

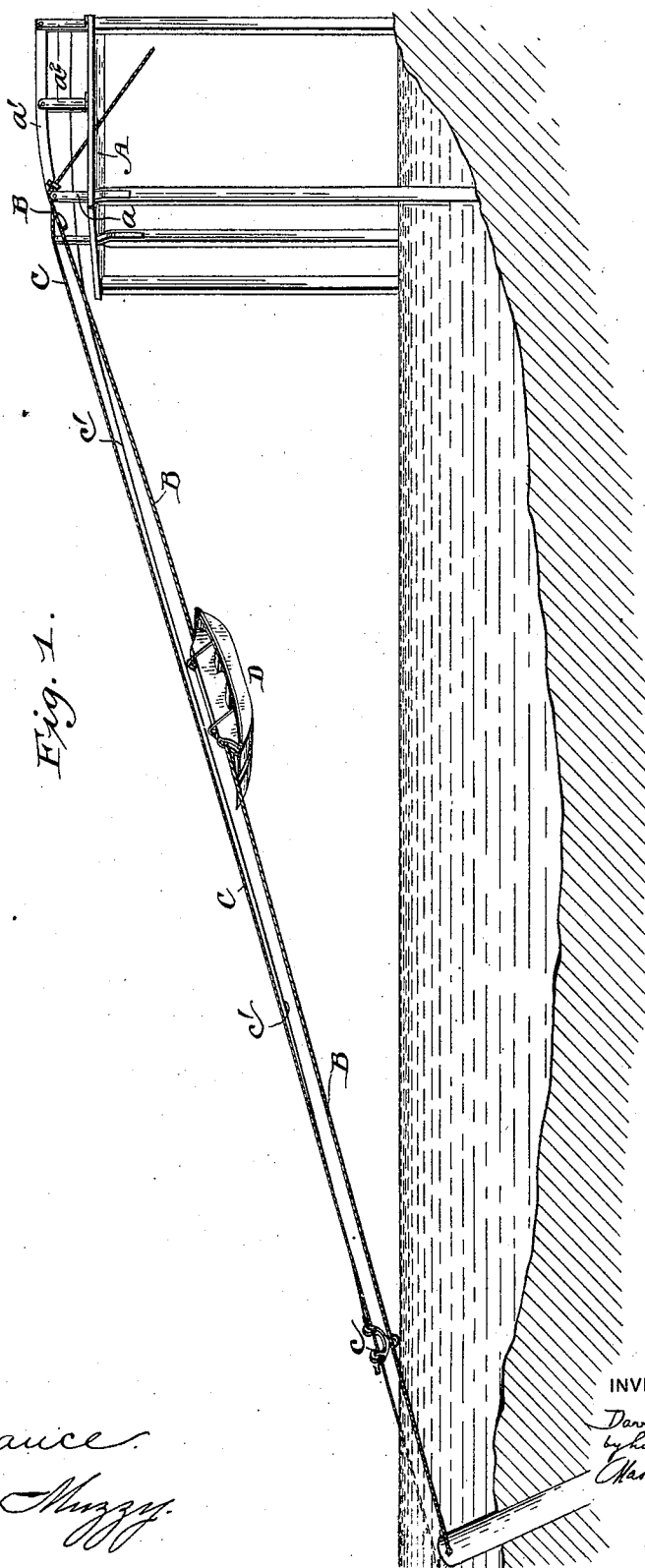
(No Model.)

3 Sheets—Sheet 1.

D. URCH.  
PLEASURE RAILWAY.

No. 576,704.

Patented Feb. 9, 1897.



