J. A. MILLER.

PLEASURE RAILWAY STRUCTURE.

APPLICATION FILED NOV. 24, 1911.

1,038,174.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 1.

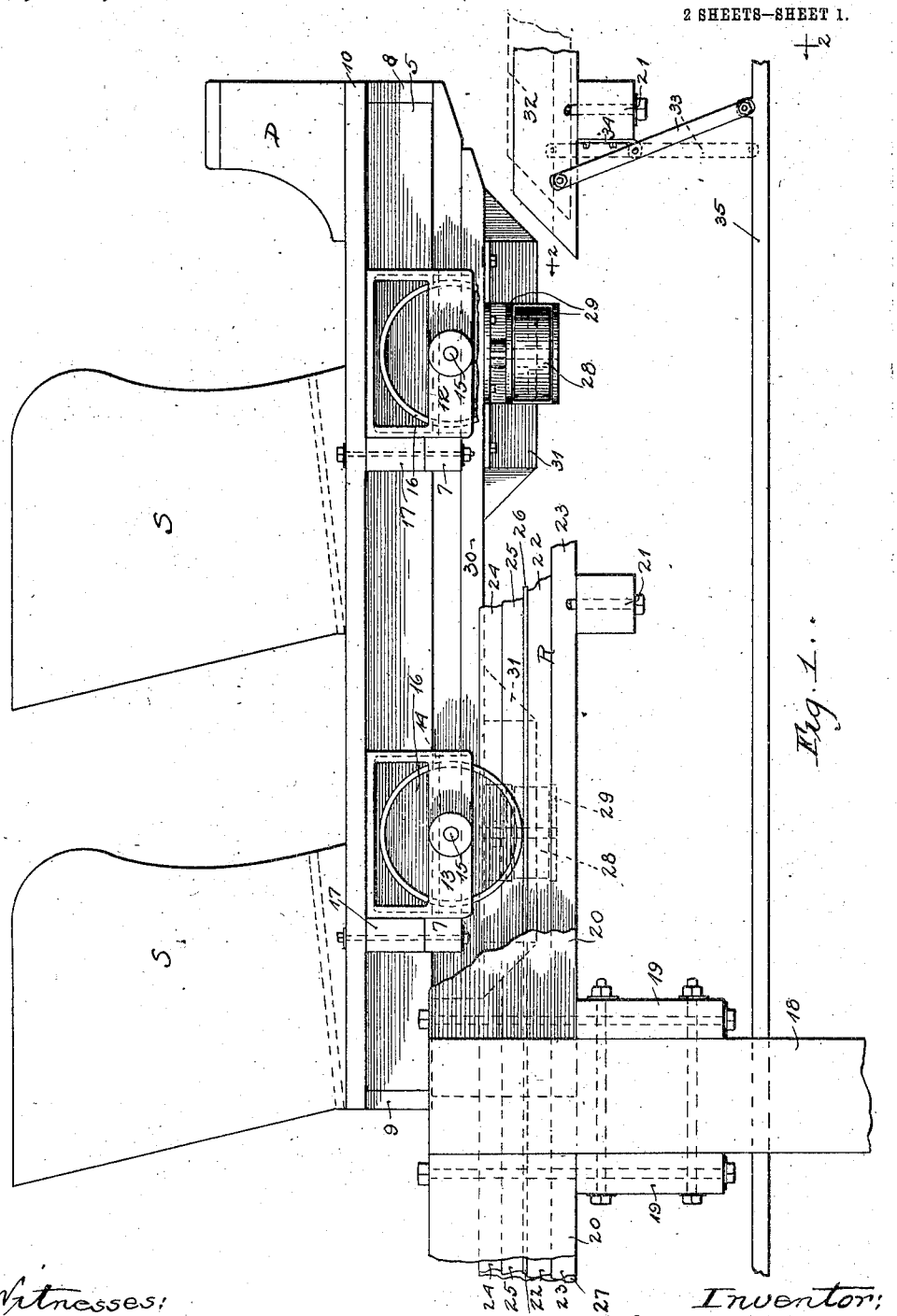

Fig. 1.

