

F. M. WILLIAMS.
AEROPLANE PLEASURE RAILWAY.
APPLICATION FILED AUG. 6, 1919.

1,328,238.

Patented Jan. 13, 1920.
3 SHEETS—SHEET 1.

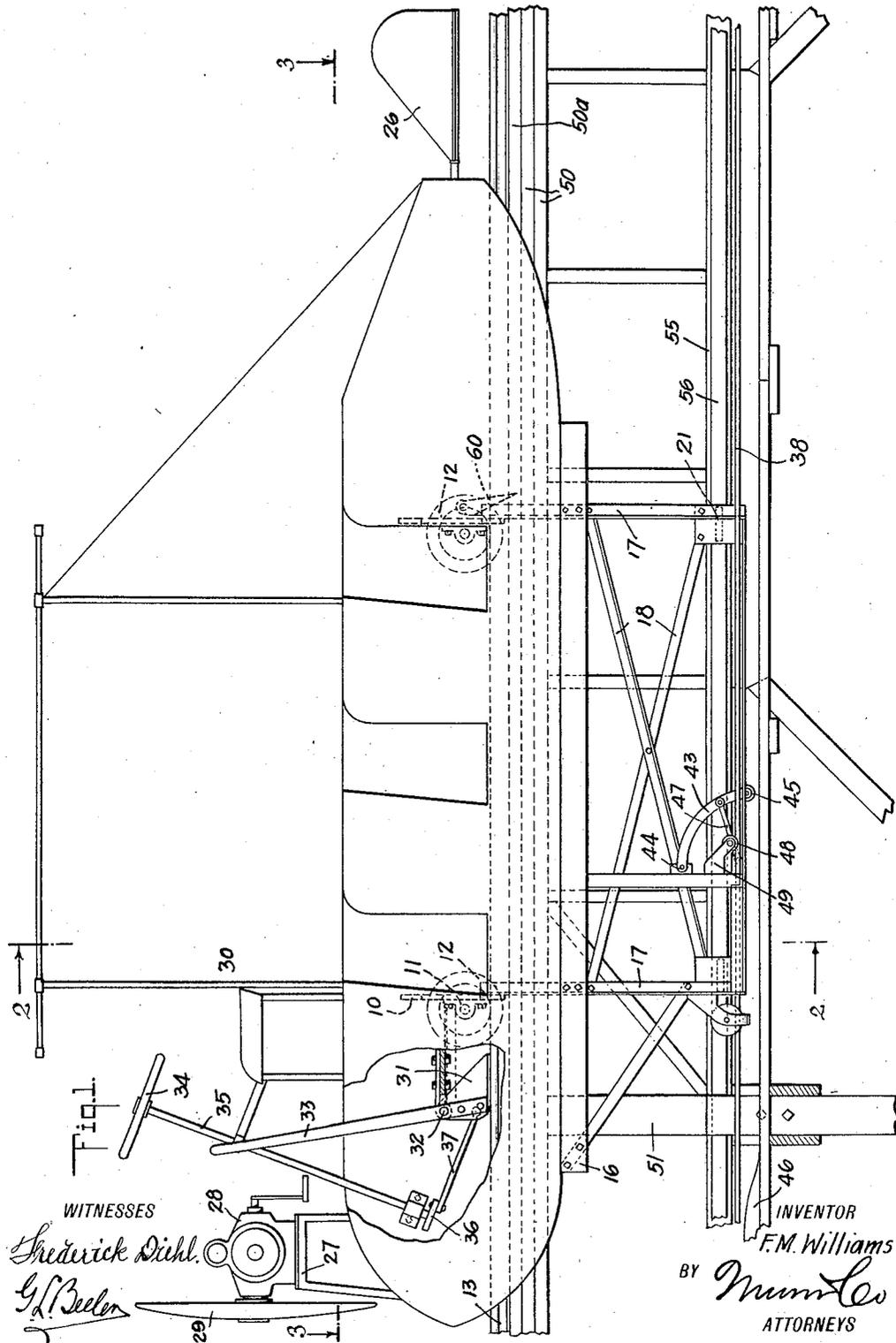


FIG. 1.
WITNESSES
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G. J. Beeler

