May 18, 1926.

1,585,605

A. RUSSO

AMUSEMENT DEVICE

Filed July 1, 1925

3 Sheets-Sheet 1

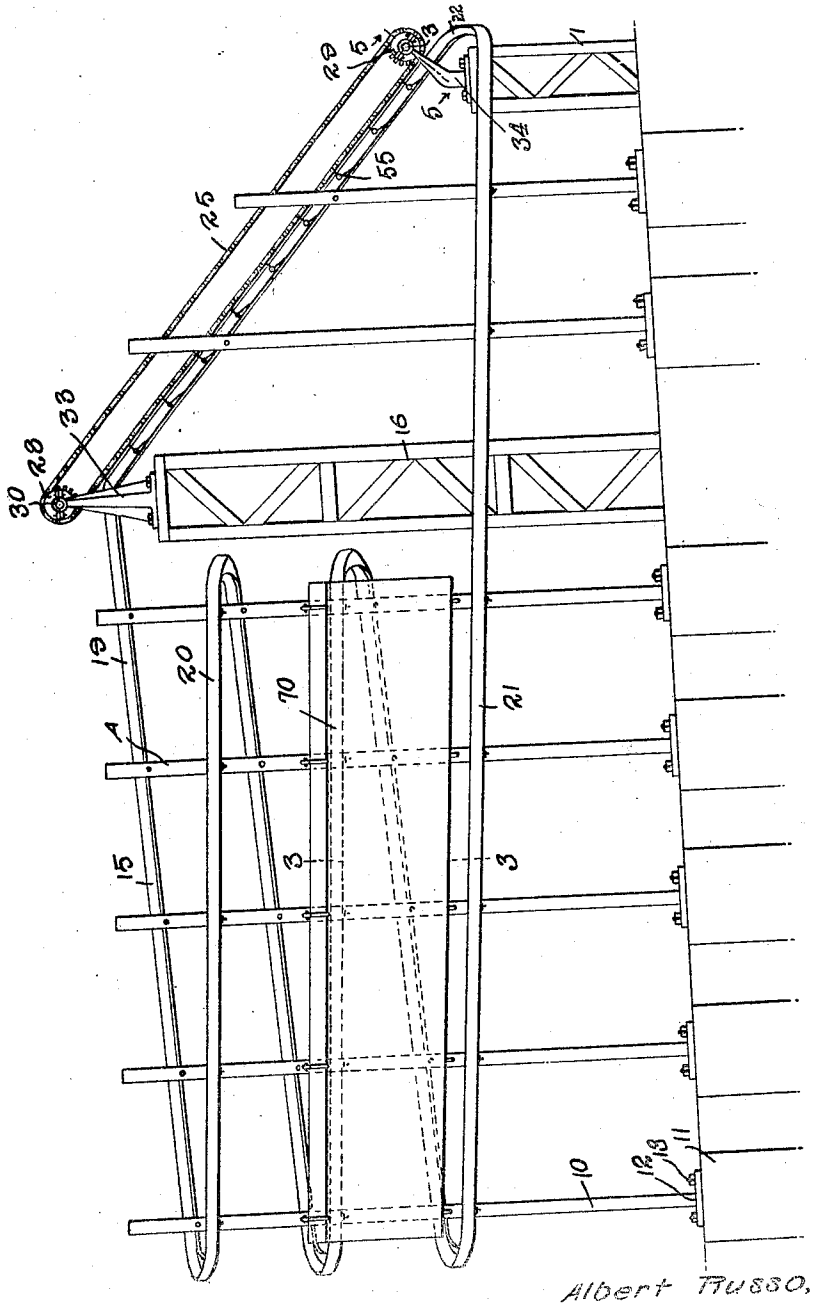

Fig. 1.