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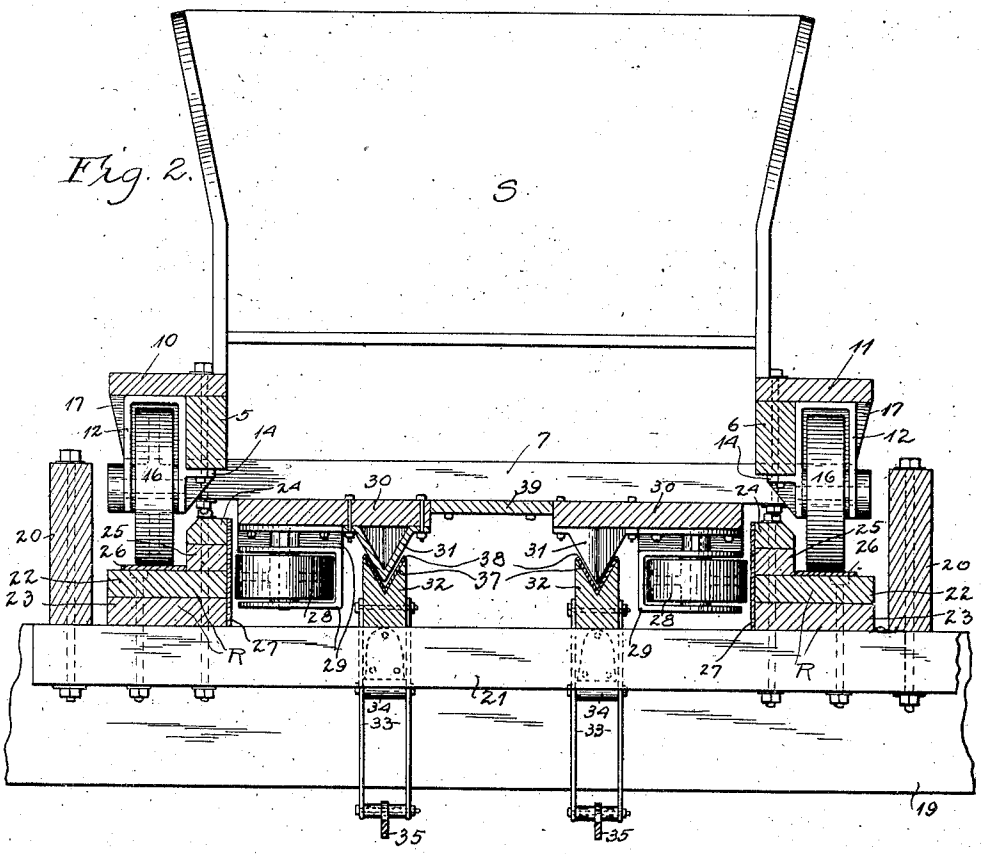
2 SHEETS—SHEET 2.

Fig. 2.



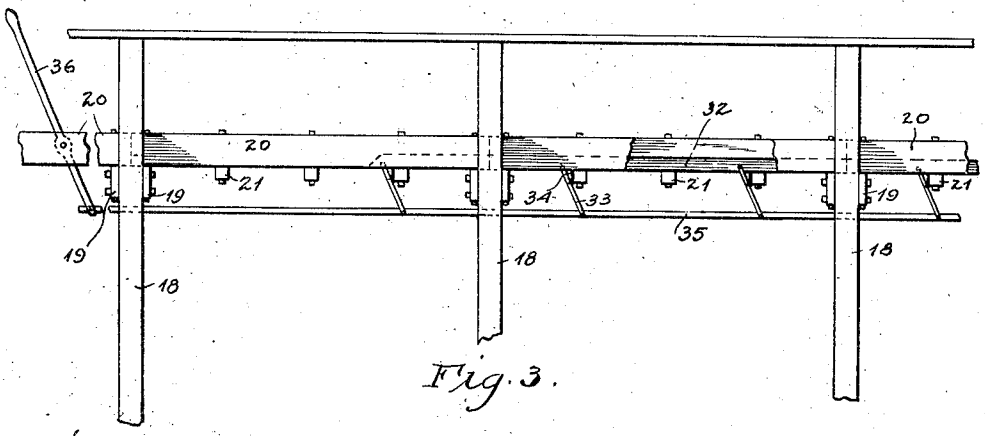


Fig. 3.

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UNITED STATES PATENT OFFICE.

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PLEASURE-RAILWAY STRUCTURE.

1,038,174. Specification of Letters Patent. Patented Sept. 10, 1912.

Application filed November 24, 1911. Serial No. 662,196.

To all whom it may concern:

Be it known that I, JOHN A. MILLER, a resident of Homewood, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pleasure-Railway Structures, of which the following is a specification.

My invention relates to pleasure railway structure and covers improved features of construction, arrangement and operation.

