H. F. MAYNES.

AMUSEMENT APPARATUS.

APPLICATION FILED DEC. 7, 1920.

1,397,009. Patented Nov. 15, 1921.

Fig. 1,

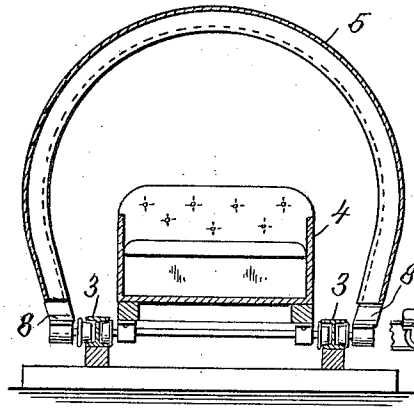


Fig. 2,

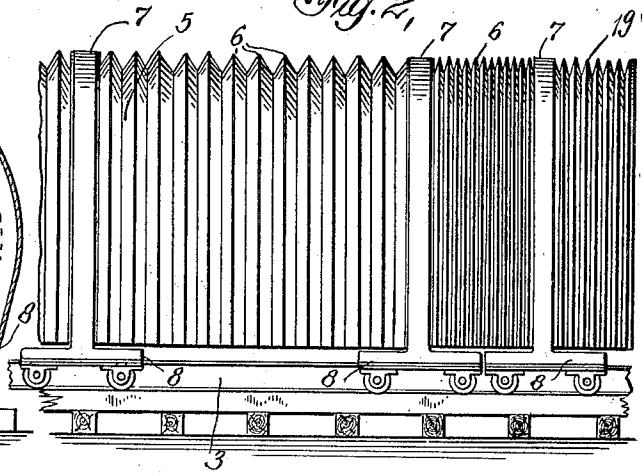


Fig. 3,

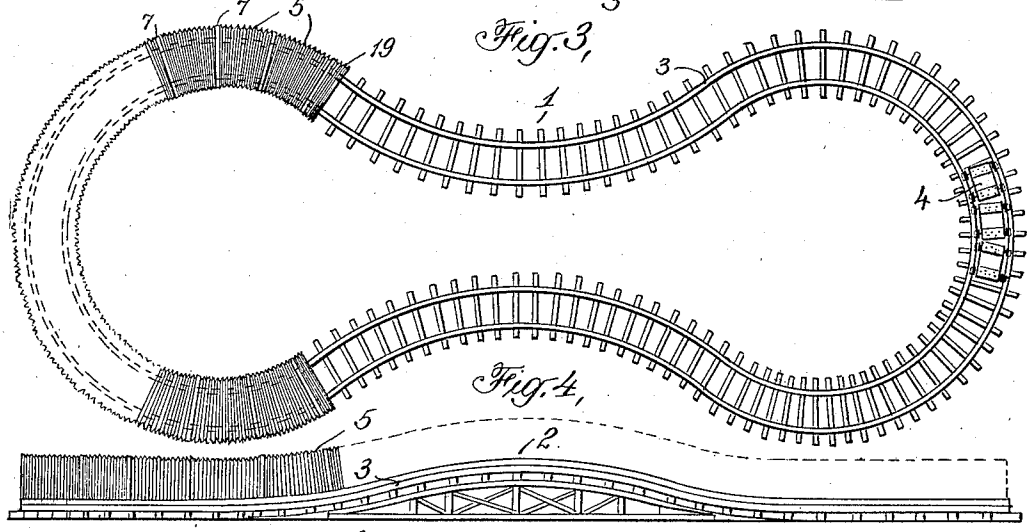
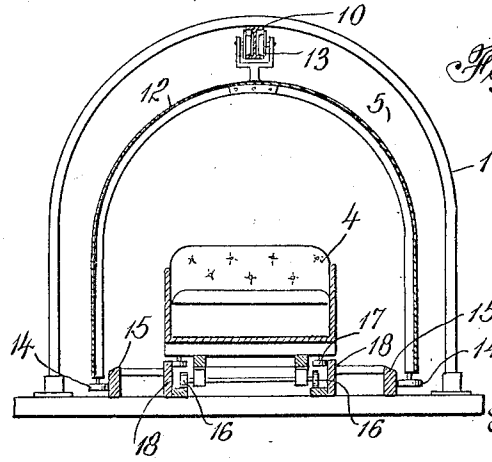


Fig. 4,

Fig. 5,



Inventor
Hyla F. Maynes
By his Attorneys
Pennie, Davis, Marvin & Edmonds

UNITED STATES PATENT OFFICE.

