

(No Model.)

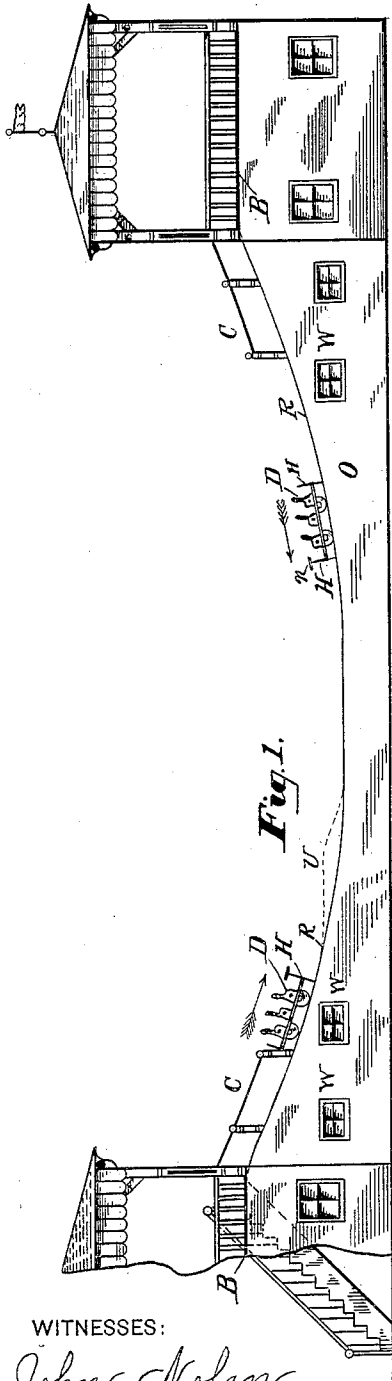
3 Sheets—Sheet 1.

J. PUSEY.

ARTIFICIAL COASTING COURSE.

No. 318,026.

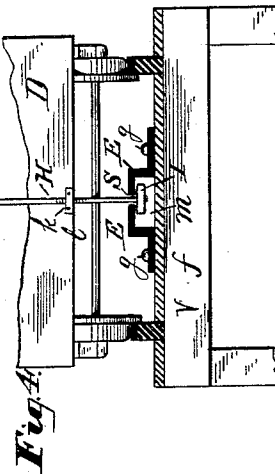
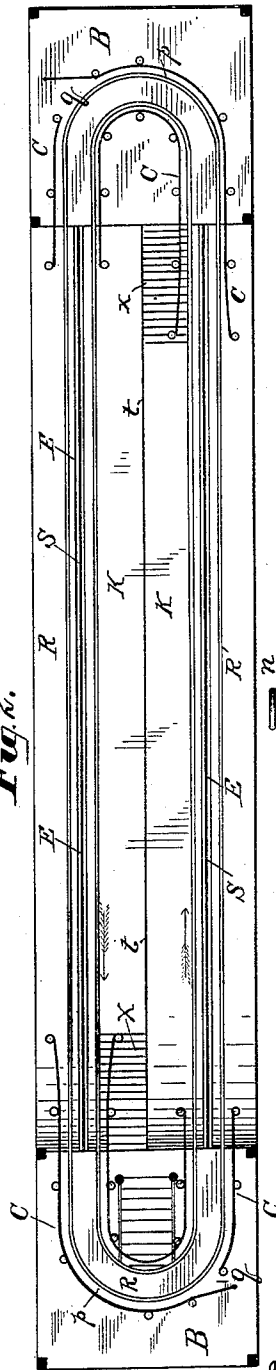
Patented May 19, 1885.



WITNESSES:

John Nolan,
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Fig. 2.



INVENTOR

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(No Model.)

