May 22, 1928. 1,670,992

W. G. SHAFER

MOUNTAIN RIDE

Original Filed May 18, 1925 2 Sheets-Sheet 1

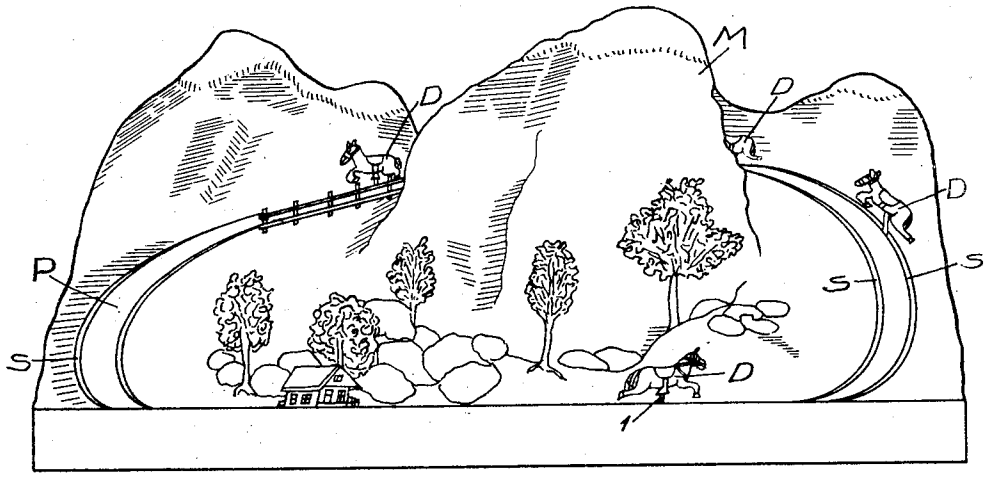

FIG 1

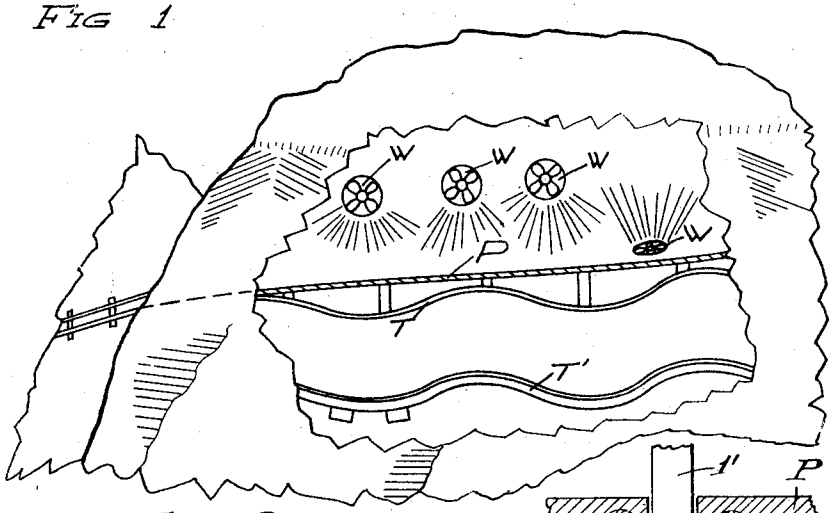

FIG 2

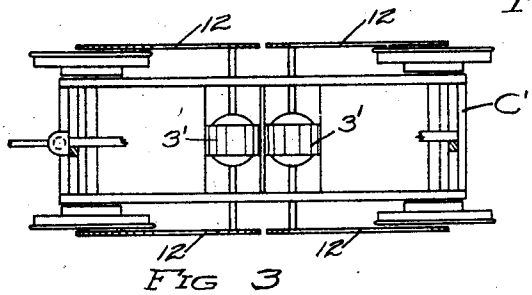

FIG 3

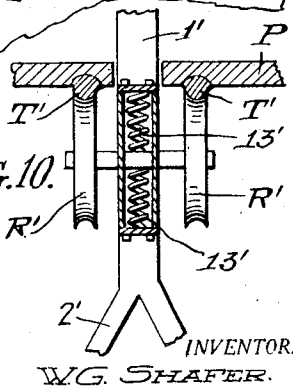

FIG. 10.

