—SHEET 2.

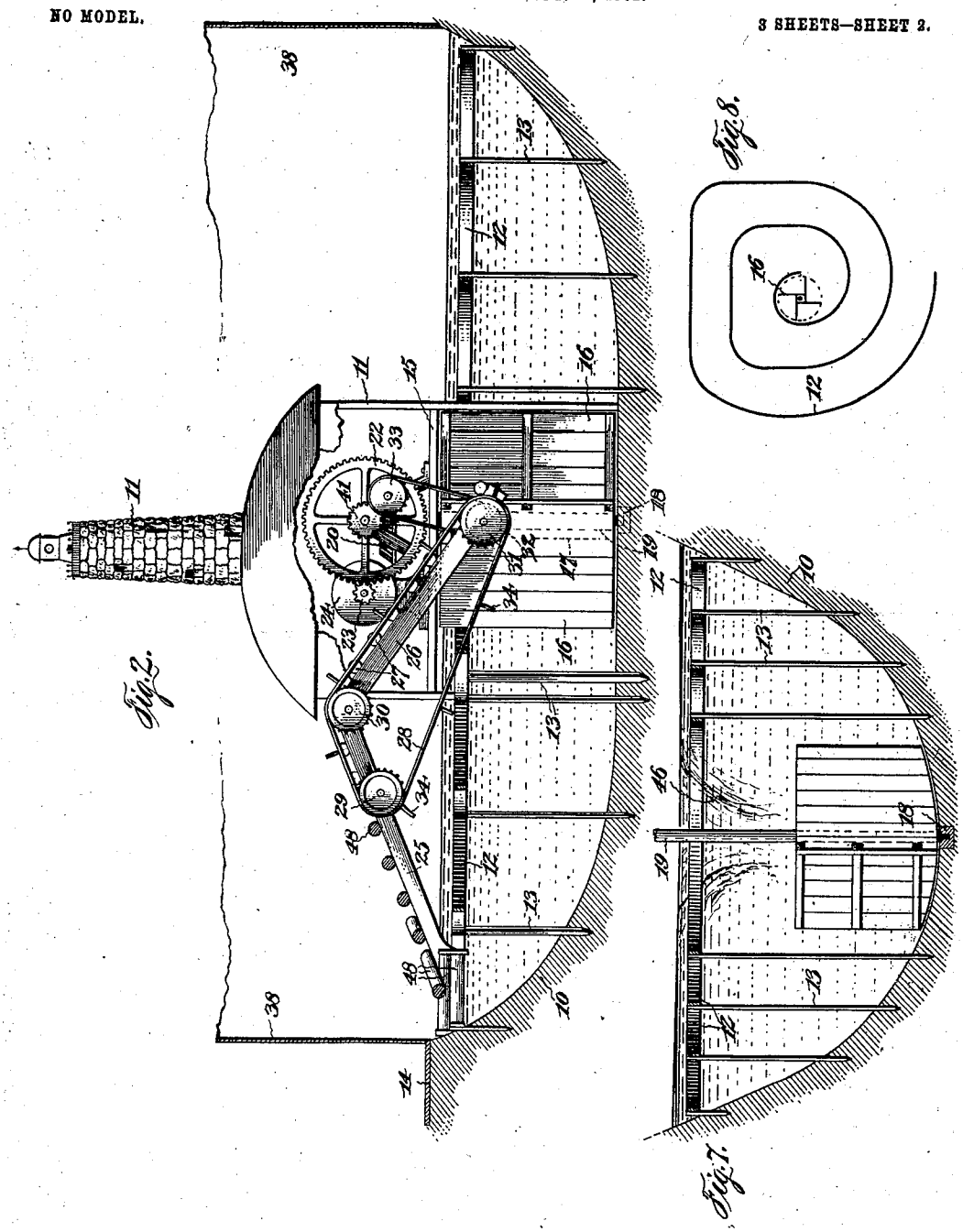


Fig. 2.

Fig. 8.

Fig. 7.

