

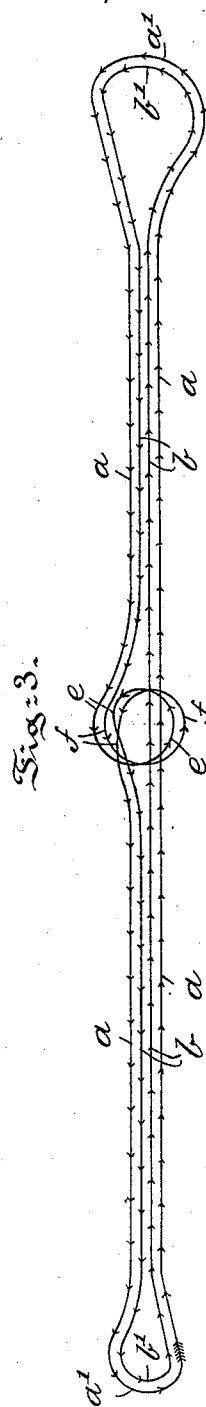
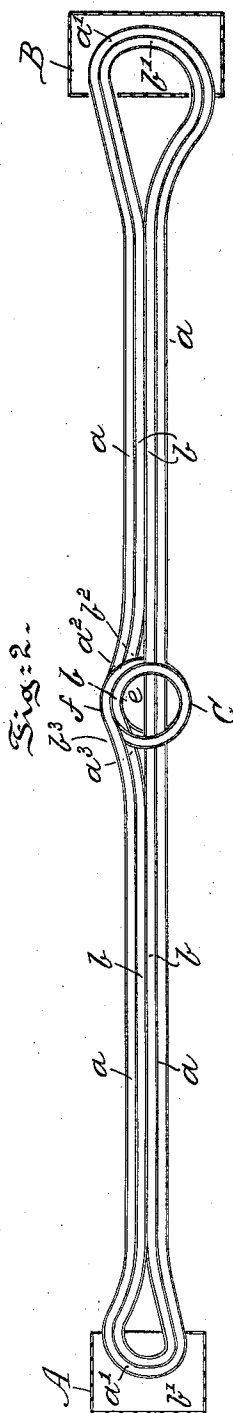
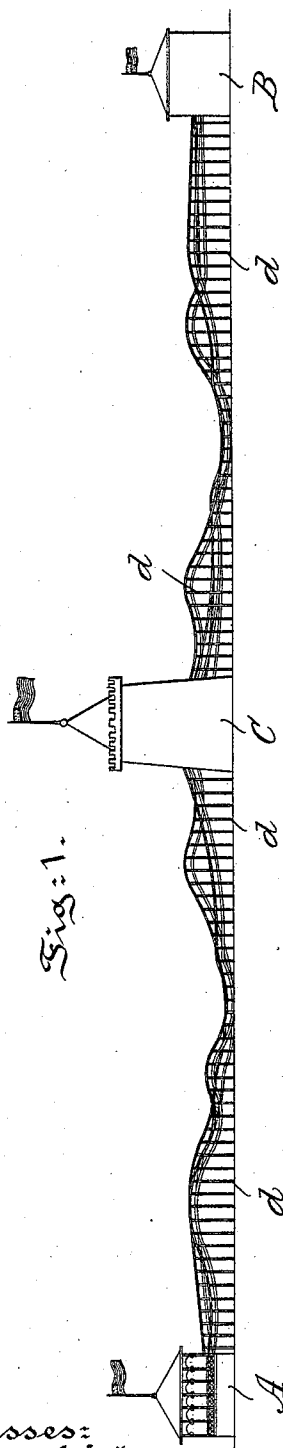
(No Model.)

2 Sheets—Sheet 1.

J. A. GRIFFITHS.  
GRAVITY AND CABLE PLEASURE RAILWAY.

No. 577,549.

Patented Feb. 23, 1897.



Witnesses:  
Thomas M. Smith.  
Richard C. Maxwell.

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(No Model.)

