

No. 825,958.

PATENTED JULY 17, 1906.

A. M. CLARK.
RAILWAY TRUCK AND RAIL.
APPLICATION FILED OCT. 6, 1905.

2 SHEETS—SHEET 1.

Fig. 2

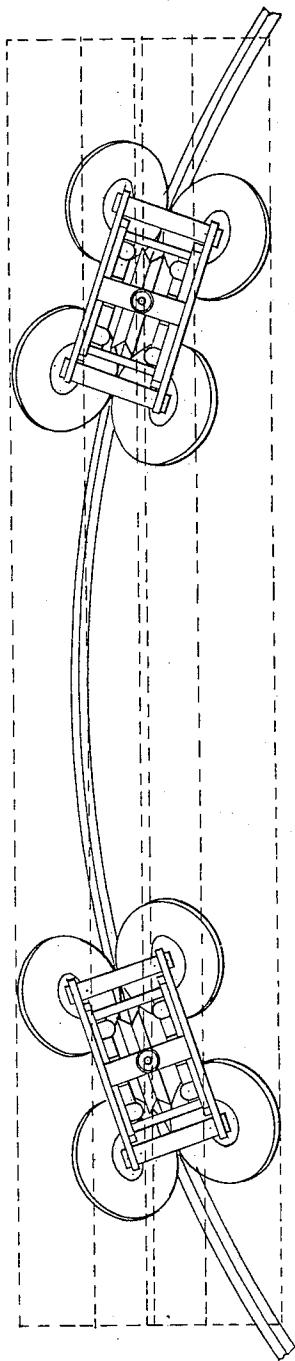
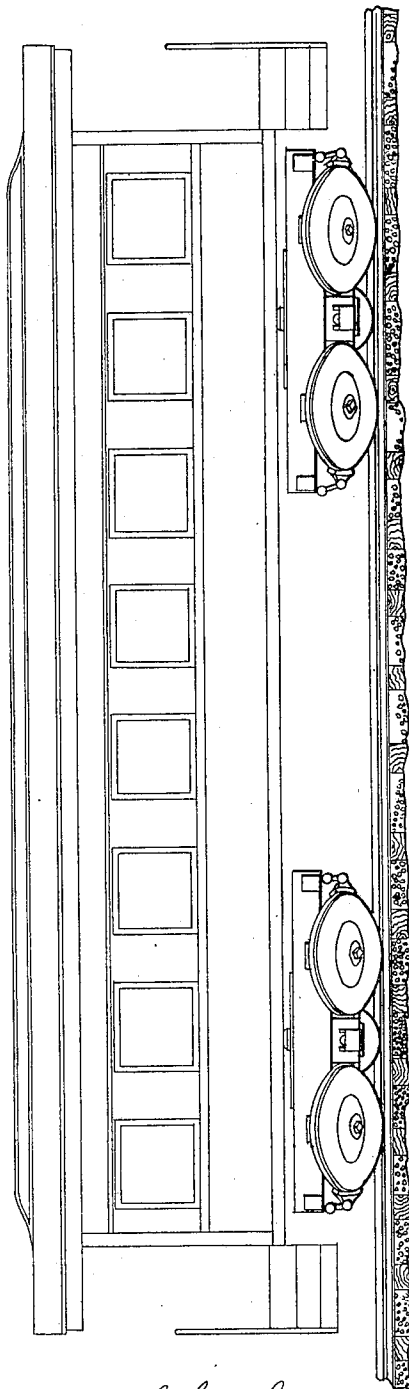


Fig. 1



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2 SHEETS—SHEET 2.

