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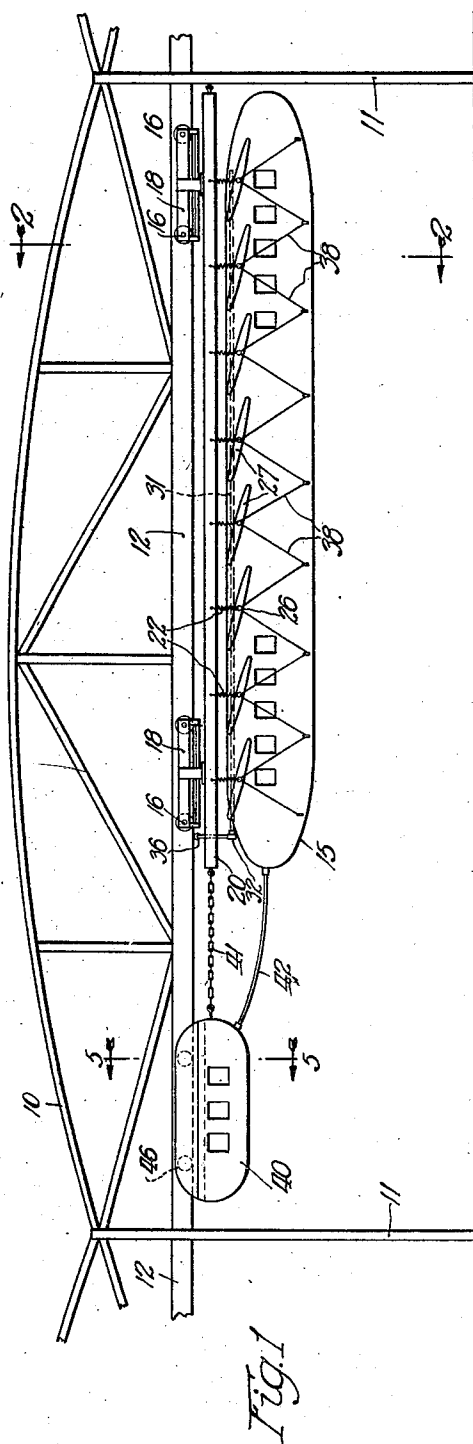
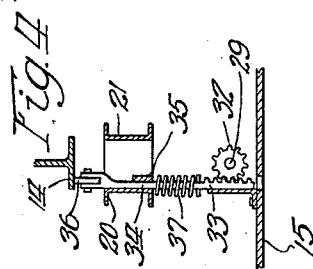
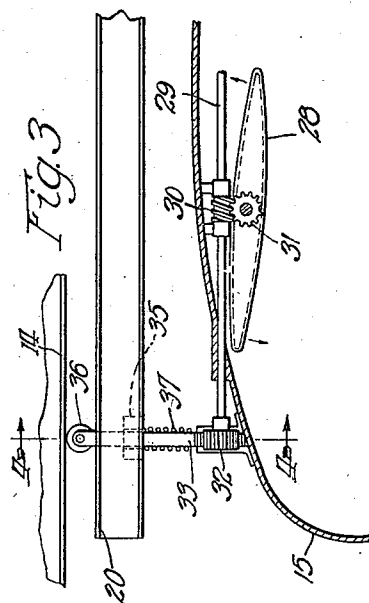
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1,723,352