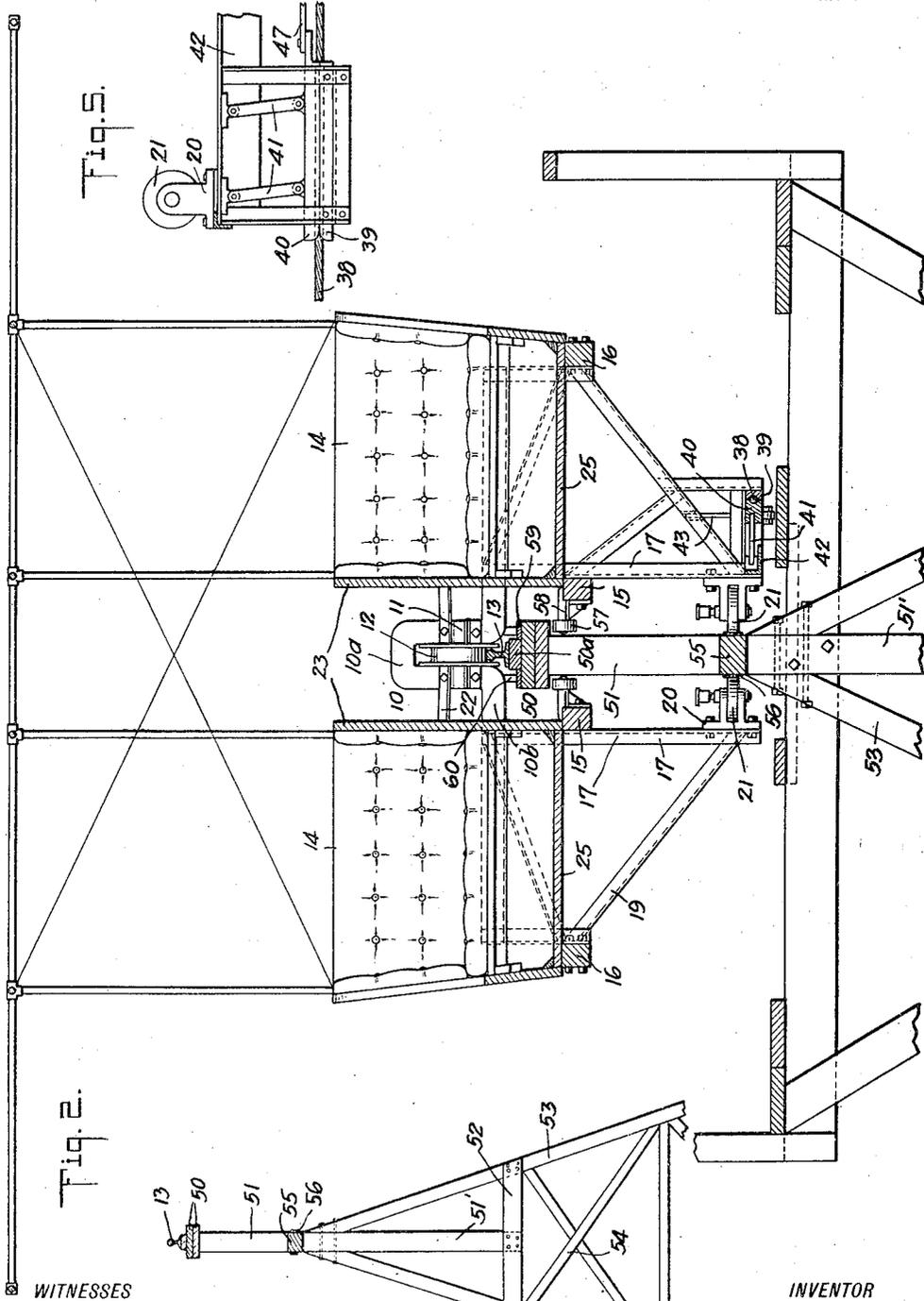
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3 SHEETS—SHEET 2.