WITNESSES

*E. J. Everance*  
*W. Harry Muzzey*

INVENTOR

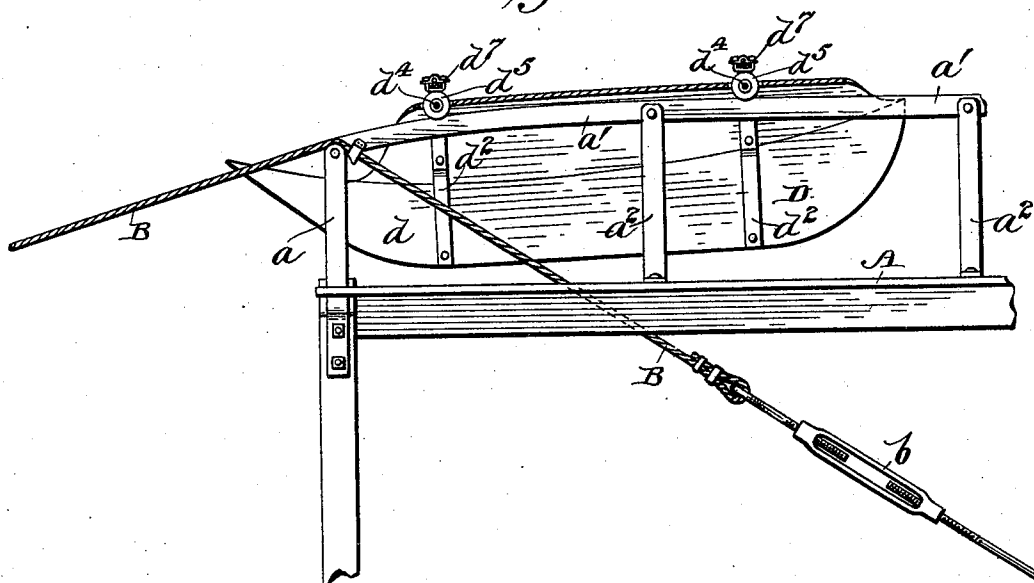
*Daniel Urch*  
*by his Attorneys*  
*Harvey, Hammett & Hammett*

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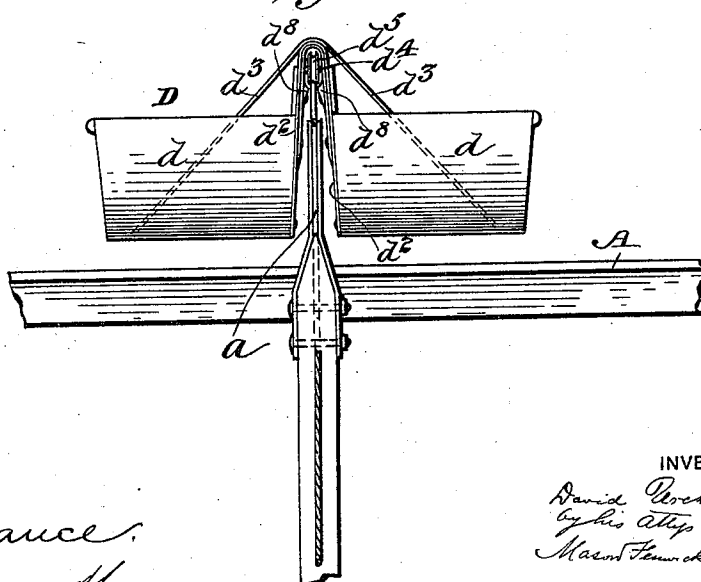
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Fig. 2.



*Fig. 3.*



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Cheverance.  
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Mason Fennel & Lawrence

(No Model.)

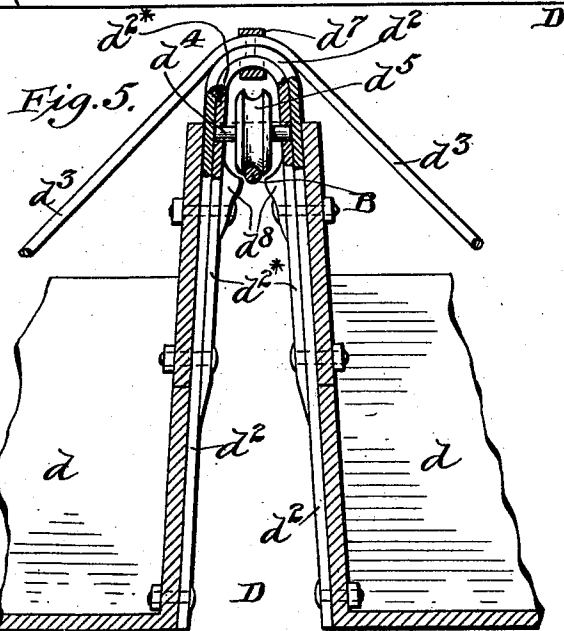
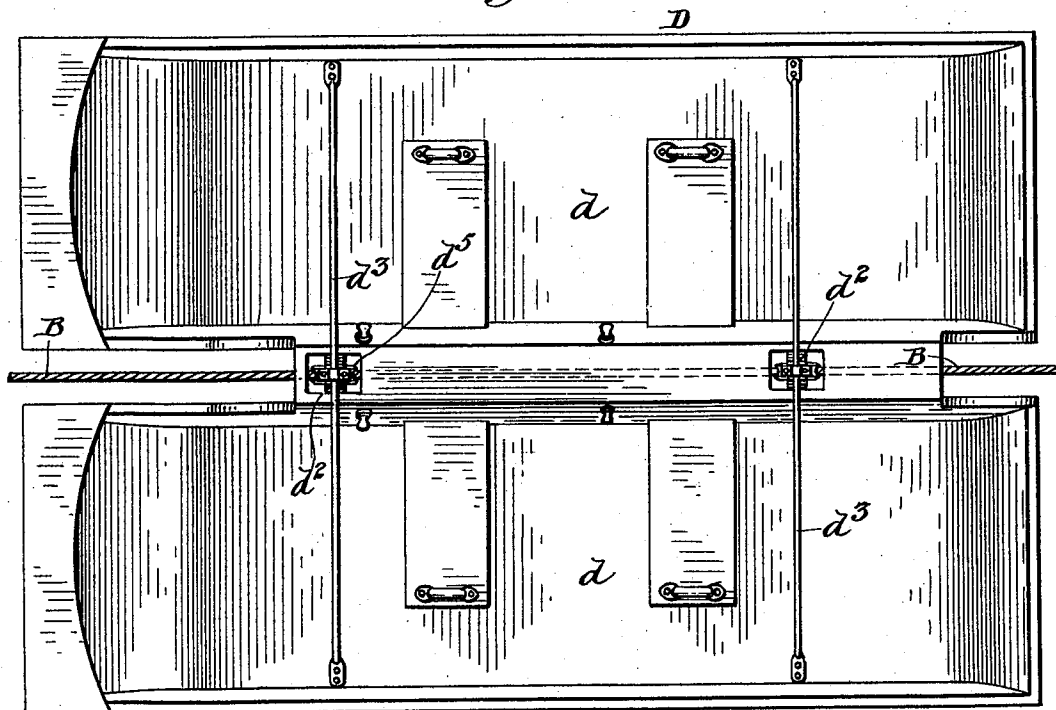
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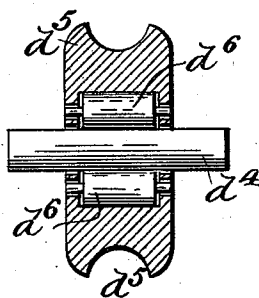
Fig. 4.