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3 Sheets-Sheet 2

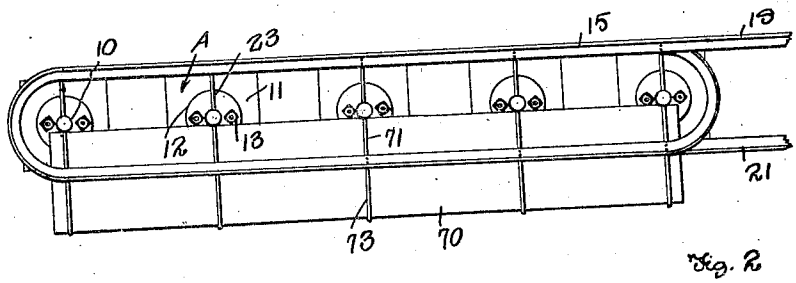

Fig. 2

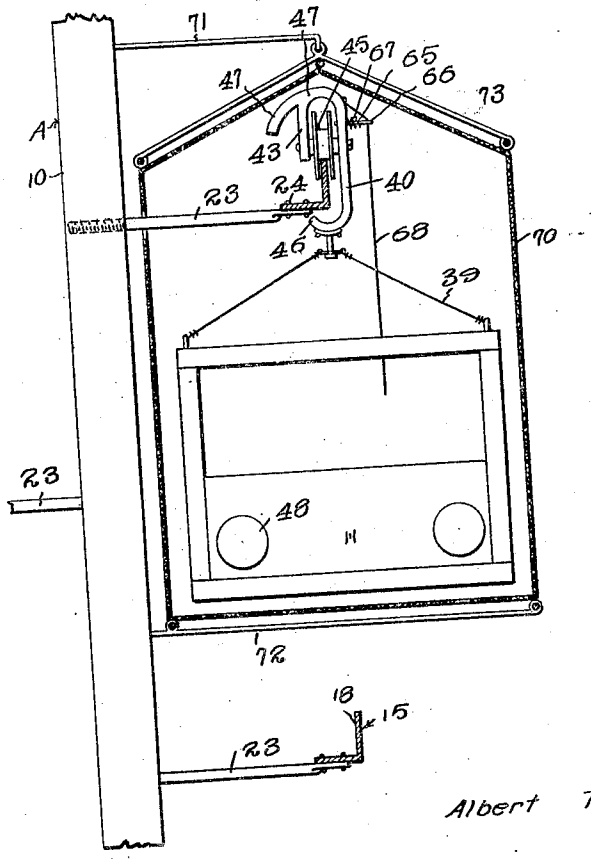

Fig. 3.

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3 Sheets-Sheet 3

Fig. 4.

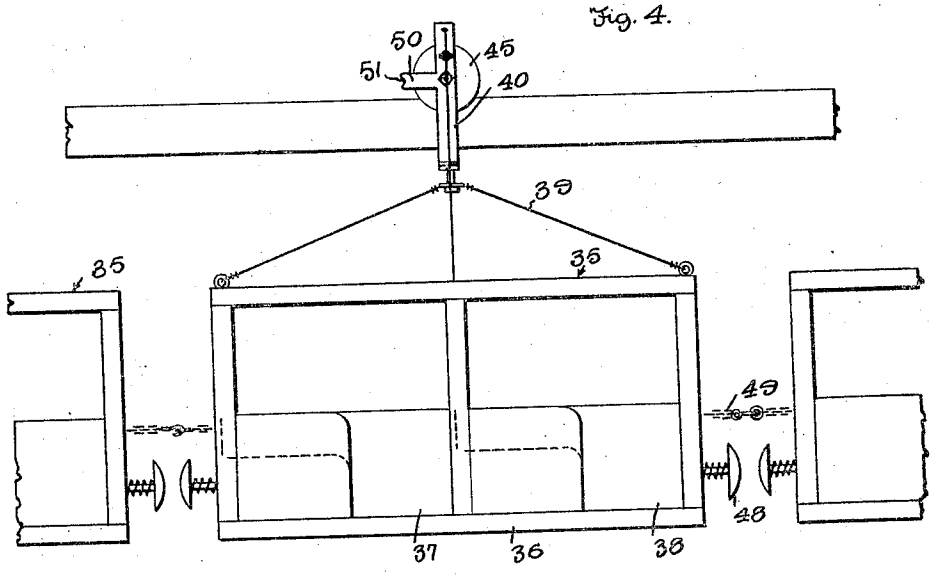


Fig. 5.