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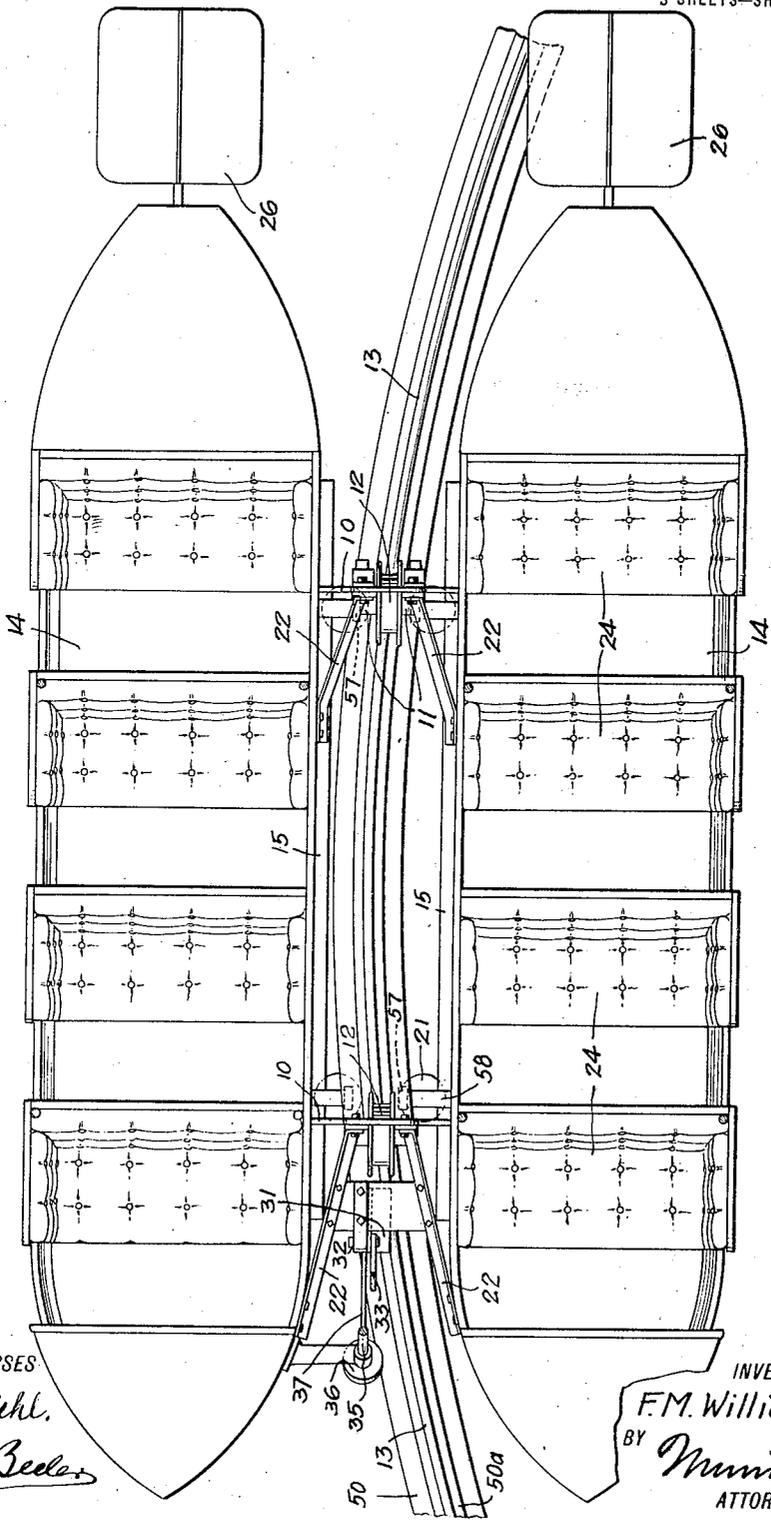
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3 SHEETS—SHEET 3.

