No. 814,939 PATENTED MAR. 13, 1906.

F. A. CERRUTI.

AMUSEMENT RAILWAY.

APPLICATION FILED OCT. 6, 1905.

3 SHEETS—SHEET 1.

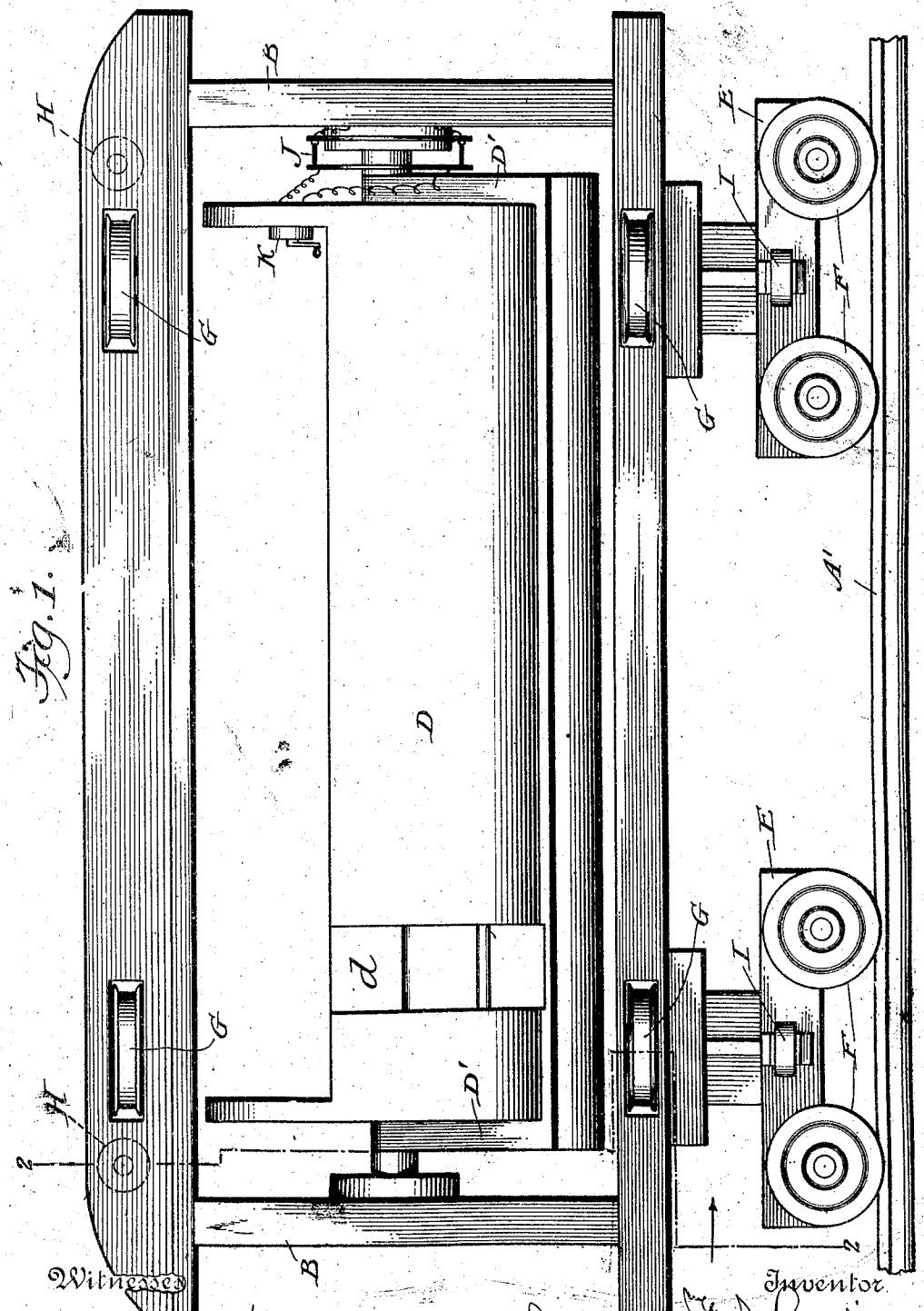

