

May 15, 1923.

1,455,390

A. DAVINO ET AL

AERIAL RAILWAY FOR AMUSEMENT PURPOSES

Filed June 29, 1922

2 Sheets-Sheet 1

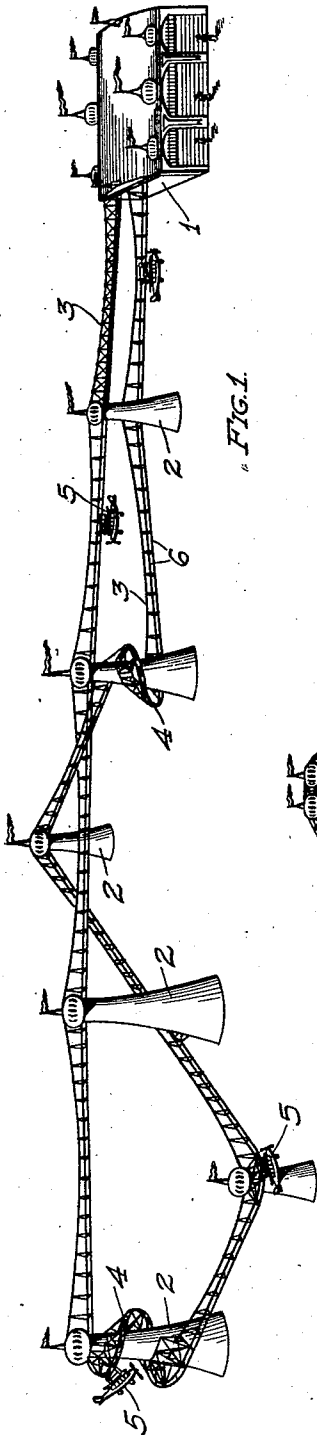


FIG. 1.

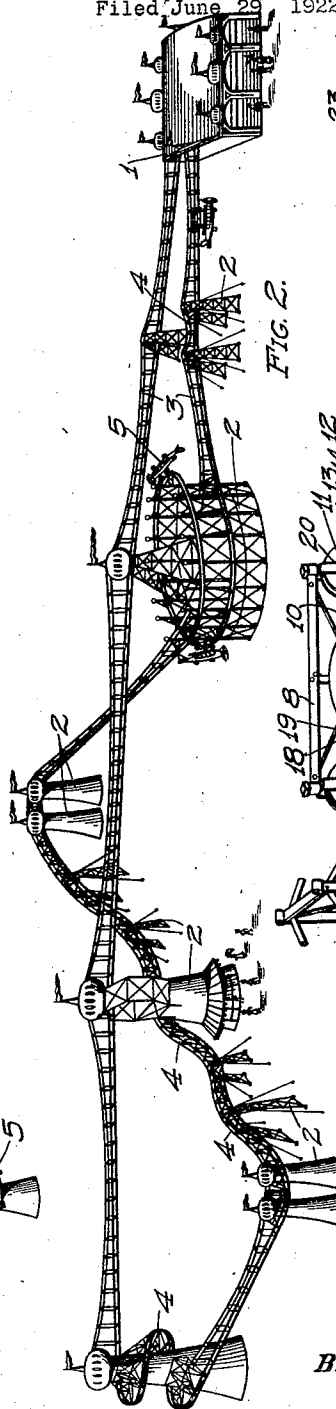


FIG. 2.

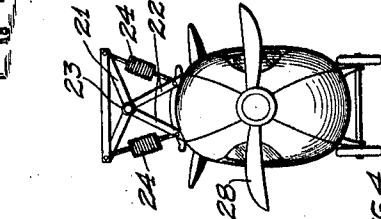


FIG. 4.

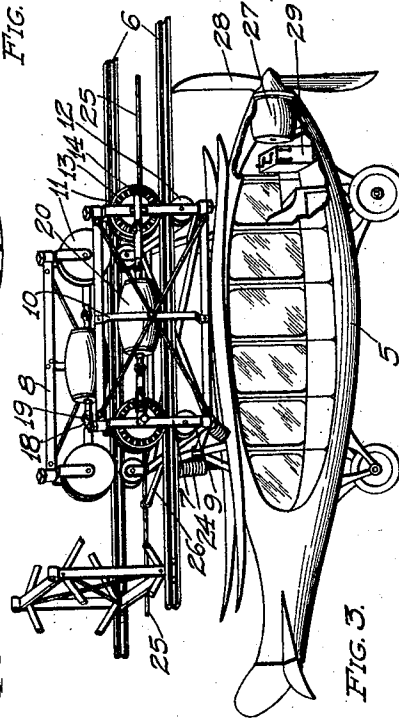


FIG. 3.