HYLA FREDERICK MAYNES, OF GAINES, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO EMMA C. MAYNES, OF GAINES, PENNYSLVANIA.

AMUSEMENT APPARATUS.

1,397,009. Specification of Letters Patent. Patented Nov. 15, 1921.

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To all whom it may concern:

Be it known that I, HYLA F. MAYNES, a citizen of the United States, residing at Gaines, in the county of Tioga, State of Pennsylvania, have invented certain new and useful Improvements in Amusement Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to amusement devices, the amusement being that afforded by a speedy ride over a winding trackway and through darkened tunnels.

Devices of this nature are attractive principally because of the extremely high speeds at which the cars travel, and the roller coaster with its flying cars has always held and still holds a chief place at amusement parks. The more pretentious of such rides afford added thrills by leading the cars at intervals through tunnels of various kinds, thus combining the elements of both speed and surprise. But the roller coaster with its long tortuous trackway, its declines and inclines, and its elaborate scaffolding, is expensive to build and often dangerous to ride upon. Its use too, is necessarily confined to the permanent parks where its unwieldy form occupies a space larger than that occupied by almost any other concession. It is an object of the present invention to devise a ride which can be easily and cheaply constructed, can be readily set up and knocked down and so moved from fair to fair, occupies relatively but little space, is not dangerous to ride upon, and which nevertheless affords to those who use it all the thrills of speed and surprise commonly associated with more elaborate devices.

These ends are attained by the use of a moving flexible tunnel or canopy which envelops or incloses the cars and moves around the trackway in a direction opposite to that pursued by them. The apparent speed at which the passengers are traveling is then the added speeds of tunnel and cars, and, by running the former very rapidly an effect of reckless speed can be simulated even though the cars themselves be proceeding quite leisurely, and with safety. Similarly the distance covered seems much greater than it really is, and therefore a relatively short loop of trackway is enough.

If this illusion of speed and distance is to be sustained for an appreciable time and if the track is in reality a short one, the movable tunnel must completely cover it during the time the illusion persists. Nevertheless a certain length of clear track is necessary for the entrance and exit of the passengers from the cars. In order to meet these two requirements the movable tunnel is made longitudinally collapsible like a huge accordion, and may thus be folded up at one side of the loop while the other side is open for receiving and discharging the riders. If the tunnel were not made collapsible it would be necessary to provide a separate track onto which it could be switched when not in use. The length of the tunnel being variable at will it is also possible to obtain certain novel effects by running it extended at different degrees. In this way the train is made to dart into and out of tunnels in a manner quite startling. The use of moving, endless screens placed adjacent a car is old and well known. The use of an inclosing tunnel movable bodily and as a whole, is quite different from this, produces different results, and is capable of more varied treatments as will be described.

The invention will be more clearly understood by referring to the accompanying drawings which illustrate preferred embodiments thereof and in which Figure 1 is a transverse section through the trackway, the tunnel and one of the cars; Fig. 2 is a side elevation of the trackway showing the tunnel partly collapsed and partly extended; Fig. 3 is a plan view of the entire trackway showing the tunnel collapsed at one side thereof and a train of cars at the other side; Fig. 4 is a side view of the entire trackway showing the tunnel in the position of Fig. 3 and Fig. 5 is a view similar to Fig. 1, but showing a modified form of the invention.