Among the important objects of the invention are to provide improved braking mechanism adapted to be controlled automatically to stop the car at a desired point to be positively controlled to stop the car at other points; to provide guard wheel structure positioned to cooperate directly with the same rail structure that receives the supporting wheels of the cars; to provide a construction and arrangement which will bring the center of gravity of the car very close to the track; to provide simplified track supporting structure; and in general to provide improved construction and arrangement in pleasure railway systems.

The various features of my invention are clearly shown in the accompanying drawings, in which—

Figure 1 is a side elevational view of a car and track structure supporting the car, together with the mechanism for effecting braking of the car, Fig. 2 is a sectional view looking from plane 2—2, Fig. 1, and Fig. 3 is a side elevational view of the upper part of a track structure with parts broken away to more clearly illustrate the operation of the brake members supported on the track structure.

The body of the car shown comprises side beams 5 and 6 connected together by cross beams 7 and the front and end walls 8 and 9. Engaging the tops of the side beams 5 and 6 and extending laterally therefrom are the running boards 10 and 11. The body also supports a number of seats S and a dash board structure D. At the opposite sides of the car body are front and rear wheel journal frames 12 and 13, each being of substantially inverted U-shape, abutting with its yoke against the under side of the adjacent running plank and with its inner limb abutting against the adjacent side beam, a bracket 14 being formed on its inner limb for engaging against the under side of the side beam. The axle 15 journaled in the lower ends of the front and rear walls of the journal frame journals a wheel 16. The journal frames are further securely held in place by abutting against the projecting ends of the cross beam 7 and against blocks 17 between the projecting ends of the beams 7 and the running boards.

In the track supporting structure shown each of the bents comprises the upright side beams 18 connected together near their top by a pair of cross beams 19 securely bolted thereto. Set on edge on these cross beams and securely bolted thereto are sleepers 20, ties 21 being suspended at intervals from the sleeper beams for supporting the rail structures R. The rail structures shown are built up of upper and lower boards 22 and 23 securely bolted to the cross beams 19 and the ties, narrower upper and lower boards 24 and 25 being secured on the board 22 adjacent the inner edge thereof. The wheels of the car engage track plates 26 secured to the top boards 22 of the rail structures, the sleepers 20 being immediately adjacent the outer edge of the track structure. The inner faces of the boards 22, 23, 24 and 25 of each track structure are in a common vertical plane and are faced by pipes 27 forming tracks or running surfaces for guard wheels 28. A guard wheel is provided for each vehicle wheel, and as shown, each guard wheel is journaled in a suitable casting 29 bolted to the under side of a board or plank 30 running lengthwise of the car and secured against the under faces of the cross beams 7. In prior structures special track structures had to be provided for accommodating guard wheels, but in my arrangement the same structures which serve as track for the vehicle supporting wheels serve also as track for the guard wheels. The various boards 22, 23, 24 and 25 being securely bolted to the ties form rigid abutments for the track plates 27 engaged by the guard wheels. The boards 24 and 25 on the rail structures will offer high rail abutment for the guard wheels, that the vehicle can be tipped to a considerable angle before the guard wheels will move upwardly beyond the rail plates. The boards 24 and 25 also form guide ridges for preventing lateral displacement of the vehicle wheels on the track, if, for example, the guard wheels should become removed on one side. The sleepers 20 extend upwardly adjacent

the vehicle sides and will also prevent untracking of the vehicle if any of the other guard mechanisms should fail to work.