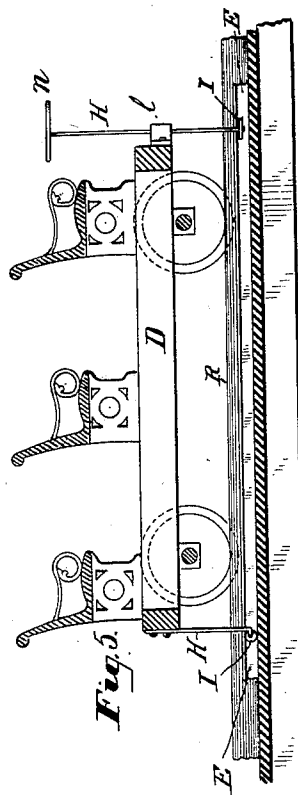
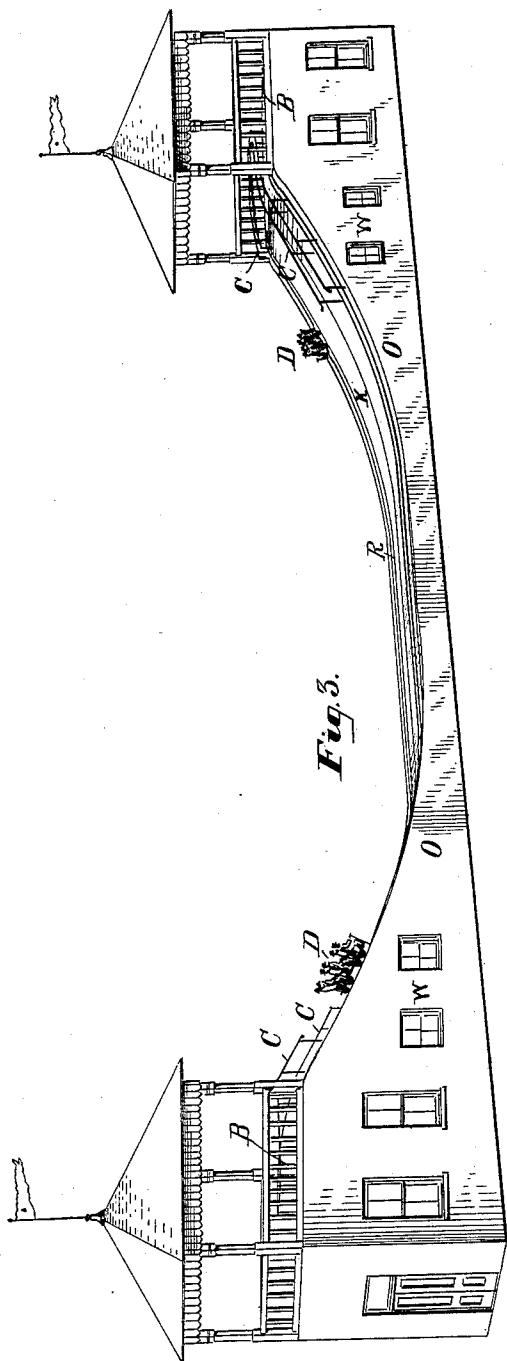
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ARTIFICIAL COASTING COURSE.

No. 318,026.

Patented May 19, 1885.



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(No Model.)

