

S. LIUNI.  
AMUSEMENT DEVICE.  
APPLICATION FILED SEPT. 12, 1921.

1,417,754.

Patented May 30, 1922.

3 SHEETS—SHEET 1.

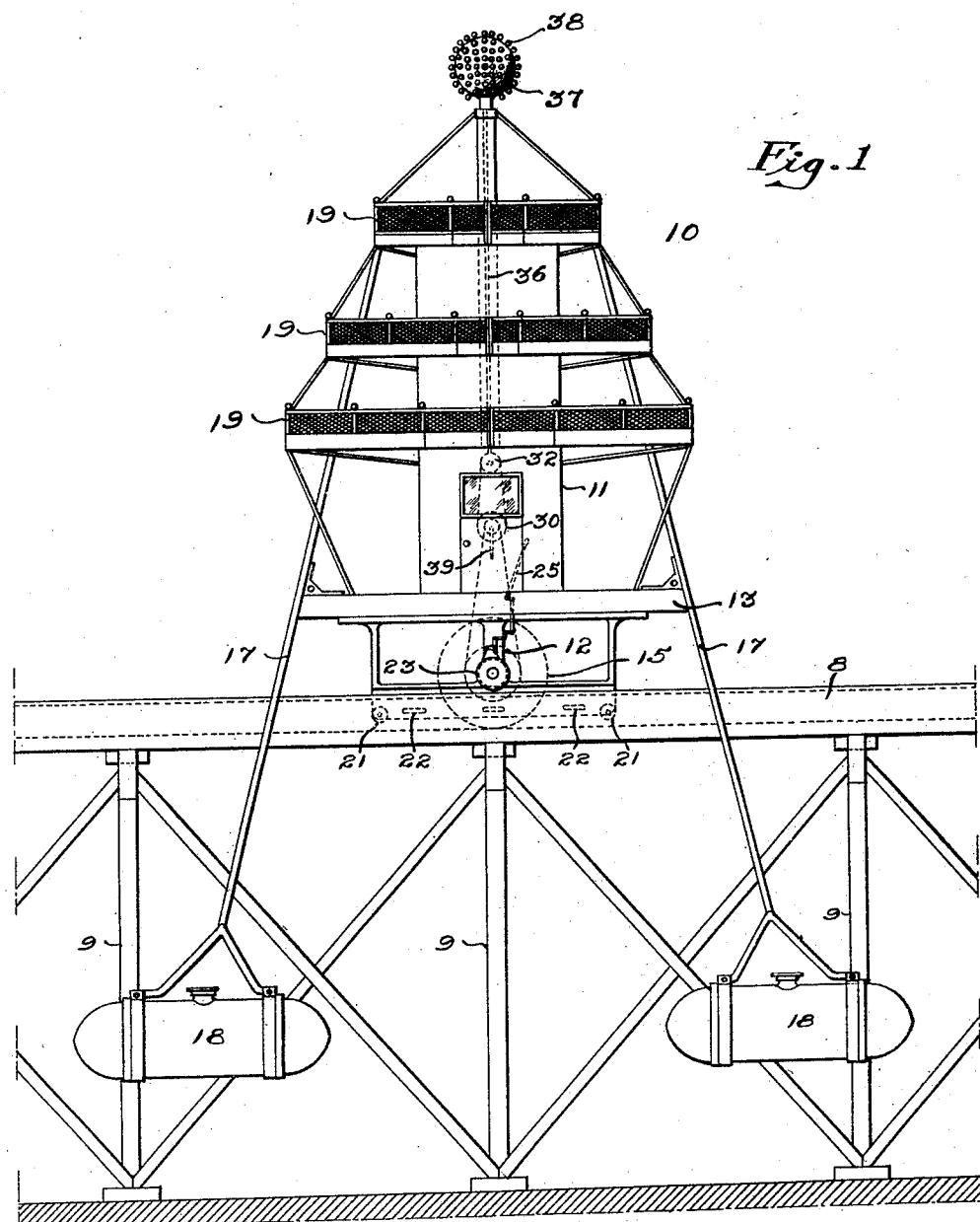


Fig. 1

Witnesses,  
Spencer W. Megonegal,  
Augustus B. Cappa

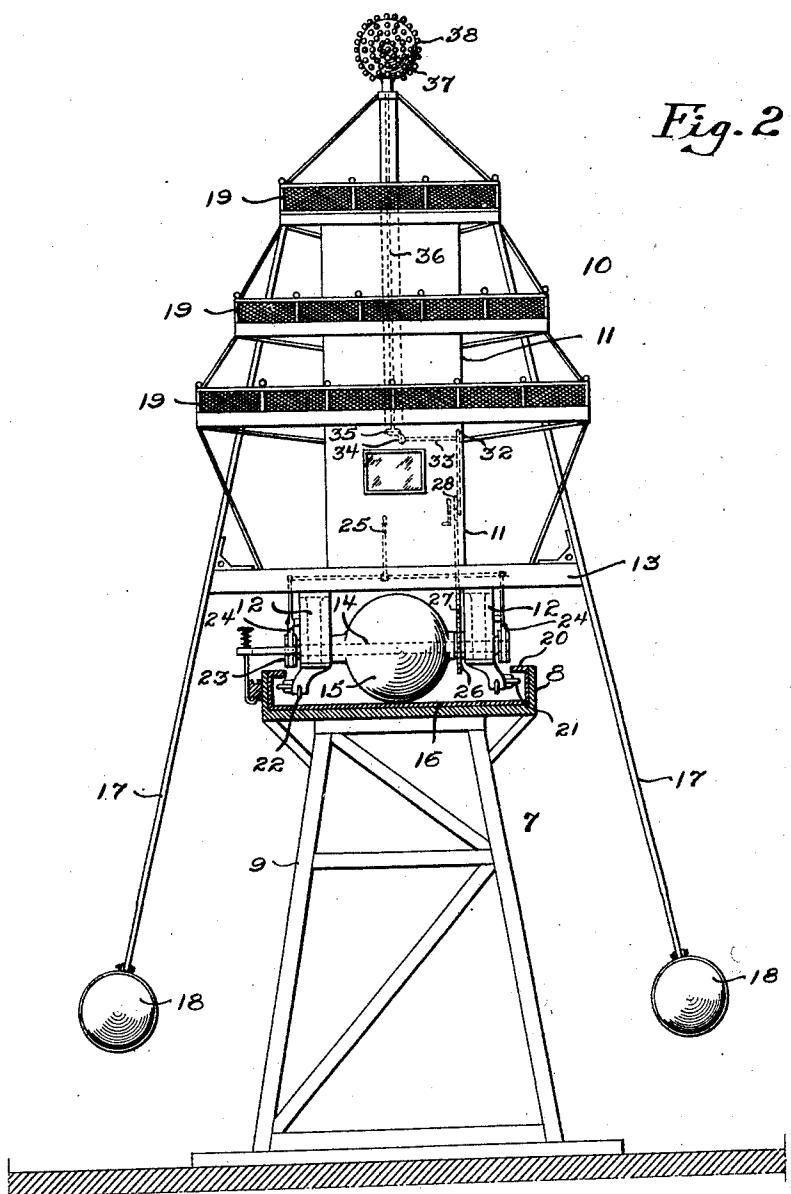