Witnesses:
C. Sobey.
R. M. Sommers

Inventor:
Attilio Pusterla.
By Munn & Co
Attys.

No. 724,040. PATENTED MAR. 31, 1903.

A. PUSTERLA.

PLEASURE WATERWAY.

APPLICATION FILED AUG. 12, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

Fig. 4.

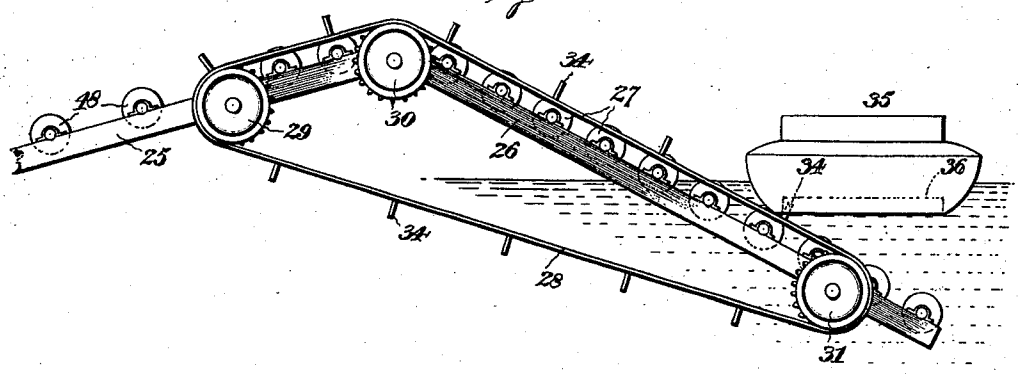


Fig. 5.

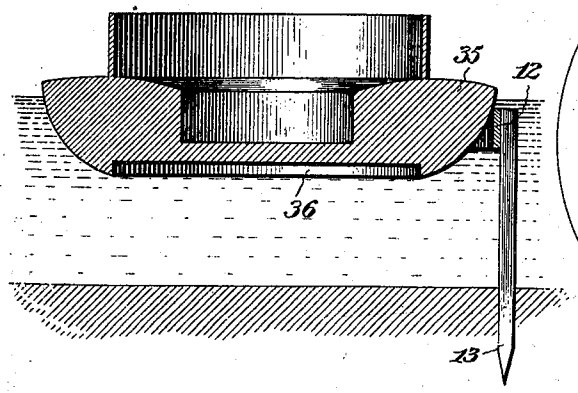


Fig. 6.

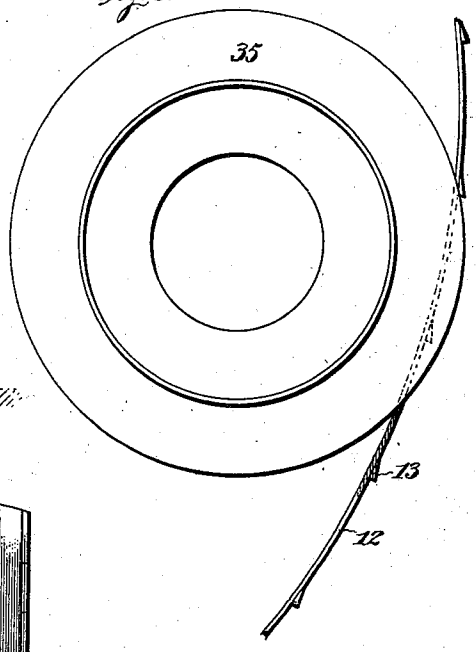
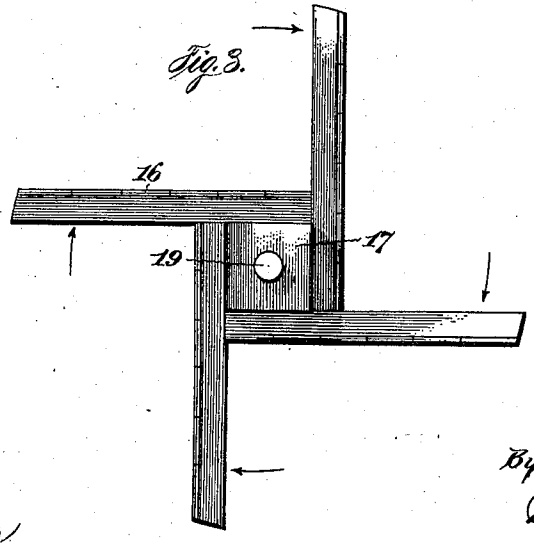


Fig. 3.



