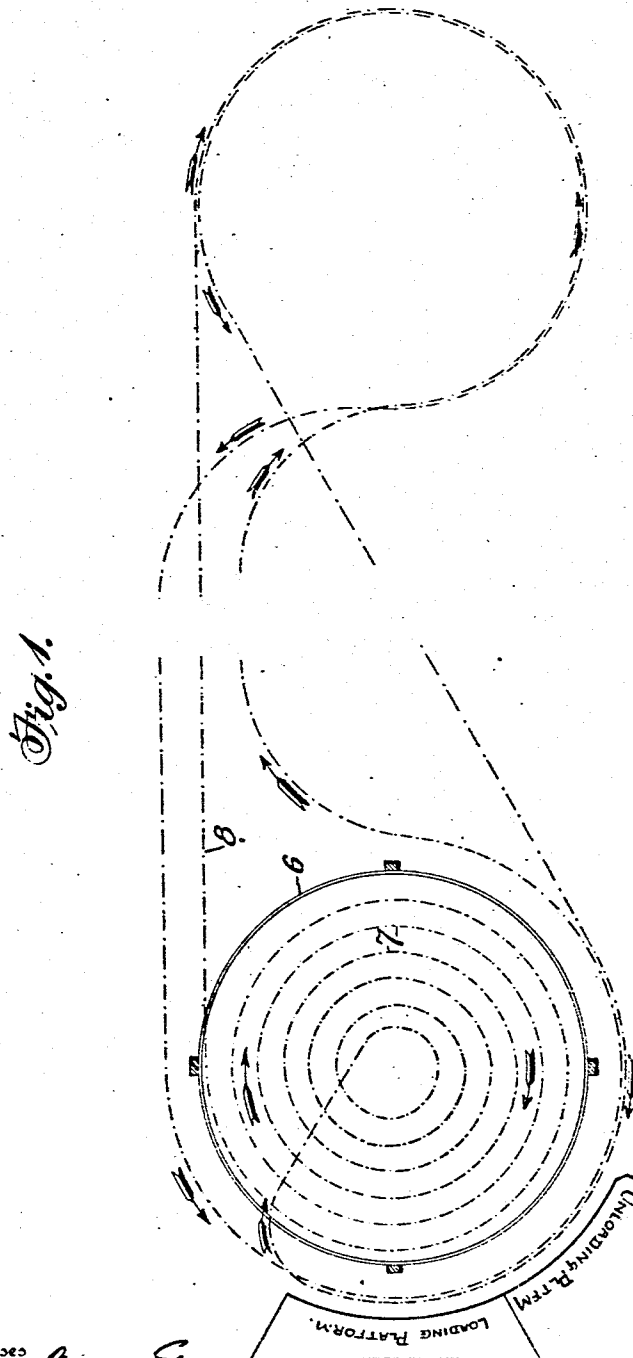


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PATENTED AUG. 11, 1908.

F. A. CHURCH.
PLEASURE RAILWAY.
APPLICATION FILED DEC. 27, 1907.

3 SHEETS--SHEET 1.



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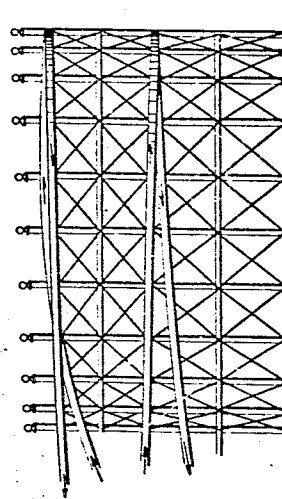
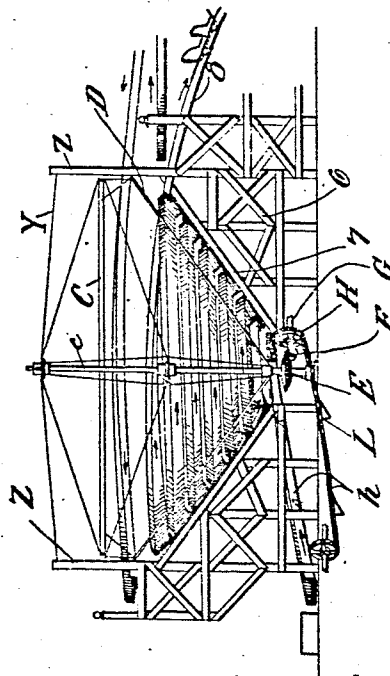


Fig. 2.



