R. L. DABNEY & C. W. DABNEY, Jr.

Railway-Car.

No. 204,009. Patented May 21, 1878.

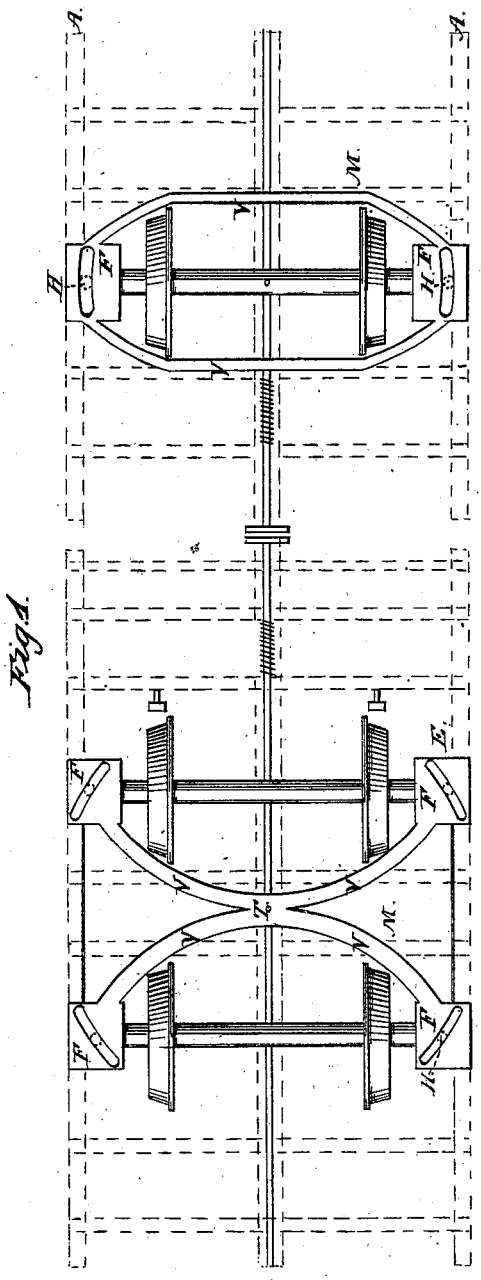

Fig. 1.

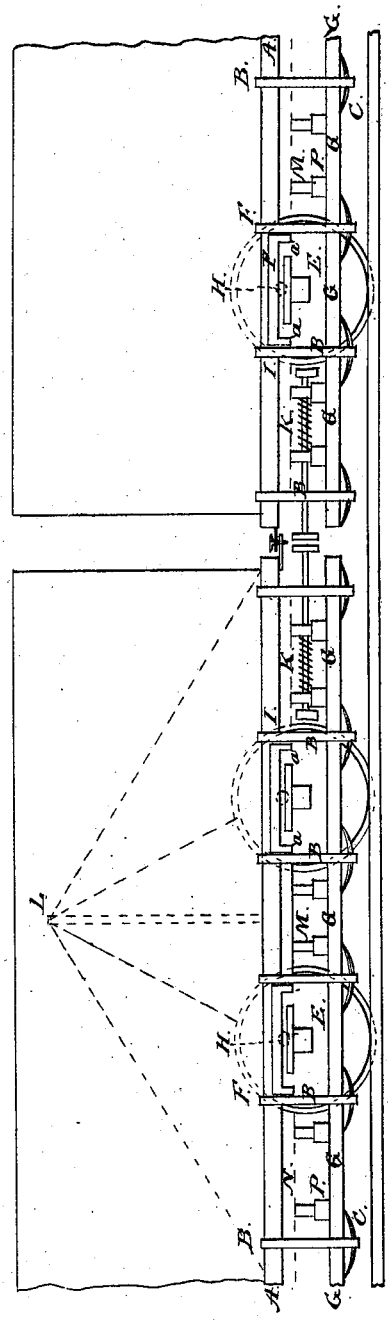

Fig. 2.

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UNITED STATES PATENT OFFICE.

ROBERT L. DABNEY, OF HAMPDEN SIDNEY, AND CHARLES W. DABNEY, JR., OF EMORY, VIRGINIA.