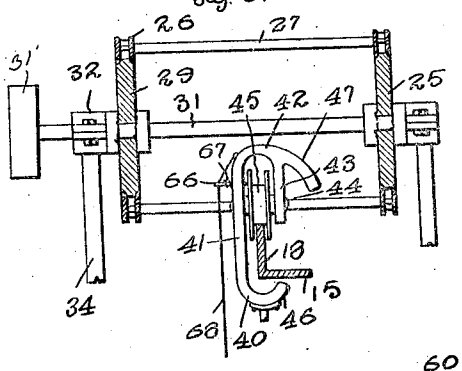
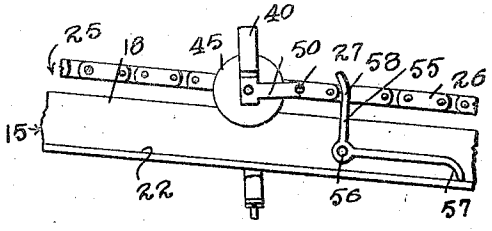


Fig. 6.



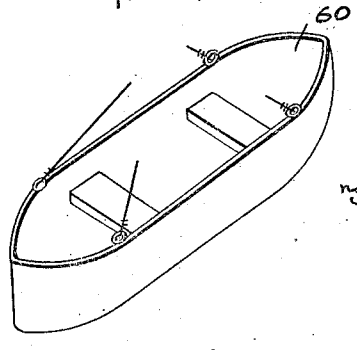


Fig. 7.

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Patented May 18, 1926. 1,585,605

UNITED STATES PATENT OFFICE.

ALBERT RUSSO, OF PITTSTON, PENNSYLVANIA.

AMUSEMENT DEVICE.

Application filed July 1, 1925. Serial No. 40,968.

This invention relate to amusement devices of the type employed in amusement parks and the primary object of the invention is to provide a monorail gravity operated amusement railroad, which will afford a maximum amount of pleasure for the users thereof with a maximum amount of safety.

Another object of the invention is to provide novel means for arranging the monorail track around a series of longitudinally alined supporting standards, whereby the device will occupy a minimum amount of space, and thereby permit the same to be utilized in the central portion of an amusement park to permit the users of the device to have an unobstructed view of the entire park.

A further object of the invention is to provide novel means for suspending the cars from the track and novel means for preventing the cars from jumping the track irrespective of the speed of the cars.

A further object of the invention is to provide novel means for permitting the control of the speed of the cars by the passengers thereof, said means embodying a novel brake for engaging the supporting wheels of the cars which engage the track.

A further object of the invention is to provide a novel elevated amusement monorail railroad embodying a track disposed spirally about a plurality of supporting standards arranged in a single row, and novel means for elevating the cars to the uppermost run of the track to permit the cars to coast down the spiral track by gravity.

A further object of the invention is to provide novel means for preventing the slipping back of the cars during the elevation of the cars to the uppermost run of the track in case of some unforeseen accident to the elevating means.

A still further object of the invention is to provide an amusement device of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture and one which can be incorporated with an amusement park at a very small cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, in which drawings:

Figure 1 is a side elevation of the improved amusement device,

Figure 2 is a fragmentary top plan view of the same,

Figure 3 is a transverse section taken on the line 3—3 of Figure 1 showing one of the cars on the supporting track illustrating the novel type of tunnel which can be utilized with the amusement device and the novel means for supporting the tunnel,

Figure 4 is an enlarged fragmentary side elevation of the improved amusement device illustrating the type of cars utilized and the means for connecting a series of cars together to form a train,

Figure 5 is a detail transverse section taken on the line 5—5 of Figure 1 illustrating the elevating means,

Figure 6 is a fragmentary longitudinal section through the elevating means illustrating the safety device incorporated therewith,

Figure 7 is a detail perspective view of a modified type of car which can be utilized therewith.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates the improved amusement device, which comprises a plurality of longitudinally alined upright supporting members 10. These uprights 10 are arranged in a single row and can be constructed in sections to facilitate the assembling thereof.