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

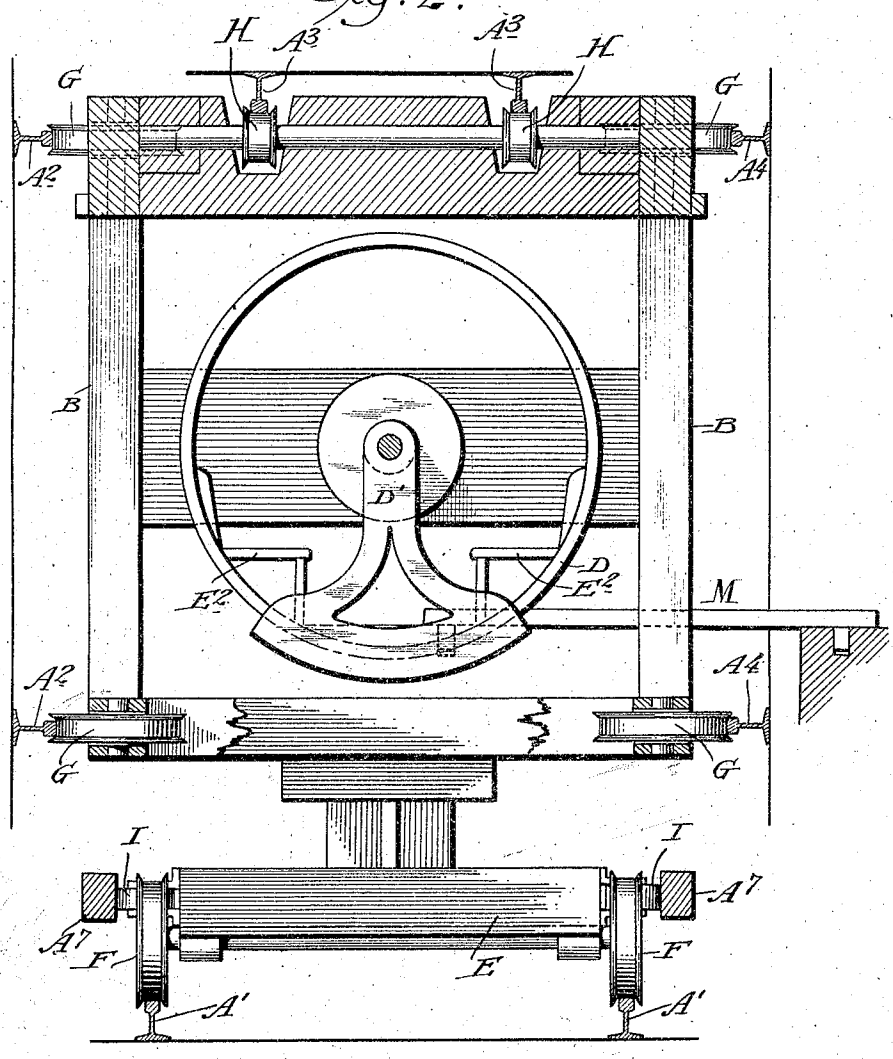

Fig. 2a.

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3 SHEETS—SHEET 3.

