

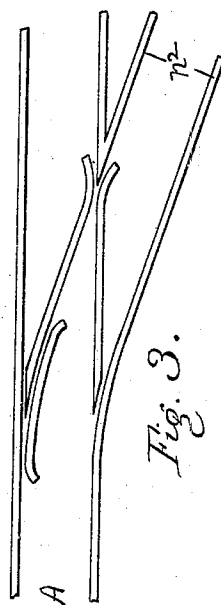
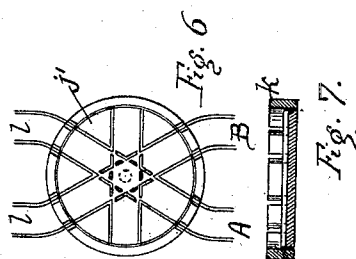
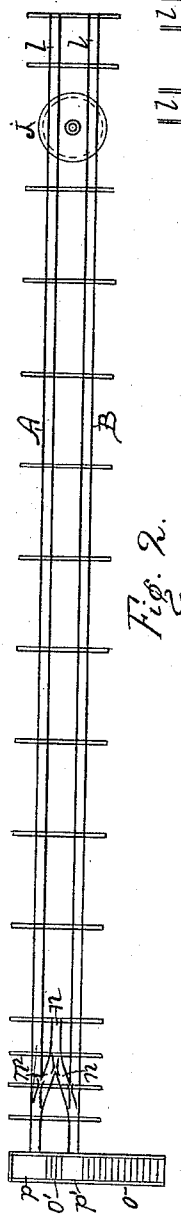
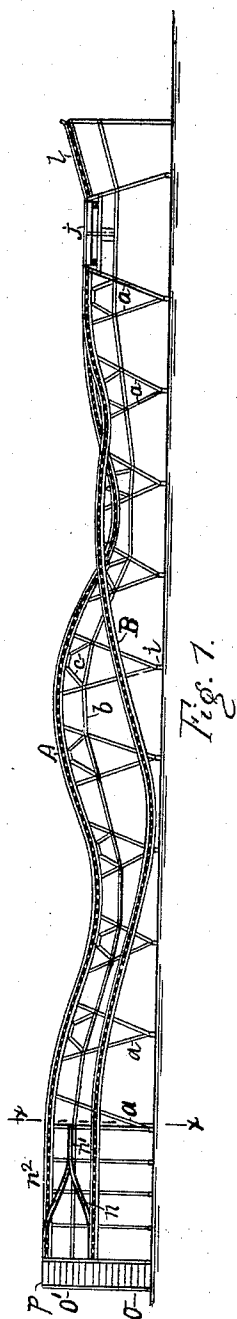
(No Model.)

2 Sheets—Sheet 1.

W. E. SMITH.  
COASTING RAILWAY.

No. 474,351.

Patented May 3, 1892.