It is preferred to provide concrete bases or foundations 11 for the uprights and as shown the lower ends of the uprights are provided with flanges 12 which can be bolted as at 13 to the said concrete foundations 11.

These uprights 10 are adapted to support the novel monorail track 15 and in a connection with the said posts or uprights are provided towers 16 and 17, which can be constructed and braced in any preferred way. These towers 16 and 17 also form supports for the track 15 but are employed more particularly for supporting the elevating means 25 for the carriages 35, as will be hereinafter more fully described. The front tower 17 ends in a plane below the tops of the

uprights 10 and the inner tower 16, as can be clearly seen by referring to Figure 1 of the drawings. The track 15 is of a novel construction and is preferably formed from angle iron with one flange disposed uppermost and in a vertical plane, as indicated by the reference character 18. The track 15 is arranged to provide an uppermost inclined run 19 and is then wound spirally about the opposite sides of the posts 10, as at 20, which are arranged in advance of the towers 16 and 17. The track terminates in a lower inclined run 21 which extends to the forward lowermost tower 17. These runs 19 and 21 incline in opposite directions and are connected together by a sharp inclined run 22 which extends from one tower 17 to the upper end of the inner tower 16. The track is supported in a novel manner from the uprights 10 and the towers 16 and 17 by the use of outwardly extending arms 23 which are secured to said uprights and towers in any desired way. The outer ends of the arms are bolted as at 24 to the horizontal flanges of the track. By referring to Figure 2 of the drawings it can be seen that the track extends on the opposite sides of the uprights and thus the cars which will be hereinafter more fully described circle the said uprights. It is to be noted that the arms 23 extend laterally from the opposite sides of the uprights.

The means 25 provided for elevating the carriages to the uppermost run 19 of the track includes an elevator consisting of a pair of spaced sprocket chains 26. These sprocket chains 26 are connected together by transversely extending rods 27, the purpose of which will be hereinafter more fully described. The upper and lower ends of the sprocket chains are trained about upper and lower pairs of sprocket wheels 28 and 29 and these upper and lower pairs of sprocket wheels 28 and 29 are secured in any preferred way to upper and lower shafts 30 and 31. These shafts are rotatably mounted in suitable bearings 32 which are formed on upper and lower brackets 33 and 34 secured respectively to the upper ends of the inner and outer towers 16 and 17. The rods 27 extend across the inclined portion 22 of the track 15 and form means for engaging the cars to pull the cars up the said incline.

The cars or carriages 35 can be of any preferred type or character and as shown include the body 36 provided with a pair of compartments 37 and 38. These compartments 37 and 38 are provided with suitable seats for the passengers. Each car is supported by means of cables 39 from a supporting hanger 40 which is of novel construction and forms a salient feature of the invention. The hanger 40 includes an upright body 41 having formed on its upper end an arcuate arm 42 which terminates in a depending leg 43 arranged in spaced parallel relation to the body 41. The leg and body carry a shaft 44 on which is rotatably mounted a flanged wheel 45 for engaging the vertical flange 18 of the angle bar shaped track 15. The lower end of the body 41 is provided with an arcuate arm 46 which underlies the horizontal flange of the track. This arm 46 is slightly spaced from the horizontal flange so as to be normally out of engagement therewith but the distance between the arm and track is of a less distance than the width of the flanges on the wheel 45, so that the flanges will be prevented from riding off of the track. In case however, that through some reason or other the wheel 45 should ride off of the track, the hanger 40 is provided with a hook 47 for catching on to the said track.