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2 Sheets-Sheet 2

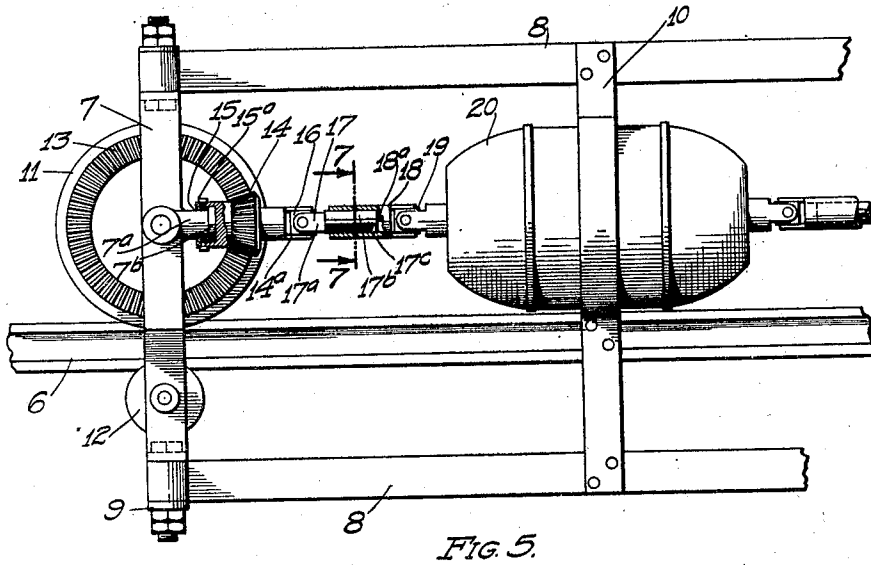


FIG. 5.

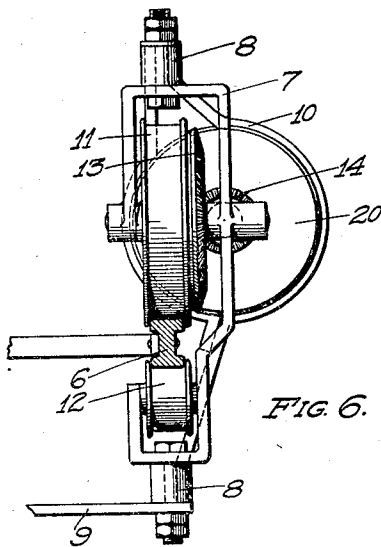


FIG. 6.



FIG. 7.

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UNITED STATES PATENT OFFICE.

ALPHONSO DAVINO AND FREDRICK P. SCHOBERTLE, OF LOS ANGELES, CALIFORNIA.

AERIAL RAILWAY FOR AMUSEMENT PURPOSES.

Application filed June 29, 1922. Serial No. 571,828.

To all whom it may concern:

Be it known that we, ALPHONSO DAVINO and FREDRICK P. SCHOBERTLE, citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a certain new and useful Aerial Railway for Amusement Purposes, of which the following is a specification.

Our invention relates to aerial railways, more particularly to a thriller type of aerial railway for amusement purposes and the objects of our invention are: first, to provide an aerial railway of this class with a combination of flexible and rigid track structure; second, to provide an aerial railway of this class in which substantially straight lines of track are frequently interrupted by sharp curves or turns and abrupt inclinations or declinations whereby a variable motion similar to aerial acrobatics is imparted to the passenger carriage suspended therefrom; third, to provide an aerial railway of this class with a flexible wheel carriage which will conform to the curvature of the rail and permit centrifugal and other forces to act directly upon the passenger carriage in a natural manner and which will reduce the strain upon the track structure and wheel carriage to a minimum; fourth, to provide an aerial railway of this class in which the power units are positioned on the wheel carriage and are directly and flexibly connected to the driving mechanism; fifth, to provide an aerial railway of this class in which the passenger carriage is resiliently suspended from the wheel carriage; sixth, to provide a substantially torqueless aerial railway carriage; seventh, to provide a novelly constructed thriller type of aerial railway, and eighth, to provide an aerial railway of this class which is very simple and economical of construction proportionate to its function, durable, efficient, easy to operate and control and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter our invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a perspective view of our thriller type of aerial suspended railway with single cable flexible track construction and rigid track construction at the suspension towers with passenger carriages suspended at various angles and positions therefrom and terminating at a passenger terminal provided at one end. Fig. 2 is another perspective view showing a slightly modified form of the thriller type of aerial suspended railway similar to that shown in Fig. 1 except that a double cable flexible track construction and bridged suspension towers for a rigid track construction is shown. Fig. 3 is a perspective view of the wheel carriage suspended from the rails which are shown fragmentarily and with the passenger carriage suspended from said wheel carriage, portions thereof being broken away to facilitate the illustration. Fig. 4 is a front elevational view of the passenger carriage. Fig. 5 is an enlarged fragmentary view of a power unit and the driving mechanism mounted on the rail, portions being broken away to facilitate the illustration. Fig. 6 is a fragmentary end elevational view thereof and Fig. 7 is a sectional view taken through 7-7 of Fig. 5.