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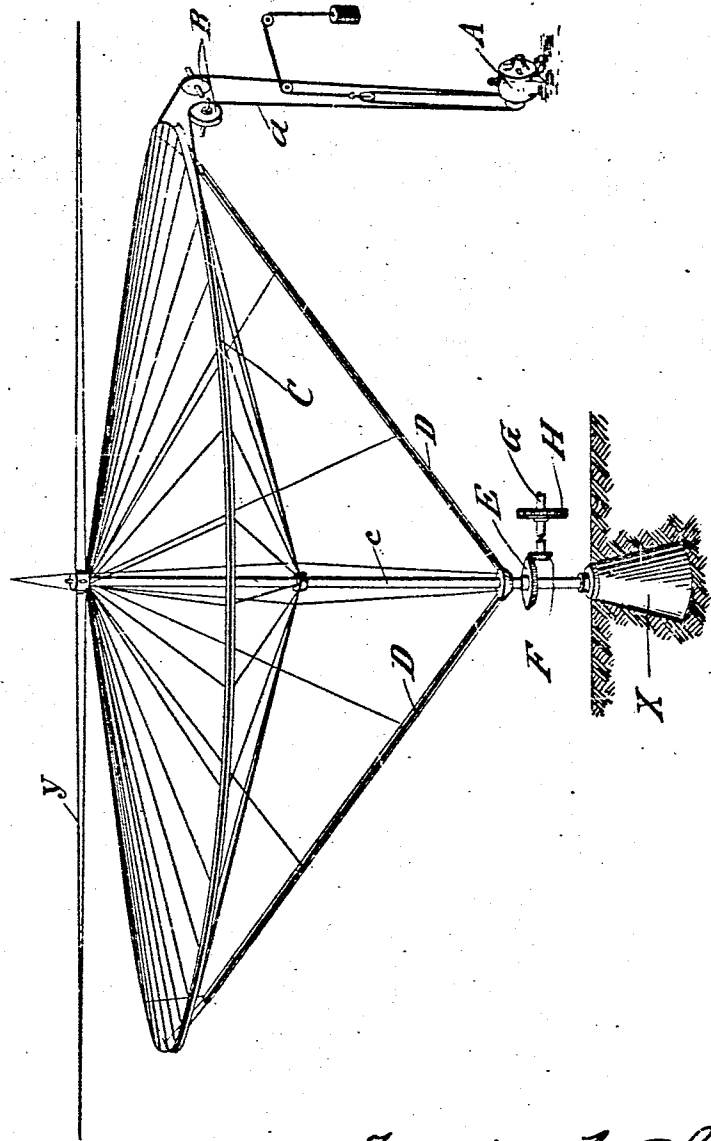
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3 SHEETS—SHEET 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

FREDERICK A. CHURCH, OF CHICAGO, ILLINOIS.

PLEASURE-RAILWAY.

No. 895,427.

Specification of Letters Patent.

Patented Aug. 11, 1908.

Application filed December 27, 1907. Serial No. 408,247.

To all whom it may concern:

Be it known that I, FREDERICK A. CHURCH, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pleasure - Railways, of which the following is a specification.

This invention relates to pleasure railways, and has for its object to provide a track of novel construction on which the cars travel, and also to provide improved means for applying power to the cars while they are passing over this new form of track, and for raising the cars to a higher level as they pass over the track.

The invention embodies the idea of propelling cars on a track of such form as to give the cars an accelerating motion, starting from a slow speed and traveling around a spiral, and with a propelling device having the same angular velocity about the center of the structure, causing the cars to gradually increase their velocity as they pass from the center to the outside of the spiral, the cars finally leaving the structure at a tangent with great velocity which is expended on the remainder of the circuit over which the cars pass.

The invention is illustrated in the accompanying drawings in which

Figure 1 is a diagrammatic plan view of the railway. Fig. 2 is a sectional elevation. Fig. 3 is a perspective view of the propelling mechanism which actuates the cars while they are on the spiral.