OVERHEAD RAILWAY

Filed Aug. 13, 1927

3 Sheets-Sheet 1



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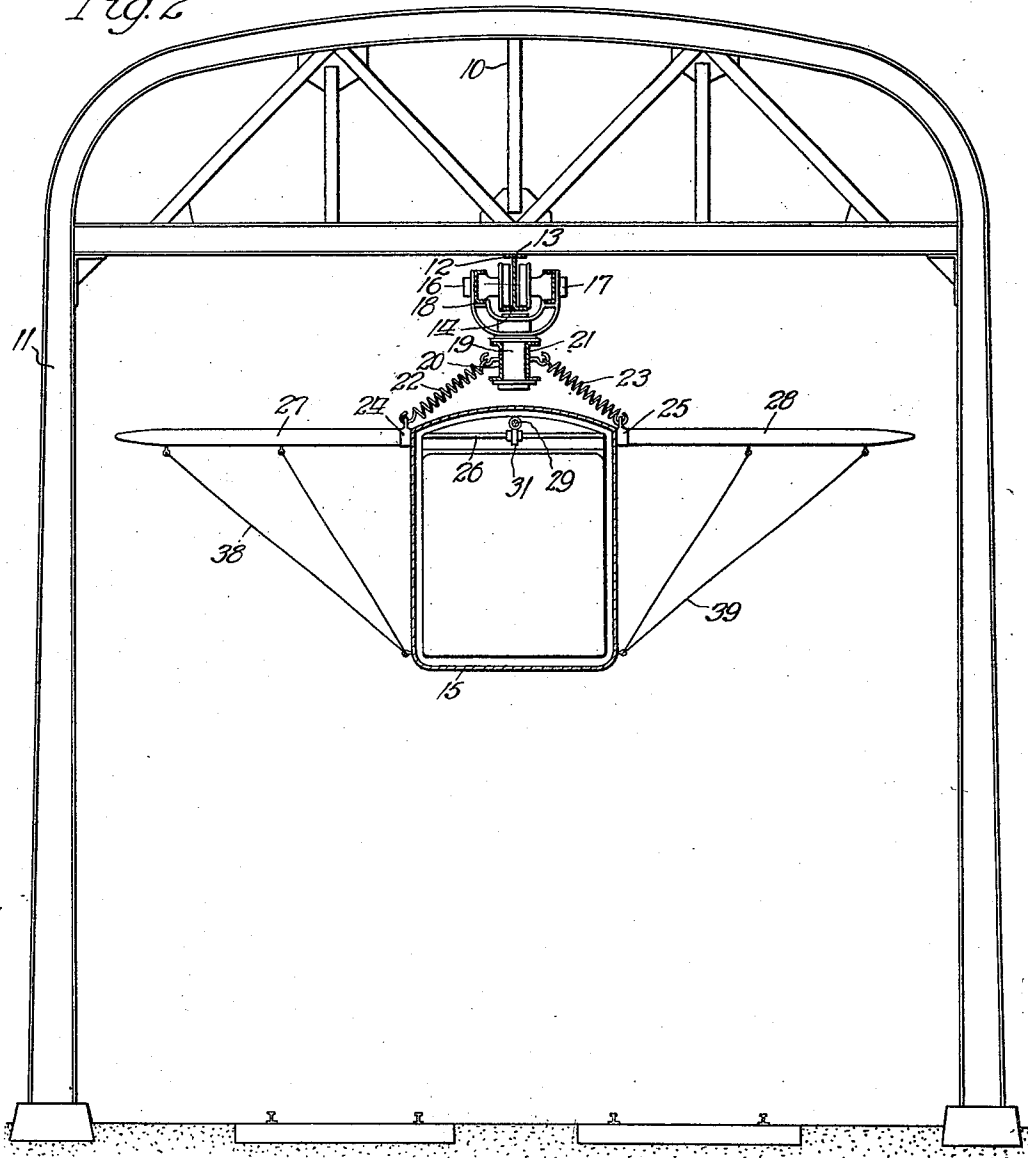
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Fig. 2



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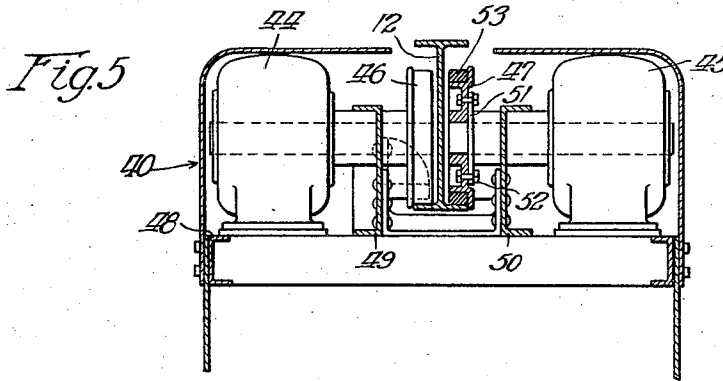
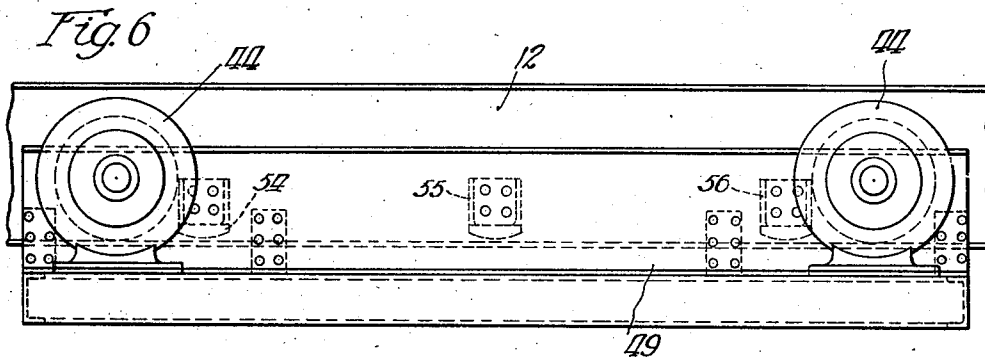
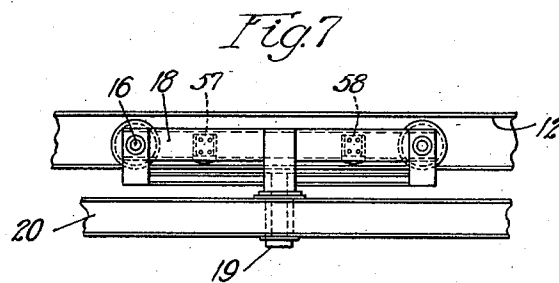
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OVERHEAD RAILWAY

Filed Aug. 13, 1927

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

JOHN T. HOHBERGER, OF CHICAGO, ILLINOIS.