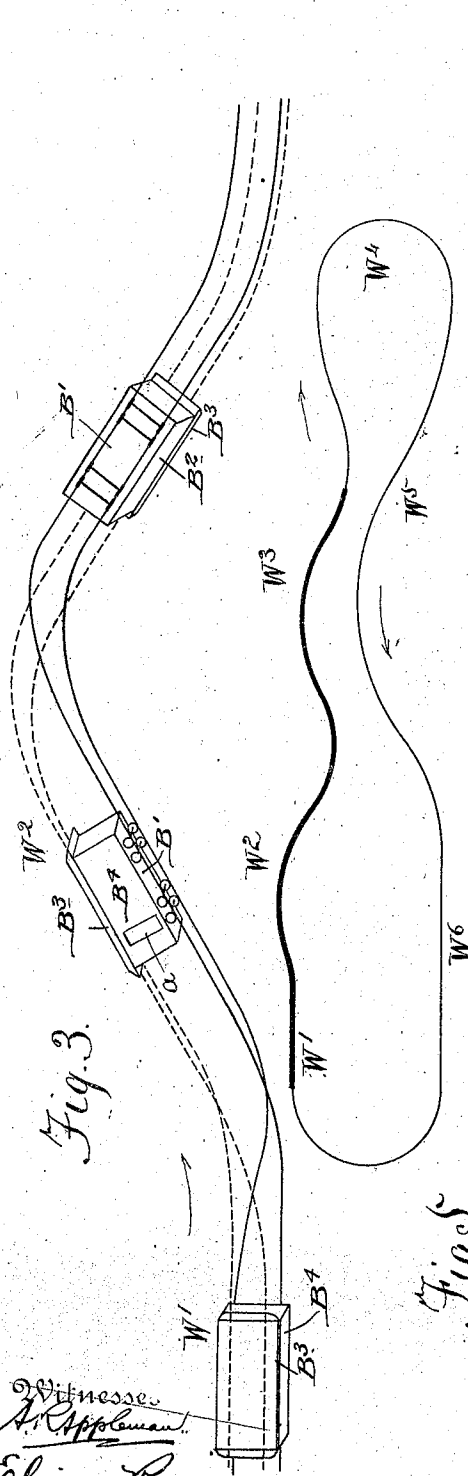

Fig. 3.

Fig. 5

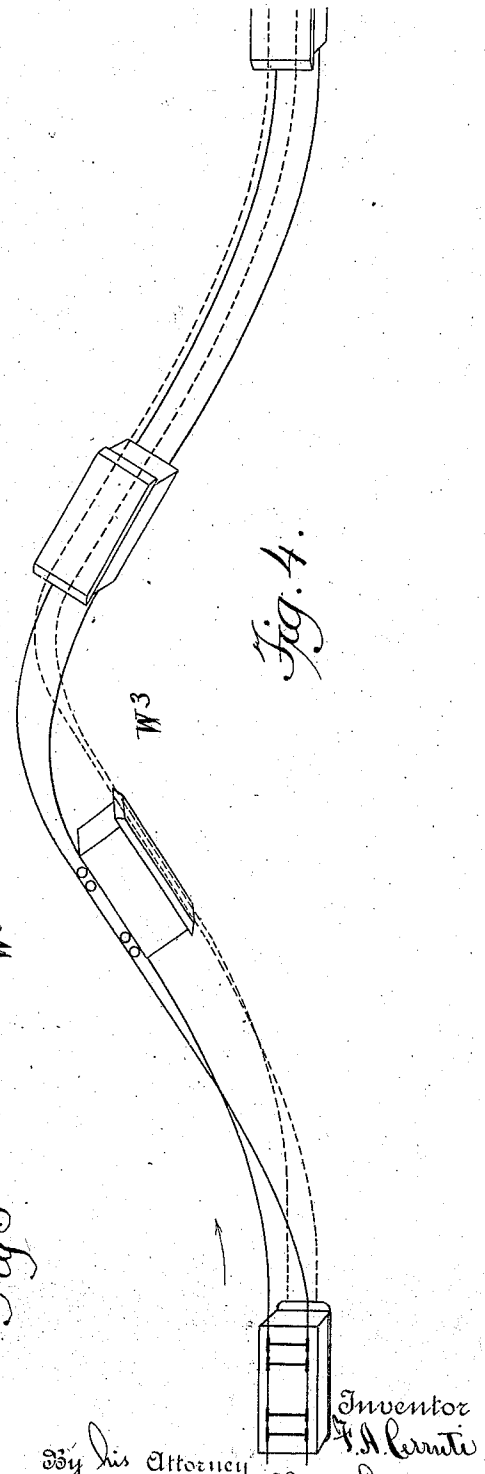

Fig. 4.

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UNITED STATES PATENT OFFICE.

FRANK A. CERRUTI, OF NEW YORK, N. Y.

AMUSEMENT-RAILWAY.

No. 814,939. Specification of Letters Patent. Patented March 13, 1906.

Application filed October 6, 1905. Serial No. 281,565.

To all whom it may concern:

Be it known that I, FRANK A. CERRUTI, a citizen of the United States, residing in the borough of the Bronx, in the city and State of New York, have invented a certain new and useful Improvement in Amusement-Railways, of which the following is a specification.

The improvement applies both to the cars and to the railway structure. It is intended more particularly for parks, picnic-grounds, sea-shore resorts, and the like, and I will describe it as thus applied.