FIG. 3.



WITNESSES
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UNITED STATES PATENT OFFICE.

FRANKLIN M. WILLIAMS, OF NEW YORK, N. Y., ASSIGNOR TO AEROPLANE RAILWAY PATENTS CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

AEROPLANE PLEASURE-RAILWAY.

1,328,238.

Specification of Letters Patent. Patented Jan. 13, 1920.

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To all whom it may concern:

Be it known that I, FRANKLIN M. WILLIAMS, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Aeroplane Pleasure-Railway, of which the following is a full, clear, and exact description.

This invention relates to pleasure devices such as are extensively used in pleasure resorts, and has particular reference to devices or apparatus similar to scenic railways, roller coasters, or the like, embodying an elevated structure with a track thereon of any suitable contour, and a carrier for one or more passengers movable over the track.

Among the objects of this invention is to improve the class of devices above referred to by making the same more attractive, to which end the structure is provided to simulate both visually and audibly an aeroplane.

A still further object of the invention is to provide a pleasure railway including a single main supporting rail and a novel form of carrier operating thereover, said carrier because of the mono-rail structure being made to possess, especially in side elevation, the appearance of a monoplane aircraft.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a side elevation of one of my improved carriers depicted as movable toward the left along my improved mono-rail structure.

Fig. 2 is a vertical transverse section on the line 2—2 of Fig. 1.

Fig. 3 is a horizontal sectional plan view on the line 3—3 of Fig. 1.

Fig. 4 is a vertical transverse section of a detail of the frame work supporting the mono-rail; and

Fig. 5 is a detail plan view of the automatic gripper.

Referring now more specifically to the

drawings I show a carrier for passengers comprising a skeleton frame made preferably of structural steel, or its equivalent, and comprising front and rear yoke members 10 arranged in parallel vertical planes and each comprising a central U-shaped portion 10^a terminating in a pair of laterally projecting horizontal arms 10^b. These yoke members are made of sufficient strength to carry more than the maximum load designed to be carried on the machine. To each of the yoke members 10 is fixed a horizontal bearing 11 to accommodate a main supporting wheel 12 having a horizontal axis, the wheel being journaled directly within the U-shaped portion of the yoke 10^a, the wheels being adapted to roll freely upon the rail 13 irrespective of the form or direction of the rail.

The carrier as a whole includes a pair of cars or bodies 14 mounted on opposite sides of the rail and built or supported upon the horizontally extending arms 10^b of the yoke members. Each body 14 comprises a pair of longitudinal stringers 15 and 16, one being close to the rail while the other is spaced outward therefrom. These stringers constitute parts of the carrier frame work. Extending downward from the stringers 15 are any suitable number of vertical posts 17. 18 indicates diagonal braces each extending from the middle portion of a post to the lower end of another post, thereby stiffening the frame work in vertical planes. To resist lateral twisting strains diagonal braces 19 secured on their outer end to the stringers 16 extend downward and inward toward the lower ends of the post 17 and adjacent to the points of connection between the braces 19. The posts are secured to a plurality of brackets 20 each having a vertical axis on which is pivoted a horizontal roller 21. These rollers 21 are arranged in pairs directly opposite each other and in the same plane. The carrier body structure is further braced by means of substantially horizontal braces 22, but diagonally arranged with respect to the direction of movement of the carrier. These braces 22 are fixed to the U-shaped portions of the yokes 10 and extend thence forward and laterally where they are fixed to the inner side walls 23 of the carrier bodies.