OVERHEAD RAILWAY.

Application filed August 13, 1927. Serial No. 212,721.

My invention relates to overhead railways, and has for its object the provision of a rail and car construction wherein when the car is traveling at high speed the weight upon the rail is reduced in order to prevent subjecting the mechanism to too great a mechanical strain.

It is also an object of this invention to provide an overhead railway car of this character with means whereby the air through which the car is passing will exert a lifting force upon the car to relieve the rail of some or all of its weight.

Another object of the invention is to provide means for regulating the lifting power exerted upon the car by the air. This is desirable because if the lifting power were too great it might raise the car sufficiently to interfere with the proper operation of the truck upon the rail or even to cause serious damage to the car, its supporting mechanism, or the rail.

Another object of the invention is to provide means in combination with a car adapted to be supported by an overhead rail for pulling the car, which means may at the same time be controlled from within the car, but which is not subject to the lifting power exerted upon the car by the air.

Other objects and advantages of the invention will appear as the description proceeds, when taken in connection with the accompanying drawings. However, I wish it to be distinctly understood that I do not intend to limit myself to the exact details shown and described, but that I intend to avail myself of all such modifications as would occur to one skilled in this art and as would fall within the scope of the claims.

In the drawings:—

Fig. 1 is a side view showing the supporting means for the overhead rail and the car mounted in position on the rail;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged detail, sectional view of a certain part of the device;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is a section on the line 5—5 of Fig. 1;

Fig. 6 is an enlarged, fragmentary view of a portion of the structure shown in cross-section in Fig. 5; and

Fig. 7 is a detail view of one of the supporting trucks for the car shown in Fig. 1.

Referring now in detail to the drawings, the numeral 10 illustrates generally a framework supported by means of the transversely extending frame portion 11 and supporting in turn the longitudinally extending rail 12. This rail, as shown more clearly in Fig. 2, consists substantially of an I-beam wherein the top flange 13 is secured to the framework 10 and the lower flange 14 serves as a rail for supporting the wheels carrying the car 15. It will be noted from Fig. 2 that the wheels are arranged in opposing pairs upon the shafts indicated by the numerals 16 and 17, which are mounted in the trucks indicated generally by the numeral 18. These wheels engage the oppositely extending portions of the flange 14 and are spaced a sufficient distance apart to clear the web of the beam 12. Depending from the truck 18 is the pivot member 19 which carries the longitudinally extending channel members 20 and 21, which are secured together in any suitable manner to form a rigid structure.

The car 15 is suspended from the channel members 20 and 21 by means of a plurality of heavy springs 22 and 23. These springs are spaced longitudinally along the car and preferably are of such strength that under normal load they expand but very little in length. These springs are secured to the car by means of link members 24 and 25 which surround a plurality of shafts 26 extending transversely of the car and mounted in suitable bearings therein. These shafts 26 carry at their opposite ends a plurality of blades or wings 27 and 28 which are rigidly secured thereto and adapted to turn with the shafts. The wings 27 and 28, which may be of any suitable material, are spaced longitudinally of the car in the same manner as the springs 22 and 23, so as to divide the weight of the car substantially equally between them. These wings, being pivoted by means of the shafts 26, may be adjusted from a position where they lie substantially in a horizontal plane to a position wherein they slope downwardly toward the rear of the car. The means for accomplishing this adjustment consists of a shaft 29 extending longitudinally of the car and having a series of worms 30 thereon meshing with

small gears 31 on each of the shafts 26, so that upon rotation of the shaft 29 the wings will be turned through the medium of the gears 31 and the shafts 26 into any desired position of adjustment.