2 Sheets—Sheet 2.

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Fig: 4.

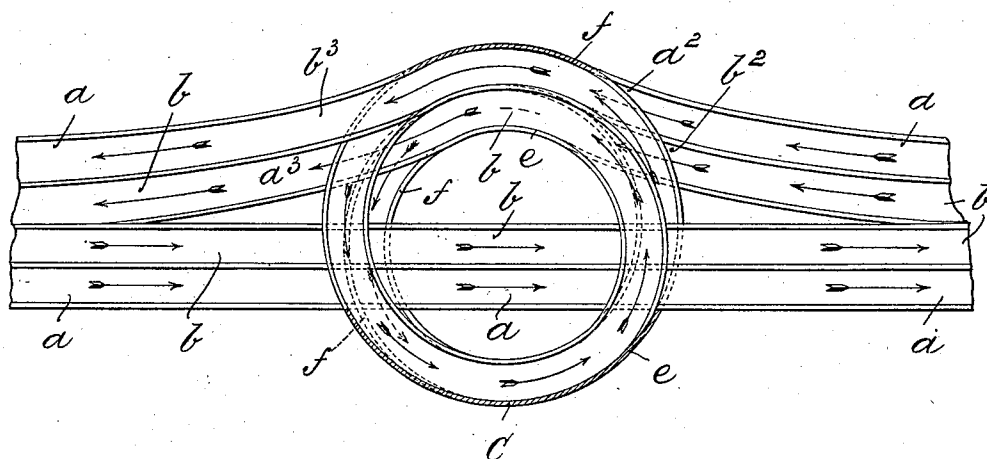
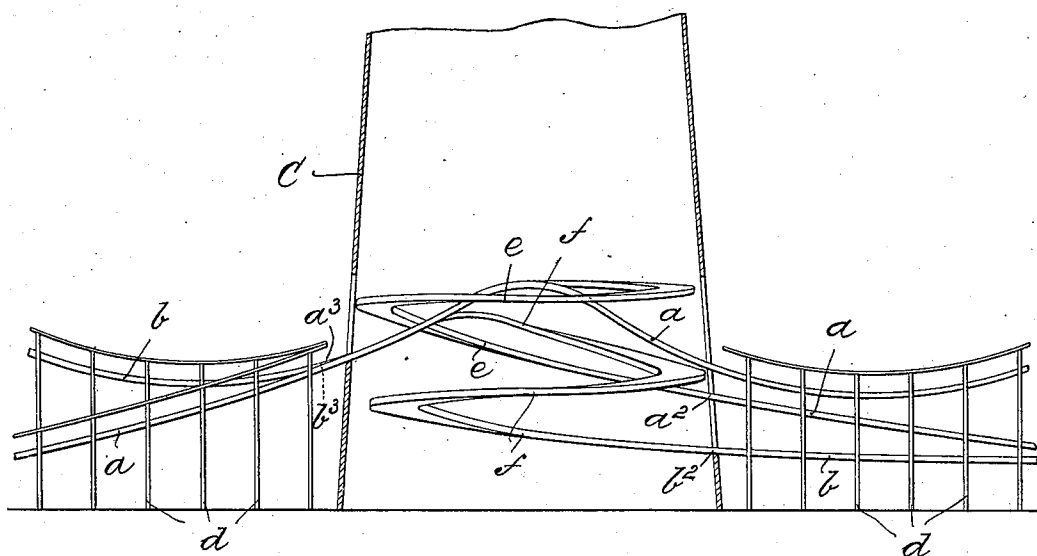


Fig: 5.



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# UNITED STATES PATENT OFFICE.

JAMES A. GRIFFITHS, OF PHILADELPHIA, PENNSYLVANIA.

## GRAVITY AND CABLE PLEASURE-RAILWAY.

SPECIFICATION forming part of Letters Patent No. 577,549, dated February 23, 1897.

Application filed March 17, 1896. Serial No. 583,533. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES A. GRIFFITHS, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Gravity and Cable Pleasure-Railways, of which the following is a specification.