In the drawings, 1 represents a continuous or endless trackway, the contour of which may vary but should include reverse curves, as shown in Fig. 3. This trackway is also provided with raised portions 2, providing inclines and declines over which the cars pass. No set configuration for this trackway is contemplated, but the greater the number of curves and the more depressions and elevations the more exhilarating and exciting the ride. The track itself com-

prises two I-beams 3, the upper surfaces of the lower flanges of which serve as the traction surfaces. Other forms of rail having inner and outer traction surfaces would suffice.

A train of cars 4 is designed to run upon this trackway, the wheels of these cars running upon the inner flanges of the I-beams 3 or the inner traction surfaces. The number of cars in a train may vary, but preferably the length of the train should be at least equal to one-half the entire length of the trackway, in order that the passenger carrying capacity of the apparatus may be as large as feasible. These cars may be of any approved type and may be driven in any satisfactory manner, although an electric drive is preferred.

The tunnel or canopy 5 is built of fabric, such as canvas, and is designed to collapse after the manner of an accordion or pair of bellows. The canvas is supported at short intervals by a series of substantially U-shaped reinforcing frames of wood or metal, these frames being situated at the points 6, as shown on Fig. 2. At longer intervals the tunnel is supported by substantially U-shaped arches 7, which in turn are supported upon trucks 8. These trucks run upon the outer flanges of the I-beams 3 or the outer traction surfaces. The first and last of these trucks are motor driven and drive the tunnel around the trackway. The length of this tunnel, when fully extended, is that of the trackway itself, so that the entire trackway may be completely inclosed and the tunnel like the trackway is continuous or endless. The collapsing and extending of the tunnel is accomplished by proper manipulation of the end trucks 8. In ordinary operation the tunnel is first run in collapsed form, the motive power being supplied by the rear truck. To effect extension it is then only necessary to supply power to the leading truck and run this truck at a higher speed than the rear one. In this way the tunnel is opened out and soon envelops the entire trackway. Both end trucks are provided with short bellows sections 19, which contact with each other when the canopy is fully extended. These sections 19 are supported from adjacent arches 17 and are held extended by means of coil springs (not shown). When the canopy is extended so that both ends meet, these sections 19 contact and the tunnel becomes continuous or endless. When running in this closed condition the yielding construction of the sections 19 holds them in contact with each other even when rounding curves, and thus prevents the formation of a gap in the tunnel at such times. The method of collapsing the tunnel will be obvious from the foregoing. When fully extended the tunnel walls appear as shown at the left in Fig. 2. The folds in the canvas never straighten entirely, for if they did the canopy could not round the curves and follow the curvature of the trackway. In order to guard against accidental extension of this nature, as, for instance, when the tunnel is just starting to move and extend, the arches 7 may be connected by inextensible means, limiting the distance separating them.

The tunnel is made high enough and wide enough to make it impossible for the passengers to touch it. With that possibility eliminated the ride may be considered absolutely safe.

The interior of the tunnel will be dimly lighted to enable the passengers to see the walls as they race past, and any suitable decoration may be applied to these walls. The exterior walls of the tunnel may be painted to represent a huge snake or the alternate faces of the folds may be painted different colors, so that looked at from one direction the tunnel will be one color and looked at from the other direction, another. Thus, as this canopy winds around the trackway it will present a strange and unusual appearance to those on the outside.

Fig. 5 illustrates a modified method of supporting the tunnel. A single I-beam 10, supported by a series of arches 11, extends above the middle of the trackway. The tunnel 5 is held in shape by a series of U-shaped members 12, which correspond to the arches 7, as shown in Fig. 2. These members 12 depend from trolleys 13, which run upon the lower flanges of the I-beam 10 and correspond in function to trucks 8 of Fig. 2. At the lower ends of members 12 are situated rollers 14, which bear against guideways 15 and prevent the tunnel from swaying during the time it is running. The car shown in this figure is provided with two sets of wheels 16 and 17, the former supporting the weight of the car and the latter bearing against vertical guideways 18 and preventing lateral displacement. The suspension drive for the tunnel shown in this figure simplifies somewhat the problem of driving the cars and the tunnel simultaneously in opposite directions.