Fig. 4

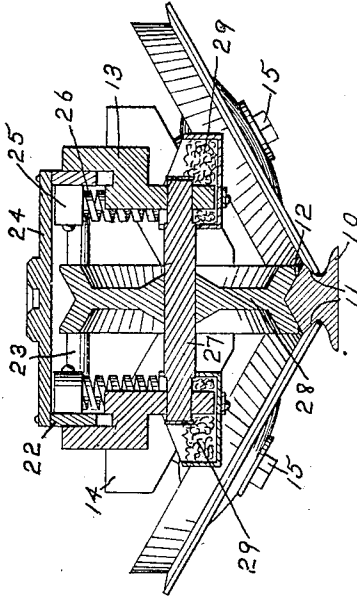


Fig. 3

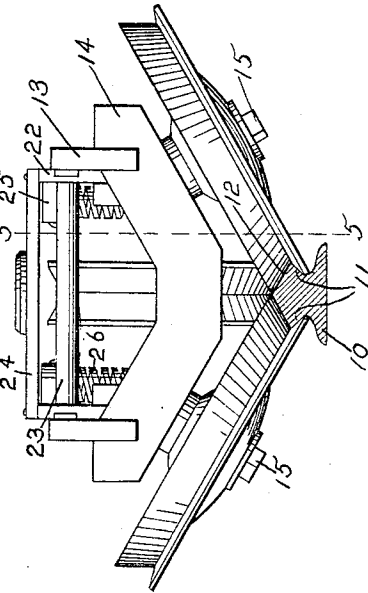


Fig. 6

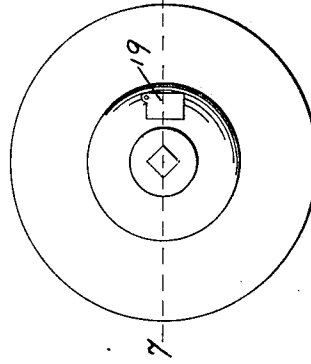


Fig. 7

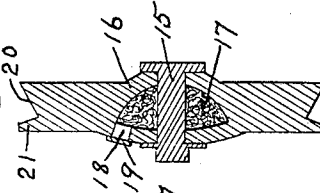
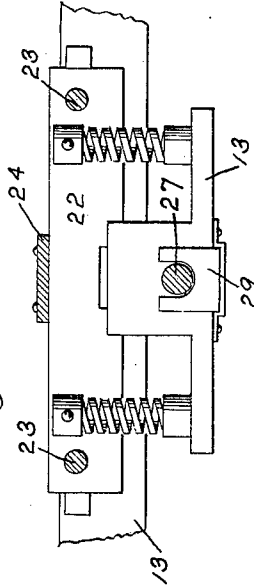


Fig. 5



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UNITED STATES PATENT OFFICE.

ALBERT M. CLARK, OF MARSHALLTOWN, IOWA.

RAILWAY TRUCK AND RAIL.

No. 825,958.

Specification of Letters Patent.

Patented July 17, 1906.

Application filed October 6, 1905. Serial No. 281,631.

To all whom it may concern:

Be it known that I, ALBERT M. CLARK, a citizen of the United States, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented a certain new and useful Railway Truck and Rail, of which the following is a specification.

The object of my invention is to provide a railway truck and rail so constructed that the truck will run upon a single rail, resting upon the ground and not tilt laterally, and, further, to provide a truck and rail of this class in which the truck is positively held to the rail by the wheel-flanges, so that high speed may be attained without danger of having the truck leave the rail.

My invention consists in the construction, arrangement, and combination of the various parts of the truck and in the construction of the rail to coact with the car-wheels, whereby the objects contemplated are obtained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a car mounted on two trucks resting on a single rail and embodying my invention. Fig. 2 shows a top or plan view of two trucks mounted upon a single rail embodying my invention, the dotted lines indicating the position of a car-body mounted on the trucks. Fig. 3 shows a front elevation of a single truck mounted upon the rail, which latter is shown in section. Fig. 4 shows a vertical central transverse sectional view of my improved truck mounted upon a rail. Fig. 5 shows a detail view illustrating a portion of the truck-frame, taken on the line 5 5 of Fig. 3, the car-wheels being omitted. Fig. 6 shows a side elevation of one of the car-wheels, and Fig. 7 shows a sectional view of same on the line 7 7 of Fig. 6.

Referring to the accompanying drawings, the rail comprises a base 10, designed to be secured to railway-ties in the ordinary way. Above the base is a shank which is thicker than the ordinary shank of a railway-rail, and above the shank are two faces to be engaged by the car-wheel flanges, and these faces extend upwardly and outwardly from the shank and are indicated by the numeral 11. At the upper edges of the faces 11 are the tread portions 12, which incline upwardly and inwardly to the center of the rail. The truck-frame comprises side pieces 13 and end pieces 14, rigidly connected there-

with. The under surfaces of the end pieces 14 are arranged at angles from the horizontal of about thirty degrees, and on each cross-piece two stub-axles 15 are fixed to project downwardly at right angles to the under surfaces of the ends of the cross-pieces. On each of the stub-axles is a car-wheel comprising an enlarged central body portion 16, having a chamber 17 surrounding the axle 15 and designed to be filled with oil and a packing material, the oil-hole 18 being provided with a cover 19.

On the periphery of each wheel is a tread portion 20, arranged at an acute angle relative to an axial line to lie flat against the adjacent tread portion 12 of the rail, and on the under surface of the wheel is a projecting flange 21, designed to pass under the tread portion of the rail and to engage the faces 11 of the rail.