3 Sheets—Sheet 3.

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Fig. 6

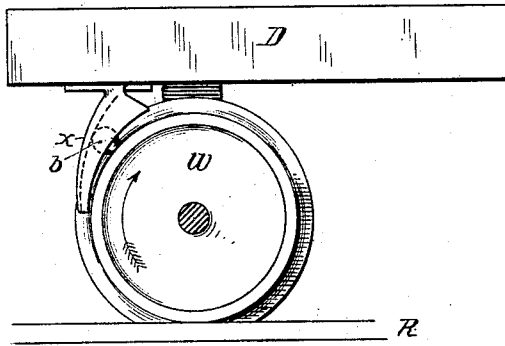


Fig. 7

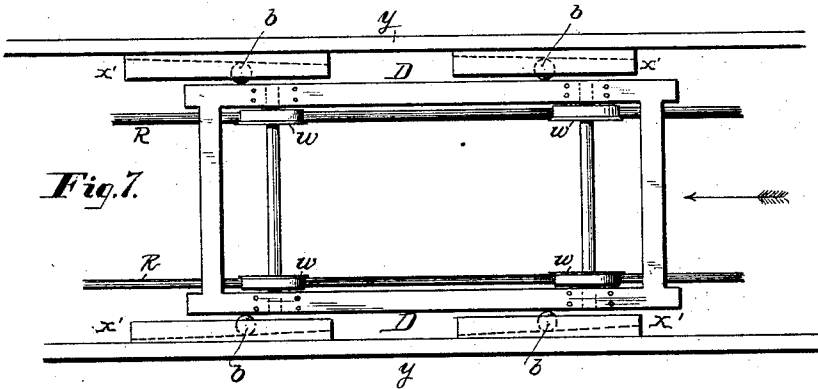
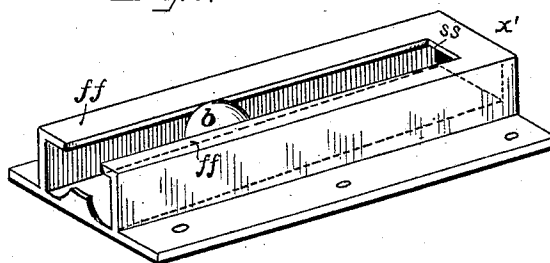


Fig. 8



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JOSHUA PUSEY, OF PHILADELPHIA, PENNSYLVANIA.

ARTIFICIAL COASTING-COURSE.

SPECIFICATION forming part of Letters Patent No. 318,026, dated May 19, 1885.

Application filed July 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA PUSEY, a citizen of the United States, residing at the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Artificial Coasting-Courses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a side elevation, a portion of the side boarding, platform, and roof at one end being broken away, showing the steps by which the coasters and spectators ascend to the platform; Fig. 2, a plan view, the roofs of the end platforms being removed; Fig. 3, Sheet 2, a perspective; Fig. 4, Sheet 1, a section across one of the rail trackways, taken in front of the car; Fig. 5, Sheet 2, a longitudinal section in a vertical plane passing just in front of the middle line of the car upon the track. Fig. 6, Sheet 3, is a side elevation of part of a car, showing an automatic stop device for preventing the cars from retrograding under certain circumstances. Fig. 7 is plan view showing a modified form of stop device as in operation. Fig. 8 is a perspective view of said device detached.

The same reference-letters, where they occur in the several figures, indicate the same parts.

The invention relates to an artificial coasting or sliding course or hill consisting of a continuous railway composed of two longitudinal tracks, upon which cars are adapted to run, ascending in opposite directions to end platforms of substantially the same altitude, as shown; also to the combination, with said trackways and cars, of means for preventing the cars from running backward under certain circumstances; also to the combination, with the railway, of lateral hand-rails, whereby the occupants of the cars are enabled to draw the same up, without quitting their seats, beyond the point where their momentum is overcome in ascending the incline opposite the one they have just descended in position for making a succeeding descent.

The invention is an improvement upon, or in some respects a modification of, an artificial coasting-course for which I filed an application for Letters Patent on the 21st day of January, 1884, Serial No. 118,221; but I do not claim herein any matter that may be claimed

in the specification of Letters Patent which may issue upon said application, nor will there be claimed therein any matter claimed herein.

Referring now to the annexed drawings, R are two rails supported by a suitable framework and ascending in opposite directions, similar to a catenary curve, and connected upon end platforms, B, of substantially the same height, whereby the cars may be run around continuously upon the track or tracks.

C are hand-rails at the side or sides of the track, extending around the curves *p* at either end, and also some distance beyond, as shown. These rails are supported by posts, and so placed as regards height and proximity that, while there shall be no danger of the sides of the car striking said posts, the passengers sitting in the cars D can conveniently reach the rails and pull themselves and the cars on up beyond the point at which the momentum of the car acquired in descending the opposite incline is overcome, and around the curves, as hereinafter explained.

The rails R and the cars are of ordinary construction, the latter being provided with seats and flanged wheels, as usual.

In order to obviate any danger of the cars running off the rails, I secure, preferably midway between the latter, two Z-shaped beams or rails, E, held to the cross-pieces *f* of framework V by means of bolts *g* in a manner to leave a longitudinal slot, S, as seen most clearly in Fig. 4.