Witnesses:
B. Stoberer.
B. W. Sommers

Inventor:
Attilio Pusterla.
By Munn Orth & Co
Attys

UNITED STATES PATENT OFFICE.

ATTILIO PUSTERLA, OF PHILADELPHIA, PENNSYLVANIA.

PLEASURE-WATERWAY.

SPECIFICATION forming part of Letters Patent No. 724,040, dated March 31, 1903.

Application filed August 12, 1902. Serial No. 119,440. (No model.)

To all whom it may concern:

Be it known that I, ATTILIO PUSTERLA, a subject of the King of Italy, residing at 2132 North Eighth street, in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Pleasure-Waterways; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention relates to certain novel improvements in pleasure-waterways known under various names, as "pleasure-canals" and "pleasure-lakes," artificially made and usually accompanied by scenic and other attractive displays for amusement, to be hereinafter particularly described, and pointed out in the claims.

Referring to the drawings, in which like parts are similarly designated, Figure 1 is a plan view of a form of waterway embodying my invention. Fig. 2 is a section on the irregular line A B of Fig. 1, showing the water-propelling mechanism and the transfer devices for the boats. Fig. 3 is a top plan view of the water propeller or agitator. Fig. 4 is a detail view of the transfer devices for the boats. Fig. 5 is a section, and Fig. 6 a plan view, of one of the boats, showing its relative position to the guide-rail. Fig. 7 is a modification wherein centripetal action of water is shown, and Fig. 8 shows diagrammatically one of many forms of spiral guides whereby a variable progression of the boats is obtained.

The invention has for its object to produce a movement of the water such that, in connection with means to guide the boats, they will be translated or progressed on their trip and simultaneously rotated, and, further, to provide such a waterway that in appearance will be an artificial lake, preferably, though not necessarily, surrounded by scenic effects, and which may to all intents and purposes be converted into a pleasure-canal by placing along the path of the boats such scenic display as may be desired.

The invention also has for its object details of construction hereinafter described and claimed.

In the following description and in the drawings I have shown the preferred form of basin as substantially circular, with a substantially spirally-arranged boat-guide therein, but desire it to be distinctly understood that I do not limit myself to any particular form of basin or to any particular disposition of the boat guide-rails therein, the main object being to produce motion throughout the body of water and so dispose the guide-rails therein as to produce a progression and rotation of the boats, either continually or periodically.

I provide a basin 10 of any suitable shape and size that may be more or less permanently constructed, as of concrete, for a permanent pleasure resort, or a basin built of wood and made water-tight by suitable means. The basin is of the usual depth of such waterways, of from eighteen to twenty-four inches. Preferably, though not necessarily, in the center is an imitation lighthouse or other decorative housing 11 for the actuating machinery. In the basin and sufficiently below the surface of the water are placed guide-rails 12, supported on posts 13, preferably, though not necessarily, beveled on that edge presented to the water moving against it, so that there will be as little obstruction to the free circulation of the water as possible. Said rails form a continuous guide for the boats from a passenger landing or platform 14 to a point where the boats are taken from the water. This point is here shown near the center of the spiral guides 12 and near the housing 11; but, if desired, the passengers may enter the boats near the housing 11 and leave them at the platform. The guide-rails in order to produce the effect desired will be at an angle to the general direction of motion of the water.