Witnesses  
Walter Wagner  
Anton Fongner

Inventor  
Will E. Smith  
By his Attorney  
Wm Zimmerman

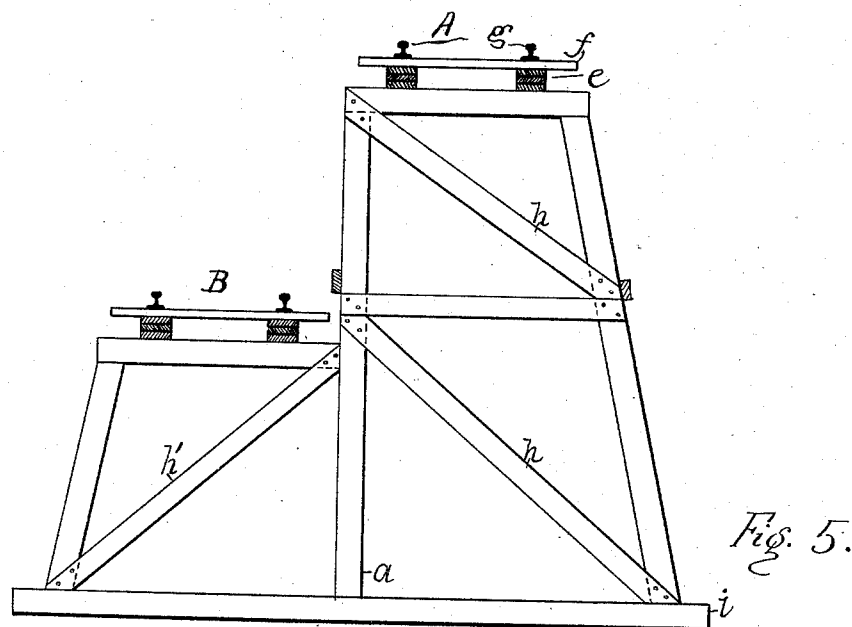
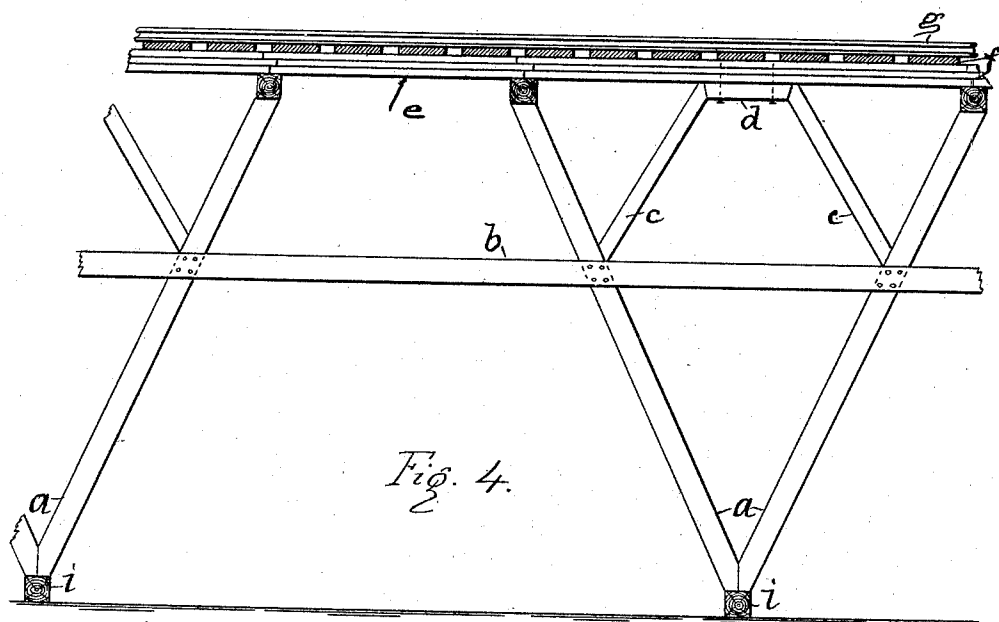
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# UNITED STATES PATENT OFFICE.

WILL E. SMITH, OF CHICAGO, ILLINOIS.

## COASTING-RAILWAY.

SPECIFICATION forming part of Letters Patent No. 474,351, dated May 3, 1892.

Application filed August 1, 1891. Serial No. 401,358. (No model.)

*To all whom it may concern:*

Be it known that I, WILL E. SMITH, a citizen of the United States, residing at Chicago, in have the county of Cook and State of Illinois,

5 invented certain new and useful Improvements in Coasting-Railways, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

10 Figure 1 shows my new and improved coasting-railway in side elevation. Fig. 2 shows the surface of Fig. 1 in plan view. Fig. 3 shows the construction of the switches and frogs made to side tracks. Fig. 4 shows the  
15 details of construction in side elevation on an enlarged scale. Fig. 5 shows the construction of Fig. 4 in cross-section on a transverse plane at  $xx$  of Fig. 1. Fig. 6 shows a modified form of my turn-table in plan view. Fig.  
20 7 shows a transverse central vertical section of Fig. 6.

Like letters refer to like parts.

The object of my invention is to cheapen and improve the details of construction of  
25 coasting-railways, whereby greater advantages in both safety and pleasure may be attained, as will appear from the following specification.

I construct my said railway in substantially  
30 the following manner, namely: I construct bents  $a$ , which I unite at and place upon the same base and spread apart at the top, so as to form V-shaped structures when seen at their ends. Said structures are set apart  
35 suitable distances and connected at a proper elevation by chords  $b$ . From the junction of said chords  $b$  and bents  $a$  rise smaller bents  $c$ , which again form V-shaped figures with the bents  $a$ . The bents  $c$  are held in their proper  
40 places by and support blocks  $d$  on a level with the tops of the bents  $a$ . The distances between the bents  $a$  are divided into three substantially equal spaces by said blocks  $d$ . On the top of said bents are laid stringers  $e$ , composed of a series of plates laid on top of each  
45 other, which break joints and which are spiked or bolted, and thus connect the tops of said bents and blocks. On said stringers are laid ties  $f$ , upon which are laid T-rails  $g$ .  
50 Said bents are braced with braces  $h$ , inclined from their base to the side on which the opposite track runs, and the trestles on which

the opposite track runs are braced with braces  $h'$ , which oppose the braces  $h$ .

