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B. A. SMYSER

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SUSPENDED AERIAL RAIL, RAPID TRANSIT SYSTEM

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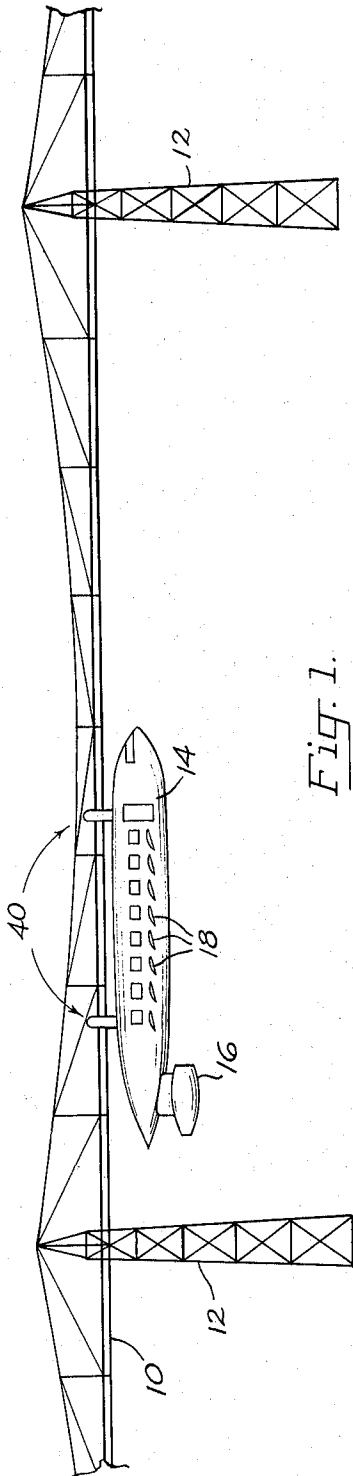


Fig. 1.

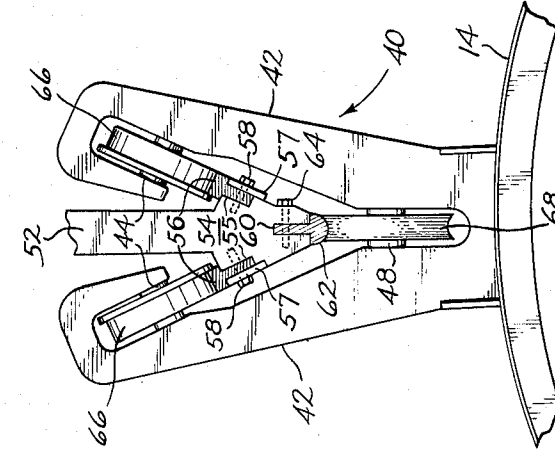


Fig. 4.

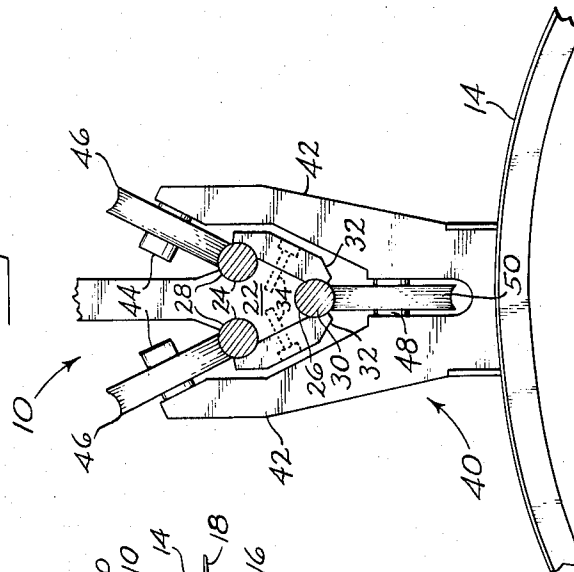


Fig. 3.