These bodies are provided with suitable seats, or their equivalent, shown at 24 for

the accommodation of the passengers. Any suitable size, design or arrangement of seats may be provided, and each body has a floor 25. These bodies are provided with pointed front ends and as far as practical for the purpose of the invention they have the form in side elevation of an aeroplane body, and each has at its rear end any suitable design of empennage or tail structure representing vertical stabilizers and lifting planes, indicated at 26. These devices, however, are not intended to be manipulated.

At the front end of the carrier is arranged a support 27 between and above the pointed ends of the car bodies. Upon this support is fixed a motor 28 to the shaft of which is fixed a propeller 29. Any suitable motor may be employed for this purpose such for example as a well known type of air drive motor and propeller for motor bodies or the like, the same having the appearance and adaptability for rendering rapid exhaust explosions so as to carry out in a very realistic manner the behavior of an aeroplane for pleasure purposes. This engine or motor is designed to operate for the two purposes stated, but is not relied upon for the propulsion of the machine although it may have some adaptability along this line in practice.

Back of the motor is a seat 30 for the "aviator" or driver of the machine. His duty, however, is limited practically to the controlling of the speed of the machine which may be effected by him through any suitable manually operated devices such as a brake shoe 31 mounted on a horizontal fixed pivot 32 above the track rail 13 and adapted to be brought forcibly into engagement with the upper surface of the rail by manipulation of either the hand lever 33 fixed to the shoe or else by a hand wheel 34 fixed to the upper end of the post 35 and having a crank 36 at its lower end connected to the shoe through a link 37.

By drawing rearward upon the upper end of the lever 33 the lower portion or point of the shoe is forced downward upon the rail setting up as much friction as necessary to retard the motion of the carrier or stop it.

The machine is carried up the principal inclines by mechanically operated means of any suitable nature and thereafter is operated by gravity and its own inertia of motion. As a means to carry the car up an incline I utilize a power operated cable 38 which is received between the relatively fixed and movable jaws 39 and 40 respectively beneath one of the car bodies. The movable jaw 40 is connected by links 41 to a stationary rail 42 or an equivalent abutment, the function of which is to cause the movable shoe to be carried frictionally by contact with the running cable into gripping position making in effect an automatic grip.

When the crest of the incline has been reached or passed the carrier will promptly overrun the cable due to the acceleration of gravity and so loosen the frictional grip caused thereby and at this time the movable jaw is drawn bodily out of the way of the cable and so permits the cable to drop beneath the plane of the jaws. This removal of the jaw 40 is effected by means of an arm 43 pivoted at a fixed point 44 to a portion of the frame and having at its lower end an antifriction roller 45 adapted to strike and roll over any suitably disposed ramp 46. This lifting of the arm 43 and movement of the roller 45 relatively rearwardly will cause the rearward movement of the movable jaw 40 through a link connection 47. When the movable jaw is thus withdrawn the cable will be free to drop down and the carrier will proceed independently thereof, as already set forth. 48 indicates an anti-friction roller carried by a bracket 49 and serves to limit the upward thrust of the cable at the time the cable is gripped automatically.

The support for the main load carrying rail 13 is of peculiar construction adapting it for the support of the carrier on opposite sides of the supporting means for the rail. As will be appreciated from Fig. 2 the center of gravity of the carrier is located not much if any above the rail 13, and hence in order to make the carrier as compact as possible whereby the similarity and appearance of an aeroplane is made as faithful as can be, the downwardly projecting side portions of the carrier run very close to the vertical plane of the rail. Therefore the immediate support for the rail 13 consists of a plurality of planks or stringers 50 upon which the rail is fixed in any suitable manner, and the support for the planks 50 consists of a plurality of vertical posts 51 the lower ends 51' of which are secured at the centers of horizontal footings 52 connected at their outer ends to diagonally arranged inclined posts 53 suitably braced at 54 by diagonal braces of any suitable construction. Longitudinally the posts are connected by longitudinal stringers 55 and along the sides of these stringers and serving to make secure the connection between them and the post are flat metal wear plates or strips 56 against which the rollers 21 bear. All of the weight of the carrier and its load therefore is supported upon the rail 13 through the wheels 12 and the strips 56 through the rollers 21. As suggested in Fig. 3 the rail 13 and the supporting means therefor may be curved in any direction laterally, and as is usual in this type of devices the rail is designed to have any suitable inclines and declines for the purpose of adding to the enjoyment of the apparatus. The supporting means just referred to is sufficient to accommodate the carrier to any of these several movements

