No. 676,190. Patented June 11, 1901.

C. W. HUTCHINSON.

RACING TROLLEY TRACK.

(Application filed Mar. 16, 1901.)

(No Model.) 2 Sheets—Sheet 1.

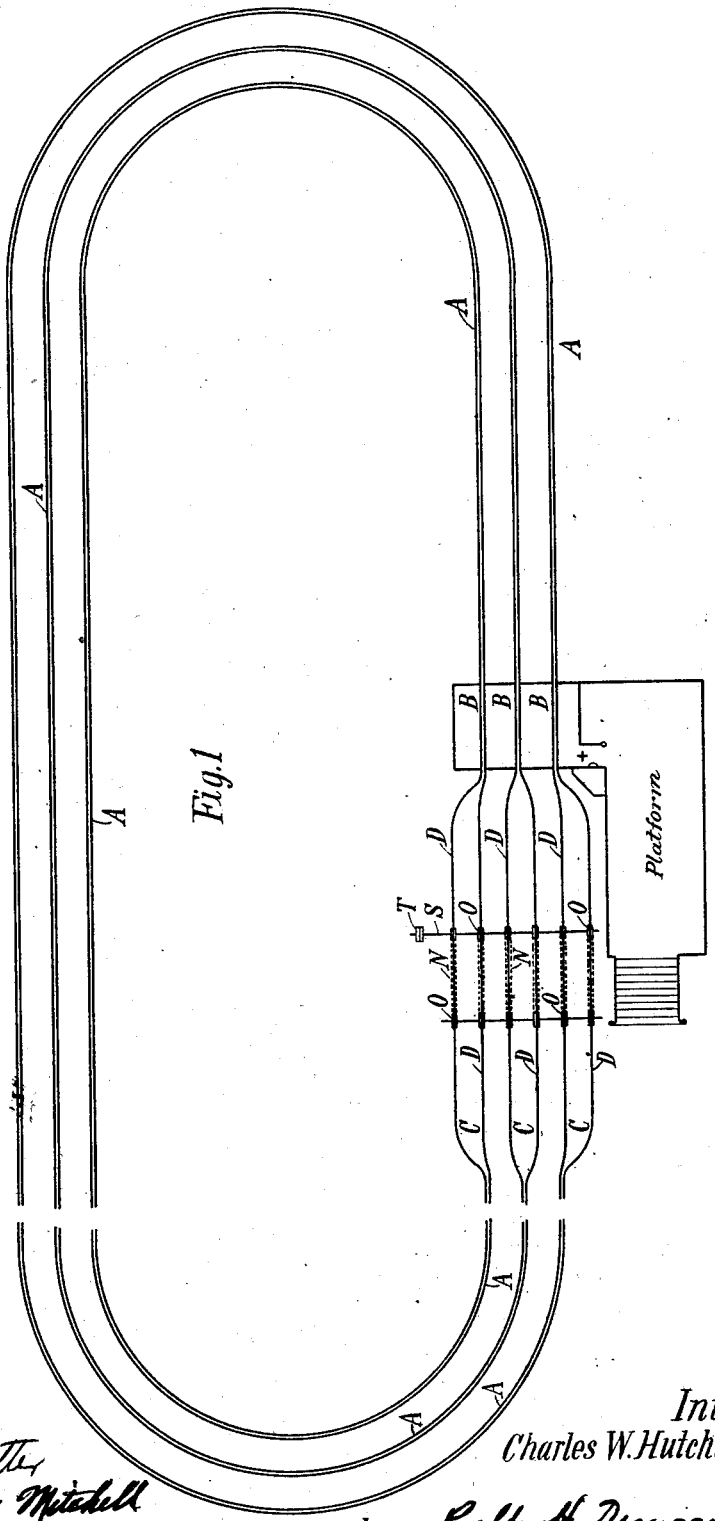

Fig. 1

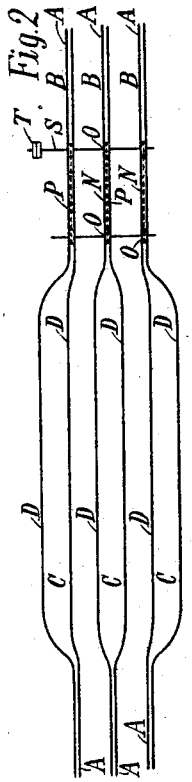

Fig. 2

Witnesses:
Raphael Netter
Alexander Mitchell

Inventor
Charles W. Hutchinson
by Robt H. Duncan Atty

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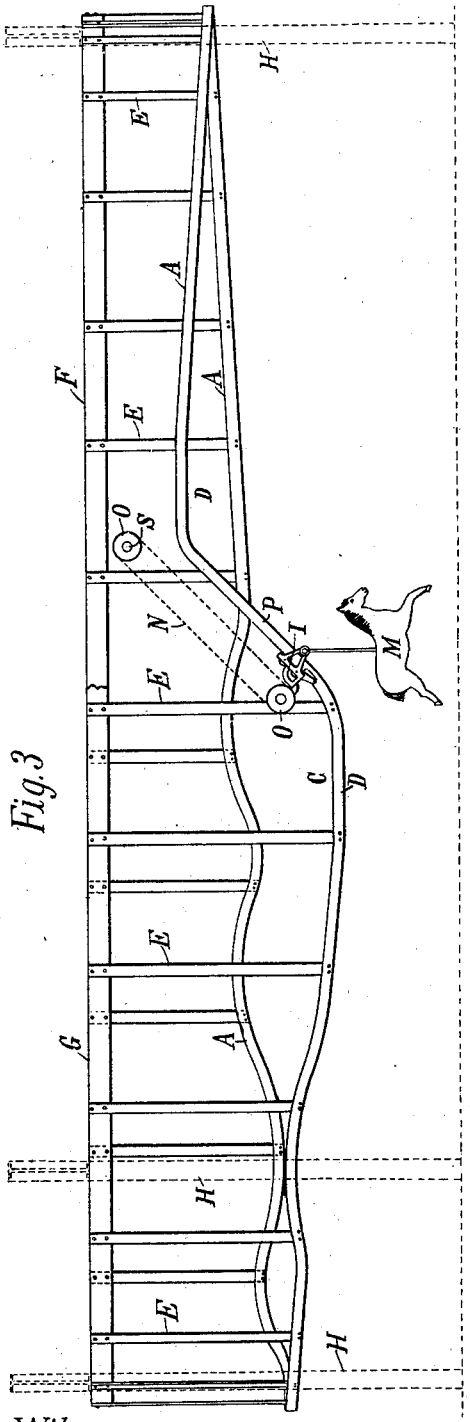

Fig. 3

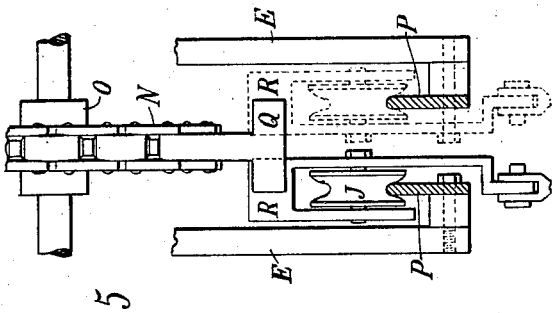

Fig. 5

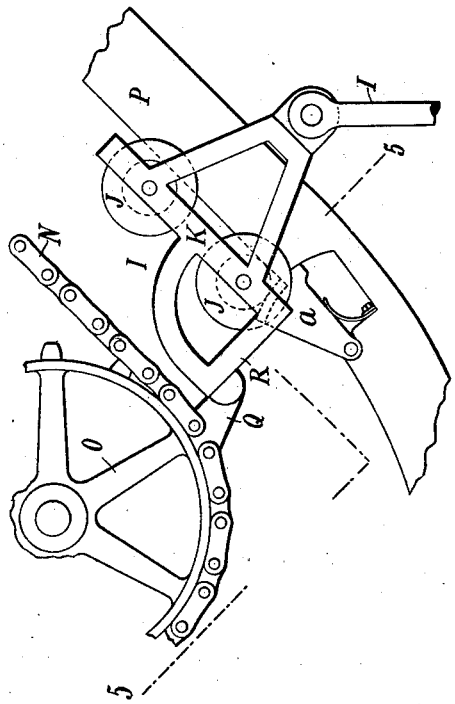

Fig. 4

Witnesses:
Raphael Netter
Alexander Mitchell

Inventor
Charles W. Hutchinson
by Robt. H. Duncan Atty

UNITED STATES PATENT OFFICE.

CHARLES W. HUTCHINSON, OF NEW YORK, N. Y.

RACING TROLLEY-TRACK.

SPECIFICATION forming part of Letters Patent No. 676,190, dated June 11, 1901.

Application filed March 16, 1901. Serial No. 51,485. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. HUTCHINSON, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the county and State of New York, (whose post-office address is corner of One Hundred and Twenty-second street and First avenue, New York city,) have invented a new and useful Improvement in Racing Trolley-Tracks, of which the following is a specification, reference being had to the accompanying drawings, forming a part of the same.