To some part of the car D, preferably at each end thereof in line vertically with slot S, I secure rods H, extending down to and entering said slot, and provided each with a cross-head or enlargement, I, wider than the slot. In Fig. 5 this enlargement at the rear end of the car is a roller, and at the forward end a simple transverse bar. Either may, however, be used. They are of such dimensions with relation to the space *m* embraced by the top and sides of the aforesaid Z-beams that they will have ample play within said space, so as not to interfere with the motion of the car, yet not sufficient vertical play to permit the wheels to rise up off the rails to a height greater than or somewhat less than the difference between the diameter of the flanges and the tread of the wheels respectively. It is obvious that by the use of this contrivance

it is impossible for the wheels to fly the track. It is not usually necessary that the Z-beams should extend around the curves, as the motion is slow at those points.

5 I prefer to construct the device at the forward end of the car so that it may be used, if required, as a brake. To this end I make a screw-thread, *k*, on a portion of rod H, and a corresponding thread in a box, *l*, the top of
10 the rod extending above the platform of the car and provided with a hand-wheel, *n*, in position to be conveniently operated by an occupant of the front seat of the car. Ordinarily, the position of the parts is such that the cross-head I runs freely within the space *m*; but
15 when requisite to check or arrest the motion of the car the hand-wheel is rotated in the proper direction, which brings the upper side of the head I against the under side of the
20 overhanging part of the Z-beams, and thus if sufficient force is applied the car will quickly be brought to a standstill.

Part of the longitudinal portion of the railway is or may be laid upon the level platforms B, upon which also the curves *p* are laid, as
25 shown.

The mode of operation is as follows: The riders passing through the gateways or breaks *q*, Fig. 2, in the outer hand-rails seat themselves in the car, which is then started by an
30 attendant, or by the occupants themselves, seizing hold of the rails C and pulling. The car runs down the one incline and up the opposite one until its momentum is overcome, when it comes to a stop (a suitable automatic
35 stop or brake, such as hereinafter described, being used to prevent the car from running back) at a point beyond the forward end of the hand-rails, whereupon the riders may
40 draw themselves and the car on up to and upon the platforms B, as mentioned, or they may thus take hold of the rails before the car has come to a stop, and thereby propel themselves on up to the curve and, if desired, around
45 the same, and, further, if they wish, give the car an impetus sufficient after descending the succeeding incline to run nearly or quite up to the summit of the opposite hill, or the car may be pushed up by attendants or drawn up
50 by some suitable motive power beyond the stopping-point.

One form of automatic stop (with a modification thereof) for preventing the cars from running back down the inclines when their
55 momentum is overcome is shown on Sheet 3 of the drawings. It consists in the use, in combination with one or more of the car-wheels *v*, Fig. 6, of an inclined box, *x*, attached beneath the frame D of the car, which
60 box is open next the adjacent periphery of the wheel, and it contains an india-rubber ball, *b*. When the car is moving forward—that is, in the direction of the arrow, Fig. 6—the ball rides freely upon the wheel; but the instant
65 the car tends to run backward the ball jams between the rim of the wheel and the rear

wall of the box, which gradually contracts toward its lower end.

In a modification of stop device shown in Figs 7 and 8 one or more—in the present instance two on each side—inclined boxes *x'*,
70 widening out toward their upper ends and containing rubber balls *b*, are secured on the inside of side rails, *y*, at about the points where the cars come to a stop, and in such position
75 that said balls will come into contact with the side frame, D, of the car just before their momentum acquired in descending the opposite incline is arrested. It will be obvious that
80 the balls will ride up into the upper wider or deeper portion of the boxes; but the moment the car begins to retrograde said balls soon jam against the side frames of the car, respectively, and thus hold the latter in place.

In order to always retain the balls within
85 the boxes, I make the latter as shown in Fig. 8—that is, with lateral flanges *f f*, the space between the opposite edges of which constitutes a slot, *s s*, whose width is less than the diameter of the ball, thereby allowing a part
90 of the latter to project from the slot beyond the flanges a sufficient distance into the pathway of the cars.