IMPROVEMENT IN RAILWAY-CARS.

Specification forming part of Letters Patent No. **204,009**, dated May 21, 1878; application filed January 27, 1877.

To all whom it may concern:

Be it known that we, ROBERT L. DABNEY, of Hampden Sidney, in the county of Prince Edward and State of Virginia, and CHARLES W. DABNEY, Jr., of Emory, in the county of Washington and State of Virginia, have invented a new and useful Improvement in the Construction of Railroad-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, in which—

Figure 1 is a plan view of the trucks, and Fig. 2 a side elevation of cars constructed upon our improved plan.

The object of our invention is to avoid the necessity for the present massive structure of railroad-cars, which necessity arises from the too great elevation of the center of gravity of the load, increasing thereby its oscillations or lateral sway and the thrust of the load in the direction of motion, also the danger of the wheels leaving the track. The dead weight of cars so constructed is such that the paying freight carried by them is, in nearly all cases, less than that of the cars. The problem is, how to change this ratio in favor of the paying freight, and thus enable freight to be carried more cheaply and profitably. We have endeavored to meet the difficulty by bringing the center of gravity of the car and its load two feet nearer the rails, thereby dispensing with nearly half the weight of materials heretofore required for construction of car-bodies.

We accordingly suspend the body of the car from two side sills or beams, A A, Fig. 2. These side sills or beams run longitudinally outside the wheels, and just above the axles. Two still lighter beams also run longitudinally beneath the former and parallel thereto, and are suspended from them by stirrups of wrought-iron B B, Fig. 2, located four feet apart. These stirrups also embrace, beneath the lower beam G, short elliptical steel springs C C, so that, in a burden or freight car of thirty-two feet length, these lower beams G, which sustain the whole floor and freight, have support at sixteen points.

In Fig. 2, M M indicate the ends of the cross-joists. These are also shown by the dotted lines in Fig. 1. Under the ends of these cross-joists M M appears another set of rubber or coiled springs, P P. These double springs relieve the wear and tear both in the track and rolling-stock, and, by relieving jolts, prevent all sudden strains of the frame-work of the car.

The car-floor (represented by the dotted line N in Fig. 2) is supported on the cross-joists M M at a height above the car-axles barely sufficient to allow of the depression of the springs—*i. e.*, at a distance of about twenty-two inches above the rails. The upper segments of the car-wheels, of course, appear above the line of this floor. These are covered with convex hoods of plate-iron thick enough to bear the jostles of heavy articles of freight, and are screwed down to the car-floor. In passenger-coaches they may be concealed by seats placed singly or in pairs over them.

The dotted lines in Fig. 2, converging at L, indicate the manner in which the side walls of the cars may be braced by iron rods, communicating to the whole structure great stiffness and strength; and, the lateral thrust of the load having been so reduced and the points of support so multiplied and extended, not only the floor, but the walls and roof of the car, may be built much lighter than heretofore. These walls are supported upon slender uprights of tough wood, bolted, without mortising, upon the exterior faces of the lower longitudinal beams or joists G G.

We show in Fig. 1 the construction of the truck-bearings. The car-body is pivoted to the truck at T. Grooved plates E E are attached to the car-axle boxes, and corresponding plates F F to the under side of the car-body. Metal balls H are placed in the curved channel formed by the coincidently-grooved plates, and on these balls the weight of the car-body and its contained freight is supported.

We do not claim, broadly, the employment of these devices to lessen the friction and wear incident to the passage of cars around a curve; but we connect the upper plates F F by curved or bent bars V, so that the plates are held rigidly in place, and the bottom of the car-body is braced and strengthened. We also provide the plates F with pendent ears or flanges *a*, which serve as stops, which, by

contact with plates E, limit the movement of the axles, and thereby, also, the angle the latter can assume to the longer axis of the car-body.

What we claim is—

1. In combination with the car body, axles, and wheels, the exterior longitudinal joist or beams A A, the parallel lower beams G G, and the connecting-stirrups B B, for supporting the floor-joists, as shown and described, for the purpose specified.

2. The combination of the grooved plates F, having flanges *a*, and the connecting-bars V, the grooved plates E, balls H, and the car body and truck, all as shown and described.

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