The apparatus operates as follows: The tunnel collapsed, as shown in Fig. 3, is moved to one side of the trackway. The cars which extend around the other one-half of the trackway are then filled with passengers and start moving, let us say, in a counter-clock-wise-direction. At the same time the tunnel starts to move in a clock-wise direction, gradually opening out and engulfing the train of cars. For a time the tunnel may be run in a collapsed or a semi-extended condition, so that the train of cars darts into and out of it. Eventually, however, the tunnel is fully extended and the

train is run completely covered or inclosed. The cars themselves are run at a very moderate speed, but the tunnel passes them, going in the opposite direction at a much higher velocity, thus producing the illusion of great speed. Meanwhile, the sight of this strange object crawling around the winding trackway and up and down the elevations 2 attracts the attention of persons nearby. When the ride is completed the cars are brought to rest at their initial position and the tunnel collapsed, as shown. It is therefore possible to employ one relatively short trackway, and a separate track for the disposition of the tunnel during loading and unloading is unnecessary.

The terms "cover" or "inclose" as used in this specification and in the appended claims are not to be narrowly construed. One of the distinguishing features of the invention is the illusion produced by the movement of the adjacent tunnel walls, and as long as the passenger is conscious of a relative movement between the car and the walls it is, of course, not necessary that the tunnel completely cover him.

Although certain specific embodiments of the invention have have been shown and described, it is clear that the invention in its broadest aspects is not limited to these details of construction. Other modifications will readily suggest themselves to those skilled in the art, and such modifications are considered as included within the scope of this invention.

I claim:

1. An amusement apparatus comprising a trackway, cars adapted to run upon said trackway, and a movable tunnel adapted to inclose the cars and run along the trackway.

2. An amusement apparatus comprising a trackway, cars adapted to run upon said trackway, and a tunnel adapted to inclose the cars and run in a direction opposite to that in which the cars run.

3. An amusement apparatus comprising a continuous or endless trackway, cars adapted to run upon said trackway, and a continuous or endless movable tunnel adapted to inclose the cars and run along the trackway.

4. An amusement apparatus comprising a trackway, a continuous or endless trackway, cars adapted to run upon said trackway, and a continuous or endless tunnel adapted to inclose the cars and run along the trackway in a direction opposite to that in which the cars run.

5. An amusement apparatus comprising a trackway, cars adapted to run upon said trackway, and a movable collapsible tunnel adapted to inclose the cars and run along the trackway.

6. An amusement apparatus comprising a tortuous continuous trackway, cars adapted to run upon said trackway, and a flexible collapsible tunnel adapted to inclose the cars and run along the trackway.

7. An amusement apparatus comprising a tortuous continuous trackway, cars adapted to run upon said trackway, a flexible collapsible tunnel adapted to inclose the cars and run along the trackway, and a plurality of independently movable supporting means carrying the tunnel.

8. An amusement apparatus comprising a trackway, cars running upon the trackway, a movable tunnel inclosing the cars, and a plurality of trucks running upon the trackway and supporting the tunnel.

9. An amusement apparatus comprising a trackway, cars running upon the trackway, an extensible tunnel adapted to inclose the cars, and yielding end sections on the tunnel which contact with each other when the tunnel is fully extended.

10. An amusement apparatus comprising a trackway having double traction surfaces, cars running upon the inner traction surfaces of the trackway, a movable tunnel running upon the trackway inclosing the cars, substantially U-shaped supporting means for the tunnel spanning the trackway, and trucks at the ends of the U-shaped supporting means running upon the outer traction surfaces of the trackway.

11. An amusement apparatus comprising a car, and a tunnel, movable as a whole, adapted to inclose the car and move relative thereto.

12. An amusement apparatus comprising a movable car, and a tunnel, movable as a whole, adapted to inclose the car and move in a direction opposite to that in which the car moves.

In testimony whereof I affix my signature.

HYLA FREDERICK MAYNES.