The automatic stop also performs a particularly useful and, in fact, practically indispensable function, when, as will sometimes
95 occur, the bulk of the travel is in one direction, and it becomes necessary to return the cars empty upon one trackway at the same time the laden cars may be running upon the
100 other.

The hand-wheel brake, &c., hereinbefore described, may also be used to prevent the cars from running back, but of course not operating automatically as constructed. I do
105 not wish, however, to be understood as limiting myself to the several devices shown for preventing the cars from running back down the inclines, as any skilled mechanic can readily substitute therefor equivalent devices
110 adapted to operate or to be operated to perform a similar function.

In order to utilize the considerable space lying between the opposite tracks, I cover over said space with a smooth flooring, K,
115 having a longitudinal division or rail, *t*, in the middle. This flooring constitutes a trackway which is designed and adapted for a coasting course or hill upon which roller-sleds or ordinary runner-sleds (in winter) may run.
120 The coasters, starting from either one of the platforms B, glide down the one incline and on up the other until their momentum is overcome, which, of course, is at a point some distance from the summit. Here the coasters
125 get off their sleds and walk up to the platform, the cross-slats X being laid to prevent slipping, if necessary, as shown in the plan view, Fig. 2; or the sleds with their occupants may be carried on up the remainder of the
130 distance by means of suitable mechanism and motive power—such, for example, as that de-

scribed in my aforesaid application for Letters Patent filed January 18, 1884.

A car loaded with riders may be started down one of the inclined trackways R at the same time that another car is started down the incline at the opposite or alternate end of the other track in the opposite direction, the cars passing each other at about the lowest depression of the respective double inclines, as indicated by the position of the two cars in Figs. 1 and 3. The sleds also pass each other going in opposite directions, as shown, all of which adds to the interest and enjoyment of the sport.

I may also state that I intend combining with the cars a motor to be brought into operation automatically just before the stopping-points in the inclines are reached, and apply sufficient propulsive force to carry the car and riders on up to the summit of the hill, whereupon the said motor is automatically stopped, or perhaps immediately after it has imparted sufficient impetus to the car to carry it up and clear over the summit of the succeeding hill of the series, and so on continuously, if desired. This, however, I purpose making the subject of a future application for Letters Patent.

The flooring K, it will be observed, is also the roof for the space underneath, which being boarded up on the sides forms an inclosure or apartment, O, adapted for use as a bowling-alley, shooting-gallery, &c., the same being lighted by windows W. Thus at the same time that the cars may be running on the railway and the roof or flooring K occupied by the coasters other amusements may be carried on within the gallery O, thus affording a variety of entertainment by the same structure.

The rails R may, if desired, be diversified

with one or more undulations, as indicated by the dotted outline U, Fig. 1.

The cars may be provided with grooves or guideways (in lieu of wheels) adapted to fit over and upon the rails, the contact-surfaces being kept greased or lubricated in a suitable manner. This obviates the noise of rolling wheels, which in some locations it is desirable to avoid as being highly objectionable—as, for example, in the built-up portions of cities.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the longitudinal trackways arranged to form inclines ascending in opposite directions, the end platforms of substantially the same altitude or in the same horizontal plane, the cars or coasting-vehicles, and means for preventing the same from running backward down the inclines, all substantially as and for the purpose set forth.

2. In combination with a railway having inclines ascending in opposite directions, the hand-rails C, substantially as and for the purpose specified.

3. The combination, with a coasting-trackway, of the car or vehicle and the inclined box or boxes and ball or balls contained therein, all constructed and adapted to operate substantially as and for the purpose recited.

4. The combination of the longitudinal double trackway arranged to form inclines ascending in opposite directions, the end platforms, the cars, and automatic stop devices, all constructed and adapted to operate substantially as and for the purposes set forth.

In testimony whereof I have hereunto affixed my signature this 23d day of July, A. D. 1884.

JOSHUA PUSEY.

Witnesses:

JOHN NOLAN,
FRANCIS S. BROWN.