WITNESSES

*Geverance*  
*W. Harvey Muzzy.*

Fig. 6.



INVENTOR

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# UNITED STATES PATENT OFFICE.

DAVID URCH, OF PORTSMOUTH, NEW HAMPSHIRE.

## PLEASURE-RAILWAY.

SPECIFICATION forming part of Letters Patent No. 576,704, dated February 9, 1897.

Application filed June 20, 1896. Serial No. 596,329. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID URCH, a citizen of the United States, residing at Portsmouth, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Pleasure-Railways; 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.

My invention relates to improvements in pleasure-railways, and has more particular relation to that class of railways or chutes employing boats which descend from an elevation and thereby receive sufficient momentum to send them gliding over the water when they reach the same.

The invention consists of the combination, with an inclined cable extending from an elevated platform down into the water, of a catamaran-boat adapted to straddle the cable, with one hull on each side thereof, and glide down the same and into the water.

It also consists of certain other novel constructions, combinations, and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a perspective view of the apparatus embodying my invention, one of the catamaran-boats being shown in its descent upon the inclined cable. Fig. 2 represents an enlarged detail central vertical section through my improved catamaran and the supporting-rail upon the elevated platform. Fig. 3 represents an end view of the same. Fig. 4 represents a top plan view of my improved catamaran. Fig. 5 represents a detail transverse section through the same, and Fig. 6 represents a central vertical section through one of the supporting-wheels.

A in the drawings represents the elevated platform, from which the boats are launched upon an inclined cable B.

C is the auxiliary return-cable, and D the catamaran.

The shore end of the cable B is either secured to the supports of the platform A or anchored in the ground and passes up and over a standard or support  $a$ , projecting above

the forward end of the platform. The sea end of the cable is secured to a suitable pile or anchor situated at a suitable distance from the platform and below the surface of the water to provide for the rising and falling of the tide. The anchor is a sufficient distance below the surface of the water at all tides to insure a sufficient depth of water above it to float the catamaran without danger of its striking said pile. The shore end of the cable is provided with a turnbuckle  $b$ , by means of which it is always kept taut. Just to the rear of the support  $a$  is arranged an elevated track comprising a narrow rail  $a'$  and supports  $a''$  for the same. The rail occupies an approximately horizontal position in line with the cable B and is depressed slightly at its forward end to form a perfect continuation of the inclined cable, against which it abuts. Said forward end of the rail is provided on each side with a downwardly and forwardly extending clip, said clips being adapted to hug the cable, and thus hold this end of the rail truly in position upon the cable.