The invention relates to the popular class of apparatus in which a car is carried up an incline by any suitable power and caused to perform unusual movements while allowed to run by gravity down a sloping way. I propose to use either gravity or power to effect the movements. I make the car practically double—an outer structure carrying the wheels, doors, windows, &c., with extra provisions for serving in uncommon positions to be required, and the inner structure turning on swivels and hangers therein and holding the passenger right side up throughout the whole journey. I will sometimes refer to the inner structure as a "basket." I provide for causing the outer portion to turn completely over in its course. For a time the roof and bottom act as the sides, while the sides act as top and bottom. This is followed by a period during which it runs for a time completely upside down, and these periods are followed by others in which being further turned in the same direction it is carried along with its opposite side lowermost and finally restored to its original position.

The construction is absolutely safe and harmless, while amusingly confusing to the passengers. When the car is completely inverted, the bottom serves as the roof and the windows and sides are upside down, making the passengers feel that they are upside down, whereas this is only an illusion. Spectators on the outside will see the car turn completely over and will feel that the passengers are severely jostled, while the passengers are all the while serenely seated right side up.

The invention may serve successfully with the rails simply extending helically around a straight central line. I have done more than that; the central line of the car—the axis of the basket—moves also in a helical path. These two kinds of helical travel are arranged to coincide. This gives great effect to the sensations experienced. The helical arrangement of the rails A′, A^2, A^3, and A^4 and also of the single rails, one on each side, (marked A^7,) which aid in keeping the trucks in place laterally, may be continued further than shown. The track is helical and the car is caused to revolve around the longitudinal axis only in a portion of the route. The large proportion of the route involving the gradually-climbing place and the arresting of the motion, if it shall have been rapid, and the return of the car to and up the incline may be effected on an ordinary single and approximately level track. The incline up which the car is caused to climb again to the starting-point may also be an ordinary track.

The following is a description of what I consider the best means of carrying out the invention:

The accompanying drawings form a part of this specification.

Figure 1 is a side elevation of the car with the interior or basket open-topped. Fig. 2 is an end elevation seen from the left, partly in cross-section on the line 2 2 in Fig. 1. Fig. 2^a shows a portion detached. Fig. 3 is on a smaller scale. It is a plan view showing the first portion of the helical descending part of the track with the car in three positions. Fig. 4 shows the lower portion of the helical descending part of the track with the car in three positions and part of a fourth. Fig. 5 is a plan view or diagram on a still smaller scale. The heavy line indicates the portion shown in Figs. 3 and 4, the descending portion of the route. The thinner line indicates the continuation, making the route endless.

Similar letters of reference indicate like parts in all the figures where they appear.

B is the main outside framework. At each end, in the center thereof, is a large swivel, from which is suspended a hanger D′, which supports the inner compartment D, which we may term the "basket." The main structure B is provided with two trucks having each two pairs of wheels F, which serve in the ordinary upright position of the car. It also carries four pairs of wheels G, one pair near each end on each side. The main structure or car proper, B, also carries on each side small wheels I, adapted to serve laterally on the outer side of each truck E. There are thus ten pairs of wheels, each arranged to contact with more or less force with corresponding rails A′ A^2, &c. In any given position one set of rails serves with the proper

wheels to mainly support the load. In all positions all these rails and wheels contribute to guide and to insure the certainty and safety of the operation. Observe there are two rails A′ A′, which contact with the wheels F of the truck. In addition there are two rails A^2 A^2 on the left side of the car for the left side wheels G and two rails A^3 A^3 at the top of the car for the top wheels H and two rails A^4 A^4 on the right side which serve with the right wheels. Besides all these there is one rail, (marked A^7,) which may be lighter, along each side for the truck side wheels I.

There is an electrical contact J in case it shall be required to have the cars run by electricity, the trucks being supplied with motors of any convenient style. (Not shown.) K is a controller adapted to perform its obvious functions.

E^2 E^2 are benches extending lengthwise along the interior of the car, with an aisle between. I take care to have the doorway *d*, by which to enter and leave the basket D, in a position exactly coinciding with the doorway *a* in the outer structure B, so that when the body B is right side up and the basket is locked passengers may move in and out through the doorways as if they were one.

In Fig. 3 the side rails A^2, A^4, and A^7 are omitted to avoid a confusing multiplicity of lines.

The car starts from the landing W′ in the position shown in Fig. 2, which I will term the "upright" position. The right-hand rail of the pair A′ gradually rises at beginning of curve and when the car arrives at W^2 is directly over its mate, the left-hand rail A′. Now the roof B^3 is on the left-hand side, the bottom B′ is on the right-hand side, the side B^4 of the car is uppermost, and the side B^2 of the car is at the bottom. The turning motion continuing, the bottom B′ continues to rise until it is on the top, so that the car has then been completely overturned, the bottom B′ being at the top, the top B^3 at the bottom, the left-hand side B^2 on the right-hand side, and the right-hand side B^4 of the car on the left-hand side. The same process is continued and finally the car is again upright and is in the same position as when it started.

