No. 609,785. Patented Aug. 30, 1898.

G. J. CAPEWELL.

RAILWAY CAR TRUCK.

(Application filed May 26, 1896. Renewed Jan. 5, 1898.)

(No Model.)

Fig. 1

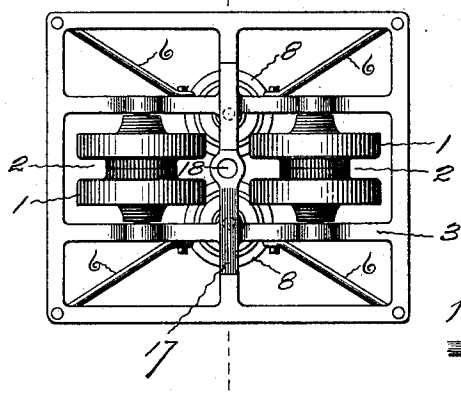


Fig. 3

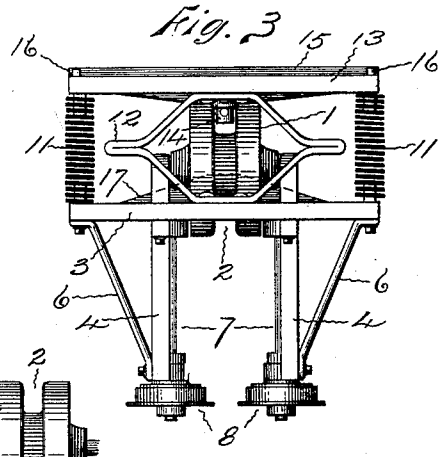


Fig. 5

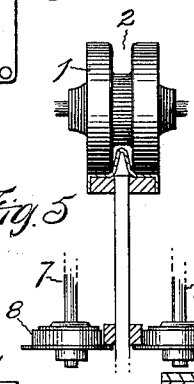


Fig. 2

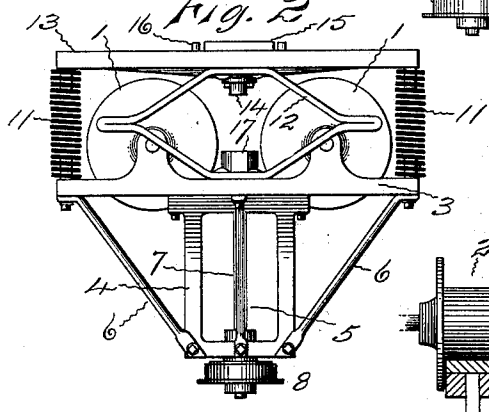


Fig. 4

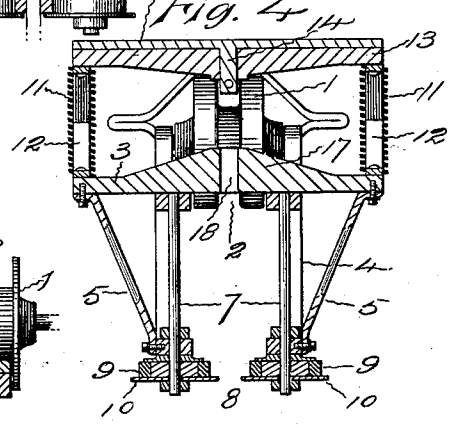
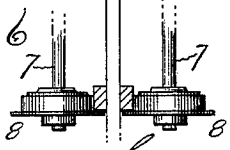


Fig. 6



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UNITED STATES PATENT OFFICE.

GEORGE J. CAPEWELL, OF HARTFORD, CONNECTICUT.

RAILWAY-CAR TRUCK.

SPECIFICATION forming part of Letters Patent No. 609,785, dated August 30, 1898.

Application filed May 26, 1896. Renewed January 5, 1898. Serial No. 665,706. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. CAPEWELL, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Railway-Car Trucks, of which the following is a specification.

The invention relates more particularly to the class of trucks provided for railway-cars designed for high speeds which have two or more traction-wheels arranged one behind the other centrally of the truck and wheels located on each side of and below the traction-wheels.

The object of the invention is to provide a simple, cheap, strong, and durable truck with wheels arranged in this manner and formed with grooved peripheries adapted to travel on and be guided by a traction-rail having broad flat tread-surfaces and horizontally-arranged wheels with retaining-flanges held by a firmly-braced light frame, so as to travel close to side rails placed below the traction-rail and prevent any possibility of the traction-wheels leaving the traction-rail, without to any extent increasing the friction of the wheels upon or against the rails.