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MOUNTAIN RIDE

Original Filed May 18, 1925 2 Sheets-Sheet 2

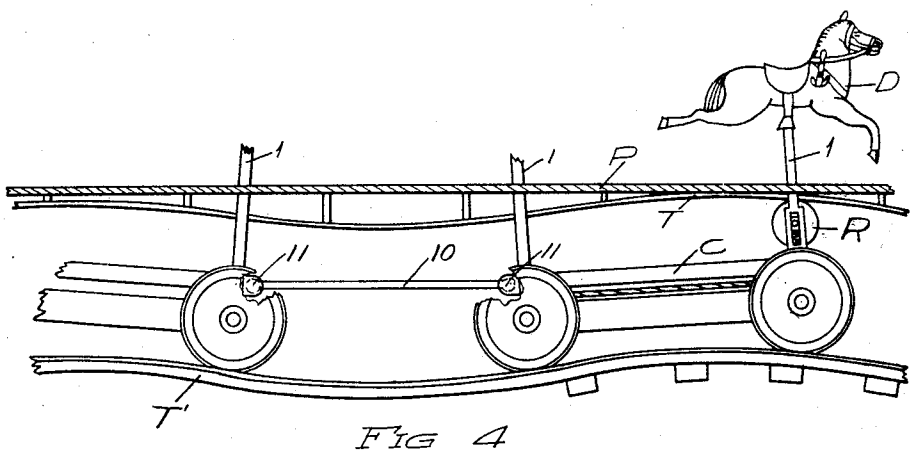

FIG 4

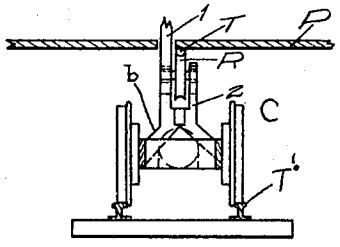

FIG 5

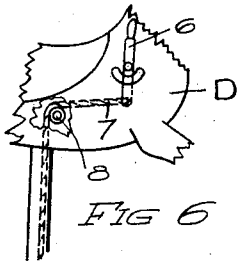

FIG 6

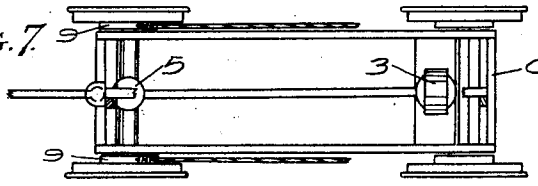

FIG. 7.

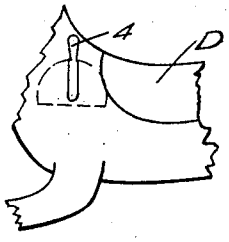

FIG. 8.

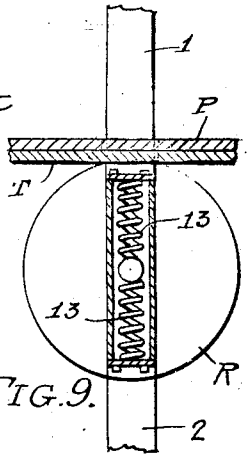

FIG. 9.

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UNITED STATES PATENT OFFICE.

WILLIAM G. SHAFER, OF LOS ANGELES, CALIFORNIA.

MOUNTAIN RIDE.

Application filed May 18, 1825, Serial No. 30,948. Renewed April 16, 1928.

My invention relates to improvements in amusement apparatuses, and the various parts associated therewith, as well as the arrangement and construction of said parts, and more particularly to an apparatus, or a collection of apparatuses so fashioned and constructed as to simulate a mountain ride.

It accordingly is an object of my invention to provide a novel form of apparatus so fashioned and constructed as to simulate a rugged mountain scene, a pathway being associated therewith, which pathway leads in and about said scene, and through one or more darkened tunnels, said tunnels being equipped with mechanism for simulating a violent wind, sets of passenger-carrying devices being used to convey passengers along said pathway and through said tunnels, said passengers being subjected to undulating movements of varying intensity.

Another object of my invention is to provide a novel form of power-driven or alternatively gravity-operated carriages to be used in connection with my novel form of apparatus, said carriages being equipped with sets of passenger-carrying devices so associated with said carriages that all strains and friction caused by the movement of the passengers on said devices will be borne by the wheels of said carriages.

A still further object of my invention is to provide a novel form of mechanism associated with my improved amusement apparatus in which one or more passenger-carrying vehicles are adapted to be operated on sets of undulating lower tracks, said mechanism being preferably, though not necessarily, positioned out of sight, there being sets of upper undulating tracks associated with said mechanism in such a manner that all strains and friction caused by the movements of the passengers positioned on devices above said mechanism, will be borne only by the wheels of said mechanism, at least one of said devices being equipped with mechanism whereby the movement of said vehicles may be controlled.