Inventor.  
Salvatore Liuni,  
by Joshua R. Tolle  
his Attorney.

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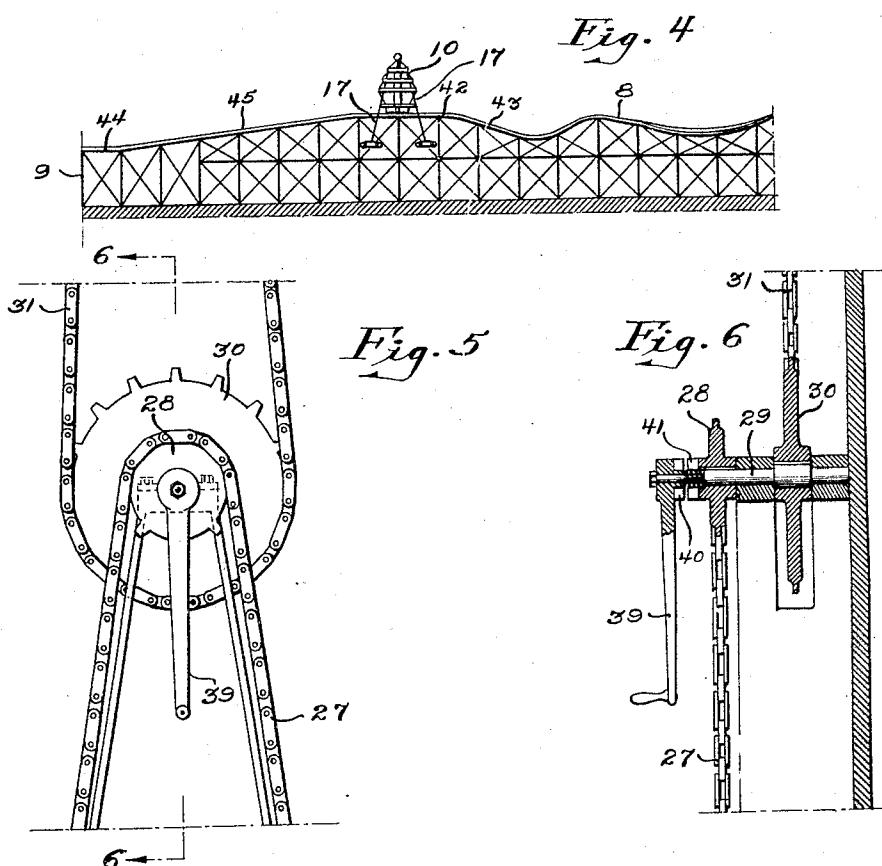
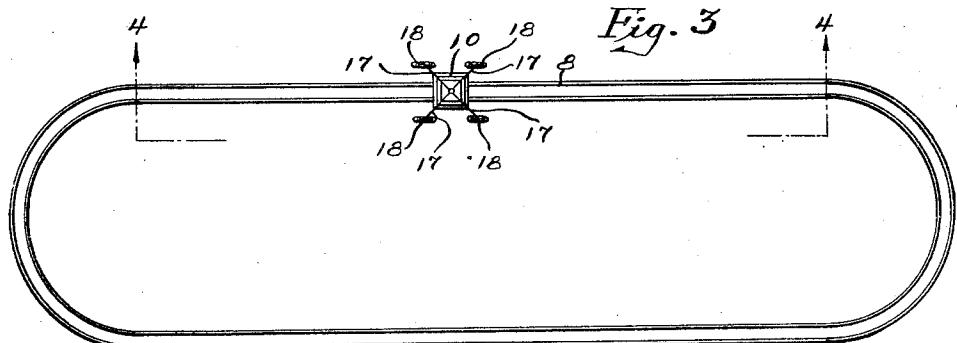
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3 SHEETS—SHEET 3.