laterally, or up and down along and over the track.

As a safety device preventing any possibility of the wheels 12 leaving the rail or the rollers 21 rising above the strips 56 I provide safety rollers 57 journaled upon brackets 58 secured to the stringers 15. These safety rollers 57 are carried beneath the laterally projecting edges of the planks 50 against the bottom surface of which they are adapted to engage in case the carrier is disposed to lift from its main supporting rail. The planks 50 consequently are made enough wider than the posts 51 to accommodate these rollers.

On the upper surface of the upper plank 50 and at the sides of the immediate rail support 50^a are arranged a pair of wear strips 59 with which safety dogs 60 are adapted to cooperate to prevent the retrograde movement of the carrier in the event of failure of the elevating means or the like when the carrier is taking an incline.

I claim:

1. In a pleasure railway, the combination of an elevated mono-rail, of a carrier in the form of an aeroplane movable on said rail and having two parallel bodies on opposite sides of the rail.

2. In a pleasure railway, the combination with a mono-rail and an elevated structure supporting said rail, of a carrier in the form of an aeroplane and comprising two portions arranged upon opposite sides of and depending below said rail.

3. In a pleasure railway, the combination with a mono-rail and an elevated structure supporting said rail, said elevated structure lying essentially in the vertical plane of the rail for a considerable distance beneath the rail, of a carrier comprising two similar body portions supported on opposite sides of and depending below the rail, and anti-friction rollers mounted upon the depending portions of the bodies beneath the rail and rotatable on parallel vertical axes close to the said plane of the rail.

4. The herein described pleasure railway comprising in combination an elevated structure, all of the upper portion of which lies substantially in a vertical plane and in-

cluding a rail support at its top projecting laterally from said plane, a mono-rail supported upon said projecting top portion, and a carrier comprising two body portions on opposite sides of and depending below said rail and having a plurality of anti-friction rollers beneath said projecting portions.

5. In a pleasure railway, the combination of a supporting structure comprising a longitudinally arranged series of spaced vertical posts and laterally inclined bracing means supporting said posts, a mono-rail supported upon the upper ends of said posts and a pair of wear strips extending parallel to each other on opposite sides of the posts well below the mono-rail, and a carrier having a plurality of main supporting wheels running upon the mono-rail and comprising a plurality of similar body members on opposite sides of and depending below the rail, and a plurality of anti-friction rollers journaled on parallel vertical axes on said depending portions of the bodies and cooperating with said strips to prevent the lateral tilting of the carrier.

6. In a pleasure railway, the combination of an elevated stationary support comprising a plurality of spaced vertical posts, supporting and bracing means for the posts connected thereto and spaced materially below their upper ends, a mono-rail and supporting means for the rail on the upper ends of the posts, said supporting means projecting laterally beyond the posts, a pair of wear strips arranged in close parallel relation to each other on opposite sides of the posts at a distance below the laterally projecting mono-rail support, a carrier for passengers having main supporting wheels rolling on the mono-rail and having two body portions on opposite sides of the mono-rail and depending below the same, means connected to the depending portions of the carrier and cooperating with said strips to prevent lateral tilting of the carrier, and means carried by the carrier bodies and projecting beneath the lateral projecting mono-rail support to prevent the lifting of the carrier from the main support.

FRANKLIN M. WILLIAMS.