M is a detachable device which will ordinarily be used only at the landing-place W′ when the car is standing still to let out and take in passengers. It serves the double duty of a gang-plank and means for engaging and stiffly holding the inner part—the basket D—against any turning or partially turning motion.

In the use of the apparatus the car is loaded at the landing W′, a low point in the track, and on removing the gang-plank and locking device M the whole interior structure or basket is free to turn; but there is as yet no occasion for its turning unless very slightly to adjust its center of gravity. The car is moved up the incline W^6 by ordinary means, as a rope (not shown) operated by a separate engine, and is liberated at the top and allowed to descend. There may be occasions on which it may be desired to move by power, and I provide electrical motors and connections to thus serve; but ordinarily gravity will induce all the startlingly grotesque and peculiar effects of the invention. In descending the first part W^2 of the route the main structure B turns on its left side. In this position its weight comes mainly on the left side wheels G. Moving smoothly and also slowly, if slow motion shall be found to be popular, (speed being controlled by ordinary means, a brake for slowing and electric power for increasing the speed,) the car continues on its way, and in the last portion of the descent (that shown in Fig. 4) it has turned another fourth of a revolution and now is completely inverted, its weight being carried mainly on the wheels H and rails A^3. At this time and all the time the basket D is held by its gravity in its proper position, right side up.

Fig. 5 shows the two portions properly joined together which are shown in two separate lengths in Figs. 3 and 4 and also shows a loop W^4 in the track and the portions W^5 W^6, which latter are inclined. The inclination does not appear in this figure, but will be readily understood. It is the ordinary means of raising the car in amusement-railways.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention.

The structure and tracks as a whole have a continuous downward slope; but the slope may vary widely.

I provide special wheels and believe that the action is additionally safeguarded by using double flanges. There being no switches or frogs in any of my series of rails allows the use of such wheels. I can successfully use wheels with ordinary single flanges, should occasion, economy, or other reason prescribe it.

Parts of the invention may be used without others. Additions may be made. I may use more rails for the support of the car or trucks should any deem it expedient.

The car may be curved at the ends, both top and side, as much as may be necessary in order to clear the side and top rails when rounding the curves. Also the center of the car between the wheels G may be indented to prevent any rail from brushing against it at this point in rounding curves.

The upper half of the basket is provided with a stout wire screen. It may be otherwise covered or may be left open, if preferred.

The top rails A^3 may be omitted over all the portion of the track included in the loop W^4, the horizontal returning portion W^5, and the ascending incline W^6. So, also, may the

side rails A^2, A^4, and A^7 be omitted in those portions of the track; but I prefer to retain the side rails to continue my unusual assurance of the absolute safety of the passengers.

I claim as my invention—

1. A pleasure-railway having lines of rails below, above, and on each side, in combination with a carriage having corresponding wheels, all substantially as herein specified.

2. A pleasure-railway having lines of rails below, above and on each side, in combination with a carriage having corresponding wheels and having trucks on the under side and wheels carried on the sides thereof, arranged to directly receive any lateral pressure of such trucks.

3. A pleasure-railway having lines of rails below, above, and on each side, arranged helically in combination with a carriage having corresponding wheels, all substantially as herein specified.

4. In combination with a railway of the character described and a car adapted to run and be revolved therein, a basket for passengers, carried within the car and adapted to maintain its upright position while the main body revolves around it, all substantially as herein specified.

5. In combination with a railway of the character described and a car adapted to run and be revolved therein, an internal basket adapted to maintain its upright position while the main body revolves around it and provisions for locking such basket to the car when required, all substantially as herein specified.

6. In combination with a railway of the character described and a car adapted to run and be revolved in the inclosing way thus formed, an internal basket adapted to maintain its upright position while the main body revolves around it and a device M adapted to perform the double functions of a gang-plank and locking means, substantially as herein specified.

Signed at New York city, in the county of New York and State of New York, this 4th day of October, A. D. 1905.

FRANK A. CERRUTI.

Witnesses:
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ELVIRA RASMUSSEN.