Witnesses,  
Spencer W. Megonegal,  
Augustus B. Copper

# UNITED STATES PATENT OFFICE.

SALVATORE LIUNI, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO RAYMOND KOON AND ONE-THIRD TO DOMENICO CAIMI, BOTH OF PHILADELPHIA, PENNSYLVANIA.

## AMUSEMENT DEVICE.

1,417,754.

Specification of Letters Patent. Patented May 30, 1922.

Application filed September 12, 1921. Serial No. 500,118.

To all whom it may concern:

Be it known that I, SALVATORE LIUNI, a subject of the King of Italy (having declared his intention of becoming a citizen of the 5 United States), residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Amusement Devices, of which the following is a specification.

One object of my invention is to provide a novel amusement device which can be used to afford pleasure and as such is adapted for use in amusement parks for transporting 15 passengers in a novel manner or it can be made on a smaller scale and used as a toy.

Another object is to make the device of my invention of a strong and durable construction.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in 25 which—

Figure 1 is a fragmentary side elevation illustrating a device made in accordance with my invention,

Figure 2 is a transverse sectional elevation illustrating said device,

Figure 3 is a diagrammatic top plan view illustrating my improved device showing the carriage in its supporting position on the runway,

Figure 4 is a section taken on the line 4—4 of Figure 3,

Figure 5 is an enlarged fragmentary view showing certain of the features of my invention, and

Figure 6 is a section taken on the line 6—6 of Figure 5.

Referring to the drawings, 7 represents a runway having an elevated trough 8 which is supported on a trestle structure 9. This 45 trough as shown in Figures 3 and 4 may be made continuous so as to include various inclines so that the uppermost surface of the trough will be undulated for a purpose hereinafter described.

50 A vehicle or carriage 10 includes a tower 11. Bearings 12 depend from the bottom 13 and serve to support an axle 14. A roller 15 in the form of a ball such for example as

a steel covered ball is mounted on the axle 14 between the bearings as clearly shown in 55 Figure 2. This roller is adapted to roll on the upper surface 16 of the trough 8. The tower 11 includes four rigid suspension rods 17 which depend to a position below the roller 15 and at their lower ends these suspension rods have secured thereto weights 18 which form counter-balances. As viewed from Figures 1 and 2, it will be noted that the suspension rods 17 flare downwardly with respect to the ball roller and the ball 65 roller is centrally disposed with respect to the weights 18. The tower 11 is preferably provided with a number of balconies 19 and if the device is used in a pleasure park or the like persons may occupy spaces in the 70 balconies during the movement of the vehicle as will be described hereinafter.

The trough 8 is preferably provided with inwardly extending flanges 20 at its top and the bearings 12 serve to support wheels 21 75 which extend under the flanges 20 but are normally spaced therefrom. These wheels 21 serve as guide rollers to operate in contact with the sides of the trough to insure proper guidance of the vehicle over the runway and I also preferably provide other guide wheels 22 for engagement with the surface 16 of the trough to limit the tilting movement of the tower in the direction of the length of the trough; it being noted that 85 the guide wheels 21 serve as limiting means for the tilting of the tower transversely to the length of the runway and also to limit the swerving movement of the tower in substantially horizontal planes. The axle 14 90 has brake drums 23 secured thereto and brake bands 24 engage the drums 23. These brake bands may be connected with any suitable power operating device and I have illustrated a lever 25 which when actuated will 95 cause the brake bands to frictionally engage the drums and thereby stop the rotation of the axle 14 and roller 15.