Like characters of reference refer to similar parts and portions throughout the several views of the drawings.

The terminal 1, towers 2, flexible track structure portion 3, rigid track structure portion 4, passenger carriages 5, rails 6, journal members 7, carriage frame members 8, 9, and 10, flanged wheels 11 and 12, bevel gears 13, bevel pinions 14, collars 15, universal joint members 16, 17, 18 and 19, motors 20, frame members 21 and 22, bolts 23, tension springs 24, conductors 25, trolley 26, motors 27, propellers 28, and the rheostat controller 29 constitute the principal parts and portions of our thriller type of aerial railway structure.

Our thriller type of aerial railway consists of a series of towers 2 positioned in scattered and staggered relation to each other and to the passenger terminal 1 in such a manner that when connected by and supporting the suspended rail structure portions 3 between said towers and the said passenger terminal and the substantially rigid rail structure portions 4 at said towers connecting said flexible rail structure portions, a substantially interrupted and irregularly curved line of travel is established

between said terminal and the various towers. The passenger carriages 5 are suspended from wheel carriages which are adapted to ride on and are guided by the rails 6, supported by said flexible and rigid track structure portions 3 and 4 respectively. Said passenger carriages are resiliently suspended on said wheel carriages and are adapted to be acted upon and swing freely with relation to said wheel carriage by reason of the centrifugal forces due to the curvature in said line of travel and by reason of the forces of inertia and gravity due to the sudden inclinations and declinations in said line of rail structures. The wheel carriage is supported on the rails 6 by the flanged wheels 11, adapted to ride on the upper face of said rails and is revolvably mounted in the journal support 7 which is pivotally mounted at the ends of the horizontal, longitudinal frame members 8. Other flanged wheels 12, adapted to ride on the lower face of said rails and revolvably mounted in said journal support members 7, are adapted to position and retain said wheel carriage on said rails. The wheel carriage portions riding on the separate rails are laterally connected and reinforced by the horizontal frame members 9. Other frame members 10 are secured to the longitudinal, horizontal frame members 8 on either side of the wheel carriage intermediate said journal support members 7 adapted to support the motor 20. A beveled gear 13 is provided on the outer faces of the larger flanged wheel 11 and preferably integrally secured thereto and is adapted to mesh with the beveled pinion 14 substantially in alinement with the motor shaft. Said bevel pinion is revolvably mounted on the cylindrical boss 7^a secured to the journal support 7 and is retained thereon by a retaining ring 15 secured to one end of the hub by means of the screws 15^a and which ring is shouldered against and retained by the enlarged collar portion 7^b at the end of the boss 7^a. The bevel pinion 14 is provided at the opposite end from said first mentioned hub portion with a bifurcated portion 14^a, adapted to receive between the arms thereof the double journaled universal joint member 16 which is pivotally connected at its other journal to the bifurcated portion 17^a of the universal joint member 17. Said member 17 is provided at its other end with a cylindrical shank 17^b provided with a longitudinal key 17^c which shank 17^b is telescopically mounted in the free portion 18^a of the universal joint member 18. Said member 18 is similarly connected to the motor shaft by the universal joint member 19. The motor shaft extends through the motor and is adapted to drive the wheels at the front and rear of the wheel carriage. It will be noted that the motors on either side of the