Referring specifically to the drawings, 6 indicates an inverted cone or cup-shaped structure on which is laid a track 7 which approximates a spiral with the entrance at the center and the exit at the top and outside. The tracks are tilted to various degrees to overcome the centrifugal force of the cars created by the revolving movement. At the top the track 7 connects to a track 8 extending tangentially from the edge of the cone and forming part of a system of tracks which may be the ordinary pleasure railway, a return bend, however, being provided to bring the cars back to the bottom of the conical structure.

The cars are propelled while on the conical structure by means of the mechanism shown particularly in Figs. 2 and 3. This comprises a motor A which may be located in any convenient position outside or underneath the structure and which imparts its power by

means of a wire cable *a* over the idle pulleys B to a wheel C, causing said wheel to turn at a uniform speed. This wheel C has an upright axle *c* which is of such height and position that the wheel is located a sufficient distance above the tracks 7 to accommodate the cars under the wheel. The axle is stepped in masonry X at the bottom and is braced at the top by guy rods Y extending to posts Z and connected to a bearing at the top of the axle. The wheel carries two pusher arms D which are located under the wheel and extend from the axle radially to the edge of the structure. The arms D are set at an inclination corresponding to the tracks and at the proper distance above the same to contact with a car or cars on the track and push the same along the track. The axle also carries, near the bottom, a beveled gear E which meshes with a pinion F on the shaft G which carries a sprocket wheel H which drives a chain haul *h* such as is commonly used in hauling cars, having well known attachments to engage the car, as indicated at L. These attachments are so spaced that every time one passes over the wheel H one of the arms D carried on the wheel C passes that point at the same moment.

The cars are loaded at the point marked "loading platform" and may be pushed by hand onto the chain haul or drag *h* where they are picked up and carried into the center of the conical structure. When the sprocket H is reached the chain is dropped and they are picked up by the pusher arms D without any perceptible jolt, owing to the fact that the attachments on the chain are timed with the point on the arm which engages the car. Each car, when picked up by the arm D proceeds to run with an accelerated speed due to the spiral form of the track, the angular velocity of the arms D remaining the same. When the top of the structure is reached the car leaves it tangentially on the track 8 and finally returns to the unloading and loading platforms. The speed acquired will be sufficient to cause the car to travel around the adjacent courses or tracks which may assume any form desired.

The sensation produced by the portion of the ride within the cone and the final exit therefrom will be quite exciting and novel. The acceleration of speed is regular and therefore not apt to frighten a rider.

The invention is not limited to the form shown in the drawings. Thus the spiral

track can be constructed on a flat surface or on a structure of different shape. Also, instead of the propelling means shown, other means may be used, such as individual motors for each car.

Various other modifications may be made within the scope of the following claims.

I claim:

1. A railway track having a spiral course, and means movable over said course to advance cars around the same, from the center outwardly, with accelerating speed.
2. A railway track having a spiral course and an entrance track leading upwardly from below, near the center, a central shaft having a revolving arm movable over the spiral course, and hauling devices associated with the entrance track to advance cars up the same and onto the spiral.
3. A railway having in combination, a track with a spiral course and an entrance track leading thereto upwardly near the center, a central shaft having a revolving arm movable over the spiral course, and engageable with a car to advance the same thereon, and hauling devices geared to the shaft and associated with the entrance track and having attaching devices for cars, to advance cars up the same and onto the spiral, the arm being located and timed with respect to the attaching devices, to engage a car on the spiral immediately upon its delivery thereto by the hauling devices.

4. The combination of a curved structure inclined upwardly and outwardly from the center, a track extending in a spiral course upon said structure and having an entrance at the center and an exit at the periphery, and means to move cars around said track.

5. The combination of a spiral track the courses of which are arranged one above the other in the form of an inverted cone, with an entrance at the center and an exit at the periphery, an upright shaft at the center, and an arm projecting from the shaft outwardly above the several courses of the track, and adapted to engage and advance a car thereon, as the shaft is rotated.

6. The combination of a spiral track the courses of which incline upwardly and outwardly from the center, with an entrance at the center and an exit at the periphery, an upright shaft at the center, a wheel at the top of the shaft, arms supported by the wheel and shafts and projecting radially from the shaft and under the wheel, and located in inclined position over the courses of the track to engage and advance cars thereon, and driving devices applied to the wheel.

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

FREDERICK A. CHURCH.

Witnesses:

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H. G. BATCHELOR.