The present invention is for improvements on the invention described and shown in my United States Patent No. 638,720, dated December 12, 1899, and relates to elevated inclined trolley-tracks, such as are in use at popular resorts for the amusement of the patrons, in which the tracks are arranged in circuit and are provided with suitable passenger-carrying devices suspended from the trolleys which travel down the inclined tracks by gravity throughout nearly the entire circuit from a starting-point to a lower stopping-point and are then lifted from their stopping-point to the starting-point by any suitable devices.

The object of the improvements is to simplify and cheapen the construction of the plant, to economize space, and especially to provide ample storage-room for the trolleys and their passenger-carrying devices on their respective tracks at or near the starting-points, so that they can be brought to the starting-point of any track with the least inconvenience and delay; and to this end the invention consists, stated generally, in arranging a series of tracks in pairs, the tracks of each pair running close together throughout the entire circuit, except for a small distance in the rear of the starting-point; also, in diverging the tracks of each pair at a short distance in the rear of the starting-point and then converging them before the starting-point is reached, and, further, in locating the necessary lifts to raise the trolleys and their suspended carriers from the level of the stopping-points to the starting-points between the points where the tracks diverge and the starting-points, all substantially as hereinafter described and claimed.

A form of construction and arrangement embodying my improvements is illustrated in the accompanying drawings, in which—

Figure 1 is a top view of six continuous tracks forming outer and inner circuits and arranged in pairs, the tracks of each pair running close together throughout the circuit, except where they are diverged near the starting-point, and containing a lift located in each diverged track. Fig. 2 is a top view of a modified arrangement of the lifts relatively to the diverging and converging tracks. Fig. 3 is a side elevation showing a single track, its supports, trolley, and suspended passenger-carrying devices and raising devices. Fig. 4 is a side view of the incline leading to the greatest elevation, showing trolley stop and raising devices; and Fig. 5 is a cross-section along line 5 5 of Fig. 4, showing the arrangement of devices adapted to raise the trolleys upon the different tracks of a pair.

In the drawings, A represents elevated inclined trolley-tracks, which, as shown in Figs. 1 and 2, are six in number, arranged in three pairs, the tracks of each pair running close together from their starting-points B, at or near their point of greatest elevation, to points near their lowest elevation C and at a short distance in rear of the starting-points, where the tracks of each pair are diverged, but come close together again before the starting-points are reached, the diverged parts of the tracks being indicated by D. The distance apart of the tracks of a pair, except when diverged, is preferably from five to six inches, which would bring the tracks too close together to permit trolleys and their carriers upon the different tracks to pass each other or to run side by side, while the distance apart of the different pairs of tracks and of the diverged tracks of each pair is preferably five to six feet, or sufficient to permit the passing of the trolleys and their carriers or their running side by side upon the different pairs of tracks or upon the diverged tracks of each pair without liability of collision or interference.

The inclined tracks should be elevated at their starting-points sufficiently above their lowest or stopping points to give the loaded trolleys the desired gravity-speed between these points, and the lowest point should be sufficiently above the ground or floor to clear the trolley-carriers. The tracks may be uni-

formly inclined from their starting to near their stopping points, or they may be arranged to form vertical undulations or gradual ascents and descents to give a variety of motion. The tracks may be of any suitable material and be supported by any means which will permit the trolleys to run securely thereon throughout their extent.

By reference to Fig. 3 of the drawings the track A is shown as secured in its elevated inclined position by its attachment to supports E, which are fastened to and project from beams F and G, which in turn are fixed to and supported by uprights H.

Any suitable form and construction of trolleys and of devices adapted for raising the trolleys and their attached carriers from their stopping to their starting points upon the tracks may be used with my improvements—for example, those shown in Figs. 4 and 5 and fully described and illustrated in my said Patent No. 638,720, in which I represents a trolley provided with two grooved wheels J J, pivoted in a frame K, to the lower part of which is pivotally attached a rod L, which sustains the passenger-carrier, which may be a dummy-horse M or any other suitable device adapted to carry one or more persons. The lifts or devices for raising the trolleys from their stopping to their starting levels consist, as shown in the drawings, of sprocket-chains N, passing over sprocket-wheels O O, one of which is positively driven, and inclined tracks P, which are continuations of the circuit-tracks A and are inclined upward from the stopping to the starting levels. The sprocket-chains are provided with lugs Q, projecting therefrom and arranged to engage projections R, located on the rear part of the trolley-frames, and these two parts cooperate to draw the trolleys and their carriers up the inclined tracks, their construction being such that they automatically uncouple at the top of the ascent. A spring-controlled stop *a* may be located near the foot of the ascending track to hold the trolley in the proper position on the track till the lug Q engages with it, as described. Where there is a series of tracks, as shown in Figs. 1 and 2, it is desirable to have several sets of sprocket wheels and chains, and in such case the positively-driven wheels may be attached to the same shaft S, which is driven by a pulley T, fixed to one of its ends.