Coming now to the mechanism for braking and stopping the vehicle, I secure to the under side of the running boards 30 and adjacent each guard wheel casting a brake shoe structure 31 in the form of a casting of V-shaped transverse section whose ends are of inverted plow shape. For frictionally receiving these brake shoes brake beams 32 are each carried at the upper ends of levers 33 pivoted at intermediate points to suitable castings 34 bolted to the ties of the track supporting structure, the lower ends of the levers pivoting to an actuating bar 35 adapted to be moved longitudinally by a main lever 36 pivoted at its lower end to said bar and pivoted at an intermediate point to the track supporting structure. Each brake beam has a V-shaped longitudinal groove 37, and if the beams are of wood the sides of the groove are preferably faced with sheet metal 38. These brake beams are in position on the ties in the paths of the brake shoes at each side of the vehicle. As shown, the brake beams are resting on the ties so as to allow free passage of the car thereover unless the brake beams are positively raised to carry their slots upwardly far enough to frictionally receive the brake shoes of the approaching car. Brake beams could be applied at suitable intervals on the track supporting structure to be used for stopping the car at the end of a run or to stop cars in case of emergency or accident. The brake beams at the stopping platform are preferably automatically and normally held up off the ties in position to frictionally receive the brake shoes of the vehicles, and the bars 35 of the stopping platform or "home" brake beams are made of sufficient weight or purposely weighted, or otherwise controlled so that the levers 33 will be normally held in vertical position to hold the brake beams in braking position. The "home" braking beam will therefore automatically receive the brake shoes and stop the vehicles. The brake beams at other parts of the track supporting structure are, however, normally held below the path of the vehicle brake shoes, so that the controlling levers 36 would have to be positively actuated to move the desired brake beams to braking position. For example, where several cars are running at intervals on the same track structure and the first car should be accidentally stopped, the attendants can throw the brake mechanisms immediately in advance of the following cars to stop these cars, thus to prevent collision. It will be noted that the weight of a vehicle itself will automatically increase the braking engagement after the brake shoes once engage with the lifted brake beams, for as the brake shoes engage with the raised brake beams the frictional engagement will tend to move the brake beams longitudinally in the direction in which the vehicle is traveling, and this would result in rotation of the actuating levers 33 to vertical position and upward movement of the brake beams into firm wedging and friction engagement with the brake shoes, the entire weight of the car being practically taken up by the brake beams and the actuating levers 33. After a car has been stopped the attendant, by swinging the proper main lever 36, can withdraw the brake beams from the brake shoes. The various brake beams are actuated in much the same manner as switches are actuated in steam railway systems, the various sets of brake beam supporting lever mechanisms 33 being connected by bars or pipes to the main levers, which levers may all be situated at the "home" platform or at a point where the operator would have the best view of the entire track. As indicated in Fig. 2, the vehicle has two longitudinal lines of brake shoes, and the track structure at various points would have two parallel brake beams, and these two brake beams could be connected with a single main actuating lever to be controlled in common. The ends of the brake beams are suitably tapered so as to readily receive the tapered ends of the brake shoes.

I thus provide very efficient brake mechanism which is particularly adaptable for use in connection with pleasure railways, although the mechanism would be equally effective in other railway systems. The provision of guard roller structures on the under side of the car enables the guard wheels to use for trackage the same structures which form rails for the vehicle main supporting wheels, and special track abutment structures for the guard wheels are therefore entirely unnecessary. Furthermore, the guard wheels placed as shown are in the best position to most advantageously and efficiently prevent displacement of the vehicle on its track or derailment thereof. For example, in going around a curve the vehicle might rise from the track at one side but the adjacent guard wheels, by abutting against the track plates 27, would prevent any lateral displacement of the vehicle on the track, and the guard wheels are thus effective through a wide range. By having the guard wheel structures and brake shoe mechanism below the floor of the car the center of gravity of the car is brought down to a very low point, and this in itself will greatly increase the stability of the car on its track. The boards 30, together with an intermediate board 39, form the floor of the vehicle, and the passengers sit low in the car.

The track supporting structure is also exceedingly simple, and a most rigid structure with a minimum amount of material is provided by arranging the sleepers 20 on the cross beams 19 and suspending the ties 21 in intermediate points from the sleepers. The rail structures R being securely bolted to the cross beams 19 and ties greatly add to the rigidity of the structure. I do not of course desire to be limited to the precise constructions, arrangements, and operations shown and described, as changes and modifications are possible which would still come within the scope of my invention, and I therefore claim the following:

1. In pleasure railway systems, the combination of a supporting structure, flat beams on said supporting structure, and a flat rail on each beam, a vehicle having supporting wheels engaging said flat rails, guard beams mounted on said flat track beams along the inner edge thereof, a vertical flat rail engaging the inner face of each flat rail beam and the guard beam thereon, bearing frames suspended from the floor of the vehicle adjacent said vertical rails, and guard rollers journaled in said frames for engaging said vertical rails.

2. In pleasure railway systems, the combination of a supporting structure, parallel flat track beams on said supporting structure and a flat rail on each beam, a vehicle having supporting wheels for engaging said flat rails, a guard beam on each track beam at the inner edge thereof, a bearing frame secured to the under side of the vehicle floor, and a guard wheel journaled in each bearing frame, the outer sides of the guard beams acting as abutments to prevent lateral displacement of the vehicle on its tracks, and the inner sides of the guard beams acting as tracks for said guard wheels.

In witness whereof, I hereunto subscribe my name this 21st day of November, A. D., 1911.

JOHN A. MILLER.

Witnesses:
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