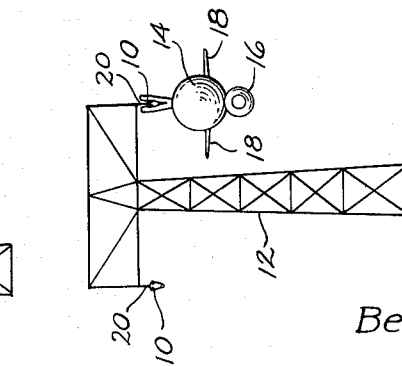


Fig. 2.

Bert A. Smyser
INVENTOR.

BY *Eugene O. Farley*

Atty.

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SUSPENDED AERIAL RAIL, RAPID TRANSIT
SYSTEM
 Bert A. Smyser, 2016 S. Tacoma Way, Tacoma, Wash.
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This invention relates to a guided air coach for fast, safe transportation.

Although many types of monorails and other suspended railway systems heretofore have been proposed, their large scale use has been prevented by the very large cost of installation, as well as by various operational problems such as car sway during travel, tilting, and buffeting occurring when cars pass each other.

The present invention overcomes these problems and provides a suspended rapid transit railway which is relatively fast and inexpensive to build; which is relatively free from problems of car swaying and buffeting; which can be used to span natural obstacles such as wide rivers and canyons; and which can be operated at a high rate of speed with a high degree of safety.

Broadly considered, the suspended rapid transit railway which accomplishes the foregoing and other objects of the invention comprises an overhead, composite track including a pair of horizontal, spaced, support track sections and a stabilizing track section located below and between the support track sections. Suitable hangers or other track support means are stationed at spaced intervals along the track, maintaining the track sections in their preselected relation to each other.

Traveling on the composite track is a car including one or more truck frames. Journaled on each frame are a pair of support wheels arranged at a predetermined angle to the vertical and each tracking on one of the support track sections. Also journaled to the frame is a stabilizing wheel arranged substantially vertically and tracking on the stabilizing track section.

A plurality of laterally extending vanes or fins preferably are mounted on the sides of the car to reduce its effective weight at high speed travel and also to cause the stabilizing wheel to bear against the stabilizing track section as the car travels at high speeds along the track. The car is powered by suitable motor means, preferably by a reversible jet engine.

In the drawings:

FIG. 1 is a schematic view in elevation of the herein described suspended railway, illustrating the car traveling along a composite track supported between spaced towers;

FIG. 2 is a rear view in elevation illustrating the manner of mounting the car on the track; and

FIGS. 3 and 4 are detail transverse sectional views, illustrating alternate forms of composite tracks and alternate means of mounting the car thereon.

As shown in FIG. 1 the suspended railway of my invention is mounted on a composite track 10 supported on longitudinally spaced towers 12. These may be of any suitable type of construction such as that making use of prestressed concrete and metal trusses, steel girders, etc.

Supported on track 10 is a car 14 powered by a suitable motor such as a reversible jet engine 16. The car may be dimensioned and shaped in the same manner as an aircraft body and may accommodate, for example, 50 or 60 passengers, or more.

Extending laterally from the side of the car are a plurality of fins 18. These serve the function of lifting the car as it travels, reducing its effective weight and minimizing the strain on the suspended track. The fins may be of any suitable size or shape but in general are kept of relatively small compass so that the car will

occupy a minimum space when placed in hangar storage and also to enable cars traveling in opposite directions to pass without spacing too widely apart the tracks supporting the cars.

A gyroscope, not illustrated, may be installed in the car to stabilize it. Suitable supplemental brake means, also not illustrated, but comprising, for example, friction brakes working on the track, may be included in the car assembly for supplementing the action of the reversible rocket engine 16 and of fins 18 in reducing the speed of the car, as well as for holding the car still when it is in the hangar or at a station stop. In the form of the invention illustrated in FIG. 3, composite track 10 is supported on a hanger 20 which includes a roughly triangular head 22. The head is notched to provide a roughly triangular pattern of notches 24, 26. These receive and support the track means which, in the embodiment of FIG. 3, comprise a pair of horizontally spaced support cables 28, received in notches 24, and a stabilizing cable 30, received in notch 26.