It is also within the province of my invention to subject the passengers conveyed in, about, and through my novel form of apparatus to certain novel sensations, which, so far as I am aware, have heretofore never been contemplated, namely, the sensations felt by persons riding a horse for example, when said horse is moving slowly, at a pace, galloping, or in a race, said passengers being also subjected to the sensation of passing up and down a rugged mountain scene, as well as through a mountain tunnel, where said passengers are subjected to the effect of a violent wind storm.

It is also an object of my invention to provide a novel form of apparatus, and parts thereof, which are simple in character, easy and comparatively inexpensive to manufacture, thoroughly reliable, efficient, and entirely safe in operation, durable, not easy to get out of order, composed of a minimum number of parts, and in which losses of power, due to friction and strains, will be reduced to a minimum.

Further objects and advantages of my invention will become more apparent as the description thereof proceeds.

Reference is had to the accompanying drawings in which similar reference characters denote similar arts. In the drawings,

Fig. 1 is a perspective view of my improved apparatus, the operating mechanism therefor being omitted,

Fig. 2 is a fragmentary perspective view of part of my apparatus showing the tunnel broken away to illustrate the internal construction,

Fig. 3 is a plan view of one form of my improved operating mechanism for conveying the passenger-carrying devices about the apparatus,

Fig. 4 is a fragmentary cross sectional view showing the undulating tracks, and the manner in which the operating mechanism is associated therewith,

Fig. 5 is a fragmentary end elevational view of Fig. 4,

Fig. 6 is a fragmentary detail view of the brake operating mechanism,

Fig. 7 is a fragmentary plan view of an alternative form of operating mechanism, and

Fig. 8 is a fragmentary detail view of the manner in which the operating mechanism may be controlled to apply power thereto.

Fig. 9 is a fragmentary detail view of the mounting of the roller device shown in Fig. 5 and

Fig. 10 is a similar view of a modification.

Describing my invention more in detail, my improved apparatus comprises a rugged mountain scene M, substantially as depict-

ed in Fig. 1, but it is clear that said scene may be changed in many ways without departing from the spirit of my invention.

Preferably, one or more of the mountains associated with my novel form of apparatus may be hollowed out, as shown in Fig. 2, to simulate one or more mountain tunnels, said tunnels in practise being darkened, and equipped with a number of electric fans or blowers W, or other mechanism for producing wind is said tunnels.

It is my purpose to equip the simulated mountain scene M with a pathway P, that winds around and about said mountain scene, in any desired manner, and through one or more of said tunnels as depicted in Fig. 2, said pathway being provided with one or more slots S conforming to the contour of said path, and in which the vertical members 1 carrying passenger-carrying devices D of any preferred type are adapted to be conveyed along said pathway.

It will be obvious, that the pathway P, as well as the various parts forming my improved apparatus, may be constructed of any material found desirable. The pathway P is equipped on its under side, and in close proximity with the slots S, with an upper undulating track T, as shown more particularly in Figs. 2 and 4, and the sub-structure underneath said pathway is also equipped with a pair of similar tracks T', the undulations of which correspond with the undulations of the track T.

Of course, the number and character of the undulations in the tracks T and T' may be any that in practice may be suggested; but it is preferred that the tracks positioned in the tunnels be equipped with undulations of such an amplitude that a very rough ride is provided for the passengers as they are conveyed therethrough.

The tracks T and T' may of course be mounted in any preferred manner, so long as said mounting insures the safety of the passengers enjoying the ride. Associated with the tracks T and T' is a set of carriages C of any preferred number, and there may be sets of such carriages associated with each of the slots S. On each of said carriages is mounted, in the manner presently to be described, a series of passenger-carrying devices D of any preferred type or construction, by means of vertical members 1, of any desired configuration, and constructed of any suitable material that will insure the safety of the passengers.

As the passengers are carried about on my apparatus, they are continually subjected to shocks and strains of travel, and the apparatus is also subjected to continual strains and friction caused by the movement of the passengers themselves on the devices D. It accordingly is necessary to provide an apparatus which will not only properly resist such stresses and strains, but will also provide for reducing to a minimum the power losses caused by said friction. In other words, in my apparatus it is my purpose to obviate friction as much as possible.