The catamaran D comprises two hulls  $d$   $d$ . A portion of the inner side of each hull is extended upward to a greater height than the remainder of the boat. These two extended sides are secured together at front and rear by inverted metallic yokes or U-shaped pieces  $d^2$ , securely bolted to the same. Braces or guys  $d^3$  pass over the tops of these yokes and have their respective ends secured to the bottoms of the boats near the outer sides of the same, thus effectually bracing them against lateral strain. The said guys are held securely upon the tops of the yokes by clamps  $d^4$ , bolted thereto. Within each of the yokes  $d^2$  is arranged a smaller supplemental yoke  $d^{2x}$  for supporting the shafts  $d^4$  of the grooved cable-wheels  $d^5$ . The shafts are held stationary in suitable apertures in the latter yokes, and the grooved wheels  $d^5$  are mounted on their respective shafts by means of antifriction-rollers  $d^6$ , so that the friction is reduced to a minimum. Wheel-guards  $d^8$   $d^8$  are secured to the yokes immediately beneath the cable-wheels, and are so constructed that they hold the cable in the grooves of the wheels against accidentally slipping therefrom and binding between the faces or cheeks of the pulleys and inner yoke.

Some distance to one side of the cable B is a similar cable C for the purpose of returning the boats to the elevated platform after each descent. This latter cable is provided with a hook-carrier *c*, adapted to run thereon and operated by a hauling-cable *c'*, which in turn receives motion from a suitable windlass or motor. (Not shown.) A suitable track and switch are provided at the upper end of the cable C for switching the boats to the cable B, or rather the rail leading onto the same.

The inclination of the cable, combined with the natural sag of the same under the load, is such that the catamaran strikes the water almost in a horizontal plane and with very little shock.

The boats are preferably constructed with overhanging bows, so that they will glide smoothly over the water after leaving the cable at the end of their descent. They are also made of greater depth at the rear than at the front, so that the return swash after the first plunge will not enter the boat. I also contemplate employing wings or blades on the outer sides of the hulls near the rear for preventing the swash from entering the boat. A suitable brake for regulating the speed of the descending catamaran may also be provided. This will preferably be of the type of friction-brake to hug the cable and thus retard the speed of the boat. Seats and handles are provided in each of the boats.

In operation an equal number of persons are put in the two hulls of the catamaran, so that they will completely balance on the opposite sides of the cable. The attendant preferably straddles the extended sides of the two boats, so that he may be in a position to throw his weight into one boat or the other if any tendency toward unbalancing is observed. The natural tendency of the boats though is to always keep a perfect balance, as they are suspended from a point midway of the center of gravity.

The cost of the construction of this apparatus is comparatively small, and absolute safety is assured by the peculiar formation of the catamaran, which straddles the cable and is held in position thereon by its own weight.

The sensation of a descent upon or within one of these boats is very similar to flying through space, as nothing obstructs the view but the cable before and behind the boat. The friction is also so reduced that the speed attained is almost equal to that of an express-train.

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

1. In a pleasure-railway the combination

with an inclined cable extending from an elevated platform down into the water, of a catamaran-boat adapted to straddle the cable, with one hull upon each side thereof, and glide down the same and onto the water, substantially as described.

2. In a pleasure-railway the combination with an inclined cable extending from an elevated platform down into the water, a catamaran-boat adapted to straddle the cable with one hull on each side, antifriction cable-wheels located in the top of the connection between the two boats, substantially as described.

3. In a pleasure-railway the combination with an elevated platform, a cable secured to the same at one end and having its opposite end anchored below the surface of the water, an approximately horizontal track upon the elevated platform and forming a continuation of the cable, a catamaran-boat adapted to straddle the track and cable with one hull upon each side thereof, substantially as described.

4. In a pleasure-railway the combination with an elevated platform, of two cables secured to the same and anchored below the surface of the water, a hook-carrier mounted on one of said cables, an operating-rope for said carrier, a catamaran-boat provided with antifriction-wheels and adapted to slide down one cable and be hauled up the other, substantially as described.

5. In a pleasure-railway the combination with an elevated platform, of a cable secured at one end thereto and having its opposite end anchored below the surface of the water, a catamaran-boat adapted to straddle the cable and comprising two hulls connected by inverted yokes, and antifriction-wheels mounted in said yokes and adapted to rest upon the cable, substantially as described.

6. In a pleasure-railway the combination with an elevated platform, of a cable secured at one end thereto and having its opposite end anchored below the surface of the water, a catamaran-boat adapted to straddle said cable and comprising two hulls connected by inverted yokes, auxiliary yokes within said inverted yokes, wheel-shafts mounted in said latter yokes and antifriction-wheels on said shafts adapted to rest upon the cable, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

DAVID URCH.

Witnesses:

M. ARCHER MOYNAHAN,  
CALVIN PAGE.