My invention has relation to that class of pleasure-courses known as "scenic" railways, in which the cars or coaches travel over courses from a starting-point through natural or artificial scenery and back to the starting-point; and in such connection it relates to improvements in the construction and arrangement of the courses of a pleasure-railway of the type set forth in the Letters Patent No. 434,554, dated August 19, 1890, and No. 450,609, dated April 21, 1891.

My invention, stated in general terms, consists of a pleasure-railway constructed and arranged in the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a side-elevational view of a pleasure-railway embodying the main features of my invention. Fig. 2 is a top or plan view thereof, the tower and end pavilions being sectioned to more clearly illustrate the arrangement of the two courses of the scenic railway. Fig. 3 is a diagrammatic view illustrating the direction in which the cars or coaches travel over the two courses. Fig. 4 is a top or plan view, enlarged, of the spiral course within the tower of Fig. 1; and Fig. 5 is a side-elevational view of Fig. 4, the guard-rails of the spiral course being removed for the sake of clearness.

Referring to the drawings, A represents the pavilion from which the cars or coaches start.

B represents a pavilion located, preferably, at the other extremity of the road and containing, if desired, scenic effects or panoramic views to heighten the pleasure and excitement of the ride.

C represents a tower located, preferably, midway between the two pavilions, and through the interior of which the cars are

adapted to run. The interior of the tower C may also, if desired, contain scenic effects and panoramic views.

The pleasure-railway consists of two concentric outer and inner courses *a* and *b*, both of which are undulating and are supported on suitable trestle-work *d* and arranged in substantially vertical planes. These two courses *a* and *b* terminate at the pavilions A and B in loops *a'* and *b'* concentric with each other.

The object of the present invention is to permit a car or coach to travel from a starting-point located on the outer course *a* completely around both outer and inner courses and to return to the starting-point and to traverse each course but once, and always in the same direction. To accomplish this, the outer and inner courses are connected by two spiral courses *e* and *f*, preferably located within a tower C. It will be observed that the outer course *a* is arranged in a straight direction from the pavilion A through the tower C to the pavilion B, then by the loop *a'* through the pavilion B and in a straight direction to the tower C, into which it enters, as at *a*<sup>2</sup>, at a comparatively lower plane than the straight portion of the course *a* through the said tower C. From the point *a*<sup>2</sup> the course extends upward in a spiral direction, emerging at the point *a*<sup>3</sup> and crossing over to connect with the inner course *b*. The course *b* then proceeds in a straight direction to the loop *b'* in the pavilion A, then in a straight direction through the tower C to the loop *b'* of the pavilion B. From this loop the course *b* proceeds in a straight direction to the tower C, which it enters at the point *b*<sup>2</sup>, preferably below the point *a*<sup>2</sup>, at which the course *a* enters the tower C. The course *b* then proceeds upward in a spiral course *f* within the tower C, emerging at the point *b*<sup>3</sup> and connecting with the outer course *a*. From the point *b*<sup>3</sup> the course *a* proceeds in a straight direction to the loop *a'* of the pavilion A and through the loop to the starting-point.

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

In a pleasure-railway, the combination with an outer undulating course, of an inner undulating course concentric therewith, each

course being provided with a loop at each  
end, two spiral courses, a tower in which the  
spiral courses are entwined and located be-  
tween the opposite looped ends of the con-  
centric courses, one of said spirals connecting  
5 the outer with the inner undulating course  
and the other connecting the inner with the  
outer undulating course, and both spirals be-  
ing upwardly inclined from the point of con-  
10 nection respectively with the outer or inner  
course, all arranged so that a car starting

from any point on either the outer or inner  
course and once completely traversing both  
spirals and courses will return to said point,  
substantially as described. 15

In testimony whereof I have hereunto set  
my signature in the presence of two subscrib-  
ing witnesses.

JAMES A. GRIFFITHS.

Witnesses:

J. WALTER DOUGLASS,  
THOMAS M. SMITH.