In my said coasting-railway there are always 55 two tracks A B, of which one is the outgoing and the other the return track. Each of said tracks is provided with the same style of bents as those above described, and each set of bents for both tracks rests upon a single 60 sill  $i$ , and said sets of bents are made of varying heights, so as to make an undulatory or wave-like surface for the rails. This latter point is only desirable, but not necessary, as the tracks may be made of one uniform 65 straight inclination from the starting-point to the final terminus, with the turn-table at or near the middle of the grade and of its length. Through this construction of the trestle-work or substructure a very light and compara- 70 tively inexpensive, yet very firm, structure is obtained, upon which my improved coasting-railway proper is laid. Said railway consists of two tracks A B vertically parallel with each other, though as to that the tracks might be 75 curved laterally also and need not at all be parallel. The starting-point is, however, the highest and the terminal point the lowest part of the entire track irrespective of all the intermediate undulations. Both tracks are 80 at about the same level at the turn-table  $j$ . Said turn-table is pivoted midway between the two tracks, and upon it are two or more tracks so placed as to receive the car from the outgoing track and, after turning, again 85 discharge the car onto the return track. Where there are three sets of tracks on the turn-table, some curvature of the main tracks will be required; but in that case it will not be necessary to turn the table around so far 90 to again discharge the car. The terminal point of the return track B is lower by a height sufficient for the length of tracks to give the loaded car a desired velocity, but so as to avoid making a greater distance than 95 really necessary in height between the initial and final ends of said tracks.

To avoid all possible danger of the car running off the turn-table while being turned around, I build a low stout wall  $k$  just beyond 100 the circumference of the turn-table, through which are cut notches to pass the car-wheels. By means of this arrangement the car cannot run off the turn-table at any other point than

that at which the tracks on the turn-table coincide with the outside tracks. Beyond the turn-table is a short piece of track *l*, which rises somewhat abruptly above the turn-table  
 5 for the purpose of gradually, yet shortly, stopping the car should it happen to have momentum enough to carry it beyond the turn-table.

Between the starting and terminal ends  
 10 of the tracks A B there is a series of connected frogs, switches, and a short track by means of which the empty car may be both raised and transferred to the starting-point of the track A. When the car has arrived at  
 15 the end of the track B and beyond the frogs and switches, it is relieved of its load and then pushed by hand upon the short side track *n*, on which it passes along upon the short track *n'*, parallel with or midway between the tracks  
 20 A B. When the car is fully on said track *n'*, its motion is reversed and through the proper arrangement of the frogs and switches the car will pass upon the track *n*<sup>2</sup> and from it through yet other frogs and switches upon the main  
 25 track A, and thus it will be returned to its starting-point. The detailed construction of the said tracks *n n' n*<sup>2</sup> is shown in Fig. 3 on an enlarged scale. The side track *n* ascends from the track B into the track *n'*, and from  
 30 it the track *n*<sup>2</sup> ascends into the track A. A staircase *o* leads to a platform *p'* on a level with the track B, and from it a short staircase *o'* leads to the platform *p*, the starting-point of the track A.

35 What I claim is—

1. In a coasting-railway, the combination, with outgoing and return tracks of substantially like descending grades, of a turn-table

near the end of the outgoing track and intermediate tracks near the terminal point of the  
 40 return track, which by a both upward and lateral course connect with the main track near its starting-point, substantially as specified.

2. In a coasting-railway, the combination, with outgoing and return tracks, of a turn-  
 45 table surrounded by a fixed and notched wall wherein the notches fit said main tracks, substantially as specified.

3. In a coasting-railway, the combination, with outgoing and return tracks, of intermediate  
 50 tracks near the terminal end of the return track, which by a both upward and lateral course connect with the main track near its starting-point, substantially as specified.

4. The combination, with outgoing and return  
 55 tracks, of separate bents rising and spreading from the same sill into V-shaped supports connected by chords *b*, and intermediate smaller bents rising from the inner  
 60 sides of said main bents and carrying blocks *d*, and stringers to connect the tops of said bents and blocks, substantially as specified.

5. The combination, with the outgoing and return tracks, of separate bents resting on a  
 65 single sill and oppositely braced and spread at their upper ends, so as to form V-shaped supports connected by chords *b*, and intermediate smaller bents rising from the inner  
 70 sides of the main bents and carrying blocks *d*, and stringers composed of several overlapping members to connect the tops of said bents and blocks, substantially as specified.

WILL E. SMITH.

Witnesses:

W. O. BLACK,  
 E. P. BRINEGAR.