The cables are strung between towers 12 and are secured in the respective notches in hanger heads 22 by means of plate retainers 32 which overlies portions of the cables and are fastened to the head by means of bolts 34.

The car is supported from the supporting cables by two or more trucks, indicated generally at 40 and each comprising a bifurcated truck frame 42.

The lower end of frame 42 is secured to car 14. The bifurcated upper end is provided with a pair of upwardly angled shafts 44 on which are journaled a pair of angled support wheels 46. These wheels engage support cables 28 and support the car. They are mounted at an angle of, for example, from 30-40° to the vertical in order more securely to mount and stabilize the car on the track.

Also provided on bifurcated frame 42 is a horizontal shaft 48 on which is journaled a stabilizing wheel 50. It tracks on cable 30 and serves the function of stabilizing the car, particularly when the car is in motion, with fins 18 exerting their lifting effect.

The form of the invention illustrated in FIG. 4 uses T-shaped rails rather than cables, as track components.

The rails are supported on hangers 52, the triangular head 54 of each of which is provided with rectangular upper notches 55 in which are seated support T-rails 56. These are secured in place by plate 57 and bolts 58.

The lower part of head 54 is provided with a slot 60 which receives a rounded stabilizing track bar 62, held in position by bolt 64.

Support T-rails 56 are mounted at a predetermined angle of from 30-40° from the vertical. Rounded stabilizing T-rail 62 is mounted substantially vertically.

Journaled on upper shafts 44 are a pair of flanged support wheels 66. These are coplanar with support T-rails 56 on which they track.

Journaled on lower shaft 48 is a grooved stabilizing wheel 68. This tracks on rounded T-rail 62.

The constructions of the embodiments of FIGS. 3 and 4 thus provide composite track assemblies which are simple, lightweight and relatively inexpensive to install and maintain. In addition, they provide a secure mounting for the suspended car, preventing it from swaying and tilting unduly as it moves in rapid transit.

It accordingly will be seen that there is provided an apparatus in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be re-

sorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A suspended railway comprising:
 - (a) an overhead composite track, and
 - (b) longitudinally spaced track support means maintaining the composite track in elevated position above the ground,
 - (c) the composite track having a hanger portion depending downward from the support means and an integral head portion at the lower end of the hanger portion, the head portion being substantially triangular in cross section with the base thereof attached to the hanger portion and the apex thereof projecting downward,
 - (d) a pair of supporting track members mounted in horizontally spaced relation at the spaced upper corners of the head portion on opposite sides of the hanger portion,
 - (e) a stabilizing track member mounted at the apex of the head portion below and between the car supporting track members,
 - (f) a car,
 - (g) a bifurcated truck frame mounted on the car with the spaced ends of the frame projecting upwardly from the car,
 - (h) a pair of support wheels journaled one on each of the spaced ends of the bifurcated truck frame, each wheel tracking on one of the car supporting track members,
 - (i) a stabilizing wheel journaled between the spaced ends of the bifurcated truck frame adjacent the lower end of the latter and tracking on the stabilizing track member, and
 - (j) motor means on the car for propelling it along the track.

2. The suspended railway of claim 1 wherein the track members comprise cables and wherein the triangular head portion of the composite track is provided with a longitudinal cable-receiving notch at each corner, and retaining plates are secured to the head portion for retaining the cables in the notches.

3. The suspended railway of claim 1 wherein the track members comprise T-rails and wherein the triangular head portion of the composite track is provided with a longitudinal rail-receiving notch at each corner, and retainer means are secured to the head portion for retaining the T-rails in the notches.

4. The suspended railway of claim 1 wherein the support wheels are positioned at an angle of substantially 30-40° from the vertical.

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ARTHUR L. LA POINT, *Primary Examiner.*

MILTON BUCHLER, *Examiner.*

F. W. MONAGHAN, *Assistant Examiner.*