The opposite ends of the cars or carriages 35 can be provided with suitable shock absorbing bumpers 48 which can be of any preferred character and these bumpers can be arranged at the upper and lower ends of the carriages if so desired or at the lower ends as shown. If preferred two or three of the carriages can be connected together to form a trainer, as shown in Figure 4 of the drawings and in this instance the opposite ends of the carriages can be provided with suitable coupling means 49. The hangers 40 are provided with rearwardly projecting legs 50 which can be formed on the body portions 41 and the legs 43 thereof and the free ends of these legs 50 are notched as at 51 to form cleats for receiving the rods 27 utilized for connecting the elevating sprocket chains 26 together. It is obvious that when the chains are in motion, that the rods 27 will sweep over the track and as a car starts to ride up the inclined portion 22 that the rod 27 will sweep in back of the same and catch the legs 50 and push the car up the said incline.

In order to prevent the sliding back of the carriages when the same are being pushed up the incline, in case the chains should break, I provide at equi-distantly spaced points on the said portion 22 of the track 15 a plurality of bell crank shaped dogs 55 which are pivotally mounted at their angles, as at 56 to the vertical flanges 18 of the said track. The outer end of the lower arm of each dog is provided with a depending extension 57 for normally engaging the horizontal flange of the track. The upright arm 58 of each bell crank is disposed in the path of the wheel 45 and when the carriages are being moved up the inclined way 22 the wheels 45 will strike the upright arms and rock the dogs on their pivots. However in case of accident and the carriages start downward, the wheels 45 will engage the inner face of the dogs and swing the same forwardly which will move the extensions 57 downward

into engagement with the horizontal portion of the track and thus prevent swinging movement of said dogs which will hold the carriages against further movement.

As heretobefore stated any preferred type of carriage can be utilized and in Figure 8 I have shown a carriage indicated by the reference character 60 which is in the shape of a boat. The boat or carriage 60 is extended in the same manner from the hangers as are the carriages 35.

In operation of the improved amusement device, a loading platform can be built adjacent to the uppermost end of the inclined run 21 at which point the carriages can be loaded with the passengers. After the carriages are loaded the same are allowed to ride down the inclined way at 21 and the carriages will obtain sufficient momentum to carry the same partially up the inclined way 22 at which time the legs 50 of the hangers will be engaged by the cross rods 27 of the elevator and the carriages will then be moved positively up the way to the upper end of the inclined run 19 of the track. The carriages now gravitate down the spiral track and are brought to a stop at the loading platform.

In case the carriages obtain too great a speed down the spiral track, brakes 65 are provided. These brakes 65 are in the nature of sliding shoes 66 carried by the hangers 40 and these shoes are adapted to engage the flanges of the wheels 45. Spring means 67 are coiled about the shoes to normally hold the same out of engagement with the wheels. The shoes can be moved in engagement with the said wheels by means of a suitable cable 68 which has its upper end attached to the bracket. The lower end of the cable depends in the car so that the same can be operated by one of the passengers or an attendant.

In order to make the device more attractive, one of the runs of the spiral track can be provided with a tunnel 70. This tunnel 70 is preferably constructed from heavy canvas and is shaped to permit the ready passage of a car therethrough. This canvas tunnel 70 is supported by suitable upper and lower brackets 71 and 72 connected with the uprights. The upper bracket 71 carries an inverted V-shaped support 73 to which is directly attached the canvas tunnel. The bottom of the canvas tunnel is connected directly to the lower bracket 72.

From the foregoing description, it can be seen that I have provided a novel amusement device of an exceptionally simple and durable construction, which will occupy a minimum amount of space and permit a maximum amount of pleasure to be derived therefrom.

The means for raising the carriages up the inclined way can be operated in any preferred manner from a suitable prime mover (not shown). As disclosed in the drawing the lower shaft 31 for the carriage elevating means is provided with a drive pulley 31' for permitting the positive rotation of said shaft.