Within the housing is a platform 15, below which is a mechanical stirrer 16, that is or is not submerged, depending upon the action of the water to be produced on the boats—that is, whether their progressive movement will be due to centrifugal or centripetal motion. This stirrer comprises a central post 17, stepped at its lower end in a suitable base-bearing 18 and the upper end secured

to a vertical driving-shaft 19, that carries a main gear 20, driven by a pinion 21 on a step-down gear 22, that is directly driven by a pinion 23 on a suitable electric motor 24 or, if desired, by a steam-engine. Driven from the same driving mechanism or independently, if so desired, is the means for lifting the boats from the water up an incline over one or more sections or convolutions of guide-rails to a downwardly-inclined roller-way 25. These means consist of inclined rails 26, supporting short bearing-rollers 27, arranged in two sets on the upwardly-inclined rails 26, and between the sets of rollers is a carrier-chain 28, supported on sprocket-wheels 29, 30, and 31, one of which, 31, acts as driver for the chain and is itself driven from a moving element of the stirring mechanism and here shown as driven from a sprocket-wheel 32, chain driven from one 33 in the housing. The sprocket-wheel 33 is driven by a gear 40, driven by a gear 41 on the gear 22.

The carrier-chain, whose lower end is submerged, delivers the boats at the top of the incline, from which they slide by gravity down the roller-way 25 to the landing 14.

The carrier-chain 28 is provided with pins 34, that engage the boats as they float toward its lower submerged end. The boats are not supported on the chain, but on the sets of lateral rollers 27.

The boats 35 are circular in shape and usually seat four persons (however, their size is dependent upon the exigencies of each particular waterway) and are provided in their bottoms with a circular recess 36, into which the pins of the carrier-chain enter to drag them up the incline. Thus it will be seen that the waterway can be made of substantially a uniform depth and requires no fall for its movement. The water will consequently not have to be lifted, but only stirred, and the waterway will have the appearance of a lake or single sheet of water.

The whole lake is surrounded, if desired, by a house the sides 38 of which are covered with suitable scenery or provided with scenic effects.

If desired, drop scenic partitions may be secured vertically over the guide-rails and the lake converted into substantially a pleasure-canal.

The operation is as follows: The machinery supposed to be continually moving, the water will be churned by the stirrer 16 and move it substantially as a whole in a circular path around the basin. In Figs. 1 and 2 centrifugal motion will be imparted to the entire body of water by reason of the stirrer 16 not being submerged; but in Fig. 7 the surface of the water will have a centripetal motion, due to submerging the stirrer, and the action of said stirrer will be to churn a hole or depression in the body of water, as shown at 46, Fig. 7, whereby the boats will have a tendency to be drawn toward the center. In the former case the boats will be rolled against the outer one of the two sections of rail between which they are located, and in the latter case they will be rolled against the inner rail. Passengers will enter a boat 35 at the landing or platform 14. The water moving substantially in a circle as a body will carry the boat with it, the centrifugal force or current will tend to hold the boat against the outer rail, and the progressive movement of the water, together with the friction of the boat on the rail, will rotate or roll the boat along this outer rail. This rotates and revolves the boat about the central motor-house, to which it is guided by the spirally-arranged guide-rails and where the boat is seized from below by a pin 34, entering the circular recess 36 in its bottom, and dragged by the chain 28, while being supported by the lateral sets of rollers 27, to the top of the roller-way 25, when the boat slides down this way over its rollers 48 to the landing 14. The boat is thus lifted from the water at the end of its journey and carried across one or more portions or convolutions of its path and delivered into the water again at the starting-point. When the stirrer 16 is reversed to reverse the motion of the body of water, passengers may enter the boats either at the landing 14 and be carried to the center by substantially the same transfer mechanism or they may walk to such point by means of a bridge, the general operation and the method of driving the boats being the same.

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

1. In a pleasure-waterway, a suitable basin, boats, a moving body of water in said basin to translate the boats and means coöperating with the boats to rotate them, substantially as described.

2. In a pleasure-waterway, a moving body of water, boats, and stationary guides for the boats inclined to the direction of flow of the water, substantially as described.