wheel carriage run in opposite directions so that the torque accompanying the single motor drive for an apparatus of this class is practically eliminated. The wheel carriage is provided on the under side near the front and rear ends thereof with downwardly extending support members 21 terminating at a central journal. The passenger carriage is provided with similar upwardly extending support members 22 which are pivotally mounted at their upper ends by the bolts 23 mounted in the journals of the support members 21. The passenger carriage is held in a substantially vertical alinement with the wheel carriage by the tension spring 24 secured to either side and at either end of the wheel carriage at one end and to said passenger carriage at the other end. An electrical conductor 25 is positioned intermediate the rails 6 and supported by the rail structures 3 and 4. A trolley 26 is secured to the wheel carriage and adapted to engage the electrical conductor 25 and provide electrical energy for the motors on the wheel carriage and the electrical equipment in said passenger carriage. A motor 27 is provided in the head end of the passenger carriage adapted to drive the propeller 28 at the front of said passenger carriage. A rheostat controller 29 is located at a convenient place in said passenger carriage for controlling the driving mechanism.

The passenger carriage is constructed similar to the conventional aeroplane fuselage provided with wing surfaces sufficient only to give the appearance of wings and provided with under carriages and the conventional tail surfaces.

In Fig. 2 of the drawings we have shown a slightly modified form of our thriller type of aerial suspended railway with the double cable flexible track construction for track suspension structure and also with some rigid, curved and inclined construction between some of the various towers.

Though we have shown and described a particular construction, combination and arrangement of parts and portions and a certain modification thereof we do not wish to be limited to this particular construction, combination or arrangement nor to the modification but desire to include in the scope of our invention the construction, combination and arrangement substantially as set forth in the appended claims.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

1. In an apparatus of the class described, a multi-curved, circuitous and inclined track, a laterally flexible wheel carriage mounted on said track, and a self-propelled passenger carriage resiliently suspended from said wheel carriage.

2. In an apparatus of the class described,

a flexible supporting structure, a substantially straight line of track frequently interrupted by sharp curves and abrupt inclinations suspended from said supporting structure, a flexible wheel carriage mounted on said track and suspended therefrom, a passenger carriage resiliently suspended from said wheel carriage, an electrical conductor suspended from said supporting structure, motors mounted on said wheel carriage communicating with said electrical conductor and driving means connecting said motors with said track.

3. In an apparatus of the class described, a flexible supporting structure, a substantially straight line of track frequently interrupted by sharp curves and abrupt inclinations suspended from said supporting structure, a flexible wheel carriage mounted on said track and suspended therefrom, a passenger carriage resiliently suspended from said wheel carriage, an electrical conductor supported by said structure, a motor mounted in said passenger carriage and a propeller mounted on the shaft of said motor.

4. In an apparatus of the class described, the combination with rails, of a frame and journal supports pivotally mounted in said frame, wheels revolubly mounted in said journal supports, gear means connected to said wheels, motors mounted in said frame, universal joint, shaft and sleeve members connecting said motors to said gear means and said wheels whereby said wheels are automatically adjusted axially with relation to the varying curvature in said rails, an electrical conductor supported contiguous to said rails, a trolley mounted on said frame adapted to communicate with said conductor and a carriage resiliently mounted on said frame.

5. In an apparatus of the class described, the

combination with suspended rails, of a frame, journal supports pivotally mounted in said frame, flanged wheels revolubly mounted in said journal supports engaging and adapted to be guided by said rails on two sides, a gear means connected to the said wheels, motors flexibly connected to said gear means, whereby said wheels are automatically adjusted axially with relation to the varying curvature of the rails, and a carriage resiliently suspended from said frame.

6. In an apparatus of the class described, the combination with suspended rails, of a frame, journal supports pivotally mounted in said frame, flanged wheels revolubly mounted in said journal supports engaging and adapted to be guided by said rails on two sides, a gear means connected to the said wheels, motors flexibly connected to said gear means whereby said wheels are automatically adjusted axially with relation to the varying curvature of the rails, an electrical conductor positioned contiguous to said rails, a trolley mounted on said frame adapted to communicate with said conductor and a carriage resiliently suspended from said frame.

7. In an apparatus of the class described, the combination with suspended rails, of a frame, a journal support mounted in said frame, flanged wheels revolubly mounted in said journal support and pivotally mounted with relation to said rails whereby said wheels are automatically adjusted axially with their relation to the varying curvatures in said rails, and a self-propelled carriage resiliently suspended from said frame.

In testimony whereof, we have hereunto set our hands at Los Angeles, California, this 20th day of June, 1922.

ALPHONSO DAVINO.

FREDRICK P. SCHOBELER.