Referring to the accompanying drawings, Figure 1 is a plan of the truck with the upper frame removed. Fig. 2 is a side view of the truck. Fig. 3 is an end view. Fig. 4 is a central transverse section on the plane indicated by the broken line of Fig. 1. Fig. 5 is a detail edge view of one of the traction-wheels, the retaining-wheels, and a section of the track; and Fig. 6 is a similar view showing a modified form of traction-wheel.

In the views the truck is shown as provided with a pair of traction-wheels 1, arranged centrally one behind the other. These wheels have peripheral grooves 2 and wide tread-surfaces. The form of traction-wheel shown in Fig. 5, which is the same as shown in connection with the views of the truck, has its tread-surface on each side of the groove, while in the form of traction-wheel shown in Fig. 6 the tread-surface is at the bottom of the groove. The traction-wheels can be manufactured with the sides integral, the grooves being formed during the making or after the making of the sides, or they can be built up so as to provide the two sides with the groove between them by placing two or more sections side by side. Short journals are provided for the traction-wheels, and these journals turn in suitable bearings connected with the wheel-frame 3.

The wheel-frame shown is arranged horizontally, and depending beneath on each side of the traction-wheels are the vertical frames 4. These vertical frames are bolted to the under side of the horizontal frame and are further connected with the wheel-frame by the brace-rods 5, that incline outward from the middle of the bottom of the vertical frames to the middle of the edge of the horizontal frame, and the brace-rods 6, that incline outward and backward and forward from the bottom corners of the vertical frames to the corners of the horizontal frame.

Bearings are formed in the vertical frames, and in these bearings are held the vertical journals 7. On the lower ends of these journals are secured wheels 8, arranged horizontally and adapted to run close to the outside of the side rails located below the traction-rail. These horizontally-arranged wheels are preferably built up in sections and have wide flat peripheries 9, of cushioning material, and retaining-flanges 10, arranged to run beneath the edges of the side rails.

Upon the upper side of the horizontal traction-wheel frame, at the corners, are located spiral springs 11, and between the spiral springs, along the sides and across the ends, are located leaf-springs 12. Upon these springs is supported a top frame 13. This top frame is connected by means of a king or pivot bolt 14 with a plate 15, that is adapted to be connected with the bottom of a car-body. The bolt 14 may be forged integral with the plate or may extend through it. Studs 16 may be arranged to limit the oscillation of the plate on the upper frame. The top of the horizontal traction-wheel frame may be provided with a rib 17 to add strength to the structure, and through a central perforation 18 the king or pivot bolt may be extended, if desired, to aid in holding the frames together.

The horizontal traction-wheel frame is sim-

ple and strong and can be cheaply formed. The vertical retaining-wheel frames are very securely held in place and strongly braced in a light simple manner, so that they cannot be wrenched or sprung out of position. The traction-wheels have wide tread-surfaces that can be provided with a cushioning material, and they are guided along the traction-rail by the grooves in their peripheries. The retaining-wheels have wide peripheries that can be provided with cushioning material and flanges that will by contact with the under edges of the side rails prevent the traction-wheels from becoming displaced from the traction-rail. The retaining-wheels are located below the traction-wheels in a plane that passes between the two traction-wheels, which allows a slight oscillation and permits the easy rounding of curves by the traction-wheels, that are held in place by the grooves in their peripheries and are retained in position by these retaining-wheels, and the upper frame, that is pivotally connected with the car, is arranged to permit the necessary oscillation for the truck and the desired spring or yielding between the car and truck for the comfort of the passengers.

The truck is simple, cheap, and strong, and will run easily, lightly, and smoothly on the track provided at rapid rates of speed without uncomfortably affecting the passengers in the car supported by a pair of such trucks.

I claim as my invention—

In a car-truck, in combination, a pair of centrally-arranged vertically-bearing traction-wheels having grooved peripheries, journals for the traction-wheels, a horizontal frame supported by the journals of the traction-wheels, an open rectangular frame depending vertically from the horizontal frame on each side of the plane of the traction-wheels, a horizontally-bearing flanged retaining-wheel supported by bearings in each vertical frame below and in a plane extending between the traction-wheels, brace-rods extending from the middle of the lower end of each vertical frame upwardly and outwardly to the side edges of the horizontal frame, brace-rods extending from the corners of the lower end of each vertical frame upwardly and outwardly toward the front and rear corners of the horizontal frame, spiral and leaf springs supported by the horizontal frame, a similar horizontal frame supported by the springs, and a plate pivotally connected with the upper frame, substantially as specified.

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Witnesses:

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