For this purpose I have equipped the carriage C with a structure such as shown more particularly in Fig. 5. Said structure preferably comprises a vertical member 1 which has extended therefrom a brace *b*, projecting from said vertical member at any convenient angle, as shown in Fig. 5. A complementary member 2, of substantially the same construction is associated in any preferred manner with the vertical member 1, suitable bolts or other fastening means, not shown, being provided to secure the same together and to the structure of the carriage C. If preferred however, the passenger-supporting structure may be cast or otherwise formed from a single integral structure secured to the carriage C in any desired manner.

As will be observed from Fig. 5, the track T is positioned above and directly midway between the tracks T'. This feature obviously provides for a rigidly held structure, it being almost impossible to displace the same from said tracks. To insure that the carriage C be continually held in position in relation to said tracks, and for the purpose of reducing friction losses to a minimum I equip the vertical members 1 with one or more grooved rollers R, mounted in any suitable manner on said members, said rollers, if desired, being provided with any form of anti-friction bearings.

To be absolutely certain that the rollers R will not accidentally leave the tracks T, I may equip the members 1 and 2 with any desirable form of resilient or buffer means, such as stout springs 13, mounted as shown, and holding the shaft of the roller R in resilient relation with the framework, as shown in Figs. 5 and 9, to hold the rollers R to the track T. This feature however is optional, for it is believed that such resilient or buffer means is not absolutely essential. It may also be stated that it is within the province of my invention to provide more than one upper track, together with appropriate changes in the member 1, with, if preferred, an increase in the number of rollers or grooved pulleys R. Such a modification is shown in Fig. 10, in which a pair of rollers R', similar to the roller R, are used, said rollers coacting with the tracks T', associated in any preferred manner with the lower portion of the pathway P', springs 13' being provided within the framework 2' to press against the shaft of said rollers to hold them in resilient relation with said tracks.

As will be evident from Fig. 5, no matter what position the passenger on the device D may take, or whatever his movements, the

stresses and strains caused thereby will be directly and solely transmitted to the wheels of the carriage C, insuring the safety of the passengers, as well as the security of the apparatus and the reduction of friction losses to a minimum.

The specific manner and means of applying power to the carriage C is immaterial. In the drawings I have shown the carriage C equipped with an electric motor 3, suitably controlled by a hand lever 4, mounted on the foremost passenger-carrying device D, and operated by the operator thereon. This form of control may be any that in practise may be suggested, and other forms may be substituted therefor.

The shaft of the motor 3 may operate the front wheels of the carriage C, or, as shown, said shaft may be extended to the rear wheels and may actuate them through some conventional form of differential gearing 5 or other means, or a chain drive may be substituted therefor. In fact, any form of motor, either electrical or otherwise, may be mounted on the carriage C to provide power for moving said carriage, it being within the province of my invention to use internal combustion engines, compressed air motors, or indeed any preferred type of motive power.

In addition to the hand control 4, I may equip the foremost passenger-carrying device D with any suitable brake control mechanism through any desired form of hand lever 6, the movement of which is conveyed by any suitable means, such as a cable or chain 7, operating upon suitable rollers or pulleys 8, to the brakes 9 on the rear wheels, or indeed on the front wheels, or both, of the carriage C. Any preferred form of brake may be used. When sets of carriages C are used instead of one only, said carriages are connected together by means of any desired type of pin, universal, or other flexible joints 11, positioned preferably on each end of a rigid connecting element 10, said flexible joints providing for proper movement as the carriages are moved up and down on the undulations and on curves of the pathway P.

In Fig. 3 I have shown an alternative form of operating mechanism or carriage C′, in which a pair of electric motors 3′ is used to operate said carriage, through a chain or other drive 12, connecting the shafts of the motors with the axles of both sets of wheels of said carriage. It will of course be distinctly understood that the arrangement and mechanism for operating the carriages may be any that in practise may be preferred.

The operation of my improved apparatus should now be clear. The devices D being populated with passengers, the individual on the foremost device will actuate the hand lever 4, which causes the electric motor 3 or motors 3′ to become energized, causing the carriages to be set in motion. Said carriages will cause the devices D to be moved forwardly along the pathway P, and in and around and through the mountain scene, the shape of the tracks causing said devices to be subjected to an undulating movement of varying intensity, imitating closely the trot or gallop of an animal; and, depending upon that part of the tracks upon which the devices are positioned, an even pace, or a rapid one, or a rough road.