At the forward end of the shaft 29, or at any other suitable point, there is provided another gear wheel 32, which meshes with the rack 33 on the upwardly extending rod 34. This rod extends upwardly between the channel members 20 and 21, and, as shown in Fig. 4, is secured by the guide piece 35 to one of the channel members. At the upper end of the rod 34 a roller 36 is provided, which roller engages the lower face of the flange 14. A spring 37 normally maintains the rod 31 pressed downwardly out of engagement with the flange 14. In this position the shaft 29 retains the wings 27 and 28 with their forward ends tipped upwardly so that when the car is in motion the air striking the under faces thereof will exert an upward or lifting force upon them. However, when the car moves upwardly, in response to this lifting force or for any other reason, the rod 34 coming in contact with the flange 14 will be pressed downwardly relatively to the gear wheel 32 and cause it to rotate and thereby bring, through the medium of the shaft 29 and the worm 30 and gear 31, the wings 27 and 28 toward a horizontal plane, and thus cut off the lifting force exerted thereon by the air.

Means for pulling the car 15 is provided in the motor car indicated generally by the numeral 40, which is connected by means of the chain 41 or other suitable drive means to the beams 20 and 21. This motor car may be of any suitable type, that in the present instance consisting of an electric motor installation, which has control means (not shown) extending into the main car through the flexible conduit indicated at 42. By spacing the motor car from the main car the weight on the overhead rail is distributed over a greater length than it would be if the motors were placed in the main car and this makes it possible to use a much lighter overhead rail.

As shown in Fig. 5, the motor car is provided with a series of motors, two of which are shown in this figure at 44 and 45, each motor carrying a drive wheel, indicated at 46 and 47, which drive wheel rests upon the flange 14. The motors are supported by means of frame members 48, 49, and 50, and the shafts to which the drive wheels are secured may be suitably mounted on these frames in anti-friction bearings of the type commonly used in this sort of work. These drive wheels, as indicated at 47, are detachably mounted on their respective motor shafts by means of a flange 51 secured upon the shaft and the bolts 52 extending through the web of the wheel.

In order to obtain a more noiseless drive, the wheels are provided with non-metallic rim portions 53, which may be of rubber or other suitable compounds such as are used on railway car wheels or trucks.

Means have been provided for preventing the derailing of the device in case one of the wheels should break, and this means consists of a plurality of shoes, indicated at 54, 55 and 56 in Fig. 6, which shoes project inwardly from the framework carrying the supporting and driving wheels, and extend over the flange 14. While only one of these shoes is shown in Fig. 5, it is to be understood that they are provided on both sides of the beam 12, so that failure of a wheel on either side would not derail the car, since these shoes would simply drop down upon the flange 14 and serve to support the car until it could be brought to a stop. Similar means are provided upon the trucks for the main car 15, as shown at 57 and 58 in Fig. 7.

The wings on the main car 15 may be braced in any suitable manner. As shown, they are provided with bracing wires 38 and 39, which are secured to the wings substantially along the axis of rotation thereof and are extended downwardly therefrom and inwardly to the bottom of the car 15.

From the above description, it is thought that the construction and operation of this device will be clear to those skilled in this art.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:

1. An overhead railway construction including in combination a guiding and supporting rail, a car, a truck having wheels thereon engaging said rail, suspension springs forming the sole connection between said car and truck, and laterally projecting wings on said car.

2. An overhead railway construction including in combination a guiding and supporting rail, a car, a truck having wheels thereon engaging said rail, suspension means connecting said car and truck, laterally projecting wings on said car, said wings being inclined downwardly from front to rear whereby the air striking them when the car is moving exerts a lifting force upon said car, and means operatively connected to said wings and actuated by movement of said car upwardly toward said rail under the lifting influence of said wings to reduce said downward inclination of said wings.

3. An overhead railway construction including in combination a guiding and supporting rail, a car, a truck having wheels thereon engaging said rail, suspension means connecting said car and truck, laterally projecting wings on said car, said wings being inclined downwardly from front to rear whereby the air striking them when the car

is moving exerts a lifting force upon said car, and means operatively connected to said wings and engaging said rail for moving said wings to reduce said downward inclination of said wings upon movement of
5 said car upwardly toward said rail.

4. An overhead railway construction including in combination a guiding and supporting rail, a car, a truck having wheels
10 thereon engaging said rail suspension means connecting said car and truck, laterally projecting wings on said car, said wings inclining downwardly from front to rear whereby the air striking them when the car
15 is moving forward exerts a lifting force upon said car, and means operatively connected to said wings for controlling their inclination by the vertical movement of said car relative to said rail.

20 5. An overhead railway construction in-

cluding in combination an overhead track, supporting means therefor, a car, means for suspending said car from said track, laterally projecting wings on said car and means
25 operatively connected with said wings for controlling their inclination by the vertical movement of said car relative to said track.

6. An overhead railway construction including in combination an overhead track, supporting means therefor, a car, means for
30 suspending said car from said track, laterally projecting wings on said car and means operatively connected with said wings for controlling their inclination by the vertical movement of said car relative to said track, 35
said means including a member carried by said car for engaging said track.

In witness whereof, I hereunto subscribe my name this 6th day of August, A. D. 1927.

JOHN T. HÖHBERGER.