Mounted within the truck-frame composed of the parts 13 and 14 is an auxiliary frame composed of the longitudinal side pieces 22, connected by the cross-pieces 23 and also by the central cross-piece 24, which is designed to receive and support the car-body. Connected with the side pieces 22 are the bosses 25, to which the cushioning-springs 26 are connected, the lower ends of which springs engage and are supported by a part of the truck-frame.

The numeral 27 indicates an axle rotatably mounted in bearings formed in the side pieces 13. On the center of this axle 27 is a car-wheel 28, having its tread portion formed with a V-shaped groove to fit the top of the rail. Surrounding the end portions of the axle 27 are the oil-boxes 29, of ordinary construction, supported by frame members 13.

In practical use and assuming the weight of a car-body to be resting upon the cross-piece 24 the springs 26 will cushion the car-body relative to the frame of the truck. A great portion of the weight upon the frame will be carried by the central upright wheel. However, if there were only one wheel vertically arranged resting upon the rail the truck would tilt to one side or the other. By means of my improvements this tilting is prevented by the inclined wheels that engage the sides of the tread portion of the rail. The wheels on the right side of the truck by having their peripheries resting on the side of the rail tend to prevent the truck from tilting to the right, while the inclined wheel on the left performs the same function on the other side,

so that even without the flanges on the side wheels the truck will ride upon the single rail without tilting.

One of my objects is to provide a truck capable of high speed, and when high speed is attained the tendency for the truck to leave the rail is increased. The flanges provided on the inclined wheels of my improved truck engage the under surfaces of the rail-head and form a positive lock, preventing the wheels from leaving the rail. Said flanges also serve as a positive lock against tilting movements of the truck, although in use comparatively little strain is thrown upon the flanges to prevent tilting movements, as the inclined wheels of themselves tend to maintain the truck in an upright position on the rail.

In Fig. 2 I have illustrated a rail arranged on a curve and two trucks on the rail with the outline of a car-box dotted in position relative to the trucks for the purpose of showing that even when the car is standing upon or traveling over a curved rail the weight of the car-body is thrown on a central line between the trucks.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

1. In a car-truck, a vertically-arranged wheel designed to rest upon the tread portion of a rail and two wheels inclined outwardly and upwardly away from each other shaped to rest upon the tread portion of the same rail and formed with flanges to project under the tread portion of the rail and to form with the rail a positive lock against tilting movements of the truck relative to the rail.

2. In a car-truck, a vertically-arranged wheel designed to rest upon the tread portion of a rail and mounted in the truck, cushioning-springs interposed between the wheel and truck and two wheels inclined outwardly and upwardly away from each other on axles fixed to the truck, said wheels shaped to rest upon the tread portion of the same rail and formed with flanges to project under the tread portions of the rail and to form with the rail a positive lock against tilting movements of the truck relative to the rail.

3. A car-truck comprising a frame, a vertically-arranged wheel in the frame, a pair of wheels supported by the frame side by side, inclined upwardly and outwardly from a point in line with the central wheel, the tread portions of said wheels being tapered outwardly from their under surfaces so that the

tread portions are of greater diameter at their upper edges than at their lower edges, and projecting flanges at the lower edges of said wheels.

4. A car-truck comprising a frame, a vertically-arranged wheel in the frame having a V-shaped peripheral groove, two pairs of wheels at the opposite ends of the truck, each pair having tread portions designed to engage the sides of a rail on which the central wheel is resting, said wheels inclined upwardly and outwardly away from each other and provided with flanges on their under surfaces shaped to pass under the tread portion of the rail.

5. An improved car-truck comprising a frame, two pairs of wheels supported at the opposite ends of the frame, the wheels of each pair inclined downwardly and toward a central point, each wheel having a flange on its under surface projecting beyond the tread portion thereof, a frame within the truck-frame vertically movable, cushioning-springs interposed between said frames, and a vertically-arranged wheel mounted in bearings carried by said truck-frame.

6. A railway-car comprising a car-body, two trucks swiveled to the opposite ends thereof, each truck comprising a truck-frame, a central vertically-arranged wheel therein, and two pairs of wheels at the opposite ends of the frame, the wheels of each pair inclined downwardly and inwardly toward each other, each wheel having a flange on its under surface projecting beyond the tread portion thereof, and a rail having faces on the top of its tread portion, inclined from a central line downwardly and outwardly, and faces on the under surface of its tread portion inclined downwardly, the latter faces being engaged by the flanges of the wheels, and the upper faces on the rails being engaged by the tread portions of the wheels.

7. The combination with a car-body, a swiveled truck at each end of the car, a single rail, a vertically-arranged supporting-wheel in each truck resting on the rail, inclined supporting-wheels on each truck engaging the sides of the rail, and flanges on said inclined wheels engaging the under surfaces of the tread portion of the rail to prevent tilting movements of the truck on the single rail.

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