A sprocket wheel 26 is secured to the axle 14 and is connected by a chain 27 to a 100 sprocket wheel 28; said sprocket wheel 28 being secured to a shaft 29 mounted in suitable bearings in the tower 11. The shaft 29 has a large sprocket wheel 30 secured thereto and this sprocket is connected by a 105 chain 31 to a sprocket 32 on a shaft 33. The

shaft 33 is operatively connected by beveled gears 34 and 35 to an upright shaft 36. This shaft 36 extends beyond the top of the tower and supports a ball 37 having thereon a number of electric lamps 38. It will thus be noted that when the axle 14 is rotated that the ball 37 will be rotated and electric current can be supplied in any suitable manner so as to illuminate the lamps 38.

10 A lever 39 is slidably mounted on the shaft 29 and has a clutch portion 40 adapted to be moved into engagement with a clutch portion 41 on the sprocket wheel 28 so that by moving the lever toward the sprocket 28 so as to engage the clutch portions 40 and 41 the sprocket 28 can be rotated and the axle 14 and ball roller 15 can also be rotated.

15 The carriage starting from the plane portion 42 of the runway 7 will roll by gravity down the incline 43 of the runway and owing to the inertia will travel up the slight inclines and down the declines of the runway throughout the entire path prescribed by 20 the runway. If for any reason the vehicle should stop the roller 15 can be actuated through the medium of the lever 39 or other suitable source. When the vehicle reaches the lowermost portion 44 it can be moved 25 up the incline 45 to the plane portion 42 either by the lever 39 or by any other suitable hoisting means.

30 It will be noted that the weight of the counter-balances 18 is equal to the weight 35 of the balance of the carriage 10 and these counter-balances are preferably made in the form of pointed cylinders which can be metal covered and filled with sufficient sand to properly balance the mechanism. During 40 the movement of the carriage the ball roller permits the tower to tilt in various directions as is obvious from the construction illustrated and above described. However, the counter-balances are sufficiently heavy 45 to return or move the carriage to its upright position after having tilted due to the various undulations of the trough. The various guide wheels serve as additional means and may be provided to limit the tilting 50 movement of the device during its movement over the runway.

55 As previously stated if it is desired to check the movement the same can be done by operating the lever 25.

60 While I have described my invention as taking a particular form, it will be understood that the various parts of my invention may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

65 Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:—

1. A device of the character described including means providing a runway having an undulated upper surface; a carriage having a single ball adapted to run on said surface of the runway; and counter-balancing means for said carriage; substantially as described. 70

2. A device of the character described including means providing a runway having an undulated upper surface; a carriage having a single ball adapted to run on said surface of the runway; and counter-balancing means for said carriage, said carriage including a tower projecting above said ball roller; substantially as described. 80

3. A device of the character described including means providing a runway; a carriage having a single ball roller adapted to run on said runway; and counter-balancing means for said carriage; substantially as described. 85

4. A device of the character described including means providing a runway; a carriage having a single ball roller adapted to run on said runway, said carriage having a tower extending above said ball; and counter-balancing means depending from said carriage to a position below said ball roller; 90 substantially as described. 95

5. A device of the character described including means providing a runway; a carriage having a ball roller adapted to run on said runway, said carriage having a tower 100 extending above said ball; and counter-balancing means depending from said carriage to a position below said ball roller, said counter-balancing means including weights spaced apart at both sides of the runway; 105 substantially as described.

6. A device of the character described including means providing a runway having an undulated upper surface; a carriage having a single ball roller adapted to run on said surface of the runway; and counter-balancing weights for said carriage located on both sides of said runway normally forward and to the rear of a vertical plane extending through the axis of said roller transversely 110 to the length of said runway; substantially as described. 115

7. A device of the character described including a runway in the form of a trough; a carriage including a single ball roller adapted to run on the upper surface of the bottom of the trough; and means located between the sides of the trough operative to limit the tilting movement of the carriage due to engagement with the sides of the 120 trough; substantially as described.

8. A device of the character described including a runway; a carriage including a single ball roller adapted to run on said runway; and means for limiting the tilting 130

movement of said carriage in the direction of the length of said runway during movement of said roller over said runway; substantially as described.

5 9. A device of the character described including a runway having an undulated upper surface; a carriage including a roller adapted to run by gravity on said undulated surface of the runway; independent means  
10 operative to move said roller; and means for

disconnecting said independent means from operative connection with said roller; substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 15 two subscribing witnesses.

SALVATORE LIUNI.

Witnesses:

CHAS. E. POTTS,  
ELIZABETH GARBE.