Changes in details may be made without departing from the spirit or scope of this invention, but:

What I claim as new is:

1. An amusement device comprising a single row of spaced uprights, a plurality of supporting arms extending outwardly from the opposite sides of said uprights, an endless track secured to said arms extending spirally about certain of said uprights, the track including an inclined way connecting the upper and lowermost ends of the track together, carriages adapted to travel on the track including hangers for supporting the carriages, rollers rotatably carried by the hangers engaging the track, and means for moving the carriages up the inclined way including a pair of spaced sprocket chains arranged on each side of the inclined way, upper and lower pairs of sprocket wheels supporting the sprocket chains, means for driving certain sprocket wheels, transversely extending rods connecting the chains together extending across the inclined ways, and means formed on the hanger adapted to be engaged by said rods.

2. A monorail amusement elevated railroad comprising a plurality of spaced uprights, an endless track including a spiral portion extending about certain of the uprights, oppositely extending arms secured to the uprights supporting the track, the track also including an inclined portion connecting the upper and lower ends of the spiral portion together, hangers for the track, rollers carried by the hangers mounted upon the track, carriages depending from the hangers, means for elevating the carriages to the uppermost portion of the spiral part of the track including a pair of spaced sprocket chains, upper and lower pairs of sprocket wheels receiving the chains for operating certain of the sprocket wheels, transversely extending rods connecting the chains together extending across the inclined portion of the track, rearwardly extending notched legs formed on the hangers adapted to be engaged by the rods when the hangers engage the inclined portion of the track, and a brake carried by the hangers for engaging the rollers to regulate the speed of travel of the carriages down the spiral portion of the track.

3. An elevated monorail amusement railroad comprising a single row of longitudinally alined uprights, a plurality of arms secured to the uprights extending outwardly from the opposite sides thereof, an endless track including a spiral portion wound about certain of the uprights and an inclined portion connecting the upper and lower ends

of the spiral portions together, means connecting the track of said arms, hangers for receiving the track, rollers rotatably carried by the hangers mounted upon the track, depending carriages secured to the hangers, means for elevating the carriages up the inclined portion of the track including a pair of spaced endless sprocket chains, transversely extending rods connecting the sprocket chains together, towers disposed in longitudinal alinement with the uprights, bearing brackets carried by the upper ends of the towers, rotatable shafts carried by the bearing brackets, sprocket wheels secured to the shafts receiving the sprocket chains, means for rotating one of the shafts, rearwardly extending notched legs formed on the hangers adapted to be engaged by the rods when the hangers are positioned on the inclined portions of the track, and means for preventing the downward movement including a plurality of bell crank shaped dogs, means rockably mounting the dogs on the tracks at their angles, one of the arms of the dogs being normally in engagement with the track, and the other arm being disposed in the path of the rollers.

4. In a monorail amusement elevated railroad, an angle bar shaped track including a vertical flange and a horizontal flange, a carriage arranged below the track, a hanger for supporting the carriage including an upright body, an arcuate arm formed on the upper end of the body, a depending leg formed on the arm disposed in spaced parallel relation to the body, a shaft supported by the leg and body, a flanged wheel rotatably mounted upon the shaft receiving the vertical flange of the track, an arcuate arm formed on the lower end of the body disposed below the track in spaced relation thereto, the space being of a less distance than the width of the flanges on the roller, and a hook formed on the upper end of the hanger extending outwardly from said body.

5. In an elevated monorail amusement device, a plurality of uprights, a plurality of supporting arms extending outwardly from the opposite sides of the uprights, a track secured to the outer ends of the arms, carriages extending below the tracks, hangers supporting the carriages and receiving the tracks, rollers carried by the hangers engaging the tracks, and a tunnel for the tracks receiving the same and of a sufficient size to permit the passage of the carriages therethrough including a flexible body, and upper and lower brackets secured to the uprights receiving said flexible body.

In testimony whereof I affix my signature.

ALBERT RUSSO.