The inclined ascending tracks P and the devices for raising the trolleys thereon, designated as "lifts," may be located on the diverged tracks, as shown in Fig. 1, which I regard as the preferred arrangement, or they may be located immediately in front of the point of convergence of the diverged pairs of tracks, as shown in Fig. 2, each of these arrangements having its special advantages. In the former there is a lifting-chain and sprocket-wheels for each track; but there is also a storage-space on each track on the level with or just behind the starting-point, so that a supply of trolleys can be stored at this point and be delivered at the starting-place without an instant's delay, while in the latter case the storage-place will be at the foot of the lifts; but as the tracks of a pair run parallel and close together throughout the ascending incline a single set of sprocket wheels and chain will answer to raise the trolleys on both tracks. This can be easily effected by arranging the sprocket-wheels so that the chain will run between the tracks and making the lugs Q to project laterally on both sides of the chain sufficiently to engage with the frames of the trolleys on either of the tracks or with projections R, attached to such frames.

As it is desirable at crowded resorts to economize space to the greatest possible degree and at the same time to make the circuit-tracks as long as possible it is considered that this end is best attained by the arrangement of the tracks in pairs, as shown in Figs. 1 and 2 of the drawings, where the tracks of each pair run close together throughout nearly the entire circuit and then separate and come together again at a short distance behind the starting-points. In this arrangement no track-blocking devices are used or needed, as is the case in the arrangement of tracks shown and described in my said Patent No. 638,720, inasmuch as a trolley is not started on one track of a pair till the trolley already started on the other track thereof has gained sufficient headway to insure their safety.

In the arrangement herein shown and described when the trolleys of a pair of tracks have nearly completed the circuit they stop or come to rest upon different diverged tracks, which are far enough apart to permit the trolleys and their carriers to pass each other or to be stored side by side at the foot of the lifts, or in the arrangement shown in Fig. 1 both at the foot and top of the lifts, but, in either case, where they can be quickly brought to the starting-point of their respective tracks.

The expressions "starting-points" and "stopping-points," as applied to the tracks and trolleys, respectively, mean those points on the tracks at which the trolley begins to descend the tracks by gravity and those points where, when the trolleys have nearly completed the circuit they stop or come to rest, and the expressions "in the rear of the starting-points" and "behind the starting-points" mean that part of the tracks which lie immediately on the opposite side of the place where the trolleys begin to descend the tracks by gravity.

It is not intended to limit this invention to any special number of pairs of circuit-tracks or to any special construction of the several tracks or trolleys or lifts, as the principle of the invention is embodied in a single pair of elevated inclined circuit trolley-tracks, arranged to run close together during most of the circuit and then separated and brought

together again in the rear of the starting-points.

What is claimed as new is—

1. A pair of elevated inclined trolley-tracks arranged in circuit and to run close together throughout the main part thereof, the tracks of the pair being diverged and then converged at a short distance in rear of the starting-point, substantially as and for the purpose set forth.

2. A series of pairs of outer and inner elevated inclined trolley-tracks arranged in circuit, the tracks of each pair being arranged to run close together throughout the main part of their circuit and to diverge and then converge at a short distance from their starting-points, substantially as and for the purpose set forth.

3. The combination, with a pair of elevated inclined trolley-tracks arranged in circuit and to run close together during the main part of the circuit and to diverge and then converge at a short distance in rear of the starting-point, of lifts to raise the trolleys from their stopping to their starting levels on the tracks, substantially as and for the purpose set forth.

4. The combination, with a pair of elevated inclined trolley-tracks arranged in circuit and to run close together during the main part of the circuit and to diverge and then converge at a short distance in the rear of the starting-point, of lifts located in the diverged tracks to raise the trolleys from their stopping to their starting levels, substantially as and for the purpose set forth.

5. The combination, in a device for raising the trolleys of elevated inclined tracks from a stopping to a starting level, of two parallel ascending tracks arranged in near proximity to each other, a chain arranged to run between the tracks and a device projecting laterally from both sides of the chain to engage the trolleys upon either of the tracks, substantially as and for the purpose set forth.

CHARLES W. HUTCHINSON.

Witnesses:
JOHN A. HUTCHINSON,
GEO. H. LAGES.