As the passengers are conveyed along the level stretches a race may be imitated, and of course, power must be applied to the carriages, as will also be the case when said devices are being conveyed up the mountain. But in descending said mountain, the power is shut off, and the passengers are carried down by gravity. Should it be desired at any time, for one reason or another, either to check or stop the movement of the carriages, all that is necessary to do is for the operator to operate the hand lever 6, which actuates the brakes, or the lever 4 to shut off the power, or both.

As the passengers are carried through the tunnel, they are subjected not only to a very rough ride by reason of the abrupt amplitude of the tracks, but they are treated to the action of the wind producing elements W in said tunnel, enjoying a sensation never heretofore produced, in so far as I am aware.

While I have thus described my invention with great particularity, it will be clear that the same may be modified throughout a wide range. I therefore do not propose to be limited to the exact details of construction shown and described, but reserve the right in practice to make any and all modifications thereof that fall within the scope of the appended claims.

I claim as my invention:

1. In a mountain ride, in combination, an apparatus constructed to simulate mountain scenery, including one or more mountain passes, at least one part of said apparatus being fashioned to simulate a mountain tunnel, devices in said tunnel for producing the sensation of a windstorm, sets of passenger-carrying devices for conveying passengers in, about, and through said apparatus, and mechanism associated with said devices for reducing to a minimum all the effects of lateral, torsional and vertical strains, substantially as described.

2. In a mountain ride, in combination, sets of apparatus fashioned to simulate a rugged mountain scene, including a mountain pass, at least one part of said apparatus being hollow to simulate a mountain tunnel, means associated with said tunnel adapted to simulate the action of a windstorm, a path asso-

ciated with, and leading in and about in devious ways around said apparatus, through said tunnel, and said pass, sets of passenger-carrying devices adapted to be moved on said path, means associated with said path and said devices for producing an undulating movement of said devices, said movement being especially accentuated while said devices are conveyed through said tunnel, and mechanism associated with said means for operating said devices.

3. An amusement apparatus in which passengers are adapted to be carried in, about, and through sets of apparatus so fashioned as to simulate a rugged mountain scene, including a mountain tunnel, said passengers being subjected to selective sensations simulating the movements of an animal and a windstorm, and sets of appliances associated with said apparatus for eliminating the effect of strains in all directions, substantially as described.

4. An amusement apparatus fashioned to simulate rugged mountain scenery, including a mountain pass and a mountain tunnel, in combination, one or more passenger-carrying devices associated with said apparatus, power-actuating means associated with said devices, mechanism for controlling said power-actuating means, and means, invisible to said passengers, associated with said apparatus and said devices whereby said devices may be subjected to undulating movements of varying intensity in certain parts of said apparatus, said means having associated therewith a set of devices for resisting all lateral, torsional and vertical strains, substantially as described.

5. An amusement apparatus including a mountain pass and tunnel scene in which passenger-carrying devices, constructed to simulate one or more different animals, are subjected to undulating movements solely by means of a set of tracks, positioned out of sight, and thus affording an element of surprise, said tracks also functioning to cause said devices to simulate the trot slow or rapid pace and gallop of said animals, as said devices are moved in and about said apparatus, and resilient means associated with said devices for resisting strains thereon in all directions.

6. In an apparatus for operating an amusement equipment, in combination, one or more carriages adapted to be driven by power, or operated by gravity, passenger-carrying devices associated with said carriages and operated thereby, and sets of resiliently mounted pulleys associated with said carriages whereby all strains caused by any movements or weight of said passengers will be conveyed to and be borne by the wheels associated with said carriages.

7. In a carriage adapted for use in connection with an amusement apparatus, in combination, sets of resiliently mounted passenger-carrying devices associated with said carriage, brake and power control mechanism associated with one of said passenger-carrying devices and said carriage, and means associated with said carriage whereby the friction generated by said devices may be conveyed directly to the wheels of said carriage.

8. In an amusement apparatus, in combination, a pair of underneath tracks, said tracks being provided with undulations of varying amplitude, an overhead track positioned directly above the middle of said underneath tracks, said overhead track being provided with undulations of an amplitude similar to those of said underneath tracks, a carriage adapted to be operated on and in connection with said tracks, one or more passenger-carrying supports rigidly mounted on said carriage, one or more grooved pulleys associated with said supports and coacting with said overhead track, and passenger-carrying devices associated with said supports.

In testimony whereof I have signed my name to this specification.

WILLIAM G. SHAFER.