3. In a pleasure-waterway, a moving body of water, boats, and submerged guides independent of the boat and inclined to the direction of motion of the water, substantially as described.

4. In a pleasure-waterway, a suitable basin, boats, a rotating body of water in said basin to translate the boats, and means coöperating with the boats to rotate them, substantially as described.

5. In a pleasure-waterway, a suitable basin, boats, a rotating body of water in said basin to translate the boats, and submerged means coöperating with the boats to rotate them, substantially as described.

6. In a pleasure-waterway, a suitable basin, boats, a rotating body of water in said basin to translate the boats, and stationary submerged means in the basin coöperating with the boats to simultaneously rotate them, substantially as described.

7. In a pleasure-waterway, a suitable basin, boats, a rotating body of water in said basin

to translate the boats, and continuous submerged guide-rails coöperating with the boats to simultaneosly rotate them, substantially as described.

8. In a pleasure-waterway, a substantially circular basin, circular boats, a rotating body of water therein, continuous guide-rails supported in the basin intermediate the bottom and the surface of the water to permit substantially free movement of the water as a body, said rails coöperating with the boats to rotate them, substantially as described.

9. In a pleasure-waterway, a substantially circular basin, a body of water in the basin, boats, means to rotate the water as a body, a continuous, submerged, spiral guide in said basin, and means to transfer the boats from one point of said spiral across one or more convolutions thereof to another point of the spiral, substantially as described.

10. In a pleasure-waterway, a substantially circular basin, a body of water in the basin, boats, a continuous, submerged, spiral guide-rail in the basin, a suitably-operated stirrer at the center of the basin and spiral, and means to transfer boats from the center to the end of the spiral, substantially as described.

11. In a pleasure-waterway, a substantially circular basin, a body of water in the basin, boats, a continuous, submerged, spiral guide-rail supported above the bottom of the basin, a mechanically-operated stirrer at the center of said basin and spiral, a roller-way, and means to lift the boats from the water near the center of the basin and deliver them onto the roller-way and thereby transfer the boats from the end to the beginning of their journey over one or more convolutions of the spiral, substantially as described.

12. In a pleasure-waterway, a suitable basin, a body of water therein, boats, means to move the body of water, means to guide the boats through the basin and means to lift the boats from the water at the end of their journey to carry them across their previous path and deliver them at the starting-point, substantially as described.

13. In a pleasure-waterway, a suitable basin, a body of water therein, boats, means to move the body of water, means to coöperate with the boats to rotate them and guide them through the basin, and means to lift the boats from the body of water at the end of their journey and deposit them in the water again at the starting-point, substantially as described.

14. In a pleasure-waterway, a suitable basin, a body of water therein, boats, a stirrer at the center of the basin to move the body of water, mechanism to rotate the stirrer, a submerged spiral guide-rail in the basin, an inclined carrier-chain having one end submerged at the end of the journey of said boats, pins on the chain, said chain driven from a moving element of said mechanism, rollers on opposite sides of the chain to support the boats dragged by said chain, an inclined roller-way having its lower end submerged at the starting-point of the boats, said carrier-chain to deliver the boats onto the roller-way, substantially as described.

15. In a pleasure-waterway, the combination with a moving body of water, of circular boats translated by the water and means coöperating with the boats to rotate them and simultaneously guide them at an angle to the direction of the moving water, substantially as described.

16. The combination with a waterway and boat-guides, of circular boats rotatable along the guides, substantially as described.

17. The combinaton with a waterway having boat-guides therein at an angle to the direction of movement of the water therein; of circular boats translated by the water and rotated by the guides, substantially as described.

18. The combination with a waterway, of a circular boat having a recess in its bottom and means to engage said recess and carry the boat from one point to another of such waterway out of contact with the water, substantially as described.

19. In a pleasure-waterway, the combination with a boat having a circular recess in its bottom, of an endless transfer-carrier, and pins thereon adapted to take into said recess in any position of the boat relative to the carrier, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ATTILIO PUSTERLA.

Witnesses:
HENRY ROLTAIR,
HENRY ORTH, Jr.